TRANSACTIONS OF THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

Volume 66

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA
THE HANCOCK MUSEUM
NEWCASTLE UPON TYNE NE2 4PT
2005-2008

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ANNUAL REPORT
OF THE
COUNCIL
FOR THE
YEAR ENDED 31 JULY 2005

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

PRESIDENT James Alder

COUNCIL

Vice Presidents

H H Chambers
Mrs S I Chambers
Dr D Gardner-Medwin
Dr J M Jones
Dr A G Lunn
I D Moorhouse
Mrs M A Patterson
Dr B J Selman
A M Tynan
R Wilkin

Chairman of Council Professor P S Davis

Honorary Treasurer D Johnson

(1) Elected by members:

2002 - J Angel, M Turner
2003 - A J Hewitt
2004 - Professor J Edwardson and E J Steele

(2) Nominated by sections: H H Chambers (library), J Simkin (botany), D Scadeng (geology), Dr C P F Redfern (ornithology and Gosforth Park), Dr B J Selman (publications), V Carnell (mammals)

(3) **University of Newcastle Representatives**: Professor P S Davis, Professor A J Richards, A Newman.

BANK Lloyds TSB Bank plc, 102 Grey Street, Newcastle upon Tyne

FINANCIAL ADVISERS Brewin Dolphin Securities Ltd, 39 Pilgrim Street, Newcastle upon Tyne

INDEPENDENT EXAMINERS Tait Walker, Bulman House, Regent Centre, Gosforth, Newcastle upon Tyne

GENERAL PURPOSES COMMITTEE

Professor P S Davis, Dr D Gardner-Medwin, A J Hewitt, D Johnson, Dr A G Lunn, I D Moorhouse, Dr B J Selman; D C Noble-Rollin in attendance

SOCIETY REPRESENTATIVES

Coquet Island Advisory Management Committee: I D Moorhouse, D C Noble-Rollin
Coquet Island Research Sub-committee: Dr C P F Redfern, D C Noble-Rollin
Lindisfarne National Nature Reserve: Advisory Committee: D G Bell and D C Noble-Rollin. **Wildfowl Panel**: D C Noble-Rollin

Museum Management Committee:
Dr D Gardner-Medwin, D C Noble-Rollin, Dr B J Selman

STAFF D C Noble-Rollin (Secretary), J Holmes (Archivist), S Carter, S Will (Office Manager).

GOSFORTH PARK NATURE RESERVE Warden: P Drummond

THE HANCOCK MUSEUM Senior Manager/Curator: S McLean

ANNUAL REPORT OF THE COUNCIL FOR THE YEAR ENDING 31 JULY 2005

The Natural History Society of Northumbria is a registered charity and is governed by the rules of the Charity Commission. The elected members of Council are all Trustees. At the Annual Meeting on 3 December 2004 a revised Constitution was unanimously adopted by the members and states that 'The objects of the Society are the encouragement by every means of the study of natural history in all its branches and the conservation of the natural environment in the north east of England including its geology, flora and fauna. Also the Society shall endeavour to ensure the Hancock Museum and all its collections are maintained and extended and made accessible to the general public. It will continue to maintain and extend the Society's library, publish the *Transactions* and other scientific papers, organise lectures, discussions and field meetings, co-operate with other scientific bodies and organisations with similar objects and maintain Gosforth Park nature reserve'.

INTRODUCTION

This year has been marked by two major events, the end of our 175th year and the announcement that the Great North Museum Project received Stage 1 approval of the Heritage Lottery Fund for £8.75 million. Both these events are thoroughly covered in this report but it is worth noting that although the Society has a long history it is still vibrant and forward looking. It has a membership of between eight and nine hundred members and around ninety active volunteers who undertake a wide variety of work from delivering Bulletins and building boardwalks to sitting on committees. It is difficult to pinpoint the reasons for its long-term success and survival. However, the stability provided by its ownership of the Hancock Museum and its collections must be a major reason for its ability to overcome each new challenge and change of fortune. For the next three years we once again face change with the closure of the Museum during the development and the temporary loss of some of our facilities. This is a challenge that the Society will meet and it is hoped that it will move back into the modernised Hancock in 2009 stronger and even more active.

The Society's President, Lord Ridley, regretfully decided that he must retire at the Annual Meeting on 2 December 2004 and Chairman Ian Moorhouse also announced that he was coming to the end of his self-imposed three year period as Chairman of Council. Council would like to thank them both for their service to the Society and the help that they have so freely given. The 175th Anniversary year was a fitting highlight in the Society's life to mark the end of their work and particularly the cooperation over the Blagdon Open Day in May 2004, which showed the Society's great range of activities and brought it to the attention of a wider audience.

MEMBERSHIP

The total membership on 31 July 2005 (with 2004 figures in brackets) was 869(865). This was made up of 7(6) honorary members, 41(42) life members, 524(516) members who receive *Transactions*, 261(268) members who do not receive *Transactions*, 30(25) associate members and 8(8) complimentary members. Although the increase in membership overall is only four, this represents the fourth successive year in which membership has increased. (The reason for the total not adding up to 871 is that the Society has two life members who are also honorary.) Thirty-one other people make payments under long-standing bankers' orders ranging from £2 to £17, made when these amounts were the current subscription rates; they are regarded as donors and not members.

The Council reports with much regret the death during the year of three members: Mr G H J Leonard (1988) Mr B Heaney (1997) and Sir Stanley Clarke (1998). Also many members will be aware that Mary Drummond, our Warden Paul's wife, died very suddenly just before Christmas 2004. This is reported more fully below, under Gosforth Park.

ANNUAL MEETING

Held on Friday 3 December, the Annual Meeting celebrated the end of a busy and most exciting year for the Society. The Chairman, Ian Moorhouse, in proposing the adoption of the annual report, outlined the major items from his point of view. These were the 175th Anniversary celebration programme, the proposals for the Hancock Museum and the fact that the membership had edged upwards again for the fourth successive year following a steady decline during the 1990s. He congratulated Chris Redfern, Chairman of the British Trust for Ornithology Ringing Committee and of the Society's Ringing Group, on being awarded the British Trust for Ornithology's prestigious Tucker medal. As he remarked, the Society is indeed fortunate to have members of Dr Redfern's calibre.

The evening marked the retirement of Lord Ridley, who had been our President since 1996, and had quietly but assiduously assisted the Society in a multitude of ways during his period of office. The Chairman mentioned that the Open Day at Blagdon had only been possible due to his generosity, as he not only made the estate available but helped with the finances when we were unsuccessful in obtaining a Lottery grant.

In recognition of his work and of the affection in which he is held, a presentation was made by the Chairman on behalf of the membership and Council of a Spring Gentian made in bone china. Appropriately enough, this had been created by the incoming President, James Alder, who had been unanimously elected earlier in the meeting. Lord Ridley responded by presenting to the Society a painting of a Farne Island puffin, which he had done some years earlier.

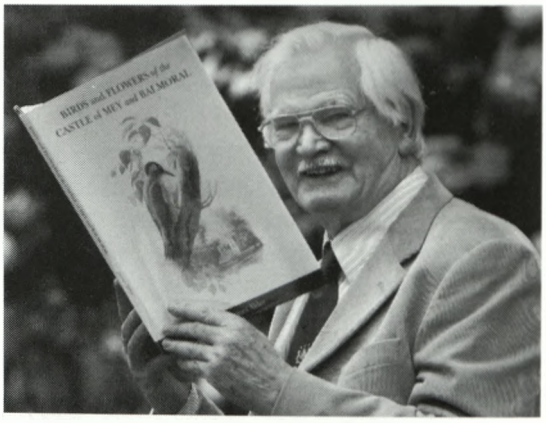


Figure 1 James Alder who became our new President at the Annual Meeting. Picture courtesy of the University of Northumbria.

The new President, James Alder, who has been a member since 1946, is a wonderful artist and naturalist who has illustrated books for the Queen and the late Queen Mother in a long and illustrious career. We wish him well in his new post.

Two stalwarts of the eighties and early nineties, Derek Shannon and Eddie Slack, were made honorary members in recognition of their work for the Society. Derek was Chairman from 1986 to 1995, steering the Society through the time before and after Grace Hickling died and the change-over to the new management of the Museum by Tyne & Wear Museum Services, prior to David Gardner-Medwin taking on the role in 1996. Eddie had been an outstanding Honorary Treasurer from 1981 to 1996, greatly enhancing the wealth of the Society and having a unique ability of being able to provide money for activities when called upon.

Amongst the business transacted at the meeting, members unanimously adopted a revised constitution for the Society, intended to update, clarify and streamline the way in which the Society operates. Two new members were elected to Council, Professor Jim Edwardson and John Steele.

At the meeting Ian Moorhouse said that he was stepping down as Chairman at the next Council meeting following completion of his three years in the post. He had greatly enjoyed the role and expressed his gratitude and appreciation to all the people who had worked with him. Secretary David Noble-Rollin paid tribute to his work over this period during which membership had increased and administrative practices been updated.

A behind-the-scenes tour of the museum ended a most successful evening. As the new President was heard to say afterwards 'That was a good meeting, with the Society in a generous mood, showing itself at its best'.

GREAT NORTH MUSEUM PROJECT

Plans for an extensive redevelopment of the Hancock Museum took a major step forward early in 2005 with the announcement of an £8.75 million award from the Heritage Lottery Fund. The award is a critical input towards the £25.75 million scheme, led by the University, and developed with the Society, Newcastle City Council, the Society of Antiquaries and Tyne and Wear Museums.

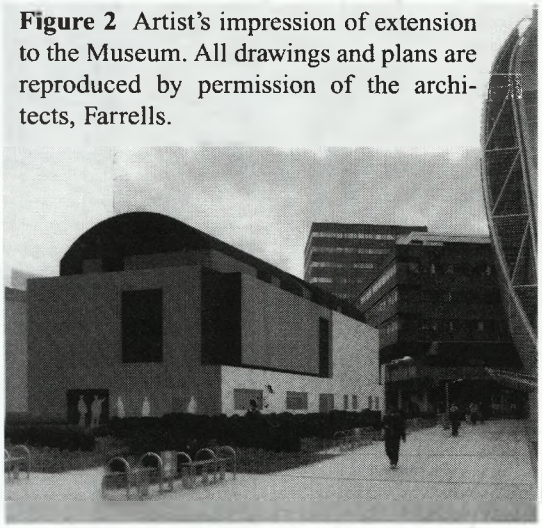
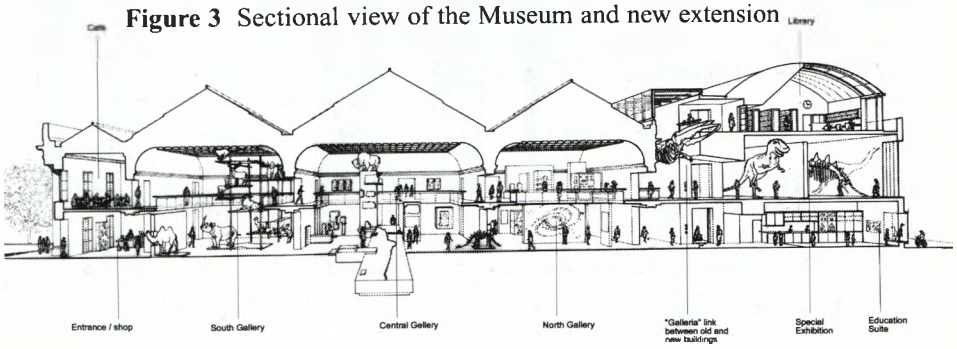


Figure 2 Artist's impression of extension to the Museum. All drawings and plans are reproduced by permission of the architects, Farrells.

The project will revitalise the museum and bring in part of the Society of Antiquaries' collections, as well as providing appropriate and accessible storage offsite within the Discovery Museum building for material which cannot be displayed. Provided sufficient of the funding is in place it is expected that the Museum will close at the end of April 2006 and reopen early in 2009. Although the Society offices will be moved out of the building during the construction phase, we will move back subsequently to an area which will provide better working conditions than at present. Since

Figure 3 Sectional view of the Museum and new extension



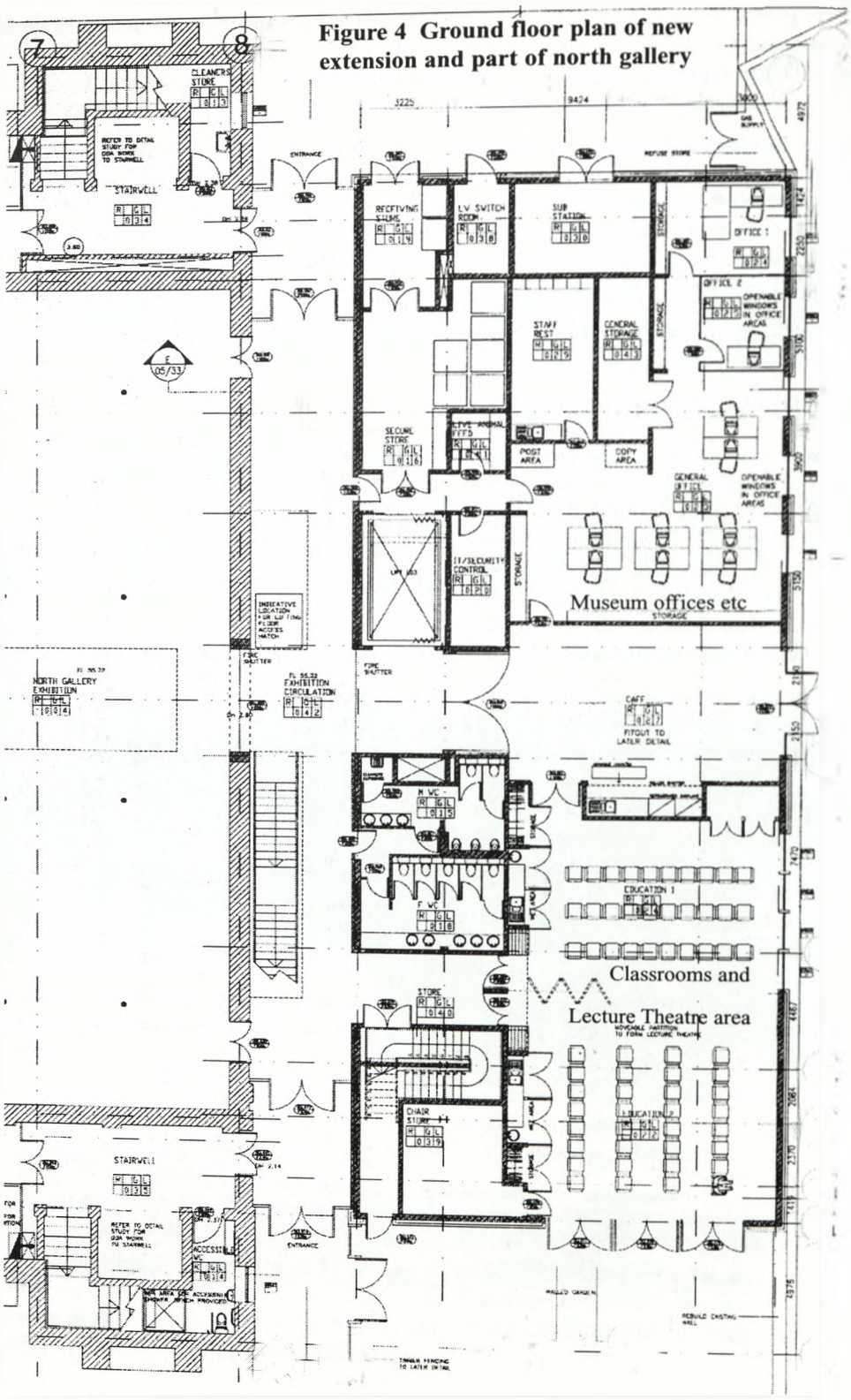
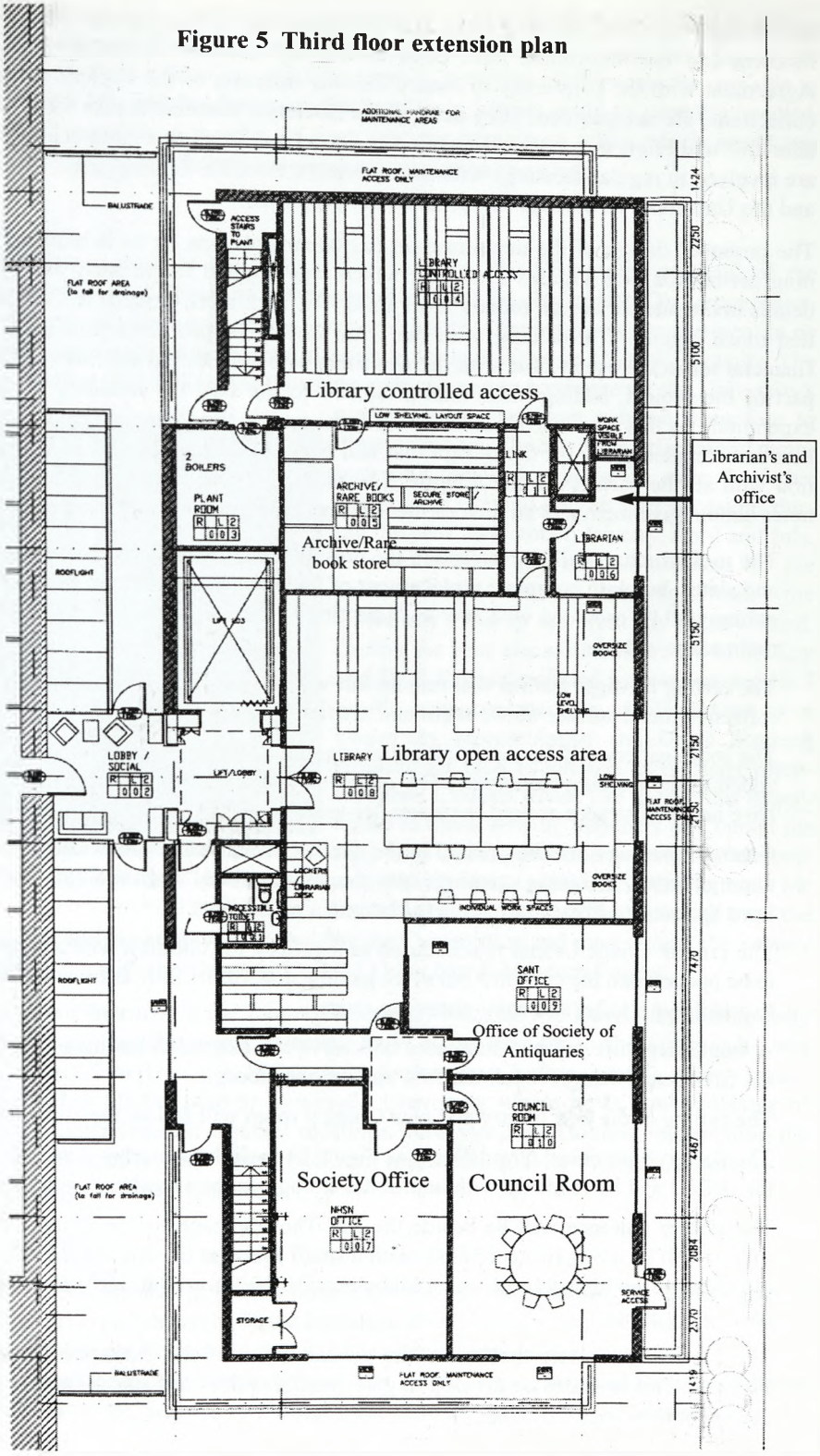


Figure 4 Ground floor plan of new extension and part of north gallery

Figure 5 Third floor extension plan



the scheme was first promoted more than two years ago, Brian Selman, David Gardner-Medwin and Ian Moorhouse have been extensively involved in the preparation of an Agreement with the University to ensure that the interests of the Society, as well as the collections, are safeguarded. They deserve the Society's warmest thanks for the considerable time and effort they have expended. For David and Brian this input continues as they are involved in regular meetings with the architects, Farrells, the designers, Casson-Mann and the University to develop the detail of the proposals.

The proposed design of the new museum has been settled as far as is required for planning permission (see Figures 2 and 3), which was applied for in early July 2005. The details in the interior design remain more fluid. The architects, Farrells & Co, have exhibited much ingenuity in dealing with the wide variety of problems presented. A major financial setback arose in June with the news that VAT will be payable after all on at least part of the project, adding more than £800,000 to the cost (or reducing the permitted expenditure by this amount). However towards the end on the financial year Council members saw detailed plans for the design that had been modified and altered with consultation with all the partners in the scheme. The plans (Figures 5 and 6) and the following notes should give members an idea of the scale and innovative nature of the project.

The roof structure will be restored to the present design, using the existing timbers and slates, but with complete replacement of the glass by aluminium sheeting. The gutters will be provided with low level heating to prevent snow accumulation (the main cause of leaks).

The ceiling lay-light frames will remain but will not be glazed; instead there will be a reflective metal surface above them and artificial lighting will be arranged below.

The south gallery will be essentially unchanged but, for safety, metal additions will be added to the existing balustrade. The other two galleries, with mezzanine floors, will have new balustrades around their smaller voids.

Central 'openings' will be created in the centres of all four walls of both floors of the main galleries, including openings into the south gallery from the entrance hall and from the current library (which is to become a restaurant).

The present Council room is scheduled as a gallery for children with a new doorway to be opened into the current Abel's Ark gallery, and, off its little entrance lobby, a door to a children's toilet and baby-changing room.

A single large lift and two staircases will serve the extension building (plus an internal fire-escape stair between the first and second floors).

The ceiling of the new library and new Council room will follow the curve of the roof.

The Society's proposed new office (see Figure 5) is slightly smaller than at present but the deficit will be made up with additional storage space elsewhere in the building.

The library entrance will be beside the lift. The approach to the Council room and offices will be along two corridors, with a small lobby at the end. There will be a single toilet on the library level, and a lobby outside the library (and lift) as a waiting and socialising area.

The classrooms/lecture-theatre on the ground floor of the extension are shown in Figure 4. This area can be divided to give smaller spaces or cater for eighty to a hundred people to attend lectures.

At the end of this year discussions were continuing concerning the grounds and front elevations of the Museum. Council was particularly considering the a ramp for wheelchairs, curving up to the west side of the entrance steps, a matching platform on the east side to serve a platform lift, and the design of the front lawn, which could be partially levelled, and a roughly parabolic path with its apex near the Armstrong statue which would run towards either side of the slightly extended tarmac below the steps.

COUNCIL

The Constitution agreed at the Annual Meeting was the first major overhaul of the Society's rules for many years. In addition to clarifying the objectives of the organisation and updating procedures, an impotant aim was to encourage members' involvement in its management, with each section now electing a representative to Council annually. The maximum number of Trustees has also been reduced and in consequence the University's representation has been reduced from four to three members. The Society's officers and members of Council are listed on page 4 of this report. The Council met on four occasions during the year, in October, January, April and July, to discuss both the normal business of the Society and matters arising from the University's bid to the Heritage Lottery Fund. During the year elected members Dr M McKay and Dr P Ranner resigned by rotation and Dr J Smith was replaced by A Newman as a University representative and Dr D Scadeng replaced Dr G A L Johnson as Geology representative. Council would like to take this opportunity to thank retiring members of Council for their help and support and to welcome the new members. It would particularly like to thank Mr Ian Moorhouse for his Chairmanship over the last three years and his hard work in revising the Constitution and representing the Society in its negotiations with the University on the Great North Museum Project.

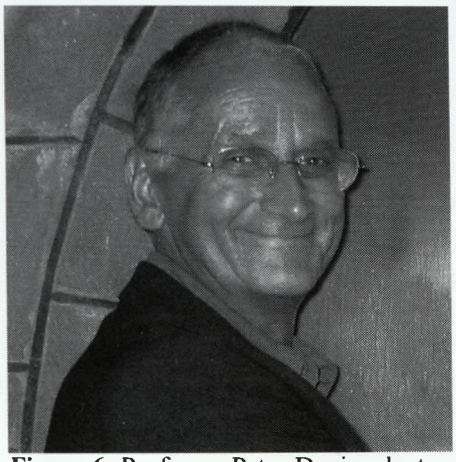


Figure 6 Professor Peter Davis, elected Chairman of Council in January.

Ian resigned as Chairman at the January meeting. Professor P S Davis was unanimously elected by Council as the new Chairman. Peter is no stranger to the Society: he was Deputy Curator of the Hancock Museum for twelve years before creating a new department of Museum Studies within Newcastle University where he is now Professor of Museology. In attendance at Council meetings were Mrs June Holmes, representing the interests of the Archives; Mr Steve McLean, representing Tyne & Wear Museums; the Secretary, and the Office Manager.

PUBLICATIONS

This year the Society has produced three parts to the Transactions, the Annual Report (Volume 65 part 1), Birds on the Farne Islands in 2004 (Volume 65 part 2) and in the summer the rather delayed Volume 64 part 3. The last had been delayed by the extra workload placed on the office by the celebrations of the 175th Anniversary and the recent illness over Christmas of the Secretary (normally the time he can devote to preparation of the

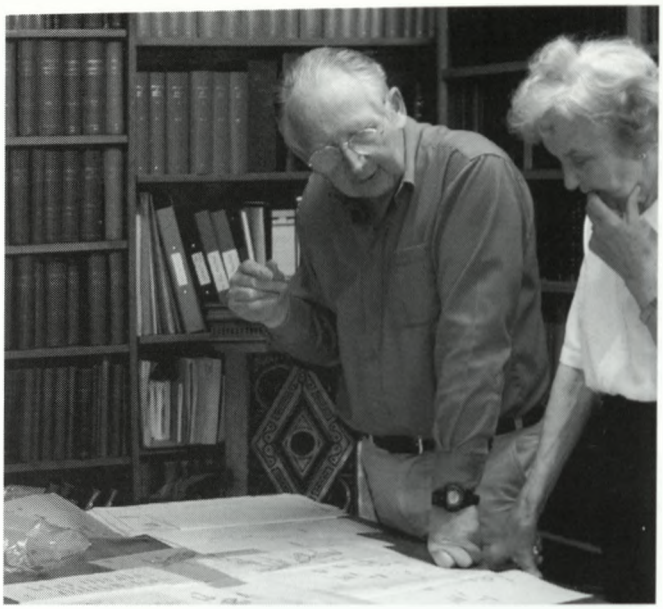


Figure 7 Joan Holding and David Noble-Rollin working on the layouts of the *Transactions* Volume 56 Part 3. Joan is a graphic artist who devotes a day a week to the Society preparing maps, front covers, drawings and layouts for both the *Transactions* and the Bulletins. Council would like to thank her for her important contribution to the quality of our publications.

publication). However the issue contains a wealth of papers covering a wide range of subject matter. There are thirteen papers in the issue and they are as follows:

Dixon A; 'The prey of Peregrines *Falco peregrinus* at breeding territories in Northumberland'

Dixon S P, Birchenough A C, Evans S M and Quigley M P; 'Children's knowledge of birds: how can it be improved and can it be used to conserve wildlife?'

J L Durkin; 'Leeches (Hirudinea) in County Durham (VC66)'

Eyre M D and Luff M L; 'The entomological history of Prestwick Carr'

Eyre M D, Luff M L and Woodward J C; 'Coleoptera (beetle) species and site quality of coastal and post-industrial sites in North-East England'

Hendra L A ; 'Robert Benson Bowman – an early Newcastle botanist'

Ingham B and Widdows A ; 'Taillessness (anury) in a Chillingham wild white calf'

O'Hara K; 'The status of the Otter in Northumberland from 1991-2003'

O'Hara K; 'The status of the Water Vole (*Arvicola terrestris*) in the Borough of North Tyneside: a survey for presence and absence, summer 2002'

Saville B; 'Some Northumberland barklice (Insecta: Psocoptera) observations'

Young B, Phillips E R and Smith B; 'Fluorite-bearing marble from Barrasford Quarry, Northumberland'

Young B; 'A large glacial erratic boulder of Gypsum from the Durham coast'

Young B, Hyslop E K, Bridges T F and Cooper J; 'New records of Supergene minerals from the Northern Pennine Orefield'.

Volume 65 part 3, a special issue on Thomas Bewick, is in preparation.

THE OFFICE

Staff

David Noble-Rollin David's main jobs are to drive the Society forward, with the guidance of Council, and to liaise with its many sections and activities. He has devoted most of his time to making sure that the Society deadlines have been met and that the programmes of members' activities are advertised on time. In addition to the Bulletin and publications production he has also to keep the website up to date and attend most of the committee meetings held throughout the year. He has also become closely involved with the planning of the Great North Museum Project as far as the offices, Council Room and library are concerned, and much time has gone into the discussions concerning moving out of the Hancock next year.

June Holmes June has had a very busy year. As our Archivist she has to deal with a large range of queries and requests from both the general public and also experts from around the country who need access to our archive material. She is employed part-time on a Heritage Lottery Archive Project Grant to promote the archives to the public. This is the second year of a three year project and her work has greatly increased the profile of this area of our collections with all the activities being well attended and many publicity successes. A full report of these events can be found in the report under Archives.

Siu Carter Siu is a life member of the Society and has been a part-time member of staff since the 1980s. She left for a short time to complete her Master's degree in Fine Art at Newcastle University and then once again returned to help the Society. In the past year her teaching commitments at Newcastle College have increased greatly and because of this she decided that she could no longer devote the time to the office. The Council would like to thank her for her many years of hard work and hope that she will continue to enjoy her association with the Society as a member.

Stuart Will Stuart joined the Society staff during the previous financial year and has worked continuously to increase the efficiency of the office and to maintain services to members. During the illness of the Secretary in December and January he took on extra responsibilities and made sure the winter programme continued and was well organised. His contract was renewed and extended in June this year in recognition of his efforts and in preparation for the office to once again run the financial side of the Society's operation. Apart from his work he is a keen member of the Ringing Group and the Northumbria Mammal group and enjoys attending both the lectures and the field meetings.

Office Volunteers Margaret Patterson, Rita Wolland and Anne Wilson help each week with the running of the office. Margaret, apart from her role as Assistant Editor of the *Transactions,* helps the Secretary with the preparation of minutes and letters. Rita Wolland is putting all the ringing shedules from the many years of ringing on the Farnes into a database in preparation for all the ringing returns and sightings since 1950, to be put onto computer. This will help our own analysis of the information but will also be given to the BTO when finished. Anne Wilson helps with the display of our publications in the foyer and keeping up to date with requests for leaflets and new members' packs. She also helps Stuart Will to input data into the financial spreadsheets and membership database. The Council would like to thank them for their work during the year.

Volunteers

There are approximately a hundred volunteers who are actively involved in the running of the Society. Their involvement extends from being a member of a committee to building boardwalks in Gosforth Park. Without this enthusiastic work force we would not be able to function or fulfil our objectives. Many of our volunteers have a number of different roles and their names appear throughout the report. However some groups, like the forty-nine deliverers, the ringing group members, members of the many sub-committees that organise activities and the volunteers who do work in the nature reserve all need to be thanked for their important contribution to the Society.

MUSEUM MANAGEMENT COMMITTEE

This committee, with members representing the Society, the University and Tyne & Wear Museums, is chaired by Dr Eric Cross. The Society's representatives are listed on page 4.

The Committee met on 29 September 2004 and 27 April 2005. This is less often than usual, mainly because of the many extra meetings that have been held in connection with the Great North Museum project. That project with all its associated planning, decisions and agreements, has for several recent years been our principal business and is described elsewhere in this report. Most of our other business is covered in the Senior Curator's report on the Hancock Museum. One of the Society's principal responsibilities in the committee is to oversee the care of the building and its collections. It is pleasing to see that much has been achieved this year in the curation of the collections, as described in the section on the Museum. Not unnaturally, this too has been focused, though not exclusively, on the preparation of the special care that will be required when the move to off-site storage is made in 2006. Other matters considered have ranged from the important issue of the policy on our small collection of early human material to the weighty matter of whether in the new building we might be able to display the whole skeleton of a whale, if we can find one.

LIBRARY

While the library has functioned normally this year the work required for the forthcoming closure in April has gradually increased and started to exercise the Library Committee's minds to enable us to still have a skeleton working library. Like every aspect of the Society, the library's future is one of change. During this period the work of new book purchases and directing efforts into the binding of serial publications and ensuring that our records are up-to-date must be maintained.

The direction of library affairs is controlled by the library committee, which meets four times a year. The members are Hugh Chambers (chairman), Paddy Cottam (mammals), Peter Davis (marine biology), David Gardner-Medwin (history of natural history), Trevor Hardy (geology), June Holmes (archives), David Noble-Rollin (ornithology), and Trevor Walker (botany). Representatives of the library have been closely involved with the planning of the new building and the joining of the Society's with the Cowen and Society of Antiquaries' libraries at the beginning of 2009. Unlike those of the other partners, the Society's library will have to be moved twice. There is a major problem of deciding which books to have available during the absence from the Hancock. Council would like thank Hugh and Stella Chambers for the great deal of thought and effort that they are putting into this problem.

The normal routine service to members, researchers and students continued and the library has been staffed by volunteers every Wednesday and on alternate Fridays.

During this financial year forty-three books were purchased covering all aspects of natural history. As is our custom birds were well catered for and these included volume 9 of the *Handbook of Birds of the World*, *Grebes of the World*, *The New Encyclopaedia of Birds*, *The Red Kite* and *Birds in England*. There was also an emphasis on Geology and Botany this year with the *Quaternary of Scotland*, *Glacial Maps of Britain*, *Frozen Earth*, *Plant life of Edinburgh and the Lothians*, Collins *Tree Guide*, *A Natural History of Nettles*, *A New Naturalist* on Fungi and *Heritage Trees of Scotland*. Other purchases included a new *Field Guide to the Moths of Great Britain*, *Freshwater fishes in Britain*, *Microchiropteran Bats*, *Atlas of Cetacean Distribution in N-W European Waters*, *Copyright for Archivists* and David Bellamy on *Conflicts in the Countryside*.

We were very fortunate this year to receive sixty-five books by donation: nine of these were from Dr M E Howat, nineteen from Dr D Gardner-Medwin and many others from M Turner, A Naylor, L Jessop, A Flowers and other generous friends. The Society is very grateful to them all.

There were two notable acquisitions, the first a fine copy of *New Illustrations of Zoology* by Peter Brown of 1776, which was obtained by the efforts of David Gardner-Medwin in successfully bidding for it at a Bonham's auction and securing a 50% grant towards the cost from the PRISM fund of the Museums, Libraries and Archives Council. It becomes one of our most highly valued possessions. Secondly the most important modern book on Northumberland has been written by Angus Lunn and published by HarperCollins in their New Naturalist Library series. It was successfully launched in the museum on 4 October, hosted by Tyne & Wear Museums. A picture of Angus presenting a signed copy to our President was published in the winter Bulletin.

More than 397 items of serial publications were received from throughout the world by exchange, subscription and donation. All of these were recorded, scanned for any articles or papers that are particularly relevant to the Society and then shelved, to be available ultimately for binding. This year a considerable effort has been made by Margaret Evans in the binding of periodicals prior to the Library going into store and thirty-eight volumes were sent for binding to become a permanent part of our collection.

Figure 8 and 9 Bob Wilkin and Iris Offen as Lord and Lady Armstrong and a member thanking Bob for his talk.

The Library Evening this year was something quite different, with 'entertainment' provided by Bob Wilkin and Iris Offen. The subject was Lord Armstrong, based very much on Jesmond Dene history, and June Holmes prepared an excellent display of relevant archive material in the Council Room. The members who attended enjoyed and appreciated the experience and were reminded of the debt the Society owed to Lord and Lady Armstrong in the early years of the Hancock.

The library continued to be serviced by the office staff; Margaret Evans handled the binding of journals and periodicals most efficiently, and also dealt with the recording of incoming periodicals and all the work involved in the exchange arrangements we have with other organisations throughout the world.

Other volunteers gave invaluable assistance during the year, in particular Stella Chambers, Martin Evans, Trevor Hardy, Norman Moore and Kati Russell. In the last few months their efforts have been directed towards early planning and preparations for the library going into store for a period of almost four years. The Society thanks them all for their indispensable work.

ARCHIVES

The Archives have had another busy and rewarding year, the second of the three-year *Archive Project,* generously supported by the Heritage Lottery Fund. Building on the success of last year, June Holmes, in the post of Archivist to the Society, continues to publicise and promote the archives and has continued to forge stronger links with other societies and organisations.

June has a host of willing volunteers working with her in the library. Ann Stephenson is progressing with the cataloguing of John Hancock's correspondence and she and June are now preparing information and selected letters for inclusion in a web site. Over the year Ann's assistance in setting up and helping with archive events has been invaluable.

Barbara Harbottle completed the cataloguing of Margaret Dickinson's botanical drawings and moved on to sorting the many legal documents and papers associated with a Society of such long standing. The archive 'Membership Database', which was set up to record membership from 1829-1950 and will eventually contain information pertaining to members in one accessible file, has reached the year 1914 under the regular supervision of Nigel Sprague.

Colin Storey and Megs Rogers are still working through the Victorian manuscript journals and correspondence of Thomas John Bold, a local entomologist with the penchant for using indecipherable Latin synonyms, a labour of love indeed. Volunteer photographer Graeme Steane, has made digital images of all the museum plans (a mammoth task as they are incredibly large), prior to their being sent to a paper conservator for a conservation audit. These images have proved extremely useful in the preparation of documents for the Great North Museum Project. He has also taken on many other difficult assignments with great stoicism considering the unusual and often large items he is asked to photograph.

Dr Parameswaran has joined the archive team after hearing about the work through a friend. He has taken to the job of transcribing and cataloguing the letters of the geologist William Hutton with great enthusiasm and is now researching the background of the correspondents.

Society librarians Hugh and Stella Chambers are, as always, tremendously supportive of the *Archive Project* and work with June Holmes on archive events and assist in giving visitors access to the archive collections.

Parts of the Bewick collection have still to be catalogued and Sarah Walter, a member of the Bewick Society, has kindly spent time looking at the un-published drawings. As always the Society is greatly indebted to Dr David Gardner-Medwin who, although having a heavy workload in its other activities, has supported the *Archive Project* and given his time freely, researching information for enquiries about the Bewick collection, the archives and the history of the Society in general.

Michael Kerr and Simon Lowe are still working once a week on transcribing manuscript ornithological journals and scanning Grace Hickling's photographic slides. There are many other people who assist from time to time with the archive project including Joan Holding and Anne Wilson; the project would not have been so successful without the enthusiasm and willingness of our volunteers and Council is tremendously grateful for all their hard work and commitment.

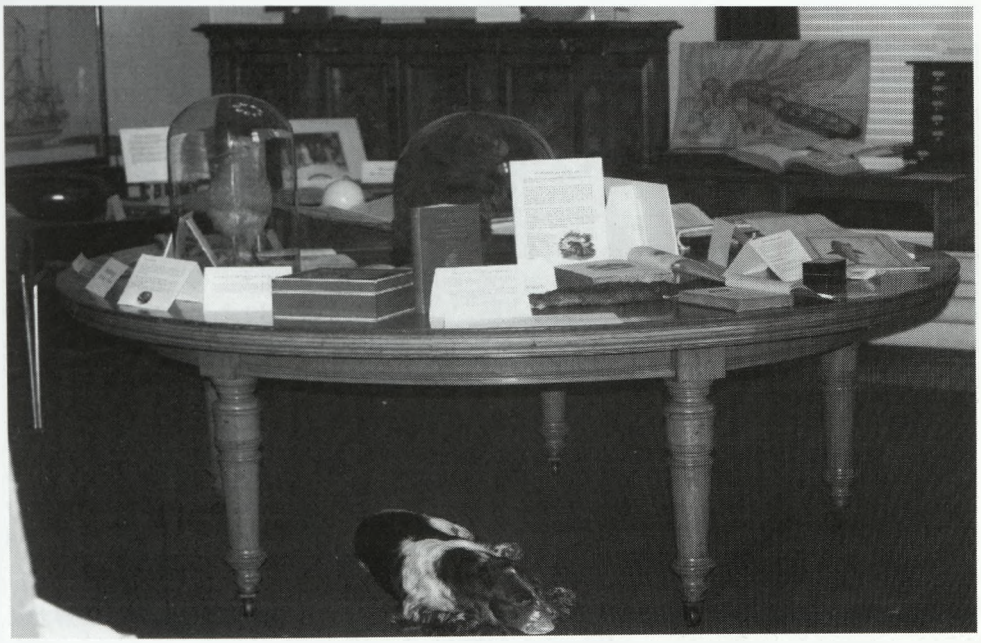


Figure 10 *John Hancock's Cabinet of Curiosities* displayed on the Council Room table.

Over the year we have arranged a number of events so members of the public and Society members can see the amazing collections of archive material.

On the 11 September 2004 the Society supported the Civic Trust Heritage Open Day events by opening the Council Room to the public and presenting an exhibition named *John Hancock's Cabinet of Curiosities,* where June Holmes and volunteers set out to recreate a Victorian study with interesting specimens and their related archives. Over three hundred members of the public attended this event, all of them fascinated by the 'Hancock Mermaid', a narwhal tusk and a hair ball from a boar's stomach among many other items.

The Bewick Swan lecture on the 20 October 2004 gave the archives an opportunity to display the Society's new historical display panels prior to the lecture and promote the work of the *Archive Project.* The information from these panels has now been included on the Society's website.

For the Annual Meeting on the 3 December 2004, June Holmes put on a display in the council room about the archive volunteers and the work they are doing for the Society and its Museum.

The John Marley and Moorside Local History Groups, led by Shiela Wilson, which had enjoyed talks and exhibitions with the archivist last year, came back in January 2005 to hear all about one of our greatest benefactors, Lord Armstrong. They were shown archives relating to Armstrong, given a talk on his relationship to the Hancock Museum and taken on a 'historical tour' through the museum galleries looking at items with interesting histories. The exhibition was also made available for Bob Wilkin's talk *Lord Armstrong Remembers* on the 28 Jan 2005.

We now receive many more enquiries especially relating to Thomas Bewick and our Bewick collections. This year the Society has worked closely with The Bewick Society to give their members access to and information on the collections. June Holmes and Sarah Walter represented the Natural History Society at an event in Cherryburn, the birthplace museum of Bewick, in January 2005. Later in the year June Holmes and Dr Gardner-Medwin led two of the weekly modules on the new study course *Introducing Thomas Bewick* organised by the Centre for Life Long Learning. It is extremely important that our Society is involved in this type of enterprise as it puts us at the forefront of Bewick studies in the North East. We have been recognised as one of the leading authorities on Bewick and his work and more organisations now approach us directly for information on Bewick. During the year, visitors from as far afield as Japan and Missouri have visited the Bewick collections in the Museum.

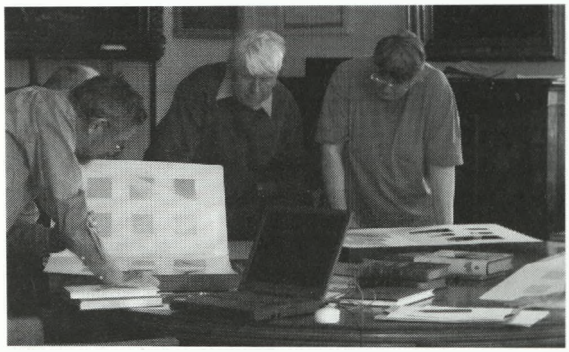


Figure 11 Investigating Thomas Bewick.

As the archives become more accessible there has been a dramatic increase in their use. Archive material was used in an episode of ITV's *Grundy's Wonders* in December 2004, within the backdrop of our Council Room and the Museum; an article in a recent *BBC Wildlife Magazine* was illustrated with images of Bewick's woodcuts, provided by the Society; the recently published *A Dictionary of the North East Dialect* by Bill Griffiths includes information from the manuscript notes on dialect by the Reverend J E Hull in our collections; and the BBC wildlife production team at Bristol asked for Bewick's image of The Eagle Owl for a programme on owls to be screened later in the year. There are now so many instances of this type of archive use that it would be impossible to record them all here but the project has definitely raised our profile considerably.

Throughout the year we have received tremendous support not only from the Heritage Lottery Fund who have taken an active interest in all of our events, publicity campaigns

and volunteer work but also from NEMLAC, the North East Museums, Libraries and Archive Council. They have given us a grant for much needed computer software and provided archive support and training over the year.

Recent accessions to the archives include:

A copy of an engraving of the antiquarian George Allan of Blackwell Grange by J Collyer.

Barbara Westoll donated two interesting engravings by Thomas Sopwith, the geologist, of his father's workshop and the Revd William Buckland.

Ornithological manuscripts relating to Charles Robert Bree, a doctor from Colchester, who had communicated with members of the Society on a regular basis in the late 1800s.

A manuscript letter, dated 1838, from John Eddowes Bowman, naturalist and Fellow of the Linnaean and Geological Societies, to William Hutton.

Seven pencil and watercolour sketches by Mary Jane Hancock, the sister of John Hancock.

A colour reproduction of a portrait by W Bonnar, in the Scottish National Portrait Gallery, of George Johnston (1797-1855), marine zoologist and founder of the Berwickshire Naturalists' Club and Ray Society.

Mrs M Preece of Corbridge donated a small collection of locally collected botanical specimens with manuscript details, c1870-80s. The collection has interesting archival details but was thought more relevant to the museum herbarium collections and passed to the museum curators for accession.

We are always grateful for new accessions, as the archive should be seen as a growing collection with thought also given to collecting modern archives for the future.

As we enter the third and last year of the *Archive Project* we will be looking more closely at preparing the archives for their removal offsite during the museum refurbishment and devising ways of keeping public and member awareness of the archives alive in 2006.

FINANCE

During the year, expenditure exceeded income by £16,870, compared to last year's surplus of £10,720. As anticipated and noted last year, grant aid received then in respect of the Archives project has been spent in the current year, contributing greatly to the excess of expenditure now being reported.

The Society's investments continue to be managed by Brewin Dolphin Securities, producing a net realised gain of £4,510. The stock market recovery has gained pace and at the year end unrealised gains of £70,419 were recorded, compared to £3,340 in the previous year. The overall value of the portfolio stood at £610,334 (plus £973 in cash) at 31 July 2005 compared to £487,937 (plus £46,096 in cash) in July 2004.

Financial Reserves Policy

It is the policy of the Society to maintain unrestricted funds, which are the free reserve of the charity, at a level which equates to approximately one year of unrestricted expenditure. This provides sufficient funds to cover management, administration and support costs and

to respond to emergency applications for funds which arise from time to time. Unrestricted funds were maintained at a higher level than this through the year.

The Society has undertaken to offer £50,000 at the rate of £10,000 a year for five years from 2006 as a contribution to the Great North Museum project, should the project go ahead as currently conceived. It is not envisaged that such a contribution will detract from the Society's current policy on financial reserves within this timescale.

Risk Management

The Council as Trustees have assessed the major risks to which the charity is exposed, in particular those relating to its operations and finances, in order to be satisfied that systems are in place to mitigate the exposure to the major risks. The financial regulations approved by Council have been in operation throughout this period.

CONSERVATION AND PLANNING APPLICATIONS

Gosforth Park Nature Reserve continues to be beset with surrounding 'development' and we attempt, where we can and feel we should, to try to prevent or modify this where it poses a clear threat to wildlife. It is evident that the planners tend to take note of what wildlife can be found on a site at a single visit (not always at the most appropriate time of year) while our main concern is for the integrity of wildlife corridors linking the nature reserve to other places. We have submitted a number of formal objections or suggestions for mitigation for various projects, including several at the northern end of the A19 corridor in North Tyneside where housing and business developments have largely obstructed the wildlife access to the remaining green areas in the borough. Our success rate is low, but some worthwhile mitigation has been achieved north of Gosforth Park, and our Secretary's efforts did manage to prevent the obliteration of a marsh near Weetslade where water shrews had been found.

ACTIVITIES

The 175th Anniversary Lecture

Held in a packed Curtis auditorium on 20 October, the same date as that of the Society's first indoor meeting in 1829, the evening provided a fitting finale to the anniversary celebrations. A generous donation from Northumbrian Water enabled a splendid reception to be held prior to the lectures with food and wine expertly served by a team from Cotherstone in County Durham, to whom many thanks are due. The evening was further helped by the University promoting the occasion as part of its season of public lectures. Vice president Dr David Gardner-Medwin set the scene for the evening with a fascinating outline of the first meeting and an account of the naming of the Bewick's Swan, first described at the 1829 meeting. This was followed by the main speaker, Dr Eileen Rees, head of the Wildfowl and Wetland Trust's Waterbird Populations Unit, and an acknowledged authority on the Bewick's Swan. She described her research visits to the swan's breeding grounds and the recent radio tagging of migrating Bewicks. The talk was accompanied by a huge amount of data, showing how far knowledge of this bird has grown since the first specimen, shot on Prestwick Carr, was purchased by John Hancock in a fruiterer's shop in Newcastle in January 1829. Excellent slides illustrated well the hardships endured by both the swans and the researchers.

Ornithology Section

Dr Tom Smulders, a Lecturer in the School of Biology at Newcastle University, described how tit species differ in their response to food availability. Some species such as Coal Tits will hoard excess food, storing it in characteristic sites for later use, whereas others such as Blue Tits and Great Tits do not display this behaviour. Tom described how he and his team are using observational studies and field experiments in Gosforth Park Nature Reserve to elucidate the advantages of such behaviour to storing and non-hoarding individuals within a species and how such behaviour might have evolved.

We have come to know John Day as an expert on the ornithology of the North-East and an author of several recent important books on this subject. But on 7 January he showed the breadth of his knowledge and experience by giving a scholarly and vivid account of 'The birds of Australia' based on an extended visit on which he travelled widely by camper van in the eastern half of the continent and took a very good selection of photographs.

On 4 February Keith Offord was billed to speak on 'Raptorphilia' – his love of birds of prey. By mischance he brought instead his lecture on the wildlife of the hill country of North Wales, but the audience enjoyed this interesting account of a group of habitats with many similarities to upland Northumberland and some subtle differences. The limited amount of heather upland and of Red Grouse in Wales made an interesting contrast with Northumberland and the greater number of Buzzards in Wales another. Both, Offord thought, reflected differences in the management of estates.

On 4 March there was another change of programme when Keith Bowey was suddenly unable to come to lecture on Red Kites. Our Secretary stood in at less than a day's notice and entranced the audience with a splendid account of wildlife, especially birds, in Northumberland – illustrated as we have come to expect with his excellent photographs.

On 12 September the section had a meeting at Cresswell and Druridge Bay. There were good numbers of waders and ducks and a number of species were identified including Little Stint and Spotted Redshank. The Cresswell Pond had lots of ducks but the wetland areas at Duridge had dried out due to lack of rain and therefore had little to offer.

On 9 October members met for the annual trip to Holy Island. The day began well with a close view of a Merlin chasing a wader right in front of the group. There were good sightings of Red-throated Divers and Brent Geese. The migrants were not very numerous but there were lots of Goldcrests creeping around the hawthorns on the straight Lonnen to keep the excitement going while the group tried to make them into rarities!

On the 24 January Society members joined the RSPB Newcastle Group for their trip to Aberlady Bay and Musselburgh. Unfortunately David Noble-Rollin could not join the trip due to his illness. Shiela Marsh led the party of 35 people, who watched a number of ducks including Goldeneye, Red-breasted Merganser, Goosander, Long-tailed Duck, and Common and Velvet Scoter. At Musselburgh they added a Short-eared Owl and Slavonian Grebe, with Fieldfare and Kestrel at the start of Aberlady Bay visit.

On the 12 March Steve Westerberg and Tina Wiffen led 16 members to Loch Ken, Laurieston Forest and Mersehead. They saw a Red Kite in the area of the old church at Bridgestone with White-fronted and Pink-footed Geese around Loch Ken. The Laurieston Forest area produced a male Hen Harrier and Raven but no eagles. The group continued to Mersehead reserve and saw 1300 Barnacle Geese and a number of passerines. At the end of the day they made a quick visit to the Solway Coast, the whole day producing over 70 species.

The summer programme began with a field meeting to Cronkley Scar and Fell on 30 April led by Ian Moorhouse. The walk followed the meadows at the side of the Tees which had until recently been a breeding stronghold of the Yellow Wagtail. Sadly, this year, none was to be seen. However, good numbers of Wheatears, Common Sandpipers and Ring Ouzels were seen plus a pair of Stonechats, an uncommon bird in the North Pennines. Golden Plovers seemed less plentiful than usual with none on the tops but for one bird that took great exception to a Buzzard which settled close by on a rocky outcrop. On descending below the Bronze Age settlement of Bracken Rigg, several more species, including Goldcrests, were added to the day's total. The final list of forty species was a pretty fair total for this area which prides itself on quality rather than quantity.

On 22 May David Noble-Rollin led a group around Plessey Woods on a field meeting entitled 'Introduction to bird song'. It was an ideal morning, warm and still, and the birds did not disappoint the group. There was a wide range of warblers, tits and thrushes to listen to and a Tawny Owl which was staying up late gave a few hoots.

On 18 June members visited the College Valley. Near Hethpool, looking for birds and the Cheviot wild goats, the group saw Buzzard and Sparrow Hawk and were able to look down into a Carrion Crow's nest with a young bird sitting there. The goats were also low down and easy to see, and Whinchats were on many of the fences and small trees. In the afternoon they climbed into the Bizzle but it was very quiet with no Peregrines present and only the sound of distant Ring Ouzels, alarming Wrens and calling Meadow Pipits. However, it was a beautiful day to be in the hills.

On 2 July a joint trip with the RSPB Phoenix Group (13-18 year olds) was arranged for the younger members of the Society. The party took the scenic route via Alston and the Hartside summit, stopping off at the renowned Melmerby bakery for refreshments. Not long after picking up the A686 a Short-eared Owl was noted flying along the hedgerow, parallel with the minibus. A Merlin was also spotted. On arrival at Dodd Wood and the open air viewpoint across Bassenthwaite Lake, the closest view of an Osprey was of one perched at the water's edge on the nearside of the lake. With the provision of high-powered telescopes and the help of enthusiastic volunteers members were soon able to pick out the nest site and watch both adult birds. (A Red Squirrel was also seen at the small bird feeding station just below the viewpoint.) On route to Whinlatter Visitor Centre, where the videocam link to the Osprey nest site is located, the group visited Powterhow Wood on the west side of the south end of the lake and were immediately treated to the sight of Peregrine, on the crags behind the wood. At the visitor centre a very enjoyable 'raptors day' was rounded off with the adult male Osprey returning with his fish catch, offering it to the female, and the subsequent feeding of the chicks.

The Roseate Tern evening on 11 July was a joint meeting with the North Northumberland Bird Club and the Society, in two boats, led by Graham Bell and David Noble-Rollin. The group visited Coquet Island, stopping at the pier to get good views of the Roseate Terns and their young. They then went around the island and a dolphin was sighted from one of the boats as it returned to Amble Harbour.

A small number of Society members were welcomed on the field outing to Blacktoft Sands on July 23 arranged by the Newcastle RSPB group. The reserve consists of tidal reedbeds, mudflats, saltmarsh and brackish lagoons. A wide range of birds were seen including Greenshank, Green Sandpiper, Spoonbill, Spotted Redshank, Ruff, Black-tailed Godwit, Little Ringed Plover, Bearded Tit and Garden Warbler and, last but not least, the

Avocets which are in danger of being taken for granted! The group had excellent sightings of Marsh Harriers and in all counted fifty-eight species.

Mammal Section

On 22 October, Dr Simon Mickleburgh, Senior Conservation Research Manager at Fauna and Flora International, Cambridge, presented a talk entitled 'Bat-Plant Relationships, an Overview'. Beginning with a brief outline of the 1100 species worldwide, of which 112 are thought to be extinct and 291 are threatened, he discussed their dietary diversity, how bats depend on plants for food and roosting sites, the importance and effectiveness of frugivorous bats as seed dispersers and pollinators, and how bats and plants have adapted to maximise the benefits of the relationships.

On 29 October, Dr Bruce Carlisle, lecturer in Ecology and Remote Sensing at Northumbria University, gave an illustrated presentation on the wildlife (particularly mammals) and conservation of the Indonesian rainforest on Sulawesi and Buton. He showed that because of its unique geology and rugged, difficult terrain, the region is still the most species-rich in the world with 62% of the mammals endemic. While 30% of the region is technically protected, conservation laws are generally not enforced. 'Operation Wallacea', a Lincolnshire based organisation, was monitoring the progress of deforestation by satellite imaging and aims to conserve the remaining rainforest on Buton.

On 21 January, Ali Ross, fisheries consultant for the Whale and Dolphin Conservation Society, gave a presentation on cetacean by-catch in UK waters. A description of the species found in the North Sea in particular was followed by some alarming statistics on how modern fishing practices affect cetaceans. For example, 23,000 cetaceans are killed worldwide every year, and numbers of some species caught may be as high as four times the level for sustainability. The most common victims around Britain are the Common Dolphin and the Harbour Porpoise. She described the two major fishing techniques responsible and the use of 'pingers' and dolphin exclusion nets as ways of attempting to reduce by-catch – but concluded by saying that there was little Government policy enforced at present to control the problem.

On 25 February, David Wembridge from Mammals Trust UK, part of the JNCC Tracking Mammals Partnership, gave a presentation on the 'Mammals On Roads project' – a four year pilot study aiming to determine whether trends in mammal populations and distribution can be followed by volunteer surveys of road casualties and live sightings. Furthermore, statistically reliable data were gained for only five species: fox, rabbit, hedgehog, grey squirrel and badger. Discussion after the talk highlighted the difficulties of maintaining volunteer interest, analysing complex data and the importance of continuing the surveys over many more years before significant trends could be reliably recognised.

On 4 September 2004, thirty-six members (including children) of the Society, the Mammal Group and the Wildlife Trusts (North East) joined one of Billy Shiel's boats at Seahouses for a four to five hour pelagic cruise on the North Sea. During the course of the day two Herring shoals were encountered, which attracted a feeding frenzy of about 500 Gannets and five Minke Whales in all: one whale spent a considerable amount of time near the surface of the water, giving good views of the dorsal fin and back, and seven Harbour Porpoises swam across the bows. Birds observed included Shags, Sooty Shearwaters, seven Arctic Skuas, a mixed flock of Common, Arctic and Sandwich Terns, Kittiwakes, Greater Black-backed and a few Lesser Black-backed Gulls and small numbers of auks. The event was led by Graham Bell, Chair of North Northumberland Bird Club, who gave an excellent commentary.

In May 2005 Bob Wilkin and Paul Drummond took fourteen members and friends to watch badgers over several nights. As badgers flourish both in Gosforth Park and the surrounding areas, members had excellent views on all the evenings. The first badger appeared around 8pm and numbers varied but five was the average seen, with cubs present on some evenings. On one evening a fox crossed to the island and on other occasions Greater Spotted Woodpecker, owls and bats filled in the periods between badger activity.

On 25 May Bob Wilkin led an Urban Otter Walk. Eight members met at 6.30pm and heard a brief history of the otters' return to the Society's reserve before examining old otter spraint on the concrete surrounds of the new sluice. They then used the narrow ringers' boardwalks to view some very fresh spraint. From there the party went along the Whitecroft Burn close to its confluence with the Ouseburn on to Dentsmire Bridge and then to the Three Mile Inn. Otter signs were examined at these localities before the remainder of the evening was spent in a hide in a well-known area with water frontage still within the boundary of the city. Unfortunately members were not able to repeat last year's climax to the walk when two otters were viewed.

On 2 July there was a Mammal Day at Scotch Gill Woods. This event is run by Castle Morpeth Borough Council together with several other conservation bodies. The Society had a presence in the form of both an information display and through the Northumberland Mammal Group. In addition Vice President Bob Wilkin led a mammal walk.

Geology Section

The programme of winter talks started on 8 October with Richard Tyson describing some of the latest ideas on oil deposits in a talk called 'Source rocks for petroleum'. The subject of the talk was not so much where the oil is now but how it got there and how it formed in the first place. Richard described the very special conditions under which black shales formed in ancient deep water seas. On 5 November in 'Interaction between the Greenland ice sheet and climate change' Jeremy Lloyd explained the possible impact of global warming on the ice sheet and the effect of the release of so much meltwater on the climate of Northern Europe. He linked this to events following deglaciation at the end of the last Ice Age, finishing with a fascinating account of human habitation and climate change in Greenland over the last 5000 years. On 26 November Professor Ian Fells gave a lecture on 'Energy supply and demand through the century' with an insight into the science and politics of energy supply in the future. He discussed the impact of increasing industrialisation of developing countries and the decline in fossil fuels. There appears to be only one solution to future energy supply – nuclear reactors – and this is something that politicians will have to face up to. His table of risks associated with different forms of energy production caused some surprises.

The 2005 programme for the section began on 14 January with Stuart Jones and 'In a state of flux! Controls on sediment supply to alluvial fans in the Zagros Mountains, Iran'. He brought us up to date with the use of computer modelling of deposition in sedimentary basins such as in the Zagros Mountains. Useful though such techniques are they are limited by the complexity of the processes involved, which are still only poorly understood. The speaker for the meeting on the 11 February had to cancel at the last moment for personal reasons and Denis Scadeng did a fill-in with an illustrated talk on the geology of Yellowstone National Park. The season finished on 11 March with Chris Woodley-Stewart talking about the North Pennines and its designation as an Area of Outstanding Natural

Beauty (AONB) and European Geopark. He outlined the work done by the Pennines AONB Partnership to conserve, enhance and promote this special area.

The first field meeting was held on 23 April led by Andy Lane and Bill Scott. Members examined the exposure of the Little Whin Sill at Greenfoot Quarry and the effect of its intrusion on the Three Yard Limestone. They then went up the Middlehope Burn and mapped the exposed sequence of Lower Carboniferous cyclothems. The second field meeting was on 9 July to Saughtree which was conducted by Gordon Liddle. The group examined the postglacial morphology of the area and discovered that interpretation was not as straightforward as it seemed. A slightly strenuous walk then took the members to the old railway cutting where they examined turbidites deformed by tectonic forces. The highlight was an unconformity which, in its own way, is comparable to the more famous one described by Hutton at Siccar Point. A very enjoyable day.

Botany Section

The winter lecture programme began on 15 October, with Dr Bill Pickering talking on 'The flora and ecology of the Swiss Alps'. He described the spectacular floral extravaganza, and related it to the varied geology and young soils, emphasising the role of agricultural management of the pastures and meadows in maintaining species-richness. Using original graphics, he illustrated the distinctive life-forms and life cycles of the species and described adaptations to the high mountain environment. On 19 November, Dr Margaret Bradshaw, universally recognised as the expert on Teesdale's famous botany and a leading protagonist in the controversy over the construction of the Cow Green reservoir, lectured on 'Change and mystery in the flora of Upper Teesdale'. She described and interpreted the changes in the flora and vegetation, which she had resurveyed after twenty-five years, and dealt with the mystery of the Lady's-mantles (*Alchemilla* species). Why were there so many rare *Alchemillas* there in the first place, and; what was the cause of changes in their distributions and abundances over half a century? Dr Bradshaw explained that there are still no clear answers.

In February Professor David Rankin, Professor of Chemistry at the University of Edinburgh, spoke on 'Soil, climate and growing Chinese plants'. The mountains of Yunnan and Sichuan, in south-west China, provide an amazing diversity of habitats for plants. With towering peaks and deep valleys, monsoon rains and near deserts, it is possible to go on foot from eternal snows to tropical forest in a day. Professor Rankin explored how plants coped with the physical geography, geology and changing weather of the region. The diversity of habitat was associated with an equivalent diversity of plant life, much of which has proved to be amenable to cultivation in Britain. By understanding the ways in which plants survive in the wild, we could improve our chances of success when we grow them ourselves. Finally, on 18 March, Dr Mike Jeffries, of the University of Northumbria, dealt with 'Ponds in the landscape'. He pointed out that Britain's ponds used to be the basket-weaving end of ecology, what you did if complex mathematical ecology was beyond you. In the last fifteen years attitudes to ponds had undergone a renaissance, combining national surveys led by the Pond Conservation Trust with intensive experiments revealing the annual comings and goings of pond life. It turns out that, despite their small size, ponds support disproportionately more species of plants and animals than our large lakes and rivers. Dr Jeffries outlined the adaptations of plants and the lives of some of the small animals of our ponds, from their day-to-day trials and tribulations to changes over ten years, apparently tracking climate change. He also discussed how to conserve ponds by caring for the rest of the landscape.

The final outing in 2004 was an arduous but rewarding trek on 5 September across the moors of upper North Tynedale, from 'Deadwater Fell to the Kielder Stone', led by Janet Simkin and Angus Lunn. The Kielder Stone is an isolated block of sandstone, the size of a double-decker bus – probably a huge glacial erratic. It lies exactly on the Scottish borderline and is an iconic landmark in Border balladry. With its pure air and humid environment, it is shaggy with lichens, and we found uncommon species such as *Alectoria sarmentosa*, *Bunodophoron melanocarpum* and *Arthonia arthoniodes*. In fact, no fewer than sixty-five lichen species were recorded on the trip. Vascular plants on the moors (mainly in blanket bog) included Cloudberry *Rubus chamaemorus* (very abundant), Lesser Twayblade *Listera cordata* and Fir Clubmoss *Huperzia selago*. The whole area is part of the Kielderhead National Nature Reserve, managed by Forest Enterprise.

The planned visit with Dr Malcolm McKay to the Society's 'Gosforth Park Nature Reserve', in early June, to examine the population there of Coralroot Orchid *Corallorrhiza trifida*, was called off in advance because the orchid could not be found. Fortunately a population was refound, a little later and in a different place. A different difficulty beset the next visit on 12 June, to 'Waldridge Fell and Cong Burn Wood' under the guidance of Alec Coles – heavy rain. However, the party had a profitable day, noting a range of heathland species on the Fell, including Smooth-stalked Sedge *Carex laevigata*, Bog Pondweed *Potamogeton polygonifolius* and Narrow Buckler-fern *Dryopteris carthusiana*. Cong Burn Wood was herb- and fern-rich, but with no particularly notable species encountered. We did, however, learn of the Atkinson Discriminant Function – it discriminates between silver and downy birches and their hybrids.

Towards the end of June, on a sunny day, John Richards and Angus Lunn led a visit to the 'Holystone Valley, Coquetdale', one of the most delightful and varied of our upland valleys. We noted that the older Juniper bushes were dead or moribund, but that transplants grown on from local cuttings were doing well in their place. We admired the uncommon valley-side Common Reed *Phragmites* community, which was spreading. Among notable plants were Petty Whin *Genista anglica* and Bog Myrtle *Myrica gale*, and we were delighted to refind, in Yardhope Oaks, Smooth-stalked Sedge and Chickweed Wintergreen *Trientalis europaea*. We noted clones of Aspen *Populus tremula*, saw Stag's-horn Clubmoss *Lycopodium clavatum* by the track-side, and were visited by a Golden-ringed Dragonfly *Cordulegaster boltonii*.

Finally, on 24 July, Jeremy Roberts led us on our most adventurous trip, to 'Knock Ore Gill and the summit of Great Dun Fell', high in the North Pennines. On a dry but cold day we saw an amazing assemblage of rare and uncommon montane species. On acidic block scree was Northern Buckler Fern *Dryopteris expansa*, on a limestone face were Green Spleenwort *Asplenium viride*, Alpine Meadow-rue *Thalictrum alpinum* and Hoary Whitlow-grass *Draba incana*. Most exciting, in flushes, were sheets of Yellow Marsh Saxifrage *Saxifraga hirculus* and large populations of Alpine Foxtail *Alopecurus borealis*. We also saw Hairy Stonecrop *Sedum villosum*, Chickweed Willow-herb *Epilobium alsinifolium*, and Three-flowered Rush *Juncus triglumis*. At the end of the day, on Great Dun Fell, we were shown, again in a flush, a newly discovered stand of Water Sedge *Carex aquatilis*. Altogether less pleasing was to see the variety of lowland species artificially introduced as 'landscaping' to the precinct of the Civil Aviation Authority installation on Great Dun Fell, some of which are escaping into the wild and obscuring natural distributions.

Midweek Botany Group

The Midweek Botany Group continued its programme of field trips throughout 2004 and 2005. During August 2004 we visited Simonside and found many late summer flowers, including Chickweed Wintergreen *Trientalis europaea* by the side of a forest path, Dwarf Cornel *Cornus suecica* below the crags and Cloudberry *Rubus chamaemorus* on the hill top. A September visit to Crawleyside Quarry near Stanhope provided a large number of species (123) because of the varied habitats present there.

The 2005 season started in April with an outing to the banks of the Tyne near Hexham to look at the plentiful early spring flowers, including several spikes of Yellow Star of Bethlehem *Gagea lutea*. Next was Low Barns Nature Reserve which was followed later in the month by a trip to Rookhope where we found plants of Shady Horsetail *Equisetum pratense*, a plant at the southern edge of its range. May began with a trip to the summit of Deadwater Fell in Kielder Forest but in spite of an extensive search we failed to find Dwarf Willow *Salix herbacea* among the rocky outcrops. Next was a more gentle excursion to Craster and Cullernose Point for coastal species, which included Thrift *Armeria maritima* and Spring Squill *Scilla verna*. In June the group started with a short visit to a wood near Ponteland to look at the saprophytic Bird's-nest Orchid *Neottia nidus-avis* and the following week they had a very interesting guided tour of Newham Fen near Embleton which is managed by English Nature. Newham has been designated a National Nature Reserve to protect the fen habitat which is not common in Northumberland. They continued the day with a trip to the sand-dunes at nearby Newton where many typical dune species were found including Sand Sedge *Carex arenaria* and the beautiful Bloody Cranesbill *Geranium sanguineum*. The members also enjoyed the noisy and spectacular Arctic and Little Tern colonies further along the beach which were being guarded round the clock by very welcoming National Trust wardens who told us of this year's successful breeding season.

In mid-June the Group organised a walk along the disused railway line at Lanchester where they found many interesting plants, including a few specimens of Greater Butterfly Orchid *Platanthera chlorantha*.

Next was a trip to Augill Pasture near Brough, a reserve managed by Cumbria Wildlife Trust for Plantlife International. Many attractive grassland species were found, including Fragrant Orchid *Gymnadenia conopsea*, Frog Orchid *Coeloglossum viride*, Globe Flower *Trollius europaeus*, Saw-wort *Serratula tinctoria* and Bird's-eye Primrose *Primula farinosa*. They then moved on to Waitby Greenriggs near Kirby Stephen where they added the fascinating Fly Orchid *Ophrys insectifera*, Lesser Butterfly Orchid *Platanthera bifolia* and Marsh Helleborine *Epipactis palustris* to our impressive day's list. The next trip was rather different with an exciting, extremely rugged, long walk through waist-high heather and bracken to the Darden Burn near Elsdon. Although hard going, it was across beautiful remote country and successful botanically because the we were able to confirm records of Intermediate Wintergreen *Pyrola media* and Bearberry *Arctostaphyllos uva-ursi*.

July began with a rainy trip to Bishop Middleham Quarry near Sedgefield, an interesting site with many species typical of the Magnesian Limestone. They added to the season's tally of orchids with Bee Orchid *Ophrys apifera* and Pyramidal Orchid *Anacamptis pyramidalis*, and enjoyed watching the fledgling Sand Martins on the edges of their nest-holes. The programme continued at Timber Beach, Sunderland, where the meadow had Adder's Tongue *Ophioglossum vulgatum* and Greater Spearwort *Ranunculus lingua*, and the saltmarsh gave a good show of Sea Aster *Aster tripolium*.

General Field Meetings

On 8 August 2004 David Noble-Rollin led a group of new members around Gosforth Park Nature Reserve to help them get more out of their future visits. They went to the sites of the Coral-root Orchid and Young's Helleborine and visited the feeding station. After continuing around the lake they visited the Ringing Group and were lucky enough to see a Kingfisher that was being ringed.

On 11 June around twenty members met in Middleton in Teesdale for a natural history walk up the Hudeshope Valley. They walked up through the woods noting the good variety of flowers found along the path, including a patch of Meadow Saxifrage. At the lime kilns they had excellent views of Redstarts and Great Tits nesting in cracks in the stone walls, and frequent glimpses of a Great Spotted Woodpecker. In a large area of old mine workings the vegetation became very sparse but they found a patch of the lead-tolerant Spring Sandwort. While they were looking at this they disturbed a Pheasant that flew off its nest allowing views of a chick and several eggs, one of which was in the process of hatching, and after a short while they moved away to allow the bird to return. The road across the moors had some interesting plants, including Marsh Valerian and Butterwort in a wet patch. There were good views of Curlew and Lapwing and a Snipe was heard drumming. After a walk through hay meadows, with Yellow Rattle and Common Bistort among the attractive flowers found, the group returned to Middleton.

Entomology

Gordon Port from the School of Biology at Newcastle University gave a talk on 12 November, entitled 'Bugs, Biodiversity and Biological Control'. Insects and other invertebrates represent a huge challenge in terms of identifying the different species. With over 25,000 species of insects in the UK, the talk concentrated on the most important groups. Some of the pest and beneficial species were presented, but it was also shown that this distinction depended on your point of view. Whilst ladybirds are generally regarded as beneficial, the newly introduced Multicoloured or Asian Ladybird poses a threat to native species. Biological Control requires careful management and can involve either alien or native species. The ways in which biodiversity and biological control can be managed in gardens and commercial crops were discussed.

On Saturday 25 June the (now annual) 'Get to know Insects' meeting was held at the University of Newcastle's field station at Close House, Wylam. The meeting was organised in conjunction with the School of Biology at the University and the Royal Entomological Society. The weather was kind to both the insects and the visitors as it remained warm and dry. The day started with sorting through the contents of a moth trap that had run overnight and then members collected other material using nets, beating-trays and pooters. The catches were identified as far as was possible in the time available and, whilst no unusual or rare specimens were seen, many people were introduced to species or groups that they were not familiar with. Ten people took part in the event. It will be run again in 2006 as part of National Insect Week.

Many thanks to the speakers and field leaders who give so generously of their time and expertise.

HANCOCK MUSEUM

The Museum attracted 83,178 visitors over the year which, although fewer than the previous year, has been a significant achievement. Despite lower visitor numbers, the year has been an exceptionally busy and successful one for the Museum. Undoubtedly the most important and exciting development was the Stage 1 approval of an £8.75m award from the Heritage Lottery Fund toward the complete redevelopment of the Museum as part of the Great North Museum project. This project, in total a £25.75m capital scheme, will see the integration of the University Museum of Antiquities and the Shefton Museum of Greek Art and Archaeology with the current Hancock collections to form a combined University Museum, together with the Hatton Gallery. As a result, the Museum will close in spring 2006 for three years.

After the completion of the *Sea Monsters* exhibition, the programme has been dominated by a series of British Museum exhibitions which mark the development of a new national partnership with the British Museum as part of the UK Partnership Scheme. This has been an extremely successful partnership and the beginning of a relationship which, it is hoped, will produce further collaborations in the future.

This year also saw the completion of two new permanent displays. *Fossil Zone*, funded by DCMS/Wolfson, HLF, Tyne and Wear Museums Business Partners and the North East Regional Museums Hub, combines traditional style case displays with interactive computer databases to explore over 800 fossils from the Museum's collections. The other new display, *Bewick – Wildlife Artist*, funded by HLF, uses many of the original specimens in the collections that were actually drawn by Thomas Bewick, to explore the history of Bewick's illustrations and artistry.

We were also delighted to receive a grant of £96,000 from the Designation Challenge Fund to catalogue and re-store parts of the designated geology collections at the Hancock and at Sunderland Museum.

The Museum's learning and outreach programmes have been extremely active with an extensive series of formal and informal events and activities, many supported by the North East Regional Museums Hub. These included participation in the third Newcastle Science Festival. Perhaps the most significant development was the Strategic Commission 'Evolution' project with the Natural History Museum London, and Oxford University Museum of Natural History. This provided a collaborative series of Evolution workshops for Key Stage 4 children, traditionally a difficult audience to attract to the Museum.

Finally, in an historic move, and to pave the way for the Great North Museum, the Hancock lifted its admission charge for the first time in its history. This means that general admission is now free, although there is still a charge to temporary exhibitions. This is a significant step forward with respect to our long-term strategic plans to provide more inclusive access to the Museum and its collections for all sections of the community.

Major exhibitions

Sea Monsters: The Exhibition (17 July–31 October 2004) This exhibition explored the science and technology that made the BBC series possible. It featured models and maquettes used for filming, fossils, TV footage and large scale models. It was supported by the National Museum of Wales, Peterborough Museum, BBC Worldwide, B&Q and Gloucester Docks Reptile Zoo.

Buried Treasure (12 Feb–26 June 2005) The second British Museum exhibition to be hosted by the Museum was the prestigious *Buried Treasure* exhibition, which showcased some of the nation's most stunning 'treasure' finds. These included the Mildenhall treasure of Roman silver tableware, the Bronze Age Ringlemere cup, The Hoxne hoard of Roman gold and silver, the beautiful Iron Age gold and silver Snettisham torcs and the Fishpool hoard, the largest hoard of medieval gold coins ever found in Britain. Sponsored by Tarmac, this was a British Museum Partnership UK Project, opened by Neil McGregor, Director of the British Museum

Egypt Revealed (30 July 2005–23 April 2006) The third British Museum exhibition opened at the very end of the academic year. It showcases over a hundred ancient Egyptian objects from the national collections as well as an additional hundred from the Hancock's own collection and several from Manchester Museum. The exhibition includes two mummies, a statue of Rameses II and a page from the 'Book of the Dead'. There are also a number of live animals including a Cobra and Scorpions. Sponsored by TWM Business Partners and the Dorset Foundation it is a British Museum Partnership UK project.

Other Exhibitions

175th Anniversary of the Natural History Society of Northumbria (17 July–6 September 2004) This exhibition explored some of the archive holdings within the collections of the Society and highlighted several important aspects, including photographs of the Hancock brothers, and drawings or watercolours by Thomas Bewick, Albany Hancock and George Gibsone. The exhibition was curated for the Society by Dr David Gardner-Medwin and June Holmes as part of the *Archive Project*. We are grateful to the Heritage Lottery Fund (HLF) for its support.

Changing Face: Masks from the British Museum (11 September 2004–16 January 2005) This impressive exhibition of ten masks from the British Museum looked at the significance of masks across different cultures and periods of history from the first century BC through to the twentieth century. It included the death mask of George Bernard Shaw. Sponsored by Tarmac and the Dorset Foundation, it was a British Museum Partnership UK project.

Wildlife Photographer of the Year 2003 (22 Nov 2004–2 May 2005) A stunning exhibition of Wildlife Photographs from the 2003 competition, toured by the Natural History Museum, London, it was supported by BBC Wildlife Magazine.

Big 12 African Insects (16 April–5 June 2005) An exhibition of textiles by artist Barbara Reed, this exhibition was inspired by the Big 12 African Insects project of the Transvaal Museum in Pretoria, which kindly supplied many of the images that inspired the textiles. In addition, a group of year 10 gifted and talented students from Washington School worked with the artist to develop their own images for this exhibition. It was supported by Transvaal Museum and Washington School.

Treasures of the Sea (25 June–4 September 2005) As part of the Sea Britain North East celebrations, this Culture10-funded exhibition focused on a wide range of natural-history themes based around the sea, including folklore, whales, shells, fish and the deep sea. It was supported financially by Culture10, North East Regional Museums Hub, Museums Libraries and Archives Council, DCMS.

Learning Activities – Schools

Strategic Commission Evolution Workshops (7–11 March) Four days of Evolution workshops were held in the week of 7 March for Key Stage 4 students. This event was part of a Strategic Commissioning project, working in partnership with the Natural History Museum in London, and Oxford University Museum of Natural History.

Regional Hub Partnership Project The North East Regional Museums Hub has confirmed £10,000 funding towards the 'IT Rocks' project in partnership with the Killhope Lead Mining Museum. The project explores the use of animation and puppetry to bring the story of rocks and fossils to life for school children.

Science Workshops Several weeks of science workshops took place on the themes of rocks, fossils and skeletons.

Living History The Ancient Egypt and Ancient Greek Living History event ran for fourteen weeks during the autumn and spring terms, attracting approximately 7000 children.

Discovering the Past and Preserving the Past Workshops These supported the *Buried Treasure* exhibition and focused on how objects can tell us about the past and issues relating to the preservation of once buried materials. Children excavated a mini archaeological dig to find evidence for Viking or Roman life and carried out experiments including soil testing. These workshops were delivered to sixteen classes (414 children plus approximately forty-eight adults). Eight schools (264 children plus thirty-nine adults) visited *Buried Treasure* free of charge courtesy of Tarmac, who sponsored the exhibition. The day included free admission, travel costs and a packed lunch. All groups were given a tour of the *Buried Treasure* exhibition by Susan Taylor (ICCHS student). Two other classes (forty-three children plus twelve adults) had free visits as a result of winning a 'Design a Treasure Chest' competition. These visits included craft activities as well as a tour of *Buried Treasure*.

The Chemistry of Colour Working in partnership with two other Tyne and Wear Museums (Laing Art Gallery and Segedunum Roman Fort), a project based on the science and history of pigments was delivered to seven classes from three Newcastle schools. The session at the Hancock focused on colour in nature and the making of pigments from natural materials. Children crushed rocks and mixed them with different binders to make paint. This project was part of the Regional Hub EPDP (Education Programme Delivery Plan).

Learning Activities – Informal Events

Family Fun A wide range of informal family orientated learning activities took place over the year. In total there were thirty-two individual sessions. **Family Learning Boxes** A number of resources have been purchased to create some learning resource boxes for the Magic of Birds Gallery, Abel's Ark and Ugly Bug Zoo. **Monthly Drawing Workshops** Following on from the successful Big Draw event, the Learning Team ran a number of monthly drawing events on Sunday afternoons. **Museums and Galleries Month: Fabulous Finds Day** As part of Museums and Galleries Month visitors were invited to bring objects to the Museum for identification by experts, and the day also included family activities and fossil hunting. The Museum received national press coverage for this event.

Adult Education and Training

The collections are used extensively for the University of Newcastle's own undergraduate and postgraduate teaching as well as by visiting groups from other Higher Education Institutions (HEIs) as part of their own courses. Staff regularly work with students from both Newcastle and other HEIs assisting with dissertation and thesis work. Courses supported include BSc Biology (Newcastle), BSc Zoology (Newcastle), BA Archaeology (Newcastle), BA Anthropology (Durham), MA and Diploma in Museum Studies (Newcastle), MA and Diploma in Art Museum and Gallery Studies (Newcastle), MA and Diploma in Heritage, Education and Interpretation (Newcastle), Primary PGCE in Education (Newcastle), MA Museum and Artefact Studies (Durham) and Secondary PGCE in Education (Durham). Six members of staff are involved in teaching the courses listed above. The Curator is also course tutor for part of the third year Zoology Masterclass course. In addition, all staff deliver a four week Natural Science Module to MA Museum Studies students. Staff also specifically provide postgraduate teaching on Documentation, Environmental Databases, Disaster Planning and Environmental Monitoring. Museum staff also delivered a one-day course to fifty staff from the National Trust on 'The Care and Conservation of Natural Science Material' and a two day INSET course for teachers on Key Stage 2, 'Rocks and Soils', using Museum collections in partnership with the Centre for Life.

Newcastle Science Festival

The Museum has become an established partner in the Newcastle Science Festival programme, co-ordinated by the International Centre for Life. For the third year we have participated in activities focused around Science Week. This year we ran a 'Finds Day' on 12 March in association with staff from the Portable Antiquities Scheme. There was also a series of children's activities during the day. Throughout the week staff led a number of behind-the-scenes tours and events were held to support the *Buried Treasure* exhibition. 'Time Travellers: History in Action' presented two characters, Bebbhild, a Saxon and Oswein, a Romano-British man. This programme included exploration of archaeological evidence. During the weekend of 19 and 20 March visitors were invited to look for real fossils in a specially created rock pile at the back of the museum. The latter activity was extremely popular and there were simply not enough places available for all visitors. This event has, therefore, been repeated at various points throughout the year.

Other Activities

Conferences In June 2005, the Hancock co-hosted and organised (with the International Centre for Culture and Heritage Studies of the University of Newcastle) a one-day conference entitled 'Buried Treasure: Building Bridges'. The Museum also hosted and arranged a two day international seminar for the Geological Curators Group. **University Public Lecture Programme** The Museum now regularly contributes to the University's public lecture programme. This year three speakers have been provided (Professor John Mack from East Anglia University (*Masks* exhibition), Dr Richard Hobbs from the British Museum (*Buried Treasure* Exhibition), and Dr J D Hill from the British Museum (*Buried Treasure*). **Northumbria for All** The Museum also took part in the North East Museums, Libraries and Archives Council-funded *Northumbria for All* project which is a research project investigating the reasons why many people living in rural communities do not visit museums in Newcastle. This was a joint project between the Hancock and the University Museum of Antiquities. **Book Launches** Several book launches have taken place or will

do so at the Museum over the year. They include the New Naturalist Series *Northumberland* volume by Angus Lunn, *Treasure Islands* by Bill Wyman (of Rolling Stones fame), and *Place* by Sir Terry Farrell. **Accreditation** An application has been made to the Museums, Libraries and Archives Council (MLA) as part of a larger Tyne and Wear Museums application for Accreditation (the new name for Museum Registration). This is the national standard that museums have to achieve in order to be listed as an approved museum. The Hancock has already achieved Phase II Registration and it is hoped that we will be notified of a positive response to our new Accreditation application in the near future. **Arts and Humanities Research Council** A great deal of work has gone into the current AHRC funding round in order to attempt to re-gain the Core Funding from AHRC (formerly the AHRB), which was lost in the last round. The Hancock application will form part of a larger overall bid from the University, which will include the Museum of Antiquities, the Shefton Museum and the Hatton Art Gallery.

Collections Management

The University was awarded a research grant of £30,000 to explore the use of radio tagging museum collections in order to keep track of objects when in storage. This project will help us determine if this kind of technology can help with the collections decant next year and the subsequent transfer to new permanent storage at the Discovery Museum.

The collection is estimated to consist of 550,000 objects, of which 237,000 now have individual computer records. Of the remaining 300,000+ objects, 200,000 are insects, which there is no intention to catalogue on an individual basis, and the other items, from all aspects of the collections, are part of a programme of backlog cataloguing already under way. The geology collections in particular are currently the subject of a DCF (Designation Challenge Fund) project to address some of these backlogs and this year we have catalogued over 5000 items.

Much of this backlog will be addressed as part of the Great North Museum project and the Accreditation programme. Two staff have been employed as part of the GNM project to begin the process of cataloguing and digitising the collection in order to create a new database that will be used to keep track of the collection during its move from the Museum to temporary and then permanent new storage.

Some examples of conservation work undertaken on the collection this year include freezer treatment (pest control) of numerous taxidermy mounts including the Polar Bear; re-storage and cleaning of parts of the spirit collection; cleaning of part of the Stevens Lepidoptera collection; re-storage of 20,000 fossil specimens into a new purpose-built store as part of the Fossil Zone project; transfer and cleaning of the University fossil collection; cleaning of part of the mineral collection; and regular cleaning and repair of osteology mounts and repair of some taxidermy mounts.

Research Staff regularly use the collections to support their own research (such as stable isotope analyses, species distribution studies, and historical studies such as the history of the Russian Mineral collection), or to facilitate student research projects. Currently two PhD students from the University of Newcastle's International Centre for Culture and Heritage Studies are actively working with the Museum and its collections, as well as numerous Masters and Undergraduate students. Staff also support academic enquiries from a considerable number of Higher Education institutions throughout the UK and overseas, particularly in the provision of loans and responding to collection information requests. The Museum normally receives visits from 20-30 academic researchers per year.

Examples of research undertaken over the last year include:

Bourkem, Brian (RSPB). Investigation of Golden Eagle genetics.

Dayrat, Benoit (California). Investigation of type material of nudibranch molluscs.

Dean, Richard (University of Cape Town). Historic researches of Southern African bird specimens.

Gosler, A (University of Oxford). Investigation of Great Tit eggs, based on historic material.

Hilton, G (RSPB). Identification of breeding areas for Slender-billed Curlews, based on stable isotope analysis.

Jessop, Les (Durham University) and Bevan, R M (University of Newcastle). Identification of the provenance of a historic Capercaillie specimen, based on stable isotope analysis.

Keymer, Paul (PhD student, University of Durham). Investigation of excavated material from Qau el Kebir.

King, J (British Museum) Research on 17th and 18th century North American clubs.

Loughney, Claire (PhD student, University of Newcastle). Investigation of development of museum collections in the 19th century, in relation to colonial expansion.

Martinez, Begonia (University of Seville). Investigation of Spanish Imperial Eagle genetics using samples from historic mounts.

Mpofu, Nkosana (MA student, University of Newcastle). Investigation of southern African element of ethnographic collection.

Newell, Jenny (British Museum). Historical research on Polynesian artefacts.

Ostapkowitz, Joanna (Liverpool Museum). Investigating historical specimens of central American stools (duhos).

Pike, Tom (University of Newcastle). Investigation of eggshell colour in historical specimens.

Richards, Rhys (University of East Anglia). Historical research on paddles from the Austral Islands and on Solomon Islands woodcarvings.

Russell, D G (Natural History Museum, Tring). Investigation of the W M Pybus egg collection.

Warren, A (LaTrobe University). Investigation into Carboniferous lungfishes.

Weys, Vonu (PhD student, University of Norwich). Historical research on barkcloth of West Polynesia.

Museum staff working on the Great North Museum Project

On 26 January, HLF officially announced an unconditional Stage 1 pass for an award of £8.75 million to the University of Newcastle towards the re-development of the Hancock Museum, together with the University Museum of Antiquities and the Shefton Museum of Greek Art and Archaeology. This is tremendous news and means that, all going to plan, the Hancock will close in April 2006 in preparation for major building works which will see the entire renovation of the Museum and the addition of a three storey extension to the rear as well as the development of off-site storage facilities. The Museum will re-open in early 2009. Planning is currently under way with respect to the removal and storage of the collections whilst the development takes place. It is anticipated that the HLF announce-

ment will unlock an additional £7 million funding from the RDA and ERDF and this, together with funding from Newcastle City Council and the University of Newcastle, together with potential funding from numerous Trusts and Foundations, will provide an overall project budget of £25.75 million.

As one would expect, much of our effort, working together with a large team from the University and indeed the Society, over the months since the HLF Stage 1 decision, has been focused on the preparation of the HLF Stage 2 application which will, it is hoped, lead to the release of funding at the end of January 2006. Museum staff are, in particular, working up briefs for the front gallery biology displays, the rear gallery geology displays and the central gallery Roman displays. In addition to these we are also working up provisional outline briefs for all new displays which will cover Egyptology, local natural history and geology, ethnography, ancient Greece, pre-history, post-Roman Newcastle and a new planetarium. Architectural planning applications have been made for both the Museum and the new off-site store which will be based at Discovery Museum, and other funding applications are being made to the Regional Development Agency and the European Regional Development Fund. There are busy times ahead …

Staffing

There have been a number of staffing changes over the year. Fiona Fenwick, our long standing administrative assistant, left to take up a new position of Director's Secretary for Tyne & Wear Museums. She has been replaced by Sharon Lewis, formerly of the Laing Art Gallery and Carol Taylor who is with us temporarily from the City Council. Sylvia Humphrey was seconded to the DCF Geology project and has been temporarily replaced by Dr Sarah Glynn. Claire Trueman took over as Communications Officer from Sheryl Muxworthy who was promoted to Communications Manager for Tyne & Wear Museums. In our front of house team, Rachel Arkley has joined us and our other vacancy has been filled by Gill Lancaster and Chris Beeton on a temporary basis.

With the increasing workload imposed by the Great North Museum (GNM) project, several staff have also joined us temporarily. They are listed below:

The Current permanent staffing complement is:

Senior Manager: Vacant

Steve McLean (Acting Senior Manager, Curator, Principal Keeper)

Sharon Lewis (Administrative Assistant)*

Les Jessop (Keeper of Biology - based at Sunderland Museum)*

Naomi Hewitt (Regional Hub Assistant Learning Officer)*

Sylvia Humphrey (Assistant Keeper, Geology: seconded to DCF project)*

Eric Morton (Assistant Keeper, Biology)

Nicola McNicholas (Biology Assistant)

Gillian Mason (Learning Officer)

Claire Trueman (Communications Officer)*

John Pratt (Team Leader)

Deborah Hunter (Team Leader)

Mark Cutts (Attendant)

Alan Lister (Attendant)*

Rachel Arkley (Attendant)*

Attendant (Vacant)*

Short-term Contract Staff

Joanne Anderson: GNM Collections Move

Alex Boyd: GNM Collections Move

Sarah Glynn: Assistant Keeper of Geology

Dan Gordon: GNM Biology

Eric Johnson: DCF Project

Jill Lancaster: Attendant*

Janet Mears: GNM Learning

Linda Morris: Exhibitions Officer

Gill Scott: GNM Egyptology

Athena Taylor: Den Facilitator*

Carol Taylor: Administrative Assistant*

Chris Beeton: Attendant*

(*indicates part-time)

Volunteers

Once again the Museum has benefited from the tremendous work undertaken by a considerable number of volunteers and work placement students who have given up their own time to contribute in a variety of important ways. In addition, we were delighted that Paddy Cottam, our honorary curator of Osteology, was presented with an award by the TWM volunteers section in recognition of her outstanding service to the Museum, represented by over twenty years of voluntary work on the bone collections. We are extremely grateful to Paddy for her continued support of, and dedication to, the Hancock Museum – long may it continue.

The Learning Officer worked with Lucy Cooke (Tyne and Wear Museums Volunteers Co-ordinator) to recruit a team of volunteers to staff the Finds Handling Table in the *Buried Treasure* exhibition. This was extremely well received by visitors and we are very grateful for the support of this group of people:

Gail Adcock	Buried Treasure
Laura Armstrong	Placement - Geology
Steve Barrett	Buried Treasure
Samantha Belcher	Buried Treasure
Heather Binmore	Buried Treasure
Trevor Bridges	Mineralogy curation
Lynn Bridgett	Buried Treasure
Adele Caisley	Buried Treasure
Julia Clark	Buried Treasure
Ron Cook	Botany/oology curation
Paddy Cottam	Osteology curation

Christine Cowey	Lord Lawson of Beamish School
Catherine Donald	Buried Treasure
Paul Eskdale	Buried Treasure
Jess Fermie	Palaeontology curation
Gavin Ferry	Buried Treasure
Michael Frankis	Northumberland bird records
Catherine Goodlet	Buried Treasure
Michael Joseph Heaney	Buried Treasure
Joyce Johnston	Buried Treasure
Susan McLean	Learning/Buried Treasure
Claire Outterside	Buried Treasure
Margaret Patterson	Buried Treasure
Mark Poole	Buried Treasure
Helen Potter	Buried Treasure
Martin Priest	Buried Treasure
Judith Renwick	Buried Treasure
Anne Robinson	Buried Treasure
Megs Rogers	Buried Treasure
Sylvia Savage	Buried Treasure
Niall Smith	Buried Treasure
Mabs Speet	Buried Treasure
Roger Stobbart	Entomology curation/bird curation
Susan Taylor	(ICCHS) 3 May-24 June 2005
Davina Thompson	Buried Treasure
Rachel Thompson	Buried Treasure
Stuart Wade	Buried Treasure
June Waites	Education support
Heather Welham	Buried Treasure
Andrew Wooldridge	Buried Treasure

Selected Acquisitions

Mounted spider *Eurypeima spinicrus*, Thailand – gift, Susan Winter, Newcastle upon Tyne

Eagle Owl, Halfpenny Woods – gift, B W Jackson, Blyth

Two Victorian Osprey displays – gift, Liz Law, Allendale

Great spotted Woodpecker, Langley on Tyne – gift, Noelle Wright, Langley on Tyne

Water rail, Big Waters, Wideopen – gift, Ron Storey, Wideopen

Osprey, Hart Village – gift, PC. Clapham, Durham Constabulary, Hartlepool

Selection of Mineral Specimens – gift, Russell Society (Northern Branch)

Icelandic Lava – gift, G and E McLean, Forfar, Scotland.

RINGING GROUP

The three main projects run by the group enable the team to experience ringing in a range of different situations – an ideal environment to train new ringers. The Constant-Effort Site (CES) project entails a degree of rigour in recording and consistency in net operations, while ringing at Low Newton in the autumn provides experience of ringing in different habitats with a wider range of species. Ringing adult and nestling seabirds on the Farnes and Coquet Island emphasises the major contribution that ringing can make to conservation and understanding the environmental impacts of climate change and overfishing.

Capture totals in Gosforth Park for the periods covered by this Annual Report for 2005

Table 1 Captures (new birds and new-for-year retraps) at Gosforth Park in the last two 'Annual Report' years (1Aug 2003–31 July 2004 and 1Aug 2004–31July 2005).

	03-04	04-05		03-04	04-05
Common Tern	4	2	Chiffchaff	62	52
Swift	7	5	Willow Warbler	136	52
Kingfisher	3	4	Goldcrest		4
Great Spotted Woodpecker		1	Long-tailed Tit	32	33
Swallow	8	8	Willow Tit	1	
House Martin	5	2	Coal Tit	8	3
Grey Wagtail		1	Blue Tit	128	102
Wren	54	65	Great Tit	55	58
Dunnock	30	24	Nuthatch	1	
Robin	34	25	Treecreeper	5	3
Bluethroat	1		Jay	1	1
Blackbird	31	29	Magpie		1
Song Thrush	4	9	Starling	1	
Redwing		1	Chaffinch	9	4
Grasshopper Warbler	1		Brambing	1	
Sedge Warbler	143	102	Greenfinch	2	7
Reed Warbler	82	88	Goldfinch	5	10
Whitethroat	3	3	Bullfinch	5	9
Garden Warbler	5	4	Reed Bunting	56	40
Blackcap	49	53			
			Total	**972**	**805**

(August 1 to July 31) and that for 2004 are shown in Table 1. The capture total for this period is somewhat lower than the previous year, and the team had some relatively quiet ringing sessions this season. The numbers of Wrens, thrushes, tits, Reed Warblers, Blackcap and Chiffchaff caught were broadly similar to last year. However, there has been a substantial decline in numbers of Willow Warblers and, to a lesser extent, Sedge Warblers. Overall, the adult Reed Warbler population at Gosforth Park is looking healthy with forty-three adults caught in the reserve in the 2005 breeding season (new birds ringed and retraps from previous years), up from thirty-six in 2004. However, the Reed Warblers seem to have had a relatively poor breeding season despite an increase in the number of adults caught; up to the end of July 2005, the team had ringed only seventeen young compared with thirty for the same period in 2004. Chiffchaffs also seem to have had a relatively poor 2005 breeding season, and although the team caught similar numbers of adults

in the 2004 and 2005 breeding seasons, only fifteen young birds compared with twenty-seven for the same period in 2004 were ringed. In contrast, despite a reduction in the number of adult Willow Warblers caught this year, there has been a slight increase in the number of young birds from five to twelve. In addition to the staple catch of warblers and tits, other highlights during the year were four Kingfishers, five Swifts, a Great-spotted Woodpecker and a Grey Wagtail.

Ringing at Low Newton-by-the-Sea in autumn 2004 proved to be a busy time. The team adopted its usual practice of running nets around the pool, amongst the dune vegetation, and on the beach above high water mark. The capture total for new birds ringed was 555 for the period September to early November inclusive, compared with 426 the previous year (Table 2). Highlights were a Jack Snipe, Redshank, Sparrowhawk, Redstart, Whinchat, Wheatear and ten Stonechats. Compared to the same period in 2003, there was a welcome increase in the numbers and range of warblers ringed, from twenty-six individuals of two species in 2003 to fifty-five individuals of seven species in 2004. Sedge Warblers, Blackcap, Chiffchaff and Willow Warblers were increased in numbers (Table 2). Most of the warblers caught at Low Newton will be passing through, so the variation in the number and range of warblers caught reflects the weather conditions during the autumn. Perhaps the best bird was a Starling caught on the beach in early November – nothing unusual in that, except that this particular one was wearing a Norwegian ring and was ringed as a young bird at Giske, Norway, in July the same year. Another common species, this time ringed by the team at Low Newton in October 2004, was recovered rather further away than expected. This was a Wren, which ended up as a moggie mouthful in Newcastle in March 2005, some fifty-six km south. We tend to think of Wrens as sedentary birds, but some can move surprisingly large distances.

The widespread breeding failure of seabirds in the North Sea in the 2004 season has led to increased interest in seabird colonies in the North East. Despite low breeding success elsewhere in the North Sea in 2005, the Farnes and Coquet Island had a good breeding season this year, and it is increasingly likely that sand-eel populations in the inshore waters of the North-East are not subject to the same influences as further north. This makes the work of the ringing team and Farne Islands Marine Research Group (FIMRG) even more important in helping us to understand the factors that affect seabirds breeding off the coast of Northumberland. Arctic Terns are major targets of the ringing team and data on weights in relation to body size were obtained for samples of chicks from the Farnes and from Coquet Island. These data are being used to calculate the annual 'growth index' for Arctic Tern chicks, a monitoring tool which is helping us to understand the role of climatic and other variables in affecting breeding success. The team also ringed and recaptured over 160 adult Arctic Terns on the Farnes and Coquet Island (Figure 12). Comparing the weights of adult terns from year to year and during the progression of each breeding season allows stress in adult birds to be monitored. This year, the team has extended the same rationale to the Kittiwake, and measured weight in relation to developmental size in a sample of Kittiwake chicks, and ringed a small sample of adult birds (23) to obtain data on variation in adult mass from year to year.

In addition to these studies, the team ringed sixty new Eiders and retrapped ninety others on Inner Farne in May as part of an ongoing 'Retrapping adults for survival' (RAS) project. The aim of RAS projects is to utilise capture-recapture ringing data to estimate annual survival rates for species which are otherwise difficult to monitor. The team also rings adult shags on Brownsman as part of a RAS project, but the totals ringed and recaptured

Table 2 Ringing totals at Low Newton in autumn 2003 and autumn 2004.

Species	2003	2004	Species	2003	2004
Sparrowhawk		1	Blackcap		7
Dunlin	4		Chiffchaff	13	19
Jack Snipe		1	Willow Warbler		10
Redshank		1	Goldcrest	11	10
Great Spotted Woodpecker	1	2	Bearded Tit		1
Swallow	8	6	Long-tailed Tit	25	9
House Martin	1	3	Willow Tit	1	1
Meadow Pipit	23	28	Coal Tit	5	1
Rock Pipit	11	14	Blue Tit	40	42
Grey Wagtail	1	2	Great Tit	14	6
Pied Wagtail	13	6	Treecreeper		3
Wren	31	57	Rook	1	
Dunnock	22	21	Starling	12	38
Robin	28	28	House Sparrow	19	9
Redstart		1	Tree Sparrow		3
Whinchat		1	Chaffinch	4	9
Stonechat	6	10	Greenfinch	2	7
Wheatear		1	Goldfinch	24	29
Blackbird	17	22	Siskin		2
Song Thrush	4	8	Linnet	9	29
Redwing	2	2	Redpoll sp.	2	
Sedge Warbler	13	24	Yellowhammer	2	6
Reed Warbler		2	Reed Bunting	57	70
Lesser Whitethroat		2			
Whitethroat		1	**Total**	**426**	**555**

Table 3 Seabird ringing totals for 2004 and 2005: Farnes and Coquet Island.

	2004		2005	
Species	**Ringed**	**Retrap/ Control**	**Ringed**	**Retrap/ Control**
Fulmar	11		15	
Shag	95	32	82	15
Eider	49	83	60	87
Black-headed Gull	209		150	
Kittiwake	163	2	260	4
Sandwich Tern	542		882	
Roseate Tern			1	
Common Tern	31	1	23	1
Arctic Tern	365	31	470	53
Total	**1465**	**149**	**1943**	**160**

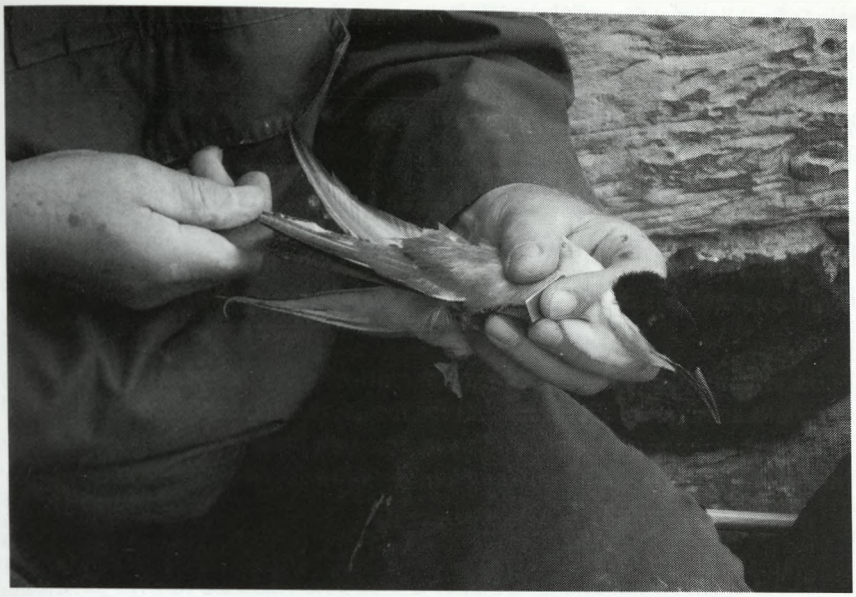


Figure 12 Bob Gadjus measuring the wing of an adult Arctic Tern on Brownsman as part of the biometric study of seasonal weight variation in adult birds.

this year were low due to an unusually high winter mortality. This had a knock-on effect in reducing the number of Shag chicks ringed to sixty-one. The group also rings samples of Black-headed Gulls, Common Terns and Fulmars (Coquet Island), and Sandwich Terns (Coquet island and the Farnes) (Table 3). The total of 885 Sandwich Terns ringed this year was close to our target of 1000 chicks, and will provide valuable information on the extent of mortality due to human activities on their wintering grounds. The grand total of seabirds ringed and retrapped in the 2005 breeding season was 2103. Although the team works hard to achieve this, and the gathering of biometric data of chicks and adults takes time, the overall ringing total is a tiny proportion of the total seabird breeding population.

We hope to increase the numbers of seabirds ringed each year, and this may become easier now that the pattern of visits to the Farnes has changed substantially. In previous years the ringers worked on the islands in the evening, from 5-10pm, but this year the wardens asked the team to carry out their ringing visits during the day instead. This new system worked well, and in the future the team should be able to increase the amount of work during the season. There is little doubt that the seabird ringing activities entail some hard graft, and are not without incident. On one particularly memorable day, the Ringing Group's leader, also boat skipper for the day, managed to strand the boat on Inner Farne (the tide unexpectedly went down) and then, on returning to Seahouses, managed to dump the boat from the trailer onto the top of the concrete slipway – far out of reach of the tide (but fortunately undamaged)! An altogether more delightful event on a later trip was being escorted to Coquet Island by a dolphin travelling effortlessly just a couple of feet ahead of the boat.

The Society is very grateful to all those who support the ringing studies in various ways. The new Harbourmaster at Seahouses and his team, together with the Harbour Committee Chairman, helped us out of a tight spot by loading the boat back onto the trailer at Seahouses. The work on the Farnes and Coquet Island would not be possible without the

support of the National Trust (John Walton) and the RSPB (Paul Morrison and Mike Innerdale); in particular we would like to thank David Steele (Steely) and Sarah Lowe, Head Wardens on the Farnes and Coquet Island, respectively, for their help and encouragement, and the wardening staff for their help and cups of tea. Olivia Burton helped tremendously by ringing Arctic Tern chicks on Coquet Island while doing her MSc project on Arctic Terns, and Eliza Leat ringed some Arctic Terns on Inner Farne during her data-gathering work. As always, the ringing team have worked very hard throughout the year and the Society is very grateful for their efforts.

Coastal Research

The Farne Islands Marine Research Group (FIMRG) is a collaboration between the Society, the University of Newcastle and the National Trust. The Group's work continued in 2005, aided by funding from the Sir James Knott Trust (administered through Newcastle University). Eliza Leat came back to spend the summer vacation from her zoology studies at Glasgow University collecting foraging and nest provisioning data on Inner Farne. Similar work was carried out by Victoria Brooks on Brownsman. These studies were extended to Coquet Island in 2005 where Olivia Burton contributed to the RSPB's wardening team while collecting data for her MSc thesis (tern foraging and nest-provisioning studies). Back on the Farnes, Richard Bevan persuaded six Puffins into telling him about their diving and foraging behaviour (with the aid of electronic dataloggers), and Judy Foster-Smith organised the RV *Bernicia* to trawl for sand-eel samples in June and July. The ringing team's measurement of Arctic Tern chick growth and adult Arctic Tern weights add to the overall picture of foraging activity, breeding success and sand-eel quality in 2005, data that are now part of a five-year series. However, the Group has still to attract substantial funding, and this vital research is being carried out on the proverbial shoestring. If any Society member has £85,000 to spare to support a fully-funded research studentship, we would be very pleased to hear from them!

GOSFORTH PARK NATURE RESERVE

It has been a busy and eventful year in Gosforth Park Nature Reserve. Work towards reedbed management continued during the winter with a further grant of £5,000 from English Nature, and similar funding has been secured to continue the management programme. However, there is still a great deal to do and the extent to which willows are growing within the reed beds is now quite noticeable; bringing these under control will be one of the targets for this coming winter. During the year an assessment of the reedbeds was carried out using aerial photographs: since 1988 they have increased by over 100%. Paul Drummond (Gosforth Park Warden) has completed fencing most of the south boundary and this is already having an impact in reducing trespass into the reserve. Although the reserve is managed by the Society to preserve and enhance its SSSI status, these efforts are hampered by lack of a secure lease – without this, the Society cannot apply for substantial grant funding to develop the potential of the reserve. However, the Society is currently negotiating with High Gosforth Park Racecourse Company, who own the racecourse and the nature reserve, for a long term lease and we hope that a mutually beneficial outcome will be agreed soon. Unlike the reserve itself, Lake Lodge is wholly owned by the Society, and this carries a responsibility for maintenance of the building. This year, Council agreed to the installation of an oil-fired boiler and fuel tank for the central heating system, a welcome replacement for the inefficient coal fire and back-boiler. Another problem surfaced during the winter when heavy rains led to floods that came close to ris-

ing above the floorboards on the ground floor; this type of event is likely to become more frequent so identifying ways to prevent flooding is one of the Management Committee's priorities for the coming year.

Wildlife in the reserve has had a reasonably successful year and it is pleasing to report that at least eight pairs of Common Terns nested successfully, with up to ten chicks fledged. This dramatic increase in the size of our tern colony is partly due to the efforts of Paul Drummond and Geoff Lawrence who doubled the size of the tern platform during the winter, adding a fresh layer of gravel in the process, but a reduction in nesting habitat for Common Terns elsewhere in the region has also displaced breeding birds towards the reserve. Ringing studies have indicated that the Reed Warbler population is very healthy. During the winter, a Bearded Tit took up residence, but did not remain for the spring and summer. Kingfishers have been caught regularly during the 2005 breeding season and may have nested nearby, perhaps in the artificial Kingfisher nestbox. Little Grebes have bred successfully, unlike the Great-crested Grebes. The year has been notable for sightings of different raptors. Sparrowhawks and Kestrels nested in or close to the reserve, and there were sightings of Hobby, Marsh Harrier, Red Kite, Peregrine and Buzzards. With respect to mammals, the Red Squirrel population continues to give cause for concern. There have been sightings of Grey Squirrels around the reserve and the Society is campaigning to safeguard the Red Squirrel population. The North Tyneside and City Councils have made money available to support a Biodiversity Action Plan and this will be made available to support the Society's efforts through English Nature.

The Society is very grateful to all who contribute to making Gosforth Park a successful nature reserve under difficult circumstances, particularly Society members who help to maintain security, volunteer members of working parties and the Ringing Team, members of the management committee, Geoff Lawrence for his carpentry skills and of course the Warden, Paul Drummond. The Society is particularly grateful to English Nature for the Grant towards maintaining the reed beds in a healthy condition, and to the Racecourse Company for their continued co-operation in maintaining security and help in running the reserve. David Noble-Rollin continues to do an excellent job in negotiating grants from English Nature to help manage the reedbeds and save Red Squirrels, and we hope that he is successful in future negotiations with the Company over a long term lease.

To everyone's distress and sadness, Paul's wife Mary died unexpectedly in hospital just before Christmas 2004. Mary did a great deal to help with running the reserve, particularly with security during the daytime, and she is being sorely missed. We offer our condolences to Paul and his two sons.

COQUET ISLAND ADVISORY COMMITTEE

The Society has two representatives on this Committee, which works with the RSPB to manage the island as a bird sanctuary. The Society's ringing group under Chris Redfern is heavily involved in research projects on the island.

The work of the Committee has continued under the able chairmanship of Mike Innerdale, the RSPB's Regional Reserves Manager, replacing Dave Barrett who has moved on to other duties.

Management has included intensive efforts to control the large gull population which has threatened in recent years to push the tern colonies off the island. The current strategy, introduced last year, allows the gulls to settle early in the season in the north of the island,

away from the tern nesting areas. In the area to the south of this, early season disturbance, including the night use of a blow-up 'scary man', has been employed. Returning adults were at a lower level than last year with fifty-five pairs compared with eighty-nine, giving some hope that the present approach is showing results. It is intended to encourage the large gulls into a progressively smaller area at the north of the island each year.

Numbers of all other breeding species were up on last year, giving hopes of a bumper breeding season to make up for a disappointing year in 2004. However a week of poor food supply in July produced higher than usual mortality amongst well grown young terns. In consequence over the whole season mortality was higher than in a good breeding year.

Roseate Terns have continued their rise in numbers with seventy-nine breeding pairs at the time of the Committee's visit in June compared with sixty-five pairs at the same time last year. By the end of July the total had risen to ninety-one pairs, marking the continuation of a remarkable success story which has made Coquet Island the most important breeding site, apart from Rockabill in Ireland, for this species in the British Isles.

LINDISFARNE NATIONAL NATURE RESERVE

Lindisfarne Advisory Committee Graham Bell represents the Society on the Advisory Committee, which meets twice a year to advise English Nature on matters concerning the Holy Island area that may impact on the natural history interest of the National Nature Reserve. At the December meeting of the Wildfowl Panel David Noble-Rollin was elected chairman of the panel and therefore now also represents the Society on the Advisory Committee. The conservation issues discussed by the Committee were as follows: there was concern over the fact that areas of mudflat were being covered by sand reducing its attraction for feeding waders. It was felt that this might be particularly affecting Dunlin and Bar-tailed Godwit, the numbers recorded of both species having recently dropped. The 2005 breeding season was a good year for sand eels, which has meant that the colony of Little Terns reached over thirty pairs on the reserve with twelve to fifteen chicks fledged. In addition the recent designation of *Epipactis sancta* as a separate species, which is endemic to Holy Island, makes it one of the world's rarest plants. It has been called the Lindisfarne Helleborine. The other main issues discussed were the management plan for the reserve and the various plans and developments that could have an impact on the reserve.

Lindisfarne Wildfowl Panel The Wildfowl panel is concerned with the conservation of the National Nature Reserve and the impact of wildfowling and other human activities on the area. It monitors the activities and the numbers of birds in the area and is constantly looking at the methods of increasing the birds using the reserve during both winter and summer. The creation of a refuge area has reversed the declining waterfowl numbers and much of this year's discussions centred around economic ways of continuing to monitor the effect of the refuge on the internationally important populations of waders and waterfowl. The status of the reserve depends to some extent on the continued use of the reserve by these birds and English Nature is under a legal obligation to try to maintain them.

Peter Davis
Chairman of Council

FINANCIAL STATEMENTS
31 JULY 2005

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA
TRUSTEES' REPORT FOR THE YEAR ENDED 31 JULY 2005
CHARITY NUMBER 526770

Review of Developments and Activities

The detailed report of the Society's activities during the year appears on pages 3 to 44 of the Annual Report.

Accounts Presentation

The format of the accounts complies with the requirements of the Statement of Recommended Practice: Accounting and Reporting by Charities (SORP 2000). SORP 2000 requires investments to be valued at market value rather than cost (Note 1).

Statement of Trustees' Responsibilities

Law applicable to charities in England and Wales requires the trustees to prepare accounts for each financial period which give a true and fair view of the charity's financial activities during the period and of its financial position at the end of the period and adequately distinguish any material trust or other restricted fund of the charity. In preparing accounts giving a true and fair view, the trustees should follow best practice and:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether the policies are in accordance with applicable accounting standards and statements of recommended practice on accounting by charities subject to any departures disclosed and explained in the accounts;
- prepare the accounts on the going concern basis unless it is inappropriate to presume that the charity will continue in operation.

The trustees are responsible for keeping accounting records which disclose, with reasonable accuracy at any time, the financial position of the charity, and which enable them to ensure that the accounts comply with Accounting Standards and Statements of Recommended Practice and the regulations made under S44 of the Charities Act 1993. They are also responsible for safeguarding the assets of the charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Investments

All investment transactions during the year under review have been carried out in accordance with the trustees' powers.

Financial Review	**2005**	**2004**
Net (Outgoing)/Incoming Resources	(£16,870)	£10,720

Independent Examiners

Tait Walker have expressed their willingness to continue in office as independent examiners, and a resolution to reappoint them will be proposed at the Annual Meeting.

Signed on behalf of the Trustees

PETER DAVIS
Chairman and Trustee

7 October 2005

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED 31 JULY 2005

	Notes	Restricted £	Unrestricted £	2005 Total £	2004 Total £
Income and expenditure					
Incoming resources					
Members' subscriptions			21,876	21,876	23,648
Grants and donations		30	12,108	12,138	40,984
Activities for generating funds:					
Investment income			21,277	21,277	24,009
Interest receivable			4,210	4,210	3,456
University of Newcastle upon Tyne			8,772	8,772	8,517
Proceeds from the sale of *Transactions*			2,169	2,169	2,379
Miscellaneous income			2,892	2,892	1,974
Total incoming resources		30	73,304	73,334	104,967
Resources expended					
Charitable expenditure	2	13,910	63,879	77,789	81,956
Management and administration	3		12,415	12,415	12,291
Total resources expended		13,910	76,294	90,204	94,247
Net (outgoing)/incoming resources for the year		(13,880)	(2,990)	(16,870)	10,720
Other recognised gains and losses					
Realised		-	4,510	4,510	1,050
Unrealised		-	70,419	70,419	3,340
Total investment gains		-	74,929	74,929	4,390
NET MOVEMENT IN FUNDS		(13,880)	71,939	58,059	15,110
Funds brought forward		13,392	591,189	604,581	589,471
FUNDS CARRIED FORWARD 31 JULY 2005		(488)	663,128	662,640	604,581

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

BALANCE SHEET AS AT 31 JULY 2005

	Notes	2005	2004
		£	£
FIXED ASSETS			
Tangible assets for use by the society	6	13,855	7,599
Investments	7	610,334	487,937
		624,189	495,536
CURRENT ASSETS			
Stock		231	391
Debtors	8	8,255	12,036
Cash at bank and in hand		34,530	106,047
		43,016	118,474
CREDITORS: Amounts falling due within one year	9	4,565	9,429
NET CURRENT ASSETS		38,451	109,045
TOTAL ASSETS LESS CURRENT LIABILITIES		662,640	604,581
NET ASSETS		662,640	604,581
FUNDS			
General Fund		229,568	177,939
Expendable Endowments:			
TB Short Memorial Fund		230,993	226,858
Grace Hickling Memorial Fund		181,433	168,684
		641,994	573,481
Life Members Fund		1,531	1,728
Designated Capital Funds	10	19,603	15,980
Restricted Funds	11	(488)	13,392
TOTAL FUNDS		662,640	604,581

Approved by Council on 7 October 2005

and signed on its behalf by:

PETER DAVIS - Chairman and Trustee

DOUGLAS JOHNSON - Honorary Treasurer and Trustee

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA
NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 JULY 2005

1. Accounting Policies

1.1 Basis of Accounting

The accounts have been prepared under the Historical Cost Convention as modified for the revaluation of Fixed Asset Investments, in accordance with the Statement of Recommended Practice: Accounting and Reporting by Charities (SORP 2000) and applicable Accounting Standards.

1.2 Realised and Unrealised Gains and Losses on Investments are recognised in the Statement of Financial Activities in the period in which they arose.

1.3 Investments are stated at market value at 31 July 2005.

1.4 Tangible Fixed Assets

Tangible fixed assets are stated at cost less depreciation which is provided in equal annual instalments over the estimated useful lives of the assets.

No value is attributed to the Hancock Museum at the date of its completion in 1884. The building is leased to the University of Newcastle upon Tyne which is normally responsible for all repairs and improvements.

The cost of Lake Lodge, less donations and grants received, of £3,899 is depreciated at 2% per annum. The cost of installing mains electricity at Lake Lodge, less donations received, of £5,300 has been fully depreciated.

The cost of the hides, equipment and office furniture is depreciation at 10% per annum and computers and office equipment at 20% per annum.

1.5 Statement of Financial Activities

Donations are recognised when received unless the receipt is certain, when they are recognised as accrued income.

Expenditure is accounted for on an accrued basis. Any excess income over expenditure for the year is arrived at after making appropriations to special funds for the purpose of setting aside temporary surpluses of income to meet future expenditure.

1.6 Deferred Income

Deferred income represents amounts received for future periods and is released to incoming resources in the period for which it has been received.

1.7 Fund Accounting

The General Fund is unrestricted, and is expendable at the discretion of the trustees in the furtherance of the objects of the charity. The T B Short and Grace Hickling Memorial Funds were created from legacies and are invested in accordance with the Trustee Investment Acts and are subject only to expenditure for special projects. The Life Members Fund consists of amounts received in payment of life subscriptions and they are released to income over a period of 20 years in equal annual instalments.

2. Charitable Expenditure

	Note	2005 £	2004 £
Unrestricted			
Salaries, pension contributions and national insurance	4	31,116	29,063
Printing and stationery		3,441	3,443
Postage and telephone		2,532	2,784
Insurance		3,308	3,411
General expenses		149	707
Lecture and field meeting expenses		2,244	1,358
Transactions		7,773	3,698
Library and society subscriptions		2,198	2,321
Gosforth Park Nature Reserve			
Net of: transfer from Restoration Fund		6,511	8,026
Coastal research		2,417	2,100
Depreciation		2,190	2,197
175th Anniversary		-	532
Purchase of copy of Peter Brown's *New Illustrations...*		(1774)	3,465
		63,879	63,105
Restricted			
Farnes research		976	4,070
Archives		11,754	14,781
175th Anniversary		1,180	-
		13,910	18,851
		77,789	81,956

3. Administration Expenses

		2005 £	2004 £
Salaries, pension contributions and national insurance	4	8,938	7,489
Printing and stationery		181	181
Postage and telephone		133	147
Insurance		368	379
General expenses		-	1,403
Accountancy and bookkeeping fees		2,000	1,933
Independent review		795	759
		12,415	12,291

4. Information regarding Employees and Trustees

	2005	2004
Average number of employees during the year	4	4
Total emoluments	£40,054	£36,552

No trustee, or any person related or connected by business to them, has received any remuneration from the charity during the year.

During the year, payments were made to five (2004 - four) trustees in respect of reimbursement of expenses incurred on the charity's behalf totalling £1,177 (2004 - £433).

5. Coastal Research

Coastal Research comprises boat and vehicle costs together with ringing expenses for Farne Islands and Coquet Island research.

6. Tangible Fixed Assets for use by the society

	2005 £	2004 £
Hancock Museum	Not valued	
Lake Lod Cost	3,899	3,899
Electrical Installation	5,300	5,300
	9,199	9,199
Less Depreciation to date	7,484	7,406
Net book value	1,715	1,793
Hides, equipment, office furniture and computers		
Cost	40,012	38,315
Additions	8,446	1,697
	48,458	40,012
Less Depreciation to date	36,318	34,206
Net book value	12,140	5,806
Total net book value	13,855	7,599

There were no capital commitments at 31 July 2005.

7. Investments

	2005 £	2004 £
Market value at beginning of year	487,937	484,903
Additions	158,454	173,826
Disposal proceeds	(110,986)	(175,182)
Net investment gains	74,929	4,390
Market value at end of year	610,334	487,937

The investment portfolio includes the following holdings which represent more than 5% of the market value of the portfolio:

Close Finsbury UK Gilt Fund	8.57%
COIF Charities Investment Fund - Income Units	11.24%
M & G Property Fund	7.46%
Royal Dutch Shell	5.02%

Investments at market value comprised:		
Listed on a recognised stock exchange	541,759	429,916
Unlisted - Charities Official Investment Fund	68,575	58,021
	610,334	487,937
Historical cost at end of year	452,329	400,351

8. Debtors

	2005	2004
	£	£
Trade debtors	933	874
Prepayments and accrued income	7,322	11,162
	8,255	12,036

9. Creditors

	2005	2004
	£	£
Deferred income	2,399	2,840
Accruals	2,166	6,589
	4,565	9,429

10. Designated Funds

Gosforth Park Nature Reserve Restoration Fund	2005	2004
	£	£
General restoration	3,199	4,480
Sir James and Lady Steel donation for lake rejuvenation	8,500	8,500
	11,699	12,980

	2004	New Designations	Utilised	2005
	£	£	£	£
Gosforth Park Nature Reserve	12,980	5,180	(6,461)	11,699
Ringing Group	-	2,321	(2,417)	(96)
Bewick *Transactions* fund	3,000	-	-	3,000
Dickinson Memorial Fund	-	5,000	-	5,000
	15,980	12,501	(8,878)	19,603

11. Restricted Reserves

	2004	New Designations	Utilised	2005
	£	£	£	£
Archives	10,457	30	(11,754)	(1,267)
Farnes Sandeels Research	1,435	-	(976)	459
175th Anniversary Lecture	1,500	-	(1,180)	320
	13,392	30	(13,910)	(488)

During the year, further designations were made following the receipt of £30 in respect of Archives from the National Association for the Teaching of English.

BULMAN HOUSE
REGENT CENTRE
GOSFORTH
NEWCASTLE UPON TYNE
NE3 3LS

INDEPENDENT EXAMINERS REPORT TO THE TRUSTEES
OF THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

I report on the financial statements of the charity for the year ended 31st July 2005, which are set out on pages 45 to 52.

RESPECTIVE RESPONSIBILITIES OF TRUSTEES AND EXAMINER

As the charity's trustees, you are responsible for the preparation of the accounts; you consider that the audit requirement of Section 43(2) of the Charities Act 1993 (the Act) does not apply. It is my responsibilty to state, on the basis of procedures specified in the General Directions given by the Charity Commissioners under Section 43 (7)(b) of the Act, whether particular matters have come to my attention.

BASIS OF INDEPENDENT EXAMINER'S REPORT

My examination was carried out in accordance with the General Directions given by the Charity Commissioners. An examination includes a review of the accounting records kept by the charity and a comparison of the accounts presented with those records. It also includes consideration of any unusual items or disclosures in the accounts, and seeking explanations from you as trustees concerning any such matters. The procedures undertaken do not provide all the evidence that would be required in an audit, and consequently I do not express an audit opinion on the view given by the accounts.

INDEPENDENT EXAMINER'S STATEMENT

In connection with my examination, no matter has come to my attention:

(1) which gives me reasonable cause to believe that in any material respect the requirements:

- to keep accounting records in accordance with Section 41 of the Act; and
- to prepare accounts which accord with the accounting records and to comply with the accounting requirements of the Act

have not been met; or

(2) to which, in my opinion, attention should be drawn in order to enable a proper understanding of the accounts to be reached.

G.J.Moore

Independent Examiner
Chartered Accountant

TAIT WALKER
Chartered Accountants
7 October 2005

BIRDS ON THE FARNE ISLANDS in 2005

compiled by

DAVID STEEL
National Trust Warden

edited by

MARGARET PATTERSON

NATURAL HISTORY SOCIETY
OF NORTHUMBRIA

THE NATIONAL TRUST

'Birds on the Farne Islands in 2005' is a production by the National Trust and The Natural History Society of Northumbria. The paper is published as a part of the *Transactions* of the Society **(Volume 66 Part 2)** and this off-print carries the original page numbers and the correct reference at the beginning of the paper.

CONTENT

Front Cover: **A pair of *Guillemots* mating on the Light House cliffs, Inner Farne**
by Bas Teunis

Drawings in the text by Ken Baldridge and Eliza Leat

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BIRDS ON THE FARNE ISLANDS IN 2005

Compiled by

DAVID STEEL[1]

National Trust Head Warden

ringing report by

CHRIS REDFERN[2]

Cetacean report by

ROSS AHMED[3]

edited by

MARGARET PATTERSON

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INTRODUCTION

The wardens sailed out earlier than usual on 17 March and manned the islands until 4 December. As has been the trend in recent years, the breeding seabird populations continued to increase with Guillemots (7%) and Razorbills (23%) amongst the most notable movers, with other positive increases shown in Sandwich Terns (3%), Common Terns (20%) Arctic Terns (20%), Kittiwakes (4%) and Black-headed Gulls (32%). However it was the return to the islands of a pair of breeding Roseate Terns for the first time in three years which stole the limelight. There was also a welcome increase of nesting Eiders (32%) following a disappointing 2004 season and the Fulmar population stabilised following their crash in numbers last year. Several species experienced a generally average year with no noticeable movement of the populations including Cormorants, Ringed Plovers and the three large gull species. However it was not all good news, as it appeared Shags suffered a particularly poor winter mortality with decreases of 34% in the breeding stock. Despite this, in contrast to the previous year, the breeding season was excellent and was combined with the news that the Farne Islands recorded over 100,000 breeding pairs of seabirds for the first time in their history.

Passage birds were represented by 169 species with an overall total of 190, representing a new Farnes year record (outer group 172, inner group 176). It was the second consecutive year the inner group had recorded more birds than the outer group and the first occasion that the Farnes had boasted 190 species in one season. Although the overall record was broken, the season produced no new additions to the islands' list, the first blank year since 1997. Despite this there was an impressive array of good birds, including the second Rose-coloured Starling, the islands' third Booted Warbler and Mandarin, the fourth records of Honey Buzzard, Red-throated Pipit, Citrine Wagtail, Hawfinch, Subalpine and Greenish Warblers and the seventh and eighth records of Great Shearwaters.

Other records of note included Cory's Shearwater, Balearic Shearwater (3), Storm Petrel (50), Leach's Petrel, Gadwall (6), Garganey, Buzzard, Marsh Harrier, Hen Harrier, Corncrake, Moorhen (2), Coot, Spotted Redshank, Wood Sandpiper, Grey Phalarope (5), Mediterranean Gull (5), Sabine's Gull (5), Iceland Gull, Glaucous Gull, Stock Dove (3), Wryneck (2), Richard's Pipit (3), 'White' Wagtail (8), Waxwing, Barred Warbler (5), Pallas's Warbler (2), Yellow-browed Warbler (5), Red-breasted Flycatcher (the first since 2000), Great Tit (3), Red-backed Shrike, Great Grey Shrike (the first since 1991), Hooded Crow (2), Tree Sparrow, Common Redpoll (several), Crossbill, Common Rosefinch (2) and Little Bunting (2), all contributing to an excellent season.

It was fitting in a record year that a number of day counts were also broken with all-time high counts of Red-throated Diver, Sooty Shearwater (also a new Northumberland record), Manx Shearwater, Scaup, Oystercatcher, Razorbill, Dunnock, Stonechat, Mistle Thrush and Greenfinch. There were also some earliest records broken for Green Sandpiper, House Martin, Wheatear, Black Redstart, Lesser Whitethroat and Chiffchaff, whilst latest-ever records were logged for Whimbrel, Little Tern, Grasshopper Warbler, Whitethroat and Willow Warbler. Surprisingly in such a good year, the Farnes failed to produce any reports of Bluethroat (only the fourth no-show in thirty-seven years), Quail (the first blank year since 1997) or Wood Warbler.

Thanks go to the 2005 wardening team of Ross Ahmed, Alex Ash, David Clare, Neil Dawson, Chris Dodd, Jerry Gilham, Chris Lane and David Steel who provided the bulk of records from the islands during the year. Thanks also go to several observers for submitting records during the season to help complete this report, including Bill Holland, Adrian Hughes, Eliza Leat, Micky Maher, David Parnaby, Chris Redfern, Billy Shiel, William Shiel, John Thompson, John Walton and Anne Wilson amongst others. The report is also very grateful to Bas Teunis for another impressive front cover illustration and to Ken Baldridge and Eliza Leat for several quality line-drawings in the report. A final thanks go to the 'unseen' hard work of John Walton and David Noble-Rollin for advice and constructive criticism and to editor Margaret Patterson.

The following is a day-by-day summary of the highlights of 2005. 'First records' means the first record of the year and species in bold are of particular interest; for more details refer to the species accounts.

February

16 Red-necked Grebe

17 Red-necked Grebe (2), 'Pale-bellied' Brent Goose (22), **'Dark-bellied' Brent Goose** (2), Long-tailed Duck (14)

March

9 Red-necked Grebe

17 Pale-bellied Brent Goose (5), Pintail (2), Woodcock (first record), Wood Pigeon (first record), Stonechat (first record)

18 Red-necked Grebe, Pink-footed Goose (84), Grey Wagtail (4) Stonechat, **Hooded Crow** (2)

19 Jack Snipe, Skylark (29), Grey Wagtail (3), Robin (42), Stonechat (7), Wheatear (first record), **Hooded Crow**

20 Jack Snipe, Short-eared Owl, Siskin (8)

21 Pink-footed Goose (16), Shoveler (first record), Black Redstart, Chiffchaff (first

record), Lesser Redpoll (first record)

22 Red-necked Grebe, Black Redstart, **Great Tit, Tree Sparrow**

23 Whooper Swan, Shelduck (5, first record), Kestrel (first record), Little Gull (first record), Black Redstart, **Tree Sparrow**

24 Greylag Goose (first record), Gadwall, Golden Plover (first record), Black Redstart, **Great Tit**

25 Red-throated Diver (first record), Black-throated Diver, Black Redstart, **Great Tit**

26 Black Redstart, **Great Tit**, Brambling (first record)

27 Jack Snipe, Green Sandpiper, Sandwich Tern (first record), Little Auk, **'White' Wagtail** (4), Dunnock (51), Black Redstart (2), Song Thrush (17), Mistle Thrush (4), **Great Tit**, Yellowhammer (2), Reed Bunting (11)

28 **Moorhen**, Jack Snipe, Woodcock (4), Green Sandpiper, Wood Pigeon (3), **'White' Wagtail** (3), Dunnock (72), Black Redstart (2), Song Thrush (13), Mistle Thrush (4), **Great Tit**, **Great Grey Shrike,** Brambling (8), Yellowhammer (2), Reed Bunting (13)

29 Great Northern Diver (first record), **Moorhen** (2), Jack Snipe, Woodcock (8), Green Sandpiper, Wood Pigeon (3), Short-eared Owl, Skylark (17), Dunnock (55), Black Redstart, Ring Ouzel, Blackbird (45), Fieldfare (29), Song Thrush (19), Mistle Thrush (5), **Great Tit, Great Grey Shrike,** Brambling (9), Reed Bunting (17)

30 Great Crested Grebe, **Moorhen**, Jack Snipe, Woodcock (12), Green Sandpiper, Dunnock (45), Robin (34), Black Redstart (3), Fieldfare (26), Mistle Thrush, **Great Tit, Great Grey Shrike**, Reed Bunting (10), **Moorhen** (2), Woodcock (2), **Mediterranean Gull, Stock Dove** (2), Dunnock (33), Black Redstart (3), Fieldfare (36), **Great Tit** (2), **Hawfinch**, Reed Bunting (8)

April

1 **Stock Dove** (2), Dunnock (21), Black Redstart, **Great Tit** (2), **Hawfinch**

2 **Mediterranean Gull,** Arctic Tern (first record), Swallow (first record), Dunnock (19), Black Redstart, **Hawfinch,** Yellowhammer

3 **Moorhen** (2), **Mediterranean Gull, Stock Dove** (2), Black Redstart (2), Rook (3)

4 Whooper Swan (11), **Moorhen** (2), Woodcock (last spring record), Black Redstart (2), Blackcap (first record), Willow Warbler (first record)

5 **Moorhen** (2), Short-eared Owl, Black Redstart (2)

6 Tufted Duck (first record)

7 Black-throated Diver, Whooper Swan, Pale-bellied Brent Goose, Black Redstart

8 Long-tailed Duck (31)

9 Black-throated Diver, Red-necked Grebe (2 daily until 21 April), Long-tailed Duck (27), **Mediterranean Gull, *Littoralis* Rock Pipit,** Black Redstart

10 Long-tailed Duck (26), Black Redstart

11 Sand Martin (first record), Meadow Pipit (122)

12 House Martin (first record)

13 Great Northern Diver, Whooper Swan (25)

14 Redstart (first record)

15 **Iceland Gull**, Redstart, Ring Ouzel

16 Great Northern Diver, **'Blue' Fulmar,** Manx Shearwater (first record), Gannet (620), Long-tailed Duck (15), Arctic Skua (first record), **'White' Wagtail,** Ring Ouzel

17 Goosander, **'White' Wagtail,** Ring Ouzel (2)

18 Collared Dove, Ring Ouzel, Lesser Whitethroat (first record)

19 Great Northern Diver, **'White' Wagtail**

20 Eider (first eggs), Long-tailed Duck (last spring record), Greenshank, Black Redstart, Ring Ouzel

21 Cormorant (first eggs), Yellow Wagtail (first record), Redstart

22 Collared Dove

23 Common Tern (first record), Snow Bunting (last spring record)

24 Shag (first eggs), Pintail (last spring record), **Glaucous Gull, Black Guillemot**, Siskin (last spring record)

25 Whimbrel (first record), **Mediterranean Gull, 'White' Wagtail** (2), Whinchat (first record), Grasshopper Warbler (first record)

26 Little Tern (first record), Whinchat

27 Red-throated Diver (99), Goosander (2), **Buzzard**, Grey Plover (first record), Black-headed Gull (first eggs), Swallow (46), Whinchat, Fieldfare (last spring record), Carrion Crow (62), Brambling (last spring record)

28 **Mediterranean Gull, Grasshopper Warbler, Swallow (41), Tree Pipit (first record), Redstart, Stonechat (last spring record), Carrion Crow (25)**

30 Guillemot (first eggs), Puffin (first eggs), Collared Dove, Swift (first record)

May

1 **Mandarin** (2), **Marsh Harrier, Mediterranean Gull (2),** Little Tern (31), Rock Pipit (first eggs), Yellow Wagtail, Robin (last spring record), Redstart, Whinchat (last spring record), Wheatear (29), Grasshopper Warbler (2), Sedge Warbler (first record), Blackcap (10), Chiffchaff (7), Willow Warbler (10), Pied Flycatcher (only spring record)

2 Mute Swan (2), **Mediterranean Gull (2),** Collared Dove, Yellow Wagtail (2), Redstart, Wheatear (71), Lesser Whitethroat (3), Blackcap (10), Willow Warbler (19), Carrion Crow (26)

3 Greenshank, Great Skua (first record), **Mediterranean Gull (2),** Roseate Tern (first record)

4 Gannet (1,066), Little Tern (73), Little Tern (78)

7 Black-tailed Godwit (first record), Sandwich Tern (first eggs), Arctic Tern (3,000), Short-eared Owl, Wren (last spring record)

8 Little Tern (89), Razorbill (first eggs)

9 Little Tern (71)

11 Oystercatcher (first eggs)

12 Black-tailed Godwit

13 Common Sandpiper (first record), Redstart (3), Whitethroat (first record), Blackcap (last spring record), Jackdaw (5), Reed Bunting (last spring record)

14 Mute Swan, Pomarine Skua, Great Skua (8), Redstart

15 Barnacle Goose (first record), **Garganey**, Redstart (last spring record)

16 Barnacle Goose (30), Arctic Skua (13), **Black Guillemot**

17 Arctic Skua (4)

19 Fulmar (first eggs), Eider (first young), Common Tern (first eggs), Arctic Tern (first eggs), Reed Warbler (first record), Garden Warbler (2, first record)

21 Little Tern (37),

22 Black-headed Gull (first young), Garden Warbler

26 Reed Warbler

27 Black-tailed Godwit, Reed Warbler

28 Shag (first young), Collared Dove, Blackbird (last spring record), Lesser Whitethroat (last spring record), Whitethroat (4), Spotted Flycatcher (first record)

29 Willow Warbler (last spring record)

30 Canada Goose (5), Wheatear (last spring record), Chiffchaff (last spring record)

31 Kittiwake (first eggs)

June

3 Canada Goose (7), Little Tern (21), Puffin (first young)

5 Red-throated Diver (last spring record), **Black Guillemot**

6 Oystercatcher (first young), Sandwich Tern (first young), Guillemot (first young)

8 Canada Goose (6), Razorbill (first young)

10 Goosander

11 **Mediterranean Gull**

12 Canada Goose (16), Sedge Warbler (last spring record)

17 Black-tailed Godwit (3), **Black Guillemot**

18 Little Tern (5)

19 **Mediterranean Gull,** Collared Dove

20 Sand Martin (last record)

21 Little Tern (1, last spring record)

23 Sanderling (first record), Swift (season's peak of 64), Song Thrush, Willow Warbler

24 Manx Shearwater (63), Common Scoter (282), Velvet Scoter (first record),

25 **Mediterranean Gull**

26 Kittiwake (first young)

28 **Mediterranean Gull,** Whitethroat

July

1 Common Scoter (125), **Black Guillemot**

2 Song Thrush

3 **Honey Buzzard**

6 Common Gull (first juvenile passing through)

7 Manx Shearwater (247), **Storm Petrel** (first record), Tufted Duck, **Black Tern**, Spotted Flycatcher

8 Tufted Duck, Song Thrush

12 Roseate Tern (first egg)

13 Sanderling, Black-tailed Godwit (5)

19 Little Tern (3), Black Redstart

20 Sanderling, Little Tern (15)

21 Sooty Shearwater (first record), Little Tern (25)

22 Manx Shearwater (126), **Storm Petrel,** Pochard (first record), Velvet Scoter (3), Great Skua (17)

23 **'Blue' Fulmar,** Manx Shearwater (136), **Storm Petrel** (12), Velvet Scoter (3),

24 Pomarine Skua

29 Snipe (first autumn record), Garden Warbler (first autumn record)

30 Dunlin (first juvenile passing through), Ruff (first record), **Wood Sandpiper**, Whinchat (first autumn record), Sedge Warbler (first autumn record), Greenfinch

31 Little Tern (66)

August

1 Roseate Tern (first young), Little Tern (30), Puffin (start of mass departure), Willow Warbler (first autumn record)

4 **Coot**

7 Greenshank (first autumn record)

8 Red-necked Grebe (first autumn record), **Cory's Shearwater, Great Shearwater,** Manx Shearwater (104), **Storm Petrel** (17), Arctic Skua (14), Roseate Tern (10)

9 Red-throated Diver (first autumn record), **'Blue' Fulmar,** Sooty Shearwater (44), Manx Shearwater (179), **Storm Petrel** (10), Tufted Duck (2), Pomarine Skua (2), Arctic Skua (17)

10 Roseate Tern (12), Wheatear (first autumn record)

11 Black-tailed Godwit, Roseate Tern (10)

13 Roseate Tern (15)**, Stock Dove**

14 Roseate Tern (24)

16 Roseate Tern (21), **Booted Warbler**

17 Great Crested Grebe, Roseate Tern (31), **Black Tern,** Swift (last record), **Booted Warbler**

18 Shoveler (first autumn record), Roseate Tern (24), Robin (first autumn record), Willow Warbler (10), Pied Flycatcher (first autumn record)

19 Roseate Tern (30)

20 Sooty Shearwater (41), **Barred Warbler**

21 Oystercatcher (314), **Barred Warbler**

22 Ringed Plover (54), Sanderling

23 Black-tailed Godwit (14, last record)

24 Shelduck (first autumn record), **Black Tern**

27 Pied Wagtail (season's peak of 12)

29 Sanderling , Spotted Flycatcher

30 Sanderling, Yellow Wagtail (last record), Whinchat (10)

31 Sanderling

September

1 Pintail (first autumn record), Tree Pipit (season's peak of 3)

2 Grey Heron (5), Redstart (first autumn record), Wheatear (24), **Barred Warbler**

3 Pale-bellied Brent Goose (20, first autumn record)

7 Swallow (125)

9 **Wryneck** (2), Meadow Pipit (105), Wheatear (45), Reed Warbler (2), **Barred Warbler** (2), Blackcap (first autumn record)

10 **Great Shearwater,** Sooty Shearwater (102), Manx Shearwater (163), **Storm Petrel,** Goldeneye (first autumn record), Water Rail, Little Stint, Bar-tailed Godwit (11), Common Sandpiper (7), Arctic Skua (34), Long-tailed Skua, Great Skua (51), **Sabine's Gull** (2), **Black Tern, Wryneck** (2), **Citrine Wagtail, 'White' Wagtail,** Redstart (7), Whinchat (12), Wheatear (33), Sedge Warbler (4), Reed Warbler (6), **Subalpine Warbler, Barred Warbler** (3), Lesser Whitethroat (4), Whitethroat (3), Garden Warbler (5), Blackcap (5), **Greenish Warbler,** Willow Warbler (29), Spotted Flycatcher, **Red-breasted Flycatcher,** Pied Flycatcher (5), **Red-backed Shrike, Common Rosefinch, Little Bunting**

11 Sooty Shearwater (65), Teal (102), Sanderling (7), Little Stint, Ruff (last record), Sedge Warbler (4, last record), **Barred Warbler** (2), **Greenish Warbler,** Willow Warbler (15), **Red-backed Shrike**, Siskin (first autumn record),

12 Little Stint, Whinchat (last record), **Barred Warbler, Red-backed Shrike**

13 Mistle Thrush, Spotted Flycatcher, **Red-backed Shrike**

14 **Red-backed Shrike**

15 Sooty Shearwater (66), **Balearic Shearwater,** Gannet (1,153), Water Rail, **Red-backed Shrike**

16 **'Blue' Fulmar,** Sooty Shearwater (2,005), Manx Shearwater (766), **Balearic Shearwater, Storm Petrel** (7), **Leach's Petrel**, Scaup (2, first record), **Grey Phalarope**, Arctic Skua (16), Long-tailed Skua (3), Great Skua (15), **Sabine's Gull, Red-backed Shrike**

20 Pochard

21 Grey Heron (4), Mute Swan, **Mediterranean Gull**

24 **Storm Petrel** (last record), Pink-footed Goose (first autumn record)

25 Grey Heron (5), Pomarine Skua (4), **Sabine's Gull,** Razorbill (3,207), Brambling (first autumn record), Reed Bunting (first autumn record)

27 **Hen Harrier,** Pomarine Skua, Razorbill (5,132)

29 Pink-footed Goose (502), Velvet Scoter (first autumn record), Sanderling (9), **Sabine's Gull, Black Guillemot** (first autumn record)

30 Pintail (5), Scaup (2), **Mediterranean Gull,** House Martin (last record), Rook (4)

October

2 Black-throated Diver, **Balearic Shearwater,** Common Sandpiper (last record), Lapland Bunting

3 Sanderling, Lapland Bunting

4 Common Tern (last record), Arctic Tern (last record), Little tern (last record), **Black Tern** (last record), Dunnock (first autumn record)

5 Great Crested Grebe, Barnacle Goose (first autumn record), Shelduck (17), Wigeon (806), Pochard, **Corncrake**, Snipe (6), **Grey Phalarope**, **Richard's Pipit**, **Red-throated Pipit,** Blackbird (first autumn record), **Yellow-browed Warbler** (2), Chiffchaff (9), Spotted Flycatcher (last record), Lapland Bunting (2)

6 Water Rail, Jack Snipe (first autumn record), Swallow (last record), **Richard's Pipit** (2), **Red-throated Pipit,** Fieldfare (first autumn record)

7 **Red-throated Pipit,** Black Redstart (first autumn record), **Yellow-browed Warbler, Common Rosefinch**

8 Snipe (6), **Red-throated Pipit, Common Rosefinch**

9 **Red-throated Pipit,** Stonechat (first autumn record)

10 **Red-throated Pipit**

11 **Red-throated Pipit**

12 Scaup (4), Water Rail, Pomarine Skua (4), Long-tailed Skua, Great Skua (28), Skylark (15), **Red-throated Pipit,** Redwing (370), Grasshopper Warbler, Brambling (124)

13 Slavonian Grebe (first record), Scaup (2), Mistle Thrush (3), **Yellow-browed Warbler**, Brambling (71), Reed Bunting (13)

14 Water Rail, Long-eared Owl, Short-eared Owl (first autumn record), Ring Ouzel (first autumn record), Brambling (27), Twite (first record)

15 Snipe (6), Woodcock (9, first autumn record), **Spotted Redshank**, Blackbird (*ca* 1,000), Redwing (*ca* 5,000), Blackcap (20), **Pallas's Warbler, Yellow-browed Warbler**, Goldcrest (180), Brambling (251), Lesser Redpoll (10), **Common Redpoll** (2), Yellowhammer (first autumn record)

16 **Spotted Redshank,** Blackbird (641), Redwing (3,979), Goldcrest (47), Brambling (410), **Common Redpoll** (2)

17 Woodcock (13), **Spotted Redshank,** Short-eared Owl (season's peak of 3), Tree Pipit (last record), Robin (51), Blackbird (260), Redwing (2,500) **Yellow-browed Warbler**, Goldcrest (53), Lesser Redpoll (19), **Common Redpoll,** Lapland Bunting

18 Shelduck (12), **Spotted Redshank,** Pomarine Skua (2), Razorbill (692), Long-eared Owl, Redwing (294), **Pallas's Warbler,** Goldcrest (55), Lapland Bunting

19 **Spotted Redshank**, Wood Pigeon (last record), Long-eared Owl, Redstart (last record), Ring Ouzel (last record), Redwing (255), Reed Warbler (2, last record), Lesser Whitethroat (last record), Goldcrest (55), Lapland Bunting

20 **Spotted Redshank**, Redwing (487), Grasshopper Warbler, **Rose-coloured Starling**

21 **Spotted Redshank,** Wheatear (last record), Snow Bunting (first autumn record)

22 Great Northern Diver, Slavonian Grebe, Long-tailed Duck (first autumn record), Lapwing (202), **Spotted Redshank,** Pomarine Skua (2), **Common Redpoll**

23 Great Northern Diver, **Spotted Redshank**, Sandwich Tern (last record), Little Auk (3, first autumn record), Fieldfare (80), Redwing (310), **Common Redpoll,** Great Northern Diver, **Spotted Redshank,** Little Gull (21), Long-eared Owl, Skylark (24), Black Redstart (3), Blackbird (200), Fieldfare (50), Redwing (320), Grasshopper Warbler (last record), Garden Warbler (last record), Goldcrest (75), **Common Redpoll (33),** Yellowhammer (5)

25 Great Northern Diver, **Spotted Redshank,** Goldcrest (50), Greenfinch (82+), Twite (5), Lesser Redpoll (last record), **Little Bunting**

26 Pink-footed Goose (804), **Spotted Redshank,** Black Redstart (last record), **Common Redpoll, Little Bunting**

27 Woodcock (7), **Spotted Redshank,** Fieldfare (60), **Common Redpoll, Crossbill, Little Bunting**

28 **Spotted Redshank, Common Redpoll, Little Bunting**

29 **Spotted Redshank,** Redwing (571), Twite (5), **Common Redpoll,** Yellowhammer (last record), Reed Bunting (last record)

30 Great Northern Diver, **Spotted Redshank,** Stonechat (last record), **Common Redpoll**

31 Woodcock (9), **Spotted Redshank,** Blackbird (226), **Common Redpoll**

November

1 **Spotted Redshank,** Little Gull (26), **Common Redpoll**

2 **Spotted Redshank,** Mistle Thrush, Whitethroat (eastern race)

3 **Waxwing**

4 Little Gull (81)

5 Pink-footed Goose (697), Meadow Pipit (last record), Goldcrest (last record), Siskin (5)

8 Greenshank (last autumn record)

9 Whooper Swan (9), Pink-footed Goose (564)

13 Gadwall (3), Shoveler (2)

14 Great Northern Diver (4), Wigeon (202), Shoveler (10), Pochard, Common Scoter (274)

15 Barnacle Goose (last record), Common Scoter (146), **Grey Phalarope**, Blackcap (last record)

16 Great Northern Diver (6), Manx Shearwater (last record), Common Scoter (45), Goldeneye (28), **Grey Phalarope**, Little Auk (10), Short-eared Owl (last record)

17 Red-throated Diver (27), Wigeon (622), Teal (96), Scaup (58), Long-tailed Duck (107), Common Scoter (116), Velvet Scoter (23), Goldeneye (242), Red-breasted Merganser (5), Dunlin (191), Bar-tailed Godwit (26), **Grey Phalarope**, Little Auk (12), Grey Wagtail (last record)

18 Great Crested Grebe, Shoveler (2), Tufted Duck (26), Goldeneye (30), Whimbrel (last record), **Common Redpoll**

19 **Grey Phalarope**

20 Mallard (152)

21 Jack Snipe (last record)

22 Woodcock (last record)

22 Pintail (last record), Willow Warbler (last record)

23 Whooper Swan (11), Greylag Goose (last record)

25 Gadwall (2), Little Gull (last record), **Black Guillemot** (last record)

26 Sooty Shearwater (last record), Kestrel, **Common Redpoll**

27 Pale-bellied Brent Goose (last record), **Grey Phalarope**

28 Arctic Skua (last record), Slavonian Grebe

December

3 Pomarine Skua, Linnet (51), Twite (last record)

4 Scaup, Chiffchaff (2, still present), Chaffinch (last record). Wardens departed.

Details of all the birds are given in the following list: this follows the order and scientific nomenclature of Professor Dr K H Voous' list of recent Holarctic species (1977), except for the Shearwaters and Gannet which adopt the new changes recommended by *Ibis* **133**, p438. Where appropriate, the figures for 2004 breeding birds are included for comparison, in brackets. The status of each species/sub species is classified using the following categories based upon Harvey and Steel (2004):

abundant	>1,000 occurrences per annum
common	101-1,000 occurrences per annum
well represented	11-100 occurrences per annum
uncommon	no more then 10 occurrences per annum but more than 10 in total
rare	6-10 occurrences
extremely rare	no more than 5 occurrences in total

SYSTEMATIC LIST

Red-throated Diver *Gavia stellata*

A common winter and passage visitor.

An excellent season with reports on seventy-nine dates from 25 March-2 December including a record count on passage through the islands. The early spring period produced typical sightings of small numbers with the majority through Inner Sound, with peaks of eight north and four south on 4 April. However this was all eclipsed by a day count of ninety-nine north on 27 April involving mostly summer-plumaged adults. Seventy moved through Staple Sound with another twenty-nine through Inner Sound, as peak movement occurred between 09:00 and 11:00. This easily beats the previous day record of forty-nine in 1991. Protracted passage continued into May with reports of 1-2 north on eight dates while a very late individual was noted through Staple Sound on 5 June. The first autumn bird was seen on 9 August through Staple Sound although reports were not regular until after 7 September.

Thereafter 1-10 were reported either on passage or on the sea around the islands with fourteen on 15 and thirteen on 25 September. The peak autumn count involved twenty-seven north and nine south on 17 November.

Black-throated Diver *G. arctica*

An uncommon passage and winter visitor.

As scarce as usual with only four records from around the islands, all involving birds on passage. The spring produced individuals through Staple Sound on 25 March (south), 7 April (north) and 9 April (north), representing the first spring records in three years. The only autumn record concerned two together north over Brownsman on 2 October.

Great Northern Diver ***G. immer***

A well represented winter and passage visitor.

This large powerful diver put in another modest year with reports on four spring and twelve autumn dates. Spring passage was represented by singles north through Staple Sound on 29 March and 16 and 19 April with a lone sighting from Inner Sound on 13 April. Autumn commenced with the arrival of a lingering bird in Inner Sound from 22-25 October and another south through Staple Sound on 30 October. Passage picked up during November, with 1-2 on six dates between 15 and 27 November, peaking with four north on 14 and six north on 16 November.

Great Crested Grebe *Podiceps cristatus*

An uncommon visitor.

A season's total of four records matched the previous year's total with Inner Sound once again providing the majority of the records. The first involved a summer plumage adult on the sea off the north end of Brownsman on 30 March, while a juvenile was seen in the Kettle off Inner Farne on 17 August. Passage birds were then seen moving north through Inner Sound on 5 October and 18 November.

Red-necked Grebe *P. grisegena*

A well represented winter and passage visitor.

Overall an excellent year with the first spring records in three years followed by the usual wintering birds appearing in autumn. Mid-winter records included singles by Inner Farne lighthouse cliff on 16-17 February, near Gun Rock on 17 February and two in the Kettle on 9 March. Due to their early return to the islands, the wardens noted individuals feeding around the inner group on 18 and 22 March. Then followed the discovery of two stunning adults (both in almost full-summer plumage) which frequented the Kettle off Inner Farne daily between 9 and 21 April and appeared to be a courting pair. A record of one north through Staple Sound on 8 August was earlier than expected with the last August record noted in 2000. Thereafter 1-2 were noted on ten dates between 4 October and 2 December and it appeared that a small wintering population was established around the islands once again, favouring the Kettle area off Inner Farne.

Slavonian Grebe *P. auritis*

An uncommon winter and passage visitor.

Despite good numbers wintering in north Northumberland the species is still regarded as very scarce around the islands, possibly due to the lack of observers present during the winter months. A total of three records around the islands in autumn was the greatest number in

one year since 1999. The first bird moved north past the islands through Inner Sound on 13 October while another was seen landing close to shore in the same area on 22 October. The final record was an individual fishing just east of the Bridges on the inner group on 29 November.

Fulmar *Fulmarus glacialis*

A common breeder, abundant on passage.

Following the collapse of the breeding population last year which witnessed a 33% decline in breeding pairs (linked with winter mortality), this year brought encouragement as the population appeared to stabilise following the alarming slump. Pairs were evident on breeding ledges when the wardens arrived in mid-March and mating was noted from mid-April, when at that stage they were the only seabirds on the islands. The 'honeymoon' period then followed between 9 and 14 May and the first eggs were discovered soon after on two islands on 19 May. A total of 176 (165) pairs nested as follows: Inner Farne 21 (20), West Wideopens 12 (8), East Wideopens 14 (15), Knoxes Reef 21 (21), Staple Island 20 (14), Brownsman 47 (52), North Wamses 13 (18), South Wamses 19 (14), Big Harcar 8 (3) and Longstone End 1 (0). The first young hatched in early July with the first fledgling taking to the wing in the week beginning 1 September. A total of seventy-three young fledged from 133 monitored nests, the best productivity in three years. After the breeding season the species became scarce with occasional sightings of lone birds in late October, although up to forty returned to the area in early December.

Heavy northerly passage was logged during the season, with 129 on 16 April and 125 north on 8 August (both counts in a thirty minute period) and an impressive 1,000 north in eight hours on 9 August. The interesting 'intermediate' bird was present for its third year in the spring on Inner Farne, although it was not known to breed. The year produced four records of 'blue phase' birds moving north past the islands including one through Staple Sound on 16 April, an unusual mid-summer record past the south end of Brownsman on 23 July, and further singles past the south end of the islands on 9 August and 16 September.

Cory's Shearwater *Calonectris diomedea*

A rare visitor.

It was evident that small numbers were present along the north-east coast and on 8 August wardens were surprised to discover the second large shearwater on a remarkable day. The bird was seen flying north past the south end of the islands, and was viewed from both Inner Farne and Brownsman at 20:40 before being lost to sight. This represents the eleventh record following the first in 1976, and the first since an unprecedented three in 2002.

Great Shearwater *Puffinus gravis*

A rare visitor.

Large numbers were seen in the south-west approaches of Britain and Ireland in late summer, resulting in small numbers making their way into the North Sea. A number of north-east headlands reported birds during this period and the Farnes produced two records of this majestic oceanic species. A bird was noted flying north past Newbiggin (Northumberland) at 13:20 on 8 August and was picked up passing the Scarcars on the inner group at 15:24. A quick interchange of phone calls between the islands saw the outer group wardens observe the bird (although an incredible eleven minutes later) saunter past Brownsman. Amazingly the season produced a second record, with another following the same route north as the previous bird on the morning of 10 September. These represent the seventh and eighth records

following singles in 1954, 1960, 1968, 1976, 1991 and 2002.

Sooty Shearwater *P. griseus*

A well represented to common passage visitor.

Recent years have seen some amazing numbers recorded from the Farne Islands including record numbers in 2001 and 2002. Following two leaner years the species hit back this year, with a day count being topped by only one other site in Britain in recorded birding history. The season started with a flourish with typical first arrivals noted in mid-July with a single north on 21 July and 1-2 lingering in feeding frenzies near Crumstone on 22-23 July. There was a fairly constant presence around the islands through August and 1-12 were noted on most dates, with forty-four north on 9 and forty-one north on 20 August being the only exceptions. Seawatching continued to produce records in early September with productive counts of 102 north on 10, sixty-five north on 11 and sixty-six north on 15 September. However all previous records paled into insignificance in just one twelve-and-a half-hour seawatch on 16 September which smashed all previous records, with a staggering 2,005 north past the islands. Northerly winds that day moved big numbers along the east coast, with several coastal headlands reporting big counts, but only Flamborough (East Yorkshire) topping the Farnes count. This represents a new Farnes and Northumberland record and it also represents the third highest-ever count in Britain, with only two counts from Flamborough eclipsing the Farnes total. The top three all time British records now stand at 2,721 at Flamborough on 16 September 2005, 2,647 at Flamborough on 22 September 2002 and 2,005 past the Farne Islands on 16 September 2005. A staggering day by any standards. Thereafter 1-11 were recorded on five October dates with late passage including seven north on 13 November and 10-2 on 16, 17 and 26 November.

Manx Shearwater *P. puffinus*

A common passage visitor.

An excellent season with several good counts and a new one-day record broken. Following the first spring records of four north on 16 and five north on 30 April, regular reports were received with 1-9 noted on fourteen May dates. Mid-summer generally produces some very good day counts and 1-49 were evident almost daily throughout June and July. During this period noteworthy passage included sixty-three north on 24 June, 247 north on 7 July, 126 north on 22 July and 136 north on 23 July. Good numbers continued to be counted during August with peaks of 104 north on 8 and 179 north on 9 August. The strong showing of the season continued well into September with another three-figure count of 163 north on 10 September. The epic day of 16 September broke a second shearwater record with 766 north, beating the previous record set in June 2003. As usual, numbers dwindled thereafter with 1-6 recorded on twelve October dates and late stragglers including two north on 14 and a single north on 16 November.

Balearic Shearwater *P. mauretanicus*

An uncommon passage visitor.

Recorded for the thirteenth consecutive year with a typical average annual count of three records. The first bird showed well as it headed north through Staple Sound on the evening of 15 September, quickly followed by another north through the same area the following afternoon. The third and final record concerned one north beyond Crumstone on 2 October.

Storm Petrel *Hydrobates pelagicus*

An uncommon passage visitor.

Once described as a very infrequent visitor to the Farnes, each year appears to bring more and more records with another impressive haul of fifty on eight dates (a total of a hundred now recorded in the past two seasons alone). Following the first singles north past Brownsman on 7 and 22 July, twelve different individuals were logged on 23 July (nine past Brownsman and three through the inner group). Further impressive day counts included seventeen on 8 August (thirteen past Brownsman and four past the inner group), followed by ten on 9 August (three past Brownsman and seven past the inner group). A single was then recorded north past Brownsman on 10 September, with a total of seven through the inner group on 16 September. The final report was of one feeding between Crumstone and Staple Island in calm conditions on the morning of 24 September.

Leach's Petrel *Oceanodroma leucorhoa*

An uncommon visitor.

Small numbers arrived in the North Sea in mid-September following strong northerly winds and the Farnes produced a lone sighting during the impressive seawatching day of 16 September. The bird was discovered in huge wave troughs near the Scarcars on the inner group but was soon lost to view as it headed north. It represents the seventeenth record in eleven years and was last recorded in November 2002.

Gannet *Morus bassanus*

An abundant passage and non-breeding summer visitor.

Seen almost daily throughout the season with birds recorded on passage to nearby breeding colonies in Lothian and East Yorkshire. During the year, one-hour timed counts indicate the strength of passage with a peak of 620 north on 16 April, 1,066 north on 4 May and 1,153 north on 15 September. During late summer large feeding frenzies were again evident and plunge diving often betrayed the presence of nearby feeding cetaceans. Numbers dwindled during the autumn although occasional adults were sighted into early December.

Cormorant *Phalacrocorax carbo*

A common breeding resident.

It was an uneventful season for the two major colonies and nesting activity was well under way by late March. The first eggs were discovered on 21 April and breeding numbers were fairly static as a total of 185 (187) pairs nested as follows: East Wideopens 108 (112), North Wamses 77 (72) and Big Harcar 0 (3). The three pairs which nested successfully on Big Harcar last year failed to reappear and probably moved back into the nearby larger colony. Although not monitored, the season appeared to be more successful than last as plenty of fledglings were recorded around the colonies from early July, and some nests were still occupied in early August. Interestingly an adult in the North Wamses colony was observed opportunistically gulping down a Guillemot chick which was being reared near the nest. Thereafter adults and fledglings dispersed from the breeding grounds, with small numbers wintering around the islands.

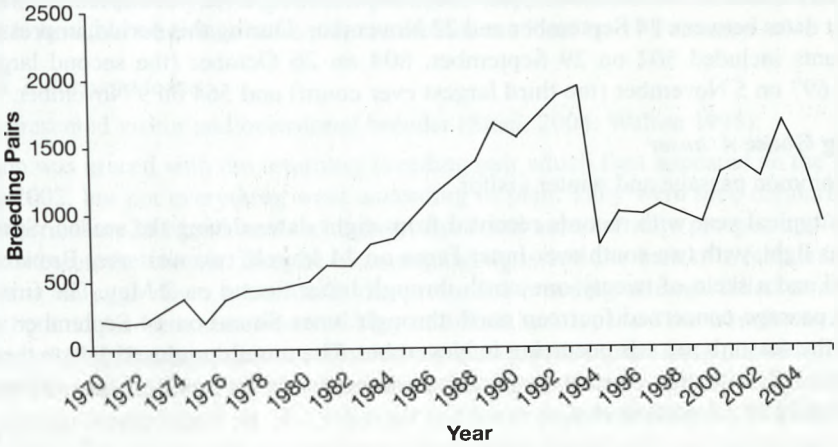
Shag *P. aristotelis*

An abundant breeding resident.

It was a catastrophic season as (like Fulmar over the previous winter), large 'wrecks' were

reported from several coastal localities along the British east coast during the late winter period. Although too early to speculate, the species appeared to have suffered from a lack of food in the North Sea during the latter half of the winter. The effect on the Farnes breeding stock was soon apparent and the population counts revealed a shocking 34% decline from 2004 figures. This drop mirrors big reductions elsewhere in the North Sea as the Isle of May reported breeding figures of between 200-400 pairs compared to their breeding stock of 700 pairs the previous season. Noticeably, the remaining breeding birds were slow to settle and nest building activity did not commence until mid-April when the species is normally expected to have the first eggs. The first eggs were not discovered until 24 April on the inner group compared with 27 April on the outer group. A total of 937 (1,410) pairs nested as follows: Megstone 24 (45), Inner Farne 206 (354), West Wideopens 51 (69), East Wideopens 107 (96), Skeney Scar 47 (76), Staple Island 192 (347), Brownsman 99 (140), North Wamses 25 (45), South Wamses 57 (51), Roddam and Green 8 (19), Big Harcar 93 (120) and Longstone End 28 (48). The first young hatched on 28 May followed by the first fledgling in early July. Monitoring indicated a reasonable season with 265 monitored nests fledging 206 young, the best return on the islands since 2001. As usual desertions and gull predation were the main cause of loss of eggs or young. After the breeding season good numbers remained around the islands, including healthy populations of fledged young which is a positive sign for future generations.

Figure 1 Breeding population of Shags on the Farne Islands, 1970-2005.



Grey Heron *Ardea cinerea*

A well represented visitor. Bred in 1894 (Paynter, 1894).

Numerous as ever, with records spanning all ten months from March-December with reports from forty-nine dates on the inner group compared to thirty-three on the outer group. As usual, undisturbed Knoxes Reef and the Longstone complex were favourite areas with regular counts of 1-3, especially in the autumn. September brought the peak counts of the year with four on 21 and five on 2 and 25 September.

Mute Swan *Cygnus olor*

An uncommon visitor.

Generally a quiet year with only three records referring to local movement through Inner Sound (96% of all records in the past ten years have come from Inner Sound). Reports

included two on the sea drifting north on 2 May followed by an adult north on 14 May and a juvenile north on 21 September.

Whooper Swan *C. cygnus*

An uncommon winter and passage visitor.

This elegant winter and passage visitor was recorded on six dates and involved fifty-eight birds, representing the best ever showing from the islands. Spring saw lone adults north through Inner Sound on 23 March and 7 April with two large groups noted during this early spring period. A herd of eleven through Staple Sound landed on the sea to the north of the islands on 4 April and an impressive twenty-five flew north high through Inner Sound on 13 April, equalling the largest ever flock reported from the Farnes. Return autumn passage was logged in November with nine south-west over Inner Farne on 9 and eleven south along the east shore of Brownsman on 23 November.

Pink-footed Goose *Anser brachyrhynchus*

A well represented passage and winter visitor.

Although recorded annually on the Farnes since the early 1970s, without doubt there has been a huge upsurge of records in recent years, with the three highest ever counts all occurring in the past four years. This year was no exception with good numbers reported including two spring records of eighty-four north on 18 and sixteen north on 21 March. Autumn produced the bulk of records with typical arrivals occurring from late September with 1-101 on eight dates between 24 September and 22 November. During this period, impressive peak day counts included 502 on 29 September, 804 on 26 October (the second largest ever count), 697 on 5 November (the third largest ever count) and 564 on 9 November.

Greylag Goose *A. anser*

An uncommon passage and winter visitor.

It was a typical year with records received from eight dates during the season. Spring passage was light, with two south over Inner Farne on 24 March, two west over Brownsman on 12 April and a skein of twenty-one north through Inner Sound on 2 May. The first hint of autumn passage concerned fourteen north through Inner Sound on 14 September with the bulk of the season's records occurring in November. The month produced 1-9 on three dates between 1-22, with sixteen seen in thick fog on the sea to the south of Inner Farne on 23 November before departing east.

Canada Goose *Branta canadensis*

An uncommon passage visitor.

The majority of Farnes reports involve small numbers of British birds which undertake northerly migration to moulting grounds in the Beauly Firth in northern Scotland in late May/early June. This year proved no exception, with the first record of five by Knoxes Reef on 30 May which departed north soon afterwards. Three further records occurred in early June, the majority through Inner Sound, with seven north on 3, six north-west on 8 and the season's peak of sixteen north on 12 June.

Barnacle Goose *B. leucopsis*

A well represented passage and winter visitor.

As with the previous season, good numbers were reported through the islands on spring pas-

sage in mid-May, although a disappointing autumn followed. On 15 May a single was watched as it flew north through Staple Sound before landing on Knoxes Reef. The following day saw twenty-eight alight onto the West Wideopens and remain for most of the day before heading off over the outer group and away north. Later that evening another two were seen going to roost on the same island and were the last of the spring passage reports. A disappointing autumn brought very small numbers with skeins of 1-9 noted on six dates between 5 October and 15 November, including a 'Darvik' ringed bird to Inner Farne on 22 October. The autumn peak was a skein of twelve north over the islands on 18 November.

Brent Goose 'Light-bellied' *B. bernicla hrota*

A well represented passage and winter visitor.

Generally quiet through the islands although passage was logged in spring and autumn. Twenty-two were noted on Knoxes Reef on 17 February with five present on 17 March. The final spring sighting was of a single south through Staple Sound on 7 April and these represent the first spring reports since 2001. Autumn records usually referred to small skeins passing through Inner Sound heading north to the nearby wintering grounds on Lindisfarne. Following the first sighting of twenty north on 3 September, 1-20 were noted on eleven dates until the last was recorded on 27 November. Exceptions to this included the season's peak of thirty-six north through Inner Sound on 18 October and a juvenile which lingered around Brownsman from 20-26 September.

For the third consecutive year the season produced another record of 'dark-bellied' **Brent Goose** *B. b. bernicla* when two were present on Knoxes Reef on 17 February.

Shelduck *Tadorna tadorna*

A well represented visitor and occasional breeder (Steel, 2004: Walton 1995).

The season was graced with the returning breeding pair which first appeared on the islands in spring 2002, but not everything went according to plan. They were seen regularly from their first arrival on 26 March and throughout April and as usual were prospecting for suitable nest sites on the islands. Despite encouraging signs and the lack of a female in early May (sitting on eggs down a burrow?) the presumed breeding attempt failed at an early stage, as both adults were seen from 14 May and both had departed the islands completely by the end of May. Passage birds were noted on spring and autumn passage, with five east over Inner Farne on 23 March and 2-3 north on four April dates. Autumn passage was light with singles on Staple Island on 24-25 August and north past the islands on 19 October and 10 November. The year's peak counts came from Inner Sound with seventeen north on 5 October and twelve north on 18 November.

Mandarin *Aix galericulata*

An extremely rare visitor.

Two drakes appeared on the pond on Inner Farne on the afternoon of 2 May although they departed north-west soon afterwards. The record falls in line with a trend of sightings in recent years of birds on passage through the north-east of England in spring, possibly pioneers in the range expansion of the British feral population. This represents only the third Farnes record following singles in May 1988 and November 1993.

Wigeon *Anas penelope*

A common passage and winter visitor.

Well reported on passage with small numbers on spring passage and the bulk of records occurring in autumn. Spring produced 1-9 on fifteen dates between 17 March and 24 April, peaking with eleven south through Staple Sound on 17 March. The majority of the inner group records concerned small numbers around Knoxes Reef, a favourite stop-off point for migrating birds. Autumn passage commenced from 9 August with counts of from 1-94 on forty-nine dates until last seen on 3 December. Small numbers were seen lingering on the islands, favouring Knoxes Reef or Brownsman, but northerly passage produced the head-line-making numbers. Peaks included an impressive 806 north on 5 October, the majority through Inner Sound, representing the highest one day count since 1995. Further hefty day totals included 202 north on 14 November and 622 north on 17 November.

Gadwall *A. strepera*

An uncommon visitor.

An exceptional year for this very scarce Farnes bird, with the first being a female south through the Kettle on 24 March. The inner group also produced two autumn records with three (one male, two females) observed circling Knoxes Reef before heading west on 13 November and a pair seen landing on Knoxes Reef on 25 November. The species has only been recorded in five of the past ten years and this was the best showing since 1999.

Teal *A. crecca*

A common passage and winter visitor.

Spring produced a light scattering of 1-8 on seventeen dates between 17 March and 26 April, favouring areas of open water including the ponds on Brownsman and Inner Farne. Exceptions to this included fourteen south through Staple Sound on 4 April and the last spring bird, a male, on Brownsman pond on 26 April. The first autumn returning birds appeared from 9 August with regular reports until the wardens departed in early December. Passage was light with records from twenty-one dates with modest peak counts of 102 north on 11 September and ninety-six north on 17 November. As usual numbers built up on Knoxes Reef for the winter, peaking with 150 in mid-November with up to thirty on the outer group during this period.

Mallard *A. platyrhynchos*

A common winter and passage visitor and well represented breeder.

Present around the islands all year with almost daily records followed by an autumn build up on Knoxes Reef. Small numbers were scattered around several islands when the wardens arrived in mid-March with peaks of twelve on 17-19 March. Nesting attempts were made on several islands with the first eggs discovered on the early date of 29 March on West Wideopens. A total of eleven pairs (12) nested as follows: Inner Farne 3 (3), West Wideopens 3 (2), East Wideopens 1 (1), Knoxes Reef 0 (1), Staple Island 0 (1), Brownsman 2 (2), North Wamses 1 (1), South Wamses 1 (0) and Big Harcar 0 (1). As usual nests and young suffered from predation by large gulls although a few successful broods were reported from the inner group, where rank vegetation conceals considerably well. Interestingly a female Eider removed all but one egg from a nest in the vegetable garden on Brownsman, then continued to lay and incubate her own clutch, along with the single 'alien' egg. All eggs hatched together and the mixed family was last seen on the nearby pond and heading for the

open sea. After the breeding season small numbers were seen, especially on Knoxes Reef where sixteen in early September increased to thirty-two by 24 and forty on 28 September. Further increases were noted with seventy present throughout October followed by a season's peak of 152 on 20 November.

Pintail *A. acuta*

An uncommon passage and winter visitor.

It was a good season for passage birds through the islands with records on fourteen dates spanning four months. Spring passage was light with a pair north through Brownsman haven on 17 March followed by 1-2 north on 6, 13 and 24 April. All the autumn records were confined to the inner group with 1-3 north on six dates between 1-29 September with a female lingering on West Wideopens on the latter date. Further reports included the season's peak of five seen together moving north through the Kettle on 30 September and, following two north on 16 and 18 November, a male was on Knoxes Reef on 22 November.

Garganey *A. querquedula*

An uncommon passage visitor.

A stunning drake was discovered in the Kettle off Inner Farne on 15 May, lingering for several hours until early evening and was an almost exact repeat of the previous season's sighting. This represents the sixteenth Farnes record involving twenty birds.

Shoveler *A. clypeata*

A well represented passage and winter visitor.

It was a reasonable year with light spring passage including a male on the sea accompanying Mallards off the north end of Inner Farne on 21 March. A pair then lingered around the inner group, favouring the pond on Inner Farne, between 30 March and 4 April and the male may have been the same individual seen on Brownsman pond at dawn on 3 April. Early autumn was quiet with only one record of an eclipse drake north over Knoxes Reef on 18 August. As wildfowl movement peaked in November, three records related to two west over Inner Farne on 13, ten together (including one drake) north through Staple Sound on 14 and two north on 18 November.

Pochard *Aythya ferina*

An uncommon passage visitor.

Small numbers were recorded annually, with records from four dates representing the best showing since 2000. A drake circled Staple Sound before heading north on the evening of 22 July with another drake north through Inner Sound on 20 September. Further records included a female circling the sea on several occasions to the north of Inner Farne before departing north on 5 October and a final record of one north through Staple Sound on 14 November.

Tufted Duck *A. fuligula*

A well represented visitor.

As with most wildfowl the year provided an above average number of records. Spring produced 1-3 north through Staple Sound on four dates between 6 and 20 April, including a male which landed near Big Harcar on 16 April. Typical mid-summer records included a female on Brownsman pond and then flats on 7-8 July with a pair north through Staple

Sound on 9 August. Small numbers of autumn returning birds were logged past the islands on three dates with 2-4 north on 16 September and 15 and 17 November. Exceptions to this included a female lingering on Knoxes Reef on 21 September and a single flock of twenty-six north through Staple Sound on 18 November, the second highest ever count.

Scaup *A. marila*

An uncommon passage and winter visitor.

All records were confined to the autumn although the Farnes record count was broken for the second consecutive year. The first records involved small parties of two females north through Staple Sound on 16 and Inner Sound on 30 September. Staple Sound produced the only October reports with four (one male, three females) north on 12 followed by a pair north on 13 October. The outstanding record of the season concerned a total of fifty-eight north in two flocks through Staple Sound on 17 November, eclipsing the previous highest ever count of twenty-four in spring last year. The final report was of a drake north through the Kettle on 4 December while the wardens were leaving the islands for the winter.

Eider *Somateria mollissima*

An abundant breeding resident.

It was an excellent year following a dip in the breeding population last season, with numbers recovering on the majority of islands. Despite a slow start, birds were prospecting the islands by 10 April and surprisingly the first eggs were found on Brownsman on 20 April, going against the traditional first of the year usually found on Inner Farne. The inner group soon recorded their first eggs the following day. Thereafter good numbers nested with a total of 875 (661) pairs as follows: Inner Farne 518 (418), West Wideopens 21 (9), East Wideopens 9 (9), Knoxes Reef 9 (4), Staple Island 29 (17), Brownsman 264 (188), North Wamses 4 (2), South Wamses 8 (9), Big Harcar 6 (2), Roddam and Green 1 (0), Northern Hares 1 (1), Longstone Main 1 (1) and Longstone End 4 (1). Interestingly a female nested on Roddam and Green, only the fourth ever occasion and the first since 1990. The first young hatched on 19 May and within twenty-four hours were already heading westwards on the sea. The measure of the breeding season success was noted in Seahouses Harbour where there was a crèche containing huge numbers of young with adults, and many people commented it was the best they had seen for several years. Productivity was just above average with 199 monitored nests producing 526 fledged young. Late hatching dates included 10 and 14 July. Small numbers remained around the islands during the late summer with large rafts of *ca* 1,000 in Inner Sound throughout the autumn and early winter months. Displaying was observed from late November, including a mating pair indicating strong pair bonding.

Long-tailed Duck *Clangula hyemalis*

A well represented passage and winter visitor.

It was evident that the small flock which had built up around the Wideopens in November 2004 had over-wintered, with fourteen counted on 17 February and up to eight still present throughout March. One of the features of April was the build-up of this flock as, following an easterly weather front, numbers increased dramatically with thir-

ty-one noted on 8 (with five north), declining to twenty-seven on 9, twenty-six on 10 and up to fifteen still present by 16 April. Although present daily, numbers continued to dwindle as spring advanced until the last report of a female on 20 April. The outer group reported 1-4 on four dates during this period, a result of the overspill from this remarkable spring concentration. Autumn passage commenced from 22 October with a female south through Staple Sound followed by 1-4 on nine November dates. During this period an impressive 107 were logged north on 17 November, only the second ever three-figure count for the islands (the highest was 187 in November 2001). As with the previous winter, small groups of up to four were seen daily in late November until early December behind the Wideopens and it appeared that a wintering flock had established for the second consecutive year.

Common Scoter *Melanitta nigra*

A common passage and winter visitor.

Well reported in all ten months that the wardens were resident on the islands, with records from ninety-one dates (ninety-three dates in 2004 and 112 dates in 2003). Small local movements were observed throughout early spring with a large raft present in Inner Sound throughout April and into early May. The flock generally held about a hundred birds with slight daily fluctuations and a peak of 210 on 7 April. Passage birds were noted on a handful of dates during the summer months with two noticeable days bringing 282 north on 24 June and 125 north on 1 July. Autumn witnessed regular counts of up to a hundred with some lingering close to shore in Inner Sound from early September. An exception to this was mid-November which brought decent northerly wildfowl passage past the islands including counts of 274 on 14, 146 on 15, forty-five on 16 and 116 on 17 November.

Velvet Scoter ***M. fusca***

A well represented passage and winter visitor.

As has been the case in recent years, small numbers move along the north-east coast in mid-summer heading for Scottish moulting grounds. Such records brought a male north through Staple Sound on 24 June, three males north through the same area on 22 July and three (one male, two females) north through Inner Sound on 23 July. More typical passage involved 1-2 north through Inner Sound on 28 and 30 September with two north through Staple Sound on 22 October. Mid-November brought the glut of the season's records with 2-3 north on 15, 16 and 18, peaking with twenty-three on 17 November.

Goldeneye *Bucephala clangula*

A common passage and winter visitor.

The over-wintering flock on the inner group behind the Wideopens remained in residence from January-16 April. Numbers fluctuated during this period, with a settled flock of five occasionally increasing to eight on 19 and 30 March. The last spring report concerned two females on the sea on 16 April. The first autumn birds involved one west past Brownsman on 10 September followed by five south through the Kettle on 25 September. Thereafter 1-9 were reported on sixteen dates and, once again, a small wintering population established around the Wideopens area of the inner group. Passage peaked in mid-November with counts of northerly passage birds including twenty-eight on 16, an impressive 242 on 17 (the second highest Farnes count) and thirty north on 18 November.

Red-breasted Merganser *Mergus serrator*

A well represented passage and winter visitor.

Another reasonable year with reports of 1-2 on spring passage on seven dates between 29 March and 16 May. During this period a party of five was seen on 9 April sheltering in the Kettle from strong northerly winds, with another five around the inner group on 12 May. It appeared that two were lingering to moult in the Kettle throughout June and early July, with records spanning fourteen dates during this period, a repeat of last season's behaviour at a similar time of year. The autumn period was quieter with two south on 12 September and 1-2 noted on three dates between 15 and 18 November, peaking with five north on 17 November.

Goosander *M. merganser*

An uncommon passage visitor.

A very quiet year for this erratic visitor, with just three records – a female south through the inner group and into Inner Sound on 17 April, two females north through Inner Sound on 27 April and another female west over Staple Island on 10 June.

Honey Buzzard *Pernis apivorus*

An extremely rare visitor.

The major highlight of the summer was the appearance of a bird over the islands on 3 July, only the fourth Farnes record following two in the 'invasion' year of 2000 and a juvenile in September 2002. The adult (considered to be a male by its head colouration) was seen battling against a westerly wind over Crumstone before landing on Brownsman, apparently exhausted, at 14:05. The bird then took flight and drifted down the length of Brownsman before heading west over Staple Island. Frantic radio calls between the two island groups resulted in it being observed losing altitude as it approached Knoxes Reef. However, in the mad panic to ensure that all staff saw the bird it disappeared but, as events unfolded, it was evident it had grounded again somewhere on the inner group. At 17:05, two hours after being originally found, it was rediscovered flying west over the Inner Farne Pele Tower and was lost to view several miles inland, with a 'swarm' of terns in hot pursuit.

Marsh Harrier *Circus aeruginosus*

An uncommon passage visitor.

A light south-easterly airflow with thick fog brought a female/immature low over Brownsman flats and then Staple Island on 1 May as it fought its way westward towards the mainland. It was seen disappearing into the fog harried by the resident large gulls but minutes later was discovered over the inner group as it continued its journey. Despite the continued harassment from gulls, the bird circled the inner group before being lost heading south-west from the Wideopens in the fog. This represents the fifteenth record for the islands and the first since September 2000.

Hen Harrier *C. cyaneus*

A rare visitor.

The fourth large raptor of an impressive season was discovered on 27 September during a period of strong south-westerly winds, as a 'ringtail' battled its way onto Staple Island

before pitching down for a brief spell. The bird eventually took flight and fought its way west, past the Wideopens and on towards the mainland. It was wing-tagged on both wings but unfortunately, due to distance, they could not be read. Still a rare bird on the islands, this represents the twelfth record (two spring and ten autumn records) since the first in November 1978.

Sparrowhawk *Accipiter nisus*

An uncommon visitor.

The inner group dominated spring sightings as a female was observed on twelve dates between 9 March and 26 April and was seen commuting to the mainland on at least two occasions. This may have been the same individual responsible for the only spring outer group record over the South Wamses on 13 May. The species remained scarce in early autumn with a female on Inner Farne on 17-18 August and 10-11 September. During this period two were seen on Staple Island on 10 September including a bird flushed from a half-plucked Song Thrush, which then promptly flew off strongly! Thereafter records increased with 1-2 reported on eight dates until last seen on Inner Farne on 4 December.

Buzzard *Buteo buteo*

A rare visitor.

A very interesting record concerned a migrant drifting east over the islands on 27 April, only the second ever spring passage bird following one west on 12 May 2001. It was observed drifting east high over the Wamses on the outer group before being lost to sight over Longstone as it continued out to sea, and came hot on the heels of an individual in November 2004. There are eight previous records on the Farnes involving twelve different individuals.

Kestrel *Falco tinnunculus*

A well represented passage visitor. May have bred in 1916 and 1943 (March, 1916; Thorp, 1943).

A typical year for records with reports spanning spring and autumn passage. The spring produced a lingering male on Brownsman from 23-30 March which may have been the same bird involved in sightings over the inner group on 29 and 31 March. The only other spring report concerned a male over Brownsman on 16 April. Autumn passage brought an exhausted individual to the Ladies Path on Inner Farne on 2 August, which was last seen disappearing into thick vegetation along the cemetery bank. Intriguingly, the same day brought a female to Brownsman which lingered until the following day and was seen catching insects and a Rock Pipit during its stay. September brought the heaviest passage of the year with singles on six dates and a season's peak of three on Brownsman on 10 September with two lingering until 11 September. Thereafter singles were recorded on ten dates between 20 October and 26 November.

Merlin *F. columbarius*

A well represented passage and winter visitor.

The most numerous raptor of the season due to the result of a fascinating long staying immature male. The bird was originally discovered over Inner Farne on 18 March, lacking any tail feathers and making its appearance very striking. Despite its missing tail, the bird was capable of fending for itself and survived throughout the spring on an array of migrants

including Purple Sandpiper, Swallow, Song Thrush, Dunnock and Brambling. It became known affectionately as 'Bob' and made the outer group its 'home' and was responsible for daily sightings throughout March, April and on nine dates in May. Amazingly it returned on 23-24 July and re-grew its tail, remaining resident throughout the autumn period from 1 August. The bird became a familiar part of the avifauna of the outer group and its killing spree in the autumn saw the demise of Rock Pipit, Wheatear and Goldcrest amongst others. Apart from the resident, records included a very tame female noted from 28 March-20 April and a male seen over Brownsman on 30 March. It was difficult to assess autumn passage due to the resident immature male although sightings suggested small numbers moving through the islands between 3 September-23 November.

Peregrine *F. peregrinus*

A well represented passage and winter visitor. May have bred in 1925 (Watt, 1951b).

Another good season for this impressive aerial hunter with records spanning nine months between 17 March and 3 December. The early spring period witnessed up to three present on the islands (two adults and an immature) on twenty-one dates between 17 March and 30 April. The species then became scarce during the summer, with the only records indicating the presence of the species referring to an immature over Inner Farne on 13 May and a Pigeon 'kill' on Staple Island on 27 July . Thereafter an immature frequented the inner group in August and sightings became numerous from early September throughout the autumn period. Although only two were ever seen together at the same time, evidence suggested at least four different individuals were involved in sightings, including a female resident on Staple Island from mid-October. As usual prey items were varied this year, from local breeding Feral Pigeons to Fieldfare.

Water Rail *Rallus aquaticus*

An uncommon passage visitor.

A reasonable showing with a scattering of migrants on autumn passage. The first was seen briefly in the cemetery on Inner Farne on 10 September and was believed to be the same bird heard by the pond on the same island on 15 September. This was followed by further singles in October with one on the dock bank on Inner Farne on 6, one flushed by the pumphouse on Brownsman on 12 and another by the pond on the latter island on 14 October.

Corncrake *Crex crex*

An uncommon passage visitor.

The discovery of a bird in the hemlock patch on West Wideopens on 5 October completed a remarkable day on the islands which witnessed the discovery of Richard's and Red-throated Pipits and two Yellow-browed Warblers. The bird was flushed from very close range, allowing close views, but soon disappeared never to be seen again. This represents the first record since October 2003 and only the tenth bird in the past thirty-five years.

Moorhen *Gallinula chloropus*

An uncommon passage visitor. Bred in 1901 (Miller, 1959) and 1947-48 (Goddard, 1947; 1948).

This former breeder is now a scarce visitor to the islands with just nine individuals recorded in the past ten years, all involving 'one-day' birds. However this year provided an excellent series of records, with two lingering birds in spring. On the inner group, an individual

was flushed from Inner Farne, flying strongly to West Wideopens before running up the shingle bank and disappearing into thick vegetation. The following day saw an exact repeat of the proceedings as the bird made it way to West Wideopens. Thereafter it was seen on Inner Farne on four dates until the last sighting on 5 April, often favouring the east side of the island. Interestingly a different bird took up temporary residence during the same period on Brownsman, as an elusive bird lurked around the west side of the island on six dates between 29 March and 5 April. The last island record involved the discovery of a corpse on North Wamses in December 2003.

Coot *Fulica atra*

An uncommon passage visitor.

On 4 August a crew member on the visitor boat *Golden Gate* informed the Brownsman wardens of a 'duck with white on its head' on the sea just off Staple Island. The wardens raced over to confirm identification of the bird which eventually drifted north along the east side of Brownsman. This represents the twenty-second record, with over half of the records having occurred during the months of July and August.

Oystercatcher *Haematopus ostralegus*

A common winter and passage visitor, well represented breeder.

Present all season with reasonable numbers nesting on several islands. Displaying birds were evident in April and nest scrapes were discovered soon after, with the first eggs found on 11 May. There was a slight decrease in the population with 33 (37) pairs nesting as follows: Inner Farne 6 (6), West Wideopens 4 (3), East Wideopens 2 (2), Knoxes Reef 3 (4), Staple Island 5 (5), Brownsman 8 (12), North Wamses 1 (1), South Wamses 1 (2), Big Harcar 2 (2) and Longstone End 1 (0). The first young hatched on 6 June and fledged young were seen around the islands from 30 June. Unlike last season, birds appeared to defend nests more aggressively and this was a contributing factor to the noteworthy thirty-four fledged young from twenty-four monitored nests, the best season for several years. Good numbers were present around the islands throughout the year, with the inner group producing the bulk of counts, with large concentrations favouring the shingle beach on West Wideopens. Spring produced maximum counts of 111 on 30 March, 104 on 28 April and 113 on 1 May, all from the inner group. Post-breeding flocks started to gather from late June with 159 on 23 July followed by 224 on both 8 and 20 August. These counts were all eclipsed by an impressive 314 on the inner group on 21 August, a record count for the Farnes. Thereafter up to 150 were reported throughout the autumn and early winter period.

Ringed Plover *Charadrius hiaticula*

A common passage visitor, uncommon as a breeding species.

Although the breeding population is limited to suitable nesting localities on the islands, the Farnes supports a small population. Despite this, nesting pairs always encounter various problems and productivity can be depressingly low. A total of 11 (11) pairs nested as follows: Inner Farne 4 (4), Staple Island 1 (1), Brownsman 5 (6) and Longstone Main 1 (0). The nest on Longstone was the first in nine years since a pair nested annually from 1992-1996, but sadly was lost soon after discovery. As usual the nesting pairs faced many problems, with gull predation being the cause of the majority of failures and predation from Turnstones the most unusual. Despite this, a total of six young fledged from the eleven nesting pairs, the best productivity since 2002. The annual post-breeding build-up generally

favoured the traditional Inner Farne or West Wideopens with small numbers on Longstone. Numbers during August increased from twenty-six on 4, to forty-eight on 21 and fifty-four on 22 August. The season's peak occurred with sixty on 2-4 September. Numbers dwindled thereafter with small numbers noted during autumn and early winter.

Golden Plover *P. apricaria*

A well represented passage visitor.

There was a typical light scattering of records in spring with a single on the top meadow of Inner Farne on 24 and 29 March and eleven summer plumage adults north through the Kettle on 15 April, with one over Brownsman the same day. Further spring records included one over the inner group on 26 April and the last spring record of two north past Brownsman on 27 April. The annual post-breeding flock built up during late summer, with the first returning birds noted from 8 July with four on Longstone Main. Thereafter numbers started to increase, favouring Longstone, Staple Island or the Bridges throughout the July-August period. During this time numbers increased from twenty on 23 July to fifty on 30 July with up to 300 recorded by the end of August. Numbers were generally down on recent seasons, possibly a result of a poor breeding season, with no four figure counts. Peak counts of the year concerned 800 in mid-September over the Longstone complex. As autumn progressed, numbers dwindled and became scarce from mid-October with no records during early winter.

Grey Plover *P. squatarola*

A well represented passage visitor.

Passage was light in spring with a winter-plumage bird appearing on West Wideopens on 27 April and it or another present on 4 May. The same period saw a moulting individual linger on Brownsman Flats from 2-15 May with the last spring report concerning an impressive flock of twenty-five summer-plumage birds over Knoxes Reef on 11 May, the third highest ever Farnes count. As with the majority of waders, passage was quiet with 1-2 noted on only five dates between 11 September and 16 November, with a peak of three north on 17 November representing the last record of the year.

Lapwing *Vanellus vanellus*

A well represented passage visitor. Sporadic breeder in past; last attempt in 1962 (Hawkey, 1991).

A good showing with 1-3 on or over the islands on nine dates between 21 March and 14 April, including some lingering birds favouring Brownsman pond. Autumn passage was generally light although most records referred to sightings from the outer group with 1-8 recorded on eleven dates between 9 September and 30 October. Interestingly a juvenile favoured Brownsman pond from 11-21 September and there was an outer group peak of seventeen south through Staple Sound on 31 October. In comparison, the inner group had produced just a single autumn record of one west on 25 September, but made up for in late October. A staggering 202 were observed lifting off the East Wideopens on 22 October before eventually heading west, representing the second highest ever Farnes count.

Knot *Calidris canutus*

A well represented passage visitor.

The trend of recent years of birds summering on the islands continued with the favoured

inner group reporting sightings throughout the season. Small numbers fluctuated in March-April peaking with twenty-seven west over Brownsman on 25 April. Thereafter reports suggested between 20-40 were present daily until mid-September, mainly on Knoxes Reef or Inner Farne with sporadic sightings over Brownsman, with peaks of seventy on 20 June and forty-eight on 6 July. The flock had a constant turn-over of passage birds as numbers of summer-plumage individuals varied from day-to-day. As the autumn progressed, numbers started dwindling and reports became fewer with counts on only six dates in October-November with the final sighting of one north over Inner Farne on 27 November.

Sanderling *C. alba*

An uncommon passage visitor.

The previous two seasons (2004-2003) had produced records from eight and ten days respectively, an excellent showing of this scarce visitor. The good number of records continued with a total of eight and as usual the majority occurred on the inner group. Records involved lone summer-plumage birds on Knoxes Reef on 23 June, south through the Kettle on 13 July and St Cuthbert's Cove on Inner Farne on 20 July. Further records followed with a moulting adult on West Wideopens shingle beach on 22 August and the outer group's first record concerned a juvenile on Brownsman from 29-31 August. There were seven east over Brownsman on 11 September, and on 29 eight winter-plumage birds flew south through Staple Sound with one on Knoxes Reef. The last record of a good season involved a winter-plumage bird seen landing on Knocklin Ends on 3 October.

Little Stint *C. minuta*

An uncommon passage visitor.

Another quiet year throughout the north-east which was highlighted by only three records, all possibly involving the same bird. A ringed juvenile was seen on Brownsman pond on 10 September before heading west, which followed sightings on the inner group with one off West Wideopens before heading east on 11 and another south through the Kettle on 12 September.

Purple Sandpiper *C. maritima*

A common passage and winter visitor.

As numerous as ever around the rocky islands with some impressive spring counts including a combined count of 340 on 25 April and 375 on 12 May between the two island groups. There are not many localities in Britain which can boast all year round presence of the species, but the Farnes is an exception with summer records of singles on Longstone on 27 and Inner Farne on 30 June. The first autumn influx occurred in early July and thereafter numbers increased to the usual wintering population levels. Although there were no counts made in the late autumn, the species remained as evident as ever with wintering estimates of 200-300 birds.

Table 1 Monthly peak counts of Purple Sandpipers on the Farne Islands, 2005.

	Mar	Apr	May	Jun	Jul	Aug
Inner group	50	172	206	1	15	20
Outer group	27	178	169	1	37	97

Dunlin *C. alpina*

A common passage and winter visitor.

Very evident throughout the year with records on seventy-nine dates from the inner group compared with sixty-one on the outer group. The slight bias towards the inner group was also reflected by the majority of the season's peak counts occurring on the same island group. Summer plumage birds moved north through the islands on eighteen spring dates between March and May with small numbers lingering throughout June. Return passage picked up during July peaking with thirty-seven south through the Kettle on 13 July. The first juveniles started to appear from 30 July including birds utilising Brownsman pond in August. Thereafter small numbers became resident with occasional fluctuations during the autumn, with such an influx involving thirty on Knoxes Reef on 1 September. The season's peak occurred with exceptionally heavy passage on 17 November, with a day total of 191 north, the majority of which passed through Inner Sound.

Table 2 Monthly peak counts of Dunlins on the Farne Islands, 2005.

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
Inner group	2	10	15	6	37	11	30	2	191
Outer group	1	1	3	8	24	4	3	4	2

Ruff *Philomachus pugnax*

A well represented passage visitor.

A quiet season on passage with records on eight dates from 30 July-11 September, the quietest year since 2002. The outer group dominated records with an immature on the pond on Brownsman on 30 July with 1-2 on five dates between 25 August and 9 September. The only multiple records during this period concerned two on Longstone on 29 August and two west over Brownsman on 3 September. In comparison it was a poor showing on the inner group with one west over Inner Farne on 30 August, a juvenile on West Wideopens (with another over) on 1 September and the final record of the year of one west over Inner Farne on 11 September.

Jack Snipe *Lymnocryptes minimus*

A well represented passage visitor.

It was a good season with records on six spring and thirteen autumn dates. Spring passage saw singles flushed from Brownsman on 19 and Staple Island on 30 March, while the same period saw singles on Inner Farne on 20 and 27-29 March. October brought the first autumn arrivals with 1-2 on eleven dates between 6 and 30 October, with Inner Farne, Brownsman and Staple Island all sharing records. The last bird of the year lingered around the ponds on Inner Farne on 20-21 November.

Snipe *Gallinago gallinago*

A well represented passage visitor.

The islands are well suited for birds pitching down on migration and light spring passage produced 1-2 on nineteen dates between 17 March and 27 April, including one seen lurking in a cave on Staple Island on 1 April. An individual utilised Brownsman pond on 29-30 July and autumn passage commenced from 17 August with four over the islands, including three west over Inner Farne. Thereafter 1-4 were recorded on thirty dates until last recorded on Inner Farne on 25 November. Peak counts included five on Brownsman on 12 October with

six scattered across the islands on 5, 8 and 15 October.

Woodcock *Scolopax rusticola*

A well represented passage visitor.

Prevailing weather conditions in early spring can bring small numbers to the islands and such a weather pattern brought the best showing on spring passage since 2001. Following the first of the season on Inner Farne on 17 March, single birds were recorded on 21, 26 and 27 March between the two island groups. The following four days brought a good influx with day counts of four on 28, eight on 29, twelve on 30 and two on 31 March. Thereafter six were still present on 1 April with two on 2 and one on 4 April representing the last of the spring movement. Typical autumn returnees appeared from mid-October with nine on 15 October including five on Brownsman and two each on Inner Farne and Longstone End. The period from 16-20 October brought the season's biggest influx with daily counts of 5-9 peaking with thirteen on 17 October. Thereafter two further noticeable days brought seven in off the sea on 29 and nine in off on 31 October. The last of the year's sightings occurred in November with 1-3 noted on thirteen dates until the last was flushed from Inner Farne on 22 November.

Black-tailed Godwit *Limosa limosa*

An uncommon passage visitor.

A good showing on passage with the majority of records referring to sightings on the inner group with individual summer-plumaged birds seen on 7, 12 and 27 May. Further inner group records included three west on 17 June and five which circled Knoxes Reef on the evening of 13 July before heading south. A summer-plumage adult was discovered roosting at high tide on Brownsman flats (the only outer group record of the year) before relocating to Inner Farne on the evening of 11 August. The final report involved fourteen south over Inner Farne on 23 August.

Bar-tailed Godwit *L. lapponica*

A well represented passage visitor.

As expected the bulk of reports were received from the inner group with the favoured locality of Knoxes Reef attracting the largest number during the year. However it was noticeable that the islands failed to attract the large summering flock which had been a feature of the two previous summers. Small numbers were present on Knoxes Reef throughout the spring with 1-3 noted from 28 March-8 May with a peak of six north on 9 May. Records on the outer group during this time included singles on 30 March and 3 May with five west on 30 April. The summer months were quiet with only two reports, a single on 3 June and ten noted on 20 June. Thereafter 1-9 were reported on forty-two dates from Knoxes Reef between 1 July and 27 November with peak counts of eleven on 10 September and twenty-six north on 17 November. The only outer group record during this period involved eight west on 9 September.

Whimbrel *Numenius phaeopus*

A well represented passage visitor.

The first of the northerly bound passage birds moved through the islands on a typical arrival date of 25 April with a single on Knoxes Reef. Thereafter spring passage peaked with six on 4 and eight on 5 May with 1-5 recorded on nineteen dates until last seen on 27 June. Autumn passage commenced on 16 July with 1-3 recorded on twelve July dates, eighteen August dates and ten September dates until the last report on 21 September of two south over Knoxes Reef. Peak counts during this return passage included four west over Inner Farne on 25 August, followed by twelve and nine over Knoxes Reef on 1 and 8 September respectively. Impressively, a very late bird was heard calling from Knoxes Reef on 18 November, the latest Farnes record and just missing out on the latest County record of that seen on Holy Island on 19 November 1972.

Curlew *N. arquata*

A common passage and winter visitor.

Present throughout the season with the biggest concentrations once again favouring Knoxes Reef on the inner group. The island saw a gradual build-up in early spring, with fifty-five on 17 March, increasing to ninety by 20 March and peaking with 250 on 23 March, which remained throughout April. However numbers declined rapidly during May and into early June, but post-breeding flocks started to gather by the month's end. From early July daily counts of 250-300 were the norm and these numbers remained until early November when the flock size reduced once again, with 150-200 present until the wardens departed in early December.

Spotted Redshank *Tringa erythropus*

An uncommon passage visitor.

With the exception of three spring reports, all Farnes records have occurred in early autumn between 23 July and 27 September. However this record was broken with the surprising discovery of a late juvenile on the outer group from 15 October-2 November. The bird was initially heard calling as it flew down the east rocks of Brownsman and onto South Wamses and thereafter was seen daily around the islands. It favoured the pools on nearby Staple Island but also frequented Brownsman, especially the ponds and the south end of the island. This was a welcome addition to the year list and was the third consecutive year the species has been recorded on the islands.

Redshank *T. totanus*

A common passage and winter visitor. Bred in 1901 and nine years 1924-46 (Bolam, 1912; Goddard, 1925-1948; Wilson, 2000-2005).

Recorded throughout the year, with peak numbers on spring and autumn passage, as shown in Table 3. However the species was scarce throughout May with only two records and the first returnees did not appear regularly until mid-June. Thereafter good numbers were

Table 3 Monthly peak counts of Redshanks on the Farne Islands, 2005.

	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
Inner group	33	1	8	43	37	20	36	26
Outer group	14	2	2	31	56	13	20	5

reported including a noticeable influx on 13 July which brought forty-three onto the inner group and thirty-one west over Brownsman, part of a bigger movement of waders that day. Thereafter recorded daily until the wardens left on 4 December.

Greenshank *T. nebularia*

A well represented passage visitor.

The previous ten years have produced spring records on only four occasions making this year's total of two sightings noteworthy, with singles on Brownsman flats on 20 April and 3 May. Despite this good start, the return autumn passage was one of the poorest on record with singles on West Wideopens on 7 August, Brownsman on 22 and 30 August and Knoxes Reef on 1 September. This very poor showing was masked by a lingering bird on Brownsman, which was first discovered being pursued by two Arctic Skuas on 6 September. The bird remained in residence on the island for no fewer than fifty-eight days until last seen on 2 November. The bird may have been responsible for the last sighting of the year, with one on Inner Farne on 8 November.

Green Sandpiper *T. ochropus*

An uncommon passage visitor.

The earliest ever Farnes record put in a brief appearance on Brownsman flats on 27 March during a south-easterly weather front. The bird was then relocated on Inner Farne within twenty minutes of leaving Brownsman and remained happily on the island for a further three days, favouring the various wet areas of the island until last seen on 30 March. Despite this good early start, it proved to be the only record of the year following very disappointing wader passage in the autumn.

Wood Sandpiper *T. glareola*

An uncommon passage visitor.

One of the few highlights of a quiet autumn wader season, a bird paused briefly on Inner Farne by the churn pool before heading west on 30 July, the first on the islands since August 2003. Interestingly, possibly the same bird took up residence on a small pool by Monk's House (north of Seahouses, opposite the Farne Islands) over the following few days.

Common Sandpiper *Actitis hypoleucos*

A well represented passage visitor.

A very quiet spring spell produced only two records of one on Megstone on 13 May and Brownsman on 14-15 May. The first returnees appeared on the outer group during July, with the first noted on Staple Island on 3 July. Other July records involved birds favouring the Brownsman pond from 5-10, 21 and 31 July. August was quiet with singles on three dates followed by an improvement in September. The month brought 1-2 on thirteen dates with a peak of seven on 10 September involving four on Inner Farne, two on Brownsman and a single on Longstone. The last record concerned one on Inner Farne on 2 October.

Turnstone *Arenaria interpres*

A common passage and winter visitor, uncommon in summer.

Present all year round with large numbers reported in late summer as passage birds filtered back into Britain. Spring saw wetland bird survey counts reveal populations of 187 on 12 April which dwindled to 101 on 12 May. Small numbers remained throughout May-June,

with a peak of 110 on 27 June. There were no significant counts made during July while numbers rapidly built up in early August, peaking at a season's best of 606 across the islands on 22 August. Up to 300 were then resident throughout the autumn and early winter months, scattered across all the islands.

Grey Phalarope *Phalaropus fulicarius*

An uncommon autumn passage and winter visitor, extremely rare in spring.

Another species going through a boom period on the Farnes, with five different individuals equalling the record of the previous season. This distinctive and exciting visitor has been recorded on thirty-two previous occasions, including no fewer than thirteen individuals between 2000 and 2004. The excellent year began with one seen on the sea off Knoxes Reef on 16 September before flying off in a north-eastly direction, and another was on the sea in Staple Sound on 5 October, drifting slowly south with the tide. A lingering immature was discovered in the lea of West Wideopens on 15 November and was seen feeding in the same area on 17 and 19 November, allowing close approach within ten feet by the inflatable Zodiac boat. During this period, a winter plumage adult was noted flying east across Staple Sound during a seawatch on 16 November. The final record of a good season involved one north through Staple Sound on 27 November.

Pomarine Skua *Stercorarius pomarinus*

A well represented passage visitor, common in some years.

It was an excellent year for this 'power-house' of a skua with the first spring record in three years and only the third ever December record. Rarely recorded on spring passage, an adult with 'full-spoons' flew north past the south end of Brownsman on 14 May. The same area produced a sub-adult north on 24 July and two north, adult and sub-adult, on 9 August. September produced records of five north including four juveniles on 25 September, with another juvenile north on 27 September. Northerly passage continued in October, all involving juveniles with four north on 12 and two north on 18 and 22 October. A very late juvenile was seen powering south through Staple Sound on 3 December, the third December record for the Farnes following individuals in 1998 and 1984.

Arctic Skua *S. parasiticus*

A common passage visitor.

An excellent season with reports from eighty-nine dates between April and November. Early spring movement was logged through Staple Sound with one south on 16 and two north on 19 April. May was excellent with several recorded on eleven dates from 4-28 May including lingering individuals. Peak passage concerned nine north and four south on 16 May with four north the following day. The species does not normally linger in spring, so three seen daily around Staple Island between 9 and 16 May was unusual. Thereafter 1-5 were noted on four June and eleven July dates. As birds moved into the area in late summer, records became daily in August and September with the bulk of passage logged in these two months. Peak counts during this period included fourteen north on 8 and seventeen north on 9 August, twenty-three north and eleven south on 10 September and twelve lingering on 16 September. Thereafter numbers dwindled with 1-5 on thirteen October dates peaking with nine south on 22 October. Late autumn passage included 1-2 on 2, 15, 26 November with four south on 16 November. The last record involved one north and one south through Staple Sound on 28 November.

Long-tailed Skua *S. longicaudus*

An uncommon passage visitor, well represented to common in 'invasion' years.

Another lean year with five birds recorded on three autumn dates. The majority of sightings off the Farnes involve juveniles and this year was no exception, with a single north through Staple Sound on 10 September followed by three north on 16 September. An impressive adult was discovered flying north through Staple Sound on 12 October, only the second adult in four years past the islands.

Great Skua *S. skua*

A common passage visitor.

Following the first bird of the year on the sea off the south end of Inner Farne on 3 May, the species was well documented on spring passage. Records involved 1-4 on sixteen dates between 5 May and 28 June which included a bird noted eating a Guillemot off Staple Island on 13 May. The spring peak occurred on 14 May with eight north, most of which moved through Staple Sound. Early July saw return passage commence with regular reports throughout the late summer and early autumn. Records during this period included 1-10 on fifty-four dates until last seen in mid-November with singles daily on 15-17 November. Heavy passage logged during the season included seventeen north on 22 July, forty-nine north and two south on 10 September, fifteen north on 16 September and seventeen north and eleven south on 12 October.

Mediterranean Gull *Larus melanocephalus*

An uncommon passage and winter visitor.

Since the first in 1964, the Farnes boasts only a mediocre twenty-one records although there has been an upsurge of records in recent years, with thirteen since 1999. The year produced a record haul with the islands attracting a minimum of five different individuals, possibly a result of range expansion within Britain. A colour-ringed first-winter bird (red ring, 8P7) was discovered on Inner Farne on 31 March and was present on the same island on 2, 3, 9, 25 and 28 April. Amazingly the bird had been ringed as a nestling at Zastow Karczmiski, along the Wisla River, Lublin, Poland on 6 June 2004. It was also noted at Port Seaton Burn (Lothian) on 15 April, between sightings on Inner Farne. The Inner Farne Black-headed Gull colony then attracted two first-summer birds (neither ringed) between 1 and 3 May. It was not known if a first-winter bird seen on Inner Farne on 19 June was one of the two earlier spring visitors. If wardens were not content with the number of records seen, then they were soon after, as a first-winter bird was noted dip-feeding behind the West Wideopens on 21 September with the same or another on the sea in Staple Sound on the 30 September. During all of this the outer group was not outdone, with a moulting adult on Brownsman on 11 June and again on 25 and 28 June, the first outer group record in five years.

Little Gull *L. minutus*

A well represented passage and winter visitor.

The first bird of the year was early, with an adult north through Inner Sound on 23 March representing the first ever March record on the Farnes. Further spring reports brought a first-summer to Brownsman on 1 May and presumably the same individual was involved in sporadic sightings on Inner Farne, with records on seven dates from 5-26 May. The summer months brought single first-summer birds to Brownsmnan on eleven dates between 6 June

and 10 July and to Inner Farne on eleven dates between 4 June and 21 July. The only exception was on Inner Farne which attracted two on 26 June and 4 July with three present on 2, 10 and 11 July. Thereafter the majority of birds were recorded on passage during the early autumn, with 1-17 recorded on twenty dates between 1 August and 16 November, including a juvenile on Brownsman flats on 11 August. Peak passage during this period included twenty-one north on 24 October, twenty-six south on 1 November and an impressive eighty-one south on 4 November. The last bird of the year was seen on the late date of 25 November with one south through Staple Sound.

Sabine's Gull *L. sabini*

A rare passage visitor.

This rare Nearctic wanderer was only recorded for the first time on the Farnes as recently as 1991, with a further eleven since, including five in 1997. However it was just one of *those* years on the Farnes as a sizeable number had moved into the North Sea and the islands produced an incredible five in nineteen days in September. The stunning spell began with a juvenile north past the south end of the islands on the morning of 10 September with an adult pursued by wardens in a Zodiac boat as it flew east across Staple Sound later that day. Another juvenile then flew north during the epic 16 September, with an adult north through Staple Sound on 25 September. The final record of the staggering month involved a juvenile south through Staple Sound on 29 September.

Black-headed Gull *L. ridibundus*

A well represented breeding species and common visitor.

Good numbers were seen and heard displaying over Inner Farne, the main breeding colony on the islands, when the wardens arrived in mid-March. As spring progressed, nest structures were built and the first eggs were discovered on 27 April. A total of 396 (301) pairs nested as follows: Inner Farne 381 (292) and Brownsman 15 (9), representing the highest ever population and eclipsing the 306 pairs in 1980. The colonies received some unwanted attention from marauding large gulls and the colony on Inner Farne south-east rocks deserted due to over predation. Despite this, the first young were seen on 22 May and the first fledglings appeared from 24 June. Although not monitored and despite predation, it was clear that it was a good breeding season with *ca* a hundred fledged young noted by early July, favouring the picnic area of Inner Farne. On Brownsman the small colony increased again with the first young seen on 9 June and fledglings noted from 15 July. Birds dispersed after the breeding season, with a build-up around Knoxes Reef in late autumn including 120 on 5 October which increased to 156 by early November, peaking with 253 on 15 and 238 on 16 November.

Common Gull *L . canus*

A common visitor. Bred in four years 1910-14 (Booth, 1911a and b, 1913; Miller, 1911-1913), probably in 1916 (March, 1916) and attempted breeding in 1974 (Hawkey and Hickling, 1974).

Spring witnesses the movement of northern breeding birds through the islands with peaks in mid-April. Knoxes Reef attracted the largest numbers with 1-8 noted from 17-28 March increasing to twenty-three on 30 and fifty-four on 31 March. This influx continued into early April with sixty on 2 and ninety-one on 3 April. Thereafter roosts attracted 60-74 until the season's peak of 196 on 20 April. Numbers dwindled soon after with thirteen east on 19 June

and fifteen over on 25 May. Very few are reported during the summer months with first-summer birds noted on 28-29 June followed by the first juveniles through the islands in July. Following the first juvenile on Brownsman on 6 July, 1-2 were noted on the islands on 18-19 and 29-30 July. Numbers gradually increased around the islands as autumn progressed with up to forty dailynd peaking with 157 on 15 November.

Lesser-black Backed Gull *L. fuscus*

A common breeding species and passage visitor.

The Farnes population is completely migratory, moving through north-east England in early March and moving south for the winter. As wardens arrived in mid-March good numbers were on the breeding islands and 431 (429) pairs nested as follows: Inner Farne 12 (11), West Wideopens 117 (115) East Wideopens 41 (44), Knoxes Reef 30 (21), Staple Island 32 (46), Brownsman 9 (10), North Wamses 47 (46), South Wamses 71 (55) and Big Harcar 72 (81). There was very little change in the breeding status from the previous season and the first eggs were discovered in the first week of May. Unusually nests with clutches of five eggs were discovered on North Wamses on 20 June and six on Big Harcar on 17 June. After the breeding season, birds soon dispersed and the species was again absent during the winter months. Interestingly a fourth-winter bird of the race *L. f. intermedius* was seen sporadically on West Wideopens between 13 April and 12 May.

Herring Gull *L. argentatus*

A common breeding species, abundant in winter.

Abundant as ever with a healthy breeding population and once again this species was responsible for the majority of predation recorded on the islands during the season. The breeding population showed a very slight increase with 540 (536) pairs nesting as follows: Inner Farne 1 (0), West Wideopens 99 (68) East Wideopens 86 (83), Knoxes Reef 20 (24), Skeney Scar 8 (19), Staple Island 15 (22), Brownsman 8 (6), North Wamses 109 (107), South Wamses 49 (38), Roddam and Green 11 (17), Big Harcar 61 (68), Longstone Main 4 (1), Longstone End 31 (27) and Northern Hares 38 (56). The first eggs were discovered in early May with hatching young found by 22 May. Large numbers remained after the breeding season, roosting on the islands throughout the autumn period with sizeable counts of northern race birds *L. argentatus* including twenty-five on 23 November and thirty-two on 30 November.

Iceland Gull *L. glaucoides*

An uncommon winter and passage visitor.

It was a case of stare in disbelief, as *that* day produced another record on the Farne Islands. Wardens checked the gull roosts daily and eventually on 15 April were rewarded with the discovery of a first-summer bird flying into the Kettle and lingering over West Wideopens before going to roost. What is remarkable is that over the past five years four birds have arrived annually, all of immature age and all on the same day, 15 April. It is especially remarkable that, as with the previous four, there were no subsequent sightings during the season.

Glaucous Gull *L. hyperboreus*

An uncommon winter and passage visitor.

The inner group came up trumps with the discovery of a large first-winter bird roosting on

the east side of Knoxes Reef on 24 April, completing the hat-trick of 'white-wingers' in April.

Great Black-backed Gull *L. marinus*

An uncommon breeder, common winter and passage visitor.

Recorded throughout the year with small numbers breeding and influxes occurring from late June. There was no change in the breeding population with 7 (7) pairs nesting as follows: West Wideopens 1 (2) East Wideopens 3 (3), Skeney Scar 1 (0), Brownsman 0 (1), North Wamses 1 (1) and South Wamses 1 (0). On the outer group only one nest was successful, with three young fledging from a nest on Skeney Scar. An adult discovered dead on Brownsman in early May was considered to be one of the parents of the usual nesting pair, and due to its demise there was no attempt made on that island. From late June numbers increased with thirty-five on 27 June increasing to sixty by 6 July. Numbers continued to increase with 344 counted on the outer group on 8 October, representing a typical wintering flock.

Kittiwake *Rissa tridactyla*

An abundant breeder and passage visitor, well represented in winter.

Small numbers were around breeding ledges in March with the bulk of the population arriving in early April. Nesting activity was again late this season, and eventually commenced from 19 May when birds promptly started collecting nest material from various damp areas of the islands. As late May approached, well-constructed nests were complete and the first eggs were discovered on 31 May. The first week of June then saw a mass synchronised laying by most of the population. Interestingly the average egg laying date over recent decades has gradually got later on the Farne Islands, as shown in Table 4. The population showed a slight increase with 5,375 (5,151) pairs nesting as follows: Megstone 13 (7), Inner Farne 1,520 (1,597), West Wideopens 256 (262) East Wideopens 318 (340), Skeney Scar 211 (220), Staple Island 1,370 (1,325), Brownsman 1,384 (1,136), North Wamses 92 (80), South Wamses 73 (84), Roddam and Green 27 (23) and Big Harcar 111 (77). The first young hatched on 26 June and the first fledglings were seen from 2 August. Monitoring indicated 337 young fledged from 590 nests, a below-average year although a big improvement on the previous season. Thereafter post-breeding flocks gathered in early autumn and small numbers lingered around the islands for the winter.

Table 4 Average laying date of Kittiwakes on the Farne Islands, 1970-2005.

Decade	Average Laying Date
1970's	26 April
1980's	2 May
1990's	8 May
2000's	19 May

Sandwich Tern *Sterna sandvicensis*

An abundant breeding summer and passage visitor.

As expected the first returning birds appeared over the islands in late March, with two noted in the Kettle off Inner Farne on 27 March. Thereafter numbers built up daily peaking in early May as shown in Table 5. During this period pairs became very vocal, with aerial displays over the islands and the first prospecting birds seen on Inner Farne 'island top' by 2 May.

The following few days saw up to thirty pairs prospecting the traditional nesting area and the first egg was discovered not long after on 7 May. Thereafter the colony increased in size and interestingly a second small colony established on St Cuthbert's Cove beach from 2 June which rapidly increased, holding 139 nesting pairs by 8 June. An interesting development involved the establishment of another colony on Brownsman, the first confirmed nesting on the outer group in five years. The colony favoured the east rocks and the first eggs were noted from 28 June. A total of 1,913 (1,853) pairs nested as follows: Inner Farne 1,853 (1,853) and Brownsman 60 (0). The first young were seen on Inner Farne on 6 June with the first fledgling noted on 1 July and thereafter good numbers fledged. However this was not the case on Brownsman, where despite the colony reaching the young stage by 24 July, a combination of poor weather and predation resulted in no chicks fledging. Numbers declined as the autumn progressed with late records involving three on 1 October, four north on 2 October and the last bird of the year seen around Inner Farne on 22-23 October.

Table 5 Evening roost counts of Sandwich Terns, Knoxes Reef, April-May2005.

2 Apr	3 Apr	12 Apr	13 Apr	16 Apr	20 Apr	23 Apr	24 Apr	27 Apr	28 Apr	4 May	7 May
45	53	162	295	250	346	400	450	681	642	1200	1500

Roseate Tern *S. dougallii*

A well represented summer and passage visitor, uncommon breeding species.

At long last the Farne Islands can boast breeding Roseate Terns once again, as a pair successfully bred on Inner Farne for the first time in three years. The first bird of the year arrived on the typical date of 3 May and 1-2 were seen frequently during the month. June witnessed a further influx peaking with eight on 25 and five on 27-28 June. Interestingly, during this period displaying birds were seen over both Inner Farne and Brownsman and a copulating pair was noted on Inner Farne on 11 June but nothing appeared to come of it. However a pair settled and started to defend a 'nest box' on the recently constructed Roseate Tern terrace in early July and a nest scrape was discovered soon after. Eventually by 12 July the pair laid one egg, representing the first confirmed breeding of the species since 2002. It was a major coup for the islands, as only 101 pairs nested in Britain in 2003, the majority on nearby Coquet Island, Northumberland. The chick hatched on 1 August and as the month progressed wardens watched as the youngster grew, eventually fledging from the terrace on 29 August (although the bird lingered with its parents into early September). Interestingly the ring number of one of the parents was read in the 'field' and was discovered to be of Irish origin. The bird was ringed on Rockabill in the summer of 2002 (therefore the first year it has bred) and was seen for one day on Coquet Island in mid-June, before it settled on the Farne Islands. During this exciting period, good numbers moved through the islands, the

Table 6 Roseate tern roost counts, Farne Islands, August 2005.

Aug	1	8	10	11	13	14	16	17	18	19
Adult	12	9	10	6	11	17	16	23	17	21
Juvs	1	1	2	4	4	7	5	8	7	9
Total	**13**	**10**	**12**	**10**	**15**	**24**	**21**	**31**	**24**	**30**

majority of which were from the colony on Coquet Island, as shown in Table 6.

Common Tern *S. hirundo*

A common breeding summer and passage visitor.

Birds started filtering into Farnes waters from mid-April with the first record involving two at roost on Knoxes reef on 23 April. Thereafter a very slow build-up ensued, peaking with ten on 27 April. However good numbers were present in early May and displaying over the main breeding colony of Inner Farne. Soon afterward the first eggs were discovered on 19 May and 160 (133) pairs nested as follows: Inner Farne 155 (133) and Brownsman 5 (0). The population appears to be slowly recovering, having reached a recent low of just seventy-six pairs in 2003. It was encouraging news on the outer group, where breeding was confirmed for the first time since 2000. The first young hatched from 8 June and fledged young were seen around the islands from 4 July. Numbers eventually declined as the summer progressed with late records including two north on 29 September and two lingering on 4 October.

Arctic Tern *S. paradisaea*

An abundant breeding summer and passage visitor.

A very early returnee was discovered on the north rocks of Inner Farne on 2 April and thereafter numbers started slowly building from 21 April. A switch in weather systems on 27 April brought light south-westerly winds over much of the region, resulting in favourable migrating conditions. The result was a huge increase of birds into Farnes waters over 27-28 April, peaking with 1,190 on 29 April. Early May witnessed a continued increase with a peak of 3,000 on 7 May. Thereafter pair bonding, displaying and nest site prospecting activities increased amongst pairs with the first birds noted on Inner Farne and Brownsman by 2 May. The first eggs were discovered on 18 May, slightly later than usual and aggression intensified towards 'intruding' visitors soon after. The breeding population enjoyed another boom, reaching its highest population count since 1997, as 2,380 (1,986) pairs nested as follows: Inner Farne 1,142 (1,234), Brownsman 1,209 (732) and Staple Island 29 (20). It has been a great recovery of the Brownsman colony which only as recently as 2002 had been down to as few as 181 nesting pairs. The first young hatched from 8 June and the first fledglings departed from 2 July. Feeding rates on the birds' preferred prey, sand-eels, was interesting this year. Following a glut early in the season, fish appeared to be in short supply for two brief spells, lasting no longer than eight days. During this lean time alternative prey was difficult to find, resulting in the death of a number of young. However this was only a short term problem and feeding rates soon corrected themselves and good numbers of young fledged from the colonies, including a small number from Staple Island. A total of 293 young fledged from 393 monitored nests, the best return since 2000. Numbers dwindled throughout August and September with the last reports in early October of thirty-seven dip-feeding in Staple Sound on 4, three on 6 and a juvenile south on 8 October.

Table 7 Evening roost counts of Arctic Terns, Knoxes Reef, April-May2005.

21 Apr	23 Apr	24 Apr	26 Apr	27 Apr	28 Apr	29 Apr	1 May	5 May	7 May
1	2	6	59	138	576	1190	1360	1800	3000

Little Tern *S. albifrons*

A well represented passage visitor.

It was an interesting season with typical spring build-up recorded on Inner Farne but this was followed by the first evidence of a post-breeding roost on the Farnes. The season began with a single on St Cuthbert's Cove beach on Inner Farne on 26 April followed by a protracted nightly roost from 28 April-21 June, as shown in Table 8. Still regarded as a rarity on the outer group, the season's only record concerned a single in thick fog on the north end of Brownsman on 28 May. Following a very successful breeding season at the Long Nanny colony near Beadnell (Northumberland), a post-breeding flock appeared on the beach on Inner Farne in late July. Three were found on 19, followed by fifteen on 20 and increasing to twenty-five on 21, before peaking with sixty-six on 31 July which included three fledged juveniles. Numbers soon dwindled with just thirty noted on 1 August with eleven present by 4 August. An exceptional late bird, a juvenile, was seen dip-feeding with Arctic Terns in Staple Sound and then on Knoxes Reef on 4 October, the latest ever Farnes record.

Table 8 Evening roost counts of Little Terns on Inner Farne, April-June 2005.

28 Apr	30 Apr	1 May	4 May	5 May	8 May	9 May	21 May	3 June	5 June	18 June	21 June
2	13	31	73	78	89	71	37	21	16	5	1

Black Tern *Chlidonias niger*

An uncommon passage visitor.

Another reasonable year with five records, the first involving a summer-plumage adult noted in the tern roost on Inner Farne on 7 July. Thereafter juveniles appeared around the islands from mid-August with singles on Brownsman on 17 and briefly in the Kettle on 24 August. Further records of juveniles included one lingering around the east edge of West Wideopens on 10 September which was attacked by an Arctic Skua at one stage. The final report concerned a juvenile dip-feeding in Staple Sound on 4 October, the latest record in ten years.

Guillemot *Uria aalge*

An abundant breeding resident and passage visitor.

The population goes from strength to strength with further increases noted, including in the main colony on Staple Island. The cold spring hampered the start of the breeding season and it was particularly noticeable with the auks, as birds did not settle on breeding ledges until the end of April. The first eggs were discovered on 30 April (eggs are usually discovered between 14 and 20 April) with the first young noted hatching from 6 June. A total of 46,915 (43,694) individuals were counted as follows: Megstone 246 (238), Inner Farne 6,059 (5,209), West Wideopens 2,250 (2,230) East Wideopens 4,412 (3,248), Skeney Scar 2,648 (2,944), Staple Island 21,511 (20,019), Brownsman 7,773 (7,706), North Wamses 1,080 (1,180), South Wamses 463 (490), Roddam and Green 140 (190) and Big Harcar 333 (240). Despite a slow start the breeding season was rapid as the first youngsters were seen in the water from 24 June, and with calm weather in July big numbers departed the islands. As usual, by mid-July the islands were bare with 99% of the population gone and only 1-2 stragglers remaining, with the last fledging off Inner Farne on 3 August. Although not mon-

itored, the number of young seen leaving the islands indicated an excellent season despite some heavy losses to predators, especially at the egg stage. After the breeding season, the species was scarce in late summer with small numbers moving back into Farnes waters from late September.

Razorbill *Alca torda*

A common breeding resident and passage visitor.

The auk family group have been doing exceptionally well on the Farnes in recent years, with every season reporting 'record breeding numbers'. This year was no exception as this species nested in good numbers with 277 (225) pairs as follows: Inner Farne 129 (94), West Wideopens 54 (47) East Wideopens 23 (21), Skeney Scar 6 (7), Staple Island 25 (29), Brownsman 7 (6), North Wamses 6 (4), South Wamses 12 (9) and Big Harcar 15 (8). Following a slow start to the breeding season due to cool easterly airflows, birds were on nesting ledges from late April with the first eggs from 8 May. The first young hatched on 8 June and fledglings were seen from 29 June. It was a great breeding season, with thirty-three young fledging from forty-two nests, the best return for several seasons. The majority of young had departed by mid-July although a few late fledglings were seen leaving Inner Farne on 8 August. Thereafter only very small numbers were seen around the islands until late September, when record movements were logged. Exceptional record counts included 3,207 south in four hours on 25 followed by 5,132 south in one hour on 27 September. The only other sizeable count involved 692 south in one hour on 18 October.

Black Guillemot *Cepphus grylle*

A well represented winter and passage visitor. Bred in the 17th and possibly 18th centuries (Gardner-Medwin, 1985).

It was an unusual season, with a series of summering records followed by a very quiet winter period. A series of sightings during the year indicated a summering bird in the southern North Sea, as a summer-plumage bird was seen on several occasions around the islands. The bird was first noted on the sea to the north of Inner Farne on 24 April followed by it being seen flying north through Staple Sound on 16 May. It was then seen again on the sea to the north of Inner Farne on 5 June and near Longstone on 17 June. The final sighting was reported by boatmen in Staple Sound on 1 July. Interestingly a summer-plumage bird was reported in late June from St Mary's Island (Whitley Bay) and Boulmer, just down the coast from the islands, and may all have involved the same individual. The first autumn returnees appeared from 29 September near Staple Island but very disappointingly singles were reported on only six dates between 12 October and 25 November. The lack of observers on the outer group from early November may have been a contributing factor to the low number of reports.

Little Auk *Alle alle*

A well represented winter and passage visitor. Large numbers can occur after northerly gales.

Following last year's record invasion, the season's total was more expected although the islands produced a rare spring sighting. A summer-plumage bird was seen flying close to the lighthouse cliff on Inner Farne on 27 March, the first spring record since 1995. The first autumn records occurred in mid-October with three north on 23 followed by singles on 24 and 28 October, all through Staple Sound. The bulk of reports occurred in November with

1-2 north on eight dates, with peaks of ten north on 16 and twelve north on 17 November. Of more interest was an individual which sat on rocks along the Ladies path on Inner Farne on 22 November, before flying off north.

Puffin *Fratercula arctica*

An abundant breeding summer and passage visitor.

The first returning birds appeared around the islands in late March although were very unsettled, like all other auk species. However they appeared to settle earlier than their relatives the Guillemots or Razorbills, with nesting activity noted from 22 April onwards. Following 'spring cleaning' of burrows, the first egg was discovered on 30 April and the majority of the population were on eggs by the first week of May. Very little activity was noted during May with the first hatching chicks discovered on 3 June and foraging behaviour increased thereafter. The current population is based upon the full Puffin census of 2003 when the islands laid claim to a population of 55,674 nesting pairs as follows: Inner Farne 13,069, West Wideopens 8,704 East Wideopens 1,676, Staple Island 15,583, Brownsman 14,438, North Wamses 977, South Wamses 1,059 and Big Harcar 168. The first young started fledging from early July and monitoring indicated a good season with eighty-five young fledging from a hundred monitored nests. The mass departure of adults occurred in early August although some did linger as very late young were seen fledging from Inner Farne on 22-23 August. However, even more unusual, an adult was seen feeding a large chick down a burrow on Staple Island in early September, which went on to fledge successfully. The species was absent from the islands in early autumn but small numbers returned to Farnes waters by early winter.

Feral Pigeon *Columba livia*

A common breeding resident.

The Farnes boasts a healthy number throughout the year, with large numbers on the islands in late autumn. Many birds commute from the mainland daily and small numbers breed, utilising disused burrows on several islands.

Stock Dove *C. oenas*

An uncommon visitor, becoming increasingly rarer. Bred in seven years 1928-1979 (Hawkey, 1991).

Regarded in recent years as somewhat of a rarity on the islands, this former breeder put in two appearances during the season. A pair frequented Brownsman and Staple Island on 31 March and 1 April (seen mating on their first day) and what was presumed to be the same two were seen flying west over the inner group on 3 April. The second record on 14 August concerned a single over Inner Farne which attempted to alight briefly on the Pele Tower before powering west towards the mainland.

Wood Pigeon *C. palumbus*

An uncommon passage visitor.

A strong showing on spring passage as birds moved west over the islands from the near continent. Spring produced reports of 1-2 on sixteen dates between 17 March and 27 May with a peak of three over the outer group on 28-29 March. Occasionally birds stop off on the islands and on one such occasion on 24 May a bird took advantage of the artificial tree on Brownsman to roost. The autumn period was quieter with a handful of records on eight dates

between 12 and 24 October peaking with two west on 16, 17 and 19 October.

Collared Dove *Streptopelia decaocto*

An uncommon passage visitor.

Another excellent year, with six records matching last season's haul, all involving birds on spring passage. April produced a lingering bird on Inner Farne all day on 18, another west over the same island on 22 and one north over Brownsman on 30 April. Records continued to follow with a bird on the chimney pot of the Brownsman cottage on 2 May, followed by an exhausted individual on Brownsman on 28 May which was seen briefly on Inner Farne later that day. The final record concerned one on top of the Pele Tower on Inner Farne on 19 June.

Long-eared Owl *Asio otus*

An uncommon passage visitor.

Mid-October produced four records of this majestic migrant on the outer group, the best showing since 1999. A single was flushed from Northern Hares on 14 before flying west in the company of a Short-eared Owl *A. flammeus*. Four days later on 18 October, one was flushed from the north beach of Brownsman before flying towards the Wamses while it or another was flushed from a similar area on Brownsman the following day before flying west towards the mainland. The final record on 24 October involved one battling its way west over Brownsman in a strong south-easterly wind.

Short-eared Owl *A. flammeus*

An uncommon passage visitor.

Following the trend of recent years birds were noted on spring passage through the islands. Records included a single seen briefly on Inner Farne before flying west on 20 March and another on Staple Island on 25 March. A bird passed within feet of the wardens on Brownsman on 29 March as it was pursued by large gulls and was later seen flying west over Inner Farne. Spring records continued with one flushed from Brownsman before eventually heading north on 5 April, and on 7 May another flew high west over Crumstone and then over the inner group before heading to the mainland. Autumn was generally quiet in comparison to recent years and following the first returnees on Northern Hares and Inner Farne on 14 October, birds were reported on a further seven dates until last seen on Inner Farne on 16 November. During this period a season's peak of three occurred on Brownsman on 17 October with two the following day.

Swift *Apus apus*

A well represented summer and passage visitor.

The species is predominately a 'June speciality' on the islands, as the first birds of the year usually reach the islands much later than the first arrivals on the nearby mainland. However the first one was seen flying south over Inner Farne on the evening of 30 April, the second earliest Farnes record following one on 16 April 1988. May saw a small movement of birds through the islands with 1-2 noted on 2, 9 and 28 May. The bulk of the season's records appeared in June with 1-3 on seven dates with peaks of seventeen east (ahead of a thunderstorm) on 19, a season's best of sixty-four north on 23 and fifteen west on 28 June. July produced 1-11 on four dates with forty north on 14 July. The last record involved two roosting on Brownsman tower on 17 August, a typical last date for this early departing summer

migrant.

Wryneck *Jynx torquilla*

An uncommon passage visitor.

The islands claim eighty-five records of this charismatic drift migrant and the year produced two autumn records from both the inner and outer groups. Following strong easterly winds on the morning of 9 September, a confiding individual was found in the Brownsman vegetable garden where it remained until the following day. On Inner Farne another was found at the same time on 9 September near the lighthouse and, like the aforementioned bird, was still present on the morning of 10 September.

Skylark *Alauda aryensis*

A common passage visitor. May have bred in 1865 and 1883 and *ca* 1900 (Brown, 1866; Harvie-Brown *et al*, 1884; Pike, 1902).

Well represented on spring passage with reports daily from 17 March-27 April. Passage intensified on two dates during this period; totals of twenty-nine north on 19 March included twenty-six over Brownsman and seventeen on the islands on 29 March. As with last year, June produced a single record with one west over Inner Farne on 23 June. Passage was extremely quiet in September with just a single bird logged as it flew west over Brownsman and then Inner Farne on 10 September. However October made up for the lack of the previous month's records with daily reports of birds filtering through the islands. Counts generally involved 1-12 on or over with peaks of fifteen west on 12 and seventeen west on 24 October. Early November saw a continuation of passage with up to seven daily in the first week, and thereafter up to four appeared to be settling to winter on the inner group as they were still present when the wardens departed in early December.

Sand Martin *Riparia riparis*

A well represented summer and passage visitor.

The species is reported on only a handful of dates each season on the Farnes and this year's records from six dates continues that trend (as shown in Table 9). The first sighting involved two north through the Kettle, Inner Farne on 11 April followed by the season's peak of four north over the same island on 27 April. Spring passage continued through May with two over Inner Farne on 20 and singles over Brownsman on 12, 13 and 20 May. The final spring report was of one over Skeney Scar on the outer group on 20 June. There were no autumn records.

Table 9 Number of records per year for Sand Martins on the Farne Islands, 2005-1996.

	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
No.dates recorded	6	12	8	7	10	11	14	6	6	8
First record	11 Apr	31 Mar	23 Apr	3 Apr	2 Apr	19 Apr	2 Apr	28 Apr	13 Apr	17 Apr
Last record	20 Jun	5 Sept	22 Aug	6 Jul	26 Aug	21 Jul	6 Sept	10 Sept	16 Sept	11 Sept

Swallow *Hirundo rustica*

A common summer and passage visitor. Bred in 19th century; *ca* 1900 (Selby, 1826; Pike, 1902); 1984 (Hawkey and Hickling, 1984) and 1990-1997 (Walton and Richardson, 1990-1991; Walton 1993-1998).

Reports indicate that birds on northerly spring passage favour the inner group of islands as a visible migration route, especially the Kettle 'basin'. Following the first bird of the year circling Inner Farne lighthouse before heading north on 2 April, birds were reported on forty-nine dates between 7 April and 24 June (forty-five on the inner group and twenty-five on the outer group). The majority of records involved light passage of 1-25 with spring peaks of forty-six on 27 and forty-one on 29 April, all on northerly passage. Autumn passage was marked by five west over Brownsman on 18 July and thereafter they were noted on twenty-one dates until the last record of a single over Inner Farne on 6 October. The majority of records concerned 1-23 south with one exception. On 7 September an exceptional 125 were counted which involved a flock of *ca* one hundred observed hawking over Inner Sound before moving south, with a further twenty-five west later that day. Although this was just short of the Farnes record count of 133 on 10 September 2002, it represents the largest individual flock seen.

House Martin *Delichon urbica*

A well represented summer and passage visitor. Six pairs attempted to breed in 1950 (Watt, 1950).

This summer and passage visitor is generally recorded on more occasions during a given season than that of its relative the Sand Martin (as shown in Table 10) and this year was no exception. The first bird of the year was seen hawking around the Inner Farne lighthouse on 12 April, representing the earliest ever Farnes record and wiping five days off the previous earliest record seen on 17 April 1987. Thereafter spring produced a handful of records with 1-3 on 27 April, 2 May and 4 and 28 June with a peak of eighteen north over Inner Farne on 26 May. Further records included a bird lingering on Staple Island on 4 July and an exhausted individual which landed on the observatory roof of Brownsman cottage on 17 August. Autumn passage was represented by singles on 21 August and 6, 7 and 29 September with the final record involving a bird west over Inner Farne on 30 September.

Table 10 Number of records per year for House Martins on the Farne Islands, 2005-1996.

	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
Dates recorded	13	18	9	7	19	9	11	19	15	6
First record	12 Apr	26 Apr	26 Apr	20 May	29 Apr	30 Apr	23 Apr	23 Apr	30 Apr	25 Apr
Last record	30 Sept	27 Sept	20 Aug	10 Sept	12 Nov	24 Sept	21 Sept	18 Sept	6 Nov	21 Sept

Richard's Pipit *Anthus novaeseelandiae*

A rare visitor.

This Siberian vagrant put in its best ever showing on the islands, with a total of three different birds recorded. As typical with this species, the first was discovered by its distinctive call and observed as it flew west over Inner Farne on the morning of 5 October. Another was then discovered on Brownsman on the morning of 6 October which disappeared soon after

onto the nearby South Wamses. Later that day two appeared together over Inner Farne and both settled on the top meadow where they remained for two hours before heading west towards the mainland. Due to the possibility of duplication, the day count on the latter day has remained as two rather than three different birds. These sightings represent the tenth-twelfth Farnes records and the first since September 2003.

Tree Pipit *A. trivialis*

A common passage visitor.

A disappointing showing on spring passage, which was made up for by an improvement in autumn. The spring only produced two, possibly three, birds with the first of the year on Brownsman on the typical arrival date of 28 April. On 1 May a vocal bird arrived on Brownsman and it, or possibly a different individual, was on Inner Farne dock bank later that day. The first autumn returnee was discovered on Inner Farne while wardens were watching the Booted Warbler on 17 August, as a vocal bird was present early that morning. Thereafter 1-2 were seen on eight dates from 30 August-8 October with the last record involving a lingering bird on Brownsman on 14-17 October. The only exception was a season's peak count of three on Inner Farne on 1 September.

Meadow Pipit *A. pratensis*

A common passage visitor. Bred *ca* 1901 and in eleven years 1946-1973 (Pike, 1902, Wilson, 2000-2006).

Very abundant on passage through the islands with almost daily records during spring and autumn. Passage in spring was logged between 18 March and 28 May with noticeable influxes of northern bound birds in late March (with up a hundred in the final week), and 122 north on 11 April. Between these influxes birds were present daily with counts ranging from 1-61 with the last spring individual on Inner Farne on 28 May. Autumn arrivals were logged on the islands from 15 August-5 November and passage was noticeably quiet with 1-30 daily with peak counts of 105 on 9 and sixty on 10 September. Numbers declined throughout October with the last report of two west over Inner Farne on 5 November.

Red-throated Pipit *A. cervinus*

An extremely rare visitor.

This rare eastern vagrant was discovered on Brownsman on 5 October and lingered on the island until last seen on 12 October. The bird was very obliging when first discovered, often perching on the stone wall of the vegetable garden, but progressively became more elusive towards the end of its stay. Often located by its very distinctive call, this represents only the fourth Farnes record following individuals in May 1974, May 1991 and September 1997.

Rock Pipit *A. spinoletta*

A common resident, well represented as a breeding species.

Territorial birds were singing in early spring and nest building activity was noted from mid-April. The first eggs were discovered on 1 May and a total of 20 (26) pairs nested as follows; Inner Farne 5 (7), West Wideopens 2 (2), East Wideopens 1 (1), Staple Island 3 (5), Brownsman 7 (8), North Wamses 0 (1), South Wamses 0 (1), Longstone Main 1 (1) and Big Harcar 1 (0). Predation was reduced as birds appeared to nest in improved, well hidden areas including in the lighthouse rubble on Brownsman and the usual spot in the gas bottles on Longstone Main. The first fledglings were seen around the islands from 31 May and a small

number of pairs went on to to rear second broods. After the breeding season small numbers lingered on the islands, and local breeding birds were swelled in autumn by northern breeding birds with peaks of forty on Brownsman on 9 October and up to fifty-eight on Inner Farne throughout November.

On 9 April a striking bird seen on Brownsman on northern passage was identified as belonging to the Scandinavian race *A. s. littoralis*, but soon departed. This represents only the third confirmed record of this race on the islands following singles in 1991.

Yellow Wagtail *Motacilla flava flavissima*

A well represented passage visitor.

Another poor year continuing the recent trend of low numbers recorded on passage, mirroring the decline of the species nationally. The year produced five records, the same total as the previous two seasons, and long gone are the days when the species was numerous on passage through the islands. The first record of the year concerned a female north over Brownsman on the typical arrival date of 21 April. Early May produced a flourish of records on Inner Farne as a female was seen on 1 May followed by a pair on the short sward by the lighthouse the following morning. During this period, one was seen flying east over Staple Island on 2 May. The only autumn record involved one west over Brownsman on 30 August.

Citrine Wagtail *M. citreola*

An extremely rare visitor.

Mid-September brought one of the finest rarity filled 'falls' ever experienced on the Farnes and one of these eastern vagrants just added to the impressive array of rarities that day. A first-winter bird was seen and heard as it flew west over Brownsman and then Inner Farne on the morning of 10 September and was possibly the same individual which took up residence down the coast at Alnmouth later that day, lingering for a further three days. If accepted, this will represent the fourth record for the islands following first-winter birds on 11-12 September 1989, 26 September 2000 and 2 October 2003.

Grey Wagtail *M. cinerea*

An uncommon passage visitor. May have bred in the 1890s (Miller, 1911-14).

A good showing on passage especially in the spring when the species is regarded as scarce. Mid-March produced northerly passage through the islands with normally the bulk of records from Brownsman, with four on 18, three on 19 and a single on 22 March. Inner Farne then produced singles late in the month, with records on 27, 29 and 30 March. The impressive spring showing was completed by records of singles north over Inner Farne on 2 and Brownsman on 17 April. Autumn produced a good number of records following the first autumn passage bird seen on Inner Farne on 12 September. Thereafter singles were recorded on or over the islands on eleven dates until last recorded with a single west over Inner Farne on 17 November.

Pied Wagtail *M. alba*

A well represented summer and passage visitor and uncommon breeding species.

Spring passage was negligible as resident breeding pairs established territories but passage was noted with 1-5 north on several dates, peaking with six on 28 March and ten through the inner group on 1 April. Following nest building in late April, the first eggs were discovered in the first week of May. A total of 5 (6) pairs nested as follows: Inner Farne 2 (2), West

Wideopens 1 (0), Brownsman 0 (2), Staple Island 1 (1), North Wamses 0 (1) and Longstone Main 1 (0). Interestingly it was only the fifth documented year that birds had bred on the West Wideopens and the seventh on Longstone Main, while it was the first time since 1992 that they made no attempt on Brownsman. One of the pairs on Inner Farne utilised the small hole in St Cuthbert's chapel wall (once previously the home of nesting Starlings), hatching four young by 21 May and fledging all four on 5 June. After the breeding season, birds dispersed from the islands with a peak of twelve on Inner Farne on 27 August. The species became very scarce in autumn with the only report concerning a lone bird on Brownsman on 16 October.

The year produced a good number of reports of the migratory **White Wagtail** *M. a. alba* with up to four in late March. On 27 March, two were at the lighthouse compound on Inner Farne with one present until the following day, while two appeared on Brownsman on 27-28 March with one lingering until 1 April. Thereafter singles were present on the outer group on three dates between 16 and 19 April with two noted on 25 April (singles on Brownsman and Longstone Main). The only autumn record concerned a male on Brownsman on 10 September.

Waxwing *Bombycilla garrulus*

An uncommon winter and passage visitor.

Following the unprecedented influx of last season (thirty birds recorded over nine dates), a single was discovered on Brownsman on the morning of 3 November. The bird was observed sitting in the lighthouse rubble near the cottage before it departed soon after towards the mainland. Still regarded as a 'rare' bird on the islands, this represents only the thirteenth year the species has been recorded since the first in November 1949.

Wren *Troglodytes troglodytes*

A common visitor and passage migrant. May have bred in the 1880s (Bolam, 1912).

Over-wintering resident birds were very evident when the wardens arrived on the islands in mid-March. Five were present on the inner group throughout March, declining during April with the last report of two on Inner Farne on 19 April. It was a similar story on the outer group, with up to three resident, declining throughout April with the last lingering until 7 May. The first autumn returnee appeared on Brownsman on 10 September and thereafter birds were resident until the wardens departed in early December. October saw passage peaking through the islands as Inner Farne had up to ten, Brownsman five and Staple Island two with odd records of singles on Longstone End, West Wideopens, North Wamses and South Wamses. Thereafter the small wintering population took up residence with five settling on Inner Farne, three on Brownsman and a single on Staple Island.

Dunnock *Prunella modularis*

A common passage visitor. May have bred in the 1890s (Pybus, 1903).

Following singles on Brownsman on 18-24 March and Inner Farne on 24 March the islands experienced an unprecedented influx in early spring, breaking the previous record count. The first intimation of this unprecedented movement occurred on the morning of 27 March as the islands boasted fifty-one, increasing to seventy-two the following day (a Farnes record count) and declining thereafter (as shown in Table 11). During this period good numbers were reported along other east coast headlands including up to eighty at Spurn, East Yorkshire. This influx is thought to have involved birds of the nominate race *P. modularis,*

moving north from wintering grounds in southern Iberia to breeding grounds in Fennoscandia which were caught in a low pressure system across the east coast of the UK, dropping good numbers onto the Farnes. Thereafter small numbers of 1-7 remained in residence throughout April, with the last spring record involving a single on Inner Farne on 30 April. Autumn produced a more typical light influx from 4 October, with 1-3 resident on both island groups throughout the late autumn and early winter period.

Table 11 Dunnock numbers on the Farne Islands, March/April 2005.

	27 Mar	**28 Mar**	**29 Mar**	**30 Mar**	**31 Mar**	**1 April**	**3 April**	**5 April**
Inner group	30	40	30	20	15	5	5	2
Outer group	21	32	25	25	18	16	14	6
Day total	**51**	**72**	**55**	**45**	**33**	**21**	**19**	**8**

Robin *Erithacus rubecula*

A common passage visitor. Bred in 1951 (Watt, 1951a).

Small numbers were present on the islands when the wardens arrived, presumably having successfully over-wintered and, although not normally associated with spring influxes, the south-easterly weather front in late March grounded some good numbers onto the islands. The local resident population was swelled on 19 March with a total of forty-two counted (twenty-two on Brownsman, ten on Longstone Main and ten on Inner Farne). A second influx soon followed from 28-31 March which brought daily counts of 22-30, peaking with thirty-four on 30 March. During this time a bird was caught in the Brownsman cottage bearing a Danish ring on its leg, which was significant as less than thirty ringed Danish Robins have been recorded in Britain. April saw a steady decline in numbers and the last spring record involved a single on Brownsman on 1 May. The first autumn returnees appeared on Inner Farne from 18 August and thereafter became resident on the islands with light influxes recorded on passage. Such an influx occurred between 15 and 20 October with 16-41 noted daily, peaking at fifty-one on 17 October. As the season drew to a close it was evident that a small wintering population had again established, especially on the inner group with up to five birds still present in December.

Black Redstart *Phoenicurus ochruros*

A well represented passage visitor.

The first bird of the year, a female, appeared on Inner Farne and lingered from 21-26 March, before an influx occurred in late March/early April as shown in Table 12. The last of the spring passage birds were seen on Brownsman on 7 and 9-10 April and on Inner Farne on 20 April. Mid-summer records are not unheard of, and a female-type was seen on Staple Island on 19 July, exactly the same date as one seen in 2003. As usual the next influx

Table 12 Black Redstart influx to the Farne Islands in late March/early April 2005.

	27	**28**	**29**	**30**	**31**	**1**	**2**	**3**	**4**	**5**
Inner group	2	2	1	3	3	1	1	2	2	2
Outer group	1	1	1	3	3	2	2	1	-	-

occurred in October with Brownsman attracting singles on 7-9 and on eight dates from 18-30, with one on Inner Farne on 26 October. The only multiple autumn record concerned three on Brownsman on 24 October.

Redstart *P. phoenicurus*

A common passage visitor.

A splash of colour was brought to the islands during the spring as a handful of birds were recorded, the majority on the outer group. The first record of the year involved a stunning summer-plumage male on Brownsman on 14-15 April (the earliest record since 1995). Other April records included lone females on Brownsman on 21 and on Inner Farne on 29 April. All May records were confined to Brownsman, with a male on 1, a female on 2 and three on 13 involving two females and one male, with one female lingering until 15 May. It was another quiet autumn (the last decent autumn passage occurred in 2002) as surprisingly there were no August records, with the first autumn arrival on Brownsman on 2 September. The only other September report concerned a total of seven during the 'fall' of 10 with three on Inner Farne and singles on West Wideopens, Brownsman, Staple Island and Longstone End. The spell of south-easterly winds in mid-October produced 1-2 on the outer group between 15-19 October, peaking with three on Brownsman on 16 October.

Whinchat *Saxicola rubetra*

A common passage visitor.

As with the majority of summer migrants, low numbers were reported in spring with only two records, with single males appearing on Staple Island on 25-27 April and another male on Brownsman on 1 May. The first autumn (and inner group record) involved an early returnee on Inner Farne on 30 July. Thereafter singles were recorded on 18, 29 and 30 August with a total of ten spread across the islands on 31 August (six on Inner Farne and four on Brownsman). September produced 1-5 between 1 and 11, peaking with twelve on 10 September (three on Inner Farne, nine on Brownsman). The final record was an individual on Inner Farne on 12 September.

Stonechat *S. torquata*

An uncommon passage visitor. Bred in 1946 (Goddard, 1946).

It was an exceptional spring for what was previously considered a scarce bird on the islands, mirroring the continued rise of the breeding population in north-east England. March produced the bulk of records with a single male on Brownsman on 17-18 March followed by seven frequenting the island on 19 March, representing a new record count. Other records brought 1-2 on four dates until the last was seen on 1 April. During this period Inner Farne produced a single male on 18 and a female on 21-22 March. A late spring record involved a male on Inner Farne on 28-29 April. Three different birds, all males, were seen during the autumn, with one on Brownsman on 9 October followed by a long staying bird on the same island between 22 and 31 October. The only other record concerned a male on Inner Farne on 26-27 October.

Wheatear *Oenanthe oenanthe*

A common passage visitor. Bred in six years 1931-59 (Goddard, 1925-1948).

The season started with a flourish as a lingering male on Inner Farne on 19-20 March was the earliest ever record, beating the previous earliest on 23 March 1987. Thereafter pro-

tracted passage saw reports of 1-13 on forty-eight dates until last seen on 30 May. During that period passage peaked in early May with twenty-nine on 1, followed by a season's peak of seventy-one on 2 (thirty-five on the inner group and thirty-six on the outer group) dwindling to eleven by 3 May. As usual the first autumn returnees appeared in mid-August with a juvenile on Brownsman on 10 August. Thereafter 1-15 were recorded on thirty-six dates until last seen in late October. Passage peaked in early September with twenty-four on 2, forty-five on 9 (fifteen on the outer group, thirty on the inner group) and thirty-three on 10 September. The last record was a late individual seen on North Wamses on 21 October, the latest for four years.

Ring Ouzel *Turdus torquatus*

An uncommon passage visitor.

Small numbers occur on passage every year through the Farne Islands but they have been known not to occur in some springs including those of 1997, 2001 and 2003. However this was not the case this year, as a female near the lighthouse on Inner Farne on 29 March was the second ever earliest, just falling short of the earliest on 27 March 1989. The spring went on to produce at least three further records, with a male on 15 April showing well all day on Brownsman, and was possibly the same bird which relocated to Inner Farne from 16-18 April. Other records to complete a good spring showing included individual females on Brownsman on 17 and Inner Farne on 20 April. As usual, mid-October brought a flurry of records with a male on South Wamses on 14 October followed by 2-3 daily on Brownsman from 15-18 October. The final involved one on Brownsman on 19 October.

Blackbird *T. mercula*

An abundant passage visitor. Bred in three years 1893-1914, *ca* 1901, 1934, 1962 then annually 1964-74 (Miller, 1911-1914; Pike, 1902; Thorp, 1934; Hawkey, 1991).

Small numbers were resident on the islands when the wardens arrived in mid-March, with four on the inner group and two on the outer group, having presumably over-wintered. Soon after, a south-easterly weather front brought big influxes in late March with thirty-six on 20 increasing to a spring peak of forty-five on 29 March (thirty on the outer group, fifteen on the inner group). Thereafter numbers dwindled steadily during April with sixteen on 1, decreasing to eleven by 3 April, down to 1-3 daily for the rest of the month. One was on Inner Farne on 4 May with a very late bird on the same island on 28 May. The first autumn arrivals appeared on 5 October, with three on Brownsman and a single on Inner Farne. As expected, the heaviest passage of the year occurred during October with some big day totals on westerly passage including *ca* 1,000 on 15, 641 on 16 and 260 on 17 October. This heavy passage saw many birds scattered across the islands, some lingering for several days, with regular counts of from 10-41 until the end of the month. Other noticeable westerly passage logged included 200 on 24 and 226 on 31 October. After the surge of October passage only small numbers were recorded in November and early December, indicating a small wintering population once again.

Fieldfare *T. pilaris*

A common passage visitor.

Northern bound birds were recorded on passage during the spring period with almost daily records between 17 March and 27 April. The majority of sightings involved 1-5 with peaks in late March of twenty-nine on 29, twenty-six on 30 and thirty-six on 31 March. The last

spring record concerned two over Brownsman on 27 April. In complete contrast to the previous season when the first arrivals occurred in mid-August, the first autumn returnee did not appear until the first week of October. Following two west over Inner Farne on 6 October, 1-29 were recorded on twenty-six dates until last seen on 23 November. Passage during the autumn was disappointing, with peak counts of eighty on 23, fifty on 24 and sixty on 27 October.

Song Thrush *T. philomelos*

A common passage visitor.

As with the other common *Turdus* species, spring passage peaked in late March with numbers declining throughout April. Spring produced daily sightings of 1-8 between 17 March and 1 May with peaks on the islands of seventeen on 27, thirteen on 28 and nineteen on 29 March. A strange series of mid-summer records concerned individuals on Longstone End on 23 June, Inner Farne on 2 July and Brownsman on 8 July and conceivably could have been the same bird on each occasion. The autumn period was marked by birds present on the islands from 10 September-4 December. As with the majority of the other migratory thrushes, peaks occurred in mid-October, as shown in Table 13, and thereafter numbers dwindled with single figure counts during November and into early December.

Table 13 Peak westerly Song Thrush passage in mid-October though the Farne Islands, 2005.

12	13	14	15	16	17
60	17	10	300	67	17

Redwing *T. iliacus*

An abundant passage visitor.

Passage was light through the islands during spring despite favourable 'fall' conditions in late March. Reports indicated low-figure counts were the norm between 17 March and 27 April with a spring peak of fourteen on 31 March. The first autumn returnee arrived on 4 October and thereafter birds were well reported until the wardens left on 4 December. October produced some very impressive day counts as birds funnelled through the islands, having crossed the North Sea heading for wintering grounds in Britain (as shown in Table 14). Following these big influxes smaller numbers of stragglers lingered throughout November, peaking with twenty on 1 November.

Table 14 Redwing passage on selected October dates, Farne Islands, 2005.

12	15	16	17	18	19	20	23	24	29
370	*Ca* 5,000	3,979	2,500	294	255	487	310	320	571

Mistle Thrush *T. viscivorus*

An uncommon passage visitor.

An impressive showing in early spring as four appeared on Brownsman on 27-28 March increasing to five on 29 March. Interestingly the inner group reported small numbers during the same period peaking at five on 29 March, and were presumed to involve all the same

birds. This count represents a record for the islands, eclipsing the previous day total of four in October 2004. The following day, 30 March, only one lingered and was the last spring report. Autumn produced a handful of records to continue the good year with a single lingering on Brownsman on 13 September, three west over the outer group on 13 October and one briefly on Brownsman on 2 November.

Grasshopper Warbler *Locustella naevia*

A well represented passage visitor.

This distinctive and often very obliging species appeared on the typical spring arrival date of 25 April, when one was discovered feeding in sparse vegetation on Longstone Main. Further records followed with one on 28 April favouring the dock bank on Inner Farne, while two arrived on the islands in early May, with individuals on Inner Farne and Brownsman on 1 May. Autumn can be interesting, as any that appear in October are carefully scrutinised for those rarer *Locustellas* and such a bird took four hours to confirm on Brownsman on 12 October. Another heart stopping moment came on Inner Farne when an unidentified *Locustella* was seen running along the ground in the vegetable garden on 20 October but disappeared as quickly as it was found. However the bird's true identity may have been given away as a Grasshopper Warbler was confirmed in the same area of Inner Farne only four days later on 24 October. The records were intriguing and late, as the previous latest had been seen on 19 October 1990.

Sedge Warbler *Acrocephalus schoenobaenus*

A well represented passage visitor.

The islands annually host small numbers on spring passage and this year was no exception with 1-2 on eight dates between 1 and 28 May. The outer group experienced the bulk of the records with reports on six dates compared to just three on the inner group. The last spring record concerned a late northern bound bird on Brownsman on 12 June. The first autumn arrival appeared on Brownsman on 30-31 July, followed by singles on four dates during August. September produced further singles on 1 and 9 September with an influx during the fall conditions on 10-11 September. That two day period produced four lingering birds including two on Staple Island with singles on Brownsman and Inner Farne, and these were the last records of the year.

Reed Warbler *A. scirpaceus*

A well represented passage visitor.

The long wait for a spring bird on the inner group continues, with the last seen in June 1999. However it is a different story on the outer group with annual spring records and this was continued this year with singles on Brownsman on 19 and 26-27 May. Autumn passage commenced in September with two on Brownsman on 9 followed by a season's peak of six on 10 September involving two on Brownsman and singles on Inner Farne, Staple Island, Longstone Main and South Wamses. As with last year, two late birds appeared on the islands with both seen together on Brownsman on 19 October.

Booted Warbler *Hippolais caligata*

An extremely rare visitor.

One of the highlights of the year involved this eastern European and central Asian breeder, which graced the islands in mid-August having appeared on a ridge of high pressure from

the continent. The bird was tentatively identified in fading light on Inner Farne on the evening of 16 August but thankfully was still present the following morning. It was very elusive at first, favouring a patch of tall Hemlock *Conium maculatum* near the pond but as the day progressed the bird became more showy. It was without doubt the rarest passerine recorded in Britain during a quiet August, putting the Farnes on the birding map, and a total of twelve mainland birders successfully twitched the bird on 17 August. This represents the third County record and the third for the Farnes following individuals on Inner Farne on 19 October 1990 and Brownsman on 20-21 August 1996. In a national context only two were seen in 2004 and this will represent the ninety-fourth British record to date.

Subalpine Warbler *Sylvia cantillans*

An extremely rare visitor.

This classic Mediterranean overshoot was one of the major stars of the exceptional 'fall' on 10 September. The bird was discovered in the vegetable garden on Inner Farne, where it showed well throughout its one day stay and was one of only two birds seen nationally in September. This represents the fourth Farnes record and the first in autumn following individuals on 20 June 1977, 26 April 1991 and 10 May 2000.

Barred Warbler *S. nisoria*

An uncommon passage visitor.

The Farnes are becoming arguably one of the best localities in Britain for this large *Sylvia* warbler, with no fewer than sixty-six records including a staggering sixteen in just the past three years. That trend continued with five individuals during the autumn, although unlike recent years the outer group dominance was halted by an impressive run on the inner group. The first bird of the year, a first-winter, appeared off the back of northerly winds on Inner Farne on 20-21 August. Further records brought first-winters to West Wideopens on 2 and Brownsman on 9 September. However Inner Farne stepped in with an impressive showing as a first-winter bird was found on 9, increasing to three on the island on 10 September. This influx was part of an incredible influx of drift migrants on the islands that day and two of these lingered until the following day with one still present until mid-afternoon of 12 September.

Lesser Whitethroat *S. curruca*

A common passage visitor.

Overall it was a very quiet year with reports on only nine dates during the season. However a single favouring the vegetable garden on Inner Farne on 18 April was the earliest ever record, beating the previous earliest on 23 April 1983. Thereafter 1-2 were seen on four dates between 1 and 28 May, peaking with three on 2 May. Surprisingly there were no autumn records on the inner group, with all records confined to the outer group. Records included four on 10 September (three on Longstone Main and a single on Staple Island), followed by a single on Brownsman on 11 September. The final record involved a typically late individual on Brownsman on 19 October.

Whitethroat *S. communis*

A common passage visitor.

Spring arrivals were late in coming as an individual on Brownsman on 13 May was the latest arrival date of the first bird since 1991. Thereafter only small numbers were recorded

with singles on six dates between 20 and 27 May, with a peak of four on 28 May. An unusual mid-summer record involved a female on Brownsman on 28 June. To complete a poor season for the species, autumn reports involved singles on nine dates between 28 August and 9 September. The season's peak count occurred on 10 September with two on Inner Farne and a single on Brownsman, while one lingered on the latter island on 11 September. Interestingly a pale, cold grey plumaged bird appeared on Brownsman on 2 November which belonged to one of two eastern races, *S. c. volgensis* or *icterops*, and was the latest on the Farnes by some fifteen days.

Garden Warbler *S. borin*

A common passage visitor.

A disappointing spring with just three birds: singles on Brownsman on 19 and 22 May with a skulking individual on the dock bank of Inner Farne on 19 May. The first autumn arrival appeared on Brownsman on 29-31 July followed by singles on nine dates between 15 and 26 August. There was a slight improvement in September with 1-2 on three dates from 2-11, peaking with five on 10 September involving two on both Brownsman and Inner Farne with a single on Longstone Main. The final record was an individual on Inner Farne on 24 October.

Blackcap *S. atricapilla*

A common passage visitor.

Spring brought the expected scattering of northern bound migrants to the islands with a male on Brownsman on 4 April representing the first of the year. Thereafter 1-2 were reported on thirteen dates with a female on Longstone Main on 13 May being the last of the spring. During this period a small influx occurred on 1-2 May with four on Inner Farne, five on Brownsman and a single on Staple Island. The first autumn birds appeared in September although these were confined to between 9 and 12 September. Following the first, a male on Brownsman on 9, a total of five birds were scattered across the islands on 10 with two still present on 11-12 September. October witnessed reports on nineteen dates with the year's peak passage in mid-month. Twenty were on four islands on 15 October including ten on Brownsman, while the following days saw 8-12 lingering until numbers dwindled from 21 October. Thereafter a second small influx took place on 24 October with eleven present but low single figure counts were the norm until the end of the month. Late passage birds were seen on Inner Farne on 5 and 15 November.

Greenish Warbler *Phylloscopus trochiloides*

An extremely rare visitor.

This rare continental migrant appeared on the islands during a major influx which brought twenty-five along the east coast between Northumberland and Norfolk on 10-12 September. An obliging bird was discovered on Brownsman on 10 September near the cottage at 16:15 and continued to perform for the rest of the day and into 11 September. This represents the fourth Farnes record and comes hot on the heels of two last year on 14 and 31 August 2004, with the first on 22 August 1991.

Pallas's Warbler *P. proregulus*

A rare visitor.

This Siberian gem graced the islands once again in mid-October and is now becoming

regarded as an annual visitor on the Farnes. Since its first appearance on the islands in October 1975 there have been thirteen records, although a noticeable upsurge in recent years with nine of them occurring in the past ten years. This year was no exception as two of these stripy sprites graced Brownsman on 15 and 18 October, both showing well during their short stay. It was the third consecutive year the islands had boasted two birds, and the Farnes were one of only a handful of British sites to claim multiple sightings this year in a relatively quiet autumn for the species.

Yellow-browed Warbler *P. inornatus*

An uncommon passage visitor. Fourteen in 1999 was exceptional.

This Siberian waif is one of the commonest drift migrants to grace the islands if conditions prevail from the east during the autumn. An exceptional influx into Britain in October produced an unprecedented 1,500 nation-wide, five of which were on the Farnes. The first individuals appeared on Inner Farne and Brownsman during 5 October with the Brownsman bird being seen on Staple Island on 7 October. Interestingly a fresh corpse was discovered by the Brownsman cottage on 12 October and it was not clear whether it was a different bird to those previously mentioned. However it was not long before more fresh arrivals appeared with singles on the dock bank of Inner Farne on 13, near the pond on Brownsman on 15 and a different bird on the same island on 17 October.

Chiffchaff *P. collybita*

A common passage visitor.

Well reported throughout the season with two birds on Inner Farne on 21-22 March representing the earliest ever Farnes record. Thereafter 1-4 were reported on forty-one dates between 23 March and 30 May including occasional singing birds. Peak spring passage saw seven on 1 May (five on Brownsman and two on Inner Farne) with five still present on 3 May. Surprisingly there was a distinct lack of September records with only two reports of individuals on Brownsman on 10 and Inner Farne on 30 September. However October produced an upsurge of records with nine on 5 October including four on Staple Island, three on Inner Farne and singles on Brownsman and Longstone End. Thereafter 1-6 were recorded on twenty-one dates with seven on 17-18 October. In early November 1-2 late stragglers were present between 1-3 and these would normally have been the last records of the year. However the discovery of two on Brownsman on 18 November was surprisingly late and both remained in residence until the wardens left on 4 December, surviving some low temperatures and northerly gales. Whether these birds were attempting to winter on the islands is unclear, but they represent only the second ever December records following one noted on 7 December 1977.

Willow Warbler *P. trochilus*

A common passage visitor.

An early bird appeared on Brownsman on 4 April and spring passage was logged on twenty-eight dates until last recorded on Inner Farne on 29 May. Passage involved 1-7 with peaks of ten on 1 May increasing to nineteen on 2 May (eight on Inner Farne, seven on Staple Island and four on Brownsman). A mid-summer record concerned one commuting between Staple Island and Brownsman on 23 June. The species was more numerous in the autumn with almost daily sightings between 1 August and 5 October with peak counts of ten on 18 August. The 'fall' on 10 September produced a total of twenty-nine between the islands,

with fifteen present the following day. A bird of the eastern form *P. t. yakutensis* was discovered on Brownsman on 17 October and remained in residence until 23 November. This striking bird survived some harsh conditions during its stay and became the latest ever Farnes record by some sixteen days.

Goldcrest *Regulus regulus*

A common passage visitor.

Well reported during spring and autumn passage with the season's peak numbers occurring in October. Spring passage saw 1-8 present almost daily between 18 March and 26 April with peaks of twenty-two on 24 and fifteen on 31 March and twenty-one on 1 and twenty-two on 2 April. Following a single on Brownsman on 17 August, September brought small numbers on ten dates with the bulk of reports occurring in October. The month produced daily records with an impressive influx mid-month peaking with 180 on 15 October, as shown in Table 15. Thereafter up to thirty remained in residence until the end of the month with the last record of one on Inner Farne on 5 November.

Table 15 Daily counts of Goldcrests on the Farne Islands, October 2005.

October	**14**	**15**	**16**	**17**	**18**	**19**	**24**	**25**
Counts	25	180	47	53	55	35	75	50

Spotted Flycatcher *Muscicapa striata*

A well represented passage visitor.

Despite only six records during the season, it was the best showing in three years. The first inner group bird since September 2002 appeared on Inner Farne by the lighthouse compound on 28 May and was followed by a mid-summer record of one on Brownsman on 7 July. Autumn was productive with individuals on Inner Farne on 29 August and 10 September with others on Brownsman on 13 September and 5 October.

Red-breasted Flycatcher *Ficedula parva*

An uncommon passage visitor.

The long wait for this regular east coast drift migrant was over, as despite forty-two previous Farnes records, the species had not occurred on the islands since one graced Brownsman on 24 September 2000. The poor showing in recent years was all but forgotten as a stunning adult summer-plumage bird was discovered on West Wideopens on 10 September, allowing good views for all the wardens.

Pied Flycatcher *F. hypoleuca*

An uncommon passage visitor.

The Farnes were brought back down to earth following an excellent showing in 2004, with the season producing sightings on only ten dates. The only spring record concerned a female seen briefly on Brownsman on the evening of 1 May. Light autumn passage resumed on 18 August with two on Inner Farne and one on Brownsman. Both islands then produced singles on 21 and three each on 31 August. Thereafter 1-2 were noted on five dates from 1-6 September with the last sighting involving five on 10 September (four on Inner Farne, one on Brownsman).

Great Tit *Parus major*

An uncommon visitor.

The arrival of birds in early spring on the back of a south-easterly weather front suggested continental origins of the three birds which appeared on the islands during this time. A female was on Inner Farne on 22 March but moved rapidly through, spending just thirty minutes on the island. However a more obliging and long staying female arrived on the same island from 24 March-1 April, favouring the peanut feeder provided. The first outer group record since October 1994 concerned an adult male on Brownsman from 31 March-1 April. The represents the best showing of the species on the islands in eleven years.

Red-backed Shrike *Lanius collurio*

An uncommon passage visitor.

A first-winter bird was discovered by wardens moments after discovering the Red-breasted Flycatcher on West Wideopens on 10 September, the first autumn record since 1998. Amazingly the same small area of hemlock on the West Wideopens only held four birds that day: Redstart, Robin, Red-breasted Flycatcher and Red-Backed Shrike! The bird was still present the following day and then relocated to nearby Inner Farne where it remained until 16 September.

Great Grey Shrike *L. excubitor*

A rare visitor.

One of the contenders for 'bird of the year' for multiple reasons, as this cracker appeared on Inner Farne from 28-30 March. As with any migrant *Lanius*, the bird performed exceptionally well and on one occasion was seen carrying a Dunnock across the central meadow.

This then led to the discovery of the bird's 'larder' in a small Elder *Sambucus nigra* in the vegetable garden where prey items were impaled including two Dunnocks and a Pied Wagtail. The species is almost annual on nearby Holy Island, but despite this representing the seventeenth record for the Farnes it has been long overdue, with the last record dating back to 28 October 1991.

Jackdaw *Corvus monedula*

A well represented visitor. Former breeder, last in 1966 (Hawkey, 1991)

Recorded in small numbers in both spring and autumn. Typical early spring sightings involved 1-2 on six dates between 17 March and 11 April with a peak of five east over Brownsman on the unusually late date of 13 May. Autumn passage was quiet with two over the inner group on 20-21 September and 4 October. The only other autumn report concerned two confiding birds lingering on the outer group between 18 and 21 October, favouring Brownsman and Staple Island.

Rook *C. frugilegus*

A well represented visitor.

Peak passage occurred during April with 1-2 on seven dates, peaking with three west over

Brownsman on 4 April. The only other spring record involved four west over the islands on 2 May. As with the previous season, autumn passage was light with 1-2 on 18 September and 8 October, peaking with four over Inner Farne on 30 September.

Carrion Crow *C. corone*

A well represented visitor and rare breeding species.

Evident as ever around the islands with daily sightings of 1-8 almost daily throughout the spring between 17 March and 13 May. During this period some noticeably heavier passage was logged with thirty-seven west and twenty-five south on 27 April, followed by twenty-five west on 29 April and twenty-six west on 2 May. However, unlike recent years the species was conspicuous by its absence during the summer months. There were no records between 14 May and 7 October on the outer group, while the inner group only recorded singles on eighteen dates during the same five month period (very poor by the species' standards). Thereafter birds were noted regularly throughout the autumn with a peak of eight on 14 October and 5 November.

Hooded Crow *C. cornix*

An uncommon visitor.

Once a familiar passage migrant, the species is becoming very scarce in the north-east. The season produced two records, the first of an individual west over Brownsman on 18 March which was seen flying over the Inner Farne lighthouse cliff moments later, before heading north-west towards the mainland. A second bird was then discovered on the Longstone complex later that day, remaining until 19 March. This is the first occurrence since the promotion of the bird as a 'species' in 2002, with the last Farnes record on 4 April 2001.

Starling *Sternus vulgaris*

A common visitor, extremely rare breeder.

Abundant throughout the season with records from all months except May. Spring produced daily reports with peaks of *ca* a hundred on 20 March including regular overnight roosting birds on the artificial tree on Inner Farne. A singing bird heard on Inner Farne on 25 April raised expectations of a possible breeding attempt; the last such attempt occurred in 2000, but alas nothing more came of the territory-holding individual. As usual, early June witnessed small family parties arriving from the mainland to forage in the safety of the islands and thereafter the species became daily throughout the rest of the season. Counts occasionally reached *ca* a hundred on a number of occasions during the autumn, with numbers swelled by continental immigrants and peaking with 130 west on 24 October and 147 west on 29 October.

Rose-coloured Starling *S. roseus*

An extremely rare visitor.

A stunning record for the year concerned.

A vocal first-winter bird was seen on 20 October flying west low over Brownsman in the company of a Starling, but despite a low swoop over Staple Island it continued west towards the mainland. The pale plumage tones of first-winters are a huge give-away at that time of year, as young juvenile Starlings have completed body moult and acquired adult-like first-winter plumage, unlike young Rose-coloured Starlings which retain immature plumage. This represents only the second record of this southern European species, following a juve-

nile on Brownsman on 9-10 September 1993.

Tree Sparrow *Passer montanus*

An uncommon visitor.

Still a very scarce visitor to the islands, one appeared in early spring on Brownsman on the morning of 22 March, and remained until the following morning. The first record since a spring bird on Brownsman in 2003.

Chaffinch *Fringilla coelebs*

A common passage visitor.

An outstanding start to the year was highlighted by one of the best ever spring showings preceding one of the most disappointing autumns. The south-easterly winds in late March produced almost daily sightings of 1-9 between 20 March and 16 April. During this period a noticeable influx occurred from 28-30 March with up to thirty-seven lingering on the islands (a maximum of twenty-five on Inner Farne and twelve on Brownsman), representing a record spring count. Thereafter numbers dwindled with the last spring sighting involving a single on Inner Farne on 27 April. Sadly the autumn never replicated the spring showing, with 1-3 recorded on twenty dates between 5 and 29 October. A very late female was discovered feeding around the cottage on Brownsman on 4 December, the latest record since 1995.

Brambling *F. montifringilla*

A common passage visitor.

Evident on spring passage with northern bound birds passing through the islands between 26 March and 27 April. During this period 1-3 were recorded on nineteen dates with a peak in late March, with eight on 28 followed by nine on 29 March. The first autumn arrivals were seen in late September as two west over Inner Farne on 25 September heralded the start of the autumn movement. October produced the bulk of records with almost daily sightings of birds lingering on the islands for several days at a time. An impressive westerly movement occurred between 12 and 16 October as shown in Table 16. Thereafter numbers dwindled with small numbers lingering on the islands until the last record of two west over Brownsman on 2 November.

Table16 Westerly movement of Bramblings through the Farne Islands, 12-16 October 2005.

October	**12**	**13**	**14**	**15**	**16**
Counts	124	71	27	251	410

Greenfinch *Carduelis chloris*

A well represented passage visitor.

Passage was light during the spring with 1-3 on thirteen dates between 18 March and 30 April, peaking with four on Brownsman on 31 March. A very unusual late-summer record concerned an elusive individual discovered on the central meadow on Inner Farne on 30 July. Autumn passage resumed with five west over Inner Farne on 21 September and smaller numbers were recorded on passage over the outer group on ten dates in October. However this was eclipsed by a build-up on the inner group, as the large patch of Lesser Burdock

Arctium minus in the cemetery on Inner Farne attracted good numbers of birds actively feeding on the numerous seed-heads. The flock fluctuated daily between thirty and sixty-two with a peak of at least eighty-two on 25 October representing a new Farnes record count. The flock decreased during November with smaller numbers of from 4-25 recorded daily until the wardens departed on 4 December.

Goldfinch *C. carduelis*

A well represented passage visitor.

Spring produced the bulk of the records with migration through the islands recorded on thirteen dates between 21 March and 20 May. The majority of records concerned 1-2 passing over and included two sitting amongst breeding Fulmars on Brownsman on 1-2 May. Peak spring passage involved four on three dates with a maximum of seven over Inner Farne on 2 May. A very disappointing autumn only produced three on Inner Farne on 22 October and one on Brownsman on 3 November.

Siskin *C. spinus*

A common passage visitor.

Another quiet year although the number of records improved on the previous season (only recorded on eight dates in 2004). Light westerly spring passage brought eight over on 20 March (five during the morning over Inner Farne with three over Brownsman later that day). The only other spring reports concerned one over Inner Farne on 12 April and two over Brownsman on 24 April. The first autumn bird was a confiding juvenile on Inner Farne on 11-12 September and thereafter 1-4 were recorded on five dates between 4 October and 22 November. The peak count of the season was seven west over Inner Farne on 5 November.

Linnet *C. cannabina*

A common passage and winter visitor. May have bred in the 1890s (Miller, 1911-1914).

Highly fluctuating numbers during the spring suggested a high turnover of birds as migrants passed through the islands. 1-16 were seen almost daily on north-westerly passage between 17 March and 20 May, with peaks during this period of twenty on 5 April, twenty-one on 24 April and nineteen on 27 April. A late spring report concerned three east over the inner group on 27 May. The species was very evident throughout the autumn with small numbers becoming resident on the islands, following the first autumn arrivals on 26 September. Thereafter 1-30 were recorded daily with numbers building up from mid-November on Inner Farne, with a maximum of fifty-one on 3 December.

Twite *C. flavirostris*

A well represented passage visitor.

Birds move away from the summer upland breeding grounds to winter along north-east coastal belts and the majority of Farnes records occur during this October-November period. This year was no exception as the outer group recorded 1-2 on passage on seven dates between 14 and 31 October with peaks of five seen on or over Brownsman on 25 and 29 October. The inner group eventually produced their first sightings when seven landed on Knoxes Reef on 15 November and another was in the company of the large Linnet flock on Inner Farne on 3 December.

Lesser Redpoll *C. cabaret*

An uncommon passage visitor.

An improvement on the previous season with a light scattering on spring passage followed by good numbers in autumn. Spring reports spanned six dates with singles west over Inner Farne on 21 and 25 March followed by individuals on Brownsman on 17, 25 and 27 April. The last spring record concerned one west over Inner Farne on 28 April. Autumn passage was light with 1-2 through the islands on three dates from 26 September-6 October, but a good influx occurred in mid-October bringing the highest day totals since 2001. Following an easterly weather front good numbers were seen on the islands, with 1-9 daily between 15 and 25 October. During this period ten were seen on 15 with a peak of nineteen on 17 October, with most birds lingering before moving west through the islands.

Common Redpoll *C. flammea*

An uncommon passage visitor.

The Farnes produced an excellent series of records from mid-October, linked with an influx of Lesser Redpolls. On the morning of 15 October two confiding classic pale birds were seen on Brownsman, allowing excellent comparisons with the Lesser Redpolls present at the time. Both lingered throughout 16 with one staying until 17 October. Thereafter a mini-invasion occurred with 1-2 seen daily on Brownsman from 22 October-1 November. During this period a huge peak of thirty-three birds was noted, including twenty-one together on Inner Farne and a different thirteen lingering on Brownsman on 24 October. Other individuals were noted on Brownsman on 18 November and on Inner Farne briefly on 26 November. Previously recorded in only thirteen years between 1881-2003, this was the second best year on record but still some way behind the unprecedented numbers of 1995 which witnessed a peak of 120 in mid-November.

Crossbill *Laxia curvirostra*

An uncommon passage visitor.

This irruptive species can be recorded in exceptional numbers on passage and although there was no indication of such an irruption this year, small numbers appeared at several coastal headlands in late October. Not surprisingly the Farnes cashed in with one record, an adult male seen landing on the tower near dusk on Brownsman on 27 October. The bird then landed briefly in a nettle patch before flying off towards South Wamses. This represents the latest ever record on the islands and was last recorded in August 2003.

Common Rosefinch *Carpodacus erythrinus*

An uncommon passage visitor.

The Farnes remains the number one locality in Northumberland for this continental finch, as the islands boast a healthy fifty-one records with only one blank year (1998) in the previous fifteen years. The season produced two autumn records of first-winters, with an obliging bird appearing on Brownsman on 10 September where it remained all day. A second individual was discovered on Brownsman on 7 October before it relocated to nearby Staple Island, where it remained until the following day.

Hawfinch *Coccothraustes coccothraustes*

An extremely rare visitor.

This large, powerful, distinctive finch was discovered on 31 March on Brownsman, where

a female was found feeding on a seed pile near the cottage. The bird was content feeding on the ground, giving excellent views, and was noted as having damage to its face (just above the bill) possibly the result of a collision. It remained until early on 2 April, when it was seen to leave high to the west. This represents the fourth Farnes record following individuals in the spring of 1953, 1991 and 1995.

Lapland Bunting *Calcarius lapponicus*

An uncommon passage visitor.

A reasonable showing on autumn passage although all records were confined to October. The first week of the month produced singles on or over Inner Farne on 2, 3 and 5 October while the latter date also produced another on Longstone End. The final record involved a lingering bird on Brownsman from 17-19 October, where it favoured the south end of the island.

Snow Bunting *Plectrophenax nivalis*

A well represented passage visitor.

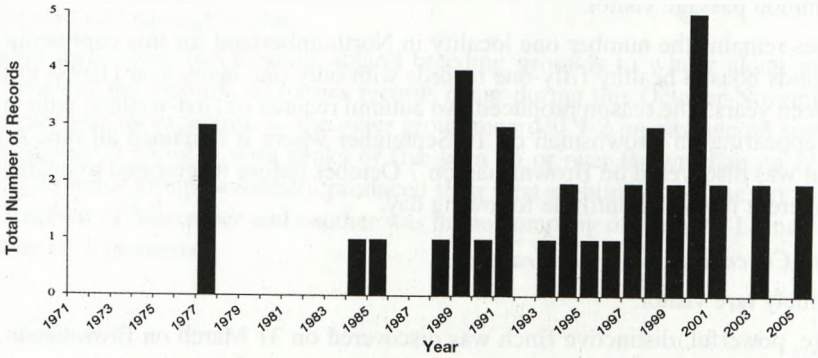
The last wintering stragglers were noted moving north through the islands in early spring with 1-3 noted on seven dates between 19 March and 4 April, peaking with four on Brownsman on 21 March. A cracking adult male was almost in complete summer plumage when discovered on Brownsman on 15 April and the last spring record concerned one west over Inner Farne on 23 April. Autumn passage resumed on 21 October with 1-3 recorded on fifteen dates until last noted on 2 December. Peak passage occurred in November with six west on 1 and seven which lingered on the inner group on 15 November. There appeared to be no resident wintering flock this year.

Yellowhammer *Emberiza citrinella*

An uncommon passage visitor.

Rarely recorded on spring passage, two graced Brownsman (a male and a female/immature) on 27-28 March and were presumed to be the same two individuals seen on Inner Farne late on 28 March. A similar occurrence involved an individual on Brownsman and then Inner Farne on 2 April and these represent the first spring records since 1998. The majority of autumn records involved birds passing through the outer group with three on 15 October and 1-2 on five dates until the last report of a female on Brownsman on 29 October. The only autumn inner group record concerned five lingering on Inner Farne on 24 October, intriguingly the biggest flock on the islands in five years.

Figure 2 Little Bunting.



Little Bunting *E. pusilla*

A rare visitor.

Following the first Farnes record in 1977, an upsurge of sightings now sees the species noted almost annually on the islands, despite it still being very rare in mainland Northumberland. The season produced two records, both on the outer group, with the first discovered on the morning of 10 September on Brownsman, before relocating to nearby Staple Island later that day. The second, a more confiding individual, lingered from 25-28 October on Brownsman.

Reed Bunting *E. schoeniclus*

A well represented passage visitor.

The year brought an impressive showing on spring passage with a noticeable influx on the islands in late March as shown in Table 17, following individuals on Brownsman on 17 and on Inner Farne on 24 March. Thereafter numbers dwindled in early April with six on 1, decreasing to four on 2 and singles noted on three dates until the last was recorded on 12 April. The only May report concerned a male on Staple Island on 13 May. The first autumn arrival appeared on Inner Farne with one on 25 and 28 September. Thereafter 1-4 were noted throughout October with the last record being two on Brownsman on 29 October. Autumn passage peaked with seven lingering on 13 October.

Table 17 Peak Reed Bunting passage through the Farne Islands, late March 2005.

March	**27**	**28**	**29**	**30**	**31**
Outer group	6	9	8	6	6
Inner group	5	4	9	4	2
Day total	**11**	**13**	**17**	**10**	**8**

RINGING AND RESEARCH REPORT FOR 2005

In contrast to the previous year, seabird breeding on the islands in 2005 was more successful and productivity good. The projects carried out by the ringing team of the Natural History Society of Northumbria over the past few years were continued, but the range of species for which more-detailed biometric data were collected was expanded to increase the conservation value of the various ringing projects.

Monitoring projects

Since 1997, the team has recorded Arctic Tern chick mass in relation to total head length (a measure of growth stage) to calculate an annual 'growth index' for a sample of chicks. Accumulated data for the past nine years are shown in Figure 3: the growth index represents Arctic Tern chick mass corrected for differences in chick age or growth stage, and shows that the chicks sampled were back up to a healthy average after the poor year in 2004. A substantial dip is shown for 1999; in fact, there was no growth index that year because practically all the chicks died at a young age due to a severe food shortage. Although there was also substantial chick mortality in 2004 this was not as severe as in 1999. One value of the growth index is that it may reveal apparent nutritional constraints even in years without sub-

stantial chick mortality. The points shown in the graph (Figure 3) represent an average for Arctic Tern chicks on Inner Farne and Brownsman; usually, we have found no statistically-significant differences in growth index for these islands analysed separately. However, in 2005, there was a marked difference between Inner Farne and Brownsman (Figure 4), and this may indicate that even within the Farne Islands as a group there may be local differences in food availability to terns nesting on different islands.

In the last three years, the team has also focused on catching samples of adult Arctic Terns on Brownsman and Inner Farne to get measurements of body mass (Figure 5). In 2005 we had a more extensive dataset, largely due to the help of our research assistant, Eliza Leat, who was resident on Inner Farne for several weeks during the breeding season. The data for 2005 show a gradual (apart from some wild fluctuations due to small sample sizes at some points) decline in adult body mass over the season. This has been observed before in studies of Arctic Terns breeding in the Shetland Islands. Unlike 2004 when a period of very bad weather in mid-June resulted in a sustained reduction of adult body mass, in 2005 adult body mass was similar to 2003. Thus, this is an approach that can be used to estimate nutritional stress on adult birds and with sufficient data it may be possible to ask if growth indices for chicks correlate with adult body mass during the breeding season. We have also extended this approach to Kittiwakes breeding on Brownsman, and obtained data for twenty-five adult birds and forty-one chicks in twenty-five nests. These data will be analysed as information for subsequent years accumulates.

Other projects being carried out are two 'Retrapping Adults for Survival' (RAS) projects on Eiders (Inner Farne) and Shags (Staple Island). Progress with the Eider project was on target in 2005 with good numbers of adult females being ringed and retrapped (Tables 18 and 19). The Shag study suffered from a severe reduction in breeding pairs within the central gully on Staple Island due to a 'wreck' of shags during the winter. As a result, we have extended the RAS study on Shags to include all accessible pairs breeding on Staple Island.

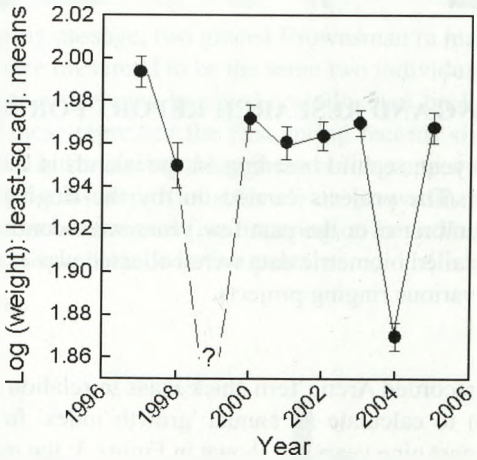


Figure 3 'Growth index' for Arctic Tern nestlings on Inner Farne and Brownsman from 1997 to 2005 inclusive. The index is log10(body mass) corrected for total head length (a measure of age) for nestlings of > 9 days old. In 1999, there was an almost complete failure of breeding as most Arctic Tern nestlings died, apparently as a result of food shortage; therefore, the dashed lines indicating a downwards trend for the growth index is speculative.

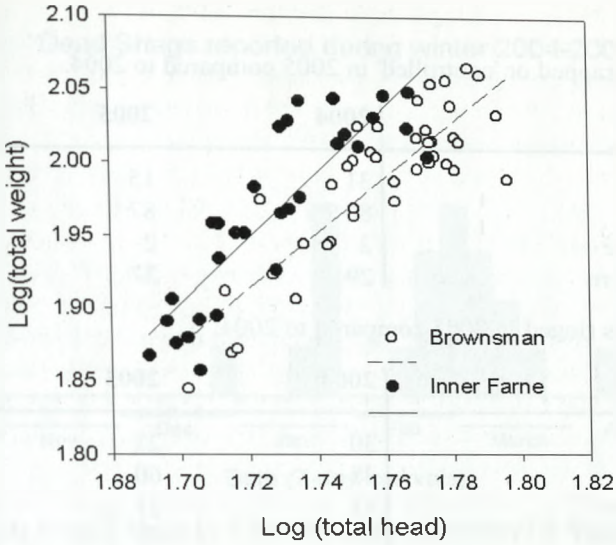


Figure 4 A comparison between Brownsman and Inner Farne of Arctic Tern chick mass in relation to total head length. For this size range, the relationship between log10(body mass) and log10(total head length) is usually linear, and for 2005, the elevation of the regression line for Inner Farne was significantly higher than for Brownsman (ANOVA $F_{1,67}$=24.26, P<0.001), suggesting that the Inner Farne chicks were nutritionally in better condition.

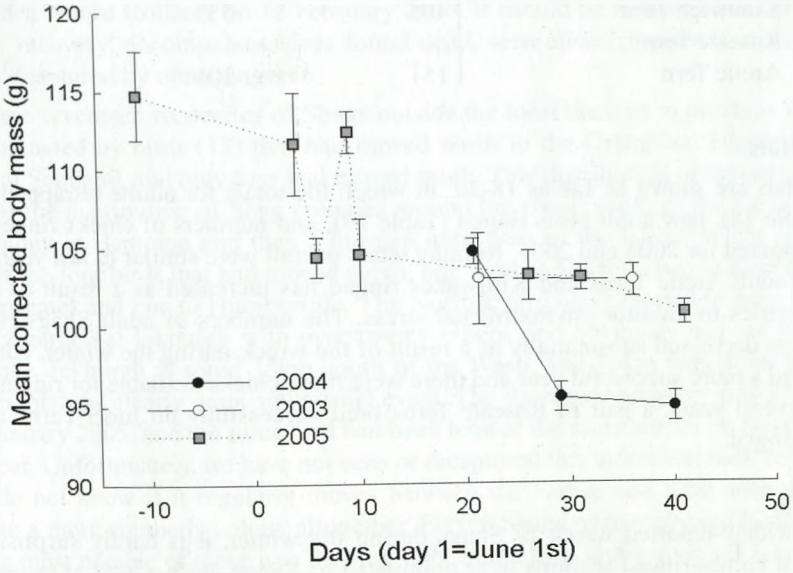


Figure 5 Mean body mass (g) of adult Arctic Terns on the Farne Islands in 2003, 2004 and 2005, sampled at different points in the breeding season and corrected for variation in body size using total head length in an Analysis of Covariance. Error bars are ± one standard error (SE) of the mean.

Table 18 Adults retrapped or 'controlled' in 2005 compared to 2004.

Species	2004	2005
Shag	31	15
Eider	80	87
Kittiwake	2	2
Arctic Tern	29	37

Table 19 New adults ringed in 2005 compared to 2004.

Species	2004	2005
Shag	30	21
Eider	48	60
Kittiwake	13	21
Arctic Tern	70	92
Puffin	7	8

Table 20 Chicks ringed in 2005 compared to 2004.

Species	2004	2005
Shag	65	61
Kittiwake	144	238
Sandwich Tern	405	553
Roseate Tern		1
Arctic Tern	151	201

Ringing totals

Ringing totals are shown in Tables 18-20, in which the totals for adults retrapped or controlled (Table 18), new adult birds ringed (Table 19), and numbers of chicks ringed (Table 20) are compared for 2004 and 2005. Ringing totals overall were similar to last year, but the number of adult Arctic Terns and Kittiwakes ringed has increased as a result of projects using biometrics to monitor environmental stress. The numbers of adult Shags ringed or retrapped has decreased substantially as a result of the wreck during the winter. Kittiwakes and terns had a more successful year and there were more chicks available for ringing. After a gap of several years, a pair of Roseate Terns bred successfully on Inner Farne and one chick was ringed.

Recoveries

Given the widely-reported wreck of Shags during the winter, it is hardly surprising that recoveries of Farnes-ringed seabirds were dominated by Shags. With a total of twenty-eight Shags reported dead during the 2004-2005 winter, this is double the total for the previous year. Most of these birds were found dead in two periods; one at the end of January 2005 and the other more extensive mortality occurred between mid-February and mid-March. Most of the dead birds were adults and only three were first-year birds ringed as chicks in

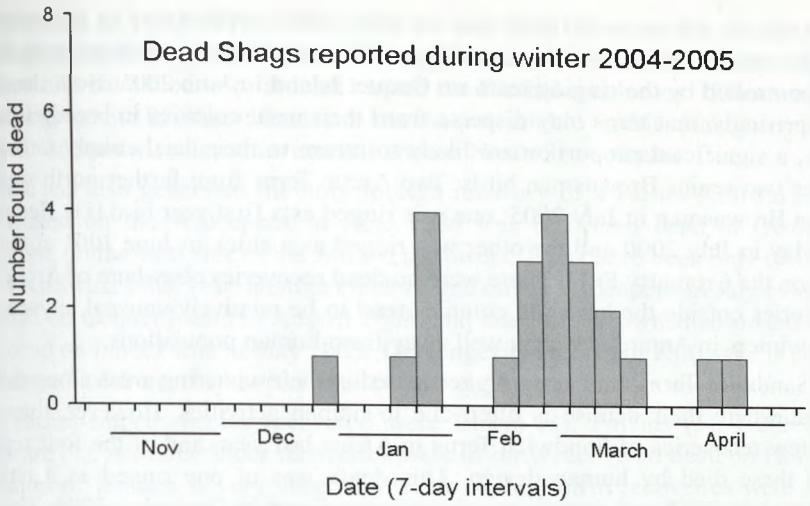


Figure 6 Reports of dead Shags by 7 day intervals (relative to 1st January), excluding cases where only the ring was found.

2004. These recoveries are summarised in three categories: birds recovered locally (defined here as Scarborough to North Berwick), longer-distance movements within the UK, and recoveries on foreign shores. Two birds, coincidentally both ringed on Staple Island on exactly the same day in June 2003, fell into this latter category: one was ringed as an adult female and found dead at Criel-sur-Mer, Seine-Maritime, France in March 2005, and the other, ringed as a chick, was a sight record (ring read in the field through a telescope) from Den Helder, Noord Holland, on 12 February 2005. It should be mentioned at this point that the term 'recovery' encompasses birds found dead, seen alive (ring read) in the field and 'controls' (captured by other ringers).

There were seventeen recoveries of Shags outside the local area; as in previous years, these were dominated by birds (13) that had moved north to the Grampian, Highland and Fife regions of Scotland, and only four had moved south. This distribution of movements may be related to the distribution of Shag colonies around the coast: south of the Farnes there is a small colony at Bempton and then a big gap until west of the Isle of Wight on the south coast. Of the four birds that had moved south, one went to Norfolk, two to Kent (Folkestone and Ramsgate) and one to Humberside. The Norfolk bird was reported to have crash-landed into a garden at Ickburgh with over twenty others, and obviously had not survived the experience. Ickburgh is some 35km south of the Wash, and 70km west from the Norfolk coast, so this was clearly quite an unusual event. The Ramsgate recovery was a sight record on 19 January 2005, and the same bird had been seen at the same site on 30 January the previous year. Unfortunately, we have not seen or recaptured this individual back on the Farnes, so we do not know if it regularly moves between the Farnes and Kent each year, or has moved to a more southerly colony altogether. Eleven Shags were recovered locally, and perhaps the most notable of these was the ring-only found by a scuba diver off Longstone.

The increased effort to catch and ring adult Arctic Terns on Brownsman and Inner Farne has resulted in an increase in the number of controls (recaptures of birds ringed elsewhere), and retraps of 'senior' birds. Two retrapped on Brownsman were both ringed there as chicks in 1985 and 1986, respectively, and thus were in their twentieth and nineteenth years. Of the controls, one was from Coquet Island where it was ringed as a chick in 2002. Since these

terns do not usually start to breed until they are three years old, this may be its first year of breeding. This movement is complemented by a chick ringed on Inner Farne in June 1996 which was controlled by the ringing team on Coquet Island in June 2005. Both these birds show, unsurprisingly, that terns may disperse from their natal colonies to breed elsewhere; nevertheless, a significant proportion are likely to return to their natal colony to breed, as shown by the two senior Brownsman birds. Two Arctic Terns from further north were also controlled on Brownsman in July 2005: one was ringed as a first-year bird (*i.e.* fledged) on the Isle of May in July 2000 and the other was ringed as a chick in June 2001 at the Nigg oil terminal on the Cromarty Firth. There were no dead recoveries elsewhere of Arctic Terns - dead recoveries outside the breeding colonies tend to be relatively unusual anyway since this species winters in Antarctic waters well away from human populations.

In contrast, Sandwich Terns are frequently recovered in their wintering areas along the West African coast where their demise is often due to human activities. However, there were remarkably few recoveries of Sandwich Terns in Africa last year, and of the four reported, only one of these died by human design. This death was of one ringed as a chick on Brownsman in July 1985 and shot at sea off the Ivory Coast in December 2004. The other three recoveries were all controls. Ringers from Belgium caught two of our birds at Fata Palmarin, Senegal in November 2004; these were originally ringed, one on Brownsman and one on Inner Farne, as chicks in 1984 and 1990, respectively. The other recovery was of an Inner Farne chick ringed in 2004 and caught and released at Axim, Ghana, in December of the same year. The location of these birds was squarely within the known wintering range of Sandwich Terns along this coastline.

Other recoveries of Sandwich Terns were reported from Europe. As with the African recoveries, only one of these was a death, and this was a chick from June 2003 that was found dead near Wilhelmshaven, West Germany (some 50km from the Dutch border) in July 2005. Sandwich Terns usually remain in the wintering areas during their first full summer, so this bird is likely to have returned north for its second full summer to prospect for suitable breeding sites in preparation for the next year. The other European recoveries were either controls (2) or sight records (7). Two old Inner Farne birds, one from 1980 and one from 1984, were controlled by Belgian ringers at Zeebrugge in April 2005. The current longevity record for a Sandwich Tern (a bird ringed on Coquet Island) is just over thirty years nine months (http://www.bto.org/ringing/ringinfo/longevity.htm), so the 1980 bird has about six years to go to beat the record. One of the seven sight records was of a class-of-1996 Brownsman bird seen just north of Zeebrugge at Heist in 2005. This, and the two Sandwich Terns controlled at Zeebrugge, may well have been breeding in the large colony of some 3,000 pairs there.

Since 2003, a Danish ringer, Kjeld Tommy Pedersen, has been scanning the Sandwich Tern colony at Hirsholm, Denmark, on the east side of the Jutland peninsula, for ringed birds and reading the ring numbers through a telescope (Figure 7). Up to and including 2004 he had obtained the ring numbers of nine Sandwich Terns from the Farnes, three from Coquet and seven from the rest of the UK (three from Forvie (Grampian), one from Newburgh (Grampian), two from the Pentland Skerries and one from Orkney). This is a clear illustration that Sandwich Terns ringed on the Farne Islands make a substantial contribution, compared to the rest of the UK, to our knowledge of the population biology of these birds. Tommy Pedersen has continued this work in 2005, obtaining 481 individual ring readings (many multiple readings of the same birds) of Sandwich Terns from nine different European ringing schemes. Amongst these were eleven with British Trust for Ornithology rings and six of these were from the Farnes. These six birds were all ringed as chicks on Inner Farne

or Brownsman in 1980, 1982, 1996, 1998 (2) and 2002. Three of the Farnes-ringed birds were also seen there between 2003 and 2004, giving a total of twelve Farnes-reared individuals known to have bred in or at least visited the Hirsholm colonies. If this work is continued and carried out in other colonies, it has the potential to enable quantitative estimates of the extent of Sandwich Tern movement between North Sea colonies.

Denmark has also generated the only foreign recovery of a Farnes Kittiwake this year: a chick ringed on the Wideopens in June 1984 was recovered dead in October 2004 at Hanstholm, on the west side of the Jutland peninsula. There have been only two other recoveries of Kittiwakes this year: another chick ringed on the Wideopens in July 1980 was recovered dead on Coquet Island in August 2005, and one from Brownsman ringed in 1985 was found dead on Inner Farne in May 2005. The longevity record for Kittiwake is currently held by a Farnes bird from 1964 at just over twenty eight years and six months.

Other Farnes-ringed species recovered were Eiders (3), Puffins (5), Guillemot (1) and Cormorant (1). All three Eider recoveries were of birds recovered dead on Holy Island; our population of females is very sedentary. Four of the Puffin recoveries were of old birds, ringed on the Farnes as adults in 1981, 1982, 1984 and 1985 and all five were recovered dead between Lunan Bay, Tayside and Waxham, Norfolk, in late February to early March 2005. These may have been affected by the same conditions that led to the high mortality of Shags during this period. The Guillemot recovery is unusual in that this bird, one of thirty that were ringed on Inner Farne in 1996, was controlled at Dunkerque, France in January 2003, and reported via the Paris ringing scheme. The Cormorant was ringed on North Wamses in July 1982 and recovered dead at Vlieland in the Netherlands in July 2005.

In addition to recoveries of birds ringed on the Farnes, birds ringed elsewhere crop up on the islands from time to time. Colour-ringed Shags from the long-running Isle of May study are seen regularly, and a colour-ringed Barnacle Goose from Svalbard was seen in the autumn. Perhaps the best sighting in recent years was a colour-ringed Mediterranean Gull (RED 8P7) seen several times on Inner Farne between 31 March and 28 April 2005. It did not remain in the area for the whole of this period however, and was also seen at Port Seton Burn, Lothian, in mid April. This bird was originally ringed as a chick at Zastow Karczmiski, Wisla River, Lublin, Poland, in June 2004. The Mediterranean Gull has increased its range substantially over the last fifty years, expanding westwards into Europe from the Black Sea with now over a hundred pairs likely to be breeding within the UK, mostly in the south and east (Mitchell *et al.* 2004). With birds prospecting on Coquet Island in recent years, it cannot be long before Mediterranean Gulls breed successfully in Northumberland. If immature birds such as 8P7 like what they find, then they may return to breed in subsequent years. This also stresses the value of ringing: with a population of individually marked birds we may be able to discover whether future colonisation within the UK is derived from home-grown Mediterranean Gulls or birds from elsewhere in Europe.

Farne Islands Marine Research Group (FIMRG)

Continuing the pattern of the past three years, research assistants were resident on Inner Farne (Eliza Leat) and Brownsman (Victoria Brooks) during the breeding season, using rangefinders to record the positions of foraging terns and Shags, and monitoring the frequency and extent of chick feeding by the adults. An analysis of data from the first year of the study is currently being revised for an international marine ecology journal and we hope will soon be accepted for publication. The FIMRG team (Judy Foster-Smith, Richard Bevan, Bob Foster-Smith, Chris Redfern and John Walton) are actively seeking funding to enable

Figure 7 Sandwich Tern DN08092, ringed on Brownsman as a chick in June 1982 and present on Hirsholm (photograph below) in 2003, 2004 and 2005. Photos by Kjeld Tommy Pedersen.

analysis of the additional data collected to date. As part of her work , Eliza (who holds a C-ringing permit) also trapped adult Arctic Terns for marking and biometric studies, obtained series of growth measurements on Arctic Tern chicks to complement the chick provisioning observations, and helped with ringing tern chicks for the growth-index studies. Richard successfully attached and subsequently recovered dataloggers to five Puffins, enabling their foraging activities (including dive depth and duration) to be monitored. This approach complements the rangefinding observations by providing information on where birds forage for food around the Farne Islands. Although it was also hoped to get more information on foraging activities of Shags using the dataloggers, the substantial reduction in colony size, coupled with weather and other factors, prevented this from happening in 2005. However, such data are important to complement the rangefinding observations, and the study will continue next season. One focus of observations on Arctic Terns is to discover whether sandeels fed to the chicks vary in size from year to year and affect the quality of chick growth. To

complement this, we need to obtain a measure of the abundance of sandeels around the islands; therefore, the University Research Vessel *Bernicia* was once again used, under Judy's direction, to obtain trawl samples of sandeels from key sites around the islands. These are being used with samples from previous years to study variation in fat levels and how this might relate to Arctic Tern chick growth, and to ask whether DNA 'fingerprints' will allow us to identify different sandeel populations.

Acknowledgements

Many people contribute to the ringing and other projects carried out on the Farne Islands, and their good humour and friendship make it worthwhile. None of the ringing and scientific projects that the ringing team and FIMRG carry out would be possible without agreement and encouragement from John Walton, his wardening team led by David Steel, and the Farne Islands Local Management Committee chaired by Charles Baker-Cresswell, and we are extremely grateful for their support. David 'Steely' Steel and his team of wardens have always provided a warm welcome when we arrive and we are grateful for their help. This has been the first year of new arrangements in which most of the work by the ringing team has been done during the day rather than in the evening. Thanks are due to David for suggesting the new working pattern. One welcome outcome is that the team no longer has to crawl back to bed exhausted in the early hours of the morning! *Sea Spray*, the boat provided to the Ringing Team by Northumbrian Water, is essential for access to the islands, and we continue to be indebted to them for their support of the project. With the team now having several years experience, launching and recovering the boat is usually a smooth operation, but sometimes things do go wrong; in one memorable (for the wrong reasons) day this season, the skipper managed to strand *Sea Spray* on Inner Farne, and then once back at Seahouses let the boat slip off the trailer well above high tide level on the slipway. We are grateful to the Harbourmaster and his staff for their good humour in loading the boat back onto the trailer for us. The Sir James Knott Trust has continued to support the FIMRG seabird foraging project, and we are grateful to Eliza and Victoria for their hard work in contributing to the project. We thank the members of the ringing team for their efforts and enthusiasm, and the Natural History Society of Northumbria for providing the rings and other essential equipment.

CETACEAN REPORT FOR 2005

Harbour Porpoise *Phocoena phocoena*

As is normally the case around the Farne Islands, the majority of cetacean sightings concerned this globally widespread species of northern temperate seas. However a marked decrease in population levels in recent decades has resulted in a slight downturn in the frequency of sightings around the islands. The species was noted on a total of fifty-nine dates this year, with a peak in June and July when sightings occurred on eleven and fourteen dates respectively. The species is present year-round at the Farnes, so this mid-summer peak does not necessarily mean larger numbers are present. An increase in observer activity, as well as calmer seas - which allow animals to be seen more easily - are more likely explanations. The species was also seen on eight dates in both April and August, and seven dates in September. Sightings generally involved 1-3 animals, but a feature of late summer was the presence of a considerably larger group for at least a fortnight. On 23 August, a pod of thirty was found feeding just north-west of Megstone, and thirty were noted in the same area on 6 September.

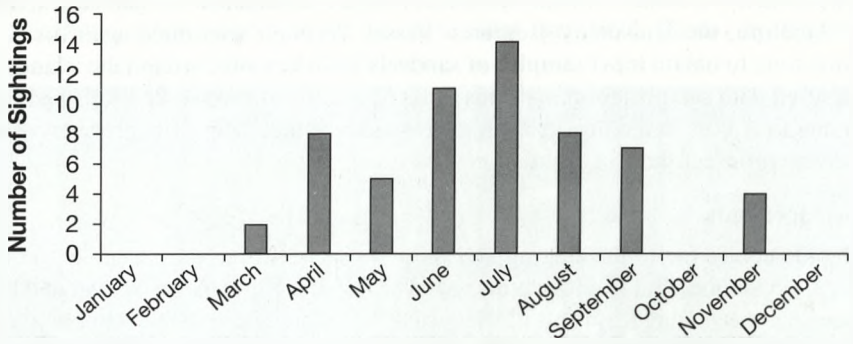


Figure 8 Number of sightings per month of Harbour Porpoises around the Farne Islands.

Bottle-nosed Dolphin *Tursiops truncatus*

The first half of 2005 provided a great opportunity to see this exciting dolphin around the islands. What was thought to have been the same individual as that first found in late November 2004, was seen on single dates in February, March, April, May and then regularly in June. Sightings often involved spectacular encounters as the animal fearlessly followed boats in a variety of spots around the islands. It was seen as far north as Holy Island, and as far south as Amble, but Inner Sound provided the majority of records. Memorable sightings included that on 19 June when it kept close company with two kayaks for two miles as they made their way northwards through Inner Sound. Four days later it followed two National Trust wardens across Inner Sound in the Zodiac boat, soaking them in the process. No sightings were made after June, but it is conceivable that the animal was present thereafter.

White-beaked Dolphin *Lagenorhynchus albirostris*

There was a single report of a pod of dolphins thought to be this species. On 29 June, a group of twelve was reported heading north between Northern Hares and North Wamses at 14:00. Unfortunately, no wardens were able to locate the animals, and this record remains unconfirmed. This is the most northerly occurring dolphin species, being found in the northern North Atlantic and often in sub-arctic waters.

Minke Whale *Balaenoptera acutorostrata*

The species was reported on a total of fourteen dates in 2005, with all records falling between July and September. There is a high chance of seeing Minkes from land, and indeed all sightings in July were made from the outer group of islands, with 1-3 on six dates. Most records during August and September, however, referred to animals seen from boats, and often from visitor boats to the islands. *Glad Tidings V* provided the majority of records during the latter period, probably as a result of it sitting high out of the water and thus allowing animals to be seen more easily. Records of juveniles were received on 18 August and 3 and 6 September.

Other Marine Species of Note

Sunfish *Mola mola*

There was a single record of this enormous, and rather peculiar, oceanic fish. On 13 August, a Sunfish was watched for ten minutes as it surfaced just east of the Shorestone bouy in

Inner Sound. Although very rare in Farnes waters, generally being found in the Atlantic, there are at least four previous records in the area. These include specimens seen or caught off Berwick in September 1851, and off Seahouses in October 1938, October 1963 and August 1973. The fish at Berwick weighed forty pounds, while that off Seahouses in 1963 measured 56cm long.

Acknowledgements

Many thanks to John Dawson (skipper of *Glad Tidings V*), the National Trust wardens and the various visitors who contributed sightings for this report.

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BREEDING BIRDS ON THE FARNE ISLANDS: AUKS

by
A E Wilson and D C Noble-Rollin

INTRODUCTION

It is now over fifty-five years since Grace Hickling published the first of her two books about the Farne Islands and apart from the annual bird reports and P Hawkey's invaluable overview of 'The Birds of the Farne Islands' (Hawkey, 1991) little has been written specifically concerning the history of breeding birds. This paper is part of an attempt to give as complete a picture as possible for every species that has nested on the islands from the time it was first documented to the present.

A total of around fifty species has nested or attempted to nest on the Farne Islands and thus a complete account that includes all of these will be very long. For this reason and the fact that it was felt that the best place to publish was in the issue of the *Transactions* that includes the annual bird report for the islands, it has been decided to break it up into parts with each one concentrating on a particular group. The present paper concerns the three species of auk that breed on the islands, Guillemot, Razorbill and Puffin.

Such a project is only possible because of the extensive archives of the Natural History Society of Northumbria. In addition to the annual reports from 1946 onwards a number of other sources have been used including numerous 19th and 20th century articles, the Farne Islands Association reports from 1924 and, for the first time material has been incorporated from the following personal diaries or note books that are held in our Archives:

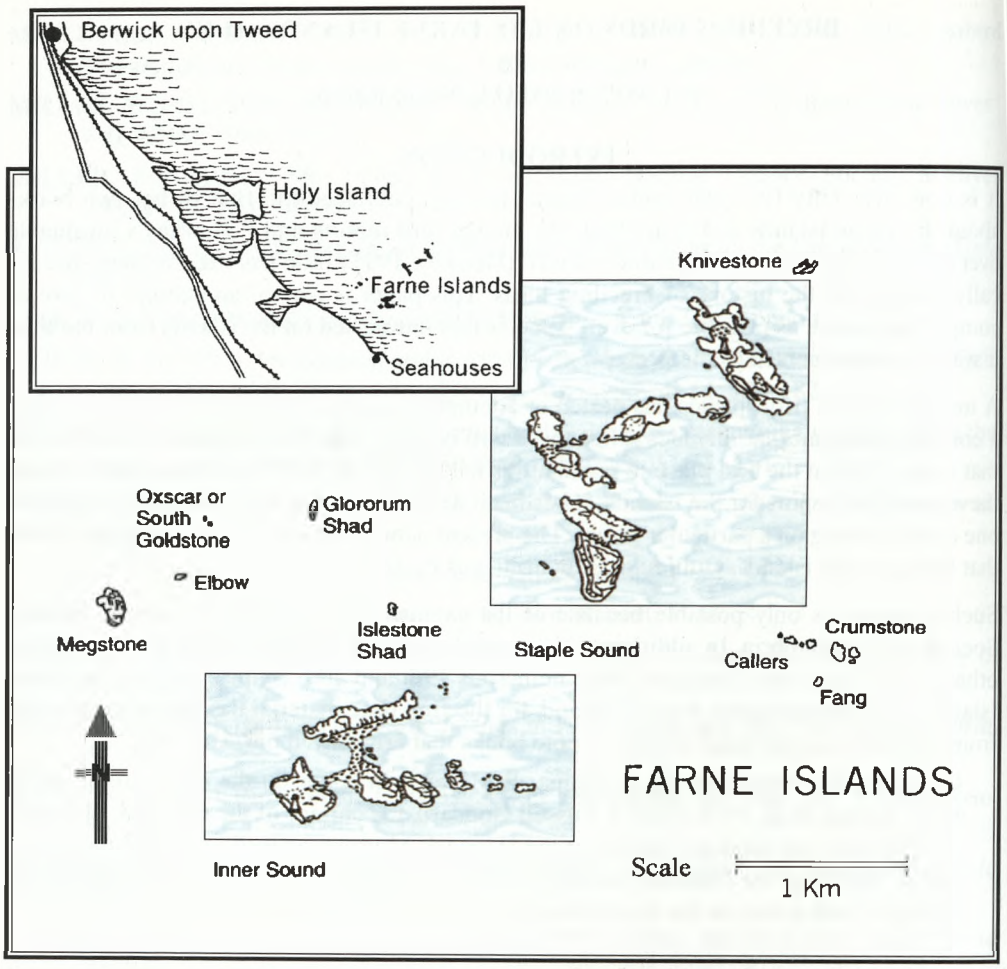
> G Bolam, the Northumbrian naturalist; E Miller, a Watcher on the outer group of the Farne Islands from 1911-1914; T Russell Goddard, the curator of the Hancock Museum; G Temperley, an honorary curator at the Hancock Museum as well as a local naturalist; and G Hickling, the honorary secretary of the Natural History Society and one of the foremost authorities on the Farne Islands in the 20th century.

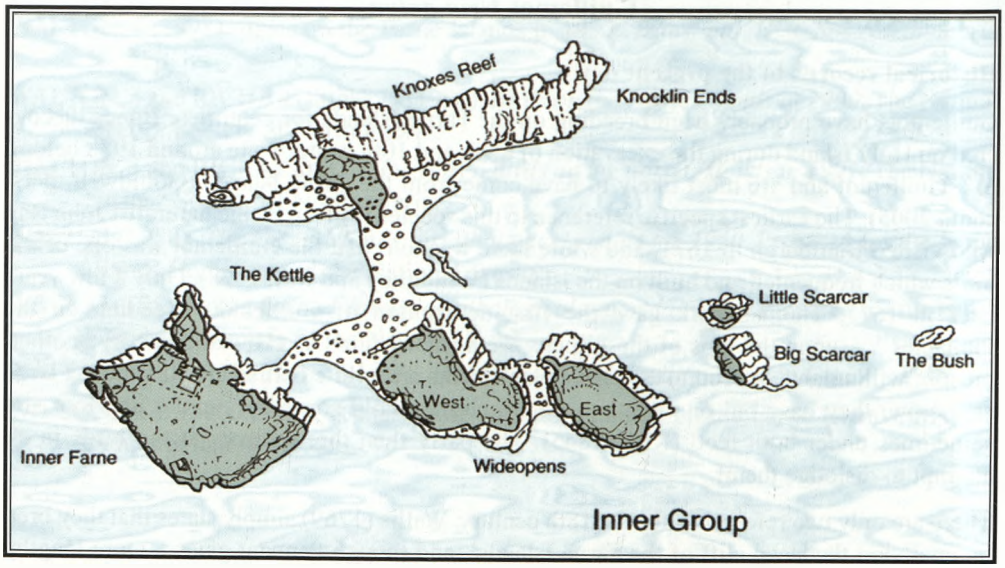
Guillemot *Uria aalge*

Historical records to the present day

Guillemots have probably been breeding on the Farne Islands for centuries. Bones discovered on Holy Island during the excavation of a 9th and 10th century site around 1988 belong to a Guillemot and are most likely to have come from the Farne Islands (Gouldwell, pers. com., 2005). The earliest specific reference to this species is given by the naturalist John Ray who visited Bamburgh in 1671, and while there was told that the Guillemot was one of the birds which frequented and built on the islands (Willughby and Ray, 1678). Only a few years later in 1677, Thomas Kirk gave the first description of Guillemots breeding on the Pinnacles '... upon the tops of these rocks are as many birds as can stand one by another, most of williamants or scouts, they have black backs and white bellies; they are not as large as a crow; they have but one egg a-piece which they hold sometimes under one foot and sometimes under both feet' (Kirk, 1845). The party then threw stones at the birds in an attempt to dislodge them!

There are only two references for the 18th century. Wallis (1769) simply states that they bred 'annually on the steep cliff of the Farne Islands', and though Pennant gives a more lengthy


Berwick upon Tweed
Holy Island
Farne Islands
Seahouses
Knivestone
Oxscar or South Goldstone
Glororum Shad
Elbow
Megstone
Islestone Shad
Staple Sound
Callers
Crumstone
Fang
Inner Sound
FARNE ISLANDS
Scale
1 Km


Knoxes Reef
Knocklin Ends
The Kettle
Little Scarcar
Big Scarcar
The Bush
West
East
Inner Farne
Wideopens
Inner Group

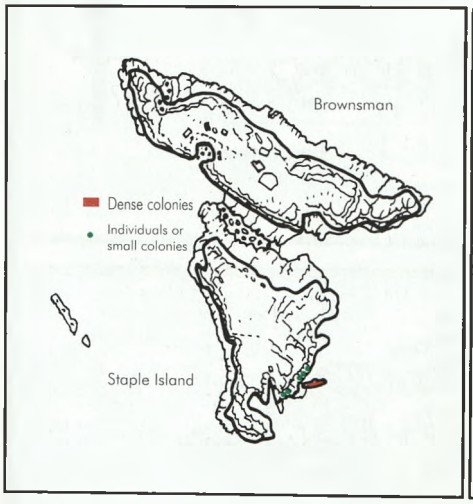

Northern Hares
Longstone
Brada
North Wamses
Little Harcar
Clove Car
Big Harcar
South Wamses
Roddam and Green
Brownsman
Gun Rock
Staple Island
Outer Group
Skeney Scar

description of his visit in 1769, he only briefly mentions the Guillemots on the Pinnacles (Hutchinson, 1778). All of the numerous 19th century accounts are unanimous in placing them on the tops of the Pinnacle stacks. Initially this was the only regular breeding place, but by 1857 Selby (in Tate, 1857) noted that some occasionally spread to the adjoining ledges on Staple Island, and Pigott (1888), along with other subsequent authors, found Guillemots on the upper ledges on the sides of the Pinnacles.

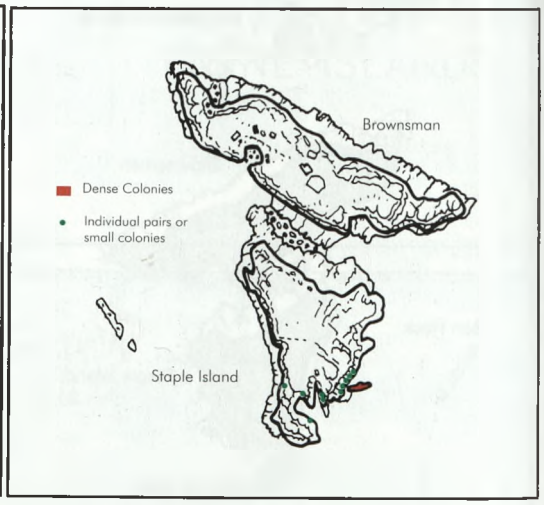
They appeared to remain in these three areas for a number of years, and despite the limited success of those on the Staple Island ledges (Morres, 1896) they probably gradually increased their area. Miller (1911-14), recorded a growing colony on the cliffs that extended over the southern area into Skeney Scar. He also witnessed the start of the occupation of the Staple Island west cliff when he found a single egg in each of the 1912 and 1914 seasons (Miller, 1911-14, 23 July 1912, 1 June 1914). As to when this area became established is not known, probably not until well into the 20th century. Until at least 1924 all the accounts indicate that the majority of the birds were still on the Pinnacles.

The first signs that the Guillemots were starting to spread to other islands apart from Staple Island appeared in 1925 when a few were seen on Inner Farne (Ratcliffe, 1925). They were also there in 1926 since Bolam, on one of his last visits to the islands, makes the comment 'a few (Guillemots) on Inner Farne where they did not used to nest,' (Bolam 1877-1933,

Map 1 Guillemot distribution in 1899, only on Staple Island.



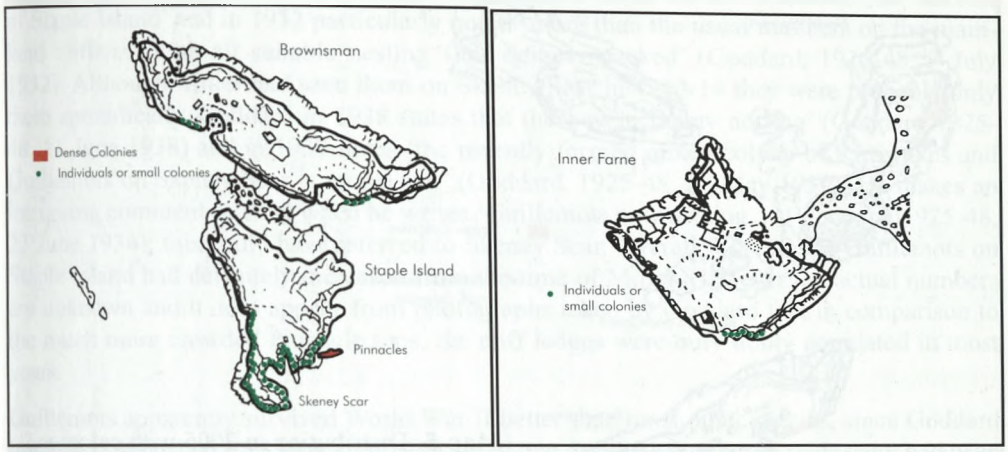
Map 2 Guillemot distribution in 1914, still only on Staple Island.



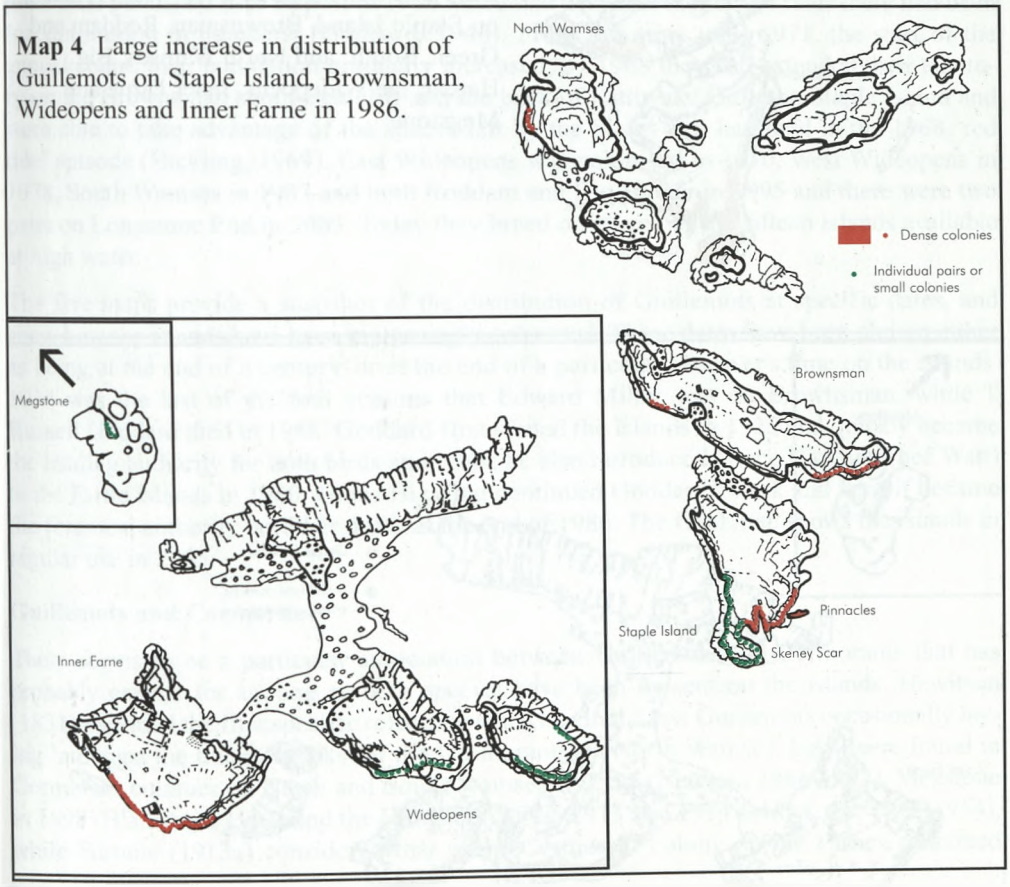
13/07/1926), and in 1929 Temperley reported them on the south-west cliff with the small relatively new Kittiwake colony (Temperley 1896-1951, 11/06/1929). The first recorded breeding on Brownsman was in 1926 (Thorp, 1927), probably on the south-east corner with the Kittiwakes. Together with Staple Island these remained the only three documented islands (except where there were breeding Cormorants) until after World War II.

Initially, nesting on Brownsman and particularly Inner Farne was spasmodic with only a few pairs, but by the start of the war the colony at the south-east end of Brownsman seemed to be flourishing with 'considerable numbers' there in 1939 (Goddard, 1925-48, 18 July 1939). Guillemots had also been found in a separate area at the south-west end of Brownsman in 1939 (Goddard, 1925-48, 18 July 1939).

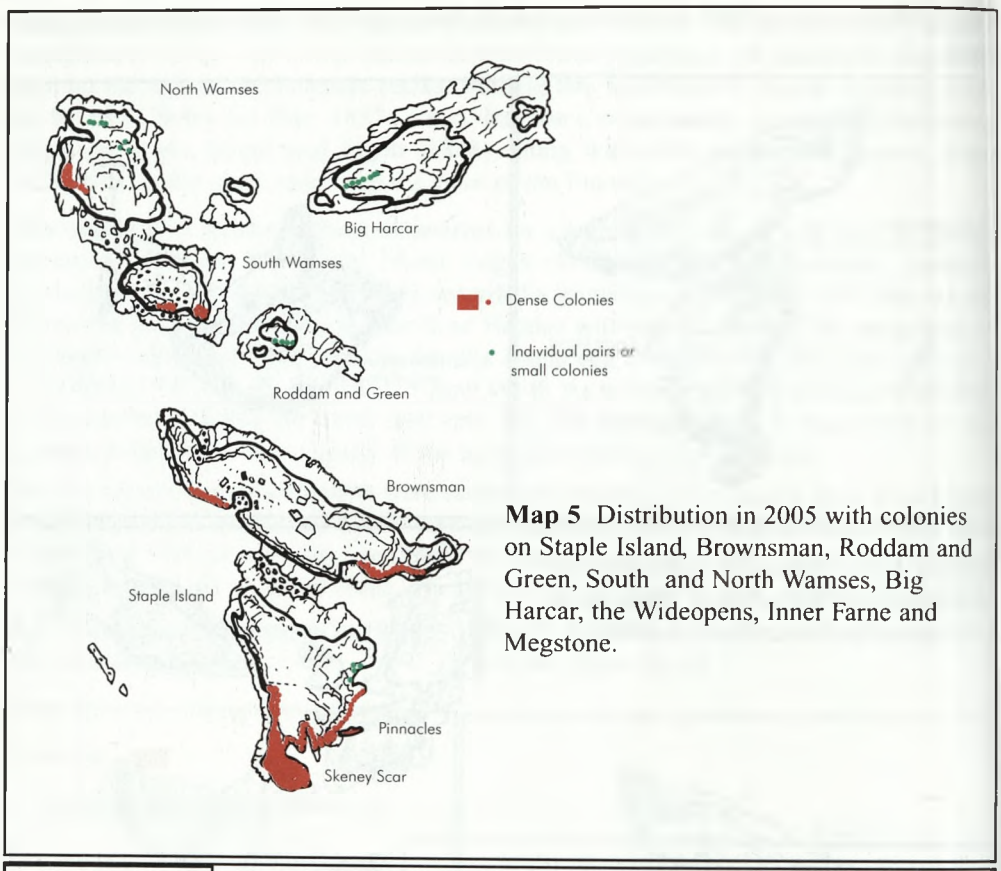
Map 3 Distribution in 1948. By now Guillemots have spread to Brownsman and the Inner Farne.



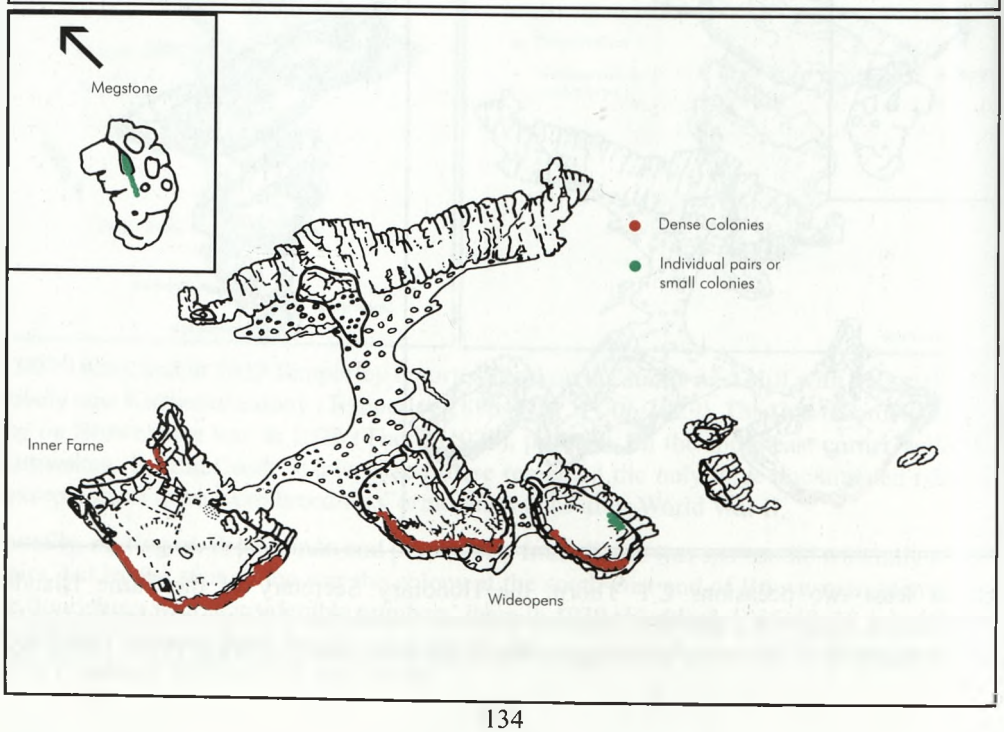
Map 4 Large increase in distribution of Guillemots on Staple Island, Brownsman, Wideopens and Inner Farne in 1986.



On at least two occasions C F Thorp, the Honorary Secretary of the Farne Islands Association, commented that the Pinnacles were overcrowded and if people did not go on to Staple Island the Guillemots would spread onto the main island (Thorp, 1928; 1938). Yet



Map 5 Distribution in 2005 with colonies on Staple Island, Brownsman, Roddam and Green, South and North Wamses, Big Harcar, the Wideopens, Inner Farne and Megstone.



Goddard from 1926 onwards found them on the cliff ledges, particularly in Kittiwake Gully. During the 1930s he repeatedly referred to Guillemots 'in all the usual stations', or 'the rest of Staple Island' and in 1932 particularly noted 'more than the usual numbers on the mainland cliffs ... with all suitable nesting sites densely packed' (Goddard, 1925-48, 9 July 1932). Although Miller had seen them on Skeney Scar in 1912-14 they were probably only there sporadically. Goddard in 1938 states that there were 'many nesting' (Goddard 1925-48, 11 June 1938) and in 1939 notes 'the recently formed mixed colony of Kittiwakes and Guillemots on Skeney Scar is increasing' (Goddard, 1925-48, 27 May 1939). He makes an intriguing comment in 1934 when he writes 'Guillemots now nesting ...' (Goddard, 1925-48, 23 June 1934); this could have referred to Skeney Scar. Overall it seems the Guillemots on Staple Island had definitely increased from the time of Miller. However the actual numbers are unknown and it does appear from photographs taken by Goddard that in comparison to the much more crowded Pinnacle tops, the cliff ledges were only thinly populated in most years.

Guillemots apparently survived World War II better than most other species, since Goddard in the first published Bird Report in 1946 noted that despite a number of raids there had been 'no diminution in numbers' (Goddard, 1946). From this time until 1971, the start of the annual count, their population gradually increased; by 1968 they had extended their territory on the Brownsman south-east cliff and the back of Kittiwake Gully on Staple Island and were able to take advantage of the spaces left by the Shags that had died in the 1968 'red tide' episode (Hickling, 1969). East Wideopens was colonised in 1970, West Wideopens in 1978, South Wamses in 1987 and both Roddam and Big Harcar in 1995 and there were two pairs on Longstone End in 2003. Today they breed on eleven of the fifteen islands available at high water.

The five maps provide a snapshot of the distribution of Guillemots at specific dates, and show how the islands have been increasingly colonised. These dates have been chosen either as being at the end of a century, or at the end of a particular observer's time on the islands. 1914 was the last of the four seasons that Edward Miller was on Brownsman, while T Russell Goddard died in 1948. Goddard first visited the islands in 1925 and quickly became the leading authority for both birds and seals; he also introduced Grace Hickling (neé Watt) to the Farne Islands in 1940. Grace Hickling continued Goddard's work and herself became the foremost authority until her death at the end of 1986. The final map shows the islands in regular use in 2005.

Guillemots and Cormorants

There seems to be a particular association between Guillemots and Cormorants that has probably existed for as long as both species have been present on the islands. Hewitson (1831) provided the first specific reference when he cited a few Guillemots occasionally laying 'amongst the thickest ranks' of the Cormorants on North Wamses. Eggs were found in Cormorant colonies on North and South Wamses in 1851 (Newton, 1864-1907), Megstone in 1898 (Blathwayt, 1903) and the Harcars in 1912, 1913 and 1914 (Miller, ms. 1912-1914), while Fortune (1913a) considered that every Cormorant colony on the Farnes contained some Guillemots.

It is thus evident that Guillemots were using other islands in addition to Staple Island and the Pinnacles, but these should not be regarded as constituting new colonies; they depended on the presence of nesting Cormorants and were thus transient. In 1911, 1912 and 1914

Miller found Guillemots on North Wamses, but not in 1913 when the Cormorants were not nesting there (Miller, 1911-14). Evans (1911) also records 'small colonies' on the Harcars in some years, again only when Cormorants were also breeding.

In the 1920s and 1930s, Goddard and Graham both noted Guillemot eggs among the Cormorant colony on Megstone (Goddard 1925-48, 26/05/1929; Graham, pers. comm., 2000) and though there are no further references until 1946 when a 'fair sized colony (of Guillemots) was again present' (Goddard 1925-48, 21/06/1946), it is probable that some were present in every season. Numbers continued to increase on Megstone and by 1973 Cormorants no longer bred on this island. In both 1933 and 1934 Goddard noted at least one Guillemot present with the Cormorants on Little Harcar (Goddard, 1925-48, 03/06/1933; 13/06/1943). The first report of Guillemots in the Cormorant colony on North Wamses is in 1956 (Hickling, 1957), yet by 1980 they outnumbered the Cormorants.

Evidence for numbers

Most 19th century accounts describe the tops of the Pinnacles as being 'densely packed' with birds; as one fishermen in the early 20th century remarked 'bottles could na' be packed closer together.' (Halliday, *ca* 1909). Gurney (1889-90) is one of the authors who gives a more detailed picture of the colony: 'On these rocks they are as thick as they can possibly be; in fact every newcomer has the greatest difficulty finding standing room ... the way they fight and push one another is very absurd and no Guillemot will budge an inch unless it is forced to. A Guillemot's platform is at no time the cleanest place in the world and this pushing results in their white breasts being sullied with dirt and blood. Several may be seen to bring fish which they show no inclination to eat and these do not add to the savouriness of the common table'. Morres (1896) described the continuous noise and motion and the difficulty that birds had in landing, which was only accomplished by alighting on the backs of others and forcing their way in. He considered that there were in the region of 2,000+ birds on the Pinnacles and is the first person even to attempt to estimate them. Interestingly he then notes that one of the Watchers had told him that before protection in 1888, 1,900 eggs had once been gathered from the Pinnacles in one morning. This same Watcher also remarked that increasingly more Guillemots were laying on Staple Island itself and seventy-five eggs had been taken in 1895. This perhaps illustrates graphically the contrast between the Staple Island ledges then, and the crowded ones today. It would also be expected that even by the time of Miller and the expansion of territory in some years into Skeney Scar, the ledges would still only be very sparsely populated.

Modern counts on the Pinnacles from 1998 to 2003 (Steel, pers. comm. 2003) give an average of 1,082 individuals, which equates to 725 pairs using the 0.67 conversion factor (see later). It is possible that during the 19th and early 20th centuries when these rock stacks were the main nesting site for the Guillemots, they would be packed even more closely together than at the present time; however close examination of photographs taken from a similar viewpoint on Staple Island in the early years of the 20th century does not seem to support this hypothesis (Pike, 1902; Halliday, 1909; Fortune, 1913a). The population density on these stacks does not seem to be any different from that seen today. If that is the case then there would probably be around 700 pairs of Guillemots breeding on the Farne Islands in the 19th and early part of the 20th centuries. There are however always seasonal fluctuations in numbers and between 1998 and 2003 the annual counts for the Pinnacles ranged from 699 to 1,014 pairs, with 1,842 pairs being present on one specific occasion. It is thus possible that the 1,900 eggs taken in one morning may not be too great an exaggeration.

The first indication of any numbers was in 1953 when the islands were involved in a BTO survey. While the Guillemot figures are very approximate (particularly for Staple Island) and possibly in the light of recent counts on the Pinnacles rather low (Steel, pers. comm. 2003) they do provide a benchmark for all future counts and serve to emphasise that even by the mid-20th century the population was still concentrated on the Pinnacles with only a few pairs on Inner Farne and Brownsman. The numbers in pairs are given below:

Inner Farne 7; Staple Island 600; Brownsman 20; other islands 160 (Watt, 1953).

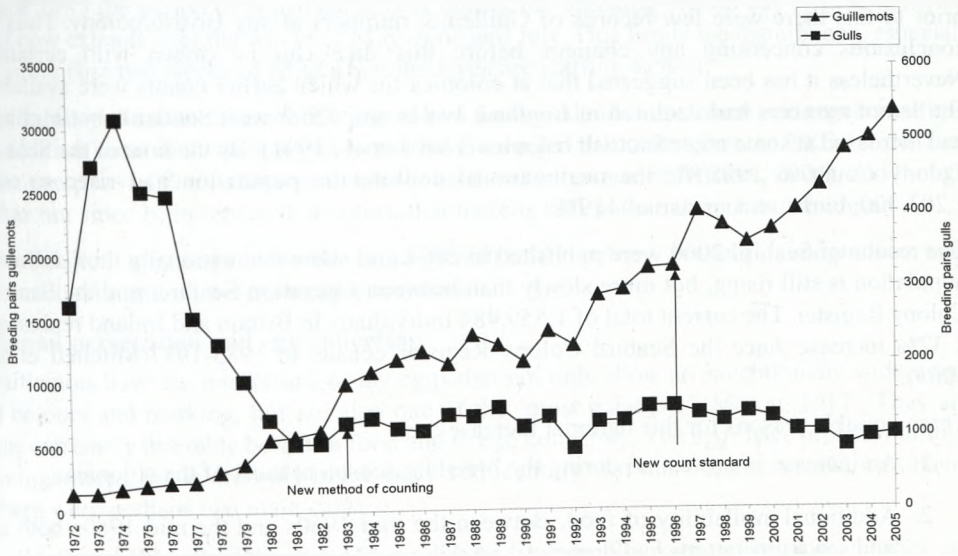
The 'other islands' mentioned would probably be Megstone and North Wamses. Throughout the rest of the 1950s and the early 1960s the numbers continued to rise with forty pairs on Brownsman in 1960 and over a hundred pairs in 1961. The 1962 bird report gives the following figures:

Inner Farne 10; Pinnacles 750-1000; Brownsman 109; Megstone 18 (Hickling, 1963).

These however cannot be regarded as satisfactory since there were over two months between the first count and the last one at the end of July.

Regular counting started in 1971 and Figure 1 shows the total number of breeding pairs of Guillemots from this date to 2005.

Figure 1 The obvious feature is the overall increase in Guillemots throughout this whole period; any decreases are usually short-lived and statistically insignificant. The drop in 1992 was the result of an exceptionally early season on the outer group when some birds had left before the count took place (Walton, 1993). The Lesser Black-backed and Herring Gull numbers show the effect of the control measures in the early 1970s and the stabilization of the population at around 1,000 pairs.



Counting methods for Guillemots

Between 1971 and 1982 all the birds were counted which appeared to be sitting on an egg; these were known as 'apparently occupied sites'. In 1983 a new method of counting Guillemots was introduced on the islands, which removed the personal judgment required

previously. The 58% increase recorded in that year indicated that in the past the colony might have been underestimated by as much as 25% (Hawkey and Hickling, 1983). In this new method all the individual birds on the ledges were counted ten times during the breeding season (usually the first three weeks of June), the highest and lowest counts discarded, and the number of breeding pairs taken as 0.67 of the average. This is still in use today, except that since 1996 the figures have not been converted but left as individual birds, as the conversion factor of 0.67 is considered unsafe for universal use. In this account the number of breeding pairs has been retained so that a continuous and comparable record can be obtained, as shown in Figure 1.

National census of seabirds

There have been three national censuses of seabirds in the 20th century; Operation Seafarer (1969-70); The Seabird Colony Register Census (1985- 87); and Seabird 2000 (1998-2002). The figure of 2,935 given by Operation Seafarer in 1969/1970 for the Farne Islands is problematic. Direct counts of all birds on the breeding ledges were supposed to be used in this survey, but confusion arose as to whether the figures actually recorded were of individuals or apparently occupied sites (a measure of breeding pairs). The total given above is considered to be of actual birds (Lloyd *et al.*, 1991), which would then convert to about 1966 pairs. This is considerably in excess of the 1,349 pairs reported in 1971 (Hickling and Hawkey, 1972b). While there could have been a decline, it is of such a magnitude (31%), that it would surely have been noticed on the islands and commented on in the relevant reports. Hawkey (1991) however states that 1,686 pairs were recorded for 1971 and if this were the case it would be in line with that obtained in the 1969/1970 survey.

Operation Seafarer was the first time that there had been a national census of seabirds, and prior to this there were few records of Guillemot numbers at any British colony. Thus no conclusions concerning any changes before this date can be drawn with certainty. Nevertheless it has been suggested that at colonies for which earlier counts were available, Guillemot numbers had declined in England, Wales and south-west Scotland, but numbers had increased at some other Scottish colonies (Lloyd *et al.*, 1991). By the time of the Seabird Colony Count in 1985/87, the next national census, the population had risen to over 1,203,000, birds; an increase of 119%.

The results of Seabird 2000 were published in 2004 and show that nationally the Guillemot population is still rising, but more slowly than between Operation Seafarer and the Seabird Colony Register. The current total of 1,559,484 individuals in Britain and Ireland represents a 32% increase since the Seabird Colony Register census in 1985-1987(Mitchell et al., 2004).

Three possible reasons for this national increase are:

1. An increase in protection during the breeding season at most of the colonies.
2. Additional availability of food. Between the mid 1960s and the mid 1980s both air and sea temperatures had dropped, and this could have made more food available.
3. High breeding success and adult survival, particularly during the past fifteen years.

Reasons for increases in numbers on the Farnes

Though the increase seen on the Farne Islands over the period of these surveys would be part of the national trend, there are at least four additional causes that contributed to the

tremendous changes seen on the islands; the control of the predatory gulls, access restrictions on the public, availability of space and stopping illegal egging.

Large gull numbers By 1975 the Lesser-black Backed and Herring Gull population was rising dramatically and it became imperative that stricter control measures were necessary. Figure 1 shows the changes in the large gull numbers from 1972 to 2005. The obvious feature is the rapid increase in auks particularly after the large gull population dropped below 2,000 pairs; it was at this time that West Wideopens was colonised in 1979 (Hawkey and Hickling, 1979). Furthermore the 1978 report noted that Guillemots were ousting other species from their traditional nesting sites (Hawkey and Hickling, 1978), and from 1971 to 1980 their numbers had risen by over 300%. Predation still continues, but the continued control of the large gulls together with the still increasing Guillemots means it has less effect.

Access to the islands A second reason for the increase seen after 1971 was probably the introduction of restrictions on visitors and visitor numbers. In the past, except for a short time immediately after World War II, visitors had been allowed to wander freely over Inner Farne and Staple Island. In 1971 a nature trail was set up on Inner Farne, followed by one on Staple Island in 1974, which made all visitors keep to certain areas of the islands. Furthermore in 1974, for the first time, each licensed visitor boat was restricted to two landings a day in the breeding season, once on Staple Island in the morning and once on Inner Farne in the afternoon. The effects of these new regulations were immediate. Guillemot numbers doubled on Inner Farne in 1972, and had doubled again by 1974, and there was a 21% increase on Staple Island and Skeney Scar in 1974. In addition visitor numbers during the breeding season (15 May to 15 July) dropped by 10,000 (Hawkey and Hickling, 1974).

Since 1985 the period of restricted access during the breeding season has been lengthened and now extends over the whole of May, June and July. This limits the disturbance, especially in the first two weeks of May when the birds are starting to nest.

Availability of space Since 1987 at least two further islands have come into regular use and in addition most of the existing colonies have enlarged their territories. In 2003 for the first time two pairs of Guillemots successfully bred on Longstone End (Steel, 2004), and though it has not since been repeated, it shows that there is still potential for future increase.

These factors may account for the rapid growth of the colony working in conjunction with the national trend of increasing auk numbers.

Human persecution and egg collecting

Guillemots have the misfortune to lay eggs that not only show an exceptionally wide range of colours and marking, but are also one of the 'most palatable' (Mason, 1917). They are thus extremely desirable both as a food and to egg collectors. The eggs have probably always been gathered, but it was only in the early 19th century that this became a serious problem. There were perhaps two main causes:

1. Since 1769, the islands had been leased by John Blackett and his son and they are known to have exploited the birds and seals unmercifully.

2. Egg collecting was fast becoming established as a fashionable hobby for the newly emerging leisured classes created by the the industrial revolution.

Selby (1826) tells of Guillemots' eggs 'taken indiscriminately and sold for a mere trifle to

the inhabitants of the Main', and in 1831 John Hancock and his party were able to obtain eggs from the Pinnacles using a rope which appeared to be permanently suspended from the top of one of them (Anon, 1890). All the breeding species suffered and Howitt (1842) recounts how eggs were gathered in their thousands from May to 1 July. Little wonder then, that few young were raised and that numbers of all the birds were in a serious decline. It was only due to the action of Archdeacon Thorp, the lessee from about 1840, in employing Watchers at his own expense that the islands survived as a breeding place for seabirds, though collecting and persecution were never completely eradicated. Tristram (1858-1860) in his presidential address to the Tyneside Naturalists' Field Club in 1860 believed that it was only because of Archdeacon Thorp that the Guillemots had maintained their strength.

Unfortunately Thorp died in 1862, and though paid Watchers were still employed they lost their effectiveness and actively exploited the birds by systematically taking the eggs, which were then sold for profit. In addition, shooting parties used to sail past the cliffs and the Pinnacles wantonly killing Guillemots and Kittiwakes on their nests (Bidwell, 1882). Smith (1876), Gurney (1878) and Clark (1881) all described the 'Keepers' collecting eggs using ladders and a chain hung from the Pinnacles and Seebohm (1885) recounts how he deliberately took ladders with him on at least one occasion in order to scale the Pinnacles. Morres (1896) was told that on one occasion 1,900 eggs were taken in one morning and at another time one man collected 1,000 eggs and then later in the day a further 600, all of which were sold at two for fid (one tenth of a new penny per egg).

The Wild Birds Protection Act of 1880 granted some protection, but only if there were people willing to enforce it, and this was the spur necessary for the establishment of the Farne Islands Association. Initially there were many problems and Fox (1884-85) recounts that the eggs were still being taken and sold to defray the rent and other expenses. Furthermore they were gathered for so long in the season that few young ever fledged.

At last in 1888 under Hugh Barclay, stricter measures were enforced, which though not entirely stopping vandalism and collecting, had an immediate beneficial effect on all the species and laid the foundation of the islands today, though in 1888 Barclay allowed some young Guillemots to be taken to St James's Park London, where not unexpectedly they all died later in the year (Barclay, 1889a).

It is hard to believe that this persecution had no effect on the Guillemots. It is probably the reason why they crowded onto the Pinnacles where they had some level of security, at least from casual visitors, rather than spreading onto the adjoining ledges. This did occur in some seasons and after 1888 they held a small but increasing colony that by the time of Miller had occasionally reached Skeney Scar. It would be almost impossible to tell if there were any reduction in numbers when the birds were so tightly packed together on the Pinnacles, but during the period of intense persecution in the 1870s and possibly in the 1830s when very few young survived this must have been the case. However it does seem that overall the Guillemots survived better than most other species.

Egg collecting continued into the 20th century. There were raids on the Pinnacles in 1922 (Temperley, 1922) and during World War II the Pinnacles were scaled on numerous occasions (Goddard, 1946). This form of persecution was only finally eradicated when from 1971 the wardens were resident on the islands for a much longer period, and is a further reason for the previously noted increase in numbers. Today the islands are designated a National Nature Reserve, a Site of Special Scientific Interest, a Special Protection Area and an Area of Outstanding Natural Beauty.

Bridled Guillemots

Bridled or as they were formerly called 'ringed Guillemots' were first described by MacGillivey in 1846 (Freethy, 1987) and the question as to whether they were a distinct species puzzled 19th century naturalists. Miller and other early observers spent many hours carefully examining both types and the only visible difference they could see was that the bridled birds had a white eye ring and a white line below the eye. Though some people thought they were different species (Bidwell, 1882), the majority including Hancock (1874) considered them simply to be variants. Gurney (1889-1890) argued that if they were different then the ringed form, as the least numerous, would eventually die out but as this did not seem to be happening they must be the same. Miller, however, provided the most convincing evidence when he recorded a mixed pair nesting at the same place (probably Kittiwake Gully on Staple Island Island) in each of the four seasons he was on the islands (Miller, 1911-14). He concluded that if they could interbreed there must be little difference between them both (Miller, 1911-14, 16 June 1912).

There were a few attempts to assess the proportion of ringed birds, with values ranging from 1 in 10 (Bidwell, 1882); 1 in 50/60 (Morres, 1896); 1in 100 (M, 1922) and 5% (Miller, 1911-14, 30 June 1911; Bolam, 1912). Though Gurney (1889-1890) actually counted twenty-seven ringed birds he only guessed the total number of Guillemots at about 270. Miller and Bolam are the closest to the value accepted now. Barclay in his report on the 1888 season considered that the number of ringed birds had increased (Barclay, 1889b) as did Fortune, (1913a) who stated that formerly they were a great rarity whereas now it was not unusual to see about six close together.

The first mention of bridled birds since Edward Miller was in 1938, when Russell Goddard was asked to participate in a survey, which H N Southern organised for the B.T.O. (Goddard, 1925-48). Ten years later G Watt took part in a repeat count to see if there had been any local changes in the proportions of the bridled form (Hickling 1949-89). There was a third survey in 1959-1960 in which the Farne Islands were not involved since the experience of the 1948-1950 survey had shown that where there was less than 5% of bridled birds it was difficult to obtain statistically significant changes without counting a very large number of Guillemots (Southern, 1962). Hawkey (1991) quotes a figure of 4.1% for 1960, while Hawkey and Hickling (1982) give a figure of 4.9% in 1982. The validity of the surveys in 1938 and 1939 can be questioned in view of the small number of Guillemots counted on only one occasion, but it must be remembered that in 1939 the Guillemots were still concentrated on the Pinnacles with at most 1,000 pairs in total. This is however the first serious attempt to obtain a percentage and as such is valuable. The difference between Goddard's and Watt's results lie in the much greater number of birds counted by Watt; furthermore her work was carried out on six dates from 5 May to 21 July (Watt, 1949). The above counts and results are summarised in Table 1.

In 1938-1939 the data collected established that the proportion of bridled Guillemots in a colony increased from SSE to NNW with less than 1% in France and southern England and 50% in south-west Iceland. Southern also noted a curious anomaly on the east coast where the Farne Islands have a higher percentage than the nearby St Abbs Head Guillemots. He speculated that this might be linked to the higher degree of isolation of island colonies but also wondered whether it was significant that the line that theoretically separates the breeding area of the northern form of Guillemot from the southern form passes between St Abbs Head (northern form) and the Farne Islands (southern form) (Southern, 1939).

Table 1 A summary of the counts and percentages for bridled Guillemots on the Farne Islands

Date	Number counted	Number of bridled Guillemots	%	Reference
1938	151	7	4.6	Goddard 1925-48, 11/06/1938
1939	434	18	4.2	Goddard 1925-48, 03/06/1939
1949	1637	64	3.9	Watt, 1949
1960			4.1	Hawkey, 1991
1982			4.9	Hawkey and Hickling, 1982

There is no obvious difference between the bridled and common form except for the eye pattern and as yet there seems to be no satisfactory explanation for its existence, though there have been at least two theories:

1. In the northern spring when breeding pairs are established in low light intensities the pattern round the eyes highlights where they are. This could be useful during bill fencing.
2. There is some slight evidence that bridled birds have a slower metabolic rate (Freethy, 1987).

At present there is no indication whether either of these theories is correct, and it is equally likely that there is some other reason for the existence of the bridled variant.

Seabird wrecks

Wrecks of seabirds occur when unexpectedly large numbers of individuals die of apparently natural causes. These are usually associated with severe weather and auks, which winter at sea, are often badly affected with Guillemots being the commonest species involved. The wrecks of 1983 and 1994 were particularly damaging with large numbers of dead and dying birds washed up on the east coast. There is no evidence that the Farne Islands' Guillemots were affected as the numbers continued to increase. One bird however found in 1994 aged twenty-eight must be one of the oldest Guillemots ever recovered. The situation for 1983 is more problematic, since the new method of counting would have obscured any decrease caused by the wreck but even so the counts for subsequent years were greater, and any problem would have been noted by the wardens.

Ringing

Edward Miller was the first person to record the ringing of Guillemots in 1914 and from then to 1986 when all ringing was stopped, at least 1,678 birds had been marked, with 288 (17%) recoveries and retraps. Most of the ringing activity for this species actually ceased in 1971 with only a further 102 being marked to 1986. Since the resumption in 1996 when thirty were ringed, a further eight were marked in 2000 as part of a study to define breeding areas and diving behaviour (Redfern in Harvey and Walton, 2001).

About 56% of the recoveries were recorded as retraps and out of the rest approximately eighteen were shot, mainly in Norway - shooting of auks was finally banned there in 1979 (Harris and Swann in Wernham *et al.*, 2002) - and twenty-four were found oiled. Guillemots are particularly susceptible to chemical pollution and are usually the most common species involved in oiling incidents. Nationally 35% of all recoveries have been oiled (Harris and Swann in Wernham *et al.*, 2002) so from this point of view the Farne Islands birds appear

to have been fortunate, though it is more likely that many which were not ringed will have been lost at sea.

Like the Eiders and Kittiwakes, Guillemots tend to return to the islands in later years (Hawkey and Hickling, 1973) but there is good evidence for inter colony exchange, with Farne birds found breeding at the Lamb, East Scotland and the Isle of May, while Guillemots from the Isle of May, Sule Skerry, Sumburgh, Fair Isle, Wexford (Ireland), and the Highlands have all been noted on the Farne Islands, especially during the 1990s when any ringed bird was particularly obvious.

Guillemots are a dispersive species; most have left the ledges by early August and then undergo their main moult until the end of September. Those from the north-east mostly remain in the North Sea throughout the winter with a small number penetrating south into the English Channel (Harris and Swann in Wernham *et al.*, 2002). While the majority of recoveries have been made locally and to the north, some have been found in Holland, Minsmere, Plymouth, France, the Channel Islands and Ireland.

The oldest Guillemot so far recovered had been ringed in 1966 and was aged twenty-eight years; it was probably a victim of the 1994 wreck (Walton, 1995). This is possibly the oldest bird recorded though one found on Brownsman in 1981 was twenty-five years, and at that time held the British longevity record (Hawkey and Hickling, 1981).

CONCLUSION

From 1971 to 2004 there has never been a three year period in which the total number of Guillemots has decreased and from 1999 the population has risen by an average of 7.8% per annum, and each season from 2001 has seen a new record number of Guillemots breeding on the Farne Islands. At present there seems little to stop their continued expansion while other areas are still available.

Their rapid increase has raised a least two concerns:

1. **The availability of food** A rough calculation by the wardens on Staple Island at the end of June 2001 showed that the Guillemots on that island alone (*ca* 17,900 individuals) consumed approximately 470kg. of fish per day (Douglas, pers. comm., 2001). Despite preliminary work by the Marine Research Group that has indicated that this species can travel long distances from the islands to feed, there still remains some doubt particularly during the time they have young, and it is important that this study continues. It is possible that it is the increased availability of sand eels and other small fish that has occurred as a result of the removal of their predator species by over fishing that has caused this situation. There were however signs in 2004 of a shortage of food, with young jumping before they were fully fledged (Steel, 2005).
2. **Whether their success is inhibiting other species** Within the last ten years the Guillemot population has increased by over 50% and many ledges now appear tightly packed and there are fewer Kittiwakes present with them in some areas.

There is in addition the ever present threat of climate change, from both the increased probability of summer storms washing eggs and chicks off the breeding ledges such as happened towards end of June 2004 when many thousands of young were lost, and more insidious effects on the whole ecosystem.

Guillemots are now the second most abundant species on the islands but they may end up being the victims of their own success. There is some evidence from the Isle of May, which

seems to show that the survival rate of immature birds declines as the numbers level ou (Lloyd *et al*, 1991). The reasons for this were unknown, but it may be related to the popu lation density on the ledges. If so, in time this could also occur on the Islands thus finall limiting the numbers.

Razorbill *Alca torda*

Historical records to the present day

Razorbills are the least numerous of the three auk species that presently nest on the Farne Islands. They were first documented in 1677 when scouts (Razorbills) were seen on the Pinnacles (Kirk, 1845) and one year later Ray included them in his list of birds that 'build on the Islands' (Willughby and Ray, 1678). Both Pennant (Hutchinson, 1778) and Wallis (1769) either saw or noted their presence in the 18th century. There are sporadic records throughout the 19th century, and except for Newton all accounts indicate that they were nesting on the Pinnacles. Newton, however, found some breeding on the West Wideopens (Newton, 1864-1907), and this is the only documented occasion of breeding on this island until 1977 when regular breeding started.

The beginning of the 20th century saw a slow increase and expansion to other islands. In 1907 Fortune found about six pairs on Inner Farne (Fortune, 1907), Bolam (1912) reported that a small colony had been established on East Wideopens with three to four pairs in 1909 and three pairs in 1910. Fortune (1913a) in the 1912 season wrote that the low cliffs of the Outer Wideopens (East Wideopens) seem to be the only place where about six pairs nested. He also added that Razorbills had not, and were not likely to increase on the Farne Islands because there were no suitable sites; they preferred crevices rather than open ledges.

Miller (1911-14) found two pairs nesting on Staple Island (though only one pair was successful) and he commented that this was the first time he had ever had a nesting pair under his supervision in three seasons (Miller, 1911-14, 8 July 1913). Breeding was again attempted on Staple Island in 1914, but failed when the egg was washed away (Miller, 1911-14, 9 June 1914). At the same time there appeared to be a build up of non breeding adults, and on one occasion Miller saw eight individuals within a relatively short time, the largest number he had ever seen on the islands (Miller, 1911-14, 20 June 1914). There are only two other references from this period, both of which simply state that Razorbills were nesting (Mason, 1917; Graham, 1920).

From 1924 to 1950 the west cliff on Inner Farne was the only site used, with just the odd pair. There are suggestions that breeding might have occurred on Staple Island (Goddard, 1925-48, 11 June 1938) and Brownsman (Thorp, 1939), but though probable, especially on Staple Island there is no definite proof and it was not until 1950 that such evidence was forthcoming (Watt, 1950). There were other attempts on Staple Island, but regular nesting did not start there until 1976. Prior to 1986 when Brownsman was finally colonised there were four earlier records, in addition to the dubious one in 1939. Regular nesting began on East Wideopens in 1970, West Wideopens in 1977, North Wamses in 1979, Skeney Scar in 1984, South Wamses in 1986 and Big Harcar in 1989. One or two pairs nested on Longstone End for six seasons from and including 1996, and in 2000 two pairs bred on Megstone. The 2005 season had the highest numbers to date with colonies on eight islands, of which those on Inner Farne and West Wideopens were the largest (Steel, pers. comm.).

Evidence for numbers

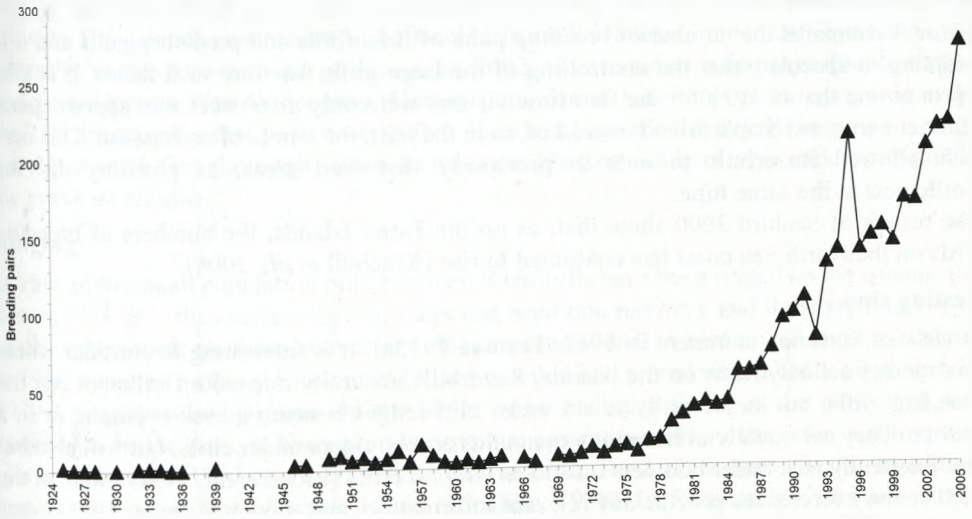
None of the early authors provide any real evidence as to numbers, though Kirk comments that most of the birds on the Pinnacles were 'willimants' (Guillemots) and scouts (Razorbills) (Kirk, 1845). There is however no indication that they were scarce and it appears that in the past the population was greater than for much of the twentieth century. In 1867 Robert Darling, a Watcher, told Booth that they had 'formerly been abundant during the summer' (Booth 1881-1887), but exactly when is not reported.

Selby gave the first intimation in 1826 that numbers were decreasing when he noted that 'a few annually bred with Guillemots' (Selby, 1826), and most subsequent accounts imply that they were only sporadic nesters. Booth could only find one pair in 1867 (Booth and Griffith, 1927); Gurney (1878) stated they were far from common and Hancock noted that 'only a few breed occasionally' (Hancock, 1874), though Bolam from 1884 had never known not to be able to purchase one or two eggs on the spot and had sometimes been offered a choice from at least six (Bolam, 1912). It is thus somewhat surprising that he wrote in 1899 that 'razorbills ... did not often nest' (Bolam, 1901). In all probability the odd pair did breed most years, but, because of the much greater number of Guillemots and the Razorbill's habit of nesting in rock crevices, they were overlooked. Pybus (1903) reported two nesting pairs in 1901 and in 1907 Fortune found about six pairs on Inner Farne (Fortune, 1907).

Figure 2 shows the total number of breeding pairs of Razorbills from 1924 to the present day. Goddard (1935) stated that there were less than twenty breeding pairs and this is surprising considering that he was still reporting the 'usual 5/6 pairs nesting in 1946' (Goddard, 1946). Even so it is hard to find evidence to justify even 5/6 pairs prior to 1940. The information available seems to show that there were only between one and three pairs breeding annually.

Razorbills were one of the few species that increased during World War II, but according to Goddard, this was in the number of individuals present, not in breeding pairs (Goddard,

Figure 2 The total number of Razorbill pairs from 1924 to the present day.



1946). From 1946 to 1971 all records indicate that around six pairs bred annually. The sixteen pairs in 1957 are exceptional, though more birds than normal were reported in spring and summer (Hickling, 1958). However the twelve breeding pairs in 1956 is most likely an overestimation since the Report notes eight eggs, not nests on Inner Farne (Hickling, 1957). The number of non-breeding individuals continued to increase and peaked with over 200 counted off Inner Farne on 12 June 1961 (Hickling, 1962). At that time it was probably the highest number ever recorded at one time on the islands.

Between 1971 and 1978 about thirteen pairs bred annually, then from 1978 onwards the population expanded rapidly at an average of 12.7% per annum. There are however two exceptions, 1992 with a drop of 24%, and 1995 when there was a 53% increase. In each case the numbers reverted to normal the next season. At the time the increase in 1995 was related to the varying numbers of non-breeding individuals seen round the islands in the previous two seasons (Walton, 1996). The 277 breeding pairs in 2005 is to date the highest number recorded.

Counting Razorbills is not easy; breeding birds can be hard to find in a seabird colony. Many nest sites are out of view in rock crevices, or hidden among boulders, so numbers can be underestimated. The birds visible on land are reasonably easy to count, but interpreting the numbers in terms of breeding pairs is difficult since even when all the birds on land can be seen, the ratio of known breeding sites to birds present in June, when attendance is least variable can range from 0.59-0.77 (Lloyd *et al*, 1991). During Operation Seafarer and The Seabird Colony Survey, two major surveys of all the breeding seabirds around the UK which took place in 1969/70 and 1985/87 respectively, most of the counts were of birds on land in June; some, however, in 1969 were much later and others were recorded as 'apparently occupied sites'. Furthermore many of the counts entered on the record cards as pairs may have been of individuals. It is thus difficult to make an accurate comparison of the two surveys. Nevertheless, from the figures given and using the same 0.67 conversion factor as for the Guillemots, an approximate comparison may be obtained, which shows that in this period the UK population increased by roughly 8% (Lloyd *et al* 1991). Over the same time the Farne Islands numbers rose from eight breeding pairs to sixty-five breeding pairs. Thus while the national increase would be responsible for some of this change, there must have been other reasons too.

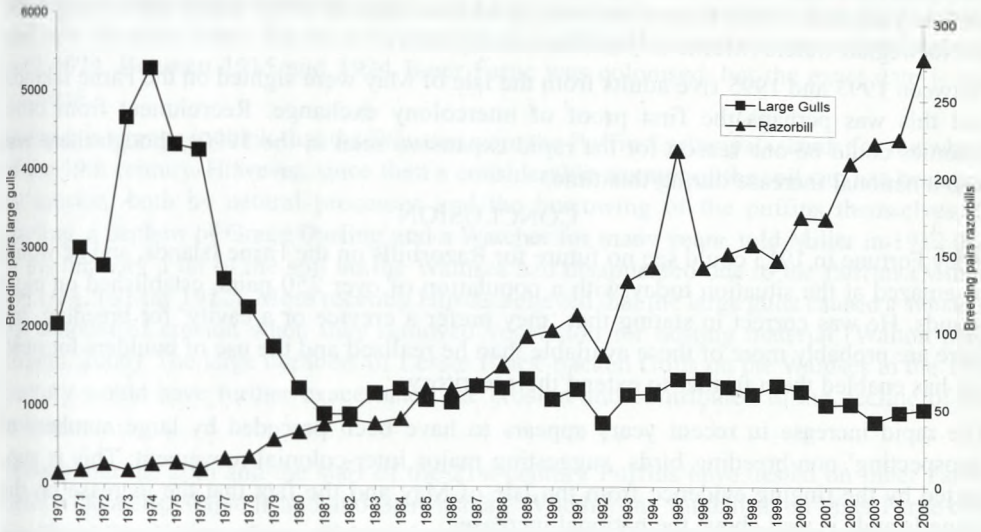
Figure 3 compares the number of breeding pairs of Razorbills and predatory gulls and it is tempting to speculate that the controlling of the large gulls was one such factor. It is also worth noting that in 1971 for the first time visitors were only given access to specific parts of Inner Farne and Staple Island instead of, as in the past, the whole of each island. This may have allowed Razorbills to nest in previously disturbed areas, as probably did the Guillemots at the same time.

The results of Seabird 2000 show that, as on the Farne Islands, the numbers of breeding birds on the North Sea coast has continued to rise (Mitchell *et al.*, 2004).

Nesting sites

In view of Fortune's comment in 1912 (Fortune 1913a), it is interesting to consider where this species actually nests on the islands. Razorbills generally mix with Guillemots on the breeding cliffs, but they usually select wider cliff ledges beneath a rock overhang or in a crevice. They are equally at home amongst talus and boulders under cliffs, but will also but less frequently nest under boulders on shores with no cliffs (Lloyd *et al.*, 1991). None of the 19th century references provide any relevant information, and though Fortune (1913a) stat-

Figure 3 The total number of breeding pairs of Razorbills from 1970 to the present day with Lesser Black-backed and Herring Gull numbers for comparison.



ed that the low cliffs of the Outer (East) Wideopens seem to be the only place where they breed he gave no further details. It is Miller, the Watcher on the outer group from 1911 to 1914, who is the most informative. In 1913 a pair of Razorbills successfully bred on Staple Island and his Diary contains a description of the exact site. On 11 June 1913 he wrote 'a bird sitting (and has been for a week) on an egg in a recess on the east face of Skeney Scar'; there was also a failed pair that were probably 'on a narrow ledge below Guillemots on the west side of the highest point of Staple Island' (Miller, 1911-14, 19 May and 7 June 1913). A pair also attempted to breed in the same 'niche' on Skeney Scar in 1914 (Miller, 1911-14, 19 May; 9 June 1914). Goddard is the only other person who has given any information as to the site, but this was only on one occasion when he described two pairs occupying 'brackets' on the west cliff of Inner Farne (Goddard, 1925-48, 14 June 1930). Personal observations on five islands show them to be nesting in rock crevices, under cliff overhangs and generally in the less exposed positions. In 2002, twenty-seven pairs were found nesting under boulders on West Wideopens (Harvey pers. comm.), and this is the main reason for the 21% increase for that year. Four or five pairs had been recorded there in previous years but this was the first thorough search so it is possible that numbers were underestimated in the previous seasons.

Ringing

In view of the small population only fourteen Razorbills have been ringed on the islands, the last in 1963. It is thus surprising that there has been one recovery and three sightings. Two of the sight records are thought to refer to the same individual. A bird ringed on Staple Island in 1958 was seen on Inner Farne in 1969; it was oiled and paired with a badly oiled bird. In 1970 a ringed individual seen on the same ledge on Inner Farne as the oiled bird was assumed to be the same individual; it was now in perfect condition. The other sighting was of a bird ringed in 1960 on a site on the Stack in 1962. The 1957 Report cites a ringed bird nesting on the east face of Staple Island (Hickling, 1958). Unfortunately no further details

are provided, so whether this was one of the two marked in 1956 is unknown.

The only recovery, in 1969, was of an oiled bird that was found on a beach in West Lothian (Hickling, 1971). This highlights one of the main dangers to auks; there can also be heavy mortality from fishing nets and, until it stopped in 1970, winter shooting of auks in Norwegian waters (Merne in Wernham *et al.*, 2002).

Between 1993 and 1995 five adults from the Isle of May were sighted on the Farne Islands, and this was perhaps the first proof of intercolony exchange. Recruitment from other colonies could be one reason for the rapid expansion seen in the 1990s, though there was also a national increase during this time.

CONCLUSION

Riley Fortune in 1913 could see no future for Razorbills on the Farne Islands, and he would be amazed at the situation today with a population of over 250 pairs, established on eight islands. He was correct in stating that 'they prefer a crevice or a cavity' for breeding, but there are probably more of these available than he realised and the use of boulders for nesting has enabled them further to extend their territory.

The rapid increase in recent years appears to have been preceded by large numbers of 'prospecting' non-breeding birds, suggesting major inter-colonial movement: This is supported by the ringing evidence from the Isle of May and the fact that the increase on the Farne Islands is well above the national increase.

Puffin (*Fratercula arctica*)

Historical records to the present day

It is possible that Puffins, like most of the breeding species, have been nesting on the Farne Islands from St Cuthbert's time, though they are not specifically mentioned until 1532 when the Durham Household book records four as being received from the Master of Farne (Gardner-Medwin, 1985). At that time Puffins enjoyed some popularity with the monasteries since they were regarded as fish and could thus be eaten on fast days. The first reference to any breeding is by John Leland *ca* 1537-1539 who noted that 'puffins ... be found breeding ther(sic) in the cliffy rokkes [*sic*]' (Gardner-Medwin, 1985). They were found nesting by Ray (Willughby and Ray, 1678) and Kirk (Kirk, 1845) in the 17th century, and Wallis (1769) and Pennant (Hutchinson, 1778) in the 18th century, though only Kirk records burrows on Staple Island.

The 19th century is well documented starting with William Darling, who, probably prior to 1820, described them as building in holes made either by themselves or by rabbits (Darling, 1795-1860), and most subsequent accounts include a reference to the species. Throughout the whole of the century they bred on the Wamses (North and South) and Staple Island, but it is not until 1851 when Newton (1864-1907) collected their eggs on West Wideopens that any other island is mentioned. Branford (1894) found them on Big Harcar; Morres (1896) on the Wideopens and Staple Island, and finally Bolam in 1899 lists Knoxes, Brownsman (the first reference) and the Wamses as all containing burrows (Bolam, 1901). Strangely he makes no mention of Staple Island and as far as can be ascertained this is the only reference to Knoxes.

Some time early in the 20th century Staple Island rather than the Wamses became the main island. Halliday (1909) writes of 'swarms (of Puffins) on Staple Island', and then adds 'also

breeds on North and South Wamses.' Miller recorded breeding on Staple Island, Brownsman, both Wamses (only a few), West Wideopens and in 1912 Big Harcar (Miller, 1911-14; Miller, 1914). Contemporary with him, Fortune (1913a) recorded nesting on The Wideopens, Staple Island and Brownsman and he, like Miller, considered that Staple Island was now the main island. These, with the exception of Big Harcar, remained in continual use until 1924. Between 1915 and 1924 Inner Farne was colonised, but the exact date is not recorded.

Today it is strange to think that the Wamses were the Puffins' principal islands for the whole of the 19th century. However, since then a considerable amount of the soil cap has been lost by erosion, both by natural processes and the burrowing of the puffins themselves. R Darling, a nephew of Grace Darling and a Watcher for many years, told Miller in 1912 that in his memory a lot of the soil on the Wamses had disappeared due to the Puffins (Miller, 1911-14, 16 May 1912). More recently Hirons believed that the large gulls caused a substantial amount of erosion when they removed vegetation for nesting material (Walton pers. comm., 2006). The large numbers of Lesser Black-backed Gulls on the Wamses in the 19th century would have further exacerbated the erosion and contributed to the decline of the colony.

Throughout the 20th and the start of the 21st century Puffins have nested on Inner Farne, both Wideopens, Staple Island and Brownsman. Whether the vandalism on Inner Farne during World War II drove them off that island is not known. It is also likely that both North and South Wamses have been in continuous use too, though on a much smaller scale than in the 19th century. Goddard (1946) in the first of the Annual Reports noted that there were 'large numbers on all the islands where there was sufficient depth of soil'. Unfortunately Puffins were not a high profile species and many reports to the mid 1960s simply stated that there were 'the usual numbers' with no specific note of which islands were used.

Big Harcar is mentioned for the first time in 1969 (Hickling, 1971), though both Branford (1894) and Miller recorded breeding there in the late 19th and early 20th centuries (Miller, 1911-14). In 1970 a pair attempted to nest on Longstone End, but deserted: however two pairs were successful the next season (Hickling and Hawkey, 1972a; 1972b). At the most recent census in 2003 Puffins were recorded on all the following islands: Inner Farne, East and West Wideopens, Staple Island, Brownsman, North and South Wamses and Big Harcar (Steel, 2004).

Evidence for numbers

In the mid 18th century Wallis' descriptions of the islands seemed to indicate that there were healthy populations of the breeding birds (Rossiter, 1999). The situation was very different by the late 1820s with a major decline in most species. This was first documented by Selby (1826), who blamed it on the lack of protection provided. Hewitson (1831) and Hancock (1874) both described a visit in 1831 where each individually commented on the lack of Puffins, and Selby himself, in 1831, noted that 'they are very rare in Northumberland'(Selby, 1831). All of the subsequent accounts simply state that Puffins were present, and it is not until 1865 that Brown (1866) and Saunders (1866) describe them as either 'numerous' or 'a good many'. It therefore appears that their situation had by then very much improved, probably because of the protection given by Archdeacon Thorp. Hancock (1874) recorded a colony of 'considerable size' in 1871 and in 1875 the local fishermen told Gurney that 'the Puffin is getting up its numbers' (Gurney, 1878). This increase continued into the 20th century; they were described as one of the most abundant species on

the islands at the turn of the century (Dixon, 1900), and Bolam considered them to be 'extremely abundant' (Bolam, 1912). Mason (1917) found them in 'prodigious numbers', and continues 'everywhere the ground is honeycombed with burrows and nearly every hole contains an egg.'

There is virtually no information available as to any numbers prior to 1969. Graham (pers. comm. 2000) postulated that there were around 3,000 pairs on the inner group in the 1930s, and Watt who participated in a BTO survey in 1953 considered the whole colony to consist of about 5,000 pairs. This was based on an estimated 10,000 individuals present in mid April (Watt, 1953). It has been shown on the Isle of May that when rafts of puffins were counted regularly in April the maximum count was approximately half of the number of birds that actually bred (Harris, 1976). Watt may not therefore, be too inaccurate; though whether she made more than one count is not known.

In 1962, 2,830 burrows were reported on the East Wideopens, but unfortunately the only reference is in the 1970 Annual Report (Hickling and Hawkey, 1972a) and no further details are given. The 6,800 pairs estimated for Operation Seafarer in 1969 gave the first real indication as to the total population (Harris, 1976), and since then except for 1971-1976 inclusive when some annual counts were made, the colony has only been censused intermittently. A Puffin census may be either a full or a random sample count; both are time consuming and, unless great care is taken, can do much harm to the burrows especially when the soil cap is fragile as it is on the Farnes. In a full count after laying out 20m^2 plots on all the breeding islands according to the vegetation mapping grids, all the burrows are then counted and if there are less than a hundred in that plot every burrow is inspected to determine whether it is occupied. If there are more than a hundred, then a minimum of 10% are sampled for occupancy. In a sample count all the burrows in only 20% of the plots on each island are sampled. Every burrow is then counted and the average occupancy used to find the overall total. In 2003, the last census, there was a full count on the outer group and a sample count on the inner group (Shreeve pers. comm., 2003: Steel pers. comm., 2005).

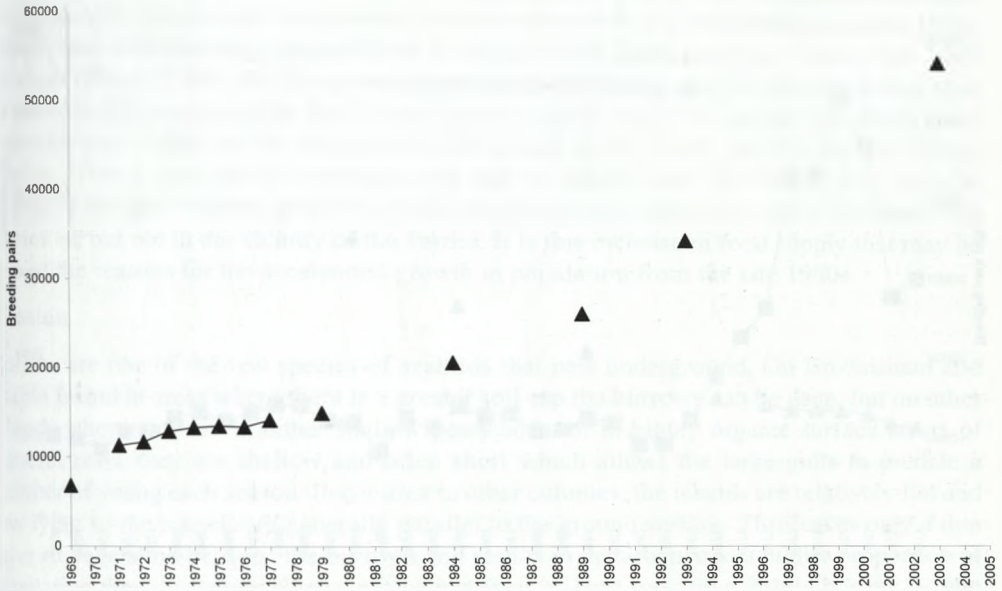
Table 2 The total numbers of breeding pairs of Puffins in Britain and Ireland for each of the three major seabird surveys.

Operation Seafarer	Seabird Colony Register	Seabird 2000
453,069	506,626	600,751

Table 2 lists the total numbers of breeding pairs of Puffins in Britain and Ireland for each of the three major seabird surveys, Operation Seafarer (1969/70), The Seabird Colony Register (1985/87) and Seabird 2000 (1998-2002) (Mitchell *et al.*, 2004).

Nationally Puffins were thought to have declined from the end of the 19th century and this was confirmed by Operation Seafarer. Though there appeared to have been some recovery by the 1985/87 census, the difference in the count units made it difficult to ascertain the exact magnitude. Operation Seafarer used either birds on land, or apparently occupied burrows (AOB), and while the latter was actually used in most of the counts, there was a suspicion that some individual birds were entered on the record cards as AOBs (Lloyd *et al.*, 1991). Harris (1984) postulated that the initial decline and recovery to 1985 was linked to the changes in sea surface temperature. Both the last two surveys have used AOB as the census unit.

Figure 4 The changes in the population of Puffins between 1969 and 2003. The obvious feature is the continued and rapid growth of the colony, particularly since 1979, and the increased rate from 1989. There are at least three possible reasons for these changes, the controlling of the predatory gulls from 1975 onwards, an increased availability of food and managing erosion that was prevalent in the Puffin colonies. These will all be discussed later. The unconnected points indicate counts done at various intervals.



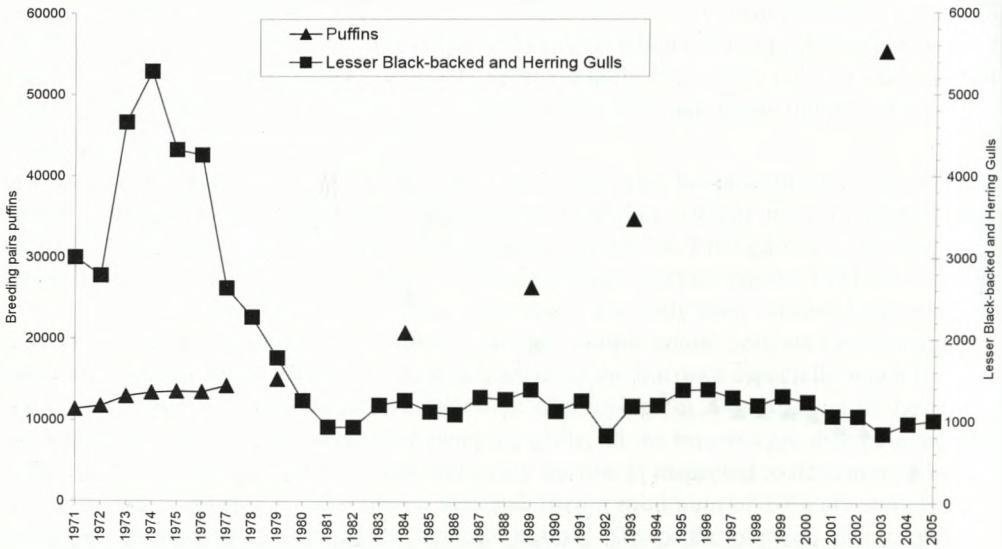
Seabird 2000 has shown that the Puffin numbers are still increasing, but at a slower rate than between the first two counts. The most substantial changes have been in eastern Britain, particularly on the Isle of May, which had five AOBs in 1959 and a staggering 69,000 in 2003 (Mitchell *et al.*, 2004).

The Farne Islands are particularly interesting, as they appear not only to have escaped the early decrease, but also along with the Isle of May and other colonies on islands in the Firth of Forth to have shown an increase. A possible reason for the lack of the early decline is that in comparison to the reportedly vast colonies in Scotland, the numbers on and around the Farne Islands were relatively small and despite the warmer seas there was still sufficient food available. Ringing evidence has shown that many of the birds that helped colonise Coquet and the Firth of Forth islands in the 1960s were immigrants from the Farnes (Harris, 1984). This, however, may well be a reflection of the increasing soil erosion on many of the Farne Islands rather than pressure from a rapidly expanding colony.

Though the overall numbers rose by 14% between 1971 and 1973 there was a shift in population on the inner group to Inner Farne with a 120% increase, and on the outer group to Brownsman (51% rise). This is not the first time that this has happened; the move from the Wamses to Staple Island at the start of the twentieth century was probably in response to the increased erosion on the Wamses, but it may be significant that the 1970s was the time when there was a rapid build up of the predatory gulls and so the move to the Inner Farne and Brownsman might have been partially in response to the increased protection given by the

presence of the Wardens on these islands. Today the largest islands, Inner Farne, Staple Island and Brownsman, between them hold 77% of the total population of 55,674 pairs, and Staple Island with over 15,600 pairs is the most densely populated.

Figure 5 The number of pairs of Puffin, Lesser Black-backed and Herring gulls from 1971 to 2005.



Predation by the large gulls

Puffins, like other species, suffer predation by the large gulls. Great Black-backed Gulls take the adults, but as there are relatively few present during the breeding season this is not usually a problem. In 1929 Goddard saw heaps of dead adult Puffins, all with a hole through their breast, which the Watchers told him had been killed by Lesser Black-backed Gulls (Goddard, 1925-48, 30 June 1929). Normally these, and Herring Gulls will take young birds, though more often they predate the fish loads and eggs. Brown in 1970 used West Wideopens for a study of gulls robbing adult Puffins and calculated that approximately 25% of fish loads were either wholly or partially lost to gulls. The Puffins then compensated by bringing more loads per day so the young did not suffer, but if for any reason there was a scarcity of fish then this parasitism could depress chick growth and survival. He also noted that the burrows on East Wideopens were very short and this allowed the gulls to predate a number of young each year, thus reducing breeding success on the island (Hickling and Hawkey, 1972a).

The Sanctuary Act of 1964 granted the status of an egg sanctuary to the islands, with the result that in the 1965 season very few gulls' eggs were collected. This led to a gull population explosion with a consequent major increase in predation. It was only when stricter controlling was introduced in 1975 that the large gull numbers started to drop.

The predation still continues, Lesser Black-backed and Herring Gulls are always present round the burrows during the breeding season to take both eggs and young as well as robbing the adults of fish. This though on the whole is now on an acceptable scale. Black-head-

ed Gulls are becoming a potential threat; so far they have not been a major problem since for the last ten years there have been less than a hundred pairs, but the last three seasons have seen a dramatic increase resulting in 396 pairs on Inner Farne in 2005. The situation thus needs to be carefully monitored.

Food availability

The availability of food under normal conditions is controlled by oceanographic conditions, particularly the sea surface temperature. Between the end of the 19th century and the 1940s British seas were warming; temperatures stabilized in the 1950s and then cooled from 1960 onwards (Harris, 1984). Puffins and Guillemots are cold water species and would thus tend to thrive in the cooler seas as they contain more suitable food. During the last thirty years however, over fishing of the commercial fish stocks in the North Sea has caused a sharp decline. This in turn has allowed sand eels and the other small fish favoured by auks to increase, though in many areas the sand eels themselves have also been commercially exploited, but not in the vicinity of the Farnes. It is this increase in food supply that may be one of the reasons for the accelerated growth in population from the late 1980s.

Erosion

Puffins are one of the few species of seabirds that nest underground. On Brownsman and Staple Island in areas where there is a greater soil cap the burrows can be deep, but on other islands where they are in either shallow peaty soils, or in highly organic surface layers of mineral soils, they are shallow and often short which allows the large gulls to predate a number of young each season. In contrast to other colonies, the islands are relatively flat and low lying so the tunnels are generally parallel to the ground surface. This leaves only a thin layer of vegetation between the burrows and results in disturbance to a higher proportion of vegetation than on steeper slopes, producing areas of bare soil and a fragile burrow system that is unstable and easily destroyed (Harris, 1984).

Each pair either excavates or cleans out their burrow as soon as they come onto land each spring. In the past Harris considered that on the Farne Islands the quantity of fresh burrowing each year is greater than at many other colonies because the burrow entrances often become blocked with eroded soil from seal activity in the autumn; furthermore, many new holes are started each year that are rarely used for breeding in the first season. If the burrows are in bare areas with organic soils, over twice as much material per burrow is removed compared to those in vegetated areas, while in sandy soils over five times as much per burrow is excavated. This amounts to a tonne for every 350 burrows. The excavated material in the bare areas is soil, whereas in the vegetated areas it is mainly plant debris or old nest lining (Harris, 1984). Once the vegetation cover is reduced more burrow entrances are infilled each autumn, larger quantities of soil are excavated each spring and the entrances become increasingly unstable. This leads to increased erosion and eventually the collapse of the burrows with the decline and eventual destruction of the colony (Hornung, 1981).

Miller (1911-14), Fortune (1913b) and Paynter (1914) had all earlier commented on the ability of the puffins to destroy their habitat. In fact Paynter (1914) considered that they were 'spoiling the beauty of the Islands', and a local guidebook in the 1920s stated that the peaty soil had been destroyed (Clark, 1924). The first relatively modern record of potential erosion was in 1949 when a lack of vegetation was noticed on some of islands (Hickling, 1949-86). However no real action was taken until the mid 1960s, by which time the progressive loss of ground cover had exposed bare soil. This was either washed off or blown away leaving bare rock in many areas. Inner Farne, the Wideopens, Staple Island, Brownsman and the

Wamses were all affected, particularly both Wideopens and Wamses where illegal egging had exacerbated the problem (Hawkey, 1970). Despite a number of attempts to re-establish the vegetation, conditions were worse by the end of the 1960s. The activities of rabbits, grey seals and the predatory gulls were all blamed in some degree for the erosion, but the most badly affected islands supported breeding Puffins and it was obvious that their activities were particularly damaging, especially when coupled with the seals and/or the large gulls. In 1970 it was found that on East Wideopens the 2,860 occupied burrows counted in 1962 had declined to 545 a drop of 81% in eight years (Hickling and Hawkey, 1972a).

It was thus imperative that some action was taken to try to re-vegetate the islands supporting Puffin colonies and to ensure that any Management Plans included strategies to maintain adequate ground cover to avoid any future population decline through this cause. During the 1970s both Hirons (1994) and Hornung (1976; 1981) individually studied the flora and erosion in detail and eventually, despite the 80% exposed soil on Staple Island and Brownsman, were able to re-vegetate a high percentage of these and other islands. The use of brashings combined with native species was found to be the most effective method of re-establishing the vegetation cover and preventing further erosion (Management Plan First Revision 1982).

Human Persecution

Puffins, as did most other species, suffered from the vandalism which became prevalent after Archdeacon Thorp's death in 1862. Their eggs were gathered in such quantities and for so long that Fox in 1884 saw puffins at the end of August 'hardly able to fly' (Fox, 1884-85), but the worst incident occurred in 1875 when the grass above the burrows was deliberately set on fire and both adults and young were 'burnt in their holes' (Adamson, 1878). It was only in 1888 when H Barclay assumed responsibility for the relatively recently formed Farne Islands Association that the situation improved. It is interesting though that despite the shooting, egg collecting and incidents such as the one above the puffins did not appear as much affected as the other species.

The egg collecting carried on well into the 20th century, and only really stopped with the appointment of a full time Warden/Naturalist in 1970 and with seasonal wardens resident for a longer period on the islands.

Bad Weather

All species suffer if there is bad weather in the breeding season, and despite nesting underground Puffins are no exception. The shallow soils on the Farne Islands mean that the burrows are generally close to the surface and those in bare or sparsely vegetated areas soon flood in prolonged or heavy rain. This has been documented on numerous occasions throughout the 20th century, and must have happened countless times in the past. Barclay (1889b) described the 1888 season as 'disastrous' with rain and cold weather; but it is Fortune (1913b) who was one of the earliest authors to record young puffins being 'drowned in holes'. From then onwards this occurred on a regular basis, particularly during the 1960s, 1970s and early 1980s when the erosion was at its most serious. In both 1966 and 1967 the burrows were flooded at least twice (Hickling, 1967; 1968), while in late July 1970 torrential rain filled every burrow and drowned any unfledged bird, at a time when substantial numbers of young were still on land (Hickling and Hawkey, 1972a). There was a similar mortality from heavy rain in July 1988. However probably the worst occasions were more recently, in 1997 and 1998. In June 1997, storms flooded 62% of all burrows on an unprecedented scale and it was estimated that *ca* 21,500 eggs and chicks were lost (Walton, 1998).

The 1998 season yet again saw severe flooding particularly on the outer group. In each case fledging success was low; in 1998 only thirty-two young fledged from a hundred monitored burrows: twenty-eight from fifty on Inner Farne, four from twenty-five on Brownsman and none from twenty-five on Staple Island, in contrast to 85-95% in normal years (Walton and Maher, 1999). Persistent or heavy rain still poses a threat. In June 2002 20% of the burrows on East Wideopens were flooded and fifty monitored nests on the outer group fledged only eighteen young (Harvey, 2003), while the atrocious conditions at the end of June in 2004 flooded up to 70% of all burrows on Brownsman and Staple Island and only twelve young fledged from fifty nests (Steel, 2005a).

Auks winter at sea and so are particularly susceptible to 'wrecks' which can occur after periods of bad weather; and pollution. Though these rarely include great numbers of Puffins, there are records that go back to 1856 (Harris, 1984). More recently in 1969 thirty-nine Farne ringed puffins were found dead between 16 February and 25 April (Hickling, 1971). This may not appear to be a high number but it is equal to the total of dead puffins recovered over the previous eight years, and as only a limited number were ringed each year, for every ringed bird recovered there must have been many more affected which were either not ringed or not recovered. Forty-nine Farne Island Puffins died in 1983 (Hawkey and Hickling, 1984), but the major casualties in the east coast wreck in February 1994 were Guillemots and Shags (Walton, 1995).

Pollution

Oil and chemical pollution has been a problem for much of the 20th century. One of the first recorded incidents of oiling was in Scotland in 1915 (Harris, 1984) and while relatively few Puffins have been killed in the major disasters, many more have suffered from the residues left after tank cleaning, oil leakage from ruptured fuel lines and other accidents. Nine oiled birds were recovered in 1969, and most recently an oiled bird was found at Hartlepool in 2000 (Harvey and Walton, 2001). Again it should be remembered that for every oiled Puffin recovered there might be other dead Farne Islands birds not ringed, or not found; though available evidence has shown that puffins rarely congregate away from their breeding colonies and therefore any major spill in the open sea is unlikely to kill more than a few individuals (Harris, 1984).

It may seem surprising that despite all these dangers, particularly the flooding, the Farne Islands population has flourished. There are probably a number of reasons:

1. Puffins are now only censused each decade, so only long term, not seasonal changes are picked up.
2. In normal years the overall fledging success is of the order of 85-95%, and even in 2002, despite the problems on East Wideopens and the outer group, there was still 94% success on the unaffected Inner Farne (Harvey 2003).
3. The timing of the rain is important. If it occurs in early spring there is a chance of the birds relaying, and if it is later in the season then most of the young will have fledged. It is the most destructive in late May, June and early July when the young are still in the burrows.

It would thus require a run of successive failures and disasters before any decline in the numbers became visible.

A final point of interest is concerned with the date of the first young; this is usually regarded as the first day when fish are taken into a burrow. Edward Miller recorded this date for

each of the four seasons he was on the islands. The earliest was 11 June in 1914 whereas the latest was 17 June in both 1911 and 1912 (Miller, 1911-14). Today it is generally some time in the last week in May, but in both 2000 and 2003 it was over a week earlier on 19 May (Harvey and Walton, 2001) and 18 May (Steel, 2004).

Ringing

Edward Miller was the first person to ring Puffins on the islands in 1913 and 1914 when,over the two seasons he ringed 680 birds for Miss Pease (Miller, 1911-14). In the mid 1920s to the 1930s Mrs T E Hodgkin ringed Arctic Terns and Puffins. Prior to World War II it seems that formal permission was necessary, but in reality any individual could and did mark birds if they were in the good books of the Watchers. C Thorp, the Honorary Secretary of the Farne Islands Association, did note that he persuaded a father and son he saw marking the Puffins and damaging the burrows on Staple Island that they were 'breaking the rules' (Thorp, 1937).

From 1949 ringing was organised on a more formal basis and the Watchers stopped any unauthorised people. Puffins were among some of the earliest species to be studied in detail when E Ennion experimented with trapping both young and adult birds. Later retrap programmes by M D Brown and M P Harris resulted in large numbers of puffins being ringed. Between 1913 and 1986 when ringing temporarily ceased, a minimum of 15,905 Puffins had been marked.

The first recovery was in 1914 when Miller caught and released one of his 1913 adults that he had found breeding on Staple Island (Miller, 1911-14). Since then until 1986 there have been at least 1,159 recoveries/retraps/sightings (*ca* 7%) of which the majority have been retraps or sightings.

It has been shown that puffins from north-east colonies mostly remain scattered within the North Sea and the Skagerrak in winter, though some pass through the Straits of Dover to France. (Harris in Wernham *et.al.*, 2002). This is certainly the case with the Farne Island birds and the majority of recoveries have been within the British Isles, usually Scotland, with a few in Ireland, France and the Netherlands. Most birds have died at sea and then been washed ashore, so little is known of the cause of death. To 1986, at least eight out of the fourteen individuals recovered in Scandinavia were shot, fifteen were oiled and one was found drowned in a fishing net, thus highlighting some of the dangers to which they were and still are susceptible. The most recent data indicate that where the cause of death has been reported, pollution was cited in 26% of the cases, 24% were killed by natural environmental factors such as severe weather, 9% shot or trapped, 6% drowned in fishing nets and 32% killed by natural predators, mainly gulls, at the colony where they had been ringed (Harris in Wernham *et al.*, 2002).

Between the 1960s and the early 1980s, M P Harris and his students carried out an intensive study using colour ringed puffins, and showed that while there were few long distance inter-colony movements, there is a regular two way interchange of young birds between adjacent or nearby colonies. Of 9,353 individuals ringed on the Farne Islands during this time, 114 were caught and many others sighted on the Isle of May, two at Craigleith, and one at Inchkeith, all of which are colonies in the Firth of Forth, similarly eighteen birds from the Isle of May were found breeding on the Farne Islands. In addition Farne Island puffins have been controlled on Coquet Island and Saltee Island (Ireland), and in 1981 an individual ringed as young on East Wideopens in 1975 was caught near Stavanger, the first British ringed Puffin to be found alive in a Norwegian colony.

Immigration from the Farnes is considered to have played some part in the vast increases seen in the Forth of Firth colonies during the period of Harris' research and also in the establishment of the Coquet Island population which rose from fifty pairs in 1971 to between 1,500/2,000 pairs in 1982 (Galloway and Meek, 1980; Harris, 1984). At that time there were major erosional and gull predation problems on the Farne islands and it is not surprising that birds moved to thriving smaller colonies with room for expansion; what was unexpected was the reverse movement from the Isle of May to the Farne Islands (Harris, 1984).

CONCLUSION

From 1969, when Puffins were first counted, the colony has never declined and every census has shown a major increase. The initial growth from 1976-1984 was probably in response to the control of the predatory gulls and erosion, but the 60% rise from 1993-2003 is unprecedented; whether numbers were inflated in 2003 because of birds from Coquet Island is however unknown. If some sort of sample count of specific areas was undertaken at regular intervals it might help to monitor the shorter term changes than is possible with the ten yearly counts at the moment.

Puffins now inhabit all the islands with a soil cap, and though Staple Island is now thought to be saturated (Steel pers. comm, 2003) there is probably still space available for expansion elsewhere, especially if they start to use rock crevices.

Providing the food supply remains adequate, the continuation of the present colony and any further expansion requires strict attention to the vegetation to curtail the inevitable erosion. This though is easier said than done, especially with high burrow densities. It is therefore most likely that eventually the whole colony will become the victim of its own success and erosion will cause its future decline; but it is possible that careful management may prevent its final collapse.

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THE WASPS AND BEES (HYMENOPTERA: ACULEATA) OF LINDISFARNE NATIONAL NATURE RESERVE

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SUMMARY

The sand dunes and dune slacks of Cheswick and Holy Island have forty recorded species of aculeate wasps and bees with two, possibly three, species of national importance (*Arachnospila minutula*, *Melitta haemorrhoidalis*, *Bombus muscorum*). The two sites are relatively unfavourable for solitary wasps and bees compared with other northern English sites since they have fewer species relative to their combined areas, and are tentatively predicted to have a resident species-diversity of about 29-31 solitary species. The two sites have a species quality score more similar to other east coast, rather than west coast, sites.

INTRODUCTION

Lindisfarne National Nature Reserve (NNR) is situated between Bamburgh and Berwick-upon-Tweed on the Northumberland coast. The NNR covers an area of 3,278ha extending from Budle Point to Cheswick Rocks and including Holy Island. The NNR consists of sand dunes, dune slacks, coastal grassland, heath, saltmarsh and tidal mud-flats. Only the sand dunes and dune slacks of Cheswick, Holy Island and Ross were visited. The sand dunes of Cheswick and Holy Island are lime-rich while those of Ross are more acidic. On the lime-rich dunes a range of herbs, *e.g.* Viper's Bugloss and Vetch, and shrubs, *e.g.* Creeping Willow, are important food sources for the aculeate species. At the back of the dunes and around a cottage, 'The Snook', on Holy Island, are shrubs and trees which provide sheltered areas for mating and probably nesting sites for the aerial nesters. Although Ross dunes were visited, the main investigations were of the dunes of Cheswick and Holy Island which have an area of about 240ha.

METHODS

Between 1997 and 2004, ten visits were made to Cheswick and Holy Island sand dunes distributed throughout the year as follows: May (one visit), June (three), July (four) and August (two). During each visit, which lasted about one and a half hours for Cheswick dunes and four to five hours for Holy Island, all species of aculeate wasps and bees were recorded and usually collected with a hand net for later identification. The weather on one July visit was so cold that only the social species could be recorded.

Four visits were made to Ross dunes and the area behind the dunes between 1997 and 1999 as follows: June (one visit), July (two) and August (one). The records for these visits will not be used in further analysis although they will be referred to where relevant.

In the following account the nomenclature can be related to Kloet and Hincks (1978). An up-to-date checklist can be found on the Bees, Wasps and Ants Recording Society (BWARS) web pages at http://www.bwars.com/.

Species present and the seasonal progression of species

A full list of recorded species, with their authorities, is given in the Appendix. Table 1 shows the taxonomic distribution of species recorded from Cheswick and Holy Island dunes. A record represents a specimen differing in one of the following three variables: name, sex and day of visit. The three groups of social, solitary wasp and bee species have a similar number of species. There are about twice the number of records of solitary wasps compared with solitary bees. The number of records of social species slightly exceeds those of the solitary species.

No additional species were recorded from Ross sand dunes by the author or as given by Eales (1998), although further additional species were found behind Ross dunes: *Crossocerus elongatulus*, *Ectemnius sexcinctus*, *Andrena haemorrhoa*, *Lasioglossum rufitarse* and *Sphecodes gibbus* (Table 1).

Table 1 Number of species and records from Lindisfarne NNR sand dunes (including the region behind Ross dunes).

	Cheswick & Holy Island		Cheswick, Holy Island & Ross	
	Species	Records	Species	Records
Solitary wasps				
Chrysididae	2	5	2	5
Pompilidae	4	9	4	12
Eumeninae	1	7	1	7
Carbronidae	8	37	10	48
Total solitary wasps	**15**	**58**	**17**	**72**
Solitary bees				
Andreninae	3	4	4	8
Halictinae	4	4	6	10
Melittinae	1	1	1	1
Megachilinae	2	12	2	13
Anthophorinae	2	2	2	2
Total solitary bees	**12**	**23**	**15**	**34**
Total solitary species	***27***	***81***	***32***	***106***
Social wasps & bees				
Vespinae	2	2	3	5
Apinae	11	88	11	102
Total social species	***13***	***90***	***14***	***107***
Total wasps & bees	**40**	**171**	**46**	**213**

Of the twenty-seven solitary species recorded from Cheswick and Holy Island dunes one species was first found during May, seventeen species during June, six species during July and three species during August. The number of solitary species found per visit was during May (one species), June (six, twelve, eight), July (six, eight, four, zero) and August (six, three). Although only a single visit was made in May to record solitary species, August, June and July would seem to be the best months for recording them.

Estimating the potential number of solitary wasp and bee species

One of the problems in the study of any site is the difficulty of not knowing how many more species are present at the site, but as yet unrecorded. Recent advances in non-parametric statistical procedures offer a way of addressing this problem. Chao and first and second-order Jackknife procedures are three statistical methods of estimating the potential number of species (species richness) likely to be found on a site after a number of samples have been taken (Magurran, 2004). The presence/absence quantitative estimate of Chao and the second order Jackknife procedure are based on the number of species that are recorded in one ('singletons') or two ('doubletons') samples while the first order Jackknife procedure is based only on the singletons. Because some aculeate species are only active in the spring or summer it is advisable that samples be distributed throughout the months of adult activity. The software to carry out these statistical procedures was provided by Pisces Conservation Ltd. In practice the software takes one, two, etc. samples at random, each time calculating a mean estimate of species richness. Each procedure was repeated thirty times. With a small number of samples the estimates are highly variable, but as more samples are selected these may stabilise, giving confidence in them.

The estimates based on different sample sizes are given in Figures 1, 2 and 3. Except for the Chao estimate, the estimates do not stabilize. Table 2 shows the three species-diversity estimates after all samples have been considered, with their 95% confidence limits except for the second order Jackknife. The species-diversity estimates differ widely from each other and no confidence can be placed in them.

The recorded species at any site could be resident, tourist or vagrant species. Resident species obtain all their resources, mainly nesting sites and food, from the site under study, while tourist species, although living in the geographical area of the site under study, do not normally obtain their resources from the site. Vagrant species normally occur away from the geographical area of the site. It is often difficult to separate resident from tourist species. Probably tourist species will tend to be found on one or a few visits, as only small numbers would be expected to be present on the site and hence are less likely to be found. Unfortunately, species found on one or a few visits could also be rare resident species which again have small numbers on site and are less likely to be found. No vagrant species were found at Lindisfarne.

The recorded solitary species can be divided into three groups. The first group consists of species with their cleptoparasites that are known to be subterranean nesters in sandy soils. These species were usually found on two or more visits and often their nesting sites were found, *e.g. Pompilus cinereus*, *Tachysphex pompiliformis* with its cleptoparasite *Hedychridium ardens*, *Crabro cribarius*, *Crossocerus tarsatus*, *Mellinus arvensis* and *Megachile circumcincta*. This first group can be considered resident species. The second group consists of aerial nesters with their cleptoparasites which use cavities in dead plant stems or dead wood or their mud nests are attached to a firm substrate, *e.g. Ancistrocerus scoticus* with its possible parasite *Chrysis impressa*, *Pemphredon lethifera* and *Megachile willughbiella*. This second group can be considered resident species because of the presence of dead herbaceous and shrubby stems. *Ancistrocerus scoticus* was found plastering its nests onto medieval masonry in a dune slack on Holy Island. The third group consists of subterranean nesters with their cleptoparasites which nest in a wide variety of soils. This third group also consists of species which are common and widespread and would have been expected to be recorded on several visits if they were nesting among the sand dunes. These species included *Andrena scotica*, *Lasioglossum cupromicans* and *Halictus*

rubicundus with its cleptoparasite Sphecodes *monilicornis*. Such species were also found behind the Ross dunes and may be considered tourist species.

Removing the tourist species, the non-parametric statistical procedures were re-run with the results given in Table 2 and Figures 1, 2 and 3. The final potential species-diversity estimates are now very close together varying between 29-31 species and the figures show an improvement in the stabilization of these species estimates. Some reservation still remains about these estimates as they are based on a rather small number of species and samples.

Table 2 Non-parametric estimates of species richness from Lindisfarne NNR using the Cheswick and Holy Island samples.

All species	Chao estimate	First order Jackknife estimate	Second order Jackknife estimate
No. species recorded	27	27	27
No. species estimated	63	42	53
95% confidence limits	21-105	34-50	-
% of estimated spp. found	**42.9**	**64.2**	**50.9**
Tourist species removed			
No. species recorded	19	19	19
No. species estimated	29	27	31
95% confidence limits	13-46	19-35	-
% of estimated spp. found	**65.5**	**70.4**	**61.3**

Compared with other northern sand dune sites (North Walney NNR, Cumbria, forty species (Archer, 2004); Ainsdale-Formby, Lancashire, ninety-four species (Archer, 1999); Gibraltar Point, Lincolnshire, seventy-three species (Archer, 1998); Saltfleetby-Theddlethorpe NNR, Lincolnshire, sixty-three species (Archer, 2000); and Spurn Point, seventy-two species (Archer, unpublished)) the number of solitary species recorded from Lindisfarne (twenty-seven species) is the smallest.

The unfavourable site of Lindisfarne NNR for solitary species of wasps and bees can also be shown in a species-area relationship figure by comparison with thirty-three other northern and east Midland English sites (Figure 4). The dot for Lindisfarne falls below and outside the range of the other sites. The regression equation for the thirty-three sites is ln no. spp. = 3.88 + (0.097 x ln area (ha)). Inserting the area of the sand dunes of Cheswick and Holy Island into this equation reveals that Lindisfarne NNR would need a further fifty-five species to approximate to the average of the other sites.

This unfavourable nature of Lindisfarne for solitary wasp and bee species is probably a consequence of a more unfavourable climate due to its position on the eastern side of England and its more northerly location (55°40 N).

QUALITY ASSESSMENT

According to Falk (1991), *Arachnospila minutula* is the only species of national importance having a nationally notable list B status. Recent work by the BWARS indicates that *Melitta haemorrhoidalis* is also of national importance. Using the latest information from the BWARS, each of the twenty-seven solitary species can be given an Archer national

Figure 1 The Chao presence/absence of species richness for Lindisfarne sand dunes.

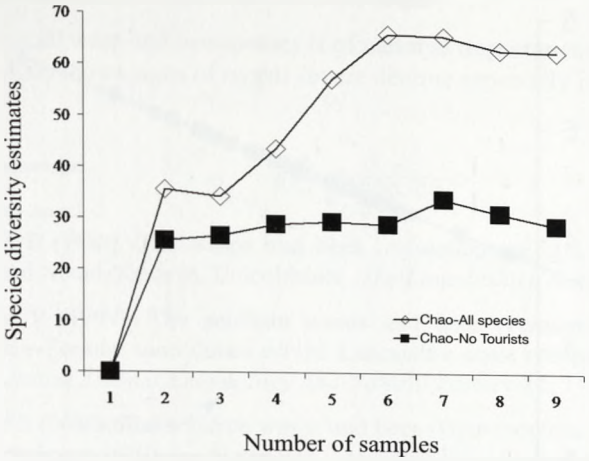


Figure 2 The first order Jackknife estimate of species richness for Lindisfarne sand dunes.

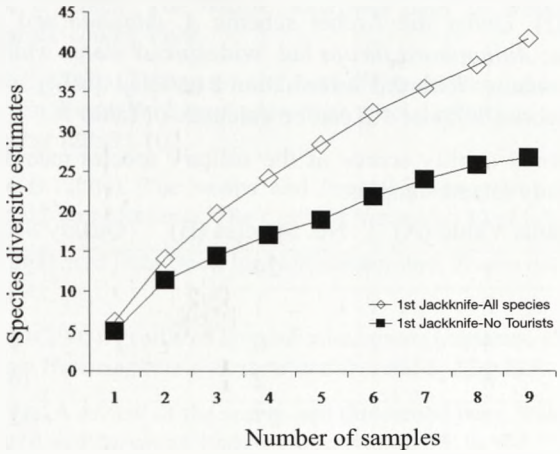


Figure 3 The second order Jackknife estimate of species richness for Lindisfarne sand dunes.

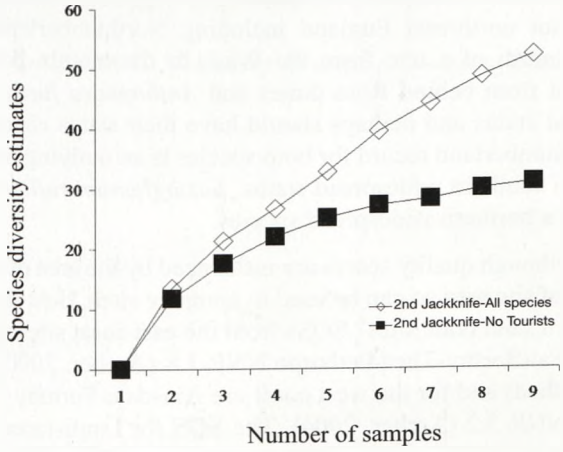
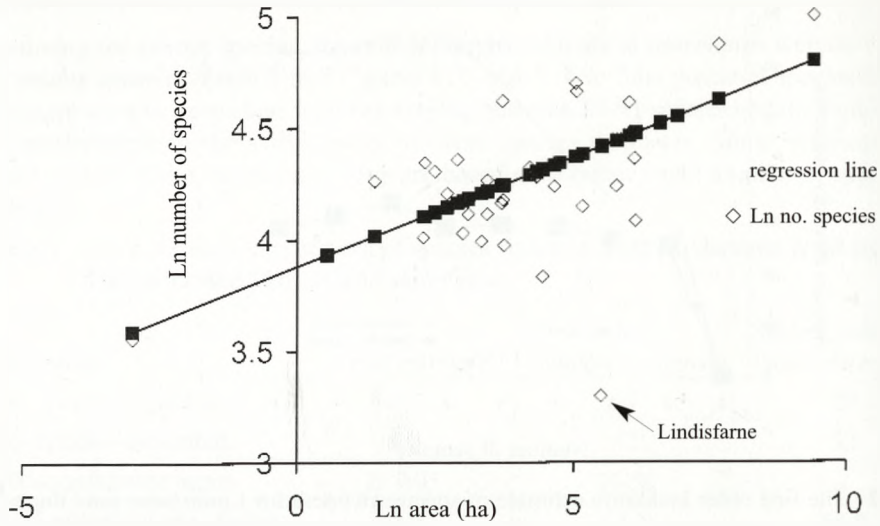


Figure 4 A species-area relationship of sites from the north and north Midlands of England.



status (Archer, 1999, 2002). Under the Archer scheme *A. minutula* and *M. haemorrhoidalis* has 'scarce' status; *Anthophora fucata* has 'widespread' status while the rest of the species have 'universal' status. With this information a national quality score of forty-two and a species quality score (SQS) of 1.6 can be calculated (Table 3).

Table 3 The Archer national quality scores of the solitary species recorded from the Cheswick and Holy Island samples.

National Status	Status Value (A)	No. Species (B)	Quality Scores (AxB)
Universal	1	24	24
Widespread	2	1	2
Restricted	4	0	0
Scarce	8	2	16
Total		**27**	**42**

Species Quality Score (SQS): 42/27 = 1.6

Southern widespread species occur in about three-quarters of England, lowland Wales and south-west Scotland but not north-east England including Northumberland. Northern widespread species occur north of a line from the Wash to the mouth of the Severn. *Sphecodes gibbus* recorded from behind Ross dunes and *Anthophora furcata* currently have a southern widespread status and perhaps should have their status changed to 'universal'. However, the Northumberland record for both species is an outlying record so, for the present, they can retain southern widespread status. *Lasioglossum rufitarse* recorded from behind Ross dunes is a northern widespread species.

Archer (1999) found that although quality scores are influenced by the area of a site, SQSs are relatively independent of site area so can be used to compare sites. How does the SQS compare with other northern sand dune sites? SQSs from the east coast sites are Gibraltar Point 1.7 (Archer, 2003), Saltfleetby-Theddlethorpe NNR 1.8 (Archer, 2000) and Spurn Point 2.3 (Archer, unpublished) and for the west coast are Ainsdale-Formby 3.8 (Archer, 1999) and North Walney NNR 3.2 (Archer, 2004). The SQS for Lindisfarne NNR (1.6)

places it with other east coast sites which have lower SQSs than west coast sites, probably reflecting the warmer climate of the west coast.

None of the social wasp and bee species is of national importance except possibly *Bombus muscorum* which shows signs of recent severe decline especially in inland areas (Edwards, 2005).

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APPENDIX

Species recorded from Cheswick (C), Holy Island (H) and Ross (R) sand dunes and behind Ross dunes (BR).

Chrysididae: *Hedychridium ardens* (Latreille in Coquebert) (C), *Chrysis impressa* Schenck (H).

Pompilidae: *Pompilus cinereus* (Fab.) (C, H, R), *Arachnospila anceps* (Wesmael) (C), *A. minutula* (Dahlbom) (C), *Evagetes crassicornis* (Shuckard) (H, R).

Eumeninae: *Ancistrocerus scoticus* (Curtis) (C, H).

Vespinae: *Dolichovespula norwegica* (Fab) (BR), *D. sylvestris* (Scopoli) (H, R), *Vespula rufa* (L.) (H, R).

Crabronidae: *Dryudella pinguis* (Dahlbom) (H), *Tachysphex pompiliformis* (Panzer) (C), *Crabro cribrarius* (L.) (C, H, R), *Crossocerus elongatulus* (Vander Linden) (BR), *C. tarsatus* (Shuckard) (H), *C. dimidiatus* (Fab.) (H, R), *Ectemnius sexcinctus* (Fab.) (BR), *Oxybelus uniglumis* (L.) (H), *Pemphredon lethifera* (Shuckard) (H), *Mellinus arvensis* (L.) (C, H, R).

Andreninae: *Andrena scotica Perkins* (C, R), *A. nigroaenea* (Kirby) (H), *A. haemorrhoa* (Fab.) (BR), *A. barbilabris* (Kirby) (H).

Halictinae: *Halictus rubicundus* (Christ) (C), *Lasioglossum nitidiusculum* (Kirby) (H), *L rufitarse* (Zetterstedt) (BR), *L. cupromicans* (Pérez) (H, R), *Sphecodes gibbus* (L.) (BR), *S. monilicornis* (Kirby) (C, R).

Melittinae: *Melitta haemorrhoidalis* (Fab.) (C).

Megachilinae: *Megachile willughbiella* (Kirby) (H), *M. circumcincta* (Kirby) (C, H, R).

Anthophorinae: *Nomada panzeri* Lepeletier (H), *Anthophora furcata* (Panzer) (H).

Apinae: *Bombus lucorum* (L.) (C, H, R), *B. terrestris* (L.) (C, H), *B. hortorum* (L.) (C, H), *B. lapidarius* (L.) (C, H, R), *B. pratorum* (L.) (C, H, R), *B. muscorum* (L.) (H), *B. pascuorum* (Scopoli) (C, H, R), *B. barbutellus* (Kirby) (C, H), *B. bohemicus* (Seidl) (C, H), *B. campestris* (Panzer) (C, H), *Apis mellifera* (L.) (C, R).

Trans.nat.Hist.Soc.Northumbria **66**: 171-188

SUPPLEMENTARY FEEDING FOR RED SQUIRRELS

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SUMMARY

A wire mesh selective feeding hopper for Red Squirrels *Sciurus vulgaris*, designed to exclude Grey Squirrels *Sciurus carolinensis* by virtue of their size, was tested in North East England during the late spring and summer of 2003. Preliminary data previously obtained indicated an approximate size mesh for exclusion of adult Grey Squirrels. Hoppers were put up in four study sites: a 'Red Squirrel' only site, a 'Red-outnumbering Grey' site, a 'Grey-outnumbering-Red' site and a 'Grey only' site, and studied for up to three months. No Grey Squirrels got through the mesh at any site. Red Squirrels passed freely in and out of the hoppers at all three sites, where they were present. At one site, there was an instance of interference competition when a Grey Squirrel attacked a Red Squirrel at the hopper.

INTRODUCTION

The status of the Red Squirrel in Britain has been a cause for concern since the 1930s, some thirty to forty years after the Grey Squirrel was first introduced in 1876 (Middleton, 1930). Research has been ongoing since then, but the inexorable spread of the Grey Squirrel and the disappearance of the Red Squirrel continues (Lloyd, 1983; Gurnell and Pepper, 1993). Northumberland is one of the last remaining refuges of Red Squirrels in England, and the purpose of this project is to try to tip the balance a little in favour of the local Red Squirrel population. It is not an attempt to solve the problem, but purely a suggestion for a possible 'holding' exercise until hopefully some form of enlightenment appears which will provide a permanent solution.

The status of the Red Squirrel in Northumbria (2003)

Lurz and Garson (1997) reported that Grey Squirrels were spreading into Northumberland from the south (County Durham), and from the north (Borders). In July 2003 they were thriving along the banks of the River Derwent in the metropolitan borough of Gateshead and invading Northumberland from the west, moving along the south banks of the Tyne in areas around Hexham and Corbridge. They had just reached Morpeth, twelve miles north of Newcastle. This situation put the county of Northumberland and its immediate surroundings in a unique position. It had (still has in October 2007) a thriving population of Red Squirrels but was, and is, at the triple interface – from south, west and north – of the Greys' invasion (Figures 1 and 2). These circumstances made this area an ideal centre for this project.

Current factors considered to be causing loss or decline of the Red Squirrel

Spread of Grey Squirrels (Biodiversity, 1995): In other parts of the world, two or more species of tree squirrel appear to co-exist, and this is achieved because they have evolved to occupy different ecological niches (Bryce, 2001). *S. vulgaris* and *S. carolinensis* have not evolved together. Unfortunately in Britain the two species occupy the same ecological niche and the larger Grey out-competes the smaller Red Squirrel for food.

Disease (Review: Sainsbury *et al.*,1997): Red Squirrels have always suffered from occasional unexplained population crashes (Skelcher, 1997) but Grey Squirrels aggravate this by transmitting a Poxvirus disease, which is fatal to Reds (Sainsbury *et al.*, 2000).

Habitat loss and fragmentation (Wauters, 1997): Development pressure has resulted in the shrinkage of large tracts of forest to linear woodland or isolated patches, which provides greater opportunities for immigration by Greys because of the increase in the amount of 'edge' relative to the area of wood. Other changes in habitat have taken place over the years which may have affected Red Squirrel survival. For example, in the sixties Dutch Elm disease almost wiped out the English Elm *Ulmus procera* in Britain, especially in the South (Noble, 1988). This will certainly have reduced the natural food supply to Red Squirrels during the critical months of late spring, when Elm seeds ripen and there is a shortage of other food. Another factor was the seventy-nine percent decline in Hazel *Corylus avellana* maintained as coppice between 1947 and 1965, which was the period of most rapid contraction in the range of Red Squirrels (Lloyd, 1983 – see Kenward and Hodder, 1998).

Conservation strategies

The Law (Biodiversity, 1995): The Red Squirrel is listed in Appendix III of the Bern Convention and is protected by the Wildlife and Countryside Act (1981) Schedules 5 & 6, and Schedules 5 & 6 of the Wildlife Northern Ireland Order 1985. It may not be intentionally trapped, killed or kept, or have the dreys disturbed except under licence from English Nature (EN), the Countryside Council for Wales (CCW) or Scottish Natural Heritage (SNH).

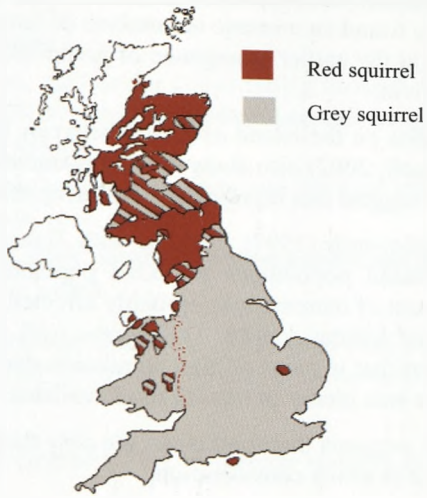
Biodiversity Action Plans: These aim to maintain and enhance the current populations where appropriate, through good management, and to re-establish Red Squirrel populations where appropriate. This is achieved by:

- reaching agreements on national strategy, including policy and legislation, and their co-ordination nationally
- reviewing geographical restrictions on Warfarin
- preparing forestry strategies for habitat management for Red Squirrels where viable populations still exist, to be implemented by creating reserves for Red Squirrels
- advising land managers on how to manage their land for Reds
- assessing experimental translocation projects for Reds
- attempting to prevent the expansion of the Grey Squirrel range to key areas currently occupied by Reds
- researching feeding ecology, suitable baits, supplementary feeding, Red/Grey Squirrel interactions, methods of control and eradication of Grey Squirrels, and habitat management and manipulation
- monitoring populations.

Red Alert (Wildlife Trusts): The Red Alert North East programme was set up in 1991 and immediately conducted the first Red Squirrel survey using ongoing records coming in from the public. Co-ordinating with Red Alert North West (since 1993) and the 'Red Squirrels in South Scotland' project (set up in 1994), the Wildlife Trusts continue to use this initiative to promote public awareness by such means as surveys, habitat management, supplementary feeding in gardens, etc. (Red Alert leaflet, December 2002; Stewart, 1997).

Figure 1 Map of 1998 distribution.

Figure 2 Map of 2002 distribution.



Maps courtesy of Red Alert North East

Feeding in squirrels

Red Squirrels need a high energy diet, particularly because they have a short gut (Moller, 1983) and a slightly higher metabolic rate than would normally be expected of a mammal of this size (Reynolds, 1985). They also need a balanced nutritional intake (Gurnell, 1983). Normally, this would be supplied by their natural diet. Pine seed is energy-rich and provides more than the 10-12% crude protein and 16-17% crude fat required for a 'minimum maintenance diet' (Pulliainen, 1973 and 1984. See Shuttleworth, 1997).

However, there are times when natural food is scarce. Research has been carried out on the effects of supplementary feeding for squirrels and other rodents for over sixty years. The literature concentrates on three criteria:

- the effect of supplementary feeding on squirrel populations
- the nature of the supplementary diet
- inter- and intra-specific interference competition.

The effect of supplementary feeding on squirrel populations: The research seems overwhelmingly to support the view that supplementary feeding increases squirrel population densities. Although most workers relate this partially to immigration, there is also evidence to show that it improves local survival and reproductive performance but does not prevent population fluctuations.

Baumgartner (1940), working with Fox Squirrels *Sciurus niger*, showed that food supplementation does not prevent population fluctuations, but produces an overall increase in the numbers of squirrels in a population.

Holm (1991) and Lurz (1995), who were both working with Eurasian Red Squirrels, found that food supplementation produced similar increases in population, provided the population density was low. Holm reported an increase in spring breeding and Lurz an increase in lactating females. However, the overall population dynamics were not affected.

Hubbs and Boonstra (1997) and Karels *et al.* (2000) found that additional food increased population densities of Arctic Ground Squirrels *Spermophilus parryii plesius* Richardson. They found an increase in numbers of females lactating, in litter sizes, percentage weaned and in the earlier emergence of juveniles, although again it did not improve over-winter survival.

Studies on the island of Jersey between 1994 and 1997 (Magris *et al.*,1997; Magris and Gurnell, 2002) also show that supplementary feeding increases Red Squirrel populations, and suggest that it provides a buffering effect against variations in natural food resources.

Shuttleworth (1997) working with *Sciurus vulgaris*, found that supplementary feeding increased populations provided population density was low, and comments that the amount of increase was probably affected by other factors, for example population density and habitat quality. This agrees with the findings of Wauters and Lens (1995) who report that in areas of high population density reproduction was suppressed, even though there was plenty of natural food available.

This suggests that food is not the only factor affecting squirrel breeding success: perhaps space is also a consideration.

The nature of the supplementary diet: In 1949, Vartio studied the effects of offering grain to a population of Red Squirrels living in conifer woodland, during the years when the cone crop failed. He found that at no time did the grain constitute more than 11% of the squirrels' diet.

Some authors, working with other rodents *e.g.* Bomford and Redhead (1987), and Lamb and Arde (2001), working with captive Australian house mice, found that changing the nature of the maternal diet altered the sex ratios of the young. Klenner and Krebs (1991), using sunflower seeds and wild populations of American Red Squirrels *Tamasciurus hudsonicus* showed no change in sex ratios.

Shuttleworth (1997) studied the effects of offering unlimited peanuts to a Red Squirrel population. He found that even when the cone crop failed, the peanuts constituted a maximum of 57% of the squirrels' diet, and an average of 25% of the diet overall. This would constitute a greater percentage in terms of energy intake, because peanuts contain 44.8% fat (Evans, 1960). When peanut intake was high, the rest of the diet contained more low-energy foods with a high mineral content, especially calcium. This mirrored the work done by Havera and Nixon in 1980 and Klenner and Krebs in 1991. It is thought that the squirrels were compensating for the peanuts' low calcium/high phosphorus ratio and the reduced calcium absorption which is caused by the high levels of unsaturated fatty acids in the diet (Gurnell, 1983).

Inter- and intra-specific interference competition: Wauters *et al.* (2000) report that, while there is intraspecific competition for and exclusion from home ranges within a population of Red Squirrels, there is no interspecific competition between adult Reds and Greys for home ranges. If this is the case, then it may be logical to consider that a low population density of Red Squirrels could be boosted by selective supplementary feeding, despite the presence of Grey Squirrels.

The diet

Hazelnuts are a native food and have been shown already to be part of a favoured natural diet for Red Squirrels (Kenward and Hodder, 1998). There is no literature available on the nutritional composition of hazelnuts (Peter Lurz, pers. comm.).

Background to the project

There is a selective feeder available (Pepper, 1993). It has the following disadvantages:

- cost – it retails at £80 (C J Wildbird Foods)
- it works on a weighted trap-door system, the heavier Greys falling through. Grey Squirrels learn to operate the mechanism by avoiding putting their full weight on the trap door by jumping or straddling the gap
- during periods of high humidity, the mechanism goes rusty and the food absorbs water and goes mouldy (Jason Reynolds, pers. comm.)
- Red Squirrels can only use it on a 'take away' system. There is not enough space inside for them to sit and eat the food in safety.

Work undertaken as a preliminary to the project was conducted in Gosforth Park Nature Reserve (NZ 2570) and Thornley Woodlands (NZ 1760). It extended from January 2002 to April 2003:

- Jan-March 2002: squirrel sightings in Gosforth Park to identify squirrel species present (all Red)
- familiarising the squirrels with the supplementary feeding technique, using a 'lift the lid' feeder containing hazelnuts *ad libitum* inside a wooden and wire mesh box with the front panel removed
- inserting a wooden front panel with a single entrance hole at 'floor' level
- a gradual reduction of the size of the opening from 50mm square, and testing whether the squirrels could get through by observation. The minimum sizes were 38mm square or 37mm wide x 70mm high, but the adults showed some agitation with the smaller square sizes (38, 39, and 40mm square)
- August 2002-March 2003: repeating the procedure in Thornley Wood. Squirrel sightings (taken from the centre's record books) were almost all of Grey Squirrels, with a very few Reds. The Grey Squirrels went through a 50mm square opening but could not pass through one of 42mm square.

METHODS

Following the preliminary work, the main experimental project was designed. Four study sites were chosen within the Red/Grey interface area, where either or both of the two squirrel species were known to be present. The habitats of each site were surveyed and the main plant species present which might affect the squirrel population were identified. The areas chosen were:

DARLINGTON (NZ 292167)

Public amenity parkland (cemetery) with shrubberies, flowerbeds and small clusters of broadleaved trees *e.g.* Oak *Quercus* spp, Horse Chestnut *Aesculus hippocastanum*, Sycamore *Acer* spp, Larch *Larix* spp and isolated conifers. The feeder was attached to the trunk of a Larch. Constant pedestrian traffic. Grey Squirrels only.

GIBSIDE ROWLANDS GILL (NZ 172583)

Open space in a designed landscape. Both squirrel species were present but Greys predominating. Various areas within this site.

Areas 1, 2, 4 and 5 (Snipes Dene Wood) and area 3 (West Wood) - mixed native and exotic broadleaf and conifer woodlands, surrounded by grassland, pasture and landscaped gardens, with ponds.

Area 1 (NZ 182588) a block of Scots Pine *Pinus sylvestris* with Bramble *Rubus fruticosus* and Male Fern *Dryopteris filix-mas* understorey. Hazel *Corylus avellana* and Sweet Chestnut *Castanea sativa* are edge species.

Area 2 (NZ 180587) a mixed block of Larch *Larix decidua,* Pedunculate Oak *Quercus robur* and Sycamore *Acer pseudoplatanus*, with an understorey of Holly *Ilex aquifolia,* Hazel, Bramble, Honeysuckle *Lonicera* sp and Male Fern. The feeder was on the trunk of a Larch.

Area 3 (NZ 178582) a broadleaf woodland with a small group of Larches, and a similar understorey to site 2.

Area 4 (NZ 181592) a large block of Corsican Pine *Pinus nigra* with 95% Bracken *Pteridium aquilinum* understorey and bare ground.

Area 5 (NZ 179591) a slope within a block of Scots Pine surrounded by Silver Birch *Betula pendula* and Western Hemlock *Tsuga heterophylla* with rhododendron understorey.

A bird feeding station situated approximately 1km from the feeders provides readily accessible food. A Grey Squirrel control programme (rough shooting) is in operation.

NEWCASTLE UPON TYNE (NZ 256704)

Gosforth Park Nature Reserve: a mixed broadleaf woodland of Oak, Sycamore, Ash *Fraxinus excelsior* and Lime *Tilia* x *europaea* with the occasional Scots Pine and an understorey of *Dryopteris* Fern, Bramble and Hazel, and two conifer plantations of Sitka Spruce *Picea sitchensis* and Scots Pine. A Red Squirrel only site.

MORPETH (NZ 188865)

The interface of a large, well-maintained, 'wildlife-friendly' garden with a mixed broadleaf wood and occasional Scots Pines. A Red Squirrel site with a few Greys.

Determination of squirrel presence/abscence at each site

Squirrels were determined as being present at each site by the presence of feeding remains, characteristically stripped cones (Figure 3). Note that it is not possible to identify the species by the appearance of the cones.

Population estimates

Darlington: squirrel counts were made each time the feeder was checked.

Gibside and *Newcastle*: a transect line was walked on each visit, and the number of sightings of each species was recorded.

Morpeth: the squirrels visiting the feeder throughout the day were recorded.

The population estimates are only intended as approximate guides to the proportion of Grey and Red Squirrels in each area. They were not full surveys and no account was taken of the differences in behaviour of the two species, *i.e.*

- Red Squirrels are crepuscular whilst Greys are active all day
- Red Squirrels are shyer and likely to be hidden in the canopy: Greys are bolder, more visible and more likely to be on the ground.

Figure 3 Squirrel feeding remains.

Measurement of relevant physical characteristics

Local squirrel specimens were measured to verify the published data. The published data for physical characteristics show a big interspecific difference in weight and a smaller difference in linear dimensions. This means that there must be a significant difference in the width of the two species' bodies.

The selective feeder relies on this difference in width to allow entry for the more slender Red Squirrels while excluding the bulkier Greys.

It was decided to measure skull widths of specimens of the two species as a representation of overall skeletal width, and to use whole body weight records as a measure of body width, given that the two species' linear dimensions are similar.

Skull widths were measured using calipers. Specimens were obtained from the bone collection at the Hancock Museum (Figure 4).

Figure 4 Red and Grey Squirrel skulls.

Squirrel weights for Red Squirrels were also obtained from records kept with study skins at the Hancock Museum. The weights for Grey Squirrels were taken from data supplied by Staward Gorge and Allenbanks Countryside Rangers' reports (Dennis Fleming, National Trust, pers. comm.).

Manufacture of selective feeder

Step 1 Wooden 'lift the lid' feeders were built to the 'Red Alert' leaflet instructions (Red Alert North East: 'Making a Red Squirrel Feeder').

Step 2 A five-sided rectangular box was made using galvanised panels of 3mm gauge one inch square welded steel wire mesh, clipped together with 'alpha' clips. The dimensions did not need to be exact, but the minimum size of the box was 30cm across and 40cm high. The 40cm square removable front of the box was made of 3mm gauge 40 x 42 mm welded steel mesh. The fasteners were made with simple twists of plastic coated wire.

Step 3 The mesh box was nailed onto a suitable tree about two metres off the ground and away from footpaths where possible. The wooden feeder containing hazelnuts was nailed onto the tree inside the box, with enough distance between the sides of the feeder and the sides of the box to prevent Grey Squirrels from reaching in and grabbing the nuts.

The diet

Hazelnuts were available *ad libitum*. At first, a few sunflower hearts were offered, but not many as they are oil-rich and can cause diarrhoea (Wauters, pers. comm.). Later, they were discontinued as they went mouldy in the warm, humid conditions unless eaten quickly.

Identification of the squirrel species using the feeders

Sticky blocks were made by attaching double-sided sellotape to the upper and lower faces of a 1.5cm square piece of plastic Correx sheet (Vasey Signs). One sticky block was attached to the underside of the lid of each feeder so that the squirrels would rub against it when they entered the feeder, leaving a few guard hairs behind as they did so. The sticky blocks were changed each time the feeder was examined or refilled. Used sticky blocks were later examined under a light microscope, 100x magnification.

Colour is not a good identification tool, since Red Squirrels vary in colour. The shape of the hairs is, however, diagnostic. Grey Squirrels hairs are round, while those of Red Squirrels are kidney-shaped in cross section. This is because Red Squirrel hairs have a groove running the length of the hair (Figure 5).

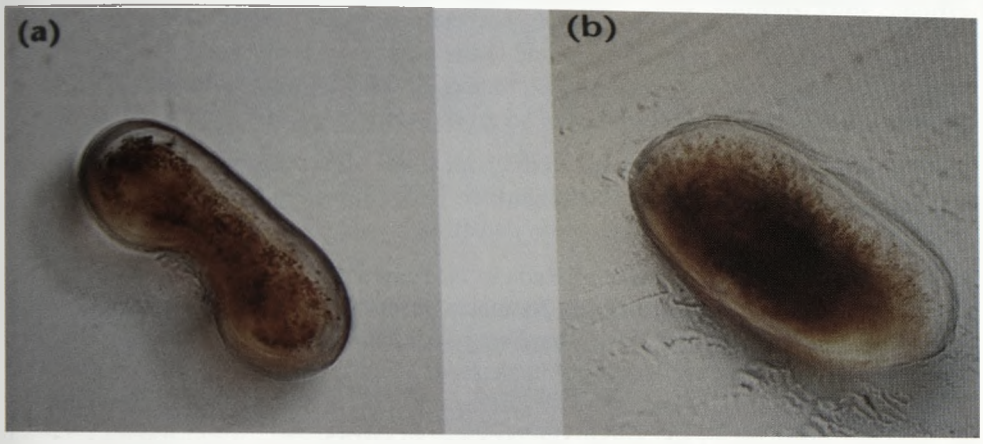
The hairs were whole hairs, examined for the diagnostic longitudinal groove running centrally along all or part of the hair. This technique was not carried out at Morpeth, where the blocks kept disappearing.

Experiment 1

At each study site, the selective feeder was left with an open front and inspected daily until the squirrels became familiar with it and the nuts disappeared regularly, leaving hairs on the sticky blocks, normally about three days. Birds could not get into the feeders, and mice were not considered to be a problem, as mouse droppings were found only once.

The front panel was then put in place, and left thereafter. Each feeder was observed and inspected regularly and the results recorded.

Figure 5 Cross section of (a) Red Squirrel, (b) Grey Squirrel hairs. Mag. X400. (Photo from Gurnell *et al.*, 2001).



Experiment 2

The second experiment, carried out only in sites 1 and 2 at Gibside, used a mesh box with 5 sides of 40 x 42mm mesh. Red Squirrels could enter and leave at any point. The front was left off until the hair survey showed that squirrels were using the feeder. Then, a 100mm x 50mm front panel was put on, replaced later by a 50mm square panel. These let both species of squirrel enter easily. When both species were using the feeder regularly, the front was replaced with 40 x 42mm mesh, accessible to Reds only. Hair surveys were carried out as frequently as possible.

Later, a feeder was put on a Scots Pine 100m from the feeder on the Larch. All other feeders were removed. The feeder was a cube of 40cm side, made of 40 x 42mm mesh. Squirrels failed to use this feeder, so the Hazlenut container was replaced with a mesh bird feeder filled with Hazlenuts. This was acceptable to Red Squirrels, entering through the back, down the tree trunk.

RESULTS

Observation, video evidence and the use of sticky hair blocks showed that Grey Squirrels did not enter the feeder.

Having established regular use of this feeder at Gibside, an attempt was made to gather data on Red/Grey interspecific interaction. This proved to be impractical, since the two species were rarely seen together, but the following observations were made:

- a Red Squirrel foraging on the ground was chased away by a Grey Squirrel
- a Red Squirrel, making an approach to a feeder by beginning to climb the tree trunk from the ground, ran away when a Grey Squirrel approached the feeder from above
- a Red Squirrel inside a feeder, eating, appeared not to react when a Grey Squirrel approached (coming down the tree trunk) and made some attempts to get in, but then left
- a Red Squirrel inside a feeder and a Grey Squirrel feeding on a mesh bird feeder (on an adjacent tree) simultaneously – there was no discernible interaction.

From these examples, it would appear that the extent and nature of interspecific interactions may depend on the individual squirrels involved.

Long term monitoring of the squirrels in Gosforth Park nature reserve

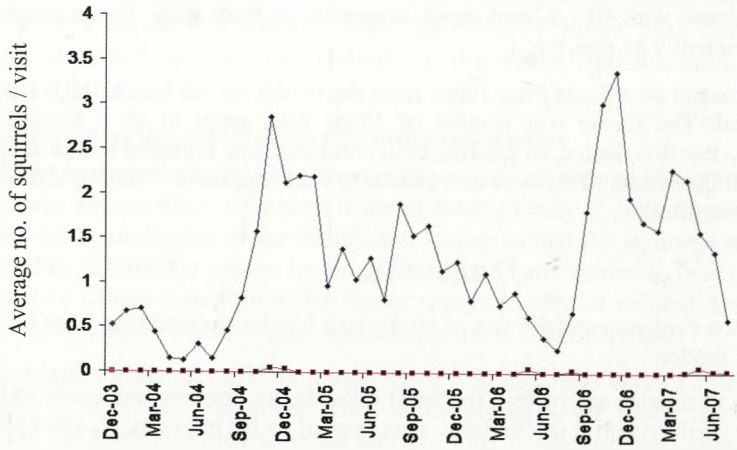
The nature reserve members' log book was used as a source of data to monitor the monthly population of squirrels in the reserve. For each complete month, the data sheets filled in by members were counted and equated to the number of visits made. The total number of squirrels (Red and Grey) seen in each month, divided by the number of visits made in the month, gave the average number of squirrels seen per visit (Figure 6).

The trend shows an overall increase in the population of Red Squirrels for the time studied. This supports the findings of Baumgartner, Holm, Lurz and others who state that supplementary feeding increases population densities.

There was a big rise in sightings of Reds in November 2004, which coincides with the only Grey Squirrel sightings recorded. Members observed a behaviour change in the Reds at this time: the Reds spent a lot of time being very active within the vicinity of the Grey Squirrels, and exhibited vigilance and uncharacteristically highly visible behaviour. This is probably an example of interspecific interaction, and may explain why Red Squirrels fail to breed, maintain weight etc. in the presence of Greys.

Other peaks and troughs on the graph reflect normal Red Squirrel biology and ecology, due to breeding, juvenile recruitment and dispersal, and the thickness of the canopy during the summer months.

Figure 6 Squirrel sightings in Gosforth Park Nature Reserve 2003-2007.



Measurement of physical characteristics

Table 1 shows local squirrel specimen weight and skull measurements in relation to published data.

Experiments 1 and 2 data

Table 2 shows the number of Red and/or Grey sightings, evidence for the presence/absence of squirrels, the survey period and the number of visits for each of the four study areas. For experiment 2 at Rowlands Gill, nine visits were made, stripped cone evidence was found, fifteen Grey Squirrels were seen but no Reds.

Table 3 shows the hair samples collected/squirrel identification at the four sites, for both experiments.

Table 1 Measurement of physical characteristics.

Weight range (g)	Red Squirrel Male	Red Squirrel Female	Grey Squirrel Male	Grey Squirrel Female
Measured	233-390	232-341	275-600	290-600
Sample size	n = 13	n = 10	n = 11	n = 3
Published	239-435	220-355	440-650	400-720
Mean skull width (mm)	30.5		35	
Sample size	n = 10		n = 3	
Range (mm)	28-32		34.5-35.5	

Table 2 Squirrel sightings and evidence of presence.

	Darlington	Rowlands Gill	Newcastle	Morpeth
Survey period	26 June-17 Aug	30 April-17 July	6 June-10 July	9 May-7 July
No. of visits	17	33	11	52
Stripped cone evidence	No	Yes	Yes	Yes
Red squirrel sightings	0	2	13	>64
Grey squirrel sightings	17	13	0	13

Table 3 Squirrel hair samples collected from feeding at the unrestricted 'Lift the Lid' and the restricted 40 x 42 mesh and 100 x 50 mesh feeders.

Experiment 1		'Lift the Lid' only	40 x 42 mesh
Darlington	Red	n/a	n/a
	Grey	5 out of 5	0 out of 10
Rowlands Gill	Red	1 out of 3	0 out of 45
	Grey	3 out of 3	0 out of 45
Newcastle	Red	2 out of 2	8 out of 8
	Grey	n/a	n/a
Morpeth	Red	39 out of 39	10 out of 10
	Grey	5 out of 5	0 out of 1
Experiment 2		'Lift the Lid' only	100 x 50 mesh
Rowlands Gill	Red	2 out of 14	0 out of 2
	Grey	9 out of 14	2 out of 2

Notes and Observations

Darlington: On four visits Grey Squirrels were observed trying to get into the 40 x 42 mesh restricted feeder. (Someone opened the front panel on two occasions, despite the fact that a note had been attached to the feeder, explaining the purpose of the experiment.)

Rowlands Gill: On transect walks, most squirrel sightings (both Red and Grey) were in conifer rather than broadleaf woodland. On one occasion when the front was closed, part of the feeder was heavily chewed but no hair or other evidence was left so the animal responsible cannot be identified.

Newcastle: Less time was spent at this site, since data was already available. Squirrels 'took turns' to feed, with some short chases but no fighting. They were observed feeding at the feeders, *i.e.* no nuts were cached. They were 'vigilant' when at the feeders and in the trees, spending time watching and banging their tails and feet.

Morpeth: Volunteer observations were continuous for two months. Red Squirrels were recorded together as follows – two together on two occasions, three and four together on one occasion – but there was no intra-specific interaction. There was one record of a Grey Squirrel attacking a Red at the feeder. There were two instances of caching recorded. Squirrels visited the feeder throughout the day, although the majority of these visits were in the morning and evening.

Experiment 2: The Red Squirrel hairs collected were black. This is in line with the colour of the Red Squirrels seen in experiment 1. A Grey Squirrel was seen harvesting a Birch seed crop very efficiently: feeding remains were being dropped continuously and there was a fresh 'carpet' of them on the ground under the tree. They are efficient foragers! The number of Grey Squirrels seen in this short space of time compared with experiment 1 was much higher (fifteen sightings in nine visits compared with thirteen in thirty-three visits). This was presumed to be due to a) increased autumn tree seed supply and b) the open feeders.

On two visits, no food had been taken from one feeder and not much from the other, even though it was readily available. Presumably this was because there was plenty of natural food available. Red Squirrels had not passed through the slightly restricted gap of 100 x 50mm by the end of the project (1 September 2003).

DISCUSSION

The habitats of all study sites were highly suitable for Greys. Most Squirrel sightings at Gibside were in conifers because this was where tree seeds were most plentiful. Grey Squirrels were observed to be very efficient and thorough foragers.

Data collected on squirrel sightings, in terms of species presence and relative abundance, were in line with data held by Red Alert and the University of Newcastle (Table 5).

Table 5 Synopsis of squirrel populations from sightings at the four study sites.

	Red	Grey	Conclusion
Darlington	0	many	Grey only
Gibside	few	many	Grey predominant
Gosforth Park	many	0	Red only
Morpeth	many	1	Red predominant

The weights and skull widths of local squirrels show the anticipated differences between the two species and agree with the published data (Corbet and Harris, 1991). This demonstrates that the bodies of local Grey Squirrels are wider than those of local Reds, which satisfies the main objective of the project.

At all three sites where Grey Squirrels were present, Greys failed to get through 40 x 42mm mesh. At Morpeth and Gibside, Greys were observed trying, and at the third site, Darlington, someone kept opening the feeder to let them in, so presumably they had also observed them trying. The 'measurement of physical characteristics' data showed two

small Grey Squirrels that were within the weight range of adult Reds: these were probably juveniles. Juvenile squirrels must have been present in Darlington, where the Grey population is well established and high, yet they still did not get through the mesh. Therefore, it may be safe to conclude that this size mesh keeps all Grey Squirrels out. At the Red Squirrel sites, Gosforth Park, Morpeth, and later Gibside, Red Squirrels passed freely in and out of the feeder. These results demonstrate that the feeder allows access to Red Squirrels and excludes Greys.

When the food was readily accessible to both species it was always eaten very quickly. This suggests that hazelnuts may be more acceptable as a supplementary food than either peanuts or grain, neither of which formed a large part of the squirrels' diet in other experiments. Lurz (1995) provided peanuts and sunflower seeds and the feeders were rarely emptied.

No intra-specific interactions were reported at the Morpeth site. Observations recorded at Gosforth Park showed that encounters between squirrels at the feeders never involved physical contact, although a 'resident' squirrel would chase an approaching one away for a short distance. There was no exclusion of subordinate squirrels – they often waited in a nearby tree and returned to feed when the dominant squirrel had left the feeder. These observations are in line with those reported by Nixon and Kirk (1997), who studied the behaviour of Red Squirrels at feeding hoppers in Falnash forest and reported that encounters rarely involved physical contact, and that subordinate squirrels were not excluded from the hoppers or disadvantaged by being forced to feed at inappropriate times. However, Pepper (1993) reported instances of intra-specific exclusion in high density populations. He suggested that it might be overcome by putting up clusters of feeders.

There is a report of an example of inter-specific competition, when a Grey Squirrel attacked a Red and supplanted it at the feeder. In this instance, Red Squirrels returned to feed after the Grey had gone. This supports the findings of Nixon and Kirk (1997) who report a similar occurrence at one of their feeders. They suggest that Greys may exclude Reds from food resources. Early records (*e.g.* Middleton, 1930) contain similar reports. When extra food was made available for Grey Squirrels at Morpeth for control purposes, Reds and Greys were observed to feed within a few metres of each other, supporting the findings of Reynolds (1981) and Bertram and Moltu (1986). Skelcher (1994) reported frequently seeing Reds and Greys 'utililizing the same food source, though not necessarily at the same time', and 'exchanging dreys nightly'.

Wauters *et al.*, (2000) in North East England made what is perhaps the first definitive investigation into Red Squirrel population demography, spacing behaviour and habitat use in the presence and absence of Greys. In the Red only site which they studied, the Red Squirrels preferred the pine habitat. Pine seeds, especially Scots Pine, are large and highly nutritious. They avoided Sitka Spruce, with its small, unpalatable seeds. At the site where the two species were living sympatrically, the Grey Squirrels used the Scots Pine habitat intensively and the Reds were never seen or radio-tracked there, but stayed in the Sitka Spruce, possibly as a result of interference competition.

One may conclude that interference competition between Reds and Greys occurs in circumstances of limited preferred food resources.

At Gibside, Red Squirrels did not use the feeders when the 40 x 42mm front panel was in place, until the 'lift the lid' was replaced by the bird mesh feeder: presumably this enabled the Red Squirrels to maintain all round vision while eating.

Usefulness of feeder

Lurz (1995) summarises the work of several authors indicating that competition for food could be a major cause of decline in Red Squirrel populations in two ways:

- malnourished females under 290g in weight do not come into oestrus and therefore do not breed
- Red Squirrels normally carry various micro-organisms which are potentially pathogenic, for example myxoviruses (tumours) and coccidiosis. Such organisms cause disease when the animals are stressed – for example, when there is competition for food.

Selective supplementary feeding should, therefore, be an advantage to Red Squirrels living sympatrically with Greys, especially at times of food shortage. However, the use of feeding sites attracts squirrels into a small area, which increases opportunities of disease transmission, particularly increasing the possible risk of *Poxvirus* transmission where Red and Grey Squirrels co-exist.

Given all this, and that Red Squirrels may not use the feeder where populations are low and Grey Squirrel populations are high (like Gibside), this feeder may be of best benefit to boost Red Squirrel populations:

- when Grey Squirrel populations are low, that is when they are immigrating into an area and when they are being controlled
- in gardens, parks or nature reserves where they are monitored and cleaned
- during times of natural food shortage, when the risk of starvation or malnutrition is greater than the risk of disease.

CONCLUSION

The selective feeder tested was found to exclude Grey Squirrels and allow access to Red Squirrels.

Inter-specific interference competition occurred at one site, where a Grey Squirrel attacked a Red. There was no significant intra-specific aggressive behaviour observed in either species. Grey Squirrels were more thorough and efficient foragers, and were most frequently seen eating, regardless of the type of habitat. Red Squirrels spent time being vigilant and put less effort into eating.

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TWO RARE CLUBS FROM THE AMERICAN NORTHWEST COAST IN THE HANCOCK MUSEUM

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INTRODUCTION

This paper discusses two clubs[i] from the Northwest Coast[ii] of America in the collections of the Hancock Museum. One (catalogued as NEWHM: G098), with a stone blade and wooden handle, probably originated in the north of the area, among Tlingit people of Alaska. The second (NEWHM: G123), pecked from basalt, is from the south of the area, probably made by Nuu-chah-nulth[iii] people of Vancouver Island (British Columbia). Both are of very rare types, G098 being one of only two examples known. Archival research suggests William Row as the likely donor of both artefacts, and a possible transfer to British ownership in the late 18th century.

Background

The origins of the collections in the Hancock Museum can be traced to the museum assembled by the Literary and Philosophical Society of Newcastle upon Tyne (Lit. & Phil.) from 1793 onwards. The ethnographic and natural history collections grew slowly in early decades but were boosted enormously when the collection of George Allan (1736-1800) was acquired in 1822 (Jessop, 1999; Jessop, 2003). Then called The Newcastle Museum, the collection was catalogued by Fox (1827) and from 1829 was in the care of the Natural History Society of Northumberland, Durham and Newcastle upon Tyne (NHS). In 1884 the NHS moved to its present site, the Hancock Museum. Ownership of the collections was transferred from the Lit. & Phil. to the NHS in 1886 (Goddard, 1929).

Throughout its development, the Hancock Museum has concentrated on Natural History, and the collection of ethnographic objects has grown despite the shortage of curatorial expertise in those areas. For much of its existence the Hancock was the only suitable museum in Newcastle for donations of ethnographic artefacts. Over the past 200 years these have grown to constitute what is now a major resource that includes material of international importance.

The history of the early ethnographic collections of the Hancock Museum has been investigated in recent years (Jessop *et al*, 1998; Jessop, 2003) and most of the 18th century material is now well documented. There are, however, still some outstanding queries. Close scrutiny of early catalogues during study of the older collections showed that some objects acquired early in the history of the museum and long thought to have been part of George Allan's museum, could not have come to Newcastle with that collection. Among this category are the two clubs G098 and G123.

The two clubs

G098 is a composite club of wood and stone (Figures 1 and 2). The handle has a long, slightly curving, shaft; the apex carved in the form of the head of a carnivore, probably a wolf or bear, with teeth made of mollusc opercula. The shaft is wrapped with a strip of fur, the hair side facing inwards; the two long edges of this fur strip are sewn together with a single strap of leather laced through holes. Inset into the rear of the carved animal's head

is a long stone blade made from a fine-grained, quartz-rich metamorphic rock of grey colour slightly striated with paler marks. The blade is rectangular in section, the top and bottom faces being flat and both sides convex; all faces have a smooth surface. The top of the shaft and the rear of the animal's head (where the blade is inserted) are both wrapped with a hide strap. Overall length 51cm, length of head plus blade 29cm.

The origin of G098 is unknown[iv]. Its earliest label is in the Newcastle Museum's house style, dating from between 1827 and circa 1860 (Jessop, 1999a). This label, glued to the shaft, states that it is a 'Stone Adze / Otaheite / Allan Museum'. Several items surviving from George Allan's Museum have similar labels, which in many instances are accurate, and there was a Tahitian adze in the Allan Museum. However, that adze cannot equate to G098: an early printed catalogue (Anon., 1822) describes the head of George Allan's adze as being 'fixed to a handle of wood with plated cordage', *i.e.* plaited fibre: the head of G098 is affixed with hide. Additionally, the stone blade of G098 is oriented as the head of an axe, not an adze.

The style of the carved animal's head indicates an origin in the northern part of the Northwest Coast of America, probably among Tlingit people. There is one known similar club surviving, in the Museo de América, Madrid (catalogue no. 13916) (Cabello, 2000) (Figure 3). In common with G098, the Madrid example has a curving shaft which is wrapped, in that case with basket-woven quillwork; a stone blade; a carved wolf or bear head with inset opercula 'teeth' (differing in detail of the eyes, which in the Madrid example have copper irides) and hide binding at the head of the shaft and base of the blade. The animal head in the Madrid example has a hair crest.

The origin of the club Madrid 139916 is also uncertain. It was long thought to be part of the material collected at Yakutat in 1791 by Alejandro Malaspina[v] and was published as such in Rüstow's major catalogue (1939). Malaspina sent a collection to Madrid that included fishing and domestic utensils, arms, dolls, spoons, gaming sticks, baskets, and 'stone axes and hammers that are well counterbalanced' (Cabello, 2000). Unfortunately, there are no records showing that Malaspina's collection entered the Royal Cabinet, and whereas a 'Malaspina' origin is attributed to many early items in Spain, this is based on supposition[vi].

Recent study of Spanish exploration of the American Northwest coast (*e.g.* Cabello, 2000) has raised other possible origins for early collections in the Museo de América. Most relevant to 139916 is the *Favorita*, commanded by Juan Francisco de la Bodega y Quadra, which spent two months in Bucareli Bay in 1779. There was extensive bartering, and a chest filled with artefacts was sent to Spain, among the contents being a cape, breastplate and back-plate of armour, two arrows, a stone hatchet and a bag of gaming sticks. Bodega's journal, cited in translation by Cabello, noted that the offensive weapons generally used at Bucareli Bay are 'hatchets of flintstone and another green stone, so hard that they cut any wood, although there is not a single tooth on their blades'.

Bodega y Quadra's visit to Bucareli Bay in 1779 therefore provides a second contender for the origin of the Madrid example. This is some 500 miles to the south of Yakutat, visited by Malaspina in 1791.

The second weapon G123 has been pecked and ground from black basalt. In form, it has a wedge-like blade and a cylindrical grip bordered by two rings; the outer ring bears a face comprising two eyes and a nose, and with a hole pierced through the 'forehead'. The whole surface is smooth. Overall length 26cm, the outer ring 11cm x 8cm (Figure 4).

Figure 1 Tlingit club NEWHM : G098.

Figure 2 Tlingit club NEWHM : G098 (detail of head).

Figure 3 Late 18th Century club in the Museo de América, Madrid (catalogue no. 13916).

Figure 4 Nuu-chah-nulth club NEWHM : G123.

This type of club seems to have occurred only in the southern part of the Northwest Coast. Surviving examples vary mainly in details of the face on the surface of the outer ring, and some have a geometric motif instead of a face. Eight surviving 18th century examples are known, all apparently acquired from Nuu-chah-nulth people; some were collected in 1778 during Cook's visit to Nootka Sound (Beaglehole, 1967: 320). Early examples are now in the British Museum (4)[vii], Vienna (2), Florence (1) and Wellington (1). In addition, a small number were collected in the 19th century among Kwakwakawakw[viii] people living to the north and east of the Nuu-chah-nulth (Duff, 1975; Hawthorn, 1979). Feest (1995) and King (1981) discussed these clubs in the context of the examples in Vienna and the British Museum.

The Nuu-chah-nulth examples are all made of basalt but several of the Kwakwakawakw ones are wooden.

G123 has no old labels, either glued to the object or written on it. The earliest evidence of its existence is a sketch in one of A W Franks's notebooks, datable to 1867-71[iv]. A display label, undated but probably written in the early 20th century[ix], identifies it as part of the Allan Museum. The label reads: 'STONE CLUB Used for killing slaves on ceremonial occasions, such as the building of a house, or at the death of an important man. Northwest coast of North America. Allan Museum'. For G123 to be part of George Allan's collection, it would need to equate to his 'Stone Hammer for pounding Cassada' listed by Fox (1827): however, a Tahitian breadfruit pounder is a stronger contender for that catalogue item (Jessop, 2003).

Possible donors

If G098 and G123 were not part of the Allan Museum as previously claimed, how were they acquired for the Newcastle Museum? There are several known possibilities:

Flower Humble

Mr Flower Humble gave 'various curiosities of Nature and Art from the Islands in the South Sea, and from China' to the Lit. & Phil. in 1793 (Anon, 1794). If these artefacts survived up to the mid-1820s then they, together with the remainder of the Lit. & Phil's collection, would have been amalgamated with the Allan collection to form the Newcastle Museum. When the catalogue of the Newcastle Museum was published (Fox, 1827), the older ethnographic collections were not described in detail: Fox singled out artefacts given in 1799 by Captain Wilson of the missionary vessel the Duff (specifically, Tongan spears and a Marquesan gorget) but he did not include, for instance, Polynesian bark-cloth given by Wilson (and still surviving to date) and it is possible he neglected to mention G098/G123[x].

George Dixon

Captain George Dixon was a pioneer in the trade for Sea Otter furs (Portlock, 1789; Dixon, 1789 and *vide infra*), thus having the opportunity to acquire G098 and G123. He was on the Alaskan coast in 1786 and, after wintering in the Hawaiian Islands, returned to the Northwest Coast in March, 1787. George Dixon was one of the one hundred plus Honorary Members elected to the Lit. & Phil. in 1794-95 but, unfortunately, did not survive long afterwards to enjoy his membership, dying in Bermuda in 1794 (Parish, 1990). Dixon certainly collected artefacts during his travels, giving some to Daniel Crossthwaite's Museum in Keswick (Brears, 1992). However, there is no evidence that he made any donations to the museum in Newcastle.

William Row

One further possible donation of G098/G123 occurred in the years following Fox's (1827) catalogue of the Newcastle Museum. Volume two of the *Transactions of the Natural History Society of Northumberland, Durham and Newcastle upon Tyne* (1832-38) recorded the donation by William Row in 1834-35 of a feather cloak and helmet and 'a collection of Native Curiosities from the Sandwich Islands'[*i.e.* Hawaii]. William Row (*ca* 1748-1832[xi]) was a businessman involved in Newcastle's maritime trade. The size of his interests can be gauged by his becoming owner or part-owner of forty-one vessels between 1786 and 1808 (PA947); he was also a hostman[xii], contracted with eight collieries in 1790 (Anon., 1790). He had offices in Broad Chare and at St Peter's Quay in Newcastle and he also part-owned a Whale Oil Manufactory in Gateshead[xiii]. William Row was a member of the Lit. & Phil. between 1819 and 1830, although he did not join the NHS. It was possibly his son (also called William[xiv]) who gave the collection of artefacts to the Newcastle Museum two years after his father's death.

William Row was part-owner of the whaler *Priscilla*, which carried out a voyage to the southern whaling grounds in 1792-93 (Barrow, 2001). We know that the *Priscilla* was fitted out for a journey to the Pacific Ocean[xv] and it is tempting to suppose that she sailed north to Hawaii and the Northwest Coast; however, the overall length of the voyage (eighteen months) is too short to allow for such an extensive journey as well as the work of catching and processing whales[xvi].

A second possibility involves the snow[xvii] *Three B's*, a vessel that was involved in the trade for Sea Otter furs. This trade had its origins in Captain James Cook's last voyage (1776-1780), when members of Cook's crew obtained furs of the Sea Otter *Enhydra lutris* (L., 1758) on the Northwest Coast and sold them at enormous profit in Guangzhou [= Canton] (Gibson, 1992; Jackson, 1978; Malloy, 2000). From 1785 to 1800, about forty-five British vessels sailed to the Northwest Coast in search of furs (Howay, 1930; Howay 1931) although profits soon fell and British involvement in the trade dwindled considerably after 1795. The typical pattern of trading was for vessels to arrive on the Coast in early summer, possibly calling at Hawaii on the journey from Europe or the Eastern United States. Summer was spent moving from place to place acquiring furs. Vessels departed the Coast in late summer, sailing to Hawaii (a journey of about three weeks) to take on provisions. From there, they moved on to Guangzhou, where the trading season commenced in mid-November. The furs would be sold at Guangzhou and a cargo of tea, ceramics and textiles bought for transport home. This coincidence of Hawaii and Northwest Coast in linking early artefacts in the Hancock Museum (Hawaiian cape and helmet known to have been given by William Row + G098/G123) with the pattern of trade makes the *Three B's* potentially interesting.

The *Three B's*, sometimes referred to as the *Three Brothers*, was a Newcastle-built snow registered at Newcastle Custom House on 23rd July 1791 (Ex. Nc/1/1)[xviii], the owners being William Row and Nathaniel John Winch[xix]. The registrar added that the property was later transferred to London[xx]. Nathaniel John Winch had been apprenticed as a hostman to Robert Lisle, who was a partner with William Row in the office on Newcastle's Broad Chare (Anon., 1790) and in the Whale Oil Manufactory in Gateshead, and who, in 1793, jointly sold the cargo of the *Priscilla* with William Row.

Lloyd's Register for 1792 recorded the voyage of the *Three B's* (William Alder RN, commander) as being from London to Africa[xxi], the owners being J Lyall & Co. of London. Whether J Lyall was related to Robert Lisle of Newcastle is an interesting, and unanswered,

question but there are also possible links between J Lyall and William Row[xxii]. *Three B's* together with another vessel, *Prince William Henry*, together formed what has been called (Howay, 1931) the 'Alder Squadron'. One noteworthy person who joined the *Three B's* at Nootka Sound was Sigismund Bacstrom, an artist, naturalist, alchemist and Rosicrucian (Cole, 1980) whose dated sketches enable us to piece together some of the movements of the *Three B's*. Bacstrom joined the *Three B's* at Nootka Sound in October 1792, the vessel then going to the Hawaiian Islands before returning to Nootka Sound then proceeding up the Alaskan coast, calling (at least) at the Queen Charlotte Islands and Datzkoo (in Haida territory), Sitka and Cross Sound (in Tlingit territory). Cross Sound, at latitude 58°N, may have been the northern turning point in early April 1793, since the *Three B's* was back at Sitka by mid April 1793 before proceeding south to Nootka Sound: at this point our knowledge of her movements ends[xxiii] since Bacstrom transferred to another vessel.

The subsequent fate of the *Three B's* is not known, and there is certainly no evidence she was carrying Hawaiian featherwork or Northwest Coast clubs on her return to England. However, the Newcastle connections in ownership, the links between William Row and Nathaniel John Winch (a promoter of the early Newcastle Museum) and the geographic range of the Sea Otter fur trade are highly suggestive. Also suggestive is the involvement of Bacstrom: we know that he offered to make natural history collections for Sir Joseph Banks before setting out for America (Cole, 1980) – did he influence the crew of the *Three B's* to trade for 'curiosities', or could he have acquired objects on his own account that he later sold to the crew of the *Three B's* to raise money to continue his travels?

Richard Collinson

The last of the known possible donors is Captain Richard Collinson[xxiv], who was sailing the northern Pacific and Arctic Oceans between 1850 and 1855. On his return he gave the Newcastle Museum a number of items, mainly of Chinese or Inuit origin: several survive, including an Aleut skin dress (*kamleika*). It is possible that artefacts donated by Collinson could be mislabelled as being from the Allan Museum, though this is unlikely given their late date of acquisition. Joseph Wright was in post as paid curator of the Newcastle Museum when Collinson's donation arrived, and it is unlikely that a man who ,knew and loved every specimen in the museum, (Goddard, 1929) would make such a mistake. Some artefacts donated by Collinson bear labels in the same style as the old label glued to G098, naming him as the donor.

DISCUSSION

Northwest Coast clubs

Several publications in recent decades enable us to place the Hancock clubs in a context of other material brought from the Northwest Coast in the late 18th century. Following Kaeppler's (1978) compendium of the artefacts collected during Captain Cook's voyages of Pacific exploration, there have been several studies of 18th century material in specific institutions. These include the British Museum (King, 1981, who included Northwest Coast artefacts from several 18th century sources); Vienna (Feest, 1995); Göttingen (Hauser-Schäublin and Krüger, 1998); Herrnhut (Augustin, 1993); Prague (Kandert, 1985 on the Hänke collection), and a re-examination of early Spanish collections (Cabello, 2000). Malloy (2000) compiled an important catalogue of artefacts taken to the Eastern United States by men involved in the Sea Otter fur trade. From the artefacts and from

written and pictorial descriptions of the Northwest Coast (*e.g.* Beaglehole, 1967; Joppien and Smith, 1985; Gunther, 1972) we can gain an idea of, for instance, the diversity and abundance of weapons in the late 18th century.

We must, however, be cautious in the interpretation of data that are very incomplete. The early artists did depict some distinctive aspects of Northwest Coast material culture, such as capes and conical hats, canoes, house interiors and the labrets worn by women, but not many weapons. The range of pictorial evidence relating to the Northwest Coast between 1741-1841 presented by Henry (1984), from the work of dozens of artists, rarely shows Tlingit men carrying weapons: a drawing by de Vancy dating from 1786 shows one man carrying a trade axe and a second with a musket; Tikhanov, in 1817, pictured a man carrying a musket and long knife; Postels, in 1827, drew a man wearing a long knife. However, detailed portraits are rare among the output of this assemblage of artist-voyagers, few of whom had any artistic training.

As for artefacts, in all, about a hundred Northwest Coast clubs survive today in museums, most of the 18th century examples being acquired at Nootka Sound, possibly because most of the contact occurred there. About half are spatulate weapons of wood or whalebone with a stylised head carved at the grip[xxv]. The remainder vary in form and materials: some are wooden, carved with animal or human features, some are composite clubs of stone and wood (the wood carved with animal or human features, with a stone 'tongue'), others monolithic stone. (Keithahn (1962) discussed a range of stone artefacts of the region).

It is likely that clubs were widespread but not numerous on the Northwest Coast in the 18th century. Contrast between the small numbers of Northwest Coast weapons in museums with the many thousands from, for instance, Fiji, Vanuatu, New Zealand or Southern Africa, suggests that they were not everyday accoutrements for all Tlingit or Nuu-chah-nulth men. The main offensive weapons of people of the Northwest Coast prior to the introduction of firearms seem to have been arrows, spears and copper-bladed knives, and clubs may have functioned mainly in personal or ceremonial roles rather than primarily as fighting weapons. With the arrival of muskets and iron, Northwest Coast weaponry must have changed rapidly in the late 18th century.

Names and uses

Naming objects is a perennial issue in studies of material culture, and whatever names are used, we need to be aware of their limitations. G098 could have been called an 'axe', 'pick' or 'tomahawk' at various times; two of these names carry implications of usage similar to European tools and the third derived from Algonquian people of the Eastern USA. Cook recorded the Nuu-chah-Nulth name *see'aik* for stone clubs similar to G123 (Beaglehole, 1967). This may have been a mis-hearing of the term *tsitsiq yaq*, as noted by Drucker (1951): the word may derive from *ick* 'pound or strike with a blunt object' and *ak* 'tool for' (John Stonham, pers. comm., 2005). *Tsitsiq yaq* has been adopted here for clubs similar to G123. The Tlingit name for G098 may have been *ké tu* (following Emmons, 1991).

Samwell, who was on the Northwest Coast with Cook in 1778, stated that *tsitsiq yaq* were held in one hand and struck with the point of the wedge downwards (Beaglehole, 1967). This description, and the elongate stone head of G098, suggests that both weapons are designed for inflicting penetrating, rather than crushing, wounds; highlighting the limitations of the cover-all term 'club'. Feest (1995) and King (1981) used the term 'dagger' for *tsitsiq yaq*, which, again, is not wholly satisfactory.

The term 'slave killer' is frequently given to Northwest Coast clubs, and G123 was previously labelled as such when on display. There are obvious dangers of this term in potentially standing as a label for the people of the Northwest Coast as well as for their artefacts. Although slave ownership was formerly common on the Northwest Coast, dying out in the late 19th century (Donald, 1997 for discussion) and there are well-documented cases of slaves being killed on ritual and other occasions, there is no evidence that *tsitsiq yaq* were used primarily (if at all) for killing slaves.

None of the early travellers described tlingit *ké tu* in use as weapons, although we know they were carried by high-ranking Tlingit men dressed in armour[xxvi] (only men of high social rank wore armour). Unlike *tsitsiq yaq*, there is a suggestion in the ethnographic literature that tlingit *ké tu* were used for killing slaves. Emmons (1991: 306) described Tlingit ceremonies when, during building a house, five slaves were killed (it is unlikely that Emmons would have witnessed such a ceremony himself, since slavery had virtually ceased when he first visited Tlingit territory, in 1889: he would have relied on informants):

> This was done by knocking them on the head with a ceremonial club, or by laying them on the ground with a stone under the neck and placing a stout pole over the neck on the ends of which several men bore down. But the greater chiefs killed the slave with a ceremonial pick, called ka tu [*ké tu*], 'turned up', which was the most prized of all weapons. It sometimes had a long, slender, finely worked blade [or head] of jade, set through the end of a stout wooden handle that was carved in animal [crest] design. The body of the dead slave was cast out on the beach to be washed away by the tide. The killing of slaves was an indication of wealth and a sacrifice of property that greatly added to the prestige of the builder (information in square brackets was added by Frederica de Laguna in revising Emmons's notes).

Passages in the work of other authors that Emmons cited mention slaves being killed by clubs, some of which had carved animal motifs, but none approaches so closely as this to a description of G098. The carved animals are most likely significant in being Crests, the symbolic representation of totems[xxvii]. Many Crests are in the form of animals (such as wolf, beaver, frog, grizzly bear); they can belong to clans, lineages, households or individuals and can be inherited. However, the right to use and display Crests must be purchased, and one of the ways of purchasing these rights is through a potlatch.

The potlatch is a phenomenon that has been widely discussed by anthropologists (*e.g.* Suttles and Jonaitis, in Suttles, 1990, Graeber, 2001 or Boas, 1966 for an entry to this literature) and is the best-known example of the ritual public destruction of wealth. Potlatches were events at which a high-ranking individual would bring numbers of people together to take part in, and witness, cycles of ceremonies during which property was given away or destroyed, often in large amounts. This destruction of material wealth is central to the operation of value systems of people of the Northwest Coast. Although high-ranking people of the Northwest Coast acquired large amounts of material objects, including slaves, copper, blankets, oil (and, in later years, imported manufactured goods), the possession of these things was not an end in itself. Rather, the ability to destroy, give away or mutilate them was a means of acquiring immaterial wealth (such as titles or Crests or the right to perform songs or dances).There are also instances (*e.g.*, Emmons, 1991) of men destroying property where they felt their honour was questioned: if the other party could not destroy an equal or greater amount of property the shame fell upon them.

Emmons (1991) refers to slaves being killed in the course of a Tlingit potlatch and on the death of important people, by means of clubs. This killing of slaves can be understood in terms of their being the property of the individual giving the potlatch (Donald, 1997).

There would be restrictions in who could own and use clubs, and the carved animal head could help situate G098 socially. While we do not know precisely what species is intended on the carved head, it is feasible to accept the carving as a Crest (bear, wolf and otter are all Crest species among Tlingit people). Since ownership of Crests was restricted and the right to display and use them was costly, the display of the Crest on the club would restrict who could own and use it. In this light, the club can be seen as signifying the ownership of this right to own or display such a Crest.

As for G123, according to Drucker (1951) only Nuu-chah-Nulth War Chiefs (who were hereditary leaders of war expeditions) used *tsitsiq yaq*: most War Chiefs had special ritual names for these weapons and referred to them by such names, or by some euphemism like 'Orphan Maker'. They were not carried by ordinary warriors.

Artefacts similar to *tsitsiq yaq* were in use among Kwakwakawakw people in the 19th century. It is not known whether they were used as weapons there, but it is recorded that they were used in ceremonies when Coppers were broken up at times of the transfer of privileges (Hawthorn, 1979) at events such as potlatches. Coppers are shield-shaped sheets of copper, decorated with Crest motifs, and they were important items of wealth on the northwest coast. The fact that they were ceremonially broken – 'killed' – is a further link to the phenomenon of slaves and their destruction: Donald (1997) gives data on the relative exchange values of slaves and Coppers. We could consider *tsitsiq yaq* in this light. If they were used to kill slaves, or 'kill' coppers or other material goods by breaking them, they would be the physical agents of their owners at the moment in which they demonstrated their ability to acquire and control social wealth or cast off shame. In this context it is not surprising that they are ornamental objects made of a hard durable material that is difficult to work into shape.

Spiritual rather than physical combat, by Tlingit shamans, is also relevant. Emmons (1991) noted that shamans held a club while sending their spirit out to reconnoiter the camp of a war enemy; clubs were also carried while the shaman fought with hostile spirits. If *ké tu* were used by shamans as well as by warriors then the carved animal head, the wrapping of the shaft and the greenstone blade could all have been significant spiritually.

These considerations of the social position of clubs highlight the broader scope of the concept of use of artefacts. G098 and G123 cannot simply be understood as weapons used only at times of combat: they also served to mark out the social position of their owners and their links to totems.

Transfer to western ownership

As discussed above, we do not know for certain how G098 and G123 were acquired by the Hancock Museum, although circumstantial evidence suggests the involvement of William Row, the vessel *Three B's* and the year 1793. In turn, we have less idea how they passed from Tlingit and Nuu-chah-nulth to western ownership. By the 1790s trading relations between Northwest Coast people and ships' crews were well developed (Emmons, 1991; Gibson, 1992; Gough, 1992). The people living on the Coast were far removed from the common stereotype of Native Americans as naïve traders willing to barter their land for a handful of beads: they quickly acquired a reputation for astuteness, and possessed a

range of strategies to frustrate their visitors. However, it is likely that novel manufactured goods attracted initially a high rate of exchange, and prestige objects may have been traded during early contact.

European arms were quickly acquired: by 1792, muskets were numerous at Nootka Sound and they were already in use among the Kwakwakawakw and Tlingit at that time (*e.g.* Cole and Darling in Suttles, 1990; Gibson, 1992). The trade may not have been simply 'new weapons for old': muskets may have been desirable because they added to the social standing of their possessors rather than being better weapons.

Although the visitors went mainly in search of Sea-otter pelts, they traded for artefacts as well as skins (the main items offered in exchange being metal (iron and copper), firearms, blankets, clothing and ornaments). The best-known collections were made by explorers rather than traders, Captains Cook and Vancouver being the most notable (King, 1981; Kaeppler, 1978). Russian and Spanish exploring expeditions also made collections (see chapters in Brown, 2000), for instance, Bodega y Quadra's expedition acquired a range of objects by barter in 1779, including arms and armour, gaming sticks and, it is likely, the club Madrid 13916. However, some of the fur trade captains also acquired artefacts as well as furs: Captain George Dixon gave objects to Daniel Crossthwaite's museum in Keswick, and a large body of objects collected by American commercial mariners survives in the Peabody Museum of Salem, Massachusetts (Malloy, 2000).

CONCLUSION

'Provenance' – the who, where, when, why of collecting – is so central to museum collections that it is frustrating to encounter items of rare and important types that are so lacking in it. The two clubs G098 and G123 are certainly rare and important, originating from a region that is widely recognized as one of the world's great art-producing regions and being survivors from at least the 18th century. However, both repose in the Hancock Museum's collections without an origin.

This has presented the challenge of creating a credible story for both objects. We know roughly where they originated and some archival research has suggested several possible donors (the most attractive being the suggestion of William Row and the *Three B's*). Using historical/anthropological literature, it has been possible to position the clubs in a broad social context even if the precise range of their uses may never be known.

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END NOTES

i The word 'club' (rather than striker, hammer, pick, dagger) has been chosen because it is a commonly used term for striking weapons. The problem of naming of these artefacts is discussed below.

ii Northwest Coast is a term for the coastal area stretching approximately 1500 miles, from Vancouver Island (Canada, British Columbia) to Prince William Sound (USA, Alaska) (Figure 5). In popular terms, it is well known as the 'Land of the Totem Poles'.

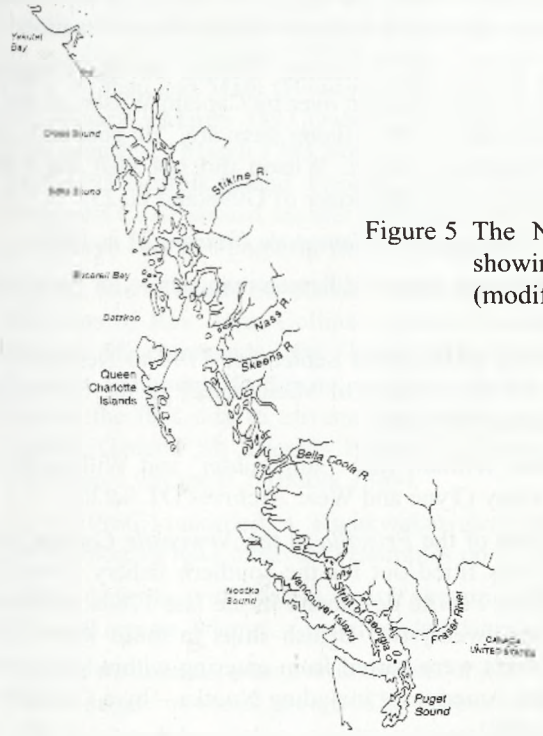

Figure 5 The Northwest Coast of America, showing places mentioned in the text (modified, from Donald, 1997).

iii This name [= 'all along the mountains'] is preferred by people who have long been referred to by Western authors as 'Nootka' [derived from a misunderstanding of the verb 'circling about']. A major destination for Western vessels in the late 18th century was Nootka Sound. The group of Nuu-chah-nulth people that inhabit the Nootka Sound area are the Mowachaht (for discussion of names of groups inhabiting Vancouver Island, see Arima & Dewhirst, *in* Suttles (ed.),1990; McMillan, 1999).

iv A useful reference for confirming the presence of items in the Newcastle Museum at an early date (1867-71: Jessop, 2003) is a book of sketches by A W Franks (British Museum, Franks notebook SS19). Unfortunately, G98 is not in this book, but it is unlikely that it came to the Newcastle Museum after 1870.

v Malaspina's expedition was in Yakutat Bay 27 June-5 July 1791. He also made contact with one Tlingit man off Icy Cove 25.vii.1791.

vi Part of the collection of the naturalist on the Malaspina expedition, Tadeáš Hänke, survives in Prague (Kandert, 1985).

vii There is no documentation that dates the British Museum examples to the 18th century with certainty. Three were catalogued by Edge-Partington as being probably from the Cook Collection and the fourth was donated by Meyrick and is documented only to the 1820s.

viii This name is preferred by people who have long been referred to by Western authors as Kwakiutl.

ix Goddard (1929) commented that E Leonard Gill (curator of the Hancock Museum 1901-1922) introduced descriptive labels for objects on display in the museum. In turn, Gill would have relied on older, non-descriptive labels for provenances.

x The catalogue entry (Fox, 1827: 251) is headed 'Certain Savage Weapons and Implements from South Sea Islands, brought over by Captain Wilson, of the Dove, who took out the first Missionaries. 1799. Among them are'. He goes on to list one [Tongan] spear and the Marquesan gorget. Wilson did not visit the American Northwest Coast, and is unlikely to be the donor of G098 and G123.

xi He died on 15th September 1832 aged 84 (*Newcastle Courant* 22.ix.1832).

xii Hostmen (sometimes called fitters) were middlemen responsible for the transfer of coal from collieries to keels.

xiii Together with Robert Lisle, he paid £30 in September 1794 to Newcastle Town Council as ten years' rent for the Whale Oil Manufactory in the Salt Meadows (Tyne & Wear Archives Service 543/148)

xiv A lease dated 1824 mentions William Row 'shipbuilder' and William Row the younger, both of St Peter's Quay (Tyne and Wear Archives DT.Sc/201).

xv An announcement of the return of the *Priscilla* in the *Newcastle Courant* for 14th September 1793 stated she was fitted out for the southern fishery, 'round Cape Horn'. Whaling in the southern Pacific developed in the late 1780s, and between 1791-1793 there were at least twenty-two British ships in those waters (Webb, 1988). However, British whalers were barred from entering within ten leagues of the West Coast of the Spanish Americas – including Nootka – by a Convention of 1790; Gough, 1992, Webb, 1988).

xvi Some details of the voyage of the *Priscilla* can be found in the *Newcastle Courant*. *Priscilla* cleared from Shields 31st March 1792 and returned September 1793. A sale, of 94 tons of sperm oil, 31 tons of 'head matter' and 1,300 seal skins, was held 17th October 1793 at Lisle & Row's office.

xvii A snow was similar to a brig, having a foremast, mainmast and trysail. *Three B's* was described in the Customs House register (Ex.Nc/1/1) as a Square Horned Snow, which possibly means that the sails on the mainmast were square rather than the triangular fore-and-aft sails found on some snows.

xviii A Square-horned Snow of weight 73 tons; length 57-1 fathoms; breadth 17-8¼ fathoms; two masts; 1½ decks.

xix Nathaniel John Winch (1768-1838), well known as a botanist, geologist, founder of Newcastle's Natural History Society and supporter of its museum (Welford, 1895; Russell Goddard, 1929).

xx The vessel is listed in contemporary records (*e.g.* by Vancouver: Kaye Lamb, 1984) and in recent literature (*e.g.* Howay, 1930) as being London based.

xxi British trade in the Pacific was subject to the monopolies of the East India Company and the South Sea Company, so if the *Three B's* had no licence from these companies her owners would have reason for concealing her true destination.

xxii The *Dictionary of National Biography* (Mathew and Harrison, 2004) has entries for three sons of John Lyall (1752-1805) a Scottish merchant and shipowner of London and his wife Jane Camming (or Comyn) of Newcastle. One son, born in 1788, was William Rowe Lyall: the coincidence of name with William Row is highly suggestive.

xxiii Details of Bacstrom's known movements aboard the *Three B's* (from Cole, 1980) are as follows: 23 October 1792 Friendly Cove (Nootka Sound); 31 December 1792 Oahu, Ni'ihau and Maui (Hawaiian Islands); 16-20 February 1793 Nootka Sound; 26 February-3 March 1793 Queen Charlotte Islands; 18-22 March 1793 Datzkoo (Dall Island); 29 March 1793 Norfolk Sound (Sitka); 3 April 1793 Cross Sound; 16 April 1793 Norfolk Sound. Prior to joining the vessel, Bacstrom had been up the Northwest Coast aboard another ship, the *Butterworth*, and is known to have visited Bucareli Bay in Tlingit territory in September 1792.

xxiv Captain, later Admiral Sir Richard Collinson (1811-1883) was one of two remarkable sons of Rev. John Collinson (rector, successively, of Gateshead and West Boldon). He commanded the *Enterprise* and *Investigator*, searching for Sir John Franklin. Although Collinson on the *Enterprise* turned back, the *Investigator* became the first ship to traverse the Northwest Passage (from west to east). His brother, General Sir Thomas Bernard Collinson, wrote the account of Richard Collinson's voyage (Collinson, 1889).

xxv Boas (1966) recorded a Kwakwakawakw name Kw xayu for these clubs. Archaeologists have excavated examples up to 2000 years old (McMillan, 1999).

xxvi Tomas de Suría, with Malaspina at Yakutat in 1791 listed Tlingit fighting arms as a bow and arrows, a lance, a metal-bladed dagger and a stone-bladed hatchet.

xxvii Totems are animals, plants or inanimate objects that are socially connected to individual people or social groups. The subject of totemism is complex, but there is often a supposed common ancestry between the totem and the people and there may be restrictions on the use of totems. Crests are physical signs of the concept of totems: the things commonly called 'totem poles' are not carved with totems, but with Crests.

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'SAVE THE NORTH SEA' FULMAR PROJECT RESULTS FOR NORTH EAST ENGLAND 2003-2005

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INTRODUCTION

Fulmars *Fulmarus glacialis* have the unfortunate habit of ingesting all sorts of litter that they find on the surface of the sea. Ingested items that do not, or poorly, digest, accumulate in their stomachs. Already in the 1980s most beached Fulmars found in the Netherlands had plastics in their stomach (Van Franeker, 1985). The quantities of plastic in the stomachs of beached birds can be used to survey changes in the abundance of marine litter at sea.

In The Netherlands, beached Fulmar corpses have been collected since 1982 by volunteers of the Dutch Beached Bird Survey and by seabird rehabilitation centres. They have been studied by Dr Jan Andries van Franeker, a marine biologist specialising in seabirds and working for IMARES (Institute for Marine Resources & Ecosystem Studies), the new Dutch organisation for applied marine research and part of Wageningen University & Research. Dr Franeker is the organiser of the international 'Save the North Sea' (SNS) Fulmar surveys around the North Sea and is based on the Dutch island of Texel. Funding for the SNS project during 2002-2004 came from the European Union in the Interreg IIIB program for the North Sea. The 'Save the North Sea' project aimed at reducing marine litter by increasing awareness. The specific aim of the Fulmar project is to use this species as an ecological monitoring instrument for assessing levels and trends in marine litter in the North Sea. This will assist policy makers to take appropriate measures to reduce the amount of litter discarded, and to set realistic targets for a cleaner and healthier North Sea in the future (Van Franeker *et al.*, 2005; Van Franeker and Meijboom, 2007).

In 2003, North East England started to participate in the SNS Fulmar project with a number of volunteers who searched beaches for Fulmar corpses. The participation in the SNS Fulmar project triggered the start of a monthly regional Beached Bird Survey (BBS). This BBS, which covers counts of corpses of all species and items of interest, was set up with assistance of the BBS co-ordinators for Shetland (Martin Heubeck) and Orkney (Eric Meek and Keith Fairclough). Details on methods and results of the BBS in North East England will be published in a separate report (Turner, 2008).

METHODS

During initial dedicated searches and later BBS surveys, Fulmar corpses which were sufficiently intact in order to have a complete abdomen and stomach were collected. Corpses were stored in a project freezer housed in the Dove Marine Laboratory of Newcastle University. Training in dissection of such birds had been received during various workshops at IMARES Texel. Standard methods of dissections in the SNS Fulmar study have been described in Van Franeker (2004b). The first set of North East England Fulmar dissections were conducted together with Mark Grantham and Stuart Newson of the British Trust for Ornithology in Thetford, Norfolk. Dissection information and stomachs were then transferred to the IMARES laboratory on Texel, the Netherlands, for full analysis of their contents. Methods of stomach analysis are

described in the various reports of the Fulmar project, all available on the website of the Dutch Seabird Group NZG (www.zeevogelgroep.nl) under 'downloads'. In plastics, frequency of occurrence, number of items and mass of items of a number of different plastic categories are recorded. The main plastic categories distinguished are industrial granules (so called 'pellets'), which is the raw material used to mould all plastic items of the second category, the user plastics. Further details are given with tables showing data.

RESULTS

Some of the international and North East England Fulmar data from the SNS project are shown in the following three tables (Tables 1-3). In early 2004 there was a wreck of hundreds of Fulmars in the southern North Sea, with some found in NE England at this time. An initial report was given in Van Franeker (2004a), but an in depth paper on this large scale wreck of North Sea Fulmars is in progress.

Table 1 details specific biometrics of the North East England birds. The bill measurement is bill *depth* and the following list relates to the other measurements:

U	Unknown
Sub	Sub-adult
n/a	Not applicable
Colour-phase	LL double light, L light, D dark, DD double dark
Condition	0-9 Very poor-Healthy (very fat)
STA	Starvation
CEM	Cement cloaca
PLU	Plumage problems

These measurements and dissections were carried out by Mark Grantham (BTO), Dr Stuart Newson (BTO) and Daniel M Turner (volunteer co-ordinator for NE England).

Table 2 shows preliminary analysis of the stomach contents of a selected number of North East England Fulmar corpses. There was no oil present on any of these six birds.

Other NE England Fulmar corpses (unsuitable for analysis) were found on 29 Feb, 9 April, 2 June and 7 Aug in 2004 and also on 9 Mar, 19 May, 21 June, 31 July and 24 Aug in 2005.

Stomachs of the NE England birds collected during 2005 await analysis and this will be reported on at a later date.

Table 3 shows the occurrence of plastics (industrial and user plastics combined) from different study locations around the North Sea and Faeroes, in the period 2002-2004 (2004 as far as could be included in the SNS final data analysis).

In March 2004 many hundreds of dead Fulmars were washed up in the southern North Sea. Many were dissected during the group workshop on Texel in September 2004.

The majority of these birds were females that died from starvation (Van Franeker, 2004a).

For complete information please see the final Save the North Sea Fulmar report (Van Franeker *et al.*, 2005). This is available as a pdf file under 'downloads' at the website of the Dutch Seabird Group (www.zeevogelgroep.nl). Various other study reports are also available from this website.

Table 1 Certain biometrics of North East England Fulmars.

Reference NEE:	Colour-phase	Sex	Age	Culmen (mm)	Bill (mm)	Head (mm)	Tarsus (mm)	Wing (mm)	Condition (0-9)	Possible death cause	Finding information
2003-001	LL	M	Imm	39.9	17.4	99	55.3	340	6	UNK	28.06.03 P Collins, Marsden, Tyne & Wear.
2004-001	LL	M	Imm	42.9	17.3	99	59.3	339	1	STA	30.05.04 D M Turner, Seaton Sluice, Northumberland.
2004-002	LL	F	Ad	38.7	15.6	90	50.5	313	1	STA	02.03.04 M A Blick, Saltburn Beach, Cleveland.
2004-003	LL	F	Juv	n/a	n/a	n/a	54.0	329	2	STA	03.03.04 M A Blick, Redcar, Cleveland. No head.
2004-004	D	F	Ad	35.1	15.1	89	53.0	332	3	CEM	14.03.04 D M Turner, Blyth Beach, Northumberland.
2004-005	L	U	Imm	36.5	15.4	87	52.2	310	1	STA	03.11.04 P. Collins, Marsden, Tyne and Wear. Wt: 440g.
2005-001	LL	F	Imm	37.1	16.0	92	53.5	320	2	STA	26.01.05 M A Blick, Redcar beach, Cleveland.
2005-002	LL	F	Ad	—	—	—	52.3	331	2	STA	23.02.05 P Collins, Marsden, Tyne and Wear. No head. Possible Peregrine victim.
2005-003	LL	F	Imm	40.6	17.6	96	53.3	310	1	STA	16.03.05 M A Blick, Hartlepool North Sands, Cleveland. Wt: 545g.
2005-004	LL	M	Ad	41.4	18.9	100	58.7	345	1	STA	16.03.05 M A Blick, Hartlepool North Sands, Cleveland.
2005-005	LL	F	Ad	37.1	16.6	92	53.5	326	1	CEM	16.03.05 M A Blick, Hartlepool North Sands, Cleveland.
2005-006	LL	M	Ad	40.4	15.5	96	57.4	335	2	STA	19.05.05 D M Turner, Seaton Sluice, Northumberland.
2005-007	LL	M	Ad/Sub?	40.1	17.8	100	54.5	323	1	PLU	31.07.05 D M Turner, Seaton Sluice, Northumberland.

Table 2 Stomach contents overview, North East England Fulmar corpses 2003-2004.

Reference	Fulmar stomach analysis selected details					Other comments
	Plastic pieces	Other rubbish	Pollutants	Prey items	Non-food items	
NEE-2003-001	16 (incl. 6 pellets)	0	0	7	4	Suspected shot; but no hail was found; non-breeding male.
NEE-2004-001	4 (incl. 1 pellet)	0	0	6	6	Gut scavenged; bursa not noted; non-breeding male.
NEE-2004-002	7 (no pellets)	0	0	0	0	Arrested moult.
NEE-2004-003	25 (incl. 1 pellet)	0	0	0	10	Bird was juvenile or 2nd year; plumage + bursa suggest juv.; no head.
NEE-2004-004	13 (incl. 1 pellet)	0	0	3	0	Very large concrete cloaca i.e. the cause of death.
NEE-2004-005	30 (incl. 1 pellet)	0	0	3	14	Sex organs not found: probable Female (due to size), second winter (external moult was present).

Explanations: In the second column, 'pellets' refer to industrial plastic granules. Other plastics are the normal 'rubbish' or user type plastics.

Among the category 'Other rubbish' would be, *e.g.* paper, aluminium foil, chips of metal or paint, etc.

Pollutants are *e.g.* lumps of tar, paraffin-like substances, industrial slags etc.

Prey items are squid-beaks, fish eye lenses or otoliths, remains of crustaceans etc.

The 'Natural non food' category refers to, *e.g.* pieces of plants, seaweed, small stones etc.

Table 3 Plastic content of NE England Fulmars compared to other North Sea locations.

Location	No. of stomachs in sample	Incidence of plastic	Avg no. pieces of plastic per bird	Max. no. of plastic items	Avg mass of plastic per bird (g)	Max. plastic mass (g)
Faeroes	38	92%	7	77	0.09	0.5
Shetland	41	88%	15	59	0.18	1.7
Orkney	23	96%	28	162	0.28	1.2
NE England	5	100%	13	25	0.18	0.3
SE England	40	93%	30	226	0.21	1.1
France (north)	36	100%	58	363	0.25	0.9
Belgium	85	98%	74	1603	0.37	4.3
Netherlands	95	97%	42	558	0.36	11.1
Germany	92	95%	39	1175	0.35	4.3
Denmark *Skagen*	105	94%	39	761	0.38	20.6
Norway *Lista*	32	97%	60	457	0.39	1.8
Sweden *Sotenas*	6	83%	48	182	0.63	3.0
North Sea avg (except Faeroes)	n/a	**95%**	**41**	**1603**	**0.33**	**20.6**

DISCUSSION

In comparison to other European countries involved in the SNS Fulmar project, NE England produced a smaller number of corpses (due to a fairly late start in the project and relatively low presence of beached Fulmars). NE England became involved halfway through the SNS project, but was able to supply some valuable data and to fill a gap in the North Sea shore coverage. For the time being, the NE English sample by itself is too small for firm conclusions. At this moment, it is best to look at combined results for the NE and SE English North Sea coasts. In this combined area, in the sample of forty-five birds, 93% had ingested some plastic, in an average number of twenty-eight particles and with a mass of 0.21 grams per bird (Van Franeker *et al.*, 2005 appendix 4b). Such a level of plastics found in the stomachs of Fulmars along the English coast is intermediate between the very high level found in the southern North Sea and the moderate level found in the Orkney and Shetland Islands. However, over 90% of Fulmars anywhere in the North Sea have been shown to have some plastic in the stomach, with average quantities two to four times as high as that observed in a cleaner reference area, *i.e.* the Faeroe Islands.

With seven Fulmar stomachs collected in 2005 waiting for analysis, and future continuation of our collection program, the NE England BBS will make a growing contribution to

the monitoring of marine litter in the North Sea area. The Fulmar study is an important tool in politics and a powerful instrument to create wide public awareness of marine litter problems and the need to change the situation.

I have attended three SNS Fulmar workshops on the island of Texel, The Netherlands, in October 2003, September 2004 and September/October 2005. It was great to be able to meet the co-ordinators from the other North Sea bordering countries and learn the analysis and dissection techniques from Dr Franeker and his team. During these well organised workshops we worked in the laboratory, attended presentations and gave feedback from our own areas concerning recent coastal findings.

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(All SNS Fulmar reports are available from www.zeevogelgroep.nl under 'downloads').

APPENDIX

A selection of photographs taken during the study and analysis.

Figure 1 Fulmar NEE-2005-006, adult male. Found 19 May 2005, D M Turner, Seaton Sluice, Northumberland.

Figure 2 Fulmar NEE-2004-005, immature. Found 3 November 2004, Peter Collins, Marsden, Tyne and Wear.

Figure 3 Head length measurement being taken by Mark Grantham at the BTO, September 2004.

Figure 4 Martin de Jong analyses Fulmar stomach contents under the microscope. Texel, September 2004.

Figure 6 Preparing for Fulmar analysis in the laboratory, Texel, September 2004. From left: Dr Jan Andries van Franeker, Keith Fairclough, Wouter Courtens, André Meijboom, Eric Stienen and Marc van de Walle.

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BEACHED BIRD SURVEY RESULTS FOR NORTH EAST ENGLAND 2004-2005

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INTRODUCTION

Since 1991 the RSPB has organised a national beached bird survey, conducted at the end of February each year. Monthly beached bird surveys (BBS) began to be organised in North East England during 2003 as part of the 'Save the North Sea' (SNS) Fulmar project (Van Franeker *et al.*, 2005), the aim of which was to collect Fulmar corpses from around the North Sea for analysis in relation to marine litter. A small (and increasing) number of volunteers came forward to take part in the surveys, and this report summarises the BBS results for 2004 and 2005. Some BBS data from the Farne Islands, SE Scotland and Norfolk are also given in Appendices.

METHODS

Surveyors were asked to walk beach stretches on a monthly basis where possible and record bird corpses found (species, age and sex if possible, condition, whether oiled, etc), weather conditions, survey start and finish times, shore length, whether there was oil on the shore, and tide height. Corpses (other than Guillemot) in particularly good condition were collected for the Hancock Museum, and ringed auk corpses were collected for a study of known age birds in The Netherlands (organised by Edward Soldaat, see his website at www.shearwater.nl). Fulmar corpses with intact abdomens were collected for the SNS Fulmar project. Surveyors walked their beaches in one or both directions depending on the spread of the tidelines. Beaches were generally surveyed once per month (a 'core' survey), but 'additional' surveys could be carried out in any month if the surveyor had time. Certain beaches were cleaned by the local authorities during the summer months and some corpses were disposed of and therefore not recorded during the NE England surveys.

RESULTS

Beached Bird Survey results for North East England in 2004

Part of the coastline of three counties (Northumberland, Tyne and Wear and Cleveland) was surveyed during 2004. More shoreline was surveyed during winter months than summer (Table 1), and it is hoped in future to even out coverage more throughout the year. A total of twenty-eight bird species was recorded during 2004, mostly coastal species (Table 2), but also some passerines, a Great Tit, a Redwing, and a Fieldfare, as well as a Pheasant and some feral and racing pigeons. Few auks were found in the early part of the year, but there was a significant wreck of auks in October (198 Guillemots, nine Razorbills and four Puffins were identified). From a total of 159 gull corpses found for the year, forty-five (28.3% of the total) were recorded in March.

Two ringed Guillemot corpses were found in our area in October 2004 and supplied to Edward Soldaat (see Ringing Recoveries 2004-2005, References and skull photograph – Appendix 1) for his study into skull ageing characteristics.

Table 1 Length of NE England coastline surveyed during 2004, split by area/county: NN-North Northumberland, MN-Mid Northumberland, SN-South Northumberland, T&W-Tyne and Wear, Cle-Cleveland.

	NN	MN	SN	T&W	Cle	Total
Jan	5.2	2.0	2.0	2.0	9.0	**20.2**
Feb	19.7	2.0	2.0	2.0	3.5	**29.2**
Mar	5.7	4.0	4.5	3.0	8.0	**25.2**
Apr	5.7	2.0	2.5	2.0	0.0	**12.2**
May	1.7	3.2	5.0	3.7	0.0	**13.6**
June	15.7	0.0	2.5	2.0	11.5	**31.7**
July	1.7	1.7	2.6	3.0	0.0	**9.0**
Aug	4.2	2.0	4.6	3.0	0.0	**13.8**
Sep	18.2	0.0	0.6	0.0	0.0	**18.8**
Oct	23.2	1.2	4.0	2.7	5.6	**36.7**
Nov	14.0	1.2	4.0	2.7	7.5	**29.4**
Dec	19.2	1.2	4.0	2.8	5.0	**32.2**
Total	**134.2**	**20.5**	**38.3**	**28.9**	**50.1**	**272.0**
Avg	**11.2**	**1.7**	**3.2**	**2.4**	**4.2**	**22.7**

Oiling summary

Oiled corpses were found in March (one Puffin at Blyth, South Northumberland), June (five Guillemots at Holy Island, North Northumberland) and October (two Guillemots at Holy Island). From a total of 283 Guillemots found during 2004, seven (2.5%) were oiled, and of eleven Puffins found, one was oiled (9.1%).

Beached Bird Survey results for North East England in 2005

More shoreline was covered during 2005 (419km) than in 2004 (272km) as more volunteers had joined the project. A total of 28-29 dead bird species was recorded during the shore survey work in 2005, comprising mostly coastal species, but also a Blackbird, a Song Thrush, a possible Jackdaw and some feral pigeons and one ringed racing pigeon.

Ten times as many auks were found from January-March 2005 (210 Guillemots, sixty-three Razorbills, forty-one Puffins and nine Little Auks were identified) than in the same period during 2004, and Shag numbers were also high in February. The period from October to December 2005 produced ninety-three auk corpses (including eighty-one Guillemots) compared to 252 corpses (231 Guillemots) in 2004. From a total of 113 gull corpses found for the year, thirty-six (31.9% of the total) were recorded in July-August. (Tables 3 and 4).

Oiling summary

Oiled corpses were found in January (one Little Auk at Blyth, South Northumberland), February (two Guillemots, a Gannet and a Herring Gull) and March (a Razorbill at Seaton Sluice, South Northumberland). Of the February oiled birds one Guillemot was found on Holy Island, the other was found at Cheswick Shiel (North Northumberland) and the Gannet and Herring Gull were found at Cocklawburn beach (North Northumberland). One oiled Herring Gull corpse (2.2% of the total for the species) was found and two oiled

Table 2 Summary of bird corpses found in NE England during 2004 beached bird surveys. For each species, the first figure is the total found, the second is the number oiled.

Species	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Fulmar	0	1	3	1	1	1	0	1	0	0	1	0	**9**
Gannet	0	1	0	0	0	0	0	1	2	2	0	0	**6**
Cormorant	1	7	0	0	0	0	0	0	0	2	1	0	**11**
Shag	0	0	3	0	0	0	1	0	0	0	0	1	**5**
Grey Heron	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Mallard	0	0	0	0	0	1	0	0	0	0	0	0	**1**
Eider Duck	0	9	0	0	2	0	0	0	2	4	2	0	**19**
Oystercatcher	0	0	1	0	0	1	0	0	0	1	0	0	**3**
Redshank	0	0	0	0	0	0	0	0	0	0	0	1	**1**
Turnstone	0	0	0	0	0	0	0	0	0	0	0	1	**1**
Black-headed Gull	5	3	15	1	0	0	6	0	0	5	5	5	**45**
Common Gull	1	4	8	0	0	1	0	1	1	4	1	0	**21**
Lesser Black-backed Gull	0	0	1	0	0	0	0	0	0	0	0	0	**1**
Herring Gull	2	6	14	2	6	6	2	4	0	5	4	3	**54**
Great Black-backed Gull	0	1	4	0	1	2	1	3	0	7	2	1	**22**
Kittiwake	0	0	2	0	0	1	1	1	0	4	0	0	**9**
Gull sp.	1	3	1	0	1	0	0	1	0	0	0	0	**7**
Sandwich Tern	0	0	0	0	1	0	0	0	0	0	0	0	**1**
Common Tern	0	0	0	0	2	0	0	0	0	0	0	0	**2**
Arctic Tern	0	0	0	0	0	1	0	0	0	0	0	0	**1**
Guillemot	1	10	5	4	2	**7/5**	2	0	21	**198/2**	29	4	**283/7**
Razorbill	0	1	0	0	0	0	1	0	3	9	2	0	**16**
Little Auk	0	0	0	0	0	0	0	0	0	0	3	0	**3**
Puffin	0	0	**5/1**	0	0	0	2	0	0	4	0	0	**11/1**
Auk sp.	0	0	0	1	0	0	2	0	1	3	0	0	**7**
Total birds	**11**	**46**	**62**	**9**	**16**	**21**	**18**	**12**	**30**	**249**	**50**	**16**	**540**
Km surveyed	20.2	29.2	25.2	12.2	13.6	31.7	9.0	13.8	18.8	36.7	29.4	32.2	**272.0**
No. oiled birds	0	0	1	0	0	5	0	0	0	2	0	0	**8**
% oiled	0	0	1.6	0	0	23.8	0	0	0	0.8	0	0	**1.5**
No. oiled/km	0	0	0.04	0	0	0.158	0	0	0	0.054	0	0	**0.029**

Guillemots (0.6% of the total for the species). 1.3% of the Razorbills, 11.1% of the Little Auks and 11.1% of the Gannets were oiled. A small amount of light oil was seen along the tideline at Cheswick/Cocklawburn (North Northumberland) on 7 December.

Table 3 Length of NE England coastline surveyed during 2005, split by area/county: NN-North Northumberland, MN-Mid Northumberland, SN-South Northumberland, T&W-Tyne and Wear, Cle-Cleveland.

	NN	MN	SN	T&W	Cle	Total
Jan	18.7	1.2	7.0	2.8	5.0	**34.7**
Feb	28.2	1.2	6.5	1.8	3.0	**40.7**
Mar	21.5	1.2	6.0	6.8	6.0	**41.5**
Apr	16.5	3.2	6.0	3.8	0.0	**29.5**
May	16.5	3.2	5.5	1.8	1.5	**28.5**
June	18.3	1.2	4.0	1.8	7.0	**32.3**
July	15.8	3.2	6.0	2.2	1.5	**28.7**
Aug	18.3	2.0	5.6	3.4	3.5	**32.8**
Sept	20.0	3.2	7.5	1.8	6.0	**38.5**
Oct	20.0	3.2	7.5	1.8	3.5	**36.0**
Nov	20.0	1.2	7.5	2.2	8.0	**38.9**
Dec	17.5	3.2	7.5	3.8	5.0	**37.0**
Total	**231.3**	**27.2**	**76.6**	**34.0**	**50.0**	**419.1**
Avg	**19.3**	**2.3**	**6.4**	**2.8**	**4.2**	**34.9**

Ringing Recoveries (2004-2005)

This summary indicates the ringing information received, generally from the British Trust for Ornithology (BTO), of where and when the birds were ringed, etc. Details of where and when the birds were found dead are recorded along with the finder's initials (see acknowledgements). Professor M P Harris (Centre for Ecology and Hydrology, Banchory) provided much Shag data since he has been involved in their study for many years on the Isle of May, from where a number of our corpses originated (Table 5).

Corpses other than birds (2004-2005)

The surveyors also record other corpses found on the shore and during the period these included octopus sp., Grey Seal, Harbour Porpoise and Otter.

DISCUSSION

We have learnt much from the beached bird surveys of 2004 and 2005 in north-east England, and the survey work has continued subsequently. As a consequence a further report should follow for the period 2006-2007.

During the NE England beach surveys we recorded a wreck of 214 auk corpses (including 198 Guillemots, see Table 2) in October 2004. In addition to our survey data other information came to light of more auks affected during October 2004 throughout our survey area. For example: seventeen Guillemot corpses were handed to a vet in early October in county Cleveland; there was a report of what were probably Guillemot corpses on Roker beach (Sunderland, Tyne and Wear) in mid October, which were cleared away by local council workers; at Blyth, in mid month, four Guillemots were observed swimming in the harbour; in the Holy Island area it was reported that thin live Guillemots were being hand-

Table 4 Summary of bird corpses found in NE England during 2005 beached bird surveys. For each species, the first figure is the total found, the second is the number oiled.

Species	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Great Crested Grebe	0	0	0	0	0	0	0	0	0	0	1	0	**1**
Fulmar	1	0	4	0	2	1	2	1	0	0	0	0	**11**
Gannet	0	**2/1**	0	2	1	0	0	0	0	2	1	1	**9/1**
Cormorant	1	8	2	0	0	0	0	0	2	1	0	1	**15**
Shag	3	26	8	7	2	1	0	0	1	2	1	1	**52**
Mute Swan	0	1	0	0	0	0	0	0	0	1	0	0	**2**
Pink-footed Goose	0	0	0	0	0	0	0	0	0	0	0	1	**1**
Shelduck	0	0	0	0	0	0	0	0	0	0	0	1	**1**
Mallard	0	0	0	0	1	0	0	0	0	0	0	0	**1**
Tufted Duck	0	0	1	0	0	0	0	0	0	0	0	0	**1**
Eider Duck	0	3	1	2	2	1	1	0	2	0	0	1	**13**
Kestrel	0	0	0	0	0	0	0	0	0	0	1	0	**1**
Woodcock	0	0	0	1	0	0	0	0	0	0	0	0	**1**
Knot	1	1	2	0	0	0	0	0	0	0	0	0	**4**
Wader sp.	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Black-headed Gull	4	1	1	4	0	2	2	1	4	1	1	1	**22**
Common Gull	2	3	2	0	1	0	2	0	1	3	2	3	**19**
Lesser Black-backed Gull	1	0	0	0	0	0	1	2	0	0	0	1	**5**
Herring Gull	3	**3/1**	1	1	3	4	9	11	1	3	1	5	**45/1**
Great Black-backed Gull	3	1	0	0	0	0	0	1	0	0	1	1	**7**
Kittiwake	1	0	1	1	0	1	5	1	0	1	1	1	**13**
Gull spp.	0	0	0	0	0	0	1	0	0	1	0	0	**2**
Sandwich Tern	0	0	0	0	1	1	0	1	0	0	0	0	**3**
Common Tern	0	0	0	0	0	0	1	1	0	0	0	0	**2**
Guillemot	44	**107/2**	59	22	6	4	9	4	8	38	19	24	**344/2**
Razorbill	5	41	**17/1**	1	1	0	2	1	4	3	3	1	**79/1**
Little Auk	**1/1**	4	4	0	0	0	0	0	0	0	0	0	**9/1**
Puffin	5	27	9	4	1	1	6	1	0	1	0	1	**56**
Auk sp.	0	1	4	1	0	0	3	1	0	1	1	1	**13**
Total birds	**75**	**229**	**116**	**46**	**21**	**16**	**44**	**26**	**23**	**59**	**33**	**45**	**733**
Km surveyed	34.7	40.7	41.5	29.5	28.5	32.3	28.7	32.8	38.5	36.0	38.9	37.0	**419.1**
No. oiled birds	1	4	1	0	0	0	0	0	0	0	0	0	**6**
% oiled	1.3	1.7	0.9	0	0	0	0	0	0	0	0	0	**0.8**
No. oiled/km	0.029	0.098	0.024	0	0	0	0	0	0	0	0	0	**0.014**

ed to the vet at Berwick. Of the Holy Island birds, two were examined and seen to be suffering from a severe nematode infection. Prof. Mike Harris also reported Guillemots being washed up in the Fife area (SE Scotland) during October 2004. In the January–March 2005

Table 5 Summary of ringing information for specific recoveries, grouped by species, continued on the following page with further explanations. Under the species name is the ring number and any other ring descriptions. Bird Age is the 'age' when ringed.

Species Ring No / Description	Bird Age Recovery	Date Ringed Date Found	Distance (km)	Time (days)	Place ringed Place recovered	Notes	Finder
Mute Swan *Cygnus olor*							
Z96770	Cygnet	29/08/04			Traquair Estate Pond, Peebles, Borders	Female	GDRM
	X	02/02/05	-	-	Holy Island, Northumberland		
Shag *Phalacrocorax aristotelis*							
White DXL	Nestling	29/06/00			Isle of May, Fife		DMT
	X	11/7/04	119	1470	Druridge Bay (north), Northumberland		
1247288 / Red DCP	Nestling	19/07/88			Isle of May, Fife	Ringed 1988. Red DCP ring added when recaptured as a breeding adult in2000.	GDRM
	X	26/12/04	74	6004	Holy Island, Northumberland		
1396704	Nestling	03/07/04			Craigleith, North Berwick, East Lothian		GDRM
	X	04/02/05	71	216	Holy Island, Northumberland		
1396532	Nestling	21/06/03			Craigleith, North Berwick, East Lothian		GDRM
	X	05/02/05	71	595	Holy Island, Northumberland		
1315180	Nestling	10/07/94			Isle of May, Fife		JP
	X	24/02/05	84	3882	Between Budle Point and Seahouses, Northumberland		
1336766 / White BTU	Nestling	26/06/97			Isle of May, Fife	Seen on the Isle of May in 2001, 2002 and 2003.	GDRM
	X	26/02/05	73	2802	Holy Island, Northumberland		
1302825	Nestling	23/06/91			Nigg, North Sutor, Highland		GDRM
	X	26/02/05	263	4997	Holy Island, Northumberland		
1375175 / White NLF	Nestling	06/06/00			Isle of May, Fife	This bird was seen 14 times on the Isle of May, and in all years from 2001-2004.	A&MHu
	X	27/02/05			Cheswick Shiel (NU 048865), Northumberland		
1345402	2+ years	15/07/98			Staple Island, Farne Islands, Northumberland	Male	JP
	X	18/03/05	5	2438	Near Bamburgh, Northumberland		
Eider *Somateria mollissima*							
HT81921	3+ years	03/06/99			Inner Farne, Farne Islands, Northumberland		GDRM
	X	24/04/05	12	2152	Holy Island, Northumberland		
Herring Gull *Larus argentatus*							
GA02280	Nestling	26/06/95			Isle of May, Fife		MAB
	X	16/03/04	204	3186	Saltburn-by-the-Sea, Cleveland		
Arctic Tern *Sterna paradisea*							
BTO ring		1977			Farne Islands, Northumberland		GDRM
	X	20/06/04		27 yrs	Holy Island, Northumberland		
Guillemot *Uria aalge*							
T07184	Adult	12/10/84			Isle of May, Fife	Male. Bred, Isle of May 1985-1994, 1998-2000, 2002 and 2004.	PC
	X	13/10/04	160	7306	Roker beach, Sunderland, Tyne & Wear		
T56152	Nestling	05/07/87			Sule Skerry, Orkney, Scotland		JP
	X	18/10/04	415	6315	Budle Bay, Bamburgh, Northumberland		
R68396	Nestling	26/06/05			Castle Craig, North Sutor, Highland Region, Scotland		MAB
	X	24/08/05	375	59	Hartlepool North Sands, Cleveland		

Recovery - X is the BTO recovery symbol for 'found dead'.

After the date ringed/date found column is the 'distance' travelled from the place of ringing followed by the elapsed time since ringing.

The 'place ringed/place recovered' column and the 'notes' plus 'finder' (see acknowledgements) columns are self-explanatory.

period there was another prolonged wreck recorded involving 328 auk corpses, leading to a combined period from October 2004 to March 2005 with an overall minimum of 580 auks (441 Guillemots) in our recording area.

In a national context, the results accord well with the RSPB's February survey, with low numbers of auks in late winter of 2003/04, but much higher numbers in 2004/05. The national survey also recorded the wreck of Shags in early 2005, which in NE England may have peaked in February but only tailed off by May. Five of the seven ringed birds found during this period came from colonies in the Firth of Forth, where breeding numbers decreased by over 50% between 2004 and 2005 (Mavor *et al.*, 2006). From Appendix 2 it can be seen that in East Lothian 9-10 Shag corpses were found in March 2005. In April 2005 there were twenty-five dead Shags found on the shore of Inner Farne Island where there were ten recorded in May (Appendix 1). There is no national survey to record auk mortality in autumn, but relatively high numbers of Guillemots compared to recent years were recorded in Orkney and Shetland in October 2004 (Heubeck 2005, Meek and Wilson 2005).

Comparison of oiling data show 10.2% of a total of 501 auks were recorded as oiled in the RSPB national survey (Schmitt, 2004) for 2004 while for NE England 4.8% of auks were recorded as oiled in the Feb-March 2004 period and 2.5% for the full year 2004 (Table 5). For 2005 the RSPB national survey (Schmitt, 2005) recorded 3.9% of a total of 1,429 auks as oiled while for NE England 1.1% of auks in Feb-March 2005 were recorded as oiled and 0.8% for the full year 2005 (Table 6). Table 6 also shows other comparative oiling data. Refer to Table 6 for a comparison of oiling rates between NE England, Orkney (Meek and Wilson, 2005 and 2006) and Shetland (Heubeck, 2005 and 2006). In Shetland the percentage of oiled corpses, where oil was deemed to be the cause of death, was 1.5% in 2004 and 0.7% in 2005 (Table 7), the lowest recorded values in Shetland since beached bird surveys commenced there in March 1979 (Heubeck, 2006). In Orkney the percentage of oiled birds was 1.2% in both 2004/05 and 2005/06, which are also the lowest figures for the Orkney Beached Bird surveys since they were begun there in March 1976.

Comparing the numbers of auk and gull corpses per km for the same periods between NE England, North Norfolk (SE England) and East Lothian (SE Scotland) (Appendices 2 and 3), the following differences can be seen:

Location	Auks/km	Gulls/km	Period
NE England	0.77	0.27	Mar-Dec 2005 (10 months)
SE England	1.41	0.17	Mar-Dec 2005 (10 months)
NE England	1.07	0.38	Nov 04-Aug 05 (6 months)
SE Scotland	0.15	0.19	Nov 04-Aug 05 (6 months)

Using these small samples from SE England and SE Scotland, relatively speaking therefore NE England produced:

1. approximately twice as many gulls per km as SE England and SE Scotland
2. half as many auks per km as SE England
3. seven times the number of auks per km as SE Scotland.

In order to produce a better comparison we would require more shore to be surveyed in SE Scotland and SE England. However the surveys undertaken in these areas are nonetheless most useful.

Table 6 Oiled corpse percentage comparison between the RSPB national and North East England (NEE) surveys. Period covered by RSPB surveys: 21 Feb-07 Mar 2004 and 19 Feb-06 Mar 2005.

Species Group	% oiled 2004			% oiled 2005		
	National RSPB	NEE Feb-Mar	NEE Full year	National RSPB	NEE Feb-Mar	NEE Full year
Auks	10.18	4.76	2.50	3.85	1.10	0.80
Gulls (excl. Kittiwake)	5.14	0.00	0.00	3.45	8.33	1.00
Cormorant & Shag	2.47	0.00	0.00	0.72	0.00	0.00
Fulmar	13.10	0.00	0.00	6.17	0.00	0.00
Gannet	17.39	0.00	0.00	28.57	50.00	11.11
Kittiwake	0.00	0.00	0.00	3.57	0.00	0.00

In comparison to other European countries involved in the SNS Fulmar project, NE England produced relatively few corpses, but was able to supply some valuable data and to fill a gap in the North Sea shore coverage. For a full report of the NE England Fulmar corpses for 2003-2005 refer to Turner (in preparation): 'Save the North Sea' Fulmar project results for North East England 2003-2005'.

Table 7 Comparison of oiling rates between North East England, Orkney and Shetland beached bird data. The Shetland oiling figures relate to birds deemed to have been killed by oil, the North East England oiling figures relate to all oiled bird corpses (*i.e.* no distinction made between those oiled before/after death). The Orkney Year is from March to February of the following year and Orkney data for all (not just whole) corpses is shown here.

Location	Year	No. oiled bird corpses	Oiled birds as % of total	% of Guillemots that were oiled	No. oiled birds/km
NE England	2004	8	1.48	2.47	0.029
Orkney	2004	16	1.20	2.0	0.012
Shetland	2004	22	1.47	0.8	0.038
NE England	2005	6	0.82	0.58	0.014
Orkney	2005	13	1.20	0.5	0.013
Shetland	2005	9	0.66	0.00	0.016

ACKNOWLEDGEMENTS

Shag ringing information was supplied by Professor M P Harris (MPH) in addition to the BTO.

Many thanks go to the volunteer NE England surveyors during 2004-2005: Ross Ahmed (RA), Martin A Blick (MAB), Ray Chilton, Peter Collins (PC), Phil R Davey, Hew Ellis, Phil (Keziah and Otis) Gilbert, Malcolm Hutcheson (MHu), M Gordon Hyslop, George D R Moody (GDRM), Jenny Prince (JP), Geoff Siggins, Mick Simpson, Laurie Small, Daniel M Turner (DMT) and Michael Yianni – without the surveyors there would be no report.

Martin Heubeck kindly checked, commented on and improved the draft of this report and also provided advice on the organisation and running of Beached Bird Surveys. Appendix 1 photographs: Guillemot skull – Edward Soldaat; Common Seal tag – Steve Bexton; all others by the author. Thanks again to Ross Ahmed (Appendix 2), in addition to Margaret Sheddon (Appendix 3) and Steve Bexton and his team in Norfolk (Appendix 4). Please accept apologies for any omissions.

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APPENDICES

Appendix 1 A selection of photographs taken during the survey.

Figure 1 Guillemot
Adult winter plumage.

Figure 2 Guillemot skull,
prepared by Edward Soldaat.

Figure 3 Little Auk in winter plumage, with small amount of oil near vent and tail.

Figure 4 Woodcock.

Figure 5 Herring Gull in second summer plumage with advanced bill colouration.

Figure 6 Common Seal hind-flipper tag (London Zoo).

Appendix 2 Beached Bird Survey results for Inner Farne in 2005.

This information was collected by Ross Ahmed while acting as a warden on the Farne Islands during 2005. The Farne Islands, off the north-east coast of Northumberland, support a large breeding seabird population (Steel, 2006). These data have not been included within the body of the report for NE England. No oiled bird corpses were recorded during the surveys.

Table summary: dead birds found during Inner Farne Island (0.8km) surveys during 2005.

Species	**Apr**	**May**	**Jun**	**Sep**	**Total**
Fulmar	1	0	0	0	**1**
Shag	25	10	3	0	**38**
Black-headed Gull	0	0	1	1	**2**
Herring Gull	0	0	0	1	**1**
Great Black-backed Gull	0	0	1	0	**1**
Lesser Black-backed Gull	0	1	1	0	**2**
Kittiwake	0	1	1	0	**2**
Razorbill	1	0	0	0	**1**
Puffin	3	0	0	0	**3**
Total birds	**30**	**12**	**7**	**2**	**51**
Auks/km	5.0	0.0	0.0	0.0	**1.25**
Gulls/km	0.0	2.5	5.0	2.5	**2.50**

Ringing Recoveries

This summary indicates the ringing information received from the BTO.

Manner of recovery: X - Found dead.

Lesser Black-backed Gull *Larus fuscus*

RING No	AGE	DATE	PLACE
GG52136	3 years +	29/11/87	Throckmorton Landfill Site, Hereford & Worcester.
		(X) 15/02/05	Inner Farne, Northumberland (RA).

Time since ringing: 6,377 days. Distance: 386km.

Kittiwake *Rissa tridactyla*

RING No	AGE	DATE	PLACE
EK53903	Nestling	01/07/85	Brownsman, Farne Islands.
		(X) May 2005	Inner Farne Island, Northumberland (RA).

Time since ringing: 7,258 days. Distance: 3km.

Appendix 3 Beached Bird Survey results for East Lothian in 2004-2005.

This information was collected by Margaret Sheddon of North Berwick, East Lothian, South East Scotland.

Table summary: dead birds found during East Lothian surveys, Nov 2004-Aug 2005.

Species	**Nov**	**Dec**	**Jan**	**Mar**	**July**	**Aug**	**Total**
Kilometres	3.0	14.0	11.0	2.0	2.0	1.7	33.7
Fulmar	0	0	0	0	0	0	0
Gannet	1	1	0	0	0	1	3
Shag	0	0	0	9-10	0	0	9-10
Eider Duck	0	0	1	0	0	0	1
Herring Gull	0	1	0	0	0	1	2
Kittiwake	0	0	0	0	1	0	1
Gull sp.	0	0	1	0	0	0	1
Guillemot	2	2	0	0	0	0	4
Puffin	0	0	0	0	1	0	1
Total birds	**3**	**4**	**2**	**9-10**	**2**	**2**	**18-19**
Auks/km	0.67	0.14	0.0	0.0	0.5	0.0	0.15
Gulls/km	0.0	0.07	0.09	0.0	0.5	0.59	0.19

Comments

The main 'tourist' beaches are cleaned in summer. A miniscule amount of oil was found on one beach at Eyebroughty on 2 December 2004. The 9-10 Shag corpses were found over a three week period during March 2005 on a small stretch of beach near the Seabird Centre, North Berwick. A dead Peregrine Falcon was found on a beach between Dirleton and North Berwick on 18 June 2005.

nearby, unaccompanied by epsomite, probably owe their origin to reaction between the magnesium-rich dolomitic limestone and sulphate-bearing ground water, possibly derived from the breakdown of traces of disseminated sulphides such as pyrite. The presence of such a readily water-soluble, and thus ephemeral, mineral in extensive crusts no doubt reflects the prolonged period of hot dry weather during the summer of 2006.

Simple chemical tests on exactly similar ephemeral efflorescent white crystalline crusts on other outcrops of dolomitic limestone and dolomite within the Magnesian Limestone, for example at Seaham Harbour [NZ433 493] and at Aycliffe Quarry [NZ288 223], suggest that epsomite may be of very widespread occurrence across the Magnesian Limestone outcrop of north-east England.

ACKNOWLEDGEMENTS

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CELESTITE FROM BARROW SCAR, NORTHUMBERLAND

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Celestite ($Sr\ SO_4$) has been identified, in some abundance, within impure limestones in the Lower Carboniferous (Dinantian) Cementstones Group, exposed in the banks of the River Coquet at Barrow Scar, in the upper Coquet valley.

At Barrow Scar [NT902 062], approximately 2km west of Alwinton, the River Coquet occupies a striking gorge cut through an alternating sequence of mudstones, sandstones and impure limestones (Miller, 1887). According to existing stratigraphical classifications, these beds comprise part of the Lower Carboniferous (Dinantian) Cementstones Group. Up to 50m of these beds are spectacularly exposed in the steep southern banks of the river, though good smaller exposures of similar beds are present at river level and in the northern bank.

The succession at Barrow Scar comprises thin sandstones and siltstones, typically 1m thick, interbedded with mudstone units up to 2m thick, and subordinate impure slightly dolomitic limestones, known locally as 'cementstones', up to about 1m thick. According to Turner and Heard (1995), the sandstones are typically ripple cross-laminated, micaceous, burrowed, and contain abundant plant debris. Rootlet traces are locally common in both sandstones and siltstones, especially where these are overlain by dark grey carbonaceous mudstone. Indeterminate plant fragments, clay ironstone nodules and locally examples of the arthropod trace fossil *Crossopodia*, are present within the mudstone units. Calcite-lined cavities, possibly indicative of the former presence of evaporite minerals such as gypsum or anhydrite, are present within some of the 'cementstone' beds. The beds exposed here may be interpreted as the products of a low-relief, semi-arid coastal alluvial plain (sabkha) environment.

At river level, and in the adjoining low cliff on the north bank of the river, up to 5m of interbedded mudstones, siltstones, sandstones and impure limestones are well exposed. Burrows are common in many of the sandstones and mudstones. Palaeosol horizons, distinguished by abundant rootlet traces, are common in the mudstone and siltstone beds. Several limestone beds, which range in thickness from 0.5 to 1m are conspicuous and weather out as prominent ledges. The limestones are slightly dolomitic and are mid grey on freshly broken surfaces, but exhibit pale buff colouration on weathered surfaces. Scattered shelly fragments and crinoid ossicles are present locally. Roughly ovoid, or slightly irregular, cavities up to 10cm across, which may represent original gypsum or anhydrite nodules, are locally common (Turner and Head, 1995). These are typically lined with white to pale cream coloured calcite in scalenohedral crystals, mostly up to about 5mm long. Celestite is conspicuous in the centre of many of these cavities where it overgrows calcite. The mineral has been identified by infra-red spectroscopy (G Ryback, pers. comm.) and X-ray powder photography (XE976, XE978*).

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SUPERGENE MINERALISATON IN COLLIERY SPOIL AT HAWTHORN HIVE, CO DURHAM: THE FIRST RECORD OF APJOHNITE IN GREAT BRITAIN

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SUMMARY

Supergene alteration of pyrite-rich colliery spoil, in a sea-spray environment on the Durham coast, has produced local concentrations of several iron sulphate species. Apjohnite, recorded here for the first time from Great Britain, has formed in storage on pyrite-rich fossil specimens from this site.

INTRODUCTION

Hawthorn Hive is a wide bay on the County Durham coast at the mouth of the deeply incised post-glacial valley of Hawthorn Dene. In common with much of the Durham coast, the beach at Hawthorn Hive is backed by cliffs of Permian Magnesian Limestone capped by glacial deposits, which here comprise mainly till and fluvioglacial sands and gravels (Smith and Francis, 1967). The Magnesian Limestone exposed in the cliffs at Hawthorn Hive belongs to the Roker Dolomite Formation, which is here a pale yellow collapse-brecciated dolomitic limestone.

Mine spoil, mainly comprising shale and sandstone, from several of the coastal collieries was, for many years, disposed of by dumping onto the adjacent beaches. Not only did this activity create large quantities of spoil adjacent to the tipping areas, but dispersal by long-shore drift resulted in the accumulation of significant deposits of spoil at numerous points along the coast. Large quantities of such waste, derived mainly from Dawdon Colliery, approximately 2km north of Hawthorn Hive, have accumulated in the Hawthorn area. Since the closure of Dawdon Colliery in 1992 coastal erosion has removed appreciable quantities of colliery waste from the nearby beaches. Substantial volumes of mine spoil have also been removed as part of an environmental reclamation programme, known as the 'Turning the Tide project' undertaken by Durham County Council. Large areas of the Durham coast are today returning to their condition prior to the disfigurement caused by many years of dumping of mine spoil.

Within Hawthorn Hive a significant volume of colliery spoil remains today as a storm beach platform, approximately 200m long and up to 50m wide, at the landward side of the bay [NZ4420 4610]. Some residual accumulations of spoil remain on the beach immediately south of Hawthorn Hive, and around Hive Point [NZ4433 4588], where small patches of spoil fill fissures and bedding planes in the limestone, and locally adhere to the lowest few metres of the limestone cliffs. Accumulations of identical spoil occur as similar, though smaller, storm beaches at the foot of the cliffs in Shippersea Bay [NZ4430 4538], approximately 750m south of Hawthorn Hive. The spoil mainly comprises grey mudstone in which pyrite is locally abundant as scattered grains and irregular nodules up to several centimetres across. Fragments of sandstone and clay ironstone are also common. Breakdown of the pyritic mudstones, and subsequent winnowing by wave action, have produced widespread accumulations of pyrite sand and pebbles, especially on the lower portions of the beach at Hawthorn Hive and around Hive Point. These sands are conspicuous by the characteristic dark brown superficial coating of iron oxide on the pyrite grains.

Chemical alteration of the colliery spoil has led to the development of a range of minerals, described below. In places these bind substantial parts of the spoil into a weakly cemented breccia, both in the storm beach accumulations and within the fissures in the cliffs.

MINERALOGY

A conspicuous feature of the colliery spoil at Hawthorn Hive, around Hive Point and in Shippersea Bay, is the local abundance of pale yellow, and locally white, crusts and efflorescent coatings of supergene minerals on and within blocks of pyritic mudstone, and within fissures in the limestone cliffs. Investigation of these deposits by X-ray powder photography has revealed a variety of minerals which are described below.

NATROJAROSITE

$NaFe^{3+}{}_3(SO_4)_2(OH)_6$

Soft, pale lemon-yellow crusts on bedding and fracture surfaces of mudstone, and haloes up to about 1cm wide surrounding clay ironstone nodules within the spoil, have been shown, by X-ray powder photography, to be natrojarosite (British Geological Survey X-ray numbers: XE 967, XE 968). Much of this material, when first collected, is extremely soft with a consistency of very wet clay. Several pockets, up to 1cm across, of compact, rather hard pale lemon-yellow natrojarosite (XE 975), with a dull earthy fracture, occur at Hive Point within fissures and open bedding planes which are filled with accumulations of colliery spoil. In these occurrences at least some of the natrojarosite appears to occupy small voids formed by the in-weathering of limestone fragments within the collapse-breccia. Deep brown limonite staining, presumably also a result of alteration of pyrite, commonly coats both the limestone and the natrojarosite.

Natrojarosite appears to be the most abundant of the supergene species within the spoil.

FERRICOPIAPITE

$Fe^{3+}{}_5(SO_4)_6O(OH).20H_2O$

During the summer months, pale yellow 'cauliflower-like' efflorescent crusts, up to 30cm across, of ferricopiapite (XE 996) are extremely common and conspicuous on the bare upper surface of, or on vertical sections on the seaward side of, spoil in the raised beach

accumulations at both Hawthorn Hive and Shippersea Bay. These concentrations are especially striking after prolonged periods of dry weather. They are much less conspicuous in moist or humid conditions, and disappear completely with prolonged rain and during most of the winter months. The crusts commonly form as broad haloes around smaller boulders of sandstone or clay ironstone.

ALUMINOCOPIAPITE

$AlFe^{3+}_4(SO_4)_6O(OH).20H_2O$

Much less common are similar ephemeral 'cauliflower-like' efflorescent crusts up to about 4cm across of a very pale yellow to yellowish white colour. X-ray diffractometry (Manchester Museum X-ray number: MANCH: XRD 840) has identified these as aluminocopiapite.

SIDERONATRITE

$Na_2Fe^{3+}(SO_4)_2OH.3H_2O$

In November 2000 an area of approximately 1-2m^2 of limestone, about 2m above the beach level, and partially covered with colliery waste, exhibited abundant bright, deep yellow efflorescent crystalline crusts. X-ray powder photography revealed this mineral as sideronatrite (XE 970). Cliff collapses during the early part of 2001 destroyed parts of this deposit and concealed parts of it beneath debris.

APJOHNITE

$MnAl_2(SO_4)_4.22H_2O$

Specimens of pyritised plant fossils, collected from the colliery spoil by one of the authors (JB), and stored in sealed containers, were noticed to have developed a superficial coating composed of abundant white to colourless acicular crystals up to 5mm long, after a period of several months storage. X-ray powder photography of this mineral revealed it to be apjohnite (XE 997).

GYPSUM

$CaSO_4.2H_2O$

Gypsum is abundant in parts of the spoil, as soft white coatings (XE 969) on mudstone and clay ironstone, and is commonly associated with natrojarosite.

CALCITE

$CaCO_3$

Calcite, of obvious supergene origin, has been identified (XE 966) as soft, white, rather earthy coatings on fracture surfaces of some sandstone and clay ironstone blocks within the spoil.

DISCUSSION

The presence of the iron sulphate minerals natrojarosite, ferricopiapite, aluminocopiapite and sideronatrite within colliery spoil at Hawthorn Hive is entirely consistent with the chemical reactions associated with the decomposition of pyrite in the presence of sea water.

Jarosite and its analogues are common supergene species resulting from the reaction between sulphuric acid, produced by the breakdown of pyrite, and clay rocks. Williams (1990) has observed that the abundance of the relevant cation determines which of the jarosite analogues will be precipitated. The abundance of sea water during the alteration process at Hawthorn Hive no doubt accounts for the presence here of the sodium analogue, natrojarosite.

The readily water-soluble mineral ferricopiapite, the ferric iron analogue of copiapite, is a common alteration product of pyrite and pyrite-rich rocks (*e.g.* Palache *et al.*, 1951). In northern England it has previously been reported by Smith (1973) from Groverake Mine, Weardale, and by Young and Nancarrow (1988) from abandoned coal workings near Aspatria, Cumbria.

The local occurrence of the aluminium analogue, aluminocopiapite, reflects some contribution of aluminium from the alteration of clay rocks within the spoil. This mineral is not known to have been recorded previously from northern England.

Sideronatrite is typically found with other supergene sulphates, as an alteration product of pyrite and pyrite-rich rocks in very arid regions (*e.g.* Palache *et al.*, 1951), though Ryback and Tandy (1992) report its occurrence, mixed with metasideronatrite, in specimens from Trerubies Cove, Cornwall, which may have formed in a sea-spray environment. More recently, Garvie (1999) has described sideronatrite as a weathering product of pyritic shales in a sea-spray environment at Barton-on-Sea, Hampshire, which bears many similarities to that at Hawthorn Hive. The only previous record of sideronatrite from north-east England is that of Randall and Jones (1966) who describe the mineral as a product of pyrite oxidation in deep underground workings in the Northumberland coalfield.

Apjohnite has not previously been reported from Great Britain.

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ERRATA

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New records of supergene minerals from the Northern Pennine orefield

By B Young, E K Hyslop, T F Bridges and J Cooper

On page 211 the following chemical formulae should be:

BEUDANTITE $\mathbf{PbFe_3^{3+}(AsO_4)(SO_4)(OH)_6}$

CALEDONITE $\mathbf{Cu_2Pb_5(SO_4)_3CO_3(OH)_6}$

On page 212 the following chemical formulae should be:

ERYTHRITE $\mathbf{Co_3(AsO_4)_2{\cdot}8H_2O}$

JAROSITE $\mathbf{KFe_3^{3+}(SO_4)_2(OH)_6}$

TRANSACTIONS
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ANNUAL REPORT
OF THE
COUNCIL
FOR THE
YEAR ENDED 31 JULY 2006

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ANNUAL REPORT OF THE COUNCIL FOR THE YEAR ENDING 31 JULY 2006

Objectives and Activities

The Natural History Society of Northumbria is a registered charity and is governed by the rules of the Charity Commission. The objects of the Society, as set out in the constitution which was adopted by the membership at the Annual meeting held on 3 December 2004, are **'the encouragement by every means of the study of natural history in all its branches and the conservation of the natural environment in the north east of England, including its geology, flora and fauna'**. To further these objectives the constitution requires that the Society shall:

a) 'endeavour to ensure that the building and grounds of its property, the Hancock Museum and all its collections are maintained and, where appropriate, the collections are extended and made accessible to the general public' - to this end the Society has been working very closely with Newcastle University on a major refurbishment of the Museum costing some £25,000,000 which will provide improved display and storage facilities for the collections. The Museum is currently closed whilst this work, due to be complete by early 2009, is in progress. In the meantime arrangements have been made for as much as is practical of the collections to be viewed and consulted.

b) 'maintain and expand the Society's library' - library facilities will be improved by the present project and there is an ongoing programme of book purchases. A small library remains available to members during the closure. The Heritage Lottery Fund (HLF) Archive Project, now completed, has also highlighted the extensive range of material available to members and the general public.

(c) 'publish the *Transactions* of the Society and other scientific papers' - two volumes of the *Transactions* have been published during the year.

(d) 'organise lectures, discussions and field meetings' - a full programme of field and indoor meetings has been arranged during the year which is described more fully within this report.

(e) 'Co-operate with other scientific bodies and organisations with similar objects' - the Society works with a wide range of organisations including Wildlife Trusts, RSPB, Natural England, Local Councils, especially their ecological and planning departments and other Museums. Details are described more fully within this report.

(f) 'establish specialist sections within the Society' - such sections have long been established and are all active .

(g) 'maintain Gosforth Park Nature Reserve for so long as it holds the lease, and any other reserves the Council may consider appropriate' - the Gosforth Park reserve has been maintained during the year and negotiations are in progress for an extension of the lease to enable grants for improvements to be sought.

The voluntary input of our members is vital to the continued furtherance of our objectives. It has been calculated that the value of volunteer input in the archives project alone is valued at £47,635 during the current year. In total the Society has seventy-eight active volunteers who work in a wide range of tasks such as leading field meetings, giving lectures,

running the sections, office work, committee work, delivering publications and maintenance work in the reserve.

INTRODUCTION

This year has been dominated by the Great North Museum Project and all the changes that it has made to the activities of the Society and its members. On 22 September we signed the historic 'Memorandum of Understanding' which allowed the development to go ahead while safeguarding the interests of the Society. The Hancock Museum closed to the public on Sunday 23 April and our staff and volunteers have helped the Museum staff pack the Society's collections, library and archives. As this report period comes to an end on 31 July 2006, the Museum is full of packing cases ready to go into store and the Society is preparing to leave the building for its temporary home at 3-4 Claremont Terrace.

The Council was concerned that throughout this period the normal activities of the Society should continue with a full lecture and field meeting programme and that its sections should endeavour to maintain their activity levels. The current report shows that this has happened and that the Society has continued to increase its membership, fulfil its objectives and in many areas such as the Archives, Gosforth Park, the Northumbria Mammal Group and the Ringing Group has increased its range of activities with new initiatives.

It is recognised that the full effect of the closure of the Museum will not be felt until the following financial year and we trust that the members will continue to support the Society and its events until we can once again return to our home in the revitalised Hancock Museum and look forward to our 200th Anniversary in 2029.

STRUCTURE, GOVERNANCE AND MANAGEMENT

The general management and conduct of the affairs of the Society, its property, the investment and expenditure of its funds and the enforcement of its constitution are the responsibility of an executive body called the Council. The Council comprises the following who are elected at the annual meeting: up to ten vice-presidents and an honorary treasurer, who stands for one year but may be re-elected; a representative proposed by each section and such additional members proposed by the members, who are elected for three years. In addition the Council comprises up to three members nominated by Newcastle University. All members of the Council are Trustees of the Society. The President of the Society, who is elected by the members, is entitled to attend all meetings of the Society but is not a Trustee.

The governing document is the constitution and the charity is constituted as an unincorporated association. Whilst the Council oversees the general management of the Society, more detailed management is provided by the General Purposes Committee (GPC). This is chaired by the chairman of the Society and consists of the honorary treasurer and Trustees appointed by Council.

Other sub-committees are as follows: Investment sub-committee, which is appointed by Council and has no fewer than three members with delegated powers to manage jointly the Society's investment portfolio; section sub-committees, who can elect their chairman and representative on Council; and the management of the Hancock Museum which is vested in a management committee of Newcastle University which includes up to three representatives appointed by Council from those of its members who are not on the staff of the University, together with an equal number of University representatives and a chairman provided by the University.

The senior member of staff is the Secretary who is responsible for the smooth running of the Society and has such delegated powers as the Council shall decide.

MEMBERSHIP

The total membership on 31 July 2006 (with 2005 figures in brackets) was 882 (869). This was made up of 7(7) honorary members, 41(41) life members, 522 (524) members who receive *Transactions*, 266 (261) members who do not receive *Transactions*, 42 (30) associate members and 6 (8) complimentary members. Although the increase in membership overall is only thirteen, this represents the fifth successive year in which membership has risen. (Please note that the reason for the total not adding up to 882 is that the Society has two life members who are also honorary.)

During the year the Society was informed of the deaths of six members: Mr D C Souter (1949), Dr T G Walker (1959), Dr C Gurney (1991), Mr J M Watt (1994) and Mr I Dorley (2000). The years in brackets are the dates of their election.

ANNUAL MEETING

The Annual Meeting was held on 2 December 2005 and the Chairman, Professor Peter Davis, outlined from the Annual Report some of the important events. He made particular reference to the Museum development and thanked Dr David Gardner-Medwin, Dr Brian Selman and Mr Ian Moorhouse for their efforts in liaising and negotiating with the University concerning the Memorandum of Agreement that was necessary for the development to take place. He said that since the Annual Report had been published the Memorandum had been signed and the development was moving on to the next stage. He thought that the future of the Museum was very bright and the Society had an exceptional opportunity to increase its profile when the new Museum opened. He said that the Annual Report reflected the varied activities of the Society, particularly by the sections, and noted that the Mammal Section had greatly increased their membership and their range of outings and speakers during the last year. He also mentioned that Gosforth Park continued to be a very significant asset for the Society and said that we were moving towards a new lease agreement with the Racecourse Company which would secure the future of the reserve.

At the end of the business the Society's President, Mr James Alder, thanked the members for re-electing him and said that he was very proud to be part of the Society. He reminisced about his early days visiting the museum, noting how Miss Gladys Scott had allowed him into the museum to draw birds when he did not have a penny for the turnstile, and also the help of the attendant, Mr Bennett, who were both mentioned in Goddard's 1929 *History of the Natural History Society*. He said that of great importance were the very detailed histories of the Society written by Russell Goddard (1929) and Grace Hickling(1979) and mentioned that at the beginning of Goddard's book he had said that due to lack of money there were very few illustrations. Mr Alder felt that this was a great pity and said that he personally would like to do something about the next *History* when the Society was two hundred years old. To forward this idea - although he was not completely certain that he would be available at the time as he would be 109 years old but would be there in spirit - he presented a cheque to the Chairman as the first stage in developing a fund for a highly illustrated and detailed *History* that would be published for the 200th anniversary of the Society.

This concluded the business of the meeting after which there was a tour of the storage areas in the museum to see the collections. This would be the last time that such a tour would be undertaken, as the Society's collections will be moved into new permanent storage in the basement of Newcastle Discovery Museum as part of the planned development of the museum.

GREAT NORTH MUSEUM PROJECT

The signing of the Memorandum of Understanding. From right to left: David Gardner-Medwin, Deputy Vice Chancellor Professor Goddard, Ian Moorhouse and Jonathan Hewitt.

The Great North Museum Project has taken up a major part of the Society's time during the year. In the autumn the focus was mostly on completion for the Memorandum of Agreement which safeguards the interests of the Society for the future when the new museum opens in 2009. This legal document was signed in the Society's Council Room on 22 September with the Deputy Vice Chancellor representing the University and David Gardner-Medwin, Ian Moorhouse and Jonathan Hewitt signing on behalf of the Society. Council would like to congratulate them on creating an excellent legal framework for the project in an atmosphere of co-operation and goodwill between the University and the Society.

As the New Year arrived the Heritage Lottery Fund announced that the second stage of the bid for the Great North Museum Project had been accepted. This meant that the Museum would close to the public on 23 April and the collection and everything, including staff, would have to move by the beginning of October. The intensity of activity towards the closure of the Hancock increased and detailed planning of how to move 500,000 items safely began. The Society was particularly concerned with the library and the office. The main problem was to decide what would be needed for the next two years and what could go into store. All the sections were asked by the Library committee to earmark books and

archives that they would need. The details of the move are under 'Library' later in this report. However, Council would like to thank Hugh and Stella Chambers and David Gardner-Medwin for their devotion in making sure that the contents of the library were packed correctly so that in two years' time they will be re-shelved in the right order.

The Project Office arranged a presentation to the volunteer members of the organisations in the Project. This took place in the King's Hall on 23 March and was attended by between 200 and 300 members of the Society of Antiquaries, the Friends of the Hatton Gallery and the Society. There was an introduction by Eric Cross, Dean of Cultural Affairs, regarding the present state of the project and how it fitted into the wider concept of Newcastle's Cultural Quarter. This was followed by an overview of the design and general layout of the proposed galleries by Lindy Gilliland, Great North Museum Project Officer.

Jon Williams from Casson Mann, the Gallery Design Team, outlined how the galleries would reflect the collections and how they hoped to link the various strands together. After this there was a question and answer session with Lindy Gilliland, Jon Williams, Steve McLean for the Hancock Museum and Lindsay Allason-Jones representing the Museum of Antiquities and Shefton Museum of Greek Art and Archaeology. Members of all the organisations asked questions ranging from the retaining of particular aspects of the present galleries to the problem of parking.

Museum staff and Society representatives continue to consult on the designs of the new Hancock galleries, the office and lecture theatre space and the grounds. This work will continue to increase in intensity as we move into the next phase of the development.

This report ends with the Hancock galleries full of boxes of packed specimens waiting to be moved, with only August and September left in which to complete the move.

COUNCIL

Although much of the focus of the Society has been the Museum Project, the other business of Council has continued. The repatriation of Australian and New Zealand human remains was discussed and taken forward during the year. The exhibition of some items from the collections during the closure of the Museum was agreed with Tyne and Wear Museums and the temporary storage of the collections was discussed as a matter of high priority. All the matters covered by this report were discussed at Council and where necessary decisions were voted on.

The April meeting was held shortly after the Museum had shut its doors to the public and the work of packing had begun in earnest. The July meeting of Council was the last to be held in the 'old' Council Room and although the furniture and pictures will return to the Museum, meetings will be held in a new extension at the back of the building. Council members were enthusiastic about the many improvements it will mean for the building and for the operation of the Society itself. By the July meeting the full enormity of the changes were becoming more obvious, as were the hundreds of packing cases filling the galleries.

cations and to thank the many officers of the Society who put in numerous unseen hours making sure that our charity is properly run and managed. Also the lecture programme and the field meetings rely on the voluntary help both of our expert members and the many lecturers who travel from all over the country to keep members informed about the latest research and developments in conservation.

MUSEUM MANAGEMENT COMMITTEE

This committee, with members representing the Society, Newcastle University and Tyne & Wear Museums service, is chaired by Dr Eric Cross. The Society representatives are listed on page 4.

The Committee met on three occasions during the year and, as last year, the main focus of the discussions were the Museum development and the wider developments within the Cultural Quarter. The progress of the project is covered throughout this report and all the various strands of the project were discussed at these meetings.

Other matters that required the attention of the Management Committee were the repatriation of Australian and New Zealand human remains that are part of the Society's collections. After careful consideration the Committee agreed that they should recommend that Council give its permission for the artefacts to be returned. Arrangements for the handover of the Australian remains (NEWHM: S0718 and S0730) have been made and the New Zealand material (NEWHM: C011, C012 and C013) is part of an ongoing research programme into its origins which is being co-ordinated by the Tyne and Wear Museums staff and with discussion with the National Museum of New Zealand (Te Papa Tongewara).

DICKINSON MEMORIAL TRUST

The Fund was set up last year to commemorate the 137 years of continuous service as honorary officers which Tony Dickinson, his father and grandfather gave to the Society and to help fund small projects within the Society. Eligible projects must be making a contribution to our knowledge of the local fauna or flora and be undertaken by Society members or Sections. By the end of March there were three applications from Sections of the Society. The General Purposes Committee assessed them and recommended to Council that the money should be divided between two of the projects.

Veronica Carnell with the squirrel monitoring feeder.

Firstly, to help with the 'Save the Red Squirrels in Gosforth Park Project' which is funded by the Society with help from both North Tyneside and Newcastle City Councils through their Biodiversity Action Plan, Veronica Carnell required more hair-collecting feeders to increase the monitoring of the approach of Grey Squirrels. These are placed all round the whole of the Park and are regularly monitored for the presence of Grey Squirrels.

The second project chosen was the research into adult survival and weight biometrics on Arctic Terns being carried out by the Society on the Farne Islands and Coquet Island. To help with this the Ringing Group required extra equipment to facilitate catching the adult birds. This season the Group caught over 170 adults, comprising both new birds and retraps from earlier years: eight of the retraps turned out to be twenty-three or more years

of age. Results of this year's work are mentioned in the Bulletin under 'Seabird studies'.

The Council agreed that both projects deserved help and the money was divided between them.

Ringers working on adult survival in Arctic Terns.

LIBRARY

The packing of the contents of the library started on 12 June and was completed in September 2006. There are 700 plastic crates ready to go into store for the next three years, approximately seventeen and a half tons of paper. The fledgling library remains to join the office in our temporary home in Claremont Terrace. This amounts to the system of boxes arranged to receive incoming serial publications together with those books and journals requested by members to be available, all needing forty metres of shelving.

For the first ten months of the year the library functioned as normally as possible although we were subjected to an inspection by a 'Conservator' who gave advice on items needing special protection during storage, and then a 'Valuer' to make a necessary assessment for insurance purposes. The extra protection called for was given and the special crates needed for oversize items were decided on. The actual crating was accomplished with the help of two members of the packing team for three weeks but the organisation and bulk of the work was carried out by David Gardner-Medwin together with volunteers. To record 'what went where' and to provide crate labels our Secretary devised computer programs to cater for both books and serial publications and an operator was present throughout.

Hugh and Stella Chambers entering the books into the packing database.

The routine service to members, researchers and students continued and the library has been staffed by volunteers every Wednesday, although the Friday opening was suspended when Kati Russell withdrew from voluntary work. Kati contributed to a lot of routine library work during her time with us, and she is sincerely thanked for her efforts.

As usual the direction of library affairs was controlled by the library committee, which meets four times a year. The members are Hugh Chambers (chairman), Paddy Cottam (mammals), Peter Davis (marine biology), David Gardner-Medwin (history of natural history), Trevor Hardy (geology), June Holmes (archives), and David Noble-Rollin (ornithology). Sadly, Dr Trevor Walker died in January and the committee that he served so steadfastly for many years will sorely miss his presence and advice on botanical matters. Dr Bill Pickering has agreed to represent the botany section in future.

During this financial year forty-one books were purchased covering all aspects of natural

history. Ornithology was catered for, notably with the acquisition of Volume 10 of the *Handbook of Birds of the World*, the BOU publication *The Bird Atlas of Uganda*, *Birds Britannica* and *Birdwatching sites in the Scottish Highlands*. Geological books included such odd titles as *Plows, Plagues and Petroleum* and for the botanists we purchased the *Guide to British Upland Vegetation*, Sell and Murrell's *Flora of Great Britain and Ireland* and a BSBI publication *Changes in the British Flora 1987-2004*. The publications from Collins New Naturalist Library this year were *Mosses and Liverworts*, *Bumblebees* and *Gower*. We also purchased the second editions of *The New Naturalist* and *The Highlands and Islands* in the same series. Other items included two more volumes of the correspondence of Charles Darwin covering 1864-65, four small books from the Mammal Society on *The Badger, The Pine Martin, Fallow Deer* and *Bats* and *Atlantic Salmon*, an illustrated natural history by local artist Rod Sutterby. There were twenty-two further purchases.

Eighty books were donated this year, thirty-one from the Museum when they were clearing the decks to go into storage and which were considered more suitable for our library and accepted by us. Of the others, thirteen were from David Gardner-Medwin,and the rest from June Holmes, Michael Turner, Les Jessop, Muriel Woodward, Brian Selman and other generous friends. The Society is very grateful to them all.

More than 304 items of serial publications (Journals, Transactions etc.) were received from throughout the world by exchange, subscription and donation. All were recorded, scanned for any articles or papers that are particularly relevant to the Society and then shelved, to be available ultimately for binding. The library continued to be serviced by the office staff. Margaret Evans has worked steadily during the year on the paper work involved in dealing with serial publications and the exchange system and also arranging the binding of periodicals. Twenty volumes were sent for binding to become a permanent part of our collection. She has also set up the system of boxes for the receipt of these items when we move to Claremont Terrace.

In addition to Margaret Evans other volunteers gave assistance during the year, in particular Stella Chambers, Martin Evans, Trevor Hardy and Norman Moore. The Society thanks them all for their indispensable work.

With the fate of the library this year, moving from its originally designed base, its future in a new building and its housing together with two other libraries, it seemed only fitting that the subject of the library evening would be the library itself. Who better to talk on this than David Gardner-Medwin. He took control of the library from Grace Hickling and nurtured it for many years until he became the Society's Chairman. For the last few years he has represented the Society in all the planning for the future. On 20 January he reviewed the range and depth of the collection, revealing some of its hidden secrets and displaying many of them. He then discussed the proposals for the future. All who attended enjoyed a very informative evening.

ARCHIVES

The three-year *Archive Project*, generously supported by the Heritage Lottery Fund, has gone from strength to strength with this year proving to be the most successful and the busiest.

Our archivist, June Holmes, has supervised the project and the numerous archive volunteers in what has been a most rewarding year. Her remit was to publicise and promote our

archives to the members and the general public which she has done with flair and dedication. Unfortunately, the closure of the Museum has curtailed some of her work in this area and during the last few months she has had to concentrate on packing and preparing the archives for storage and their subsequent return to the new library in 2009. The honorary librarians and the archivist have also spent many hours liaising with the staff of the Great North Museum Project on the subject of the new library.

The highlight of this year has been the research and conservation work which culminated

in the production of the exhibition *The Watercolour Drawings of British Nudibranchs* by Albany Hancock. The exhibition, which opened on 17 February 2006 to celebrate the 200th Anniversary of the birth of Albany Hancock, one of the Society's founder members, was a great success combining both archival material and educational information on Nudibranchs (Sea Slugs).

The participation of Bernard Picton, Curator of Marine Invertebrates at the Ulster Museum, was an added bonus. His expertise and wonderful colour photographs of Nudibranchs provided a memorable addition to the exhibition.

In co-operation with Newcastle City Council, we were delighted to acknowledge John and Albany Hancock's great contribution to the study of natural history. They have brought international renown to the city of Newcastle, which was duly recognised with the placing of a commemorative plaque at the site of their former home, number 4 St Mary's Terrace, just across the motorway from the Hancock Museum. The plaque was unveiled by the Lord Mayor on 27 March as a lasting tribute to two very remarkable men.

We were very active over the year organising other events to enable members of the public and Society members to see for themselves the wealth of archival treasures we have in our collections.

Once again our event for the Civic Trust Heritage Open Days in September 2005 was a great success. June Holmes led four tours around the museum, a total of forty members of the public. They were given a talk on the history of the Society in the Council Room, and then taken through the Museum galleries to look at specimens of particular interest with respect to our archives. This was followed by a visit to the Society's library to look at a display of some of our more interesting books, with talks given by Stella Chambers and David Gardner Medwin.

The visitors were duly impressed and wrote some very complimentary comments in our visitor's book including 'Great, more please', 'A revelation!' and 'Exceptional tour, interesting. Library is inspiring!'

The John Marley and Moorside Local History Groups joined us again in January 2006. They were treated to a Powerpoint presentation on the topic of the Hancock Museum during World War II. Archives relating to this were displayed in the Council Room, supervised by Ann Stephenson. The groups were then taken on a gallery tour mainly looking at the history and construction of the museum.

After the tour the groups were treated to an early recording of Sparkie the Budgerigar in 'Sparkie the Fiddle', where Sparkie is cast in the part of a gangster! The groups thoroughly enjoyed their morning at the Hancock and were sad that this was to be their last visit for a number of years.

In February a group of adult education students from the second *Discovering Bewick* course, organized by Sunderland University, was given a two-hour introduction by June Holmes to our Bewick collection of watercolour and pencil drawings. The students expressed their appreciation at being given access to original Bewick material.

June Holmes led an Archive Gallery Tour in March 2006 during Science Week. This covered the Museum galleries and the history of the Society together with the collections and the architecture of the Hancock Museum. It ended with a visit to the Nudibranch exhibition.

This year June Holmes has concentrated on taking groups of people around the museum, talking about the history and telling the stories behind some of the items in the collections. This has proved very popular with all the groups who thoroughly appreciated having the exhibits interpreted for them, and it was a wonderful way in which to incorporate collections, archives and history. Students from both the University of Northumbria and Newcastle University were also taken on tours.

As always, our archive volunteers have worked hard in their chosen areas with commitment and interest. Although the disruption to the library due to packing has caused some disturbance to the volunteers many of them have persevered with their work. Ann Stephenson has completed her enormous task of transcribing some 1,700 letters in the John Hancock correspondence archive and is now finalising the cataloguing. The plan for a website on John Hancock and his letters has been delayed due to the museum closure and archival packing.

Barbara Harbottle has continued to support the archives and her work on cataloguing the botanical drawings of Margaret Dickinson has now been transferred to our website where all the 450+ watercolours are available to view. The preparation of the web pages was funded by NEMLAC (now MLA North East) and designed by Ian McKie.

Nigel Sprague continued his work on the preparation of an archive database of Society members from 1829-1950. Colin Storey and Megs Rogers carried on with their projects, transcribing the journals and letters of the entomologist Thomas John Bold.

One of our most important tasks, prior to the closure, was to make a photographic record of the Society's furniture, paintings, artefacts etc., as well as recording day-to-day life in the Museum. Graham Steane, our volunteer photographer, rose to the challenge ably tackling the many strange items we have requested, from large museum exhibits to Grace Hickling's walking stick.

Dr Parameswaran has finished his work on cataloguing the letters of the geologist William Hutton and has moved on to transcribing some early Society correspondence.

Michael Kerr and Simon Lowe, from Newcastle City Council's 'Workfirst' voluntary work experience team, worked with us once a week. Michael is currently re-typing the life history of Sparkie the famous talking budgerigar and Simon scanned old museum photographs for future use.

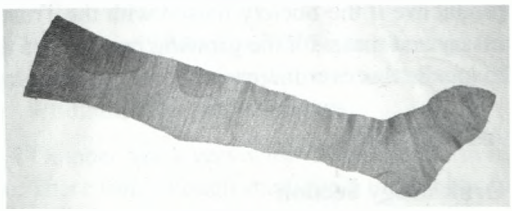
The wonderful watercolours of shells by George Gibsone have been recorded and catalogued by Margaret Johnson.

As always our librarians Hugh and Stella Chambers are a tremendous support to the archive project as are David Gardner-Medwin, David Noble-Rollin and Stuart Will.

Recent accessions to the archives include:

X-rays of the mummified remains of a hawk from Egypt. Presented by Dr B Selman.

Thomas Bewick's nettle stocking given to him by George Gray. This is the partner to the stocking already in our collections. Donated by Bewick expert Dr Iain Bain.



A rare draft manuscript by William Hutton entitled 'Observations on Coal' for a paper given to the Royal Geological Society in 1833. Presented by Dr J M Jones.

Original Thomas Bewick wood engravings collected by George Clayton Atkinson, which includes a unique manuscript memoir of Bewick pre-dating the one published in Volume I of the Society's *Transactions*. Five volumes. This extremely important item came up for auction at Anderson and Garland and was purchased by the Society with the help of a private benefactor.

Transcript archive of letters to Leonard Jenyns held at the Bath Royal Literary & Scientific Institution kindly supplied by Professor Ian Wallace. This includes letters from local North East naturalists.

We are always grateful for new accessions. As the digital age takes over, manuscript records and letters are becoming less available to the archives and we must now all look to our computers as the store of historical information - the dreaded e-mail has already replaced correspondence. Think carefully before you press delete!

The archives have generated a lot of publicity this year and information about archives and the history of the Society has been featured on our website, hopefully to keep members of the Society and the public informed and interested. Most of the archives have gone into storage during the closure but a selection of the most often requested items, including the Bewick collection, have been re-housed with Tyne and Wear Archives Service at the Discovery Museum, Blandford House. Access to these items can be obtained on application to the Society's Archivist or the Secretary.

The *Archive Project* sadly comes to an end in September 2006 but we hope to find other grants to enable us to carry on and build on the success of the last three years.

The history of the Society and its collections is one of our greatest assets: building on this strength can only reinforce the importance of both the Society and the natural history of the North East.

CONSERVATION AND PLANNING APPLICATIONS

During the year David Gardner-Medwin looked at a number of planning applications and brought some of these to the attention of the Council when he thought we should object to the proposal. The first was a wind farm to be sited near Wanney Crags, which is a medieval landscape with the crags themselves having important bryophytes and lichens. He felt that the foundation of the structures, which would be 360m tall, could affect the drainage. The second was that there were some conservation issues with the proposed dual carriageway between Morpeth and Felton which would cross several waterways and diverge in part from the present road. He also brought to the attention of Council the proposal for four wind farms in the Kirkwhelpington area near Plashetts and appealed to Council members for any wildlife information.

In April he reported to Council that the Northumberland Wildlife Trust had received information on six wind farm proposals and the Society only one. He felt that it would be more productive if the Society liaised with the Trust and supported their objections where necessary and that with the growing pressure of the Museum Project the Society was unable to handle this ever increasing work load of planning applications.

ACTIVITIES

Ornithology Section

On 30 September Keith Bowey, Project Manager for the Northern Red Kite project, came to update members on the second phase of the project and to explain the purpose behind it. He was able to confirm that the success rate of the releases had been very high and that they had been able to track many of the birds since. This lecture had been planned for spring 2004 but for personal reason Keith had to cancel at short notice so he was very willing to have another opportunity to talk about the project.

The next meeting was on 28 October when Phil Davey talked on 'Caithness and the Orkneys'. Phil is the site manager of Lindisfarne and Newham Bog National Nature Reserve. In the past he has worked for the RSPB in Orkney and Speyside and regularly commutes to Caithness. His talk centred on the conservation issues and included aspects of archaeology and the culture and history of the area. He described some of the conservation problems that faced the RSPB on the islands and how the weather did not always make it easy to undertake his job.

The section's next lecture was on 6 January when John Almond talked about his adventures in South America in 'Birds and other natural history in South America' John has visited South America on four different occasions and has been to a wide range of habitats including the volcanic peaks of the Andes, the Antiplono, the Amazon rainforest and some off-shore islands. He gave a wide ranging talk showing highlights of his visits including the scenery, birds, mammals and vegetation.

In February. Mark Whittingham gave a talk entitled 'Do I starve or risk being eaten? The trade-off between predation and starvation risk in farmland birds'. Mark is a relatively new BBSRC Research Fellow at Newcastle University but has already assembled a formidable research team investigating how bird behaviour changes in relation to the agricultural landscape. In his talk he showed how different stubble heights affected foraging and anti-predator behaviour. This was an excellently delivered talk which showed how behavioural research can have important consequences for our understanding of how best to manage the agricultural landscape. His work was a very elegant demonstration that asking apparently simple questions can fundamentally change preconceived ideas.

The final ornithological lecture was on 3 March by Andy Gosler 'Yet more ways to dress eggs'. Dr Gosler, a Research Lecturer from the Edward Grey Institute of Field Ornithology at Oxford University, arrived by train from Oxford on a rather cold, slightly snowy evening in early March. He delivered a brilliant talk describing his research into the function of pigmentation in birds' eggs. We often tacitly assume that pigmentation in birds' eggs is important for camouflage or for recognition. However, Andy described his evidence, recently published in the high-impact journal *Ecology Letters*, that pigment spots serve to strengthen eggshells and that pigmentation varies in relation to calcium availability - greater pigmentation compensating for reduced eggshell strength in low calcium habitats. This was a superbly delivered and interesting talk. Unfortunately, the audience was rather sparse (eight members in total) and it was disappointing and embarrassing for the Society that so many members missed out on one of the highlights of the talks programme this year.

Members met to look at coastal migration at Cresswell Ponds on 10 September and the weather was wet after days of rain. The group had good views of Curlew Sandpiper and saw a number of migrants including Lesser Whitethroat in the hedgerows.

The annual autumn visit to Holy Island on 8 October saw a very wide range of birds from Yellow-browed Warbler to Slavonian Grebe. There were enough small birds in the trees to keep everyone busy looking for rarities with Redwing, Brambling and a large flock of finches. There was a heavy passage of gannets, auks and ducks past Emmanuel Head and excellent views of the Brent Geese on the mud slake.

On 8 May the members returned to Holy Island to look for spring migrants. The weather forecast had predicted heavy rain all morning so a select group assembled in the Holy Island car park on a fine, still but misty morning. They appeared to have the island to

themselves and the sounds of seals, Eider drakes and Redshank led to an surreal and tranquil atmosphere. Although there were no rarities the drifting fog gave views of Red-throated Diver, Turnstone and Sanderling in summer plumage, flight displays of Redshank and a family of newly hatched Coots.

On 13 May John Steele took a party 'Birding in the Harthope Valley' They first went up the Carey Burn towards Broadstruthar before taking the bridle path down the Hawsen Burn and back to the main valley. The weather was showery and this reduced the visibility for bird watching. The group saw Buzzards, Dippers, Whinchats and Stonechats and several people saw Ring Ouzels. John explained the management and conservation of moorland habitats including some of the areas that he was directly involved with when he worked for the Northumberland National Park. He pointed out areas where native Juniper had been planted to create diversity of habitat.

On 7 May there was a field meeting to Teesdale which was organised by the Newcastle RSPB Members' Group and Society members were invited to join them. The latter part of the day was marred by rain and wind, which was not what was needed when climbing up by Cauldron Snout. Nevertheless, this did not happen before good sightings were had on the walk across Widdybank and by the Tees on the Pennine Way. Birds seen during the walk were Black Grouse, Grey Partridge, Oystercatcher, Curlew, Lapwing, Wheatear, Willow Warbler, Ring Ouzel and Common Sandpiper. Members were also able to admire Birdseye Primrose, Mountain Pansy, Marsh Marigold, Meadow Saxifrage, and, of course, Spring Gentian.

On 10 June David Noble-Rollin led a field meeting to listen to 'Bird Song in Thornley Woods'. The Thornley Woodland Centre was the starting point for the meeting. Members met at 7.30am on a beautiful morning and David took the party through the woodland identifying songs and call notes. The group visited the Red Kite project and had excellent views of the birds.

Because of the number of people wishing to go on the 'Roseate Tern Evening' the trip was put on on both 14 and 15 July. These were joint meetings of the North Northumberland Bird Club and the Society. Both trips had excellent views of adult and juvenile Roseate Terns as the boats stopped near the colony. Other species of tern were also there for comparison of their identification points. On the rocks were a number of species of waders in full summer plumage and as the boat returned to harbour on the Saturday, Manx Shearwaters flew close by.

Puffin Cruises returning to harbour.

Mammal Section

On 14 October, Kevin O'Hara presented the results of the 2004 'Researching Ratty' Project. He showed the presence of Water Voles in two upland areas with Water Shrews distributed across the region and emphasised the importance of involving local people in local wildlife issues. The Project had been funded by a grant from the Local Heritage Initiative (HLF) obtained by Northumbria Mammal Group. The grant was to employ a professional surveyor to co-ordinate local species surveys by communities in the Northumbrian uplands.

The Pybus Memorial Lecture 'The Chillingham Cattle - past, present and future' on 11 November was by Professor Stephen Hall. The Cattle represent a unique part of our region's heritage and Stephen has been involved with the conservation of the herd since his student days. He gave a well-illustrated history of Chillingham Park and the Tankerville family before concentrating on the conservation issues that are of importance to a small inbred population, and finally he outlined the future including the pitfalls and dangers from genetic engendered diseases and foot and mouth. He showed that the Chillingham Association Council has looked at the problems and are trying to take suitable action to prepare for any future emergency. This was a joint meeting with the Bewick Society.

'Images of Antarctica' was the title of the talk by Graham Bell on 25 November. His slides and commentary showed his dedicated interest in the behaviour and ecology particularly of seals and penguins and his poetic finale demonstrated his feelings towards this frozen, remote, majestic, fragile ecosystem.

Developments in the science of bat ecology and legislation gave John Steele, retired Senior Ranger, Species and Habitats Officer for Northumberland National Park and founder of the Northumberland Bat Group, plenty to talk about when he gave an illustrated talk entitled 'Fostering the Fortunes of Bats' on 27 January. Using slides to illustrate each point he described some of the strategies employed to improve habitats for bats across the county. These range, for example, from advising English Heritage on bat-friendly ways of repairing old buildings to clearing water courses and planting and managing hedgerows and woodland to improve foraging and roosting sites for bats. He also described the National Bat Monitoring programme, and emphasised the importance of maintaining good relations with the public.

On 28 January, staff and volunteers from Tees Valley Wildlife Trust visited the reserve to study our Red Squirrel conservation programme. Selective supplementary feeding and trapping techniques were demonstrated, and close extensive views of four Red Squirrels were obtained. Paul Drummond gave an informative tour of the reserve, indicating signs of other wildlife and explaining our reed-bed and woodland management practices.

On 13 February, a guided walk and small mammal trapping session in the reserve formed part of the Newcastle Science Festival 2006, when eighteen members of the public attended. Good numbers (for the time of year) of Common Shrews were caught.

Terry Coult, Durham County Council Ecologist, gave an interesting presentation on 24 February in which he described the historical and current status of the Otter in County Durham. Beginning with examples of churchwardens' historical financial accounts, in which body-parts of Otters and other 'vermin' are recorded as having attracted significant bounties, he went on to describe the development of the fashionable 'Otter chase' as a

means of control. He explained why Otter presence in the river Wear declined from the middle of the 19th century due to pollution, particularly from local mining, whereas the river Tees has always had a reasonable population, passing as it does through country estates. Today, Otters are being sighted once again in most river catchments, even within some large conurbations, and even on polluted or fish-poor sites near the coast where they hunt in the sea, but he outlined present day threats to survival from competition with human recreational activities.

The year began with two well-attended bat evenings in Gosforth Park nature reserve, led by Tina Wiffen (19 August) and Jonathan Pounder of Tees Valley Wildlife Trust (21 August) - both Mammal Group committee members. Both occasions began with the construction of three oak bat-boxes, supervised by Paul Drummond, who then put them up at a suitable site overlooking the reed-bed and explained how the site was being managed for bats. A talk on bat biology, ecology and conservation issues was followed by a search with bat detectors along the boundary path and through the reed-bed to the lake and the Pyle Hide. Noctule Bats were identified over the reed-bed and Common and Soprano Pipistrelle at the woodland edge.

3 September promised fine weather for the marine mammal cruise past the Farne islands. Unfortunately, by the time eighty-seven members of the Natural History Society, the Mammal Group, the Wildlife Trusts and the North Northumberland Bird Club were installed on the biggest of Billy Shiel's boats, the wind was rising and the sea - a flood tide - was beginning to look distinctly choppy. Nothing daunted we persisted, though not venturing out of sight of the coastline. Graham Bell once again gave an admirable commentary on the wildlife that we saw, which included two Minke Whales, some Harbour Porpoises, a moderate number of Grey Seals and the usual complement of sea-birds, with notably large numbers of Sooty Shearwaters and an Arctic Skua.

Veronica Carnell took a party of members and their families into the Nature Reserve on 24 September to look for mammals and their signs. Members identified Fox scats, Badger dung pits, Roe Deer slots and droppings and Otter spraint, and Red Squirrels were seen at the feeding station. Pre-baited Longworth traps and bait-tubes were examined, set in habitats including woodland edge, reed-bed bunds, reed-bed and grass-lined ditches. Some members took the opportunity, after a demonstration, to open a trap, weigh and sex the animal, and reset the trap.

The Mammal Group/Natural History Society had an information stand at the Blyth Forum on 24 September. The day celebrated the successful conclusion of the 'North Sea Sustainable Future' Project. The results of our mammal surveys conducted two years previously were presented by Susan Gebbels, Project co-ordinator.

On 5 November a small window of good weather and a calm sea enabled thirty-six members to visit the Farne Islands to see the Atlantic Grey Seal pups. We had close views of the seals, identifying new-born pups and more mature animals. David Steel, Head Warden of the Farnes, gave an excellent commentary on Grey Seal life history and answered questions. A school of Harbour Porpoises swimming in front of the boat near Holy Island and close views of a Peregrine Falcon completed a highly satisfactory event.

Student training sessions were held in the reserve for Henry Dobson (Glasgow University - Red Squirrels), Helen Jameson (Newcastle University - Bats) and Jane Gauvain (Newcastle University - Shrews/Woodmice). Small mammals in the nature reserve also provided hair samples for stable isotope analysis by Emma Ruffell, (Newcastle University) for a project on Grey Squirrel diet.

Andy Lees, Durham Biodiversity Action Plan Implementation Officer, invited the Mammal Group committee to help revise the Durham BAP for mammals. Don Griss, Veronica Carnell and Stuart Will, who represented the Society, took up the challenge. Targets were set for Water Shrew, Harvest Mouse, Dormouse, Water Vole, Red Squirrel, Otter, Badger, Polecat, Pine Marten, and all species of bat.

Badger Watches Twenty-nine members and friends attended this year's Badger watches. The early watches all started well with good views in sunny warm conditions with the Badgers appearing as early as 8.00pm. However as the season progressed the weather deteriorated, causing cancellation and delayed watches extending the season into July. On good nights up to five individuals were seen and although some visits did not produce as many animals, members had the opportunity to experience the presence of these beautiful creatures at first hand. Although there were no cubs seen the Badgers continue to expand their activities both within the reserve and beyond its boundaries.

Otter walk We are at present living through what must be a remarkable period for anyone interested in Otters. Fifteen to twenty years ago members were faced with a long journey to the upper waterways of the rivers Coquet and Wansbeck, or even the North Tyne, to view Otter spraint or Otter padding and even then the leader could not guarantee the day's findings. The sighting of an occasional Mink was a bonus. On 8 June members met at Lake Lodge where Bob Wilkin brought them up to date with the activities of Otters in the area. They visited a number of sites both in the reserve and further afield to see fresh spraint, indicating plenty of evidence of Otters in the area. The group then moved to a large body of subsidence water still within the boundaries of the city. Within ten minutes of their arrival two Otters appeared zigzagging through the water, lying on their backs, porpoising, sometimes moving head to tail and crossing in full view before finally one otter took its curtain call by swimming within a few feet of the members before disappearing from view.

Mammal Day at Carlisle Park, Morpeth Bob Wilkin represented the Northumbria Mammal Group and the Natural History Society of Northumbria at the Mammal Day event at Carlisle Park, Morpeth. Nineteen people including one brave young soul in a wheelchair visited several Badger setts in the area. At intervals during the walk stops were made to look at Badger habitat, food supply, Badger paths etc. While discussing a sett high above the group on a very steep slope a man in a camouflage jacket was seen at the entrance to one of the setts. For a while he remained very still, blending into the background with his dog foraging around the sett. With twenty pairs of eyes focused on him his nerve broke and before disappearing he used his mobile phone and his unseen companion noisily made his escape through the undergrowth above the sett. Once the group was on the path leading safely back to the venue the leader returned with one of the Park Rangers. They had barely started when the man in the camouflage jacket broke cover out of the tree canopy and plunged down the hillside, over the stream and up the far bank, disappearing with what appeared to be a terrier at his heels. The Park Authority, the Chairman of the Northumberland Badger Group and Morpeth Police Authority were informed of the incident.

Geology Section

The programme of lectures and field visits was varied and interesting. Unfortunately, attendance, especially on the field visits, is dropping. Poor attendance is not only embarrassing when an invited expert is giving up his time to take a field trip, but it puts the future of such events in jeopardy.

The programme of winter talks started on 7 October with Mark Allen talking about 'The mountains of Iran'. He described the effect of collision between two tectonic plates in building mountains in Iran. The talk was illustrated by some excellent photographs showing not only the geology but the culture of the country and the friendly welcome given by the people of Iran to the visiting geologists.

On 4 October David Bridgland gave a talk entitled 'The lower Thames terrace: a record of late Quaternary climatic fluctuation and early human occupation in southern Britain'. This concerned the cyclic climatic changes in the late Quaternary and the impact on early human habitation in southern Britain. This is a time in which geology and archaeology overlap. A very early axe head was passed around which made the link with the period seem very real.

The new year began on 13 January with Thomas Wagner talking about 'Mid-Cretaceous extreme warm climate - when parts of the deep ocean became free of oxygen'. He described the climatic record from the mid-Cretaceous and its significance for understanding possible future climate change.

On 10 February Ken McCaffrey talked on 'How reinterpreting the evolution of the Northumberland Basin could simplify basin models worldwide'. He described some of his latest work on the origin of the Northumberland basin and explained how the new model explains the folding and faulting as a single phase of transtensional deformation coincident with the intrusion of the Whin Sill.

The final speaker had to cancel at the last moment for personal reasons and we are grateful that Jonathan Imber agreed to give an excellent talk on rifting in the continental crust.

On 17 September Trevor Hardy led a trip to the Scottish border country of the South West Cheviot Hills. He gave his usual erudite account of a scenically beautiful and geologically interesting part of the country.

On the 6 May Gordon Liddle took a group to look at the Dent Fault and surrounding landscape. Some investigations to solve a geological puzzle and a rest by a waterfall finished the day.

The final meeting was on 17 June led by Mick Jones and combined archaeology with geology. We first visited one of the Northumbrian cup and ring rock markings which are found all over the area. These mysterious artefacts are claimed to be Neolithic but there is some doubt over the exact age and their significance is a matter of speculation. The reason for the visit was the claim that they might be of geological origin. An examination showed that they are clearly human artefacts of a quite sophisticated nature. We then visited the foreshore at Cheswick Black Rocks to look at structures in the limestone. These consisted of hemispheres in the centre of concentric rings. While there was a superficial resemblance to the cup and rings these were obviously geological structures. They appear to be unique to this part of the shore and the exact geological process has not been investigated.

Botany Section

The winter lecture programme began in October with Professor John Richards talking on 'New Zealand: the richest tundra in the world'. He described the long-isolated, largely endemic mountain flora, especially of South Island with extensive areas above the tree-line, which is at about 1,000 metres above sea level. There are about 500 alpine species, yet these are young mountains (about two million years old), so that speciation must have been rapid. Many of the plants are white-flowered and cushion forming, and many belong to familiar genera or their close relatives. However Gondwanaland families are also represented. Common plant defences are against grazing birds rather than the only recently introduced mammals.

In November, Professor Bill Heal addressed global warming with 'Look North: climate change in the Arctic, its impact on plants and lessons for us'. He explained that climate was likely to change more rapidly in the Arctic than anywhere else and, with the help of a DVD *Arctic climate impact assessment* (the result of a multinational collaboration) presented dramatic scenarios for the future. These predicted substantial botanical changes in the North Atlantic region, signalling major conservation challenges. Earlier in his career Bill Heal had worked at Moor House, high in the North Pennines, so was long familiar with cold climates!

In February Janet Simkin spoke on 'The heavy metal shingles' of the South Tyne and its tributaries, famous for their metallophytes such as Spring Sandwort *Minuartia verna*, Alpine Pennycress *Thlaspi caerulescens* and Mountain Pansy *Viola lutea*. Less well known were the rich variety of lichens and the very important colonies of Dune Helleborine *Epipactis dunensis*. Janet Simkin explained the origin of the calaminarian grasslands, involving pollution from the local lead and zinc mines, climate change and consequent floods, and myxomatosis. The grasslands are unique, threatened, suffering losses, and present some difficult conservation choices.

Finally, in March, Jonathan Mullard, a Director with the Northumberland National Park Authority, dealt with 'The natural history of Gower', the subject of his forthcoming (now published in 2006) book in Harper Collins' New Naturalist series - its publication was timed to celebrate the fiftieth anniversary of the designation of the Gower Area of Outstanding Beauty. Jonathan Mullard had spent most of his previous working life in South Wales, and was responsible for the AONB. Gower is extremely rich in wildlife, and many species of plant and animal, which are rare at national level, occur there in abundance. His talk concentrated on these and the related conservation issues.

The botany field meetings began on 11 June on a fine, sunny day when Professor John Richards led a visit to Warkworth dunes and saltmarsh, with their great variety of coastal (and other) plants. Among rare or less common species we saw were Curved Hard-grass *Parapholis incurva*, Blue Fleabane *Erigeron acer* and Maiden Pink *Dianthus deltoides*. Of the characteristic Northumberland dune plants, we found Burnet Rose *Rosa pimpinellifolia* and Lesser Meadow-rue *Thalictrum minus*, but rather astonishingly failed to turn up Bloody Cranesbill *Geranium sanguineum*. We did, however, find the uncommon hybrid grass *Elytrigia atherica* x *juncea* (Sea Couch x Sand Couch).

On 18 June, this time on a wet day, Dr Rod Corner led us along the banks of the River Tweed at Newtown St Boswells, his native patch (Dr Corner is the Recorder for Roxburghshire and Selkirkshire). We followed the Sprouston Burn down to the river,

through woodland in which grew, we believed, Soft Shield-fern *Polystichum setiferum*, although subsequent careful examination by Dr Corner leads him to believe it is probably the hybrid with Hard Shield-fern *Polystichum aculeatum*. We saw a variety of river-bank and other wetland plants by the Tweed, including Stream Water-crowfoot *Ranunculus penicillatus* subsp. *pseudofluitans* and Slender Tufted-sedge *Carex acuta*. Thankfully the Giant Hogweed *Heracleum mantegazzianum* on this stretch of the Tweed has been dealt with, and apparently replaced with sown Perennial Ryegrass *Lolium perenne* to stabilise the banks which would otherwise have been left bare and erodible. However Few-flowered Garlic *Allium paradoxum*, another alien, had become somewhat over-plentiful along the wooded river banks.

On 16 July, Janet Simkin and Angus Lunn led a visit to two sites in the upper South Tyne valley, near Garrigill. At Whitesike and Bentyfield mines we saw in particular the metallophytes characteristic of lead mine dumps and washing floors: Alpine Penny-cress *Thlaspi caerulescens*, Spring Sandwort *Minuartia verna*, Mountain Pansy *Viola lutea*, Thrift *Armeria maritima* and Pyrenean Scurvygrass *Cochlearia pyrenaica* - as well as many calcicoles. Later in the day, near the confluence of the South Tyne and Black Burn, on the river shingles, we saw again some of the metallophytes, together with an array of adventive species which included a carpet of Northern Bedstraw *Galium boreale*, Moonwort *Botrychium lunaria*, Hairy Rock-cress *Arabis hirsuta* and, in a backwater pool, Thread-leaved Watercrowfoot *Ranunculus trichophyllus* - very uncommon in the uplands. Among rare lichens were *Cetraria islandica* and among rare mosses *Racomitrium ericoides*.

The fourth Botanical Section outing on Sunday 23 July was a visit to the Upper Cottonshope Burn in the Redesdale section of the Ministry of Defence Otterburn Training area. This area is rather different from the rest of Northumberland as it consists almost entirely of Silurian rocks with a small igneous section. The vegetation is very varied including Harebell *Campanula rodundifolia*, Crowberry *Empetrum nigrum*, Grass-of-Parnassus *Parnassia palustris*, Goldenrod *Solidago virgaurea* and abundant Sedges and Ferns reflecting the changes in habitat within this small section. The wildlife seen included two Brown Hares and at the end of the visit an excellent view of a Cheviot Wild Goat (a billy) which was very reluctant to move. The varied topography of the Ranges was very evident as the weather was exceptionally fine.

Midweek Botany Group

This has been another good year for the group, with a wide range of botanical (and social) activities.

In September 2005 we celebrated our one hundredth field trip with cake and champagne at Thorpe Perrow Arboretum near Bedale, after having been in existence for eight years. The group started in May 1998 when just seven people went for a walk in Whittle Dene to look at the plants, and we now have an active membership of over twenty and outings every week from April to September.

In addition to our regular activities, this year we were asked to help with a survey of the Whin Grassland being undertaken by Northumberland Wildlife Trust, and this has involved quite intensive work by several members of the group.

We were also approached by the North Pennines Area of Outstanding Natural Beauty and members led a botanical walk from Stanhope as part of the Plants on High Festival in July.

The end of the 2005 season was exceptionally busy with several field trips in August and September to Upper Teesdale, Malton, Bamburgh, Hareshaw Linn and Slaley Forest. One of the highlights was a strenuous walk from the College Valley to check that Alpine Saw-wort *Saussurea alpina* was still growing at its only Northumberland site in the Hen Hole corrie. After a lot of searching we eventually found the plants on a very steep rocky bank where the sheep and goats had not grazed too closely, and they were photographed and recorded. By now we were quite near the top of Cheviot so we climbed up the last few hundred feet to the summit and had wonderful views of the Cheviot Hills across to the coast as we walked back down a ridge to the cars.

We started 2006 with a study day on sphagnum mosses in Kielder Forest. Next were walks in woodland and by the riverside to see the early spring flowers at Whittle Dene and Featherstone, followed by coastal trips to Seaton Sluice dunes and Craster. The next three outings were to County Durham (Cassop Vale, Hawthorn Dene and Thristlington), all of which provided interesting and beautiful displays of wild flowers. Special plants include Black Bryony *Tamus communis*, Herb Paris *Paris quadrifolia*, Dyer's Greenwood *Genista tinctoria*, Burnet Rose *Rosa pimpinellifolia* and Perennial Flax *Linum perenne*.

The summer continued with many field trips, some close to home and some further afield to Cumbria, North Northumberland and Upper Teesdale and included a long weekend away at Kirby Stephen.

As in previous years, all our findings are recorded in detail and sent to the County Recorder. Copies are also held in the library of the Natural History Society.

General Field Meetings

On 30 July John Steele led an intrepid party of adults and children on a field trip to Cullercoats to study 'Rockpool Creatures, Bizarre and Beautiful'. Armed with buckets and fishing nets we searched the rock pools and investigated the wildlife under every boulder. There were lots of Hermit and Velvet Swimming Crabs and an interesting Butterfish and John wrestled a large Lobster out of its hiding place to show us. The highlight of the visit for certain members of the party were the two specimens of Sea Lemon, one of our commonest British Nudibranchs found hidden under the rocks at the low tide line. They looked like blobs of chewing gum but it was great fun to see one in its native habitat.

John Steele with the lobster.

On 7 August David Noble-Rollin led a group of new and not so new members around the Nature Reserve. The day proved to be an excellent introduction to the reserve. They visited the site of the Young's Hellerborine and found one stalk and in the same area saw a Sparrowhawk feeding its young. Also in the woods young fledged Kestrels were calling. As they approached the lake a Hobby flew over their heads and started chasing House Martins. They visited the ringers' hut and were in time to watch them process a number of birds including a female Sparrowhawk.

Entomology

On 24 March Jeri Wright from the Division of Biology at Newcastle University gave a talk entitled 'Not in the flower, but in the nose: the Honeybee's sense for scent'. The sense of smell may have been the first sense to evolve in animals. Our nose allows us to detect thousands of different chemical compounds and combinations of chemical compounds. Some of the ways in which odour is used in animals include finding and recognizing food, locating and identifying mates and rivals, territory marking, recognizing family members, and detecting predators or other forms of danger. Interestingly, the brain structures associated with olfaction in different kinds of animals are very similar. Scientists have inferred from this that the olfactory system has evolved several times in many animals. Because of such similarity in olfactory systems, it is possible to study scent perception in insects or other animals in order to understand how the olfactory system functions in humans. Honeybees are a particularly good model system for studying sensation, learning and memory because they must learn to associate floral cues and landmarks with profitable floral rewards. They also have excellent olfactory acuity, and they can learn to associate the scents of flowers with nectar and pollen provided by flowers. In the laboratory, it is possible to train Honeybees to learn to associate scent with a food reward. After a Honeybee has been trained, we can then assess the Honeybee's ability to discriminate one scent from another scent. We can then also make neurophysiological recordings from the Honeybee's olfactory system to study how odours are encoded.

As part of National Insect Week the annual 'Bug Day Out' was held at Newcastle University's field station at Close House, Wylam on 24 June. The meeting was organised in conjunction with the School of Biology at Newcastle University and the Royal Entomological Society. During the day we had two opportunities to sort through the contents of moth traps that had run overnight and then we collected other material using nets, beating trays and pooters. The identification of some of the insects was discussed in relation to their key characteristics and many people were introduced to species or groups with which they were not familiar. Fourteen people took part in the day. If you missed it this year then watch out for the event in June 2007.

HANCOCK MUSEUM

This has been a particularly momentous year for the Hancock Museum after The Heritage Lottery Fund confirmed Stage II approval for a major award of £9.246 million toward the Great North Museum project, a £26.246 million redevelopment of the Museum which will see the integration of the Newcastle University Museum of Antiquities and the Shefton Greek Museum with the current Hancock collection to form a combined University Museum, together with the Hatton Gallery. This funding, together with other recent awards including £5m from the Regional Development Agency ONE North East and the Tyne and Wear Sub Regional Partnership, provided the green light for the Great North Museum project to begin. The Museum closed on 23 April 2006 and will re-open to the public in early 2009.

Despite efforts being focused on the redevelopment plans, the Museum has continued to provide an extensive series of exhibitions and learning programmes, achieving 55,102 vis-

itors over the period of August 2005-April 2006 (three quarters of a full year). The series of British Museum exhibitions continued with the completion of the prestigious 'Buried Treasure' exhibition and the installation of a major exhibition of ancient Egyptian artefacts entitled 'Egypt Revealed'. The latter represents the last in a trilogy of BM Partnership UK exhibitions at the Hancock. There have also been a series of smaller exhibitions including a partnership project with the Transvaal Museum in Pretoria, South Africa, an exhibition highlighting the common skin condition psoriasis, and a celebration of one of the founders of the Museum, Albany Hancock, amongst others.

The Museum's learning and outreach programmes have continued to be active with a full range of formal and informal events. Some highlights include the 'It Rocks! Bringing Geology to Life' project, a collaboration with Killhope, the North of England Lead Mining Museum, using animation and puppetry to develop creative ways for schools and families to engage with the subject of geology. This was funded by a variety of partners, including the North East Regional Museums Hub. The Strategic Commissioning 'Real World Science' partnership project with the Natural History Museum London, Oxford University Museum of Natural History, Sheffield Museums, and the Manchester Museum has continued for a second year, delivering a series of workshops and outreach programmes on the subject of evolution to secondary school pupils.

Major exhibitions

Egypt Revealed (30 July 2005-23 April 2006). The third in the series of British Museum exhibitions at the Hancock included over a hundred items from the British Museum's collections, including two mummies, a statue of Rameses II and a page from the 'Book of the Dead'. Supported by TWM Business Partners, Manchester Museum.

Other exhibitions

Treasures of the Sea (2 July-4 September 2005). As part of the Sea Britain celebrations, this exhibition was being designed for showing at the Museum before touring to other venues throughout the region. The exhibition focused on a wide range of natural-history themes based around the sea, including folklore, whales, shells, fish and the deep sea. Supported by Culture10.

Ancient Dynasties: The Evolution of the Cat (17 Sept-30 Oct 2005). An exhibition of drawings by South Shields artist Angela Russell, exploring the evolution and natural history of the cat family. The exhibition included a series of pencil studies as well as supporting fossils and models. Supported by Arts Council England, UnLtd*

Skin - Shattered Shelters (12 November 2005-22 January 2006). An innovative exhibition by a group of artists which was part of a larger project to work with psoriasis sufferers in Newcastle upon Tyne, in an effort to highlight the condition and the way it affects

people's lives. The exhibition included a series of prints, three-dimensional installations and video representations. Supported by Psoriasis Association, UnLtd*, Skin Care Campaign, The Scarman Trust, Arts Council England, Newcastle City Council, The Newcastle upon Tyne Hospitals NHS Trust, Skin Care Campaign. Opened by Laura Moffatt MP.

Northumberland Wildlife Trust - Wildlife Photographer 2005 (1 Dec 2005-15 Jan 2006). The now annual exhibition of photographs from the NWT 2005 photographic competition was on display along the Abel's Ark corridor over the Christmas period.

The Nudibranchs of Albany Hancock (6 Feb 2006-23 April 2006). The final exhibition before closure of the Hancock prior to the Great North Museum redevelopment. The exhibition celebrated the 200th anniversary year of the birth of Albany Hancock and showcased the beautiful drawings used to illustrate the specimens of Nudibranchs (Sea Slugs) collected by Albany Hancock and Joshua Alder in connection with their Ray Society Monograph of 1848. The exhibition was curated by June Holmes (NHSN). Supported by Heritage Lottery Fund.and opened by Professor Richard Bailey (HLF).

Learning Programmes - Family Fun

Museum Events An extensive series of family fun events took place over the year. These included: Crafty Crocs and Creepy Creatures (2, 3, 4, 9, 10, 11, 16 and 17 August 2005), Egyptian Afterlife (2, 9 and 16 August), Nile Style (3, 10 and 17 August), Snake Handling Day (24 October), Museum of the Mind (25 October), Pharaoh Fabric (27 October), Bugs Alive (28 October), Family Learning Day - HLF Anniversary Event (5 November), Family Learning Day - Skin Exhibition (12 November), Nudibranch, Hats and Badges (20 February 2006), Nudibranch Dioramas (22 February), Funky Nudibranchs (24 February), Animal Masks (10 April), Picture this ... Become a Beast (11 and 12 April), Reptile Day (11 April), Porthole Puppets and Top 5 Object Trails (13 April), Animal Sanctuary (13 April), Meet an Ancient Egyptian (18 April), Memory Boxes (19 April), Games Day (20 April), Craft Day (21 April), Sunday Fun Day - Multiple Activities (23 April).

Business Partners Family Fun Day 26 February 2006. As part of the funding support received from the TWM Business Partners for the Egypt Revealed exhibition, over two hundred people visited the Museum for a series of behind the scenes tours, handling sessions and an opportunity to visit the exhibition itself.

Evening Performance A local performance group, The Guild of Lillians, hosted a reading of extracts from Julia Darling's book 'Crocodile Soup' at the Museum during the evening of Tuesday 4 April, for a group of over sixty people. The book is reputed to have been inspired by the Hancock Museum in its current form, and the event was a fitting tribute to the Museum prior to re-development.

Closure Programme To mark the closure of the Hancock Museum at the end of the Easter holidays, an extensive series of family fun events took place and these, along with public lectures, attracted some good, final press coverage. Events included dressing up, mask making, puppet making, creating a board game, a live reptile day and a wildlife day.

Outreach Working with the TWM Outreach department, the Museum hosted a group of adults from a Gateshead-based photography group. Participants were developing their photography techniques through documenting the Hancock Museum before it closed for redevelopment. The afternoon involved a talk about the history of the Museum and its

possible future, and a tour of the Museum stores. Participants will also be recording their feelings about the Museum and it is hoped that their work will be exhibited in the Museum.

As part of the programme to maintain schools audiences and the profile of the Museum during closure, staff have run workshops in venues throughout TWM as well as workshops in schools. The Time Travellers: History in Action programme will relocate to Segedunum to complement the Lands of the Pharaohs display, as well as Chemistry of Colour workshops. Rocks, fossils, and skeletons workshops are also planned to take place at schools throughout the region and at the Discovery Museum and Sunderland Museum. A series of Family Fun events will take place at the Hatton Gallery and Stephenson Railway Museum.

Staff at the Museum delivered lectures and fossil handling sessions at St Mary's Lighthouse as part of its family learning programme over the February half term.

Loans Boxes Another mechanism to encourage continued use of collections at the Hancock has been the development of loans boxes. Boxes on the themes of rocks, skeletons and mini-beasts are currently in schools and new boxes are being developed. It is also intended to produce a series of loans boxes to be used in museums throughout the region.

Learning - Schools Programmes

Living History The living history programme which supports the Ancient Greek and Land of the Pharaohs displays has again been very popular with schools. The Egypt programme was particularly successful in light of the presence of the Egypt Revealed exhibition, attracting over 7,000 school pupils to the Museum.

Under Fives - The Den The post of Den Facilitator was extended until April 2006. A number of family fun events took place over the holiday periods as well as a series of workshops for nursery and pre-school groups. All of these were well attended.

Science Workshops Primary school science workshops have taken place throughout the year on the theme of rocks and fossils and skeletons. These workshops were delivered by our North East Regional Museums Hub-funded Assistant Learning Officer. This post has made a significant contribution creating opportunities for learning at the Hancock both in terms of quality of experience and in attracting new visitors and helping the Museum achieve its annual schools visitor target which was 140% of expected performance this year.

Chemistry of Colour This cross-curricular project ran in October and February. These half day workshops combine history, science and art and children discover how the ancient Egyptians used crushed minerals to make paint.

Learning - Partnership Learning Projects

Real World Science - Strategic Commission Project. This Strategic Commissioning secondary schools science programme continued to attract good audiences with Stage 3 and 4 students attending a series of evolution workshops at the Museum as well as attending numerous 'outreach' lectures at secondary schools. This programme has received some national attention, having been discussed in a House of Lords Select Committee meeting on science education in schools, and it is a testament to the importance of the Hancock and its collections that we are one of only four national partners in the UK currently delivering this DCMS-funded programme.

Creative Partnerships The Museum is working with a Primary School in North Tyneside on a Creative Partnerships project. Three classes visited the Museum in mid January to look at the collections and then worked with three artists to create a number of different pieces that reflected their ideas inspired by the Hancock.

Family Learning Partnership Staff from both the Hancock Museum and Killhope Lead Mining Museum worked together on a project encouraging families with young children to explore both museums using rocks, gems and the natural world as a stimulus. Families from Bishop Auckland Sure Start Groups in County Durham visited both venues in October and created artwork to illustrate the story of Rocky, a very special mineral character, which was then used to illustrate a book. The project enabled each museum to develop its provision for families with young children, and provided opportunities to share ideas and observe each other's practice.

Newcastle Science Festival The Museum contributed to the 2006 Newcastle Science Festival with a number of events including a Natural History Roadshow, behind the scenes tours, live animals days and public lectures about the current research on the Egyptian mummies.

Lifelong Learning, Teaching and Placements

Weekend Events In conjunction with the Centre for Lifelong Learning, two weekend events were held at the Museum consisting of lectures and practical activities which supported the main themes of the *Egypt Revealed* exhibition.

Post Graduate Studies Three post-graduate students from the University of Newcastle International Centre for Culture and Heritage Studies spent one month each at the Museum undertaking a series of projects including research into the Museum's holdings of Giant Deer bones, John Hancock's Gyr Falcons and the development of the *Treasures of the Sea* exhibition which will be shown at South Shields Museum over the summer holidays. Six Museum Studies students (from ICCHS) were at the Museum on an eight week placement and, after appropriate training, assisted in the pack up of the collections.

Adult Education and Training The collections are used extensively for the University of Newcastle's own undergraduate and postgraduate teaching as well as by visiting groups from other Higher Education Institutions (HEIs) as part of their own courses. Staff regularly work with students from both Newcastle and other HEIs assisting with dissertation and thesis work.

Courses supported include BSc Biology (Newcastle), BSc Zoology (Newcastle), BA Archaeology (Newcastle), BA Anthropology (Durham), MA and Diploma in Museum Studies (Newcastle), MA and Diploma in Art Museum and Gallery Studies (Newcastle), MA and Diploma in Heritage, Education and Interpretation (Newcastle), Primary PGCE in Education (Newcastle), MA Museum and Artefact Studies (Durham).

Six members of staff are involved in teaching the courses listed above. The Curator is also course tutor for part of the 3rd Year Zoology Masterclass course. In addition, all staff deliver a four week Natural Science Module to MA Museum Studies students. Staff also specifically provide postgraduate teaching on Documentation, Collections Management, Environmental Databases, Disaster Planning and Environmental Monitoring.

INSET. An INSET event was held on Tuesday 28 February and attracted a wide range of teachers who were presented with the future plans for the Museum as part of the Great North Museum project.

Curatorial Staff

Membership on outside bodies:

S McLean	Programme Secretary, Geological Curators' Group; Member, Durham Wildlife Trust Conservation Committee; Member, North Pennines AONB Geopark Advisory Group.
E Morton	Member, Northumberland Bat Group Committee; Representative, Department of the Environment Wildlife Inspectorate; Licensed bat worker, English Nature; Committee member, Woodland Trust, Derwent Valley Woodland Project.

Lectures, and excursions

D Gordon	'The Scientific Uses of Museum Zoology collections', University of Newcastle.
S Glynn	'Life Lines - The Evolution of Life on Earth', Various secondary schools; 'Palaeobotany Collections at the Hancock Museum', University of Newcastle; 'Radio Carbon Dating - its uses and limitations in palaeontology', University of Newcastle.
N Hewitt	'Learning in Natural History Museums', University of Newcastle
L Jessop	'Korere: Maori feeding funnels' and 'Hooked on whale teeth: Polynesian whale-tooth necklace pendants' Sainsbury Research for Visual Arts, University of Norwich); 'The Uses of Zoology Collections', University of Newcastle; 'Zoology Collections at the Hancock Museum', University of Newcastle.
S McLean	'The curation and conservation of palaeozoology collections', 'History and research uses of the Natural Science and Ethnographic collections at the Hancock Museum', 'The museum environment', 'Interpretation in natural history museums', 'Disaster planning', and 'Collections Management and the Great North Museum Project' University of Newcastle. 'Life Lines - The Evolution of Life on Earth'. **Schools. 'The Great North Museum Project', Various.
G Mason	'Interpretation in natural history museums', 'Living History Interpretation in Museums' and 'Learning in Natural History Museums'. University of Newcastle.
E Morton	'Introduction to the Hancock natural history collections, University of Newcastle' and 'Zoology collections and the History of Taxidermy', University of Newcastle.

Excursions

S Glynn	'The Geology of Tunstall Hills'. Tunstall Hills Protection Group.
E Johnson	'A walk through geological time in Upper Teesdale'. English Nature. and 'The Geology of Tunstall Hills'. Tunstall Hills Protection Group.

Awards and Accreditation

Arts and Humanities Research Council We were delighted by the decision of the Arts and Humanities Research Council (AHRC) to award the museums in the Great North Museum partnership A+ status and funding under the University Museums Core Funding scheme. This is an important accolade which recognises Newcastle University's museums, including the Hancock, as amongst the greatest in Britain.

Accreditation We were also very pleased to be awarded full Accreditation from the Museums, Libraries and Archives Council (MLA). Accreditation is the 'quality control' mechanism for museums in the UK. Not only did we 'pass', but we did so with flying colours (along with the rest of Tyne and Wear Museums), receiving a commendation for the strength and professionalism of our application. This is a particularly important moment to achieve Accreditation given the progress of the Great North Museum Project.

Exploring Your Environment The University was also awarded a grant of £226,000 for the development and operation of the EYE (Exploring Your Environment) project, a regional environmental resource centre to be managed by the Hancock Museum. The project, which has received additional funding from a number of partners including Northumbria Water, Natural England, The Northumberland Wildlife Trust, The North East Regional Museums Hub and Tyne and Wear Museums Business Partners, is predominantly about public participation in environmental recording and will utilise innovative database technology developed as a research project by staff at Newcastle University.

University Open Day Ten university academics visited the Museum on Wednesday 18 January to listen to a presentation by Dr Eric Cross, Les Jessop and Steve McLean with respect to the research value of the collections. A series of store tours also took place. This liaison between the Museum and the University research community is extremely important for the research credentials of the Museum and the relationship between the Museum and the University, as well as providing a solid basis for continued funding support from AHRC.

Collections Management and Conservation

This year efforts have been focused on the documentation, digital recording and pack up of the entire collection as part of the Great North Museum project. The 237,000 strong collections database has been considerably augmented by the addition of over 10,000 new records representing the cataloguing of around 200,000 additional items (approx 100,000 of which are insects). All items in the collections have been photographed as part of the pack up (although often not individually but in groups).

A large proportion of taxidermy specimens underwent freezing treatment as part of a preventative programme to eradicate insect pests prior to storage.

In addition, due to the packing requirements, much of the collection has been re-packed into new storage containers and the results have been a general overall increase in the quality of storage conditions.

Repatriation Council of the Natural History Society and Hancock Management Committee agreed to repatriate a number of Australian Aboriginal human remains from the Hancock Museum to the Australian Government, after very careful and detailed consideration of the arguments for repatriation.

Loans In addition to numerous research loans to academic institutions around the world several loans have been arranged as part of our plans to maintain the profile of the Museum during closure. Our important collection of Blaschka glass models is now on display at the National Glass Centre in Sunderland; and the Sainsbury Centre for Visual Art borrowed six key items from the Museum's World Culture collections for exhibit in their major exhibition, *Pacific Encounters*, opened by Sir David Attenborough in May 2006. Our *Treasures of the Sea* exhibition was shown at South Shields Museum over the summer holidays, and the *Land of the Pharaohs* display, which includes our two Egyptian mummies, has been re-displayed at Segedunum Roman Fort and Museum in Wallsend. Material has also been loaned to National Trust properties including Bewick's birthplace (Cherryburn) and Cragside.

Research undertaken

A great deal of internal and external research has taken place on the collections over the last year. Examples are given below:

Plasmodium Falciparum (malaria) study using ELISA technique (Samples from Irt Irw (NEWHM : AREGYPT604) taken by York University).

Embalming materials study using GC-MS techniques. (Samples taken from Irt Irw (same as above). Awaiting report from York University - Dr. Stephen Buckley.)

Radiology of 3 mummified heads from Egyptology collection to determine age at death, ante- and post-mortem trauma, and to draw new light on the specimens. (Carried out at RVI by Gill Scott and Dr Iain Macleod.)

Four Mummified Heads at the Hancock: An investigation using palaeopathological methods to throw new light on the Hancock Museum's Egyptian human remains collection. (Conducted by Gillian Scott as partial fulfilment of MSc Palaeopathology at Durham University, Department of Archaeology (2004-2005).)

Radiology and forensic examination of 3 Maori toi moko. (Research by Gill Scott and Dr Iain Macleod at the RVI.)

CT scan imaging and assessment of Bakt hor Nekht's mummy (NEWHM :AREGYPT605) (carried out by Gill Scott and Dr Iain Macleod at theNewcastle General Hospital.)

Reconstruction and model reconstruction of the mummified face of Bakt hor Nekht (carried out by Gill Scott, Dr Iain Macleod and VisialImpactUK.)

Preparation for DNA analysis of NEWHM : CO13 Maori toi moko (by Gill Scott in conjunction with Glasgow University for repatriation request).

Pathological and morphological anaylsis of 3 Aboriginal skulls from collection (by Gill Scott as part of a repatriation request).

Variation in squirrel coat colour using museum study skins (Dr Peter Lurz, Newcastle University.)

Field vole statistics including body length as a function of population variability in Northumbrian Field Voles using Museum study skins (Dr Peter Lurz, Newcastle University.)

Water Vole DNA. Regional variation comparing Northumbrian Water Vole genes with those from Cumbrian Water Voles. (Liverpool University.)

Checking historic distribution from museum records. (Andrew Grayson, Yorkshire Naturalists' Union.)

Checking butterfly records of Northern Argus Butterfly against historic distribution to investigate decline in numbers in Northumberland. (P. Summers, National Museums of Scotland.)

Historical research into John Hancock's Gyr Falcons. (Ruth Pollitt, Newcastle University.)

Research on the Hancock Museum holdings of Giant Deer skeletal material. (Sian Smith, Newcastle University.)

Publications

Brazeau M D (2005). A new genus of rhizodontid (Sarcopterygii, Tetrapodomorpha) from the Lower Carboniferous Horton Bluff Formation of Nova Scotia and the evolution of the lower jaws in this group. *Canadian Journal of Earth Sciences*. **42** (8): 1481-1499.

Dayrat B and Gosliner T M (2005). Species names and metaphyly: a case study in discodorididae (Mollusca, Gastropoda, Euthyneura, Nudibranchia, Doridina). *Zoologica Scripta* **34** (2): 199-224.

Glynn S, Mills R A, Palmer M R, Pancost R D, Severmann S and Boyce A J (2006). The role of prokaryotes in supergene alteration of submarine hydrothermal sulfides. *Earth and Planetary Science Letters*, **244**, (1-2), 170-185.

Jeffery J E (2006). The Carboniferous Fish Genera Strepsodus and Archichthys (Sarcopterygii: Rhizodontida): Clarifying 150 years of confusion. *Palaeontology*, **49** (1): 113-132.

Parker K, Warren A and Johanson Z (2005). Strepsodus (Rhizodontida, Sarcopterygii) Pectoral Elements fron the Lower Carboniferous Ducabrook Formation, Queensland, Australia. Journal of Vertebrate *Paleontology*. **25** (1): 46-62.

Piertney S B, Stewart W A, Lambin X, Telfer S, Aars J and Dallas J F, (2005). Phylogeographic structure and postglacial evolutionary history of water voles (*Arvicola terrestris*) in the United Kingdom.*Molecular Ecology* **14**: 1435-1444.

Scott G, (2005). Four Mummified Heads at the Hancock: An investigation using palaeopathological methods to draw new light on the Hancock Museum's Egyptian human remains collection. MScThesis, Durham University, Department of Archaeology.

Collins S, Lee A (2005/2006). DCMS Strategic Commissioning, Real World Science Partnership. How can natural history museums support secondary science teaching and learning? A consultative study.

Great North Museum Project

Collections Decant The pack up the entire Museum is now (October 2006) complete, and collections have been re-located to an environmentally controlled and secured section of a warehouse within the Newcastle area. This has been a monumental task and one that has been completed over a relatively short period of time, the actual physical pack up and decant of over half a million objects taking place over a period of only five months. Thanks are due to all staff and volunteers who worked on this project, and especially to Joanne Anderson (Storage Project Co-ordinator) and Ana Flynn (GNM Project Conservator) who both worked above and beyond the call of duty (well into numerous nights) to ensure that this essential part of the project met its deadline. Like NHSN staff, all curatorial and learning staff have now relocated to the Museum offices at 3-4 Claremont Terrace.

Design and Funding Staff continue to work on the designs for the new permanent displays as a main priority and also continue to work closely with the University development office to secure the remaining funding from a series of charitable trusts and foundations. There are a number of applications currently being developed and staff have recently made presentations to the SITA Trust and the Garfield Weston Foundation.

Awards

The second phase of an educational partnership project with the Killhope Wheel Lead Mining Museum, called ***IT Rocks!*** is now complete. Children at Pallion Primary School visited both sites and engaged in a series of workshops including puppet making and the creation of video animations, all focused around the subject of geology. We are pleased to report that ***IT Rocks***!, won the History and Heritage section of the Chrisi Bailey Awards (The National Children's Media Arts Award) administered by Arts Council England. This award is aimed at creative projects with children aged 11 years and under, using photography, animation, digital art or video.

Staffing: the Current permanent staffing complement is:

Senior Manager : Vacant
Steve McLean (Acting Senior Manager, Curator, Principal Keeper)
Sharon Lewis (Administrative Assistant)*
Les Jessop (Keeper of Biology - based at Sunderland Museum)*
Naomi Hewitt (Regional Hub Assistant Learning Officer)*
Sylvia Humphrey (Assistant Keeper, Geology)*
Eric Morton (Assistant Keeper, Biology)
Nicola McNicholas (Biology Assistant)
Gillian Mason (Learning Officer)
Claire Trueman (Communications Officer)*
John Pratt (Team Leader)
Deborah Hunter (Team Leader)
Mark Cutts (Attendant)
Rachel Arkley (Attendant)*
Chris Beeton (Attendant)*
Jill Lancaster (Attendant)*.

Short-term Contract Staff

Joanne Anderson (GNM Storage Project Coordinator); Sarah Glynn (Assistant Keeper of Geology); Dan Gordon (GNM Curatorial Assistant :Biology); Gill Scott (GNM Curatorial Assistant: Egyptology); Ana Flynn (GNM Project Conservator); Carol Taylor (Administrative Assistant*); and the following GNM Curatorial Assistants (Collections Pack Up): Alex Boyd, Andrew Longworth, Graham Meggeson, Cheryl Rowe, Lindsay Bruce, Diane Veti, Helen Potter, Christelle Hyppolite, Leonie O'Dwyer, Eric Johnson, Barry Donaldson, Christine Hutchinson, Alison Blackburn, Nicola Berne*; Janet Mears (Assistant Learning Officer); Athena Taylor (Den Explainer)*.

(*indicates part-time)

Volunteers

Volunteers have been particularly critical to the operation of the Museum this year, especially in light of the huge amount of work that has been undertaken to document and pack up the collections for removal to temporary storage as part of the Great North Museum project. In addition, we recruited a team of volunteers to staff the Finds Handling Table in the Egypt Revealed exhibition. Much of our work would not be possible without the continued support of our volunteers and we are extremely grateful for their generosity and commitment.

GNM Pack-up volunteers: Angela Russell, Jeremy Fay, David Horsefield, Zahida Ibrahim, Peter Charlton, Stacey Felton, Jonathan Cranston, Maria Rodriguez, Jess Weightman, Alison Coapes, Laura Sevil, Andrew Park, John Harvey, Ellie Swinbank, Heather Froste, Lauren New, Debra Miller, Gillian Laing, Katherine Farrimond, Chris Pettigrew, Nikki Spaulding, Sarah Dresser, Gillian Griffiths, Svetlana Ryle, Lewis McNicholas, Jillian Rees, Paul Myers and David Rees.

Other volunteers: Trevor Bridges and Shelagh Bridges (Mineralogy curation and GNM Pack up); Paddy Cottam (Osteology curation); Jess Fermie (Palaeontology curation); Michael Frankis (Northumberland bird records); Susan McLean and June Waites (Learning support/ Egypt Revealed); Roger Stobbart (Entomology curation/bird curation); Stuart Wade, Lynn Bridgett, Adele Caisley, and Judith Renwick (Learning support).

Thanks should also go to Natural History Society members who helped considerably with the packing of the Society's library. Those who helped were: Hugh and Stella Chambers, David Gardner-Medwin, June Holmes, David Noble-Rollin, Chris Calver, Margaret and Martin Evans, Margaret Patterson, Stuart Will, Joan Holding and Rita Wolland.

Work Placements: Frances Cusack (St Benet Bishop High School); Hui-Pin Chen, Matt Cowpe, Caitlin Gordon-Walker, Corinne Heggie, Christos Keiktsoglou, Huj-Ju Ouyang, Ruth Pollitt, Wen-Ching Shih, Sian Smith, Susan Taylor (all MA Students, ICCHS); and Kate Gibson (Newcastle Central High).

Grants and Sponsorship (excluding GNM)

Hancock Museum Exhibitions:

Treasures of the Sea	Culture 10	£6,428
Egypt Revealed	TWM Business Partners	£5,000
Learning:		
Real World Science	DCMS Strategic Commissioning in partnership with Natural History Museum	£27,289
IT Rocks:		
Bringing Geology to Life	North East Regional Museums Hub	£9,757
Easter Learning Activities	TWM Business Partners	£1,800
Collections		
General Storage Equipment	Newcastle University	£1,000

Selected Acquisitions

Barn Owl and Wren - gift, C P Pickering, Acklington; Rabbit - gift, Mrs Lock, Newcastle upon Tyne; Kittiwake and Puffin - gift, Daniel Turner, North Shields; Badger - gift, Mr J Morrison, Ebchester, Co. Durham; Slavonian Grebe - gift, Daniel Turner, North Shields; Woodcock - gift, Kurt Grant, Blyth; Blue Tit - gift, J F Hellen, Rowlands Gill; Six Butterflies from Brazil - gift, Mrs Reeve, Bedlington; Two boxes of birds eggs, antlers, Ostrich egg and Sperm Whale tooth - gift, Greta Emmerson, Bishop Auckland; Grey Squirrel - gift, Tony Brenan, Plessey Country Park; Seven Rabbits - gift, Tina Wiffin, Thornley Woodland Centre; Otter - gift, B Prudhoe, Whalton, Northumberland; Herbarium sheets - gift, Mrs Margaret Preece, Corbridge; Lichen - gift, John Douglass, Hamilton, Lancs; Part skeleton of Tortoise - gift, Dr Brian Selman, Heddon-on-the-Wall; Barn Owl pellets - gift, Dr Brian Selman, Heddon-on-the-Wall; Nettle stocking - gift, Dr Iain Bain; Guanaco skull -gift, Dr Brian Selman, Heddon-on-the-Wall; Various natural history specimens including Mice skeletons, Dolphin and Cormorant bones, and dried Octopus - gift, Dr Brian Selman and family, Heddon-on-the-Wall; Neasham Elk, part skeleton - Fired brick with cuneiform writing - Gilded wooden figure - Section of Mammoth tusk - Subfossil bovid horn - all transferred from former collections of the Tubwell Row Museum, Darlington.

RINGING GROUP

Over twenty Society members participate in the ringing activities of the Society. Three fully-licensed 'A' permit Trainers look after eight 'C' permit holders and others at various stages of training, three of whom will shortly be applying for their 'C' permits. The two most important activities of the Team are their continued work on seabirds nesting on the Farnes and Coquet Island, and the Constant-Effort Site (CES) ringing at Gosforth Park Nature Reserve. Ringing studies on seabirds are carried out with the encouragement and help of the National Trust (Farne Islands) and RSPB (Coquet Island) and are focused on using ringing as a monitoring tool to understand the reasons underlying population

change. This is a vital activity in times of global climate change and the Team's efforts are helping to understand the consequences of climatic change in the North Sea. These seabird ringing studies also interact closely with work carried out by the Farnes Islands Marine Research Group (FIMRG).

Seabird ringing Ringing seabirds produces valuable data on survival rates and causes of mortality. With more-intensive and focused studies, particularly obtaining biometric data from adults and chicks, the work can produce results of greater value. The 2006 breeding season was particularly interesting, with the 'growth index' measurements for Arctic Tern chicks on Inner Farne, Brownsman and Coquet island showing marked differences between the islands: Coquet chicks were in better condition whereas Brownsman chicks had the poorest body condition, even compared to chicks on Inner Farne. These results suggest that feeding conditions were relatively poor around the Farnes, particularly for the outer group of islands. These body-condition results correlated broadly with the mortality of chicks (from ringing data) with 22% of ringed Arctic Tern chicks on Coquet being found dead compared with 41% on Inner Farne and 46% on Brownsman. At least part of this mortality occurred late in the season and affected chicks near to fledging. As last year, Snake Pipefish were very much in evidence and were being fed to Arctic and Sandwich Terns and also Kittiwake chicks. The technique of measuring chick mass in relation to a measure of structural size was extended to Kittiwakes for the 2005 and 2006 breeding seasons. The Team is applying the same rationale to adult birds; data for adult Arctic Terns allow us to assess body condition throughout the breeding season. For 2006, adult Arctic Terns showed similar body masses during the most intensive chick feeding period (mid June-early July) to 2005 and 2003, and above that for 2004, a year in which chick mortality was high due to lack of food (Figure 1). Data for adult Kittiwakes were also obtained in 2006 as part of a planned long term series which started in 2005. As well as allowing us to track the gradual reduction in body mass of the adults as the season progresses, obtaining samples of adults early in the breeding season can provide valuable data on feeding conditions necessary for successful breeding and how this relates to mean clutch size. The Team plans to extend these focused studies to include Puffins in the next season: both Arctic Terns and Kittiwakes are surface feeders and data for a species which feeds throughout the water column would be of considerable value.

Part of the Ringing Team leaving Inner Farne for Brownsman.

Apart from these focused and intensive studies, the Team rings adult female Eiders (Inner Farne) and Shags (Staple Island) as 'Retrapping Adults for Survival' (RAS) projects, Fulmar chicks (Coquet Island), Black-headed Gull chicks (Coquet Island) and Sandwich

Tern chicks (Farnes and Coquet Island). Capture totals for these projects are summarised in Table 1. The overall level of activity was similar to last year, but with the inclusion of eighty Puffins the total was slightly higher. The numbers of Black-headed Gulls ringed is

Table 1 Seabird ringing totals for 2005 and 2006: Farnes and Coquet Island

	2005		2006	
Species	**Ringed**	**Retrap/ Control**	**Ringed**	**Retrap/ Control**
Fulmar	15		24	
Shag	82	15	58	25
Eider	60	87	8	74
Black-headed Gull	150		200	
Kittiwake	260	4	325	5
Sandwich Tern	882		528	
Roseate Tern	1		1	
Common Tern	23	1	48	1
Arctic Tern	470	53	802	91
Puffin			80	
Total	1943	160	2074	196

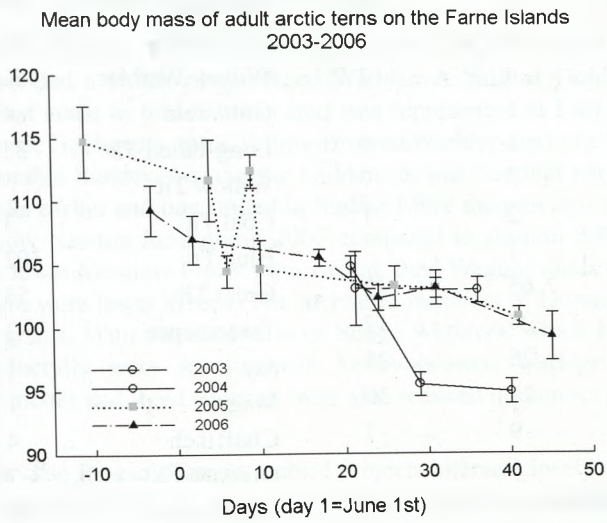


Figure 1 Mean mass (g) of adult arctic terns on the Farne Islands in relation to seasonal progression (day 1= 1st June) in 2003, 2004, 2005 and 2006. Mass has been corrected for variation in body size. Error bars are one standard error (SE) of the mean.

held at 150-200 (on grounds of cost). The Team aims to ring 1,000 Sandwich Terns each year, but only achieved just over half that total in the 2006 season, mainly because Roseate Terns nesting on Coquet Island got in the way! This reduction in numbers of Sandwich Terns ringed was balanced by an increase in ringing and recapture totals for Arctic Terns.

Ringing in Gosforth Park Nature Reserve The CES project at Gosforth Park has been running since 1988. During the period up to the end of August 2005, over 15,000 birds have been ringed or retrapped in the reserve. Each year, capture data are submitted to the British Trust for Ornithology (BTO) and are incorporated into national indices of bird productivity (breeding success) and abundance. In addition, the rigour in recording and consistency in net operations means that the data can be used for analyses of adult survival. For many years, Gosforth Park has been important as the main focus of the Reed Warbler population north of the Tyne, and the CES data for this species in Gosforth Park since 1988 has recently been analysed and compared with a well-studied Reed Warbler population at Wicken Fen in Cambridgeshire. This analysis, by Chris Thaxter, Chris Redfern and Richard Bevan and recently published in the international BTO journal *Ringing & Migration*, has shown that survival rates for adult females were comparable at the two sites, but suggested that survival rates for adult males were lower at Wicken Fen. Unlike Wicken Fen where new recruits due to immigration had a greater contribution to population growth, the survival of adults returning to the site was important to Reed Warbler pop-

Table 2 Captures (new birds and new-for-year retraps) at Gosforth Park in the two 'Annual Report' years.

Species	01/08/2004-31/07/2005	01/08/2005-31/07/2006	Species	01/08/2004-31/07/2005	01/08/2005-31/07/2006
Common Tern	2	21	Blackcap	53	44
Swift	5		Chiffchaff	52	48
Kingfisher	4	2	Willow Warbler	52	69
Great Spotted Woodpecker	1	1	Goldcrest	4	1
Swallow	8	7	Long-tailed Tit	33	19
House Martin	2	1	Willow Tit		
Grey Wagtail	1		Coal Tit	3	
Wren	65	42	Blue Tit	102	79
Dunnock	24	12	Great Tit	58	29
Robin	25	21	Treecreeper	3	1
Blackbird	29	30	Jay	1	2
Song Thrush	9	7	Magpie	1	
Redwing	1		Chaffinch	4	1
Grasshopper Warbler		1	Greenfinch	7	19
Sedge Warbler	102	91	Goldfinch	10	4
Reed Warbler	88	60	Linnet		2
Whitethroat	3	11	Bullfinch	9	6
Garden Warbler	4	1	Reed Bunting	40	34
			Total	**805**	**666**

ulation growth at Gosforth Park. These differences may relate to the availability of adjacent habitat: *Phragmites* reed beds are common in the South, but relatively scarce in the north-east. Now that the growth of reed beds is being encouraged in the north-east, with Chevington being a good example, Reed Warblers are likely to increase in abundance in this region. In contrast to published data for Sedge Warblers, the Reed Warbler survival rates at both Gosforth Park and Wicken Fen did not correlate with rainfall in the Sahel region of West Africa.

Capture totals (new-for-year birds) in Gosforth Park for 2006 (1August 2005 to 31 July 2006) and for 2005 are shown in Table 2. Overall, ringing totals for this period were down (666 compared to 805), and this was reflected in declines of the capture totals for a number of species. Dunnocks and Wrens were down by a half and one-third, respectively; Sedge Warblers, Reed Warblers and Blackcaps were all down, Reed Warblers by one quarter. All the tit species were down with capture totals for Long-tailed Tits and Great Tits only about 50% of the total for the previous period. Conversely, Whitethroats and Greenfinches were more numerous. Bluethroats were most definitely down but this is perhaps to be expected for a once-in-a-blue-moon species!

Ringing at Low Newton Once the Constant Effort Season finishes at the end of August, the Ringing Team focus their efforts on the site at Low Newton-by-the-Sea, giving trainees experience of a wider range of ringing situations. At this site, the Team focus their activities in two main habitats: a rocky area extending from mid tide level to the upper beach on the north side of Newton Haven, and the reed and willow scrub vegetation around Newton Pool and the associated sand dunes. Since the start of the project in autumn 1993 more than 4,500 birds have been ringed there. Although this site is not a migration hot spot, from the ringing data it is clear that it is, nevertheless, important for migrants of a wide range of species. In particular, the beach habitats with extensive areas of decomposing seaweed support flocks of wagtails, pipits and Starlings.

Autumn 2005 at Low Newton will be one to remember. The first visit of the season in early September yielded a Dutch-ringed Reed Warbler. A 'fall' of Goldcrests occurred along the North-East coast in mid-October and was represented at Low Newton by the capture of seventy-six Goldcrests, three Yellow-Browed Warblers and one Pallas's Warbler on one very memorable Sunday. Among the Goldcrests was one that had been ringed in Norway a few weeks earlier and one ringed in Staffordshire the previous autumn. Overall ringing totals at Low Newton for autumn 2005 compared to autumn 2004 are shown in Table 3. Although fewer Meadow Pipits were ringed, Pied Wagtail totals increased. As at Gosforth Park, there were fewer Wrens. The increased numbers of Dunnocks and Robins were probably migrants. With the exception of Sedge Warblers, which breed at Newton Pool, warblers generally were sparse, with Yellow-browed Warblers outnumbering Chiffchaffs. Tits, finches and Reed Bunting were also reduced in number compared to the previous autumn.

Coastal Research The Ringing Team's seabird projects interact closely with the work of the Farne Islands Marine Research Group (FIMRG), a collaboration between the Society, the Newcastle University and the National Trust. The Group's work continued in 2006, aided by funding from the Sir James Knott Trust (administered through Newcastle University). Eliza Leat came back to spend her third summer vacation from Glasgow University collecting foraging and nest provisioning data on Inner Farne. Similar work was carried out for a shorter period by Myles Menz on Brownsman. These studies were

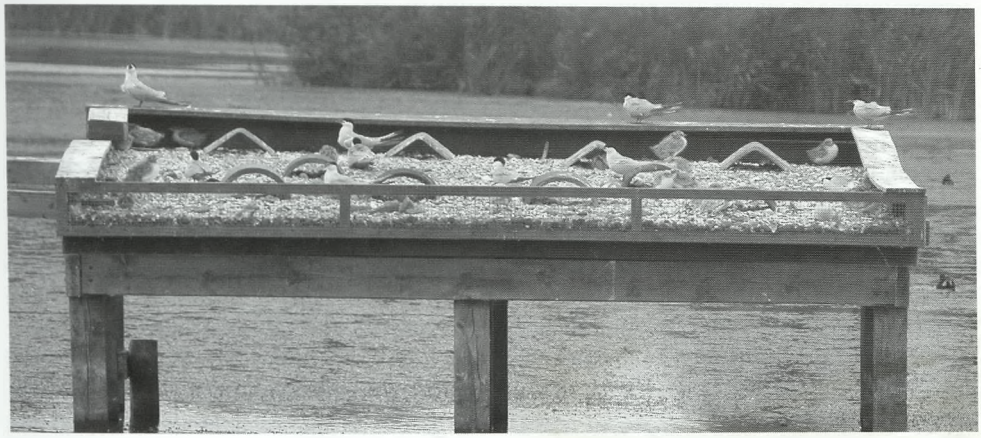
also continued on Coquet Island in 2006 where Laura Morris contributed to the RSPB's wardening team while collecting data for the FIMRG. As part of the work, FIMRG funding supports Sand-eel sampling with the University Research Vessel *Bernicia*. As well as enabling annual monitoring of Sand-eel abundance at key sites around the Farne Islands, the sampling provides material to investigate changes in the nutritional or energy content of Sand-eels from year to year. A by-product of the sampling programme is that the regular trawls have revealed the extent of the increased abundance of Snake Pipefish in these waters. The apparent ready availability of this fish, a relative of Seahorses, to foraging seabirds may have important consequences on seabird breeding success and it will be important for the Group to develop techniques to assess the nutritional content of Pipefish and their impact on seabird growth and body condition.

Table 3 Ringing totals at Low Newton in autumn 2004 and autumn 2005

Species	2004	2005	Species	2004	2005
Sparrowhawk	1		Pallas's Warbler		1
Jack Snipe	1		Yellow-browed Warbler		3
Redshank	1	2	Chiffchaff	19	2
Great Spotted Woodpecker	2	1	Willow Warbler	10	5
Swallow	6	12	Goldcrest	10	88
House Martin	3		Bearded Tit	1	
Meadow Pipit	28	11	Long-tailed Tit	9	
Rock Pipit	14	10	Willow Tit	1	
Grey Wagtail	2	2	Coal Tit	1	2
Pied Wagtail	6	13	Blue Tit	42	9
Wren	57	34	Great Tit	6	11
Dunnock	21	31	Treecreeper	3	
Robin	28	39	Jackdaw		1
Redstart	1		Starling	38	33
Whinchat	1		House Sparrow	9	14
Stonechat	10	1	Tree Sparrow	3	
Wheatear	1		Chaffinch	9	4
Blackbird	22	12	Greenfinch	7	17
Fieldfare		2	Goldfinch	29	6
Song Thrush	8	7	Siskin	2	
Redwing	2	5	Linnet	29	5
Sedge Warbler	24	18	Redpoll sp.		2
Reed Warbler	2	1	Lesser Redpoll		1
Lesser Whitethroat	2	2	Yellowhammer	6	1
Whitethroat	1		Reed Bunting	70	47
Blackcap	7	6	**Total**	**555**	**461**

The Society is extremely grateful to all those who support the ringing studies in various ways. The seabird studies would not be possible without the support of the National Trust (John Walton and David Steel) and the RSPB (Paul Morrison and Mike Innerdale). It has been a particular pleasure for the Ringing Team to have received very positive help and encouragement from David Steel (Steely) and Sarah Lowe, Head Wardens on the Farnes and Coquet Island, respectively. Laura Morris helped tremendously by ringing Arctic and Common Tern chicks on Coquet Island while working for the FIMRG team, and Eliza Leat ringed some Arctic Terns, Eider and Puffins on Inner Farne during her data-gathering work. The Ringing Team put a tremendous amount of effort into the Society's ringing projects and the Society is very grateful for their hard work.

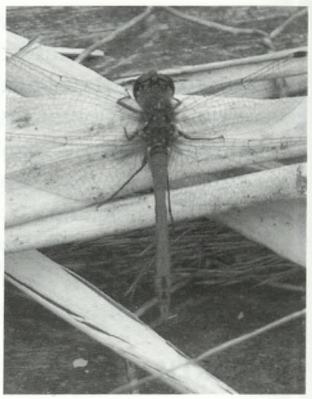
GOSFORTH PARK NATURE RESERVE



Reedbed management work again took place during the winter, funded by a grant of £5,000 from English Nature. To maintain the health of the reedbeds, the contractors had the task of clearing mature Willows and other trees overhanging reedbeds and cutting reeds in strips several metres wide to help reduce the annual accumulation of debris. The University Conservation Society once again helped out by building boardwalks and the more delicate task of clearing and coppicing willows growing within the reedbeds. Also during the winter Geoff Lawrence and Paul Drummond doubled the size of the tern platform in the old lake area. With a new covering of gravel and shells, this was particularly successful and eighteen pairs of Common Terns nested on the platform. The platform will be increased in size again next winter in a bid to expand the Common Tern colony further. Fencing work along the southern boundary of the reserve has been effective in reducing trespassers, but more work is still required to fill in the gaps so that we have a continuous run of barbed wire. The reserve has had a good year for wildlife, with birds and mammals faring very well. Otters, Foxes, Badgers, Stoats and Roe Deer have all been seen in the reserve, and Red Squirrels have been sighted regularly. Red Squirrels are under continuing threat from encroaching Greys, so it is encouraging that few of the latter have been sighted in the reserve this year. A 'Save the Red Squirrels in Gosforth Park' project has been funded by the Society and also the North Tyneside and Newcastle City

Holly Blue in Gosforth Park Nature Reserve.

Councils through their Biodiversity Action Plan. Led by Veronica Carnell, this project is making excellent progress in establishing monitoring techniques for Red and Grey Squirrels. Like the Common Terns, other species breeding in the reserve have done well and the resident Mute Swans raised a brood of eleven cygnets. Ringing studies have indicated that the Reed Warbler population remains at a good level. Bird sightings included Barn Owl, Green Woodpecker, Black-necked Grebe, six species of waders and a Ring-necked Parakeet. Insects have not gone unrecorded and this year has been notable for the number of butterfly species recorded (13) including Orange-tipped, Large Skipper, Comma (including an aberration form *suffusa*), Wall Brown, Painted Lady, Small Copper and a Holly Blue. A Hummingbird Hawk Moth put in an appearance and Dragonfly sightings have included Emperor and Ruddy Darter.


Ruddy Darter.

Negotiations with the owners of Gosforth Park for a long term lease of the reserve are still ongoing but we hope that these will reach a satisfactory conclusion this year. The Society is indebted to the members who help to maintain security, volunteer members of working parties and the Ringing Team, members of the management committee, Geoff Lawrence for his carpentry skills and of course the Warden, Paul Drummond, all of whom help to make the nature reserve a wildlife haven in an increasingly urban environment. The Society is grateful to English Nature (later re-named Natural England) for funding work to maintain the reed beds in a healthy condition, and to St Modwens for their continued co-operation in maintaining security and help in running the reserve. David Noble-Rollin continues to do an excellent job in negotiating grants to help manage the reedbeds and safeguard the Red Squirrels. Finally, Veronica Carnell deserves a special mention and thanks for her dedication to research and monitoring of the Red Squirrel population in the reserve and surrounding areas.

COQUET ISLAND ADVISORY COMMITTEE

The Society has two members on this committee, currently Ian Moorhouse and David Noble-Rollin. They, alongside the Northumberland Wildlife Trust and other representatives, work with the RSPB to help manage this small island as a nature reserve, now one of the two main breeding sites for Roseate Terns in Great Britain.

The year started under the chairmanship of the RSPB's Mike Innerdale who left shortly afterwards to be replaced by Dave Barrett, who has taken up his old post as Regional Reserves Manager. We are delighted to see Dave back and wish him well as he returns to his old role.

There are only two meetings in most years. The first this year involved preparation of a protocol for research on the island, still to be formalised. The second, in summer was held at the end of July in Amble and was followed by a site visit.

The strategy to control the breeding area and number of large gulls, which at one time threatened to push the tern colonies off the island, is now in its third year. Although requiring intense effort it appears to be working well with the gulls currently occupying a smaller area than last year and breeding numbers dropping to fifty pairs compared with fifty-five last year and eighty-nine in 2004.

The assemblage of breeding birds is generally holding its own or increasing. Eider numbers (249 pairs) are up for the second year after several years of steady decline, but are still well down on the five hundred or so pairs recorded on several occasions in the 1970s and 1980s.

Roseate Tern numbers, at ninety-three pairs, have increased again (ninety-one last year). However, at the time of the site visit the terns generally appeared to be having difficulties in obtaining Sand-eels and are catching Pipefish - thin bony creatures up to 300mm long which the young terns are unable to digest and which frequently protrude from their mouths. This had already at the time of the site visit been the cause of chick mortality.

Puffins, which also feed on Sand-eels have by contrast experienced a very good breeding season. One possible reason for this is that they are able to fish at greater depths than the terns to locate Sand-eels which may be lower in the water column than normal. Another manifestation of global warming?

LINDISFARNE NATIONAL NATURE RESERVE

Lindisfarne Advisory Committee

The Advisory Panel meets twice a year and its main remit is to advise English Nature (now Natural England) on all matters that may affect the National Nature Reserve. Graham Bell represents the Society on this committee and as Chairman of the Lindisfarne Wildfowl Panel David Noble-Rollin also has a place on the committee. The main areas of discussion were the effect of lighting from a new planning application at Waren Mill, access issues to the shore of Budle Bay and proposed development of an interpretation centre with café and shop at Beal Farm. The committee was told of a trial cattle grazing scheme where thirty-eight cattle had grazed 140ha on the reserve and although the trial was for a short time they had made a significant impact into the rank vegetation with the additional benefit of grazing and trampling Pirri-pirri Bur. It is hoped that this can be repeated in the future.

The Committee was also updated on the Foreshore project which is a programme of managed realignment in order to create intertidal habitat and reduce the massive costs of sea defences.There are currently two schemes in our region, one at Beal and the other at Alnmouth. A total of 200ha of inter-tidal habitat will be created.

At the December meeting it was reported that in summer 2005 the Little Terns had their best breeding season for many years with forty-eight fledging young. In 2006 the colony had had a bad start during cold wet weather in late May but during June there had been a surge of breeding activity with forty nest scrapes in the colony.

The other main concern of the Committee was the imminent change in the structure of English Nature. The new Natural England will incorporate the Rural Development Service, a large part of the Countryside Agency and English Nature. It is hoped that this will give a more holistic approach encompassing education and conservation aims.

Lindisfarne Wildfowl Panel

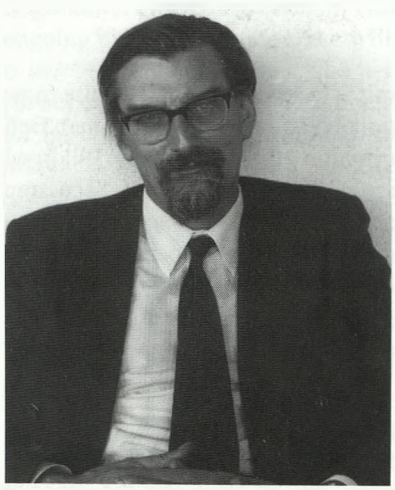
The Wildfowl panel is concerned with the Conservation of the National Nature Reserve and the impact of wildfowling and other human activities on the area. It monitors the activities and the number of birds in the area and is constantly looking for ways to increase the

birds using the reserve during both the winter and the breeding season. The panel met on two occasions during the year and David Noble-Rollin, the Society's representative on the Committee, continued his role as Chairman. One of the main concerns was the possible effects of bird flu. The Holy Island area is a major wintering area for European birds and it is known that waterfowl are carriers of the virus. The case in Fife highlighted the danger and monitoring of the Nature Reserve was increased during that period. Also specimens were sent for analysis throughout the winter but no cases of the virus were found.

The Wildfowl Panel reports to the Advisory Panel and all other matters that the Committee dealt with are mentioned under the Advisory Panel.

Obituary

Dr Trevor George Walker (1927-2006)



Trevor George Walker joined the Natural History Society in October 1959 when he arrived in Newcastle to take up a lectureship at the University. He became an active member of the Botany Section and the Library Committee and represented the University on the Society's Council for many years until his retirement in 1992. At the January meeting of Council his death a few days earlier was greeted with great sadness, and Tony Tynan and others spoke warmly of their longstanding friend.

He was born in York. From Archbishop Holgate School there, Trevor joined the Military Police for his National Service, posted with the RAF in India. He read Botany at the University of Leeds (BSc 1952) and as a postgraduate student developed an interest in the cytology of ferns and the relationships between fern species. Two inspiring expeditions to Ceylon, the first with his Leeds colleagues Professor Irene Manton and Arthur Sledge and Frank Ballard (of Kew) led to his lifelong fascination with ferns, botanical exploration and the collection and cultivation of exotic species. His PhD in 1956 was on variation in the genus Pteris. His next major expedition was to Jamaica, in association with the University of the West Indies, to which he returned on many further visits becoming an authority on the island's ferns. His extensive fieldwork there and later also in Papua New Guinea, Indonesia, Sarawak, Trinidad, Costa Rica and Venezuela resulted in many living plants being sent to the Royal Botanic Gardens at Kew and Edinburgh. His herbarium specimens were deposited in the London Natural History Museum. He could never find his way around London and used to say how much easier the jungles of Sarawak were to navigate. While on the library committee he was responsible for acquiring for our library a characteristic collection of books on botanical exploration and on ferns and afterwards his widow Molly (née Shivas) generously donated some of his books to the Society.

In Newcastle he followed Katherine Blackburn as Lecturer, becoming Senior Lecturer in 1969. He worked closely with Dr William Clark (a leading botanist in the Society at the time and the son-in law of Heslop Harrison) and wrote Clark's obituary for *Watsonia*. Clive Jermy a pteridologist colleague who joined Trevor on several expeditions regarded his research as fundamental in its scope and importance for classification. He was awarded the DSc at Leeds for this work. He was a past Director of Newcastle University's Moorbank Botanical Gardens to which he brought back specimens particularly from Trinidad and he was involved in creating new fern cultivars for the Dutch horticultural industry. He was President of the British Pteridological Society.

Trevor was passionate about the conservation of cultivated as well as wild plants. He was a founder and life member of the North East Group of the National Council for the Conservation of Plants and Gardens (NCCPG) and served as its chairman and constituency representative on the National Council of which he was vice-chairman (conservation) in 1995-7. David Goodchild, chairman of the NCCPG said of Trevor 'Most of all he was an excellent plantsman with a huge knowledge and expertise most of us couldn't even aspire to. I like to believe that a very large part of his knowledge will live on because he was hugely generous in giving it away, just as he often said that the best way to keep a plant is to give it away.' His garden and greenhouse became the focus for the conservation and generous distribution of threatened cultivars. Denis Scadeng remembers meeting Trevor by chance on the Metro, when he knew him only slightly, and asking him by way of conversation about how to obtain spores of the Royal Fern. Trevor had put his hand into his top pocket, removed a test tube with a plantlet growing in agar and handed it to him. Members of the North East Group on the NCCPG planted a tree in his memory at Blagdon Hall.

Over the years Trevor led botanical field trips and gave many lectures to the Society based on his expeditions in search of ferns, first in 1960 'Plants in Jamaica' and later 'The rich coast - a naturalist in Costa Rica', 'Thomas Belt: his ants and their plants', and A Botanist in Venezuela'.

Trevor died on 12 January 2006, his 79th birthday. The very high attendance at his funeral was a tribute to the very high regard and affection felt for him by Society members, friends and former colleagues. A fine biographical tribute was paid by his colleague and close friend Chris Jermy.

FINANCIAL STATEMENTS
31 JULY 2006

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA
REPORT OF THE TRUSTEES FOR THE YEAR ENDED 31 JULY 2006

CHARITY NUMBER 526770

The Trustees submit their Financial Statement for the year ended 31 July 2006. During the year, expenditure exceeded income by £7,141, compared to last year's deficit of £16,870, although the net movement in funds when the growth in value of the Society's investments is taken into account was a positive £36,947.

The Society's investments continue to be managed by Brewin Dolphin Securities, producing a net gain (realised and unrealised) of £44,088.

Reference and Administrative Information

These details are disclosed on page 4 of this Annual report.

Structure Governance and Management

This is described in full on page 6 of the Annual Report.

Objectives and Activities

These are detailed on page 5 of the Annual Report.

Achievements and Performance

The detailed report of the Society's activities during the year appears on pages 5 to 48 of the Annual Report.

Risk Management

The Council as Trustees have assessed the major risks to which the charity is exposed, in particular those relating to its operations and finances, in order to be satisfied that systems are in place to mitigate the exposure to the major risks. The financial regulations approved by Council have been in operation throughout this period.

Reserves Policy

It is the policy of the Society to maintain unrestricted funds, which are the free reserve of the charity, at a level which equates to approximately one year of unrestricted expenditure. This provides sufficient funds to cover management, administration and support costs and to respond to emergency applications for funds which arise from time to time. Unrestricted funds were maintained at a higher level than this through the year.

The Society has undertaken to offer £50,000 at the rate of £10,000 a year for five years from 2006 as a contribution to the Great North Museum project. It is not envisaged that such a contribution will detract from the Society's current policy on financial reserves within this timescale.

Investment Policy

All investment transactions during the year under review have been carried out in accordance with the trustees' powers.

Financial Review	**2006**	**2005**
Net Outgoing Resources	(£7,141)	(16,870)

Trustees Responsibilities in relation to the Financial Statements

The law applicable to charities in England and Wales requires the trustees to prepare accounts for each financial period which give a true and fair view of the charity's financial activities during the period and of its financial position at the end of the period and adequately distinguish any material trust or other restricted fund of the charity. In preparing accounts giving a true and fair view, the trustees should follow best practice and:

select suitable accounting policies and then apply them consistently;

make judgements and estimates that are reasonable and prudent;

state whether the policies are in accordance with applicable accounting standards and statements of recommended practice on accounting by charities subject to any departures disclosed and explained in the accounts;

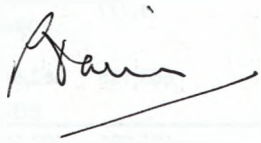
prepare the accounts on the going concern basis unless it is inappropriate to presume that the charity will continue in operation.

The trustees are responsible for keeping accounting records which disclose, with reasonable accuracy at any time, the financial position of the charity, and which enable them to ensure that the accounts comply with Accounting Standards and Statements of Recommended Practice and the regulations made under s44 of the Charities Act 1993. They are also responsible for safeguarding the assets of the charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Independent Examiners

Tait Walker have expressed their willingness to continue in office as independent examiners, and a resolution to reappoint them will be proposed at the Annual Meeting.

Signed on behalf of the Trustees



PETER DAVIS

Chairman and Trustee

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED 31 JULY 2006

	Notes	Restricted	Unrestricted	2006 Total	2005 Total
		£	£	£	£
Income and expenditure					
Incoming resources					
Incoming resources from generated funds:					
Voluntary income	2	34,950	23,265	58,215	33,984
Activities for generating funds	3	-	12,823	12,823	10,737
Investment income	4	-	25,419	25,419	25,487
Incoming resources from charitable activities	5	138	3,923	4,061	2,558
Other incoming resources		-	691	691	568
Total incoming resources		35,088	66,121	101,209	73,334
Resources expended					
Charitable activities	7	29,162	70,014	99,176	83,456
Governance costs	8	-	9,174	9,174	6,748
Total resources expended		29,162	79,188	108,350	90,204
Net (outgoing)/incoming resources before other recognised gains and losses		5,926	(13,067)	(7,141)	(16,870)
Other recognised gains and losses					
Realised and unrealised on investments assets		-	44,088	44,088	74,929
NET MOVEMENT IN FUNDS		5,926	31,021	36,947	58,059
Transfer between funds		(1,777)	1,777	-	-
Funds brought forward		(488)	663,128	662,640	604,581
FUNDS CARRIED FORWARD 31 JULY 2006		3,661	695,926	699,587	662,640

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

BALANCE SHEET AS AT 31 JULY 2006

	Notes	2006	2005
		£	£
FIXED ASSETS			
Tangible assets for use by the society	11	13,358	13,855
Investments	12	621,736	610,334
		635,094	624,189
CURRENT ASSETS			
Stock		231	231
Debtors	13	4,743	8,255
Cash at bank and in hand		64,278	34,530
		69,252	43,016
CREDITORS: Amounts falling due within one year	14	4,759	4,565
NET CURRENT ASSETS		64,493	38,451
TOTAL ASSETS LESS CURRENT LIABILITIES		699,587	662,640
NET ASSETS		699,587	662,640
FUNDS			
General Fund		263,440	229,568
Expendable Endowments:			
TB Short Memorial Fund		230,993	230,993
Grace Hickling Memorial Fund		181,433	181,433
		675,866	641,994
Life Members Fund		1,346	1,531
Designated Capital Funds	15	18,714	19,603
Restricted Funds	16	3,661	(488)
TOTAL FUNDS		699,587	662,640

Approved by Council on 19 January 2007

and signed on its behalf by:

PETER DAVIS - Chairman and Trustee

DOUGLAS JOHNSON - Honorary Treasurer and Trustee

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 JULY 2006

1. Accounting Policies

1.1 Basis of Accounting

The financial statements have been prepared under the historical cost convention and in accordance with the Statement of Recommended Practice: "Accounting and Reporting by Charities" (SORP 2005) issued in March 2005 and applicable accounting standards and the Charities Act 1993.

1.2 Realised and Unrealised Gains and Losses on Investments are recognised in the Statement of Financial Activities in the period in which they arose.

1.3 Investments are stated at market value at 31 July 2006.

1.4 Tangible Fixed Assets

Tangible fixed assets are stated at cost less depreciation which is provided in equal annual instalments over the estimated useful lives of the assets.

No value is attributed to the Hancock Museum at the date of its completion in 1884. The building is leased to the University of Newcastle upon Tyne which is normally responsible for all repairs and improvements.

The cost of Lake Lodge, less donations and grants received, of £3,899 is depreciated at 2% per annum. The cost of installing mains electricity at Lake Lodge, less donations received, of £5,300 has been fully depreciated.

The cost of the hides, equipment and office furniture is depreciated at 10% per annum and computers and office equipment at 20% per annum.

1.5 Statement of Financial Activities

Donations are recognised when received unless the receipt is certain, when they are recognised as accrued income. Expenditure is accounted for on an accrued basis. Any excess income over expenditure for the year is arrived at after making appropriations to special funds for the purpose of setting aside temporary surpluses of income to meet future expenditure.

1.6 Deferred Income

Deferred income represents amounts received for future periods and is released to incoming resources in the period for which it has been received.

1.7 Fund Accounting

The General Fund is unrestricted, and is expendable at the discretion of the trustees in the furtherance of the objects of the charity. The T B Short and Grace Hickling Memorial Funds were created from legacies and are invested in accordance with the Trustee Investment Acts and are subject only to expenditure for special projects. The Life Members Fund consists of amounts received in payment of life subscriptions and they are released to income over a period of 20 years in equal annual instalments.

1.8 Charitable activities

Costs of charitable activities includes grants made and an apportionment of overhead and support costs as shown in note 7.

1.9 Governance Costs

These comprise all costs involving the public accountability of the charity and its compliance with regulation and good practice. These costs include statutory audit and legal fees together with an apportionment of overheads and support costs. As shown in note 8.

2. Voluntary Income

	Restricted	Unrestricted	2006 Total	2005 Total
	£	£	£	£
Subscriptions	-	20,098	20,098	21,876
National Heritage Lottery Fund	21,433	-	21,433	-
Dickinson Bursary	-	1,410	1,410	5,000
Atkinson manuscript	6,517	14	6,531	-
English Nature	7,000	-	7,000	5,180
The Percy Hedley Foundation	-	500	500	-
Samares Investors Ltd	-	500	500	500
General public donations	-	743	743	952
	34,950	23,265	58,215	33,508

3. Activities for Generating Funds

	Restricted	Unrestricted	2006 Total	2005 Total
	£	£	£	£
Search fees	-	1,800	1,800	1,810
Council room hire	-	1,988	1,988	155
Lease payment	-	9,035	9,035	8,772
	-	12,823	12,823	10,737

4. Investment Income

	2006	2005
All investment income is unrestricted:	£	£
UK equity dividends	17,437	16,299
UK fixed interest	3,124	1,825
UK unit trusts	1,222	3,846
Non UK unit trust	16	-
Non UK fixed interest	638	-
Non UK equities	627	834
Bank interest	2,355	2,683
	25,419	25,487

5. Incoming resources from Charitable Activities

	Restricted	Unrestricted	2006 Total	2005 Total
	£	£	£	£
Publications	-	370	370	244
Field Trips	-	570	570	359
Transactions	-	2,071	2,071	1,925
Coastal Research -BTO	138	-	138	30
Ringing Group	-	912	912	-
	138	3,923	4,061	2,558

6. Allocation of support costs and overheads

Unrestricted	Basis	Direct Charitable £	Governance £	2006 Total £	2005 Total £
Depreciation	Staff time	2,430	185	2,615	2,190
General Expenses	Staff time	562	43	605	431
Insurance	Staff time	3,461	263	3,724	3,676
Post and telephone	Staff time	2,686	204	2,890	2,665
Printing and Stationery	Staff time	2,174	165	2,339	3,622
		11,313	860	12,173	12,584

7. Charitable Activities

	Note	Restricted £	Unrestricted £	2006 Total £	2005 Total £
Salaries, pension contributions and national insurance		9,504	40,963	50,467	45,600
Archive costs		7,598	-	7,598	4,379
Book purchases		5,060	935	5,995	-
Great North Museam project		-	657	657	-
Coastal Research		-	2,650	2,650	2,417
Gosforth Park Nature Reserve		7,000	2,425	9,425	6,511
Farnes Sandeels research		-	-	-	976
Library costs		-	2,618	2,618	1,917
Transactions		-	4,579	4,579	7,773
Other publications		-	1,350	1,350	-
Field expenses		-	540	540	415
Lectures		-	1,984	1,984	1,828
Allocated support costs	6	-	11,313	11,313	11,640
		29,162	70,014	99,176	83,456

8. Governance Costs

	2006 £	2005 £
Salaries, pension contributions and national insurance	3,114	3,009
Printing and stationery	165	272
Postage and telephone	204	200
Insurance	263	276
General expenses	43	31
Depreciation	185	165
Accountancy and bookkeeping fees	1,875	2,000
Independent review	825	795
Fee for valuation of library	2,500	-
	9,174	6,748

9. Information regarding Employees and Trustees

	2006	2005
Average number of employees during the year	3	4
Total emoluments	£53,581	£48,609

No trustee, or person related or connected by business to them, has received any remuneration from the charity during the year.

During the year, payments were made to four (2005 - five) trustees in respect of reimbursement of expenses incurred on the charity's behalf totalling £423 (2005 - £1,177).

10. Coastal Research

Coastal Research comprises boat and vehicle costs together with ringing expenses for Farne Islands and Coquet Island research.

11. Tangible Fixed Assets for use by the society

	2006 £	2005 £
Hancock Museum	Not valued	Not valued
Lake Lodge : Cost	3,899	3,899
Electrical Installation	5,300	5,300
	9,199	9,199
Less Depreciation to date	7,562	7,484
Net book value	1,637	1,715
Hides, equipment, office furniture and computers		
Cost	48,458	40,012
Additions	2,117	8,446
	50,575	48,458
Less Depreciation to date	38,854	36,318
Net book value	11,721	12,140
Total net book value	13,358	13,855

There were no capital commitments at 31 July 2006.

12. Investments

	2006 £	2005 £
Market value at beginning of year	610,334	487,937
Additions	339,149	158,454
Disposal proceeds	(371,835)	(110,986)
Net investment gains	44,088	74,929
Market value at end of year	621,736	610,334

12. Investments (continued)

The investment portfolio includes the following holdings which represent more than 5% of the market value of the portfolio:

Old Mutual Fund Managers	5.71%
Royal Dutch Shell	5.37%

	2006	2005
	£	£
Investments at market value comprised:		
Listed on a recognised stock exchange	621,736	541,759
Unlisted - Charities Official Investment Fund	-	68,575
	621,736	610,334
Historical cost at end of year	511,432	452,329

13. Debtors

	2006	2005
	£	£
Trade debtors	1,018	933
Prepayments and accrued income	3,725	7,322
	4,743	8,255

14. Creditors

	2006	2005
	£	£
Deferred income	2,409	2,399
Accruals	2,350	2,166
	4,759	4,565

15. Designated Funds

Gosforth Park Nature Reserve Restoration Fund	2006	2005
	£	£
General restoration	804	3,199
Sir James and Lady Steel donation for lake rejuvenation	8,500	8,500
	9,304	11,699

	2005	New Designations	Utilised	Transfer	2006
	£	£	£	£	£
Gosforth Park Nature Reserve	11,699	30	(2,425)		9,304
Ringing Group	(96)	1,282	(2,650)	1,464	-
Bewick *Transactions* fund	3,000	-	-	-	3,000
Dickinson Memorial Fund	5,000	1,410	-	-	6,410
	19,603	2,722	(5,075)	1,464	18,714

16. Restricted Reserves

	2005	New Designations	Utilised	Transfer	2006
	£	£	£		£
Archives	(1,267)	21,433	(17,102)		3,064
Farnes Sandeels Research	459	138			597
175th Anniversary Lecture	320	-	-	(320)	-
Atkinson manuscript	-	6,517	(5,060)	(1,457)	-
	(488)	28,088	(22,162)	(1,777)	3,661

During the year, further designations were made following the receipts of £21,433 in respect of Archives from the HLF Lottery fund- £20,565, Newcastle City Council -£578, J S Uglow - £230 and Origin publishing - £50.

A receipt for Ornithololgical research of £138.

Money donated to enable the purchase of the Atkinson manuscript.

BULMAN HOUSE
REGENT CENTRE
GOSFORTH
NEWCASTLE UPON TYNE
NE3 3LS

INDEPENDENT EXAMINERS REPORT TO THE TRUSTEES
OF THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

I report on the financial information of the charity for the year ended 31 July 2006, which are set out on pages 50 to 59 .

RESPECTIVE RESPONSIBILITIES OF TRUSTEES AND EXAMINER

As the charity's trustees, you are responsible for the preparation of the accounts; you consider that the audit requirement of Section 43(2) of the Charities Act 1993 (the Act) does not apply. It is my responsibilty to state, on the basis of procedures specified in the General Directions given by the Charity Commissioners under Section 43 (7)(b) of the Act, whether particular matters have come to my attention.

BASIS OF INDEPENDENT EXAMINER'S REPORT

My examination was carried out in accordance with the General Directions given by the Charity Commissioners. An examination includes a review of the accounting records kept by the charity and a comparison of the accounts presented with those records. It also includes consideration of any unusual items or disclosures in the accounts, and seeking explanations from you as trustees concerning any such matters. The procedures undertaken do not provide all the evidence that would be required in an audit, and consequently I do not express an audit opinion on the view given by the accounts.

INDEPENDENT EXAMINER'S STATEMENT

In connection with my examination, no matter has come to my attention:

(1) which gives me reasonable cause to believe that in any material respect the requirements

to keep accounting records in accordance with Section 41 of the Act; and

to prepare accounts which accord with the accounting records and to comply with the accounting requirements of the Act

have not been met; or

(2) to which, in my opinion, attention should be drawn in order to enable a proper understanding of the accounts to be reached.

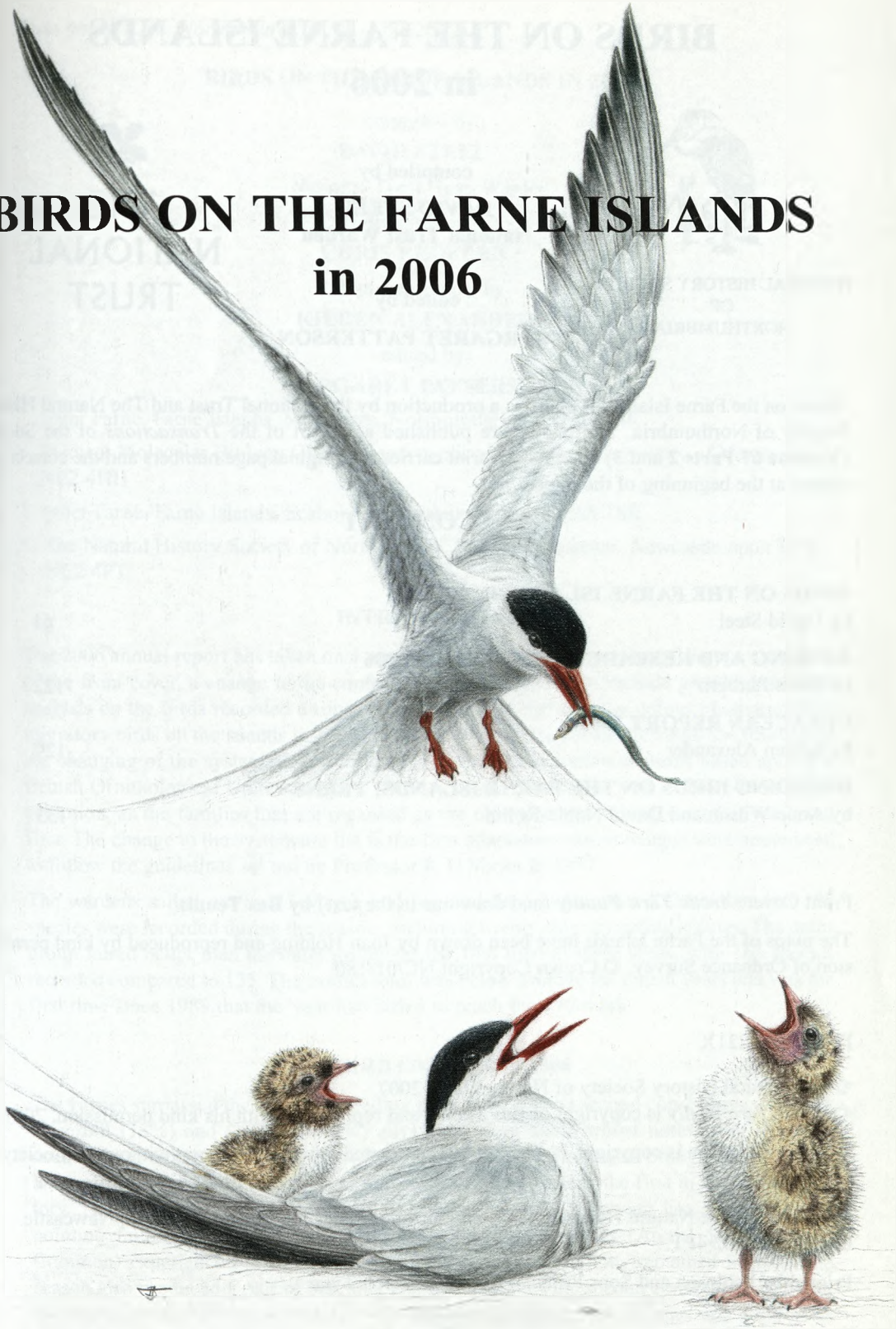
G J Moore 6 March 2007

G. J. Moore

Independent Examiner
Chartered Accountants

TAIT WALKER
Chartered Accountant

BIRDS ON THE FARNE ISLANDS
in 2006



BIRDS ON THE FARNE ISLANDS in 2006

NATURAL HISTORY SOCIETY
OF
NORTHUMBRIA

compiled by

DAVID STEEL
National Trust Warden

edited by

MARGARET PATTERSON

THE NATIONAL TRUST

Birds on the Farne Islands in 2006' is a production by the National Trust and The Natural History Society of Northumbria. The papers are published as a part of the *Transactions* of the Society (**Volume 67 Parts 2** and **3**) and this off-print carries the original page numbers and the correct reference at the beginning of the paper.

CONTENT

Front Cover: ***Arctic Tern Family*** (and drawings in the text) **by Bas Teunis**

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BIRDS ON THE FARNE ISLANDS IN 2006

compiled by

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National Trust Head Warden

ringing report by

CHRIS REDFERN [2]

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INTRODUCTION

The 2006 annual report has taken on a number of welcome changes including the alteration of the front cover, a change in the context of the introduction to include greater detail and analysis on the birds recorded during the year, and the inclusion of colour photographs of migratory birds on the islands in 2006. However the most significant change has resulted in the changing of the systematic list following taxonomic recommendations based upon the British Ornithological Union checklist (Dudley *et al.*, 2006). The new order reflects avian evolution, as the families that are regarded as the oldest on the evolutionary tree are listed first. The change to the systematic list is the first adaptation since changes were announced to follow the guidelines set out by Professor K H Voous in 1977.

The wardens sailed out on 23 March and manned the islands until 2 December and 168 species were recorded during the season, including twenty-three breeding species. The outer group faired better than the inner group for the first time in three years, with 163 species recorded compared to 155. The overall total was below average for recent years and was the first time since 1989 that the 'year list' failed to reach the 170 mark.

SEABIRD OVERVIEW 2006

The Farnes surpassed the 100,000 breeding pairs mark for the second consecutive year with Razorbill (13%) and Guillemot (2%) advancing once again whilst noteworthy increases occurred in Fulmar (36%) and Shag (20%) numbers. The season also brought the spectacular confirmation of a breeding pair of Red-breasted Mergansers, the first in the islands' history. The returning pair of Shelducks was also successful following last season's disappointing failure at the egg stage. The three main tern species (Arctic, Sandwich and Common) experienced minor declines but the overall populations remained healthy. The season also produced a pair of breeding Roseate Terns for the second consecutive year and the breeding attempt was successful with one chick fledged. Not all news was good news

however, as there were slight decreases in a number of species including Cormorant, Oystercatcher and Ringed Plover whilst a decline in Kittiwakes may be a result of late nesting (after the census counts) rather than a serious drop in numbers. The large gulls had mixed fortunes with an increase in Lesser Black-backed and a decline in Herring whilst the Great Black-backed Gull population remained static. In recent years the breeding seasons have brought bad news for at least one species following population collapses in Fulmar (2004) and Shag (2005). This year the Eiders suffered with a total of 556 nesting attempts representing a 36% decrease from 2005 and the lowest breeding levels since 1968.

Overall, the hot dry summer resulted in a good breeding season for the majority of the seabirds, but as expected not all benefited with some having only moderate successes. Food availability again dominated the headlines, with Sand eels in plentiful supply at times, although there were periods of short supply which caused problems for the nesting seabirds. However the season will be remembered for the abundance of Snake Pipefish, with incredible numbers seen and reported and most breeding species of seabirds observed feeding on the abundant crop throughout the year. Breeding population details, see Table 1.

Table 1 Farne Islands Breeding Birds 2006.

Breeding Birds (pairs)	Population	+/- to 2005	Productivity	First Egg	First Fledgling
Shelduck	1	+ 1	-	n/a	n/a
Mallard	10	- 1	-	21 April	n/a
Eider	556	- 318	2.50	26 April	24 May
Red-breasted Merganser	1	+ 1	-	4 June	6 July
Fulmar	240	+ 64	0.52	19 May	19 Aug
Cormorant	170	- 15	-	22 April	Late June
Shag	1,120	+ 183	0.78	26 April	16 July
Oystercatcher	29	- 4	0.65	15 May	8 July
Ringed Plover	8	- 3	0.50	7 April	25 July
Black-headed Gull	342	- 54	-	30 April	23 June
Lesser B-b Gull	545	+ 114	-	2 May	n/a
Herring Gull	505	- 35	-	2 May	n/a
Great B-b Gull	7	level	-	26 April	26 May
Kittiwake	4,713	- 662	0.49	26 May	19 July
Sandwich Tern	1,635	- 278	-	11 May	1 July
Roseate Tern	1	level	1.0	3 July	13 Aug
Common Tern	122	- 38	-	12 May	7 July
Arctic Tern	2,250	- 130	0.60	17 May	3 July
Guillemot	47,926*	+ 1,011	0.72	25 April	23 June
Razorbill	314	+ 37	0.73	10 May	9 June
Puffin	55,675	level	0.89	30 April	1 July
Rock Pipit	18	- 2	-	n/a	n/a
Pied Wagtail	4	- 1	-	n/a	n/a

* Individuals

MIGRATION OVERVIEW 2006

Although it was an average season in Farnes terms, the array of birds recorded on the islands was nevertheless impressive and would still be envied by many other birding localities. Highlights of the year included the islands' fifth and sixth Spoonbill sightings, the fifth Subalpine Warbler and the fifth-seventh Greenish Warbler with other good birds of note including Balearic Shearwater, Storm Petrel (8), Garganey, Moorhen, Spotted Redshank (2), Wood Sandpiper (6+), Mediterranean Gull (4), Glaucous Gull, Cuckoo (2), Wryneck (7), Richard's Pipit, 'White' Wagtail (5), Bluethroat, Icterine Warbler (2), Barred Warbler (6), Yellow-browed Warbler (17), Wood Warbler (7) Red-backed Shrike (3), Great Grey Shrike, House Sparrow (2, first since 1999) Common Redpoll, Common Rosefinch, Little Bunting and Lapland Bunting (3) all contributing to the 2006 season.

As well as the good array of migrants, 'day record counts' were broken for several species including Whooper Swan, Kestrel, Redshank, Wood Sandpiper, Little Tern, Garden Warbler, Yellow-browed Warbler and Wood Warbler, but despite the good numbers of rarities and scarcities there were no records of Great Crested Grebe (first blank since 1989), Slavonian Grebe (first blank since 1998), Iceland Gull (first blank since 2000) and Pallas's Warbler (first blank since 2002) amongst others. The following is a monthly summary of migration through the Farne Islands during the course of the season and species in bold are of particular interest.

March

23 March saw the return of the wardens, with early spring passage migrants evident on the islands, as four **Woodcock** were discovered on 24 followed by a lingering **Jack Snipe** on 24-27 March. Other interesting records during this early spell included a **Stonechat** on 23 and 25, a **Mistle Thrush** on 24 and a Grey Wagtail on 28 March. The final week of the month brought passage of northern bound wildfowl with noteworthy highlights including Brent Geese, Wigeon, **Long-tailed Duck** and **Pintail**, while wintering Goldeneyes were still very evident around the islands. The same period also brought the first record of Manx Shearwater past the islands. A spell of south-easterly winds late in the month brought a flurry of migrates with the arrival of **Woodcock**, Snipe and Redwing (74) on 28 March, followed by a small 'fall' of Robin (8), Redwing (54), Blackbird (30), Fieldfare (72), Goldcrest (24) and a female **Snow Bunting** on 30 March, reminding everyone that winter had not gone just yet. However the same period brought the first sign of spring with a pair of Wheatears on Brownsman on 27 and Chiffchaff on 30 March. In amongst the array of commoner migrants, interesting records included another **Stonechat**, three **Black Redstarts** including a male ringed at Spurn and a male **Common Redpoll** on Brownsman on 31 March.

April

April was dominated by westerly winds and as a result spring migrants were 'thin on the ground' on the islands until the final week of the month. Despite the westerly winds, the first **Pink-footed Geese** of the year were recorded heading north on 1, with a noteworthy count of twenty-four Jackdaws on top of the Pele Tower the same day. Other migrants of note during the first week included individual Bramblings on Inner Farne and Brownsman on 2, a **Collared Dove** on 7 (the first of three during the month) and three Rooks (first record of the year) over on 8 April. The first sea watching spell brought a handful of noteworthy records with the first **Great Skua** of the year through the Kettle on 4, Tufted Duck on 9 and a herd of twenty-nine **Whooper Swans** north through Inner Sound during the evening of 14 April.

Mediterranean Gulls have become annual on the Farnes in recent years and another was added to the collection with the discovery of a first-winter bird on Knoxes Reef on 8 April, one of three different individuals seen during the month. The full momentum of spring passage began picking up from mid-month as more summer migrants started appearing, with the first records of Common Sandpiper on Inner Farne on 11, Swallow over on 14 and Sand Martin and Willow Warbler noted from 15 April. A spell of light south-easterly winds quickened the pulses of the wardens and a further flurry of summer migrants was discovered including a very obliging Grasshopper Warbler which fed out on the open rocks on Brownsman on 20, while Whitethroat appeared for the first time the same day. A spring passage **Short-eared Owl** livened up the day on Brownsman on 21 April but this was overshadowed by a new Farnes record count of forty-two **Black-tailed Godwits** north over the islands the same morning. The month continued to produce 'first' records of the year for several summer visitors with a male Yellow Wagtail on Inner Farne on 22, House Martin over Brownsman on 24, Redstart on 25 and Blackcap the same day. The 25 April brought the first **Greenshank** and **Whimbrel** to the islands, while Wheatears surged through the islands during the same period, with a peak of twenty-six. It was a lean month for the rarity hunters, although highlights included a first-winter **Glaucous Gull** on Knoxes Reef on 23 April, which was a good find following a below-average winter showing in the north-east for the species. The same island and the same evening also produced a second-winter **Mediterranean Gull**. Other birds of note included the islands' first spring **Long-eared Owl** in eight years on Staple Island on 25, a smart male **'White' Wagtail** on Brownsman on 26, and a very impressive 546 **Barnacle Geese** in two skeins east over the islands on the evening of 29 April.

May

Despite an easterly airflow dominating from 1-17 May, the lack of rain failed to 'ground' any reasonable numbers of migrants, but the islands still produced some good records through this period. The month started well with a female **Ring Ouzel**, Lesser Whitethroats (8), Blackcaps (8), Whitethroats (3) and a Grasshopper Warbler all arriving on 1 May. It was not long before the first scarcities were discovered with a summer-plumage **Black Guillemot** on 3 and 6, a stunning male **Garganey** accompanying two Shovelers in the Kettle on 4 and an *Icelandic* **Black-tailed Godwit** on Brownsman in thick fog on 7 May. Common migrants continued to pour through the islands with **Collared Dove** on 2 and 5, the spring's only Whinchat on Staple Island on 5, Yellow Wagtails on 3 and 5 and the islands' only spring record of Pied Flycatcher, a female, on Brownsman on 7 May.

Without doubt, the most productive period during the spring occurred between 8 and 10 May with plenty of common migrants and some good rarities to go with them. The discovery of a **Wood Sandpiper** on Brownsman on the morning of 8 (present until 9) was capped by a fly-over **Spoonbill** over the outer group while a **Wood Warbler** graced Inner Farne the same day. A good number of common migrants were also seen with Tree Pipit (5), Whitethroat (4), Lesser Whitethroat (3) and the first Spotted Flycatcher of the year. More was to follow as 9 May produced both Redstart and **Black Redstart** while the real gem of this purple patch appeared on the islands on 10 May in the form of a male **Bluethroat**. The species has become a scarce visitor on the east coast in recent years so the discovery of a cracking male on Longstone End was most welcome and only the second record in three years. In the context of the Farnes, the best bird came in the form of a **Cuckoo** which had not been recorded on the islands since 2003, so two separate birds were welcome additions.

The first flew west over Brownsman on 15 and the second spent two hours in the artificial tree on the same island on 18 May. As May progressed, the winds altered direction to the west and with it the islands went through a long quiet spell with no noticeable records until 105 **Manx Shearwaters** moved north past the islands on 31 May.

June

Early June can still be productive as depending on weather conditions late migrants can appear on the islands. However despite prolonged south-easterlies between 1 and 11 June, the islands recorded very few migrants with the exception of a stunning male **Subalpine Warbler** discovered on Brownsman on the afternoon of 3, which remained throughout 4 June. It was soon noted that it was ringed and the bird's obliging nature allowed the ring to be read in the field. News filtered through that it had been ringed at Spurn Point, East Yorkshire just twenty-four hours before its arrival on the Farnes. One of the most productive days of the month occurred on 4 June as a skein of eighty Canada Geese, the highest count of the year, was seen on passage through Inner Sound and this was followed by the discovery of an unseasonal **Moorhen** (the year's only record) on Staple Island. Later that day, a stunning adult **Long-tailed Skua** was observed flying north through Staple Sound, representing the islands' first spring record. Thereafter highlights included the season's sixth **Collared Dove** on 9 and an unseasonal Wood Pigeon west on 11. Swifts became regular over the islands from mid-month and the final spring sightings of all three Hirundines occurred. Other highlights included an adult **Mediterranean Gull** on the outer group on 15 and 28, and a lingering first-summer **Little Gull** which was first seen from 16 and remained until the end of the month.. Although sea passage was quiet, Common Scoters became regular in the second half of the month while a male **Goosander** north through Inner Sound on 30 June was noteworthy. It was a quiet month for waders although the inner group hosted a summering Knot flock which gradually increased as the month progressed.

July

Migration can be at an almost complete standstill throughout July and a Chiffchaff on Brownsman on 6 July was the only passerine of note. However attention was drawn to the sea as records included two **Velvet Scoters** north on 9, Arctic Skuas which became regular from 10, the first returning Great Skua seen on 14 July and the same day produced Manx Shearwater (74) and Common Scoter (130). The highlight of mid-July involved a summer-plumage adult **Black Tern** at roost on both the inner and outer group on 4 and 11-14 July. A Kestrel made an unexpected and unwelcome appearance on Brownsman on 23 where it remained until 30 and took a liking to young Arctic Terns before dramatically ending up in the sea and being released back onto the mainland. The month of July heralds the start of wader passage through the Farnes and the first returning Dunlin and Purple Sandpipers were evident on the islands in the first week. Thereafter the first autumn Common Sandpiper appeared from 8, a record count of Redshank (175) moved west over the islands on 13, the same day as **Black-tailed Godwit** (15) were recorded, and a good count of Grey Plover (20) on 16 July continued the good spell. The summering Knot flock peaked at triple figures on Inner Farne, while the season's first **Sanderling** was discovered on 24 with another on the 29 July which lingered into early August. The final week of the month saw the first trickle of passerine migrants filter through the islands, with a Garden Warbler on 26, Wood Pigeon on 27 and Sedge Warbler on 31 July. However the final day of the month produced one of the highlights of the year, as a female **House Sparrow** graced Brownsman, the first on the islands since 1999.

August

August witnesses a huge change on the islands, as the breeding seabirds depart making way for southern bound migrants utilising the islands as 'food service stations'. If the wind prevails from the north then migratory seabirds can pass in good numbers, and it was during such northerly winds on 3 August that the first **Sooty Shearwater** of the year was seen. The same day also brought a **Velvet Scoter** and the first autumn Willow Warbler to the islands. Despite the good start, the winds eased to light variables which brought few migration highlights, although the first autumn Merlin reappeared from 6, a juvenile Sanderling was discovered on 7 and the first autumn Robin, Wheatear and **Black Redstart** appeared from 8 August. Eventually the winds switched direction and increased in strength, with a spell of strong north to north-easterly winds from 11-14 which ensured eyes were glued to telescopes as the sea watching season commenced. Although no spectacular movements occurred, a sub-adult **Pomarine Skua** on 12 was a good start and was followed by peak northerly passage of **Sooty Shearwater** (100), Manx Shearwater (254), Arctic Skua (13) and Great Skua (12) north on 14 August. Without doubt, the highlight of this period included seven **Storm Petrels** with three north on 12, two on 13 and another two on 14 August. Despite the conditions, passerine migrants were few and far between, so the Inner Farne warden team was shocked to discover the island's fifth **Greenish Warbler** in the vegetable garden on 14 August. The following few days then produced the first autumn Whitethroat and Whinchat on 15 and 16 August respectively.

As the winds turned to an easterly direction during the 17, Brownsman produced the goods with an obliging **Icterine Warbler**, the first on the islands in two years, and this was just a taste of what was to come. The Farne Islands, in common with many other east coast birding locations, receive their largest number of migrants when low pressure weather systems produce easterly airflows and force migrants over the North Sea. If the islands are shrouded in mist or rain, then good numbers of migrants can potentially drop onto the islands to seek food and shelter during the poor weather. It was clear that such a system was occurring on 18 August as following a spell of easterly winds and torrential rain mid-afternoon, the islands produced a spectacular selection of birds. Highlights included **Wryneck** (6), **Greenish Warbler** (2), **Icterine Warbler**, **Barred Warbler**, **Wood Warbler** (3) and **Red-backed Shrike** (3 juveniles). As well as the rarities an excellent selection of commoner migrants included Tree Pipit (5), Redstart (8), Whinchat (20), Wheatear (17), Grasshopper Warbler (3), Sedge Warbler (2), Reed Warbler (10), Lesser Whitethroat (2), a staggering count of Garden Warblers (123), Whitethroat (8), Willow Warbler (94), Spotted Flycatcher and Pied Flycatcher (18) amongst many others. The day also produced a flurry of wader passage with Ruff (4), Snipe (8), Whimbrel (5), Greenshank (5) and Common Sandpiper (9) with highlights of **Green Sandpiper** (3) and **Wood Sandpiper** (4). Although the following day saw many of the migrants still lingering on the islands, it produced yet more new discoveries including two more Barred Warblers and the season's first **Little Stint**. However the real highlight of 19 August came in the form of two **Spoonbills** observed flying west towards the mainland over Staple Island, representing the first autumn record for the Farnes. Although nothing could match the sheer brilliance of 18 August, the islands continued to produce good records in the final week with a **Spotted Redshank** over the outer group on 23, a light south-easterly wind producing another **Wryneck** on Brownsman on 25-26, and another two **Barred Warblers** the following day. The final few days produced the last bit of action of a productive month with the season's only **Balearic Shearwater** north on 29 August, another **Little Stint** on 30 and a juvenile **Pomarine Skua** north through Staple Sound on 31 August.

September

After the excitement of August, the month started very slowly as westerly winds dominated throughout the entire first week, followed by unproductive southerlies until 11 September. This resulted in a quiet spell with the autumn's first Meadow Pipit from 4, Goldcrest from 5 and Blackcap from 10 September. The only noticeable records during this period included the season's only records of **Mute Swan** on three dates from 5-9, Peregrine which returned to the islands from 4 and winter wildfowl which started moving from 8 September. The month eventually kicked into life with a total of five species of raptor recorded on Brownsman on 11 September including Kestrel, Merlin, Peregrine and Sparrowhawk although a female **Harrier** proved frustratingly too distant to identify conclusively but was almost certainly a Hen Harrier. The day also provided a scattering of migrants with Whinchat (6), Redstart (2) and a Reed Warbler with the season's peak count of Golden Plover (738) on Staple Island. Sea watching remained quiet throughout the month, with a sub-adult **Pomarine Skua** north through Inner Sound on 9 followed by a more productive spell on 17 September which produced the first autumn **Red-necked Grebe**, and a disappointing monthly peak of **Sooty Shearwater** (27) and **Black Tern** (3) north past the islands. Despite the lack of any serious numbers of migratory seabirds, wildfowl passage did provide some entertainment as a prosperous spell through Inner Sound saw highlights of **Pochard** on 11 and 15, and the latter day produced counts of Brent Geese (97), Wigeon (236) and a season's peak of Shoveler (14) on 17 September. Migration was in full swing by mid-month and the period from 11-17 heralded the return of many common migrants with the first autumn records of Song Thrush from 12, Rook on 12, Yellow Wagtail on 14, Chaffinch from 15, Grey Wagtail from 16, Redwing from 16 and Reed Bunting from 17 September. During this spell, foggy conditions on 14 dropped some reasonable numbers of migrants including Tree Pipit (4), Whinchat (8), Pied Flycatcher (6) and Spotted Flycatcher (2), while two days later saw Kestrel (9) and Garden Warbler (6) on the islands. The most noticeable highlights during this period included a **Water Rail** on Inner Farne on 14, a **Wood Warbler** on Inner Farne on 16 and the first **Yellow-browed Warblers** (2) of a record year were discovered on 17 September with singles lingering on Inner Farne and Brownsman. Wader passage also kept the islands ticking over, with noticeable records including **Sanderling** (13) west over Brownsman on 13, a party of **Ruff** (5) over Inner Farne on 15 and the first **Jack Snipe** of the autumn period discovered on 16 September.

A showy **Long-eared Owl** on Inner Farne on 19 livened up a quiet spell during a period of westerly winds while a **Common Rosefinch**, the only record of the year, made a brief visit to Brownsman on 22 September. However the most productive spell of the month occurred on 24 September as the winds switched to the north-east before eventually backing to the south-east, with a rain front dropping a good selection of migrants. Highlights included a **Barred Warbler**, **Yellow-browed Warbler** (5) and the season's final **Wood Warbler** with a supporting cast of Dunnock (26) Lesser Whitethroat, Reed Warbler and Pied Flycatcher (3). The final few days also produced the season's second **Spotted Redshank** on Inner Farne on 29 September, to complete a reasonable month.

October

October witnesses even more change as the last of the summer migrants can be seen passing through the islands while birds heading from the north to winter in Britain can be recorded in vast numbers. The south-easterly airflow of late September continued early in the month, switching to a direct easterly wind on 2 October. With this weather system, the

islands produced a small scattering of migrants with an impressive day total of **Yellow-browed Warbler** (6) followed by the last of the season's Pied Flycatchers. Other noteworthy records during the first week included the first autumn returning **Black Guillemot** on 5 and the first **Lapland Bunting** of the year west over Inner Farne on 8 October. A south-easterly weather front then dominated from 10-19 and this helped produce the first major westerly passage of continental thrushes. Redwing dominated with peak counts of 2,443 on 15 and 1,942 on 19, Song Thrush (658) peaked on 11 whilst the largest number of Blackbird (54) occurred on 15 October. This spell also produced the first Fieldfare from 14, **Ring Ouzels** were well represented with two on Inner Farne on 11, three on Brownsman on 16 and two over Brownsman on 19, and **Mistle Thrush** (2) flew west on 11 October. However the major highlights arrived on 12 October in the form of a stunning **Great Grey Shrike** that butchered a Robin on Brownsman, with the same islands boasting a confiding **Little Bunting** near the cottage. Further noteworthy records included **Yellow-browed Warbler** (2) on 10 with singles lingering from 14-18 and the final new bird arriving on 15 October, taking the year's total to seventeen, a new Farnes record. A **Richard's Pipit** graced Brownsman on the afternoon of 14, and other noticeable records included **Jack Snipe** on 11, **Water Rail** on 15, **Short-eared Owl** on three dates, **Stonechat** on 10 and 19, **Lapland Bunting** on 14 and **Twite** from 14 October, with monthly peaks of **Black Redstart** (2) and **Yellowhammer** (3). Away from the scarcities, peak counts of commoner migrants included Grey Wagtail (3), Robin (37), Blackcap (7), Chiffchaff (5), Goldcrest (16), Brambling (47) and Reed Bunting (18). The changing seasons also witnessed the final records of several common migrants of the year including Tree Pipit on 14, Willow Warbler on 14 and Swallow on 18, while very late Wheatears were seen on 25 and 27 October.

As with the previous month, sea watching was less productive although wildfowl still produced the odd noticeable record with **Pochard** (3) on 10 and **Velvet Scoter** (6) on 12 October. Eventually a northerly airflow reached the islands during the final week of the month producing the first Great Northern Diver of the year from 24, with the same day producing the first **Long-tailed Duck** for the autumn and the season's highest count of Pink-footed Geese (110). However 24 October will be remembered for the first sightings of **Little Auk**, with impressive numbers seen daily around the islands until the end of the season, with an October peak of 1,299 north on 29 October. Other sea watching highlights included another **Pochard** on 26 and a late **Sooty Shearwater** battling against a storm force northerly gale through Staple Sound on 31 October.

November

At this time of year, any strong northerly winds can often produce some exciting wildfowl and seabird movements as birds re-orientate and move north past the islands, and the first few days of the month produced some noticeable passage through Inner and Staple Sounds. Totals on 1 November included Red-throated Diver (3), **Great Northern Diver** (2), **Black-throated Diver**, **Sooty Shearwater**, Goldeneye (169), **Velvet Scoter** (11), **Long-tailed Duck** (4), Mallard (56), Wigeon (78), Red-breasted Merganser (3), **Goosander** (3) and **Little Auk** (1,385). The numbers and variety of species increased on 2 November with day totals of Red-throated Diver (20), **Great Northern Diver** (6), **Red-necked Grebe** (2), **Storm Petrel**, Brent Geese (13), Shelduck (4), Goldeneye (225), **Velvet Scoter** (8), Common Scoter (55), **Long-tailed Duck** (10), Mallard (89), **Pintail** (5), Wigeon (260), Red-breasted Merganser (21), **Goosander** (3), a **Black Guillemot** and an impressive count of **Little Auk** (7,881). Eventually passage settled from 3, and passerine migrants of note

Sooty Shearwater *Puffinus griseus*

A well represented to common passage visitor.

It was a disappointing sea watching season as due to the lack of any northerly winds during the late summer period, there were very few significant numbers of migratory seabirds recorded past the Farnes. The islands produced records on twenty-two dates, generally involving small numbers with only one count exceeding double figures. Following the first north past the islands on 3 August, the month produced 1-7 on five dates with the season's peak occurring in mid-August. The period from 12-14 August produced the bulk of records with twenty-four north on 12 and thirty-six north on 13, followed by the season's peak count of a hundred north on 14 August. Thereafter 1-3 were recorded on ten dates from 7 September-31 October, with twenty-seven north on 17 September. A very late wanderer was noted flying north past the south-end of Brownsman on 1 November.

Manx Shearwater *P. puffinus*

A common passage visitor.

Evident on passage throughout the season with peak numbers reported in late May and from mid-July to mid-August. The first bird of the year was seen flying north through Staple Sound on 31 March, followed by four north on 1 April. Thereafter 1-6 were noted on ten dates during the spring with strong passage in the final few days of May. Northerly passage logged during this period included twenty-three north on 29 and twenty north on 30, peaking at 205 north on 31 May. The summer months produced regular reports of 1-25 with peaks in mid-July including seventy-four north on 14 and sixty-two north on 15 July. August was productive with regular sea watching producing counts of 1-62 with a season's peak of 254 north on 14 August. Thereafter numbers dwindled as the autumn advanced with small numbers of 1-17 reported on nine September and three October dates. The final record concerned a single north through Staple Sound on 29 October.

Balearic Shearwater *P. mauretanicus*

An uncommon passage visitor.

Following the breeding season, this critically endangered Mediterranean species heads north to the Bay of Biscay to moult in late summer, with small numbers penetrating the North Sea during this period. The islands have produced annual records over the past fourteen years and that run continued with a single bird observed flying north through Staple Sound on 29 August. It was tracked north before landing on the sea, where it remained feeding for ten minutes before continuing its journey northwards.

Storm Petrel *Hydrobates pelagicus*

An uncommon passage visitor.

Throughout the 1970s and 1980s the species was a sea watcher's dream discovery as only eight were seen during these two decades. However the record books have been re-written for this unique seabird in recent years, with a staggering one hundred records in the previous two years alone. Although not quite up to this standard, the season produced four records involving eight birds, with the majority of sightings in mid-August. A total of three were seen flying north past the south end of Brownsman on 12 August, followed by two north through Staple Sound on 13 and another two north past the south end of Brownsman on the morning of 14 August. The best sighting of the year occurred in late autumn, as an individual was observed feeding close-in to the west face of Brownsman on 2 November,

allowing close scrutiny of the bird before it eventually flew north. This represented the latest record since 2002.

Gannet *Morus bassanus*

An abundant passage and non-breeding summer visitor.

A very noticeable and numerous seabird around the islands, birds being recorded almost daily throughout the season as they moved to-and-from breeding areas to the north in Lothian and to the south in East Yorkshire. Passage was particular heavy during the spring period with a typical one hour timed count revealing 1,168 north on 28 April. Interestingly, adults were seen sitting on both Inner Farne and Skeney Scar during the season although these may have been ill birds, rather than potential prospecting breeders. During the late summer, large feeding frenzies were evident and plunge diving often betrayed the presence of nearby feeding cetaceans. Numbers dwindled during the autumn although occasional adults were sighted into early December.

Cormorant *Phalacrocorax carbo*

A common breeding resident.

Good numbers were present at the two main colonies on East Wideopens and North Wamses on 22 March, with some birds standing alongside old nest structures (and some birds apparently sitting). Unlike the majority of the other early nesting species, the cold spring appeared not to hamper the breeding routine and nest building activities soon commenced with adults observed from 25 March carrying nest material. A total of 170 (185) pairs nested as follows: East Wideopens 102 (108), North Wamses 65 (77) and Big Harcar 3 (0). The first eggs were discovered on the typical date of 22 April with the first chicks hatching by late May. The year brought a nesting attempt away from the two main colonies as three pairs nested on Big Harcar on the outer group of islands. This was only the fifth breeding record on the island since the early twentieth century, following previous attempts in 1960, 1968, 1981 and 2004, while nearby Little Harcar was successful as recently as 1992 and 1997. However despite the encouraging development of the colony, all three attempts failed at the egg stage due to a direct result of human disturbance. As usual, due to access difficulties and the nature of the species, the colony was not directly monitored. Despite this, the breeding season appeared to be excellent, with good numbers of young fledging from late June and most dispersed around the islands and to the nearby mainland.

Shag *P. aristotelis*

An abundant breeding resident.

Good numbers remain around the islands for the winter months and this was evident throughout January-March. As spring progressed, birds concentrated on breeding cliffs although it was a slow start with nest building not commencing until mid-April and the first eggs not discovered until 26 April, slightly later than expected. Following the population crash during the winter of 2004/05 it was an excellent breeding season with encouraging signs, as the population increased by 20% with a leap of 183 nesting pairs. A total of 1,120 (937) pairs nested as follows: Megstone 30 (24), Inner Farne 319 (206), West Wideopens 61 (51), East Wideopens 113 (107), Skeney Scar 50 (47), Staple Island 201 (192), Brownsman 110 (99), North Wamses 40 (25), South Wamses 67 (57), Roddam and Green 10 (8), Big Harcar 94 (93) and Longstone End 25 (28). The first young hatched in early June and young started fledging from 16 July. As usual, the breeding season was protracted with

young successfully fledging in mid-September from a small number of nests. Interesting observations during the season included at least three colour-ringed 'Darvic' birds, presumably from the Isle of May, discovered in the colonies and at least six pairs attempted to construct nest structures for the first time on the wreck of *Children's Friend* on West Wideopens. From late August, good numbers of adults and fledged juveniles formed large flocks, especially around Knoxes Reef and Megstone, to confirm the impression of a good breeding season. The number of monitored nests increased year-on-year and the overall productivity reached a three-year peak, with 242 young fledging from 310 monitored nests.

Grey Heron *Ardea cinerea*

A well represented visitor. Bred in 1894 (Paynter, 1894).

Well reported throughout the season with records from eighty-two dates from the inner group and twenty-eight dates from the outer group. As usual, the undisturbed islands of Knoxes Reef and the Longstone complex were favourite areas with regular counts of 1-3 especially in the autumn, where at least three were resident throughout the months of October-November. Noticeable records included a juvenile mobbed by terns over Brownsman on 23 July and the only counts to exceed the norm involved five west over the inner group on 16 September and five on Longstone on 3 November.

Spoonbill *Platalea leucorodia*

An extremely rare visitor.

This characteristic, rare summer visitor appeared twice during the season, including the first ever autumn record for the islands. On the morning of 8 May, an immature drifted east over Brownsman towards Longstone before eventually back-tracking, and was last seen heading south-west towards the mainland. Amazingly the season produced another record on 19 August, with two west over Staple Island and the inner group as they headed towards the mainland, representing the first ever autumn Farnes record. There have been four previous records in total, including a single in May 1988, two different birds in April 2002 and two together over a fourteen day period in June 2003.

Sparrowhawk *Accipiter nisus*

An uncommon visitor.

Spring passage was light with only two records, both involving adult females. The first was seen flying low west over Inner Farne on 27 April followed by another over Brownsman on 14 May. Another female was seen in mid summer on Brownsman on 8 July and was suspected to be the same individual seen the following morning heading west over Inner Farne. Further records included singles over Inner Farne on 19 August, Wamses on 11 September, three dates between 16 and 22 October and the final sighting of the year of a male on Inner Farne on 2 November. During the season, birds were seen taking a number of prey items including Blackbird, Song Thrush and Brambling.

Kestrel *Falco tinnunculus*

A well represented passage visitor. May have bred in 1916 and 1943 (March, 1916; Thorp, 1944).

It was a good year for records, with an unusual mid-summer record followed by a record day count for the islands during autumn passage. Spring passage was light with a female seen battling against a strong north-westerly breeze over the inner group as she made her

way towards the mainland on 14 April, followed by another west over Inner Farne on 27 May. More unusual and (more unwelcome) was the appearance of a female on Brownsman between 23 and 30 July. The bird remained on the island preying on fledged or nearly-fledged Arctic Tern young, with at least eighteen being taken by the predator during its stay. Almost unbelievably, the bird was found on 30 July in the sea, alive, by divers near Big Harcar and was released unharmed back on the mainland and thankfully the bird did not reappear on the islands. Thereafter autumn passage commenced from 29 August with a single over Inner Farne and 1-2 seen on sixteen dates from 11 September-22 November. During this period passage produced an impressive nine west on 16 September with five noted the following day. The count surpassed the previous Farnes record day count of five on 20 September 1999. During the season, birds were seen with various prey items including Starling, Blackbird, Redwing and Arctic Tern young. The final record of the year involved a female on Brownsman on 1 December.

Merlin *F. columbarius*

A well represented passage and winter visitor.

It was another excellent year for this agile falcon with reports from seven months including a long-staying individual during the autumn months. The spring suggested that at least two different birds were 'working' the islands with a female regularly seen between 23 March and 9 April and a second-year male noted on at least five dates until last seen on Brownsman on 10 April. Thereafter there was a noted absence on the islands until early August, when a female took up residence on Brownsman and was seen almost daily from 6 August to the end of the year. During her stay, the bird was seen taking various prey items and on 26 August was only a talon's length away from grabbing a visiting Wryneck. Away from Brownsman, the inner group recorded individuals on eighteen dates during the autumn although some of the sightings may have involved the resident female from the outer group.

Peregrine *F. peregrinus*

A well represented passage and winter visitor. May have bred in 1925 (Watt, 1951b).

This powerful avian predator was very evident on the islands throughout spring and autumn. Spring records spanned eleven dates between 23 March and 17 April with at least three different individuals involved including an adult male, a female and an immature. Generally lone birds were seen hunting or heading to roost on the islands with the only multiple sighting involving two vocal birds together over the inner group on 23 March. Following a three month absence, singles appeared on four dates from 17-24 August with more regular appearances as the autumn progressed. The months of October-November produced regular reports, with at least four individuals utilising the islands as a hunting area, including a huge female in late November. As usual, prey items varied, with local feral pigeons being targeted on numerous occasions, while the abundance of Little Auks in the autumn did not go without attention.

Water Rail *Rallus aquaticus*

An uncommon passage visitor.

The majority of sightings on the Farnes involve autumn passage birds and this year produced two birds, both on the inner group. On 14 September a warden was surprised to be looking at an immature bird which was feeding amongst rubbish in St Cuthbert's Gut on Inner Farne before it flew to the centre of the island, but it soon disappeared in vegetation

surrounding the pond. The species' elusive nature on the islands was demonstrated when a bird popped its head into view from the large Iris patch on Inner Farne on 15 October, before dropping back in and despite a search, was not seen again.

Moorhen *Gallinula chloropus*

An uncommon passage visitor. Bred in 1901 (Miller, 1959) and 1947-48 (Goddard, 1947; 1948).

Although the previous season produced two 'long-stayers' on the islands, the species still remains a scarce visitor with nine records from the previous ten years. A very unseasonal bird was flushed from Staple Island on 4 June but was not seen subsequently and was the first June record since the breeding pair which were present in 1948-1949.

Oystercatcher *Haematopus ostralegus*

A common winter and passage visitor, well represented breeder.

The species was present all year with reasonable numbers nesting on the islands. Displaying birds were evident in April and nest scrapes were discovered soon after, with the first eggs found on Brownsman on 15 May. The population showed a slight decrease to the previous season, with pairs not establishing or not discovered on the small satellite islands of the outer group. A total of 29 (33) pairs bred as follows: Inner Farne 6 (6), West Wideopens 5 (4), East Wideopens 2 (2), Knoxes Reef 3 (3), Staple Island 4 (5), Brownsman 7 (8), North Wamses 0 (1), South Wamses 1 (1), Big Harcar 1 (2) and Longstone End 0 (1). The first young hatched on 13 June on Brownsman and on Inner Farne the following day, with fledged young flying in early July. The species is renowned for its aggressive behaviour especially towards large gulls when in defence of nests and therefore predation is usually minimal. However the breeding season was not great, dipping below recent standards, as several nesting attempts were predated at the egg stage. Despite this, thirteen chicks fledged from twenty monitored nests at an overall productivity level of 0.65. Following the breeding season, post-breeding flocks started increasing with one hundred on 16 July between both island groups. Thereafter small numbers remained on the outer group while the favoured West Wideopens roost on the inner group attracted 189 on 11 August followed by 249 on 14 August. The season's peak occurred in early September with 250 on West Wideopens on 8 September.

Ringed Plover *Charadrius hiaticula*

A common passage visitor, uncommon as a breeding species.

The Farnes boast a small population, restricted by the lack of suitable nesting localities on the islands, although this year the population dropped with the loss of three pairs. A total of 8 (11) pairs nested as follows: Inner Farne 4 (4), Staple Island 1 (1), Brownsman 3 (5) and Longstone Main 0 (1). As usual the nesting pairs faced many problems, with gull predation being the cause of the majority of failures and an attempt below the tide-line never bodes well for a successful outcome. The first displaying birds were seen over the islands from early April and the first egg was discovered on the early date of 7 April. Interesting stories during the season included a pair which nested along the tide line on St Cuthbert's Cove on Inner Farne. They laid four eggs in close proximity to an Arctic Tern nest and confusion ensued as the Tern switched attentions to the Plover eggs and was seen incubating the brood on several occasions, much to the bemusement of the Plovers. However it all ended in tears as both the Tern and Plover nests were lost to a high tide with the backing of a strong north-

easterly wind. A disappointing outcome also occurred on Brownsman, where the only surviving chick was drowned on the 'flats' during another high tide in early August. However there was some good news as the islands produced six fledged young, the same return from the previous two years. A total of twelve nests were monitored, with forty eggs going on to produce the six fledged young (three from Inner Farne and three from Brownsman). Following the breeding season, small numbers were seen during autumn wader passage with a modest peak of twenty-nine on Inner Farne on 14 August. Following a flock of twenty-one on 8 September on West Wideopens, only a handful lingered on the islands into the early winter period.

Golden Plover *Pluvialis apricaria*

A well represented passage visitor.

It was a noticeable season with the huge post-breeding concentrations occurring once again during late summer, although the build up occurred much later than in recent years. The spring produced typically few sightings with two west over Inner Farne on 30 March and another full summer-plumage individual on the same island top on 7 May. The post-breeding flock usually starts concentrating on the outer group from early July and by mid-August can be 400+ strong. However this year was more unusual, as the first autumn returnees were not logged until 11 August with twenty-seven east over Brownsman. Thereafter numbers increased rapidly with an August peak of 285 on 16, followed by further influxes in September with 609 counted on Staple Island on 8 September with a season's peak of 738 present on 11 September. The flock eventually started dwindling in October with a hundred noted on 21 October and the final record of the year concerned one on South Wamses on 7 November.

Grey Plover *P. squatarola*

A well represented passage visitor.

It was a mixed season for wader passage as some experienced a disappointing year, but this could not be said about this species. The only spring record referred to a single summer-plumage individual on the Bridges on the inner group on 21 April. The first autumn returnees appeared on the outer group, with birds favouring the Longstone complex, and four noted on 12 July followed by an impressive twenty on 16 July which commuted to Crumstone the following day. Following this multiple sighting, all other records involved individual birds including a full summer-plumage adult north over Brownsman on 12 August. Further records included singles east over Brownsman on 10 September and on the inner group on 17-18 September and 3 October. The final record was one west over the islands on 11 October.

Lapwing *Vanellus vanellus*

A well represented passage visitor. Sporadic breeder in past; last attempt in 1962 (Hawkey, 1991).

It was a quiet season without any large numbers on passage and birds were recorded on only ten dates during the year. Spring passage produced only three individuals, with singles on or over Inner Farne on 25 and Brownsman on 27 March and another seen flying west over the outer group was seen pitching down on Knoxes Reef later that day. Following two on Staple Island on 27 July, autumn produced 1-3 on four dates peaking at six west on 11 October, completing a poor showing on the islands by recent standards.

Knot *Calidris canutus*

A well represented passage visitor.

The islands have boasted a healthy summering flock in recent years and once again good numbers were present. The species was scarce around the islands on spring passage with only a handful of reports involving two east over Brownsman on 19 April, one on Inner Farne on 25 April and three discovered on West Wideopens on 25 May. However following a single on 1 June, records became daily as the summering flock, favouring the Ladies Path area on Inner Farne, increased and birds were resident until mid-August. Numbers slowly increased in June with 1-13 in the first two weeks followed by sixteen on 19, peaking at twenty on several dates in the final week. The real influxes occurred in July with seventy-six on 8 increasing to ninety-two on 11 and 103 on 13 July. Thereafter three figure counts were made on fourteen days with regular counts of 112-132 peaking at 146 on 16 July. Numbers eventually started declining in August, with 113 on 8 followed by seventy-five on 14 August, with seventeen present on 17 August. Eventually the species became scarce on the islands with late records of nine west over Brownsman on 11 September, two on Knoxes Reef on 15 September and two on Inner Farne on 30 October.

Sanderling *C. alba*

An uncommon passage visitor.

The species can be an erratic visitor to the islands, although the previous three seasons have produced bumper numbers with between eight and ten records in each year. In comparison, there was a slight decrease in the total number of records this year although the islands still produced a creditable five reports. Records included a moulting adult at roost on West Wideopens on 24 July followed by another frequenting St Cuthbert's Cove on Inner Farne daily from 29 July-2 August. Thereafter all records referred to sightings on the outer group, with a juvenile on Brownsman east rocks on 7 August and three west over the same island on 11 September. The final record was a flock of thirteen west over Brownsman on 13 September, the largest flock reported from the islands since 2001.

Little Stint *C. minuta*

An uncommon passage visitor.

Wader passage was slightly disappointing during late summer as the lack of any standing fresh water (all ponds were dry by late June) may have contributed to an average showing. This was reflected with only two records of this demure wader: a vocal bird east over Brownsman on 19 August and another west over the same islands on 30 August.

Purple Sandpiper *C. maritima*

A common passage and winter visitor.

The islands attracted good numbers throughout the season, especially during the winter months, and are one of a very few English localities which boast summering individuals. Small numbers were on the rocky shorelines of all the major islands throughout early spring with a peak of 107 on Longstone Main on 25 April. Thereafter numbers dwindled with singles reported on three dates during the final two weeks of May. An exceptional forty were seen on the inner group on 1 June but the next report was not until birds started returning in early July from northern breeding grounds. Following the first sighting on 7 July, small numbers built up with sixty on Longstone on 12 and ten on Inner Farne the same day. Thereafter numbers increased to the usual wintering populations, with 200-300 present throughout the autumn period.

Dunlin *C. alpina*

A common passage and winter visitor.

Small numbers were recorded annually on spring passage following by a good influx on return passage from mid-July. The spring produced records of 1-4 on twenty dates from 25 April-30 June, involving summer-plumage adults. During this period, numbers peaked with thirteen on Inner Farne on 29 May and sixteen present on the inner group on 16 June. Return passage commenced from the first week of July with noticeable influxes recorded mid-month. On the inner group, numbers increased with one on 1, increasing to five on 8 peaking at twenty-one on 13 with 10-15 present until at least 24 July. During the same period on the outer group, numbers increased from one on 1 to three on 8 with a peak of twelve on 16 and fourteen on 25 July. The species remained evident throughout August with the first juveniles appearing slightly later than normal, with singles from 9 on the inner group and 18 August on the outer group. Thereafter records became more sporadic during the autumn although large counts included thirty-five on 15 September, thirteen north on 30 October and eleven north on 2 November.

Ruff *Philomachus pugnax*

A well represented passage visitor.

The season was defined by two reports, the lowest number of records in a season since 1989. Despite only two records, both involved flocks, with four west over Brownsman on 18 August followed by five west over Inner Farne on 15 September.

Jack Snipe *Lymnocryptes minimus*

A well represented passage visitor.

It was a reasonable year for this secretive visitor as an individual lingered on Inner Farne between 24 and 27 March, often showing well in low vegetation. The first autumn bird appeared on 16 September with one on the mudflats of Brownsman pond. Thereafter two were present on the islands (singles on Inner Farne and Brownsman) on 11 October, followed by another on Brownsman on 20 October. The final record was of one flushed from Brownsman pond on 27 November.

Snipe *Gallinago gallinago*

A well represented passage visitor.

Although well reported on spring passage, the bulk of the island records occur throughout the autumn months. Spring produced four together feeding on Inner Farne on 7 March with 1-2 recorded on the islands daily from 23 March-5 April. During this period, a total of seven were flushed off Inner Farne on 24 March, representing the peak spring count and late passage birds were seen on Brownsman on 17 and 23 April. Autumn passage commenced from 13 August with one west over the outer group and thereafter 1-4 were on the islands on thirty-seven dates until last seen on Inner Farne on 29 November. During this period, passage peaked with eight on 18 August and a season's best of fifteen west on 14 September.

Woodcock *Scolopax rusticola*

A well represented passage visitor.

Passage is generally light through the islands in spring with the bulk of records occurring during the late autumn period. Northern bound migrants were discovered on Inner Farne

with four on 24 followed by 1-2 present on 28 and 30 March. During this period singles were on Brownsman on 28 and 31 March. The first autumn returnees, heading to the mainland for the winter, were seen from 14 October with singles on Brownsman and Inner Farne. Thereafter 1-2 were recorded on passage on twenty-two dates until last seen flying west over the Wamses on 1 December. Due to the lack of any easterly weather fronts during the late autumn, peak counts were very moderate with a total of six counted on 10 November, which included four on Brownsman and two on Inner Farne.

Black-tailed Godwit *Limosa limosa*

An uncommon passage visitor.

It was an excellent year, with a record count and an Icelandic race bird recorded. On the morning of 21 April, three flocks of twenty-three, ten and nine were recorded heading north over the islands. This overall total of forty-two represented a new Farnes record (the previous highest was twenty-eight in 2003) and was part of a much wider movement along the Northumberland coast during the same period. The only other spring record concerned a summer-plumage individual belonging to the Icelandic race, on Brownsman amongst Puffins on the morning of 7 May, only the second confirmed record of the race on the islands, following two in April 1996. The season continued to produce records during late summer with fifteen west over the inner group on 13 July and Knoxes Reef boasted four on 9 August with at least one still present on 14 August. The final record concerned one east over Brownsman with Bar-tailed Godwits on 17 September.

Bar-tailed Godwit *L. lapponica*

A well represented passage visitor.

As usual, the inner group dominated sightings as birds frequented Knoxes Reef during the season, with only three confirmed sightings from the outer group. Small numbers were present during spring, generally amongst the large flock of Curlews on Knoxes Reef, with a peak of eleven including one summer-plumage bird on 11 June. Autumn passage produced the bulk of the records with 1-8 noted on thirty-four dates on the inner group, peaking with eleven on four occasions: 21 August, 7 and 16 September and again on 23 October. The species remains scarce on the outer group with only three records including sixteen east on 11 June, one east on 17 September and one north on 2 November.

Whimbrel *Numenius phaeopus*

A well represented passage visitor.

Their distinctive call often reveals their presence on passage and good numbers are recorded through the islands during the spring and autumn periods. The first bird of the year was seen flying east over Brownsman on the typical arrival date of 25 April, followed by 1-2 through the islands on six May dates. The last spring record concerned one on Longstone on 11 June. Autumn passage commenced with two north through Inner Sound on 18 July and birds became regular, often becoming resident on the islands during the late summer months. August experienced the peak of the season's passage with 1-4 present almost daily with peaks of twelve west on 4 and five west on 18 August. The number of records dwindled thereafter, with reports on four September dates including six over Inner Farne on 6 September and the last sighting on Knoxes Reef on 1 October.

Curlew *N. arquata*

A common passage and winter visitor.

Present throughout the season with the biggest concentrations favouring Knoxes Reef on the inner group, and small numbers reported over the outer group. Birds commute daily between the mainland, presumably from nearby Budle Bay, to Knoxes Reef, and spring peaks occurred with 150 on 23 March and 140 on 30 June. Larger numbers occurred from early July, as post-breeding flocks gathered with monthly peaks of 280 on 18 July, 300 between 7 and 9 August and 211 on 6 October. However this was all eclipsed by 680 on Knoxes Reef on 24 October, the Farnes second highest ever count, but falling short of the *ca* 1,000 noted in October 1993.

Spotted Redshank *Tringa erythropus*

An uncommon passage visitor.

The year produced two records of this distinctive passage wader, with one calling as it circled Brownsman on 23 August and another which was on Inner Farne on 29 September before departing north, again calling. In a Farnes context, the species is an uncommon passage visitor with the islands producing thirty-two records totalling forty-two birds in the past thirty years.

Redshank *T. totanus*

A common passage and winter visitor. Bred in eight years 1924-46 (Goddard, 1925-1948; Hawkey, 1991; Wilson, 2000-2007).

Recorded throughout the year, with the season's peak numbers occurring during autumn passage. As usual the spring was generally quiet with 1-3 noted daily from late March-early May, with a peak of ten on 20 April. Thereafter the species became absent from mid-May to mid-June with a single taking up residence on the inner group from 16 June. Following this, birds flooded through the islands with the bulk of passage logged during July with regular counts of 2-18 on both island groups, with fourteen on 11 and seventy-four west on 17 July. However the biggest movement occurred on 13 July, with a day total of 175 west over the islands in several large flocks, representing the highest ever count for the Farnes. Numbers remained high throughout August-September with peaks of twenty-seven on 6 August, nineteen on 15 August and thirty-two on 28 September. Thereafter 1-10 lingered throughout the autumn period with twenty noted on Staple Island on 20 October.

Greenshank *T. nebularia*

A well represented passage visitor.

Small numbers are recorded annually on passage, with the majority of sightings usually involving birds in August and September. For the second consecutive year the islands produced a spring record, only the thirteenth in the previous twenty years, as a bird lingered on Knoxes Reef on 25 April. It was a quiet autumn for the species with all records confined to a six day spell in mid-August. Records during this period included two west over Brownsman on 17, five west over both the inner and outer groups on 18 and singles lingering on Brownsman on 19 and 22 August.

Green Sandpiper *T. ochropus*

An uncommon passage visitor.

It was a reasonable year with reports on seven dates, all during August, with the inner group

producing the majority of records. During a very productive day on 18 August, two flew west over the islands and were followed by three which touched down briefly on Brownsman on 19 August before departing west. All other records referred to individuals on the inner group with one which lingered from 20-23 August, and was seen daily feeding around the south-east rocks area. The final record may have involved the same bird, as one commuted between Inner Farne and West Wideopens on 26 August.

Wood Sandpiper *T. glareola*

An uncommon passage visitor.

An incredible year, marked by record numbers and birds reported on both spring and autumn passage. A breeding-plumage adult lingered on Brownsman Pond on 8-9 May and represented the tenth spring record for the islands. The Farnes boast twenty-two records following the first in 1952 and all have involved single birds apart from three lingering on Brownsman in August 2002. However that record was broken this year, as at least six different birds were recorded on the islands during mid-August. The majority of sightings occurred on the outer group with two east over Brownsman on 18 August being discovered later that day on Longstone Main. Thereafter three were seen daily between 19 and 22 August and were observed commuting between Brownsman and adjacent Staple Island during this period. Away from these three lingering birds, one flew west on 19 August. The party of three eventually reduced to two birds on 23-24 August with one lingering until last seen on 27 August. The inner group was not completely quiet during this spell, with two west on 18 August and one which was seen landing on the boardwalk on Inner Farne on 21 August before departing high to the south-west.

Common Sandpiper *Actitis hypoleucos*

A well represented passage visitor.

It was an improved showing on spring passage from the previous year with reports on five dates compared with two from last year. The first bird of the year appeared on the very early date of 11 April on the south-east rocks of Inner Farne, the second earliest on record following one on 10 April 1979. The only other spring reports concerned a single lingering on Brownsman on 3-4 May and 7-8 May. A single was seen on Brownsman pond on 13 and 16 July with autumn passage commencing from early August. Records refer to 1-2 on fourteen August dates on both Inner Farne and Brownsman, with peaks of nine on 18 (seven on Brownsman, two on Longstone Main) and three on Brownsman on 19 August. Late passage birds were seen on Inner Farne on 6 September with two on Brownsman on 15 September.

Turnstone *Arenaria interpres*

A common passage and winter visitor, uncommon in summer.

Present all year round with large numbers reported in late summer as passage birds filtered back into Britain. The spring period produced regular reports from several islands, with up to *ca* 150 present, favouring Knoxes Reef and the Longstone complex. Evidence suggested that small numbers remained on the islands throughout the summer with daily records throughout May and June with a peak of thirty-eight on West Wideopens on 14 June. Wader passage increased from early July and numbers rapidly built up, with 120 on the inner group on 15 July, increasing to 147 by 24 and peaking at 316 on 29 July. During this same period, the outer group peaked at 200 on 12 July. As summer gave way to autumn, up to 300 were resident throughout and most remained into the early winter months across the islands.

Grey Phalarope *Phalaropus fulicarius*

An uncommon autumn passage and winter visitor, extremely rare in spring.

Another season and yet more records, as the islands can lay claim to fifteen records involving eighteen birds since 2000. This distinctive and exciting visitor was reported on the sea, with two individuals near a dive boat by Longstone End on 19 November, followed by a single which showed well to admiring wardens at the south end of Brownsman on the afternoon of 21 November.

Pomarine Skua *Stercorarius pomarinus*

A well represented passage visitor, common in some years.

Without the right weather conditions passage can be disappointing and this proved to be the case this year with only three confirmed sightings of this power-house of a skua. A sub-adult was observed flying north off the south end of Brownsman on 12 August followed by a juvenile north through Staple Sound on 31 August. The final record involved a sub-adult north through Inner Sound on 9 September.

Arctic Skua *S. parasiticus*

A common passage visitor.

Well represented on passage with the bulk of the Farnes records referring to autumn birds. The spring period was generally quiet with singles north on four dates from 20 May-4 June with a peak of five on 22 May, including three lingering around Staple Island. Two birds loitering around the inner group on 25 June heralded the start of the autumn returnees, although numbers were low at first, possibly hinting at a better breeding season to the north. July produced reports of 1-2 on thirteen dates with small numbers idling around the islands. On the inner group, a series of excellent records from 28 July-early September involved up to four daily around the Kettle, frequently seen harrying terns for food. The birds were often seen sitting on Knoxes Reef or on Inner Farne and showed spectacularly well during aerial pursuits over the island. Away from lingering birds, the season's peak passage occurred in August, with eleven south on 11, eleven north on 13 and thirteen north on 14 August. Numbers eventually started dwindling from mid-September as birds departed south for the winter, with 1-2 seen on five October dates between 10 and 22 October. The final record concerned an immature south through Staple Sound on 12 November.

Long-tailed Skua *S. longicaudus*

An uncommon passage visitor, well represented to common in 'invasion' years.

Although recorded annually, adult birds are few and far between with only three records of this age group in the past six years. Despite the year producing a disappointing single record, the bird in question was a stunning adult with full tail streamers, noted flying north through Staple Sound on 4 June. Surprisingly, this represented the first spring record of the species for the Farnes.

Great Skua *S. skua*

A common passage visitor.

It was an interesting season for this ferocious visitor, as passage was overshadowed by lingering birds which were seen killing several species of seabirds around the islands. Spring passage commenced with a single north on 4 and 29 April with reports of 1-2 on thirteen

May dates. If anyone doubted the species' aggressive nature, then a series of sightings from early May to mid-June changed all perceptions of that. An individual was observed killing and eating an adult Herring Gull near Staple Island on 6 May, two individuals killed two Puffins and a Kittiwake in the space of two hours on Brownsman on 18 May, another killed a Kittiwake on 22 May and another was seen killing an adult Herring Gull on South Wamses on 16 June. However the inner group did not escape attention as on 11 June an adult landed on the top meadow, killing an adult Arctic Tern on its nest, devouring two Black-headed Gull chicks and then attempting to predate Sandwich Tern eggs. The bird departed, reluctantly, only when wardens approached within a few feet of it. The same bird was again seen attempting to land in the same area only two days later and was reported as causing havoc down the Northumberland coast at the Long Nanny Little Tern colony. Thankfully this was the last record of birds on the islands, with the rest confined to reports on passage. It was a moderate autumn for records with passage of 1-6 on twenty-nine dates between 14 July and 27 November, with peak counts including nineteen north on 12 August and twelve north on 14 August. A very late individual was seen flying north through Staple Sound on 27 November.

Mediterranean Gull *Larus melanocephalus*

An uncommon passage and winter visitor.

Although the Farnes only boasts twenty-seven records since the first in 1964, the islands are going through a boom period with no fewer than nineteen since 1999. This year continued the upsurge of records with the inner group having at least three different individuals during April. Records from this area included first-winter birds on Knoxes Reef on 8 and 19 April followed by a second-winter bird on 23 and a second-summer bird on 26 April. For the second consecutive year the outer group produced records, when an adult with an incomplete black hood was discovered sitting amongst Kittiwakes on Skeney Scar on 15 June, and noted on nearby Brownsman on 28 June.

Little Gull *L. minutus*

A well represented passage and winter visitor.

Well reported during the season although there was no sizeable passage during the autumn. The north-east experiences annual influxes of birds in mid summer along the coastline and the Farnes usually produce several records during this period, and this year was no different. Records included a first-summer bird on Brownsman on 16, 17, 21 and 30 June with another first-summer bird on Inner Farne on 29-30 June. The next influx occurred from early August with two adults in Inner Sound on 8, three north on 14 and an immature north on 17 August. Lingering first-winter birds were seen on 17 September while the season's peak count involved five north on 10 October. Late individuals included an adult north on 27 October and a first-winter bird battling against a storm force northerly wind on 31 October.

Black-headed Gull *L. ridibundus*

A well represented breeding species and common visitor.

As the wardens arrived on the islands in late March, the species was very evident with good numbers counted on Knoxes Reef around the inner group, with 604 on 24 March. Display commenced from 25 March and soon afterwards birds started establishing territories in the three main nesting areas on Inner Farne (the Ladies Path, south-east rocks and top meadow). Interestingly a good number (up to 103 on 11 April) were seen on Brownsman during this

early spring period and this set the trend for a noticeable increase in breeding pairs on this particular island. The first eggs were discovered in the main colony on Inner Farne along the Ladies Path on 28 April with the first noted on Brownsman on 4 May. The overall population showed a slight decrease from the 'all time-high' of last season as 342 (396) pairs nested as follows: Inner Farne 302 (381) and Brownsman 40 (15). The first young were noted in late May and the first fledglings were recorded from 23 June on Inner Farne and 30 June on Brownsman. As usual, the species interacted with the nesting Sandwich Terns on both major islands although both appeared to suffer heavy predation from the larger gulls during their nesting period. This 'buffer zone' benefits the nesting terns and reduces the impact on their breeding attempts. As with any species of gull, the Black-headed Gull is an opportunistic species and this was evident on Inner Farne in the cemetery area, as predation of Arctic Tern eggs was described as 'heavy'. The species also caused a few problems late in the season around the Brownsman cottage area, where a handful of fledged young predated the last few small Arctic Tern chicks from around the cottage. Interestingly a fledged juvenile appeared on Brownsman on 19 June which did not belong to the islands' breeding colonies. Following the breeding season, birds dispersed the islands with only small numbers lingering during the autumn months.

Common Gull *L. canus*

A common visitor. Bred in four years 1910-14 (Booth, 1911, 1912; Miller, 1911-1914; Paynter 1914), probably in 1916 (March, 1916) and attempted breeding in 1974 (Hawkey and Hickling, 1974).

The majority of Farne records occur in spring as birds move north to breeding grounds, with a distinct build-up on Knoxes Reef during evening roosts. Following three on Knoxes Reef on 27 March, numbers slowly started increasing during April with eight on 1 and peaking with eighty-six on 5 and then 73-74 were present nightly from 6-13 April with a gradual decline until last seen in early May. During this period, diurnal easterly passage was logged over Brownsman with twenty-six east on 14, twenty-nine on 19 and a peak of seventy-four east on 22 April. The final spring passage report concerned ten immatures east on 16 May. Birds were absent from the islands throughout the summer although a fledged juvenile appeared on Brownsman from 27 July. The autumn months witnessed small numbers lingering around the islands, with no large counts reported.

Lesser-black Backed Gull *L. fuscus*

A common breeding species and passage visitor.

The Farnes population is completely migratory, moving through north-east England in early March and then returning south for the winter. As wardens arrived in late March, the species was scarce around the islands with only *ca* twenty counted on the Wideopens on 24 March. Thereafter breeding birds returned in good numbers in early April and territorial disputes were noted from 7 April. The first nest building activities were recorded from mid-April and the first eggs were soon discovered on 2 May. There was a slight increase in fortunes for the breeding stock, with 545 (431) pairs nesting as follows: Inner Farne 16 (12), West Wideopens 121 (117), East Wideopens 63 (41), Knoxes Reef 33 (30), Staple Island 55 (32), Brownsman 8 (9), North Wamses 75 (47), South Wamses 78 (71), Roddam and Green 15 (0) and Big Harcar 81 (72). As usual a small number of birds caused havoc to other nesting seabirds, as the species was again responsible for heavy predation of Black-headed Gulls on Inner Farne and Arctic Terns on Brownsman north beach. Birds soon dispersed after the

breeding season, although they lingered longer than usual, with small numbers noted in early November before the species was once again absent during the winter months.

Herring Gull *L. argentatus*

A common breeding species, abundant in winter.

Abundant as ever with pairs attempting to nest on fourteen islands, with North Wamses remaining as the only site holding three figure numbers. The breeding population showed a decrease for the third consecutive year, dipping below the total number of Lesser Black-backed Gulls nesting on the islands, although the strategy of nesting amongst other species, especially Guillemots and Cormorants, has helped birds raise young unhindered. A total of 505 (540) pairs nested as follows: Inner Farne 2 (1), West Wideopens 70 (99), East Wideopens 83 (86), Knoxes Reef 20 (20), Skeney Scar 12 (8), Staple Island 14 (15), Brownsman 6 (8), North Wamses 120 (109), South Wamses 40 (49), Roddam and Green 9 (11), Big Harcar 67 (61), Longstone Main 2 (4), Longstone End 33 (31) and Northern Hares 27 (38). A good number were once again responsible for the majority of predation recorded on the islands during the season, although revenge was handed out by several adult Guillemots which were observed killing a young Herring Gull chick on the East Wideopens. Following the breeding season, large numbers remained, roosting on the islands throughout the autumn period with northern race birds *L. a. argentatus* noted taking up residence for the winter.

Glaucous Gull *L. hyperboreus*

An uncommon winter and passage visitor.

There has been a huge reduction in records in recent years, as the species was once a guaranteed annual with most years producing multiple sightings. However there has been a marked decline of wintering birds in the north-east, possibly linked with the decline of the fishing industry, and this has reflected on the number of records annually from the Farnes. The year produced a lone record with a first-winter bird on Knoxes Reef on the evening of 23 April, representing only the fourth record in five years.

Great Black-backed Gull *L. marinus*

An uncommon breeder, common winter and passage visitor.

The species maintained its toehold as a breeding species on the islands, with seven pairs attempting to nest for the third consecutive year. A total of 7 (7) pairs nested as follows: West Wideopens 2 (1), East Wideopens 3 (3), Skeney Scar 0 (1), North Wamses 1 (1) and South Wamses 1 (1). Once again there was no recorded breeding on Brownsman as following the death of one of the established adults in early 2005, there have been no replacement birds. More unusual for such a large aggressive bird, the species suffered predation problems with the loss of at least three nesting attempts to other large gull species. From late June numbers increased on the islands with good numbers present during the autumn months, with *ca* 500 present throughout November.

Kittiwake *Rissa tridactyla*

An abundant breeder and passage visitor, well represented in winter.

Very few birds were present when the wardens arrived in late March with just a handful of pairs occupying nesting ledges. Numbers started to increase around the islands from early April and nesting activity was triggered from late April when birds started collecting nest

material from various areas of the islands. Well constructed nests were complete by mid-May and the first eggs discovered from 26 May. This late May laying date now appears to be the 'norm' for first egg laying as evidence suggests that the Kittiwake breeding season is now almost one month later on the Farne Islands than three decades ago. A total of 4,713 (5,375) pairs nested as follows: Megstone 18 (13), Inner Farne 1,420 (1,520), West Wideopens 207 (256), East Wideopens 262 (318), Skeney Scar 175 (211), Staple Island 1,168 (1,370), Brownsman 1,185 (1,384), North Wamses 96 (92), South Wamses 70 (73), Roddam and Green 20 (27) and Big Harcar 92 (111). The overall population experienced a decrease of 12% resulting from a loss of 662 nesting pairs. However the counting process in early June may now not cater for the late nesting habits of the Kittiwakes on the islands as it was evident that nest building activities were still in operation when the cliff counts were undertaken in early June. The first chicks started hatching from 22 June with fledglings recorded around the islands from 19 July. The excellent summer weather resulted in a good breeding season for the majority of seabirds on the Farnes but this was not the case for Kittiwakes. Monitoring showed that 601 monitored nests produced 301 fledged young at an overall productivity level of 0.50, a disappointing return and the second worst return this decade.

Sandwich Tern *Sterna sandvicensis*

An abundant breeding summer and passage visitor.

As expected the first returning birds appeared over the islands in late March, with one noted in the Kettle off Inner Farne on 29 March. Thereafter numbers built up daily (as shown in Table 3) peaking in early May with *ca* 2,000 present. Pair bonding and very vocal aerial displays commenced over the islands in the first week of May and the first prospecting birds were seen on Inner Farne 'island top' by 4 May. The first eggs were discovered on Inner Farne on 11 May and for the second consecutive year, birds nested on the north-east side of Brownsman, with the first eggs discovered on 21 May. A total of 1,635 (1,913) pairs nested as follows: Inner Farne 1,429 (1,853) and Brownsman 206 (60). The first young hatched on Inner Farne on 21 May and Brownsman on 14 June and although not monitored, both colonies produced good numbers of fledged young with the first taking flight from early July. Post-breeding flocks gathered on the islands throughout early August and started dispersing before becoming scarce by mid-September. A partially leucistic bird (which was ringed) was reared successfully on Inner Farne and may have been the same individual responsible for sightings at Musselburgh, Lothian in early August. As the autumn progressed, sightings became fewer and late birds were seen on 14 and 18 October. However a winter-plumage adult fishing in the Kettle on 29 October was the latest since one was near Big Harcar on the same day in 1997.

Table 3 Evening roost counts of Sandwich Terns on Knoxes Reef, Mar-Apr 2006.

Mar		*Apr*												
29	*31*	*2*	*5*	*6*	*7*	*8*	*13*	*14*	*15*	*19*	*23*	*25*	*27*	*28*
1	**1**	**3**	**4**	**6**	**14**	**17**	**80**	**101**	**143**	**247**	**343**	**461**	**600**	**800**

Roseate Tern *S. dougallii*

A well represented summer and passage visitor, uncommon breeding species.

It was an eventful and successful season as the returning pair fledged one chick from Inner Farne for the second consecutive year. Birds arrived on the islands from early May and were

were few and far between with a **Short-eared Owl** and a **Yellowhammer** present on 2 while a female **House Sparrow** was the pick of the bunch, appearing briefly on Inner Farne on the morning of 3 November, the second record of the year. Thereafter the Farnes went through a quiet spell, although good numbers of **Little Auk** remained around the islands, **Black Guillemot** were occasionally sighted and small numbers of **Woodcock** were reported. The autumn's only Wood Pigeon occurred on 9 whilst southerly winds on 10 November produced Fieldfare (253), Redwing (58), Blackbird (41) and the season's final records of Brambling and Chaffinch. As the month progressed and westerly and southerly weather systems dominated, the dying embers of migration were extinguished, The only passerine records of note included a very late Blackcap discovered on Northern Hares on 15 and the season's peak count of Blackbird (112) on 25 November. The final few weeks of the month produced very few highlights, as small numbers of Robin, Wren, and Dunnock settled on the islands for the winter. The only noteworthy highlights from this final period included a late **Arctic Skua** on 12 and **Grey Phalarope** (2) on the sea off Longstone Main on 19 with one feeding just off the south end of Brownsman on 21 November (See Table 2).

Table 2 Migrant dates 2006.

	First date recorded 2006	Last date recorded 2006	Mean arrival 1970-2005	Earliest Farnes record
Swift	3 May	13 Aug	24 May	16 Apr 1988
Sand Martin	15 Apr	6 Sept	24 Apr	30 Mar 1993
Swallow	14 Apr	18 Oct	21 Apr	31 Mar 1999
House Martin	24 Apr	8 Oct	6 May	12 Apr 2005
Tree Pipit	7 May	14 Oct	24 Apr	2 Apr 1972
Yellow Wagtail	22 Apr	17 Sept	27 Apr	14 Apr 1995
Redstart	25 Apr	17 Oct	24 Apr	4 Apr 1971
Whinchat	5 May	2 Oct	30 Apr	19 Apr 1987
Wheatear	27 Mar	27 Oct	30 Mar	19 Mar 2005
G'hopper Warbler	20 Apr	12 Sept	30 Apr	17 Apr 2000
Sedge Warbler	5 May	16 Sept	6 May	13 Apr 1992
Reed Warbler	18 Aug	24 Sept	28 May	15 May 1979
Lesser Whitethroat	1 May	24 Sept	6 May	18 Apr 2005
Whitethroat	21 Apr	26 Sept	2 May	17 Apr 1981
Garden Warbler	1 May	24 Sept	11 May	6 Apr 1982
Blackcap	25 Apr	15 Nov	22 Apr	31 Mar 1994
Chiffchaff	30 Mar	8 Nov	4 Apr	21 Mar 2005
Willow Warbler	15 Apr	15 Oct	14 Apr	2 Apr 2000
Spotted Flycatcher	8 May	17 Sept	15 May	4 May 1984
Pied Flycatcher	7 May	2 Oct	7 May	23 Apr 1975

The wardens finally left the islands on Saturday 2 December having spent a total of 255 days resident on the islands.

Acknowledgments

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The status of each species/sub-species is classified using the following new categories, which were implemented from 1 December 2006:

abundant	> 1,000 occurrences per annum
common	101-1,000 occurrences per annum
well represented	11-100 occurrences per annum
uncommon	no more than 10 occurrences per annum but more than 20 in total
scarce	11-20 occurrences in total
rare	6-10 occurrences in total
extremely rare	no more than 5 occurrences in total

SYSTEMATIC LIST

Mute Swan *Cygnus olor*

An uncommon visitor.

Over the years the majority of Farne records have involved local movement though Inner Sound and this year was no different, with three records in early September. Records included four adults south on 5, followed by three north on 7 and three north on 9 September. There was no evidence to suggest that the three records involved the same individuals.

Whooper Swan *C. cygnus*

An uncommon winter and passage visitor.

This elegant winter visitor was noted on spring passage as an impressive herd of twenty-nine flew north through Inner Sound on the evening of 14 April. This represented the largest single flock recorded from the islands, beating the previous highest of twenty-five in both 2004 and 2005. Disappointingly, there were no records from the autumn or early winter period.

Pink-footed Goose *Anser brachyrhynchus*

A well represented passage and winter visitor.

Recorded on both spring and autumn passage but the number of records was below that of

recent years. A large skein of ninety-eight north over Inner Farne on the morning of 1 April was part of a much wider northerly movement recorded along the east coast that day and represented the only spring record. Autumn produced below average numbers, especially in comparison to recent years which have seen some remarkable numbers recorded from the islands. The first autumn returnees were noted on 30 September with a skein of seventy-three south which were followed by skeins of 2-41 on ten dates until last seen on 10 November. The peak count during this period included a skein of 110 south-west over Inner Farne on 25 October.

Greylag Goose *A. anser*

An uncommon passage and winter visitor.

It was a typical year with a handful of records, with the first bird observed flying west over the outer and then inner group of islands on 21 April. The majority of Farnes records probably involve feral birds from the mainland and such a record concerned a vocal flock of three in the Kettle off Inner Farne on 26 April which, having landed, eventually departed back towards the mainland. The final spring sighting was four in the Kettle on 21 May. The only autumn record involved a skein of thirteen north through Staple Sound on 12 September.

Greater Canada Goose *Branta canadensis*

An uncommon passage visitor.

It was a good season with records from eight dates with the majority of records involving small numbers heading north to moulting grounds in the Beauly Firth in northern Scotland in late May/early June although this year brought a few lingering individuals. The first indication of movement was logged through Inner Sound on 25 April with three skeins, totalling twelve birds, moving north past the islands. However this was followed by a feral individual which took up residence on Inner Farne on 3-5 May and looked distinctly odd amongst the masses of nesting seabirds. Passage resumed in early June, the peak time for northerly movement, with a large skein of eighty through Inner Sound on 4 June which landed on the sea on at least three occasions. Thereafter singles were logged on the islands with one on Brownsman pond and then Inner Farne on 5 and another on 15 June. The final record of the year involved six south through Inner Sound on 3 July.

Barnacle Goose *B. leucopsis*

A well represented passage and winter visitor.

Spring sightings are becoming more frequent on the islands; as with the previous two seasons, the spring produced some good numbers followed by a disappointing showing during autumn passage. The evening of 29 April produced a spectacular 546 east over the islands in two huge skeins, both at eye level, with 281 east followed by 265 in the same direction. The only other report concerned fourteen east on 12 May. Autumn passage was disappointing with twenty-eight north on 23 September, ten north on 26 September and three on South Wamses before heading west on 16 October. The only other record concerned a single lingering on Little Scarcar on at least five dates between 15 and 19 October.

Brent Goose 'Light-bellied' *B. bernicla hrota*

A well represented passage visitor.

Spring records are scarce from the islands with usually just a handful of reports and this year

was no different as two circled the Kettle before heading south on 26 March, followed by two north on 28 March. Autumn records refer to returning birds heading north to wintering grounds on nearby Lindisfarne and the first autumn record involved twenty-three north on 8 September. Peak autumn passage was logged past the islands from 11-16 September with nineteen on 11, six on 12 and four on 16 September. The season's best showing occurred during this period with ninety-seven logged north past the islands on 15 September, a particularly high count for the islands. The only other records concerned a single north through Inner Sound on 12 October and thirteen north during a good wildfowl movement on 2 November.

For the fourth consecutive year, the season produced another record of 'dark-bellied' **Brent Goose** *B. b. bernicla* with a single north past Inner Farne on 28 March.

Shelduck *Tadorna tadorna*

A well represented visitor and occasional breeder (Steel, 2004).

This uncommon Northumberland breeding species had a successful season, with the distinctive pair returning for a fifth consecutive year. The female, who originally summered on the islands in 2002, was identified by her distinctive facial pattern. Since that time, young have successfully been raised in two years (2003, 2004) but last season the breeding attempt failed at the egg stage. The pair returned to the islands in late March and thereafter were recorded on both island groups throughout April with the female prospecting various burrows and holes on Inner Farne. Eventually it appeared that a suitable nesting place had been discovered as the female became elusive, suggesting incubating activities, whilst the male was seen frequenting both Brownsman and Knoxes Reef during this period. As mid-May approached, the female was occasionally seen departing from the suspected next site, but due to the fragile soil cap and the nearby presence of other nesting seabirds, it was decided not to make an attempt to check the site. Unlike the previous season, circumstantial evidence suggested that the pair had been successful and the family party had departed west towards the mainland in late May. Away from the breeding pair, passage was logged with 1-2 on three dates during spring with a peak of six north through Inner Sound on 16 April. Following a family party of six north on 30 August, autumn passage involved 1-4 north on six dates between 9 September and 3 November with a peak of six south over Brownsman on 11 October.

Wigeon *Anas penelope*

A common passage and winter visitor.

Well represented on passage with the bulk of records occurring, as usual, during the autumn months. Spring reports were confined to the inner group with five south through Staple Sound on 27 March followed by 2-3 lingering on Knoxes Reef on 30 March and 3 and 7 May. A pair south over Brownsman on 22 August commenced autumn passage with good numbers recorded thereafter. The months of September-November witnessed the largest movements with 2-78 noted on thirty dates with three-figure counts on six dates. Peak passage during September generally involved passage through Inner Sound with 189 north on 12, 232 north on 15 and 123 south on 16 September. The season's peak counts occurred in mid-October with an impressive 469 north through Inner Sound on 10 October followed by 260 north on 2 November (138 through Staple Sound and 122 through Inner Sound). As usual small numbers lingered on the islands, especially Knoxes Reef, throughout the late autumn/early winter period with a peak of twenty-six on 3 November.

Teal *A. crecca*

A common passage and winter visitor.

It was a noticeably quiet spring for the species, with just four records of 1-3 on the islands between 1 and 9 April. However following the first autumn returnee, a female on Brownsman flats on 22 July, autumn produced light passage with a modest peak of seventy-eight north through Inner Sound on 12 September. The bulk of the autumn records involved birds moving north through either Inner or Staple Sounds with 1-42 recorded on thirty-five dates from 26 August-3 November. The islands also hosted small wintering flocks, with Staple Island, Brownsman and Knoxes Reef all holding small numbers with a peak of 120 on the latter island in late November.

Mallard *A. platyrhynchos*

A common winter and passage visitor and well represented breeder.

This species has a small toe-hold on the islands with 10-13 pairs nesting in good years. As usual small numbers were noted in the early spring period, favouring the Kettle area of the inner group, and pairs were seen prospecting nest sites in early April. The first eggs were discovered from 21 April and a total of 10 (11) pairs nested as follows: Inner Farne 4 (3), West Wideopens 2 (3), East Wideopens 0 (1), Knoxes Reef 1 (0), Brownsman 2 (2), North Wamses 0 (1) and South Wamses 1 (1). The first young appeared around the islands from mid-May with the ponds on both Inner Farne and Brownsman being utilised by family parties. However predation by large gulls took a heavy toll as no fledglings were produced from the ten nests. Following the breeding season birds were present daily, favouring Knoxes Reef although birds were evident on the outer group throughout this period. The gradual increase peaked with up to ninety recorded daily throughout November. During this period passage was logged during heavy wildfowl passage with counts of fifty-six north through Inner Sound on 1 November and eighty-nine north on 2 November (fifty-two through Inner Sound and thirty-seven through Staple Sound).

Pintail *A. acuta*

An uncommon passage and winter visitor.

It was a reasonable year for this stunning visitor as the spring produced two records, with three records during the autumn period. The first of the year involved a pair lingering in the Kettle near Knoxes Reef on 27 March followed by a pair north through Staple Sound on 2 April. Autumn passage saw Inner Sound producing two north on 12 September and two north on 10 October with five north (including two males) through Staple Sound on 2 November.

Garganey *A. querquedula*

A scarce passage visitor.

Another year and another stunning drake graced the islands, the third consecutive year the Farnes have produced records. The male was discovered on 4 May during the early evening feeding with a pair of Shovelers in the Kettle off the north side of West Wideopens. The exact same spot has produced drakes in the previous two years (1 May 2004 and 15 May 2005) begging the question that it has been the same individual on each occasion. In a Farnes context, this represented the seventeenth record involving twenty-one birds, following the first on 21 May 1979.

Shoveler *A. clypeata*

A well represented passage and winter visitor.

It was a reasonable year with birds recorded on both spring and autumn passage, with the first record involving a pair on the sea near Gun Rock off Staple Island on 21 April. The bulk of the spring records occurred in May with two males in the Kettle on 2, a pair lingering in the same area with a male Garganey on 4, a pair flushed from pools on Staple Island on 9 May (with a male on Inner Farne the same day), and possibly the same pair east over Inner Farne the following day. Wildfowl movement in mid-September produced the bulk of the autumn records with singles north through Inner Sound on 12 and 16 September and three east over Brownsman on 13 September. A record during this period was of significant note when a flock of fourteen flew north past Inner Farne on 17 September, representing the second highest count for the islands, although short of the all time record of twenty-five on 21 September 1997. The final record of the year involved a drake north through Staple Sound on 14 October.

Pochard *Aythya ferina*

An uncommon passage visitor.

Despite it being recorded almost annually (the last blank year was 2002) only small numbers are seen on passage with most years producing no more than three records. The year's total of four records involving six birds was the best showing since 2000. All records referred to birds on autumn passage, with a male north through Staple Sound on 11 September, a single north through Inner Sound on 15 September, three (two males, one female) north through Inner Sound on 10 October and a male north through Staple Sound on 26 October.

Tufted Duck *A. fuligula*

A well represented visitor.

Passage birds were logged on nine days during the season, a typical average showing for this diving duck. Spring passage was light with two records, a pair north through Staple Sound on the morning of 9 April followed by a pair lingering around Brownsman and Staple Island on 15-16 May. The majority of the early autumn passage was all logged through Inner Sound with a female north on 12 August, four drakes south on 10 September and singles north on 16 and 18 September. Away from this favoured area, a female landed on the sea behind the Wideopens before eventually heading north on 22 October and possibly the same bird repeated the same act five days later on 27 October.

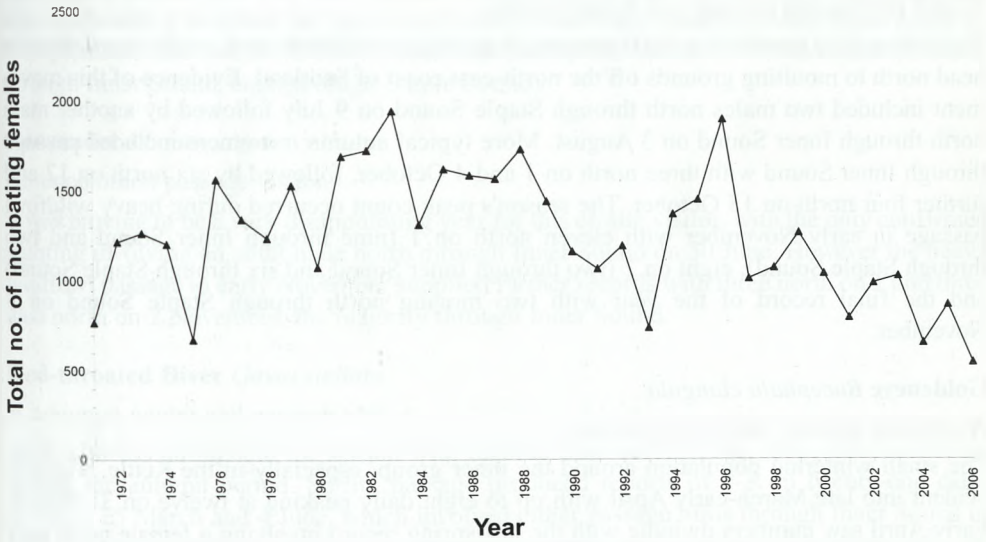
Eider *Somateria mollissima*

An abundant breeding resident.

The species suffered one of its poorest years on record with the breeding population falling to its lowest level since 1968, a decline of 36% from the previous season. Early indications suggested the season was going to be poor as only small numbers greeted the wardens on their arrival in late March compared to the usual large rafts of birds around the islands. The first prospecting pairs appeared on the island 'tops' from 9 April, with the first eggs discovered on Inner Farne on 26 and Brownsman on 28 April. A total of twelve islands were colonised with a total of 556 (875) pairs as follows: Inner Farne 337 (518), West Wideopens 7 (21), East Wideopens 5 (9), Knoxes Reef 4 (9), Staple Island 27 (29), Brownsman 154 (264), North Wamses 2 (4), South Wamses 9 (8), Big Harcar 4 (6), Roddam and Green 0 (1),

Northern Hares 1 (1), Longstone Main 4 (1) and Longstone End 2 (4). The overall population trend continues to decline, with fluctuations from year-to-year disguising the longer term decline, as mirrored on nearby Coquet Island over the past decade. The first chicks hatched on Brownsman on 24 and Inner Farne on 25 May and thereafter good numbers of young were seen going to sea, the majority heading west towards the mainland. Throughout June numbers declined as successful family broods moved off the islands with the last breeding females departing by mid-July. As usual, egg predation by large gulls was noticeable early in the season while females abandoning nests was generally above average. This latter fact may be a direct result of poor winter feeding, as the late winter period saw onshore winds and cold temperatures hampering feeding along the North Northumberland coastline. It was evident that many birds were not in sufficient breeding condition by April and this may be one of the reasons why so many females failed to nest or abandoned nesting attempts at an early stage. Monitoring was below average, with 307 nests producing 1,207 eggs with 770 young fledging.

Figure 1 Breeding population of Eider on the Farne Islands 1971-2006.



Long-tailed Duck *Clangula hyemalis*

A well represented passage and winter visitor.

The over-wintering flock behind the Wideopens was still evident when the wardens arrived on the islands in late March with up to four daily until 9 April. During this period, passage was logged on three dates with 1-2 north through Inner Sound on 2 and 4 April, and four north through Staple Sound on 26 March. Numbers dwindled throughout April with late records including a summer-plumage pair behind the Wideopens on 25 and 29 April. However this was eclipsed by a male on the sea near North Wamses on 6 May, representing only the third ever May record from the Farnes. The first autumn bird appeared from late October, with a female on the sea behind the Wideopens from 24 October lingering into early November. Passage was logged during the first three days of November with four north on 1, ten north on 2 and two north on 3 November. Unlike the previous two seasons, there appeared to be no birds wintering behind the favoured location of the Wideopens.

Common Scoter *Melanitta nigra*

A common passage and winter visitor.

Recorded in all months although the overall number of records was down on the previous three years, with reports from sixty-three dates compared to 112 in 2003, ninety-three in 2004 and ninety-one in 2005. The majority of spring records referred to 1-14 with a noticeable influx in June-July as counts peaked at eighty-five north on 30 June, forty-three south on 10 July and 130 north on 14 July. Thereafter smaller numbers were recorded until the next influx in mid-September, with peaks of 135 north on 11, seventy-three north on 12 and sixty-four north on 15 September. As usual, the autumn months produced almost daily records, with a small wintering population in Inner Sound bolstered by passage birds moving past the islands. Good numbers were logged heading north during the wildfowl movements in late October-early November, with ninety-seven on 30 October, fifty-five on 1, eighty-four on 2 and ninety-two on 3 November.

Velvet Scoter *M. fusca*

A well represented passage and winter visitor.

The Farnes have produced a small number of records in mid summer in recent years, as birds head north to moulting grounds off the north-east coast of Scotland. Evidence of this movement included two males north through Staple Sound on 9 July followed by another male north through Inner Sound on 3 August. More typical autumn movement included passage through Inner Sound with three north on 1 and 4 October, followed by six north on 12 and further four north on 15 October. The season's peak count occurred during heavy wildfowl passage in early November with eleven north on 1 (nine through Inner Sound and two through Staple Sound), eight on 2 (two through Inner Sound and six through Staple Sound) and the final record of the year with two moving north through Staple Sound on 3 November.

Goldeneye *Bucephala clangula*

A common passage and winter visitor.

The small wintering population around the inner group, especially in the Kettle, was still evident into late March-early April with up to eight daily peaking at twelve on 31 March. Early April saw numbers dwindle with the last spring record involving a female north past Brownsman on 14 April. A very unusual record concerned a male discovered off the north end of Brownsman on 26 May, the first May record since 1996. The first autumn returnees started reappearing from late October with light passage of 1-5 recorded between 24 and 31 October. The season's peak counts occurred during early November, when large numbers of wildfowl were logged past the islands. An impressive 169 were seen moving north on 1 November (155 through Inner Sound, fourteen through Staple Sound) but this was superseded the following day, with 225 north (145 through Inner Sound, eighty through Staple Sound) on 2 November. This latter count represented the third highest ever day count for the Farnes. Thereafter up to six settled around the inner group of islands to over-winter in the favoured localities and were present until the end of the year.

Red-breasted Merganser *Mergus serrator*

A well represented passage and winter visitor.

Without doubt one of the major highlights of the season, as a pair was confirmed nesting on Inner Farne, the first ever breeding record for the Farne Islands. Nationally 1,000-2,000

pairs breed annually, the majority in Scotland, while in a Northumberland context the species is an extremely rare breeder having only attempted on six previous occasions (Kerr, 2001). The first confirmed breeding in Northumberland occurred at Lindisfarne in 1975 with further breeding attempts in 1977, 1980 and 1997 while a pair nested inland at Caistron in 1984 and 1985 (Kerr, 2001). The nest, complete with nine eggs, was discovered on 4 June and thereafter visits to the area were reduced to minimise disturbance although the female was occasionally seen away from the area, presumably on foraging trips. Having seen the female at the nest on the evening of 5 July, it appeared the bird was brooding small young and a check the following morning confirmed the suspicions. The breeding strategy of the species follows that of the Eiders, as the female vacates the nest within twenty-four hours of hatching young and departs for the open sea. It is presumed this was the case, as the nest contained well trodden lining with droppings and egg fragments and one cold unhatched egg, the classic hallmarks of a successful ending to one of the most remarkable breeding records the islands have seen. Away from the breeding attempt, the species was well reported on passage, with 1-2 noted on seventeen dates from 16 April-3 November. From these sightings, a female with five fully fledged young on 20 August was the most interesting and was it possible it involved the Farne bred birds? Other high counts included eight north on 8 September, five south on 10 October and twenty-one north on 2 November (thirteen through Inner Sound, eight through Staple Sound).

Goosander *M. merganser*

An uncommon passage visitor.

It was proving to be a very disappointing year for this erratic visitor, with the only confirmed sighting involving an adult male north through Inner Sound on 30 June. However the heavy wildfowl passage in early November supplied further records with three north on 1 and three also north on 2 November, the majority through Inner Sound.

Red-throated Diver *Gavia stellata*

A common winter and passage visitor.

Well reported throughout the season with records from seventy-one dates, most occurring during the autumn period. Spring passage produced reports of 1-3 on twenty-one dates between 25 March and 4 June, which involved either passage birds through Inner Sound or birds loafing around the islands. As spring progressed, the majority of sightings involved summer-plumage individuals and the final record of this period involved five north together through Inner Sound on 4 June. Following a two months absence, autumn passage commenced from 7 August with a single north through Inner Sound. Thereafter good numbers were seen with up to eight lingering around the islands throughout the late autumn period. Passage generally involved 1-7 with peaks of nineteen south on 15 September, eleven south on 16 September and seventeen north on 2 November.

Black-throated Diver *G. arctica*

An uncommon passage and winter visitor.

The species' true scarcity status has been realised on the islands as the year produced only two confirmed sightings during the season. A partially summer-plumage adult flew north through Inner Sound on 16 October and another flew north past the south end of Brownsman on 1 November.

Great Northern Diver *G. immer*

A well represented winter and passage visitor.

This large hulk of a diver had a quiet year with all records referring to sightings during the autumn. The first bird of the year was discovered flying north through Inner Sound on 24 October and was followed by another north on 28 October. The good seabird passage in early November produced four north on 1 (two north through Inner Sound, two north through Staple Sound) and three north, all through Inner Sound, on 2 November. Thereafter singles were seen on four November dates with two noted on 12 November.

Red-necked Grebe *Podiceps grisegena*

A well represented winter and passage visitor.

Small numbers winter around the islands and these were evident with a single on 18 January and two noted on 7 March. Late spring passage birds were seen around the inner group with a winter-plumage bird present in the Kettle on 25 March. The same period produced a summer-plumage individual off the north end of Inner Farne on 25-26 March and which was discovered in a raft of Puffins on the latter date. The first autumn returnee was noted flying north past the south end of Brownsman on 17 September with singles north through Staple Sound on 27 October and 18 November. During a disappointing autumn period for the species, the only multiple sighting concerned two north together through Staple Sound on 2 November.

Fulmar *Fulmarus glacialis*

A common breeder, abundant on passage.

In general it was an excellent year for the species as good numbers attempted to nest on the islands, continuing the increase in the breeding population following the 'crash' of 2004. The Farnes were originally colonised in 1935 and the breeding population increased year-on-year until 2004. The opening months of that year brought reports of large numbers washed up dead along the North Norfolk coastline resulting in a catastrophic decline of 33% in the Farnes' breeding stock. However since that dramatic decline, the population has started to increase towards pre-2004 levels. Seabirds are generally scarce around the Farnes during the winter period but good numbers were present on the islands throughout January into mid-February before departing, eventually reappearing in mid-March. Pair bonding and copulation were observed in early April and birds remained loyal to traditional nesting sites until early May, when they disappeared for their annual 'honeymoon'. A total of 240 (176) pairs nested as follows: Inner Farne 21 (21), West Wideopens 15 (12), East Wideopens 22 (14), Knoxes Reef 24 (21), Staple Island 36 (20), Brownsman 63 (47), North Wamses 25 (13), South Wamses 27 (19), Big Harcar 6 (8) and Longstone End 1 (1). The first eggs were discovered on 19 May and with the lengthy incubation period (on average 49-53 days) the first young eventually hatched in early July. The open access policy to Big Harcar again caused problems, as there was a complete failing of all six nesting pairs. The first fledglings appeared over the islands from 19 August and thereafter birds started to disperse from their breeding grounds until the species became scarce from early September. Monitoring was consistent with recent years, with ninety-six chicks fledging from 183 nests, an overall productivity of 0.52. Following several week's absence, birds reappeared around the islands from 15 November.

evident throughout the month, with up to six different individuals recorded. Although there was no breeding attempt on Brownsman, a confused individual lingered and was seen displaying to several Arctic Terns, but with little success. However it was better news on Inner Farne as a pair was observed copulating on 2 June and seen inspecting an area in the Sandwich Tern colony on the top meadow on 14 June. However optimism faded as the pair apparently disappeared, with very little indication of nesting activity; surprisingly however the pair had remained and bred successfully as the nest site was discovered in early July. On a routine check of the Sandwich Tern colony, a single egg was discovered in the rim of a car tyre, which had been placed to encourage nesting Roseate Terns. Despite the apparent snub of the specially constructed tern terrace, the end result was still rewarding. The chick hatched on 19 July and successfully escaped the confines of the tyre after one week, before relocating onto the tern terrace where it was raised until it fledged. It eventually fledged on 13 August and was seen on the Ladies Path for a further few days before it departed successfully with its parents. The bird was ringed at the chick stage, with a BTO standard ring and a special Roseate Tern ring (IF50).

Common Tern *S. hirundo*

A common breeding summer and passage visitor.

The population on the Farnes has always been low in recent years with a peak of 313 pairs in 1989. The previous two seasons have seen an encouraging increase in numbers although this was halted this year with thirty-eight less pairs nesting compared with 2005. The first birds started arriving around the inner group from late April and displaying commenced in early May. The bulk of the breeding birds settled in the traditional area on Inner Farne to the west of the Sandwich Tern colony on the top meadow, while one pair attempted to nest on the central meadow. The first eggs were discovered on 12 May and 122 (160) pairs nested as follows: Inner Farne 118 (155) and Brownsman 4 (5). The first young hatched from 10 June and, although not monitored, it appeared to be a reasonable year with good numbers of fledged juveniles noted around the islands from the second week of July. On Brownsman, birds appeared over the islands from early May and displaying was recorded from 3 May. Despite four pairs nesting, all attempts failed at the egg stage due to predation from large gulls.

Arctic Tern *S. paradisaea*

An abundant breeding summer and passage visitor.

The Farnes population of Arctic Terns is the most closely scrutinised of any seabird on the islands as the two major breeding colonies surround the main dwellings on both Inner Farne and Brownsman. Throughout the season Arctic Terns are intensely studied through monitoring work and various research works. The first returning bird appeared on the typical arrival date of 19 April and thereafter the traditional roost around the inner group attracted large numbers, peaking at *ca* 5,000 by 10 May. Early May saw displaying birds landing on the 'island tops' of Inner Farne and Brownsman and following courtship the first eggs were discovered on 17 May. A total of 2,250 (2,380) pairs nested as follows: Inner Farne 1,163 (1,142), Staple Island 1 (29) and Brownsman 1,086 (1,209) pairs. The season did not pass without some noticeable events linked to Sand eels, the species' favoured prey. Although reasonable numbers of Sand eels were present in Farnes waters in the early part of the breeding season, there appeared to be a short supply for two brief spells lasting no longer than eight days. During these lean times, adult Arctic Terns preyed exclusively on other fish but

predominately Snake Pipefish, which were super-abundant this year. The result of feeding on inadequate prey items was evident with estimations of the loss of up to 25% of early hatchings in the colonies, as the majority of 'second born' in each nest subsequently died of starvation. The most noticeable die-off occurred in the final week of July, when adults were struggling to bring in enough quantities of food to feed large youngsters. The result was catastrophic for the large fledged chicks, with sixty-eight collected on Inner Farne and forty-nine on Brownsman on 24 July. Further complications to the season included the arrival of a very unseasonable (and unwelcome) Kestrel on Brownsman, which preyed upon eighteen almost fully fledged juveniles between 23 and 30 July. Despite another turbulent season, monitoring indicated a reasonable year with 464 nests producing 278 fledged young. Following the breeding season numbers dwindled throughout August and September with late records including forty-seven on 16 September and fourteen on 17 September.

Table 4 Evening roost counts of Arctic Terns on Knoxes Reef, April-May 2006.

April						*May*		
19	*23*	*25*	*27*	*28*	*30*	*1*	*5*	*10*
1	**3**	**28**	**157**	**359**	**398**	**1500**	**3000**	**5000**

Little Tern *S. albifrons*

A well represented passage visitor.

An excellent year with the traditional evening roost at St Cuthbert's Cove, Inner Farne attracting record numbers in mid-May, although unlike the previous season there was no evidence of a post-breeding roost. The first bird appeared on 30 April with two present in the large tern roost on the Ladies Path on Inner Farne. Thereafter the evening roost attracted birds nightly throughout May as shown in Table 5, with unprecedented numbers early in the month. The evening of 9 May attracted 115 to the beach, a new Farnes record, eclipsing the previous best of 90+ on 15 May 2001. Numbers started to dwindle as May progressed, as birds moved off to breeding areas to the north and south of the islands, with the final roost records involving seven on 3 June and two on 17 June. For the second consecutive year, the outer group claimed just a single record, with one over Brownsman in thick fog on 7 May.

Table 5 Evening roost counts of Little Terns on Inner Farne, May 2006.

May											
1	*2*	*3*	*4*	*5*	*8*	*9*	*10*	*12*	*22*	*25*	*27*
5	**26**	**52**	**82**	**96**	**110**	**115**	**101**	**58**	**22**	**14**	**9**

Black Tern *Chlidonias niger*

An uncommon passage visitor.

It was a reasonable year for this stunning 'marsh tern' with a lingering adult followed by three birds noted on autumn passage. A summer-plumage adult was discovered on the south-east rocks of Inner Farne on 4 July and was presumed to be the same individual lingering daily on Brownsman between 11 and 14 July. Autumn passage resulted in three juveniles north on 17 September, with one past the southend of Brownsman and two through Staple Sound.

Guillemot *Uria aalge*

An abundant breeding resident and passage visitor.

Another season and another record breeding count, as the continued march of the Guillemot continues on the islands. Mid-March witnessed the arrival of the first breeding pairs with the first birds making landfall on the Wideopens on 27 March. As usual the unsettled weather of early spring resulted in erratic behaviour throughout April and it took until the last week of the month for birds to settle finally on the nesting ledges. The first egg was discovered predated by a large gull on 25 April and thereafter mass synchronised laying commenced across all the colonies. A total of 47,926 (46,915) individuals were counted as follows: Megstone 277 (246), Inner Farne 5,739 (6,059), West Wideopens 2,147 (2,250), East Wideopens 3,161 (4,412), Skeney Scar 2,539 (2,648), Staple Island 24,647 (21,511), Brownsman 7,136 (7,773), North Wamses 1,388 (1,080), South Wamses 392 (463), Roddam and Green 230 (140) and Big Harcar 270 (333). The population continues to thrive with Staple Island dominating as usual with 24,647 individuals, an increase of 6,500 individuals in just five years. The two main islands of Brownsman and Inner Farne house the next sizeable populations with 7,136 and 5,739 individuals respectively. The cliff counts revealed some very minor drops in some areas with the most noticeable occurring on East Wideopens with a loss of 1,251 individuals, but this may be attributed to conservative counting rather than an actual drop in the population. The first jumplings were noted on the sea from 23 June and thereafter huge numbers were seen leaving the cliff tops from all the island colonies, including many which departed during the day, As usual, by mid-July the islands were bare with 99% of the breeding population gone and only a handful of stragglers remaining, with the last fledgling on 1 August. Predation in certain areas by Herring Gulls was heavy but this appears not to have a detrimental effect on the breeding stock, as the Farnes population continues to rise year-on-year. The species was monitored on both the inner and outer groups for the first time, with two selected colonies observed on Inner Farne and Staple Island. The results confirmed the impression of a good breeding season with 121 young jumping from 167 monitored nests. The species became very scarce following the breeding season, although good numbers returned from 18 September with small numbers remaining to winter in Farnes waters.

Razorbill *Alca torda*

A common breeding resident and passage visitor.

The population growth of the auk families has been very dramatic over the past ten years and the season produced another record number of breeding pairs on the islands. Inner Farne had the greatest population with 143 nesting pairs, which is just below the overall total number which nested on all the islands just ten years ago. The spring period was dominated by cold, easterly airflows resulting in a late start to the nesting season. Pairs were erratic throughout April, occasionally appearing for a few days at a time on nesting ledges before disappearing for several days at a time. Eventually birds settled and the first eggs were discovered on 10 May. A total of 322 (277) pairs nested as follows: Inner Farne 143 (129), West Wideopens 69 (54), East Wideopens 21 (23), Skeney Scar 10 (6), Staple Island 35 (25), Brownsman 6 (7), North Wamses 9 (6), South Wamses 16 (12) and Big Harcar 13 (15). Due to the change in lay-out of the boundary ropes on Staple Island, a pair successfully raised one young in Kittiwake Gully, the first such success by the pair in four years. The first chicks started hatching from 9 June and thereafter pairs successfully raised young to the fledgling stage. As with Guillemots, the cliffs became bare from early July as successful par-

ents took youngsters to sea and the species became scarce from late July. In mid-September, the first wintering birds reappeared around the islands, with *ca* 600 noted in Inner Sound in mid-September. The number of monitored nests increased again and productivity was excellent as the sheltered nest sites help protect eggs and young from predation and the worst of the elements. A total of fifty-six monitored nests produced forty-one fledged young, producing overall productivity figures of 0.73, just below the previous season's figure.

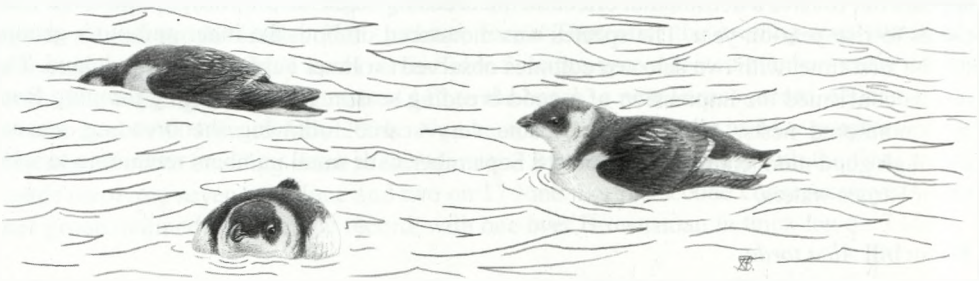
Black Guillemot *Cepphus grylle*

A well represented winter and passage visitor. Breeding 17th and possibly 18th centuries (Gardner-Medwin, 1985).

Small numbers continue to winter around the islands although an individual was seen during the summer for the second consecutive year. Following on from a series of summer sightings the previous year, an adult summer-plumage individual was seen with other auks in Staple Sound on 3 and 6 May. The first autumn bird was discovered to the north of Inner Farne on 5 October with another in the same area on 27 October. Further records included one in Staple Sound on 31 October followed by the season's best showing of four north (two adults, two first-winters) through Staple Sound on 1 November. Thereafter small numbers lingered with singles on 2, 12 and 14 November with two noted in Staple Sound on 22 November.

Little Auk *Alle alle*

A well represented winter and passage visitor. Large numbers can occur after northerly gales.



The Farnes are growing in reputation as one of the best sites in Britain for this erratic winter visitor, as once again the islands produced a huge November day count with good numbers lingering. Following strong gales, birds were present daily in late October with counts of 5-494 between 24-31 October with peaks of 2,284 north on 28 and 1,012 north on 29 October. More were to follow as a count of 1,385 north on 1 November would have been noteworthy in most years, but this was eclipsed by a staggering 7,881 north the following day (5,241 past the south end of the islands, 2,513 through Staple Sound and 127 through Inner Sound). The islands have produced some exceptional numbers in recent years, as the Farnes 'top all-time five counts' have occurred since 2000, including a mighty 10,265 north on 18 November 2004. This season's count on 2 November was the third highest ever, just behind second place of 8,186 north on 9 November 2001. Following this huge passage, birds were recorded daily until the wardens departed on 2 December, although numbers gradually decreased during this period. Apart from 168 north on 12 November, the majority of records referred to double-figure counts and as usual, many were seen by the wardens at

close quarters from the Zodiac boats. The large numbers also attracted attention from other quarters, with many falling prey to Peregrine, Merlin and Great Black-backed Gull during this time.

Puffin *Fratercula arctica*

An abundant breeding summer and passage visitor.

The first birds returned to Farnes waters on 23 March with several hundred around the islands the following day, although these moved on following strong northerly winds. The first major influx occurred on 27 March with several thousand rafting on the sea and the first birds were seen on the island tops that evening. Despite varying weather birds were settled by mid-April, which was noticeably quicker than the other two auk species. The first eggs were discovered on 30 April and mass synchronised laying took place in the first week of May. There was no census of the population this year; the next full census is scheduled for 2008 and numbers were therefore based upon the census of 2003 which revealed island populations on Inner Farne of 13,069, West Wideopens 8,704, East Wideopens 1,676, Staple Island 15,583, Brownsman 14,438, North Wamses 977, South Wamses 1,059 and Big Harcar 168. A surprising find on Staple Island during the summer was the discovery of a colour-ringed individual, which was caught and released unharmed. The adult bird had originally been ringed as a nestling on the same island on 11 July 1976, making the bird thirty years old and one of the oldest ever recorded. The first young started fledging from early July and monitoring indicated a good season with eighty-nine young fledging from a hundred monitored nests. The mass departure of adults occurred from 24 July although some did linger throughout August and for the second consecutive year an adult was seen feeding a chick down a burrow on Staple Island on 9 September. The species then became absent from the islands until small numbers returned to Farnes waters in mid-September.

Feral Pigeon *Columba livia*

A common breeding resident.

The islands boast good numbers throughout the year with birds commuting daily to the mainland. Peak counts occurred during the autumn, with *ca* 500 present on Inner Farne in October. Small numbers breed, utilising disused Puffin and Rabbit burrows on several islands.

Wood Pigeon *C. palumbus*

An uncommon passage visitor.

An intriguing year, with spring passage logged on eleven dates followed by a disappointing showing in autumn with only two documented records. The first record resulted in the largest count of the year (and joint highest count for the Farnes) with a total of six west over Inner Farne on 27 March. Thereafter singles were recorded on four April dates and a further four early May dates until the last record of one on Brownsman on 6 May. The islands tend to produce some mid-summer records and this year was no different, with singles west over Brownsman on 11 and Staple Island on 13 June. A single on Brownsman on 27 July should have started a run of autumn records, but a single over Brownsman on 9 November was the only report during a very disappointing period.

Collared Dove *Streptopelia decaocto*

An uncommon passage visitor.

Evidence suggests that birds erupt from the near-continent in spring and the majority of

Farnes records range from this period and usually follow onshore winds. It was another bumper season with six records split evenly between the two island groups. Records included one west over Inner Farne on 7 April, a tame individual on Brownsman all day on 14 April and another which lingered on Inner Farne on 17 April. Spring passage continued with one briefly on the artificial tree on Inner Farne on 2 May and another singing on Brownsman early on the morning of 5 May. The final record was a single on Staple Island on 9 June.

Cuckoo *Cuculus canorus*

An uncommon passage visitor.

A noteworthy bird on the Farnes with only twenty-six records in the previous thirty years, and only four records this century. The majority of records occur in May and this year was no different with a single bird observed being mobbed by a Lesser Black-backed Gull as it flew west over Brownsman and Staple Island on 15 May before it was lost to sight. However it was only a matter of days before the islands had a second record, a male discovered sitting on the artificial tree on Brownsman on the morning of 18 May. The bird remained for two hours before departing west in a cloud of terns and these records represent the first records since spring 2003.

Long-eared Owl *Asio otus*

An uncommon passage visitor.

A remarkable year with two records, but neither during the peak passage months of October or November. Discontent amongst the large gulls on Staple Island on 25 April alerted wardens to a roosting bird which soon took flight and was lost to view as it flew over the adjacent south end of Brownsman. This represents only the sixth spring record on the Farnes, following 1-2 recorded in 1976, 1987, 1992, 1997 and 1998. The only other record was just as interesting as a bird was flushed off the dock bank on Inner Farne on the morning of 19 September before relocating to the south-east rocks. It remained roosting undeterred until it departed mid-afternoon and represents the earliest autumn record since an individual on 27 August 1986. Disappointingly, the islands failed to produce any further records during the autumn period.

Short-eared Owl *A. flammeus*

An uncommon passage visitor.

Although scarce in spring, recent years have produced a spate of early sightings and the trend continued this year. One was observed flying west over Brownsman on 21 April, before being pursued by large gulls over several outer group islands over the following two hours. Autumn passage was below average with a minimum of seven different birds noted with most occurring in October. The first appeared over the Wamses on 10 October followed by further birds on Inner Farne on 11 and 14 and Brownsman on 16 October. The last records occurred in early November, with a single flushed from the south end of Brownsman on 2 and 5 and presumably the same bird on Inner Farne on 6 November.

Swift *Apus apus*

A well represented summer and passage visitor.

The first record of this aerial summer visitor concerned two west over Brownsman on 3 May followed by further records of singles west over the islands on 6 and 18 May. June is the month for recording the species on the islands with 1-5 reported on eleven dates, peaking at

nine west on 26 June. The species is one of the first to leave Britain for the southern hemisphere wintering grounds and this was reflected in light southerly passage in July with 1-2 on three dates peaking at three south on 2 and 12 July. The final record concerned one north over Inner Farne on 13 August.

Wryneck *Jynx torquilla*

An uncommon passage visitor.

An amazing year for this charismatic east coast drift migrant, with no fewer than seven different birds all appearing during an eight day spell in late August. Following an easterly airflow with torrential rain, six were 'grounded' on the islands late on the afternoon of 18 August. On the outer group, one was discovered on Staple Island before relocating to nearby Brownsman where it was joined by three other birds, all of which could be seen together on the artificial tree. It was a similar story on the inner group, as two appeared in mid-afternoon on Inner Farne and were often seen together favouring the vegetable garden. This day total was the highest concentration of any down the east coast, including Shetland. The following day, 19 August, saw both birds linger on Inner Farne and two of the four remain on Brownsman all day. The year was not complete as an obliging individual appeared soon after on Brownsman on 25-26 August. This bird was very approachable and at one point proceeded to carry out a 'snake threat' towards one of the wardens, by stretching its neck and body, raising its head feathers and clicking loudly at the observer's presence. During the bird's eventful stay, it also narrowly avoided being caught by the resident Merlin. The year's total of seven represents just one short of the all time Farnes best showing of eight in 1974 and 2004.

Skylark *Alauda arvensis*

A common passage visitor. May have bred in 1865 and 1883 and *ca* 1900 (Brown, 1866; Harvie-Brown *et al.*, 1884; Pike, 1902).

Spring passage was quiet with the majority of records involving singles moving west over the islands. Following a bird resident on Inner Farne from 23-28 March, passage peaked with four west on 30 March. Thereafter individuals were noted on five April dates including a single mimicking a Snow Bunting over Brownsman on 15 April. The final spring record concerned one lingering on Brownsman on 9-10 May. As usual mid-summer produced one record with a bird on Brownsman on 14-15 July. Autumn passage took some time to commence with the first noted on 1 October but records became daily thereafter with 1-13 on or over the islands. Peak passage was logged with eighteen west on 13 and twenty-seven west on 21 October. Passage declined throughout November with singles on eleven dates and a peak of seven west on 3 November. It was evident that a small number were attempting to winter on the islands with four present on Inner Farne throughout November and early December.

Sand Martin *Riparia riparia*

A well represented summer and passage visitor.

The islands produced a light scattering of records during the year with birds recorded on

twelve dates spanning six months. The first bird of the year was noted over Brownsman on 15 April followed by singles on 22, 25 and 27 April and peaking with five north on 23 April. Light northerly passage continued throughout early May with seven on 3 and singles on 7 and 8 May, the latter bird discovered perched on the Brownsman artificial tree. Further records included three lingering around Staple Island on 7 June and autumn passage commenced with two over Inner Farne on 23 July and one over Brownsman on 18 August. The final record concerned three west over Inner Farne on 6 September, the latest record since 1999.

Swallow *Hirundo rustica*

A common summer and passage visitor. Bred in 19th century; *ca* 1900 (Selby, 1826; Pike, 1902); 1984 (Hawkey and Hickling, 1984) and 1990-1997 (Walton and Richardson, 1990-1991; Walton, 1993-1998).

The most abundant Hirundine recorded on the Farnes with reports on sixty-seven dates following the first of the year, a bird north over Inner Farne on 14 April. Spring passage continued throughout April and May with 1-26 on twenty-eight dates, with peaks of forty-seven north on 23 April and seventy-one north on 3 May. Passage dwindled in June with records of predominately single birds on seven dates until the last was recorded over Brownsman on 26 June. Return autumn passage was not long in starting as southern bound migrants moved through the islands from 17 July with 1-3 noted on a further five July dates. The bulk of the autumn movement occurred from 5 August-15 September with 1-7 recorded on twenty-one dates, although the autumn peak count was eight south on 28 September. Late stragglers were seen hawking over Brownsman on 16 and 18 October with a bird over Inner Farne on the latter date.

House Martin *Delichon urbica*

A well represented summer and passage visitor. Six pairs attempted to breed in 1950 (Watt, 1950).

This summer and passage visitor was recorded on thirteen dates, the same number as the previous season and a general average showing on the Farnes. The first bird of the year flew west over Brownsman on 24 April and was followed by two north over Inner Farne on 26 April. Thereafter spring passage was light through the islands, with singles north on 3, 7 and 17 May and 3 and 10 June. The final spring record involved one west over Brownsman on 26 June. Autumn passage was concentrated over Inner Farne where all records involved two birds over on 21 and 22 August and 6 and 12 September. The final record was one battling west on 8 October, the latest record since 2001.

Richard's Pipit *Anthus novaeseelandiae*

A scarce visitor.

This powerhouse of a pipit, a scarce migrant from Siberia, appeared on the islands for the second consecutive year. Following light south-easterly winds, an individual was on Brownsman in an area of recently cut grass on 14 October. The bird was discovered late in the afternoon and was present until dusk but was not seen subsequently. This represents the thirteenth Farnes record and comes hot on the heels of a record three in 2005.

Tree Pipit *A. trivialis*

A common passage visitor.

The first birds appeared in early May, slightly later than the average arrival date of 24 April

and some way short of the all time earliest on 2 April 1972. The outer group produced the bulk of the spring records with 2-4 daily from 7-11 May involving fly-over records or birds feeding around the islands, with a peak of five on 10 May. The inner group's only spring record concerned one lingering on Inner Farne on 8 May. The mid-August 'fall' period brought the first autumn passage birds with a surge of records between 17 and 22 August. During this spell both the inner and outer group had 1-3 with a peak of five on the outer group on 18 August. September brought a smattering of records with 1-3 on eight dates and four on 14 September. The final record concerned one calling high over Inner Farne on 14 October.

Meadow Pipit *A. pratensis*

A common passage visitor. Bred *ca* 1901 and in eleven years 1946-1973 (Pike, 1902; Wilson, 2000-2007).

One of the most abundant passage migrants reported on the islands during the season with almost daily records throughout the period from late March to mid-June and September-October. Spring passage of northern bound birds was generally light with 1-19 with peaks of thirty-two on 1 April and thirty-three on 12 April. The final spring record concerned a bird with an injured foot which lingered around Brownsman from 15 May-10 June. Autumn passage commenced with the arrival of four on Inner Farne on 3 September and thereafter the species was recorded daily throughout the month. Passage generally involved 1-22 with peaks of thirty-three on 11 and forty-three on 13 September. Although recorded daily, passage was disappointing throughout October with a peak of just twenty-two on 11 October. The final record and only November report concerned one on Brownsman on 11 November.

Rock Pipit *A. spinoletta*

A common resident, well represented as a breeding species.

As usual, territorial birds were singing in early spring and nest building activity was noted from mid-April. The first eggs were discovered in late April with a number of pairs taking advantage of man-made features including stone walls and the two lighthouse buildings. A total of 18 (20) pairs nested as follows; Inner Farne 5 (5), West Wideopens 2 (2), East Wideopens 0 (1), Staple Island 2 (3), Brownsman 8 (7), Longstone Main 1 (1) and Big Harcar 0 (1). As usual fledged young appeared around the islands from mid May and second broods were noted on three islands in July. After the breeding season small numbers lingered on the islands and local breeding birds were swelled in the autumn by northern breeding birds, with up to thirty resident on Inner Farne throughout November and a peak of twenty-eight on Brownsman on 27 November.

Yellow Wagtail *Motacilla flava flavissima*

A well represented passage visitor.

Any records are good ones, as the decline of the species nationally has been mirrored in the number of records the Farnes produce annually. This year's total of five records mirrored those of the previous three seasons, and the first of the year involved a vocal male which was on Inner Farne on 22 April before departing west soon after. Further spring records concerned individual males over Inner Farne on 3 and 5 May. Autumn was just as quiet, although an improvement on the single record from the previous autumn. A bird circled the dock bank on Inner Farne on 14 September before being relocated later as it flew east over Brownsman. The final record was a single at dusk on Brownsman on both 16 and 17 September and was considered to be the same bird on both occasions.

Grey Wagtail *M. cinerea*

An uncommon passage visitor. May have bred in the 1890s (Miller, 1911-14).

Early spring is a good time for northern bound passage birds to be recorded on the islands and this year singles moved through Inner Farne on 28 March and 5 April. As usual, the bulk of the season's records occurred during the autumn months, with a first-winter on South Wamses on 16 September heralding the start of passage. On Brownsman records included two west on 14 with singles west on four of the following five days. It was a similar story on the inner group with two west on 11, a single lingering on 14 and another two west on 18 October.

Pied Wagtail *M. alba*

A well represented summer and passage visitor and uncommon breeding species.

Small numbers moved through the islands during spring passage although the presence of breeding birds disguises this fact. Breeding pairs had established territories by mid-April and nest building soon commenced with a total of 4 (5) pairs nesting as follows: Inner Farne 2 (2), West Wideopens 0 (1), Brownsman 1 (0), Staple Island 1 (1) and Longstone Main 0 (1). Following no attempt last season on Brownsman (the first time since 1992), a pair was successful in raising young and for the second consecutive year, a pair utilised the small hole in St Cuthbert's Chapel wall on Inner Farne, successfully fledging four young on 5 June. Following the breeding season, up to ten were present daily on Inner Farne throughout August with a peak of fourteen on 9 August. Numbers dwindled thereafter and the species became scarce during the autumn, with only three October records involving two on 8, and singles west on 24 and 30 October.

The islands produced a scattering of migratory **'White Wagtail'** *M. a. alba* records with the first being a male which lingered for ten minutes on Brownsman on 26 April before departing. May produced four records, all involving males with singles on Brownsman on 5, Knoxes Reef on 9, Staple Island on 10 and Inner Farne on 21 May.

Wren *Troglodytes troglodytes*

A common visitor and passage migrant. May have bred in the 1880s (Bolam, 1912).

Small numbers winter on the islands and evidence suggested that four were present on Inner Farne with a single on Brownsman throughout January-March. April saw a gradual decline as birds moved off to breeding areas, with the final records involving one on Longstone on 25 and Inner Farne on 27 April. Following a four month absence, the first bird reappeared on Inner Farne on 17 September and thereafter became resident for the autumn period. Numbers gradually increased with up to five resident on Inner Farne, peaking with six between 15 and 18 October. A similar story occurred on the outer group with up to three resident and peaking with four on 15 October. After the influx, numbers stabilised with territorial birds settling down for the winter ahead. The inner group had up to six throughout November while three were resident on Brownsman during this period.

Dunnock *Prunella modularis*

A common passage visitor. May have bred in the 1890s (Pybus, 1903).

It was evident that individual birds had wintered on both Brownsman and Inner Farne with sporadic records in January and February. When the wardens arrived back on the islands small numbers were evident with 1-2 on Inner Farne from 30 March-6 April and two on

Brownsman on 31 March. Further spring records possibly indicated migratory passage with singles noted on 12, 14 and 18 April with the last spring records involving individuals on Inner Farne on 1 and Brownsman on 8-9 May. Autumn commenced with a 'fall' of birds on 24 September with twenty counted on Inner Farne and six on Brownsman the same day. The following day saw a slight reduction in numbers with a total of sixteen present and thereafter up to five were noted daily until 2 October. The next influx occurred in mid-October with 1-3 on Brownsman between 15 and 19 October, and a lone bird took up residence on Inner Farne and remained on the island until the wardens departed in early December, presumably set to over-winter on the islands.

Robin *Erithacus rubecula*

A common passage visitor. Bred in 1951 (Watt, 1951a).

The remnants of the over-wintering population were still on the islands as the wardens arrived in late March, with up to four present. However the islands experienced their first noticeable influx of the year soon after with south-easterly winds producing eight on Inner Farne and five on Brownsman on 30-31 March. Numbers dwindled throughout April with the final spring records on Brownsman on 24 and Inner Farne on 25 April. A very late spring passage bird was noted on Staple Island on 9 May. The first autumn bird appeared on Inner Farne on 8 August and was resident on the island until at least 25 August, while another was present on Staple Island on the latter day. Records started to increase from early September with 1-3 on Brownsman on four dates and daily records from Inner Farne with a peak of six in the final week of the month. Resident numbers were swelled by further influxes during mid-October with twenty on Inner Farne and seventeen on the outer group on 12 October. Good numbers remained throughout the following week and daily counts varied from 18-27 with a gradual decline from 19 October. Thereafter up to six were resident on Inner Farne and appeared to be settling for the winter but the species became scarce on the outer group, with the only late autumn record concerning a single on Brownsman on 26-28 November.

Bluethroat *Luscinia svecica*

An uncommon passage visitor, well represented in some years.

It was another disappointing year nationally as well as on the Farnes, as the spring produced only four confirmed spring sightings in England, with a further seventeen in Scotland. However the Farnes cashed in with a stunning male discovered on Longstone End on the afternoon of 10 May which showed well to the admiring wardens, although it occasionally disappeared in gullies to feed on insects. The species is going through a poor run on the islands and this represented only the second record in three years, following the previous Farnes record on Longstone End on 9 May 2004. The last spring bird on either of the two inhabited islands was in May 2002.

Black Redstart *Phoenicurus ochruros*

A well represented passage visitor.

The Farnes are arguably one of the best localities along the east coast of England for this charismatic passage visitor. The year started in style as a cracking ringed adult male graced Inner Farne from 30 March-1 April. The bird was caught in the lighthouse buildings during its stay and it transpired that it had been ringed just four days previously at Spurn, East

Yorkshire. During the same period, a pair was present on Brownsman on 31 March. The only other spring record concerned a male on Staple Island on 9 May. Autumn passage commenced early with the discovery of an elusive bird on Inner Farne on 8 August, but it was another two months before the next Farne records. The mid-October period produced a scattering of records with a male on Inner Farne between 9 and 11 October, and a female/immature on Brownsman on 11 and Inner Farne on 15-17 October.

Redstart *P. phoenicurus*

A common passage visitor.

Spring birds bring a good splash of colour to the islands and the year produced four different individuals during the late April-early May period. The first arrived on the islands on 25 April with individual females lingering on Longstone and Inner Farne, followed by a splendid male favouring the vegetable garden on Inner Farne on 26 April. The final spring record was a female on Inner Farne from 9-10 May. The autumn always produces the bulk of Farne records and this year was no different with reports from nineteen dates from 18 August-17 October. The 'fall' period in mid-August produced daily counts of seven on 18-19, three on 20 and a single which lingered until 21 August. A gap of twenty days then brought the next influx, with 1-2 recorded on ten dates between 10 and 25 September. The final records concerned a male commuting between Brownsman and Staple Island on 12-13 October and an individual on Inner Farne from 15-17 October.

Whinchat *Saxicola rubetra*

A common passage visitor.

Following the trend of recent years, spring passage was poor through the islands with only one record of a male on Staple Island on 5 May. Following the first autumn returnee on Inner Farne on 16 August, the following six days produced the bulk of the autumn records. Birds were recorded daily between 17 and 22 August following a switch of winds to the east, with day counts during this spell including twenty on 18, twenty-six on 19 and fourteen on 20 before declining to four on 21 and a single on 22 August. The next influx occurred in mid-September following the appearance of six birds on the islands on 11 September and 1-3 were noted on twelve days thereafter, with a peak of eight on 14 September. The final record involved a single lingering on Inner Farne on 1-2 October.

Stonechat *S. torquata*

An uncommon passage visitor. Bred in 1946 (Goddard, 1946).

The Farnes are going through a boom period, mirroring the breeding population in the north-east of England. The 1990s produced a total of eleven individual records while the islands have produced a bumper thirty-two from 2000-2005. This year never matched the previous season's record, but nevertheless the year produced six different individuals. Spring passage was represented by three different birds, all on Inner Farne, with males on 23 and 25 March and a female on the dock bank on 30 March. Autumn passage belonged to Brownsman with a lingering male noted on 10-11 October and a female-type on 19 October. The final record was a first-winter bird on Inner Farne on 21 October.

Wheatear *Oenanthe oenanthe*

A common passage visitor. Bred in six years 1931-59 (Goddard, 1925-1948).

The sight of a 'sentinel of the uplands' stirs the imagination as birds pass through the islands

bound for northern breeding grounds in Northumberland and beyond. The first record of the year was on 27 March with a pair discovered on Brownsman and the following few days witnessed a small scattering over the islands. The spring then went on to produce 1-6 birds on thirty-nine dates, with spring peaks of twenty-six on 25 April, twelve on 26 April and nineteen on 3 May. May saw a gradual decline of records and late spring stragglers were seen on Inner Farne with two lingering on 2-3 June. Autumn returnees started arriving on the islands from 8 August and thereafter 1-10 were reported on sixty dates until last recorded in late October. The mid-August 'fall' conditions brought the first real autumn influx with day counts of seventeen on 18, twenty-two on 19 and fourteen on 20 August. Thereafter numbers returned to expected levels with further influxes in mid-September, peaking with fourteen on 16 September. Late stragglers lingered into October with one particular individual taking a liking to Inner Farne between 3 and 11 October. Other late records of note included singles on Inner Farne on 17 and Brownsman on 25 October. The final record concerned a late individual on Inner Farne on 27 October, the latest since 2000.

Ring Ouzel *Turdus torquatus*

An uncommon passage visitor.

It was a modest year for this summer thrush with the islands producing just a single spring record, a female lingering on Staple Island on 1 May. Peak passage through the Farnes generally concentrates in mid-October and this year was no exception with reports on four dates from 11-19 October. Inner Farne produced two records during heavy thrush passage on 11 October, with a male west and an immature lingering on the island. Thereafter all records were confined to Brownsman with three on 16, a female on 17 and two males west on 19 October.

Blackbird *T. merula*

An abundant passage visitor. Bred in four years 1893-1914, 1934, 1962 then annually 1964-74 (Miller, 1911-1914; Pike, 1902; Thorp, 1935; Hawkey, 1991).

There was a reasonable spring showing with a good influx through the islands in late March. Following a south-easterly weather front, birds appeared on the islands from 23 March with up to seven present in the final week of March. A noticeable influx occurred on 30 March with thirty present on Inner Farne and ten on Brownsman during the same period. Numbers dwindled throughout April with eleven on 1, declining to ten on 2, and 1-2 daily until 12 April. Thereafter records became more sporadic with singles noted on Brownsman on 20-24 April and Inner Farne on 17 and 26 April. The final spring sightings involved up to three on the outer group from 7-9 May with the last, a male, on Longstone End on 10 May. The summer months produced no records and the first autumn returnees did not arrive until 11 October when at least sixty moved west over the islands during heavy thrush passage. Records became daily thereafter as birds lingered on the islands, bolstered by strong westerly passage. Peak passage counts during October included thirty-one on 14, fifty-four on 15, sixty-one on 25 and thirty on 26 October. November can surprisingly produce some reasonable passage days, as Blackbirds tend to move later than their other northern European cousins. To demonstrate this, the season's peak passage counts occurred during November with fifty-five on 16, 112 on 25 and fifty-nine on 28 November. Smaller numbers remained on the islands throughout the autumn and into early December.

Fieldfare *T. pilaris*

A common passage visitor.

Northern bound spring passage birds were logged on six spring dates with 1-2 over on 27-28 March. The most noticeable movement occurred on 30 March with seventy-two lingering on Inner Farne following a cold weather front, with thirty remaining until the next day. In a very quiet April the only two records concerned two on Inner Farne on 1 and three west over Brownsman on 21 April. It was another disappointing autumn period as, dependant on weather, huge numbers can be seen passing over the islands, heading westwards to the mainland for the winter. The first autumn passage was logged from 14 October with a single on Brownsman followed by 1-6 on a further five October dates. During this period, the islands experienced a peak of a modest fifty-seven west on 25 October. November showed a slight improvement with records from fourteen dates generally involving 1-57 west with a season's peak of 253 west on 10 November. It was the second consecutive year that the islands failed to produce a four-figure count during the autumn.

Song Thrush *T. philomelos*

A common passage visitor.

With any influx of thrushes on the Farnes, small numbers appear and there was no exception to the rule with a light scattering noted during the influx in late March. The first bird of the year appeared on Inner Farne with two on 23 March and 2-3 recorded daily from 24 March-2 April and numbers peaked with six on 27 and five on 28 March. Sporadic April records involved singles on Inner Farne on 15 and 17, Staple Island on 15 and Brownsman on 23 and 25 April. The final spring passage birds were recorded on Brownsman on 1 and Staple Island on 9 May. Autumn passage commenced from 12 September with a single on Inner Farne and thereafter 1-12 were recorded on a further twelve September dates. The bulk of the autumn records occurred in October with daily sightings of 1-24, although heavy passage was logged on 11 October with a total of 900 west (including 658 over Brownsman), representing the highest day count since 1,811 were recorded over on 8 October 2002. Thereafter passage was typically average, with a peak of ninety-three on 15 October. Reports declined during November, with 1-2 noted on eleven dates until the last seen flying west on 28 November.

Redwing *T. iliacus*

An abundant passage visitor.

Spring passage is generally light, with northern bound passage birds recorded moving through the islands in late March-April. Typical small numbers were recorded on 23-27 with a maximum of seven on 27 March. However unprecedented westerly passage occurred on 28 March with seventy-four over, possibly involving birds being caught out by a low pressure weather system. This spring peak was followed by further counts of fifty-four on 30 and twenty-five on 31 March with 1-6 noted on four dates between 1 and 15 April. The final spring record concerned one on Brownsman on 19 April. Following the first autumn returnee on Inner Farne on 16 September, the main influxes occurred from early October. October and November produced 1-132 west on forty-one dates with small numbers lingering. Peak autumn influxes occurred on the islands during this period as shown in Table 6.

Table 6 Redwing passage on selected October dates, Farne Island 2006.

Oct						
11	*14*	*15*	*16*	*19*	*20*	*25*
731	**206**	**2,443**	**339**	**1,942**	**250**	**148**

Mistle Thrush *T. viscivorus*

An uncommon passage visitor.

It was a typical showing during the season, as the species was once again the rarest Turdus family member that appeared on the islands during the season. Both spring and autumn passage produced single records, with one lingering on Inner Farne all day on 24 March followed by two west over Brownsman during heavy thrush passage on 11 October.

Grasshopper Warbler *Locustella naevia*

A well represented passage visitor.

It was a mixed season, with a good number of records although all were confined to the outer group as, disappointingly, Inner Farne failed to produce any records at all during the year. The first of the year involved a very obliging bird on Brownsman on 20-21 April which fed leisurely on open rocks within two feet of the admiring wardens. Other spring records included singles on Staple Island on 1 May and Brownsman on 3 May. Return autumn passage started with a bang as three birds appeared on 18 (two on Brownsman, one on Staple Island) with one of the Brownsman individuals remaining until 20 August. The only other record was also the last one, a single discovered on the north hill of Brownsman on 12 September.

Sedge Warbler *Acrocephalus schoenobaenus*

A well represented passage visitor.

This trans-Saharan migrant was recorded on ten spring dates following a singing male in the elders on Inner Farne on 5 May. The spring peak occurred two days later with three scattered across the islands but thereafter only singles were recorded (including a singing male on Brownsman on 16 May) until last seen on 19 May. The first autumn returnee appeared early, with an individual on Brownsman on 31 July and thereafter 1-2 were noted on eight August dates with a peak of three on 18 August. The final spate of records occurred in September with 1-2 on the outer group on three dates between 2 and 6 September. The final record involved an individual around the ponds of Inner Farne on 16 September.

Reed Warbler *A. scirpaceus*

A well represented passage visitor.

The previous six springs have only produced a total of seven records, all from the outer group, but this year there were none, resulting in the first blank spring since 2003. However the lack of spring passage birds was made up during the mid-August 'fall' period. On 18 August a total of ten birds were discovered (two on Brownsman, three on Staple Island, two on Inner Farne and two on the Longstone complex) with six lingering throughout the next day and one still present on 20 August. The only other records concerned obliging singles on Inner Farne on 11 and 24 September.

Icterine Warbler *Hippolais icterina*

An uncommon passage visitor.

This stocky east coast drift migrant appeared on the islands for the first time in two years with two birds discovered on the outer group. During the impressive mid-August 'fall', a total of eighteen were discovered down the east coast between Shetland and Suffolk, with the Farnes boasting two individuals. The first was discovered on the morning of 17 August feeding near Brownsman cottage and remained all day. However it departed overnight and

a different individual was found on Staple Island before moving to nearby Brownsman on 19 August. The markings of the second bird indicated it was a different individual to the other bird and was originally found within half-a-metre of a Red-backed Shrike.

Subalpine Warbler *Sylvia cantillans*

An extremely rare visitor.

It was a reasonable year nationally for this classic Mediterranean spring over-shoot, with at least fifteen reported from April-June. However the most noticeable record was that from the islands, as an adult male of the western form was discovered in the vegetable garden on Brownsman late on the afternoon of 3 June. The bird was wearing a metal ring (T774225) and due to its obliging nature the number was read in the 'field'. It transpired that the bird had been ringed at Spurn, East Yorkshire on the evening of 2 June. It remained on Brownsman until dusk the following evening and was seen actively feeding throughout its stay, occasionally on pollen. In a Farnes context, this represented the fifth record following spring males in 1977, 1991, 2000 and an autumn individual on Inner Farne in September 2005.

Barred Warbler *S. nisoria*

An uncommon passage visitor.

The Farnes are becoming arguably one of the best localities in Britain (certainly the English locality) for this large Sylvia warbler, with no fewer than seventy-one records including a staggering twenty-one in the past four years. That trend continued with six individuals during the autumn, and the mid-August period brought three first-winter individuals to the islands. The first bird was discovered on Inner Farne on 18 August, remaining for six days, and was last seen on 23 August although it was very elusive during its stay. Different individuals were seen on Brownsman from 19-22 August and an obliging bird was on nearby Staple Island on 19 August. Further records included one observed 'dropping in' onto Brownsman on 26 August and later that day it was evident that two birds were on the island, both eventually being seen together to confirm the suspicions. The final record involved one briefly during a 'fall' near the lighthouse on Inner Farne on 24 September.

Lesser Whitethroat *S. curruca*

A common passage visitor.

This long distant migrant put in an excellent spring with birds recorded on ten May dates. The first arrivals descended onto the islands on 1 May with an impressive eight recorded

(three on Brownsman, three on Longstone and singles on Inner Farne and Staple Island), which included one individual feeding on an apple on Brownsman. Thereafter 1-2 were recorded on nine dates until last seen on Brownsman on 13 May. Autumn passage was quiet, as two graced the outer group on 18-19 August and late singles were noted on Brownsman on 15 and Inner Farne on 24 September.

Whitethroat *S. communis*

A common passage visitor.

Well reported throughout the spring and autumn periods with the first bird of the year, a male, discovered on Staple Island on 21 April; it commuted to nearby Brownsman and remained until 23 April. The first record for the inner group appeared not long after, with a single on Inner Farne on 25 April. May produced a flurry of records with 1-3 on nine dates between 1 and 17 May with a spring peak of four on 8-9 May. Birds in song are very rarely heard on migration through the Farnes but a singing male on Inner Farne on 1 May brought a touch of summer to the islands. Autumn passage was just as productive, with the first appearing on Inner Farne on 15-16 August followed by a noticeable influx during 18-19 August. Good numbers arrived during this period with eight on 18 and seven on 19 August with 1-3 lingering over the following few days. One individual found Inner Farne to its liking as it was 'resident' from 21-28 August. September brought the usual decline of records with singles on the outer group on five dates between 2 and 17, peaking with three on 16 September. The final record concerned a late single on Inner Farne on 25-26 September.

Garden Warbler *S. borin*

A common passage visitor.

Although unexceptional in appearance, this robust Sylvia is always a welcome sight on the islands and despite no spring records on the inner group, the outer group produced one of the most productive showings in recent years. The first bird of the spring was found feeding on an apple on Brownsman on 1 May and singles were recorded daily on the outer group from 4-10 May, including peaks of two on 8-9 May. The first autumn returnee moved through the islands early, with a single on Brownsman on 26 July, followed by another on 13 August. The period of 18-19 August produced an exceptional 'fall' of migrants on the islands and the species was by far the most dominant during this period. 18 August saw unprecedented numbers with no fewer than 123 counted including totals of thirty-six on Brownsman, thirty-five on Longstone, twenty-five on Inner Farne, seventeen on Staple Island, six on Longstone End and four on West Wideopens. Despite the record number, this was considered an underestimate of the real numbers, as not all the islands were checked. Despite a slight clear-out overnight, the islands still boasted fifty on 19 August but numbers declined thereafter with seventeen on 20, nine on 21 and a single on 22 August. Having smashed the previous day record count of a hundred in September 1963, September felt a bit of an anti-climax, with 1-3 noted on eight dates and a peak of six on 16 September. The final record concerned two on the inner group on 25 September.

Blackcap *S. atricapilla*

A common passage visitor.

This characteristic summer visitor put in the usual strong showing during spring and autumn passage. The first northern bound individuals appeared on 25-26 April with singles present on Inner Farne, Brownsman and Longstone. The spring peak occurred early, with thirteen

on the islands on 1 May including five on Inner Farne and Brownsman and three on Longstone Main. Thereafter 1-3 were recorded daily until 14 May and the final spring record was a female on Inner Farne on 19-20 May. Passage during autumn is generally later than many other migrants and the first autumn birds appeared from mid-September, with single individuals recorded on seven dates between 10 and 25 September. October brought a further surge of southern bound migrants with regular records of 1-4 noted on seventeen dates with peaks of six on 11 and 15 October. Late stragglers included a female on Brownsman on 8 November and a male on Northern Hares on 15 November.

Greenish Warbler *Phylloscopus trochiloides*

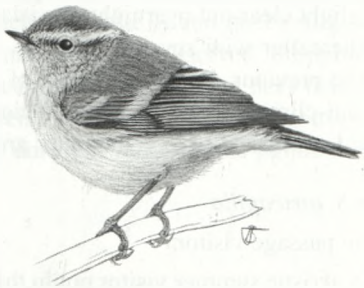
A rare visitor.

It is hard to believe that the Farnes were boasting only their second ever record of this rare continental migrant two years ago, as the islands can now lay claim to a total of seven records. During August a total of thirteen appeared down the east coast of Britain, including five in Northumberland, but the Farnes were head and shoulders above any other locality. On the afternoon of 14 August a vocal individual was discovered in the vegetable garden on Inner Farne where it showed to admiring wardens until dusk but was not present the following day. Four days later, following a favourable easterly airflow, two arrived on the islands. Inner Farne had the second record of the year as a bird appeared on the island late in the afternoon of 18 August but was not present the following day. During the same period another was discovered feeding out on rocks on Longstone Main and relocated to Brownsman towards dusk. The bird remained on the island all day on 19 August and showed very well on occasions. This represents the third consecutive year the species has appeared on the islands and the fifth-seventh records following birds in 1991, 2004 (two) and 2005. Interestingly the total number of records now surpasses Arctic Warbler which lays claim to five records but has not been seen on the islands since 2000.

Yellow-browed Warbler *P. inornatus*

An uncommon passage visitor.

This Siberian waif is one of the commonest drift migrants to grace the islands if conditions prevail from the east during the autumn, and this year brought record numbers. The year began with individuals discovered on the dock bank of Inner Farne and near the jetties on Brownsman on 17 September, but this was just the start of things to come. The period from 24-26 September brought a good influx with a total of five individuals: three on Inner Farne on 24 with one lingering until 25 and two on Brownsman which remained until 26 September. The autumn period continued to produce more of these Siberian gems



with the season's peak day count on 2 October when six were discovered, three on Inner Farne, two on Staple Island and another on Brownsman. There was no let-up as Inner Farne and Brownsman had singles on 10 October, another was on Inner Farne on 15 October and the seventeenth and final record of the year concerned one lingering on Brownsman on 14-18 October. This incredible year eclipses the previous best showing of fourteen in 1999 and ten in 1985. The year's total brought the number of Farne records to 101 following the first on Inner Farne on 27 September 1972 and the last blank year was in 1995.

Wood Warbler *P. sibilatrix*

An uncommon passage visitor.

It was an exceptional year for one of the Britain's most enigmatic summer visitors, with unprecedented numbers recorded on passage. An obliging individual favoured the lighthouse compound on Inner Farne on 8 May, representing the first spring record for the islands in six years. In a normal season this would have represented a good year, but this was no ordinary season. The period of 18-19 August produced a lingering bird on Inner Farne while two appeared on Brownsman during the same spell with one commuting to Staple Island on the second day. To the delight of the wardens more were to follow, with another on Inner Farne on 21 August, a bright individual which lingered on Inner Farne on 16-17 September and the last record of a stunning year occurring on Brownsman on 24 September. The records mirrored the trend down the east coast, with a good number reported and this represented the best ever year on the islands, eclipsing the five noted in 1987.

Chiffchaff *P. collybita*

A common passage visitor.

This early returning summer visitor is one of the first migrants to appear on the islands and this year was no exception with one lingering on Inner Farne on 30-31 March and Brownsman on 31 March. Thereafter 1-3 were recorded on thirty dates until last seen on West Wideopens on 16 May. Although never as numerous on passage as its commoner relative the Willow Warbler, peak spring counts included seven on 8 and five on 10 May. Following an unusual record of one on Brownsman on 6 July, autumn passage commenced from mid-September. The period from 15-17 September produced daily records of up to three on the inner group and two on the outer group, with the only other September record concerning a lingering individual on Inner Farne from 24-29 September. October was more productive with 1-4 on sixteen dates with peaks of six on 17-18 October. Late individuals were seen lingering into November, with two on Brownsman on 1-2 November and one remaining until last seen on 8 November.

Willow Warbler *P. trochilus*

A common passage visitor.

Numerous as ever on passage with records on twenty-eight spring and fifty-one autumn dates including an exceptional number in mid-August. The first bird of the spring appeared on Inner Farne on 15-16 April and thereafter light northerly passage through the islands involved 1-5 with peaks of six on 26 April and 5 May. The last spring sighting was an indi-

vidual on Staple Island on 28 May. As expected, autumn passage produced the bulk of the season's records with 1-6 noted between 3 and 17 August. An easterly weather front over the following few days then produced some exceptional numbers on the islands with day counts including eighty-two on 18, forty-eight on 19 and thirty-eight on 20, declining to twenty on 21 and ten on 22 August. Brownsman, Inner Farne and Staple Island witnessed the largest concentrations and the count on 18 August was the second highest in the islands' history, although falling short of the all time record of 260 on 8 September 1995. Thereafter passage continued with 1-10 almost daily with peaks of fifteen on 16 and thirteen on 24 September. The final record concerned a pale northern type bird on Inner Farne on 14-15 October.

Goldcrest *Regulus regulus*

A common passage visitor.

A disappointing season especially in autumn when large numbers can be found on the islands if the right conditions prevail. As usual, spring migration was light but, unknowingly at the time, produced the largest count of the year. An influx brought twenty-four to Inner Farne following south-easterly winds with seven present the following day. The only other spring records concerned 1-3 on eight April dates with the last bird seen on Brownsman on 21 April. Autumn passage commenced from 5 September and 1-5 were noted on twelve September dates, peaking with seven on 26 September. The autumn can be summed up on Brownsman where October produced a total of only nine individuals altogether, in complete contrast to the previous October which witnessed day counts of 50-120, peaking at 180. The inner group's fortunes were slightly better with 1-6 daily on Inner Farne until 21 October, with an autumn peak of fifteen on 12 October. Late individuals were seen on Brownsman on 14 and 24 November, the latter the latest on the islands since 2000.

Spotted Flycatcher *Muscicapa striata*

A well represented passage visitor.

Following a few lean years the number of records is starting to increase again, with the year producing the greatest number since 2002. Spring passage was light, with two individuals noted: one on Brownsman sheltering from a north-easterly wind on 8 May followed by another on Longstone lighthouse on 10 May. The mid-August period then brought the first autumn returnees, with a single on Brownsman on 18 August followed by three together on the same island the following day. The inner group finally got in on the act with a single present on Inner Farne on 4 September, followed by two on Brownsman on 14 September with one lingering until the following morning. The final record was one on Inner Farne on 17 September.

Pied Flycatcher *Ficedula hypoleuca*

An uncommon passage visitor.

Spring usually produces just one or two records (the last blank spring was 2003) and this year was no exception with a female briefly on Brownsman on 7 May. As with many migrants, the mid-August period produced the bulk of the autumn records with nineteen on the islands on 18 August, including ten on Inner Farne and five on Brownsman. The following day produced a slight increase with twenty-one scattered over the islands, the bulk on the two inhabited islands with twelve on Inner Farne and eight on Brownsman. The final lingering birds of this period concerned two on Brownsman on 20 August. The next influx occurred in mid-September with six noted on 14 (three on both Inner Farne and

Brownsman) and 1-3 on four dates between 16 and 24 September. The final record concerned one on Brownsman on 2 October, the latest in four years.

Red-backed Shrike *Lanius collurio*

An uncommon passage visitor.

The mid-August 'fall' brought ten along the east coast of England with three discovered on the islands. As migrants descended onto the Farnes, two immature birds were discovered together on Staple Island on 18 August and both were present the following day. On Inner Farne another immature appeared on 18-20 August and was often seen feeding on beetles in the vegetable garden. Predominately a spring bird on the Farnes, this was the best autumn showing since 1977.

Great Grey Shrike *L. excubitor*

A scarce visitor.

Having broken the curse last year (an individual on Inner Farne was the first for the islands since 1991), the islands produced another of these stunning shrikes. On the morning of 12 October a first-winter bird was discovered on Brownsman and was seen impaling a Robin on the artificial tree on the island. The bird devoured its meal over a twenty minute period before spending the following hour on the island hunting insects (with a crowd of angry Rock Pipits in attendance). As the weather improved, it eventually departed west and was not seen again, having spent two hours on the islands. This represents the eighteenth Farnes record following the first in October 1862.

Jackdaw *Corvus monedula*

A well represented visitor. Former breeder, last in 1966 (Hawkey, 1991).

This lively, gregarious Corvid has been known to migrate between Britain and colder climates on the continent although the majority of Farnes records will probably relate to more local movements. The year began explosively, with an impressive flock of twenty-four on the roof of the Pele Tower on Inner Farne on 1 April, before they moved off in a south-westerly direction. The following morning produced a single on Brownsman, calling from the top of the old lighthouse building. The next record involved a tatty individual which landed in the middle of the Guillemot colony on Brownsman west cliff on 6 June. The bemused bird was soon seen off and chased west over Staple Sound by an angry mob of terns, before eventually heading west over Inner Farne. The autumn produced two records, with a single west over Inner Farne on 8 October and two west over Brownsman and then Inner Farne on 18 October.

Rook *C. frugilegus*

A well represented visitor.

Wandering birds from the mainland are seen during the spring and autumn, although very few linger (and even fewer land), with most moving back to the mainland. Spring passage was light with 1-3 over the islands on four April dates with a peak of four west over Inner Farne on 25 April. Against the trend of recent years, autumn records eclipsed spring passage with reports on twelve dates spanning the period 12 September-20 October. Most records referred to 1-2 flying over the islands although a season's best of five flew west over Inner Farne on 5 October.

Carrion Crow *C. corone*

A well represented visitor and rare breeding species.

Well reported throughout the season although noticeably absent during the summer months. Small numbers from the nearby mainland commuted daily to the islands throughout March-April with heavy passage recorded on several April dates, including eighteen on Northern Hares on 12, twenty-four east on 17 and twenty-five west on 25 April. The number of records declined in May with reports of 1-4 on fourteen dates. However, following the last spring reports of two west over Inner Farne on 2 and 10 June, the species became very scarce. The next confirmed sighting came ninety-four days later, with three west over Inner Farne on 12 September. Following this record, small numbers were recorded daily until the end of the season with peaks of thirty-two west on 25 September and fifteen east on 5 October.

Starling *Sternus vulgaris*

A common visitor, extremely rare breeder.

The islands host two different populations during the year, with breeding residents venturing over from the nearby mainland and northern European birds migrating through the islands during the autumn period. Small numbers commuted daily to the islands in the spring with a peak of 200 on Inner Farne on 30 March. There were again no breeding attempts (the last was in 2000), but family parties from the mainland including fledged young were seen utilising the relative safety of the islands from 8 June. Numbers thereafter increased with daily records of 20-40 between July and September. October brought the major influxes from the continent with strong westerly passage documented on several dates with peaks of 252 on 17, 402 on 25 and 463 on 26 October. Passage gradually declined as the autumn progressed although up to a hundred utilised Inner Farne on a daily basis throughout November.

House Sparrow *Passer domesticus*

An uncommon visitor.

This quintessential 'Farnes rare' sent pulses racing as the year produced two records and the wardens could celebrate the end of a seven year wait. The moment arrived with the discovery of a female outside the cottage on Brownsman on the morning of 31 July which was widely twitched by all the wardens on the islands. The bird lingered for the day but was not seen subsequently. Amazingly the year produced a second record, with a female on Inner Farne on 3 November feeding around the base of the tower, loosely associating with a large flock of Linnets. However despite its vocal nature, the bird became elusive soon after and disappeared to complete an excellent year. In a Farnes context, there have been twenty-two previous records covering eighteen years and thirty-four birds with the last island record involving a family party in October 1999.

Chaffinch *Fringilla coelebs*

A common passage visitor.

Spring passage was generally light with 1-4 noted on the islands on seven dates between 26 March and 6 April although a large flock of thirty flew west over Inner Farne on 28 March. The only other spring passage was logged on 20-22 April with a female lingering on Brownsman and two females noted on Inner Farne. Autumn passage commenced from 15 September with 1-6 daily until late October with some birds lingering to take advantage of

the relative safety of the islands. During this period passage was heaviest in mid-October with peak counts of eleven on 15 and ten on 17 October. The last record concerned two west over Brownsman on 10 November.

Brambling *F. montifringilla*

A common passage visitor.

It was a quiet spring period with northern bound birds recorded on only three April dates, the majority on Brownsman. A female on both Inner Farne and Brownsman on 2 April may have involved the same individual. The only other spring records concerned a pair over Brownsman on 21 and a female present on the same island on 25 April. The bulk of Farnes records concerned autumn passage birds moving back into Britain for the winter with the first autumn returnee seen flying west over Inner Farne on 23 September. Thereafter 1-7 were recorded moving through the islands on fifteen dates from 26 September-10 November with peak passage logged in mid-October. 11 October witnessed the largest movement of the year with a modest (by Farne standards) forty-seven west over the islands, and the only other noticeable count involved ten west on 25 October.

Greenfinch *Carduelis chloris*

A well represented passage visitor.

Birds of possible continental origin pass through the islands on westerly spring passage with small numbers lingering throughout the autumn. The spring brought a small scattering of records with 1-2 flying over on six dates from 26 March-16 April. It was a disappointing year on the outer group with only two records, although the islands did produce the first autumn returnees, with two present on Brownsman on 13 October. All other sightings involved lingering birds on Inner Farne with five present on 18 October and thereafter 2-6 daily with a peak of eight on 31 October. November produced a small handful of records, all from Inner Farne, with up to five lingering on the island until the wardens departed in early December.

Goldfinch *C. carduelis*

A well represented passage visitor.

As usual, there was a spring bias of records of this partial migrant, with only a handful of autumn records. Spring passage commenced with one west over Inner Farne on 27 March and thereafter 1-3 were noted on westerly passage on eight April dates with a peak of six west on 23 April. Passage continued into early May with 1-2 noted on 2 and 8 and the final spring record of one east over Brownsman on 11 May. Autumn passage was scaled down with a single west on 14 October, two on Brownsman on 19 October and one lingering on the island on 25 October.

Siskin *C. spinus*

A common passage visitor.

Although spring passage was generally quiet one of two records involved a flock of seven west over Inner Farne on 14 April. The only other spring record concerned a female lingering on Brownsman on 7-8 May. Autumn passage was reasonably productive during late September as 1-7 were scattered across the islands from 20 September-1 October with a peak of fourteen on 23 September. Thereafter small numbers were recorded flying west over the islands on passage with singles on 15 and 18 October and a peak of three west on 19 October.

Linnet *C. cannabina*

A common passage and winter visitor. May have bred in the 1890s (Miller, 1911-1914).

One of the most abundant passerines recorded on passage through the islands with good numbers lingering during the autumn months. The spring witnessed almost daily reports of 1-5 throughout March and April with peak passage including twelve north on 14 April and six north on 29 April. Passage in May declined with six west on 4 May, otherwise 1-3 were noted on seven dates until last seen on 11 May. A juvenile was present on Brownsman all day on 17 August but otherwise passage commenced from 29 September. Passage was obscured by good numbers lingering on the islands, but strong westerly movement over Brownsman included fifty-two on 13 and forty-one on 14 October. In comparison numbers increased gradually on Inner Farne with 12-20 present throughout October with daily records from the islands until the wardens departed in early December. During this period regular flocks were present on both Inner Farne and Brownsman with peaks of forty and twenty-eight respectively.

Twite *C. flavirostris*

A well represented passage visitor.

This charming northern finch moves down to coastal areas to winter from summer upland breeding grounds, with the majority of Farne records occurring during the autumn period. The first birds of the year appeared on Brownsman with two present on 14 and 18 October. Thereafter all records occurred on Inner Farne as small numbers associated with the large Linnet flock, with five on 21 and six on 22 October with 1-4 noted on four dates until 2 November. The final record involved two on Inner Farne on 3 November.

Lesser Redpoll *C. cabaret*

An uncommon passage visitor.

Light spring passage was concentrated in early May with singles on Inner Farne on 3 and Brownsman on 5 May. A bird calling over Brownsman in thick fog on 7 May was presumed to belong to this species rather than *C. flammea* (inseparable on call only). The autumn was just as lean, with singles on Inner Farne on 7 October and Brownsman on 13 and 25 October. As with the spring, vocal fly-over birds were heard over Brownsman on 18 October and 22 November.

Common Redpoll *C. flammea*

An uncommon passage visitor.

An adult male graced Brownsman on 31 March following a brief rain shower, although once the weather improved the bird disappeared. This represents the first spring record since 2002.

Common Rosefinch *Carpodacus erythrinus*

An uncommon passage visitor.

The majority of Northumberland reports of this bulky continental finch relate to birds from the islands with records from no fewer than twenty-four of the past thirty years. The only record this year concerned an immature discovered on 22 September near the cottage on Brownsman, which briefly showed well before disappearing.

Lapland Bunting *Calcarius lapponicus*

An uncommon passage visitor.

Predominately an autumn passage bird (last Farnes spring record occurred in 2002) although it was generally quiet throughout the north-east of England and this was mirrored by the number of records from the islands. The season produced a total of three reports with one west over Inner Farne on 8 October, another which lingered on the same island on the morning of 11 October and the final record of the year involving one west over Brownsman on 14 October.

Snow Bunting *Plectrophenax nivalis*

A well represented passage visitor.

The remnants of northern spring passage were evident with the appearance of lone females on Inner Farne from 30 March-1 April and another female noted sheltering against strong winds on the north rocks of the same island on 13 April. Autumn passage commenced from 14 October with two west over Brownsman followed by a single lingering on Inner Farne on 17 October. Thereafter up to five became resident on Inner Farne from 25 October-24 November, while light movement of 1-3 was seen on five dates over the outer group during November.

Yellowhammer *Emberiza citronella*

An uncommon passage visitor.

The species is rare on spring passage with last year boasting the first spring records in six years. However for the second consecutive year, birds were seen during spring with a female noted on Brownsman on 31 March. As usual, the bulk of passage was logged during October with a single first-winter bird lingering on Brownsman on 11-12 October. During this same period, another first-winter bird was seen on Inner Farne with two on 12 October and one west on 17 October. The final record concerned a late individual on Inner Farne on 26 November.

Little Bunting *E. pusilla*

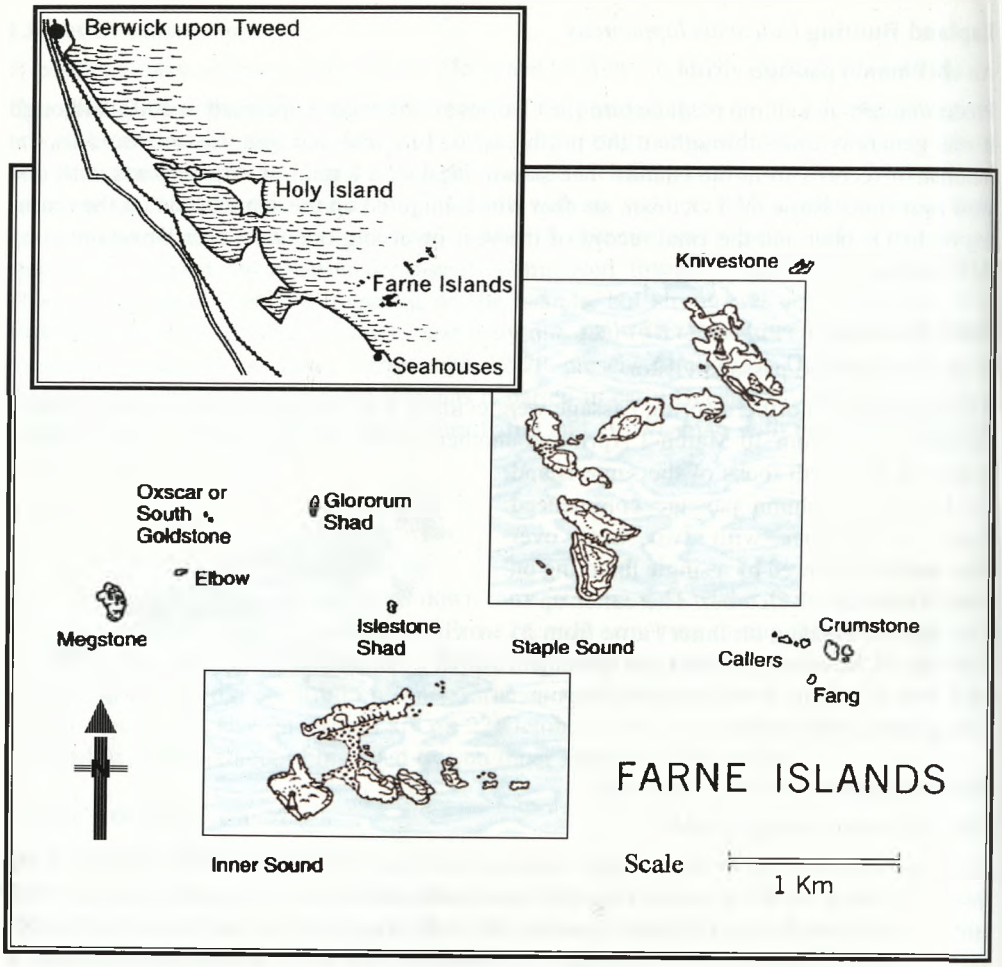
An uncommon passage visitor.

The islands boast thirty-seven records following the first in 1977 and the species has become an almost annual migrant to the islands despite still being very rare on mainland Northumberland. A vocal first-winter bird was discovered near Brownsman cottage on the morning of 12 October following a spell of good weather, and showed well for thirty minutes before disappearing.

Reed Bunting *E. schoeniclus*

A well represented passage visitor.

It was an average showing in spring, interestingly all involving females, with the first bird of the year being an approachable individual on Inner Farne on 25 March. Further records involved singles on Brownsman on 15 and another briefly on Inner Farne on 19 April. The


Berwick upon Tweed
Holy Island
Farne Islands
Seahouses
Knivestone
Oxscar or South Goldstone
Glororum Shad
Elbow
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Islestone Shad
Staple Sound
Callers
Crumstone
Fang
Inner Sound
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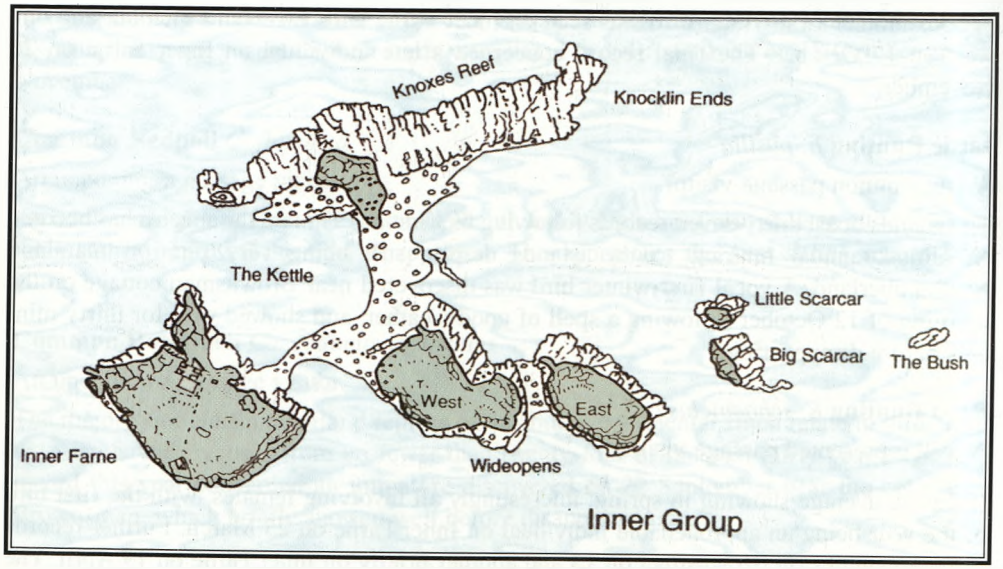
Knoxes Reef
Knocklin Ends
The Kettle
Little Scarcar
Big Scarcar
The Bush
West
East
Inner Farne
Wideopens
Inner Group


Northern Hares
Longstone
Brada
North Wamses
Little Harcar
Clove Car
Big Harcar
South Wamses
Roddam and Green
Brownsman
Gun Rock
Staple Island
Skeney Scar
Outer Group

final spring passage birds lingered on Brownsman from 7-9 May and on Longstone End on 10 May. Autumn passage commenced with one west over Inner Farne on 17 September followed by another on 30 September. The October period brought the heaviest passage of the season, with a number of birds lingering on the islands. Numbers gradually built up with two on 10, increasing to eight on 11 and peaking at eighteen on 12, with nine daily on 13-16 October. Numbers gradually decreased with five on 17, three on 18 and the final record of two on 19 October.

RINGING AND RESEARCH REPORT FOR 2006

Monitoring projects

Since seabird ringing studies were re-initiated on the Farnes in 1996, we have obtained a size-independent measure of body condition or 'growth index' for Arctic Tern chicks as one of the core projects. This has shown fluctuations in chick body condition from year to year that may relate to variations in food supply. Data for 2005 suggested that Inner Farne and Brownsman colonies were subjected to different nutritional constraints. This also seemed to have been the case in 2006 since the Brownsman Arctic Tern chicks had a poorer body condition than those on Inner Farne (Figure 2). The growth indices for Inner Farne and Brownsman were both lower than in 2005. The Arctic Tern chicks on Brownsman also had a slightly higher mortality and 46% of ringed Arctic Tern chicks were found dead compared to 41% on Inner Farne. Arctic Tern chicks on Coquet Island, twenty miles to the south, had a higher growth index and lower overall mortality (22% of ringed chicks were found dead) than on the Farnes. The lower mortality might be explained by Coquet Island birds being a bit more advanced in seasonal timing than on the Farnes in 2006 as there was a noticeable mortality of chicks near to fledging. These data suggest that the immediate local environment of each colony and rapid within-season changes in prey availability can be important determinants of breeding success. The reasons for these effects are unknown and these are questions that the Farne Islands Marine Research Group (FIMRG), a collaboration between Newcastle University, The National Trust and The Natural History Society of Northumbria, are hoping to answer. Extending the measurement of body condition to include adult Arctic Terns, initiated in 2003, will increase our ability to understand what constrains successful breeding at a local level and how this is likely to be affected by climatic changes on a broader scale.

In 2005, we started to use the same approach in Kittiwakes, and now have two years of data on body condition in Kittiwake adults and chicks (Figures 3 and 4). There was no difference between the two years in adult Kittiwake body condition, but chicks were significantly lighter in 2006 than the previous year (Figure 4). Like Arctic Terns, Kittiwakes are surface feeders and it would be very useful to have data for a species that was not limited by the availability of fish at the sea surface. Eliza Leat, the FIMRG Research Assistant on Inner Farne, was able to spend some time collecting body condition data for chicks and adult Puffins (Figure 5), a species that can feed on Sand eels throughout the water column. As with Arctic Terns and Kittiwakes, between-year comparisons may give a good indication of annual and intra-seasonal fluctuation in food supply. More importantly however, with data for Puffins we may be able to address the question whether any reductions in body condition in Arctic Terns and Kittiwakes are due to a reduction in surface availability of fish (which can be affected by weather) or to a more general reduction in fish abundance throughout the water column.

Other projects being carried out are 'Retrapping Adults for Survival' (RAS) projects on Eiders (Inner Farne) and Shags (Staple) which have now been running for ten years. For the Eider project, good numbers of adult females were retrapped, although the numbers of new females ringed was substantially lower than normal (Tables 7 and 8). The numbers of adult Shags ringed and retrapped for the Shag study has not increased much compared with last year, and these low numbers may make this RAS project unsustainable in the long term unless we can increase the sample size. Retrapping adult Arctic Terns is also valuable for survival estimation and we hope to be able to achieve a consistent sampling regime for this as a by-product of the biometric studies on adult Arctic Terns.

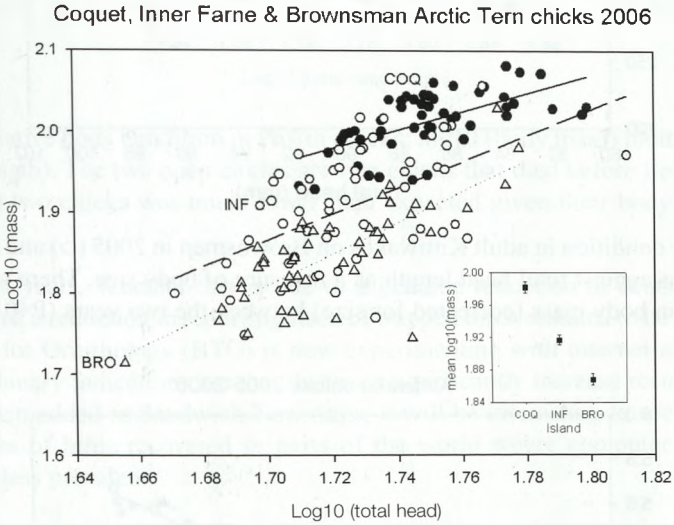

Figure 2 Body condition of Arctic Tern chicks on Inner Farne (INF, ○), Brownsman (BRO, △) and Coquet Island (COQ, ●) in 2006. Data for body mass (ordinate) and total head length (abscissa) have been log-transformed. The fitted lines are linear regressions. Inset graph: least-squares mean log10 (body mass) 1 Standard Error (SE) from Analysis of Covariance (ANCOVA) - mean body mass corrected for differences in body size - for Arctic Tern chicks on each island colony. The difference between chicks on each island is significant: ANCOVA, effect of Island, $F_{2,158}=62.3$, $P<0.0001$.

Recoveries

In this section of the report, details of birds ringed on the Farnes and recovered elsewhere, or ringed elsewhere and recovered on the Farnes, are summarised. This summary refers to those birds recovered in 2005 and 2006 for which details have been received in 2006. More Sandwich Terns have been ringed on the Farnes than any other species and these generate the most recoveries. In the past year, twelve recoveries of Sandwich Terns away from the Farnes have been reported: three from elsewhere in the UK, seven from the rest of Europe and two from Africa. Both the African recoveries were of birds ringed as chicks on Inner Farne in 2005. One of these was caught alive in a fishing trap off Ghana in January 2006 and its subsequent fate is unknown. The other bird was found dead at Tarfaya on the Atlantic coast of Morocco (same latitude as Gran Canaria in the Canary Islands). The fact that only two birds this year were recovered in Africa is in line with the reduction in African recov-

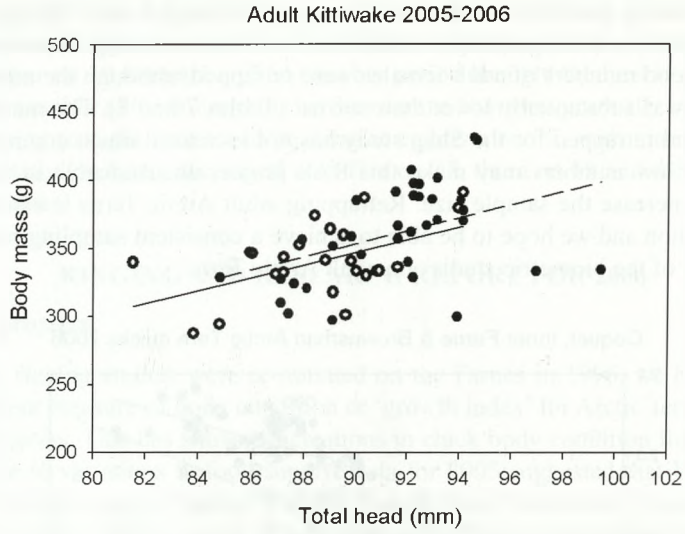

Figure 3 Body condition in adult Kittiwakes on Brownsman in 2005 (○) and 2006 (●) plotted as body mass against total head length as a measure of body size. There was no significant difference in body mass (corrected for size) between the two years (P=0.463).

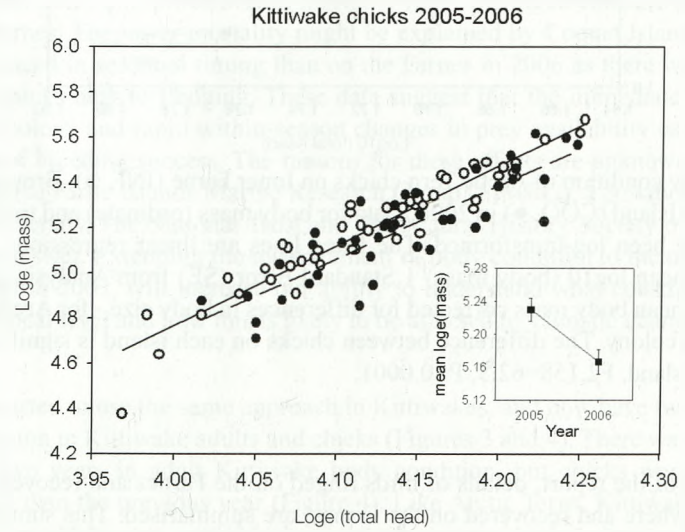

Figure 4 Body condition of Kittiwake chicks on Brownsman in 2005 (○) and 2006 (●). Data for body mass (ordinate) and total head length (abscissa) have been log-transformed (in this case natural log). The fitted lines are linear regressions. Inset graph: least-squares mean loge(body mass) 1 Standard Error (SE) from ANCOVA - mean body mass corrected for differences in body size - for Kittiwake chicks in 2005 and 2006. The difference between years is significant: ANCOVA, effect of year, F1,87=10.7, P=0.0015. Differences in brood size have not been taken into account in this analysis.

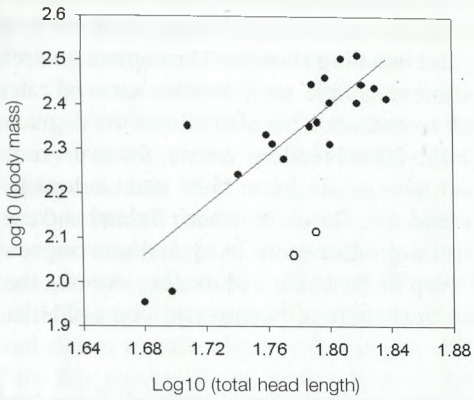

Figure 5 Relative body condition in Puffin chicks: log10 (body mass) plotted against log10 (total head length). The two open circles are two chicks that died before fledging. The body mass of these two chicks was much lower than expected given their body size (total head length).

eries in recent years. Whether this is due to a genuine reduction in deaths due to human activities or just a reduction in reporting rates of trapped birds remains to be determined. The British Trust for Ornithology (BTO) is now experimenting with internet addresses on bird rings – preliminary indications are that this may significantly increase recovery rates. Once these have been added to Sandwich Tern rings, it will be interesting to see if this increases reporting rates of birds recovered in parts of the world where computers, at least at the moment, are less prevalent.

All the European recoveries reported this year were either sightings (rings read in the field – five birds) or controls (birds recaptured by ringers). Both of the controls were caught by Belgian ringers at Zeebrugge in April 2006 and were birds ringed on the Farnes in June 1986 and June 2002. The ring sightings refer to four birds seen within the Sandwich Tern colonies at Hirsholm, Jylland, Denmark, in May and June 2005 and a first-year bird from Inner Farne seen at Westkapelle, Zeeland, The Netherlands, in August 2005. Three of the Hirsholm birds have been seen there in previous years (2003 or 2004); these birds were ringed as chicks on Inner Farne or Brownsman in 1998, 1996 and 1982, respectively. The latter bird is thus quite old and seems to be still going strong at the age of twenty-three. The high longevity of birds compared to mammals of comparable size is really remarkable, especially given the length of migration flights and the weather conditions that these seabirds experience.

Nevertheless, inexperienced birds in their first year of life have higher mortality rates than adults, and all three recoveries of Sandwich Terns in the UK related to chicks ringed on Inner Farne on the same day in the 2006 breeding season and recovered in their first autumn. Two of these seem to have been following a conventional route south along the east coast and were recovered dead on 15 October at Blakeney Point, Norfolk, and on 16 August at Ingoldmells, Lincolnshire, respectively. The third recovery is more intriguing: this bird was recovered dead on a beach at Portslogan on the Mull of Galloway (Dumfries and Galloway) on 20 August 2006. Had this bird gone all round the coast of Scotland, since we know that many do go north at least to the Firth of Forth in the autumn, or had it gone east to west on a trans-Pennine route, as suggested for Common Terns (Ward, 2000)?

Unlike Sandwich Terns, Arctic Terns are seldom recovered away from the Farnes and most of the value of ringing this species comes from retrapping adults at the breeding colony and in monitoring productivity and breeding success. The capture and retrapping of adults at the breeding colony, given sufficient sample size, enables survival rates to be estimated more efficiently than from overall recoveries. This also allows the degree of interchange between colonies to be estimated. In the 2006 breeding season, the team controlled two Arctic Terns which had been ringed elsewhere as chicks in their natal colonies. The first of these was ringed in July 1988 at Copeland, Co. Down, Northern Ireland and caught as a breeding adult on Inner Farne. The other bird was rather more local, and was ringed in June 2003 on Coquet Island. This may well have been its first year of breeding. Among the Farnes birds retrapped in the 2006 season was one, just short of twenty-two years old, that had been ringed as a chick on Inner Farne in 1984.

Although ringing totals for Shags are lower than Sandwich Terns, bird-for-bird, the recovery rate is higher. Reports of five Farnes-ringed Shags were received in 2006 and, in addition, a bird ringed as a chick in June 2002 on the Isle of May, Firth of Forth, was found dead on Brownsman in April 2006. Of the five Farnes-ringed birds, three were ringed as chicks on Staple Island in 2005. These were recovered dead in November 2005 (Sheringham, Norfolk), April 2006 (Inchkeith, Firth of Forth: dead in a lobster pot) and 27 May 2006 (Terschelling, The Netherlands, one of the West Frisian Islands in North Holland, on the north side of the Wadden Sea). The Shag at Terschelling was recorded as an oil victim: 'dead, not fresh'. The other two recoveries were both of males ringed as breeding adults on Staple in 2004 and 2003 and recovered dead on the Isle of May and Tarbet Ness, Highland Region, in June and March 2005, respectively. The timing of the Isle of May recovery, 8 June 2005, could suggest that this bird had switched breeding colonies. However, it was recorded as 'dead, not fresh' so could have died as a wintering bird earlier in the year. The pattern of juvenile and adult recoveries is consistent with the known dispersal of Shags north and south from the Farnes during the winter months.

In contrast to the winter dispersal of Shags, female Eiders breeding on the Farnes do not often go anywhere. Although previous analyses (Baillie and Milne, 1989) have suggested that up to a third of breeding females from the Farnes and Coquet Island may winter in the Forth and Tay estuaries, in recent years recoveries from outside the Northumberland coast have been unusual. This year we received two Eider recoveries: the first was of the leg and ring of a female ringed on Inner Farne in 1998 and found at Beadnell in November 2005; the second recovery, also leg and ring only, was of an adult female ringed in May 2002 on Inner Farne and found on 2 June 2006 at Terschelling. Note that the date of this recovery is only six days after the oiled Shag was reported from Terschelling, so it is possible that the Eider may also have been an oil victim. Although Eiders from the UK have been recovered in Denmark and around the Baltic, these are almost exclusively males, and thought to be as a result of abmigration where UK-bred males pair up during the winter with females of Baltic origin wintering around the UK, and return with their new mate to her breeding area (Baillie, 2002). Given the fact that the leg and ring only were recovered, it is possible that the remains of this bird were carried to Terschelling on North Sea currents and that the bird died locally. If this speculation is correct, the Terschelling Shag (perhaps with its oil) could have been carried there on the same currents.

Three other species are represented in the recoveries reported during 2006: Kittiwake, Puffin and Lesser Black-Backed Gull. The large gull was ringed as a chick on South

Wamses in July 1984 and found dead at Low Newton-by-the-Sea in August 2006. Like Arctic Terns, Kittiwakes are not often recovered outside the area due to their pelagic habits. All three recoveries of this species reported in 2006 were in the Farnes area and were of birds ringed as chicks. A Brownsman bird from 2001 was found dead at Hauxley in June 2006. One from Coquet Island in July 1996 was controlled on Brownsman in August 2006. The last Kittiwake recovery is not a movement, but a retrap (on Brownsman as a breeding adult) of one ringed on Staple in July 1985 and is noteworthy because of its age of twenty-one years. The last species for which recoveries were reported in 2006 is Puffin: one was a retrap and the other three were recovered dead outside the area. The retrap Puffin is especially notable for its age – it was ringed as a chick on Staple Island on 11 July 1976 and retrapped back on Staple Island on 25 June 2006 due to the sharp eyes of warden Alex Ash. At twenty-nine years and eleven months old, this bird is just a few days short of the current BTO longevity record for this species in the British Isles of thirty years and sixteen days. The wardens and ringers will be looking out for it again in 2007! The three Puffins recovered elsewhere were also relatively long-lived: the ring from an adult ringed on the Wideopens in June 1982 was found at Beadnell in July 2006, a chick ringed on Brownsman in July 1985 was found dead at Whitby, North Yorkshire, in June 2006 and one ringed as an adult on Inner Farne in May 1980 was found at Rattray Head, Grampian Region, in April 2006.

Farne Islands Marine Research Group (FIMRG)

The major research project focusing on Sand eels and relationships with breeding seabirds was continued this year. Eliza Leat returned for her third season on Inner Farne, collecting data on the location of seabirds foraging at sea around the islands and recording feeding frequency and the prey size brought back to Arctic Tern chicks. Similar observations were carried out by Myles Menz, a visitor from Australia, on Brownsman, although for a shorter period. This season was the second one in which the Group also had a research assistant collecting similar data on Coquet Island. The Group now has a substantial database of observations for analysis. These observational data were complemented by fitting temporary data loggers and radios to Puffins and Shags to record their foraging behaviour, studies carried out by Dr Richard Bevan (Newcastle University). Trawl sampling of Sand eels was again carried out around the Farnes using the University Research Vessel *Bernicia* under the direction of Dr Judy Foster-Smith. As well as providing an index of Sand eel abundance, fish samples are also weighed and measured. Some of this material was analysed this year by a University student, Stephen Kelly, who compared fat contents of the Sand eels sampled in different years. As a result of this analysis, it should be possible to compare fish nutritional quality in different years and relate this to Arctic Tern chick growth index and breeding success. The trawl sampling has also yielded data on the abundance of Snake Pipefish in the area, a species that has shown a dramatic population increase in the last couple of years and which may have important implications for seabird breeding success.

Ringing totals

The seabird capture totals (birds ringed and retraps/controls) this year were, at 1,682, almost 300 up on last year. Although this total is still relatively modest, given the large number of seabirds breeding on the Farnes, it reflects our commitment to generating data of maximum value by focusing on collecting biometric data for monitoring, and projects where adult retraps produce data for survival rate estimation, rather than just ringing as many birds as

possible. A breakdown of capture totals into adult retraps, new adults ringed and chicks ringed is given in Tables 7-9 and compared with last year.

For adult retraps (Table 7), Shag, Eider and Kittiwake totals were similar to last year, but for Arctic Terns the total has almost doubled and this is in line with an increased number of new adult Arctic Terns ringed (Table 8). The increase in captures of adult Arctic Terns will help improve survival estimates and studies of body condition and we increased the capture totals of adult Kittiwakes for the same reason. In addition, through the effort of Eliza Leat we were able to extend the biometric sampling to Puffin chicks and adults. The number of new adult Eiders ringed has decreased dramatically, despite the similar number of retraps to last year, and it is possible that recruitment of new breeding birds to Inner Farne has been low this year. For the chicks of other species, the totals for Shags, Kittiwakes, Sandwich Terns and Roseate Terns were similar to last year, but the availability of ringing expertise on the islands during the season has meant that the numbers of Arctic Tern chicks ringed has more than doubled, allowing the ringing of broods of Oystercatcher and Ringed Plover (Table 9).

Table 7 Adult seabirds retrapped or 'controlled' in 2006 compared to 2005.

Species	2005	2006
Shag	15	26
Eider	87	74
Kittiwake	2	5
Arctic Tern	37	69

Table 8 New adult seabirds ringed in 2006 compared to 2005.

Species	2005	2006
Shag	21	17
Eider	60	8
Kittiwake	21	58
Arctic Tern	92	138
Puffin	8	48

Table 9 Chicks ringed in 2006 compared to 2005.

Species	2005	2006
Shag	61	41
Kittiwake	238	250
Sandwich Tern	553	503
Roseate Tern	1	1
Arctic Tern	201	450
Puffin	0	22
Oystercatcher	0	4
Ringed Plover	0	4

Acknowledgements

The ringing and other projects carried out on the Farne Islands are team efforts and would not be possible without the support and encouragement of John Walton, the wardening team led by Head Warden David Steel, and the Farne Islands Local Management Committee chaired by Charles Baker-Cresswell. We are very grateful that David has been very supportive of his staff taking part in the various studies, as their time allows. We are also grateful to Northumbrian Water for their help in providing facilities to access the islands and we continue to be indebted to the Sir James Knott Trust for their support of the FIMRG seabird foraging project. Eliza Leat and Myles Menz worked hard collecting data for the FIMRG project and we are especially grateful to Eliza for initiating the Puffin studies. The Harbourmaster and his staff at Seahouses are always welcoming and helpful and it is great to feel a small part, if only for a short while each year, of the harbour community at Seahouses. We should also like to thank the crew of the University Research Vessel *Bernicia* for their help with the trawl sampling, and Stephen Kelly for performing the analyses of Sand eel samples. The ringing team provided hard work and enthusiasm and their efforts would not be possible without the rings, essential equipment and backup provided by the Natural History Society of Northumbria.

CETACEAN REPORT 2006

Bottle Nosed Dolphin *Tursiops truncatus*

This large robust dolphin, well known for its active curiosity about human activity, was seen several times during the season. The number of records also relates to the ease of identification of this cetacean, as its large size, plain grey colouration and stubby beak make it very distinguishable. The first sighting of the year was noted on 11 July from Inner Farne as an adult and juvenile moved north through Inner Sound, following a passing yacht. The two animals remained with the boat for several minutes before eventually tracking south past the islands. Another was seen surfacing twice as it moved north through Staple Sound on the afternoon of 14 August and possibly the same animal was involved in a sighting in Inner Sound later that evening. However the most memorable encounter of the year was on the morning of 28 November, as a large pod involving at least twelve individuals, including a calf, were seen moving through Staple Sound. The dolphins headed north through the Sound, with at least two observed fully breaching the surface on several occasions, offering spectacular views for the admiring warden team.

White Beaked Dolphin *Lagenorhynchus albirostris*

The most common of the dolphin species in the northern North Sea, this large charismatic dolphin, with its distinctive white or pale grey stripe on each side of the body, was seen twice during the year. The most spectacular and enjoyable sighting occurred on 17 June when news filtered out from various boatmen of a group of dolphins just to the south of the islands. The wardens were soon in the area and confirmed the record when good views of six adults and one calf were obtained, as the animals serenely headed south. At this close range the white markings on the flank and tall dorsal fin were clearly evident, confirming identification. The only other record concerned a pod of eight observed from Inner Farne as they headed north through Staple Sound on 6 July.

Risso Dolphin *Grampus griseus*

Without doubt the most unexpected and stunning highlight of the year was the discovery of a pod consisting of three adults and one calf on 18 September. At approximately 08:45 the animals were sighted to the north of Brownsman, steadily moving south. The wardens were puzzled at the identification as the animals, which were surfacing once or twice every three-four minutes, showed a rather robust, solid appearance with a tall and concave dorsal fin. Eventually closer views revealed the heads to be remarkably rounded with bulging foreheads sloping steeply down to the mouth. The heads and bodies also showed clear signs of scratches and scars indicative of the species and often caused by confrontations with squid and other Risso Dolphins. Following confirmed identification, the pod split into two with one group consisting of an adult and calf moving east between Crumstone and Brownsman where they started feeding and surfacing at a regular rate. The second group consisting of two adults moved south where they circled and fed behind the Scarcars. The two pods then rejoined before eventually heading north past Brownsman west cliff and were last sighted at 10:30. This represents only the second Farnes record, with the only other record dating from 26 June 1996.

Minke Whale *Balaenoptera acutorostrata*

The year was extremely disappointing (the worst year in recent seasons) for this Baleen whale, the smallest and most abundant of the Rorqual whales found in the northern North Sea. The season produced just one record when an individual was seen heading north through Staple Sound on 13 July. However reports suggested that a small number were active during the summer in the Farnes Deeps, just outside the recording area.

Harbour Porpoise *Phocena phocena*

As usual, the majority of cetacean sightings around the Farne Islands during the year concerned this globally widespread species of northern temperate seas. However there has been a marked decrease in the population levels in recent decades and this has been mirrored in the downturn in the frequency of sightings around the islands. The species was noted on a total of forty-two dates this year, the lowest number this century. Despite this low number of records, the species was recorded in all months between March and December and most records referred to 1-3 animals. Large pods were rarely seen with a maximum of fifteen through Inner Sound in early September representing the peak count of the season.

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BREEDING BIRDS ON THE FARNE ISLANDS: TERNS

by

A E Wilson and D C Noble-Rollin

INTRODUCTION

The purpose and reasons for publishing this account of the breeding birds on the Farne Islands in parts has already been explained in the paper dealing with the auks in the 2005 bird report (Wilson and Noble-Rollin, 2006). This auk paper also included details as to the sources of much of the material used, but it is relevant to summarise this again:

1. The annual reports of the Farne Islands from 1946 to the present day.
2. The Farne Islands Association Reports from 1924-1945.
3. Numerous 19th and 20th century articles.
4. The personal diaries of five local naturalists held in the Natural History Society Archives. These five naturalists are as follows:

   G Bolam the Northumbrian naturalist; E Miller a Watcher on the outer group of the Farne Islands from 1911-1914; T Russell Goddard the curator of the Hancock Museum; G Temperley an honorary curator at the Hancock Museum as well as a local naturalist; and G Hickling (nee Watt) the honorary secretary of the Natural History Society of Northumbria and one of the foremost authorities on the Farne Islands in the 20th century.

Terns, unlike the auk species, posed certain common problems and it will save repetition if these are considered initially prior to the individual species accounts:

1. The difficulty of separating them. Sandwich Terns *Sterna sandvicensi* are particularly distinctive, but this is not the case with Common *S. hirundo* and Arctic *S. paradisaea* Terns, and identifying any Roseate Terns *S. dougallii* present with the equipment available in the 19th century would not be easy. This problem continued into the 20th century with Bolam commenting that 'By almost none of the local fishermen are the Arctic, Common, or Roseate Terns distinguished one from the other ...' (Bolam, 1912), and it is therefore not surprising that the majority of visitors would be unable to do so as well.

2. Access was not easy; most people would only make one visit and would be unfamiliar with the geography of the islands. This explains the general nature of many of the accounts which give little information as to where the terns were nesting.

3. There is no consistency regarding the Latin names used for Common and Arctic Terns. Initially the Common Tern was designated *Sterna hirundo* (Selby, 1826; 1831; in Tate 1857) and the Arctic Tern *Sterna arctica* (Selby, 1826; 1831; in Tate 1857). However by mid 19th and into the 20th century the Common Tern was usually referred to as *Sterna fluviatillis* (Gurney, 1878; Bidwell, 1882; Chase, 1884; Nelson, 1887; Blathwayt, 1903) and the Arctic could be *Sterna paradisea* (Hancock, 1874), *Sterna macrura* (Gurney, 1878; Nelson, 1887; Blathwayt, 1903), *Sterna arctica* (Morres, 1896) or even *Sterna hirundo* (Gurney, 1878; Chase, 1884). Thus, unless a specific English name is given with the Latin, it is not always clear exactly which of the two species is being discussed, though it can often be inferred from the text.

4. There is a distinct possibility that William Darling himself caused confusion, at least in the first part of the century. In his account of 'Breeding Birds and their Nests' (Darling, 1795-1860) only three tern species are noted, Sandwich, Roseate and Common, with no mention of the Arctic Tern. It seems highly possible that he used the term Common Tern to refer to the common tern of the islands, i.e. the usual or the most numerous species. Selby (1833) in his account of Arctic Terns makes the following comment: 'Breeds in great numbers on the Farne Islands, where I corrected my mistake having first thought it to be the Common Tern.' Selby was known to be a correspondent of Darling and would probably only have realised the mistake when he visited.

Finally it has been decided not to discuss 'Elsie' in this paper, but to include her among the more unusual breeding species to be published at a later date. 'Elsie' was a Lesser-crested Tern *Sterna bengalensis* who between 1984 and 1997 paired with a Sandwich Tern and produced a number of hybrid young.

Sandwich Tern *Sterna sandvicensis*

Historical Records to the present day

Sandwich Terns were first noted on the Farne Islands in 1802, when Bewick reported that a pair sent to him had been shot there in the July of that year (Bewick, 1826). This must have been one of the earliest records since they were only described as a separate species in 1787 (Peters, 1934). Initially they were nesting on the inner group, probably West Wideopens and Knoxes, but in 1824 repeated shooting and disturbance caused most of them to desert to Coquet Island and the few that remained moved further out to the Wamses (Selby, 1826); however by 1833 most had returned (Selby, 1833).

In the 1850s Sandwich Terns were breeding on the Wideopens (West Wideopens), Knoxes, Brownsman, Northern Hares and Longstone (Newton, 1864-1907; Tate, 1857) of which Knoxes and West Wideopens were the principal islands. This is the first note of Brownsman, Northern Hares and Longstone, though Howitt (1842) states that terns started breeding on this last island after William Darling had covered some of the ledges with sand, probably soon after the lighthouse was first occupied in 1826.

Knoxes and West Wideopens remained the main islands for the rest of the 19th and for at least the first twenty years of the 20th century. There is little information regarding Longstone and Northern Hares, but it is likely that by 1900 the latter island was no longer in regular use (Miller, 1911-14; 11 July 1911). The situation regarding Brownsman is unclear; a note in Bolam (Bolam, 1877-1933a) states that in 1895 the Sandwich Terns had deserted Brownsman the day after the Watchers arrived; he also later recorded that they bred on this island (Bolam, 1912). It seems unlikely however that Brownsman was in regular use, as except for Tate (1857), there are no further 19th century references. In the 20th century Miller (1911-1914) only recorded attempted nesting in 1911 and 1913, each time unsuccessfully (May 18 1911; June 25 1913).

In 1921 the Sandwich Terns moved from the Knoxes to Brownsman (Bolam, 1877-1933a), most probably because of disturbance, and though all the terns eventually deserted in 1922, they returned in 1923 when Craw (1926) specifically noted Sandwich Terns breeding on Longstone and Brownsman; from that time these quickly became the principal islands with

both Knoxes and West Wideopens declining in importance. Regular breeding on these last two islands ended around the late 1920s though sporadic attempts continued for a while. The last recorded nesting on West Wideopens was in 1955 and on Knoxes in 1980.

From 1928 to 1948 Brownsman was the principal and in some years the only island used, with from two to four separate groups of Sandwich Terns nesting; then under the protection of W J Lewis, the head light keeper, the colonies on the Longstone group flourished, especially on Longstone End. Unfortunately after he left in 1954 the on-going disturbance and gull predation drove all the terns away and none has nested since 1959 (Coulson and Hickling, 1961). The colonisation of Inner Farne started in 1944, but it was not until 1955 that there was a significant population and even then nesting was sporadic until the early 1970s, since when only Inner Farne and Brownsman have been used on a regular basis. In some years only one island is used occasionally for a few successive seasons, but in others there are relatively large colonies on both sites. In 2006 the largest colony was on Inner Farne, with a smaller one on Brownsman.

One of the characteristics of Sandwich Terns is their tendency to change their nesting sites, often with little apparent cause, so the range of islands used for breeding on the Farne Islands is not surprising and is typical of this species.

Evidence for Numbers

Most of the 19th century accounts are very general and the first specific indication of any numbers is not given until 1867. Initially Sandwich Terns were described as being in 'great numbers' (Selby, 1826), but the shooting, egg collecting, vandalism and general disturbance that was prevalent for much of this century caused massive population declines of all breeding species that were only halted at the times when some protection was given (Table 1).

Date	Reference	Number of Pairs	Comment
1867	Booth (1881-1887)	Three large colonies present.	Marples and Marples (1934) note 200 pairs.
1885	Nelson (1887)	*ca* 70	Does not include Longstone.
1888	Barclay (1888)	175	
1889	Barclay (1890)	220	Knoxes. Counted 11/06/1889.
1892	Anon (1893)	240	Counted 07/06/1892. Probably the total.
1896	Bolam (1912)	300	Knoxes. Probably the total.
1897	Backhouse (1898)	100+	The Knoxes; also on the Wideopens.
1906	Temperley (1896-1951)	500	The Knoxes. Probably the total.
1911/1914	Miller (1918)	1000/1200	Estimated number on Knoxes.
1918	Marples and Marples (1934)	1000/1200	The Knoxes. Too similar to Miller's numbers.
1920	Cramp *et al* (1974)	1000	No mention elsewhere.

Table 1 Lists all the currently known figures for breeding Sandwich Terns to 1925, after which date Goddard (1925-1948) was able to make estimates in some seasons.

The figures for 1867 and 1918 taken from Marples and Marples are suspect in view of the numerous errors in this book, and despite extensive searches no supporting evidence has been found though the estimate for 1918 may be a misinterpretation of Miller's comment in *British Birds* that year (Miller, 1918). Unfortunately no additional reference is given for 1920, so this too must be treated with some caution. The increase from 1885 that can be clearly seen is most probably attributed to the protection given by the Farne Islands Association, and by 1911 Evans (1911) considered that the Farne Islands held the largest colony of Sandwich Terns in Britain.

Figure 1 shows the number of breeding pairs of Sandwich Terns from 1924-2006. The most obvious feature is the great fluctuation in numbers that can occur in successive years. This is however typical of these terns owing to mass movements between colonies and large variations in the proportion of mature birds attempting to breed (Ratcliffe in Mitchell *et al.*, 2004). Goddard (1946) considered that there were on average between 1,200-1,500 pairs each season; though his estimates that are available do seem to be from either exceptionally good (1932, 1939) or poor (1934, 1935) years (Goddard, 1925-1948).

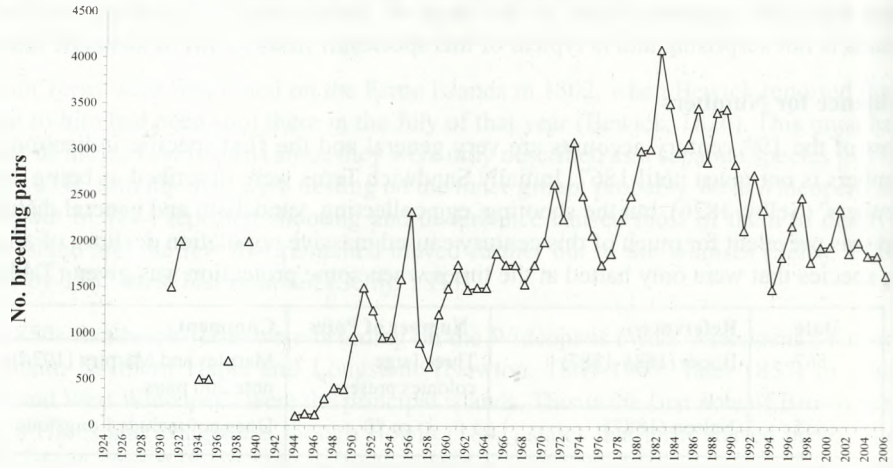

Figure 1 Sandwich Terns on the Farne Islands 1924-2006.

After the end of World War II, numbers started to increase and reached a record of 4,086 breeding pairs in 1982. Since then there has been a decline and at the present time there are on average around 2,000 breeding pairs each season. Superimposed on these trends are some particularly notable changes. The 66% increase in 1955 was a consequence of flooding at some of the large colonies in the Netherlands, and some of these displaced terns established themselves on Inner Farne in early June (Cramp *et al.*, 1974); the 61% decrease in 1957 occurred when they returned to breed in the Netherlands.

The drop in 1991, while not as severe as that for the Arctic Terns, was probably the result of the poor weather in May, which led to fewer nests at the time of the count in early June. In the case of the Arctic Terns a second wave of egg laying occurred after this date so leading to a higher number of pairs (Walton and Richardson, 1991), and this could well have happened to the Sandwich Terns also. There is a similar explanation for the sharp decline in 1994; additional breeding birds moved into the colony at a later date and the actual number was probably about 2,000 pairs (Walton, 1995).

Reasons for changes on the Farne Islands

Human Persecution and Egg Collecting

By the end of the second decade of the 19th century the Industrial Revolution had created a new middle class who desired to emulate the upper classes by pursuing fashionable hobbies such as natural history, egg collecting and shooting, and one of the results of this was the vandalism and increased egg collecting that was to continue on the Farne Islands for the remainder of this century. Furthermore improved communications allowed more people to hear about and visit the islands. In 1824 Selby noted that the repeated disturbance and shooting at the start of the season had caused the majority of the Sandwich Terns to desert to Coquet Island (Selby, 1826) and around the same time Raine (1828) deplored the 'crowds of idlers who every summer visit Farne and her sister islands'.

Until 1861 the Farne Islands were owned by the Dean and Chapter of Durham who leased them to suitable applicants. From 1769-1825 the long-term lessees were John Blackett and his son William who mercilessly exploited all the species, and this together with the relentless shooting and egg collecting was responsible for this first recorded population decline (Selby, 1826).

Around 1840 Archdeacon Charles Thorp became the lessee, and by hiring watchers or wardens at his own expense was able to exert some control and eventually to reverse the situation. Tristram (1858-60) recounts his success: 'the Terns, when he first took the rocks were dwindling to a few dozen pairs, are already recovering their numbers ... Had it not been for ... Archdeacon Thorp we should probably have had to lament ... the Sandwich (Tern) as no longer resident on our coasts.' Thorp purchased the islands in 1861, but unfortunately after his death in 1862, the Watchers lost their effectiveness and by 1875 Gurney (1878) could see little hope for the breeding birds 'summer after summer the birds are shamefully misused and their eggs poached'. He then described a particularly horrific act of vandalism when a party collected all the young Sandwich Terns they could find, set fire to them and then consumed 'the pile- the whole pile- living and dead.'

The Farne Islands Association was founded about 1881 in an attempt to provide better protection for all the birds, especially Sandwich Terns which were becoming increasingly rare in Britain; their eggs were considered to be particularly attractive and had a high commercial value ("D", 1881). Little changed at first, picnic parties were known to kill or maim 150 birds in an afternoon and after August 1st, on which day protection ceased under the Wild Birds Protection Act of 1880, the shooting recommenced (Norman, 1884); furthermore the Association fell into debt and was accused of collecting and selling eggs to pay the rent (Fox, 1884-85); in 1887 hardly a single egg was left on the islands by June 15th (Barclay, 1888). Finally in 1888 Hugh Barclay, a Norfolk banker and ornithologist, paid off the debts and assumed charge and under him the birds were at last given some effective protection. The success of his actions is seen in Table 1 when from 1888 onwards Sandwich Tern numbers gradually increased and new colonies started. The shooting and other vandalism continued after the close season ended, but the lengthening of this to August 31st in 1890 had a significant effect from that time.

World War II however saw a further brief period of egg collecting, vandalism and shooting and by 1944 the Sandwich Tern population had been reduced from around 2,000 pairs in 1939 to 105 breeding pairs in 1944 (Thorp, 1945), but the return of Watchers to all the islands in 1946 finally enabled numbers to increase again.

Egg collecting was never fully eradicated until 1971, when under Peter Hawkey, the newly appointed full time Warden/Naturalist, seasonal wardens were employed for a longer period.

Visitor Disturbance

Sandwich Terns are particularly prone to disturbance and the influx of visitors in the 19th century had a disastrous effect on all the breeding birds, especially this temperamental species. In 1824 they deserted to Coquet Island, and the few that remained moved to the Wamses in the outer group (Selby, 1826). Though it is not documented, the noise and activity associated with the building of the Longstone lighthouse in the 1825 season must have had a further effect, as must also the hoards of visitors that flocked to the islands to catch a glimpse of Grace Darling, and which continued well after her death in 1842. Despite the presence of Watchers for much of this century, visitor disturbance and egg collecting were never eradicated; Watchers were not present until the middle of May and then left again in early August, and it was not until after World War II that they were employed at the end of April (Thorp, 1947).

A feature of the second decade of the 20th century was the increase in mechanisation, and excessive crowds of picnickers in motorboats were one of the reasons given for the desertion of all the terns in the 1922 season (Temperley in Bolam, 1877-1933b). The Sandwich Terns had arrived as usual and had started to lay, then suddenly all left and went south in the middle of June (Minutes of Conference, 1923). It is of interest that the first real colonisation of the Norfolk coast occurred in 1922.

The problems associated with World War II have already been considered. For a few years after the end of the war there were significant numbers of terns on Longstone under the protection of the head light keeper, Lewis, yet within four years of his departure heavy gull predation and excessive visitor disturbance had destroyed the whole colony, and no Sandwich Terns have nested there since 1959 (Coulson and Hickling, 1961). Brownsman remained the single most important island throughout the 1960s as it was closed to the public, whereas visitors were allowed free access to Inner Farne, and it was not until the early 1970s that paths were established which limited visitors to specific areas. From that time breeding has usually taken place on Inner Farne and/or Brownsman and because Sandwich Terns nest in dense close packed colonies away from people there is usually little visitor disturbance; however in 1972 the extensive renovation of the Brownsman cottage that extended into May put them all on Inner Farne that year (Hawkey and Hickling, 1972), and it was a few years before they returned in large numbers. This may also have made some Sandwich Terns desert entirely, producing the slight decrease seen that season.

Large Gull Predation

Throughout the 19th and the first part of the 20th centuries the Lesser Black-backed Gull *Larus fuscus* was the most abundant of all the breeding species on the Farne Islands (Clark, 1881; Bolam, 1901; Fortune, 1913a), and all the terns must have suffered particularly heavy predation. This and the disturbance were probably the main reasons why the Sandwich Terns were not particularly successful on Brownsman until well into the 20th century. Interestingly, both Paynter (Anon, 1893) and Morres (1896) commented that Knoxes was much less affected by the Lesser Black-backs than the Wideopens, yet by the late 1930s predation had destroyed that colony as it did, along with visitor disturbance, those on the Longstone complex in the 1950s.

The large gull numbers continued to increase, particularly the proportion of Herring Gulls *Larus argentatus*, but from the mid 1960s there was a major explosion in their population with no real decline until stricter control measures were undertaken from 1975.

Figure 2 compares the Sandwich Tern and large gull numbers between 1972 and 2006. The overall increase in the terns as the large gulls were controlled can be clearly seen. At the start of the present century the intense predation from the large gulls on the outer group resulted in the whole population settling on Inner Farne for a few years. However determined efforts by the Brownsman wardens have succeeded in reducing the numbers of large gulls on this group and in 2005 sixty pairs settled rather late in the season on Brownsman, though a combination of poor weather and predation meant that no young fledged (Steel, 2006). At least 206 pairs were on the east rocks, an old established breeding ground, in 2006 and for the first time in five years were successful in fledging young.

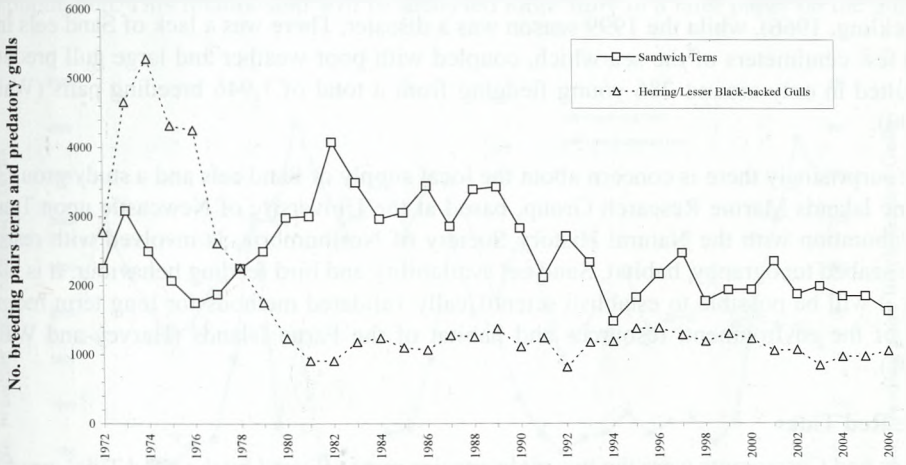

Figure 2 Sandwich Tern, Lesser Black-backed and Herring Gulls 1972-2006.

Weather

Storms, heavy rain and exceptional tides after the young have hatched and before they fledge can cause heavy chick mortality. There are only a few such documented occasions in the 19th century, specifically 1883 when exceptionally high tides washed away eggs (Dixon, 1900), and the 1889 and 1895 seasons, both of which experienced heavy rain just after the eggs had hatched, killing many young birds (Barclay, 1890; Lodge, 1895). Throughout the 20th century there have been innumerable times when Sandwich Terns have suffered in this way, most notably 1961, 1962, 1981, 1998 and in the 21st century 2004, with significant mortality among the young birds in each season.

In 1962 a combination of lower vegetation cover and northerly gales delayed nesting on Brownsman so that heavy rain in July had a disastrous effect on the chicks including some well grown ones, while earlier, poor weather on Inner Farne similarly affected young on that island too. Overall only 200 chicks were ringed from a total of 1,478 breeding pairs (Hickling, 1963). Between 40-50% of young Sandwich Terns died on Inner Farne after torrential rain in June in 1981 (Hawkey and Hickling, 1981) and poor weather affected the whole of the 1998 season such that by early June the heavy rain and cold winds had reduced the Brownsman colony from 1,007 to 600 pairs (Walton and Maher, 1999). Most recently in

a forty-eight hour period in mid June 2004 a heavy storm killed over 1,000 young Sandwich Terns (Steel, 2005).

Food Supply

Sandwich Terns, in common with all the breeding terns, are dip feeders and plunge dive to catch prey (mainly Sand eels) just below the sea surface. They are able to penetrate to a slightly greater depth and consequently do not always seem to have suffered as much as the smaller species when prey is scarce, but nevertheless there have been occasions when there have been problems. In both 1922 and 1927 the terns left around mid-June and though the official reasons cited were excessive visitor disturbance (1922) and heavy gull predation (1927), a suggestion of a shortage of Sand eels was dismissed on each occasion because the other species had done well (Minutes of Conference, 1923; Thorp, 1928). There seemed to be some shortage in 1965 as adults were seen bringing in relatively large sized fish (Hickling, 1966), while the 1999 season was a disaster. There was a lack of Sand eels in the top few centimeters of the sea which, coupled with poor weather and large gull predation, resulted in only around 286 young fledging from a total of 1,946 breeding pairs (Walton, 2000).

Not surprisingly there is concern about the local supply of Sand eels and a study group, The Farne Islands Marine Research Group, based at the University of Newcastle upon Tyne in collaboration with the Natural History Society of Northumbria, is involved with research into seabed topography, habitat, Sand eel availability and bird feeding behaviour. It is hoped that it will be possible to establish scientifically validated methods for long term monitoring of the environment, resources and habitat of the Farne Islands (Harvey and Walton, 2001).

The Red Tides

Shags and Cormorants were the two main species most affected by the 'Red Tide', produced by the dinoflagellate protozoan *Gonyaulax tamerensis* in both 1968 and 1975. The 1968 outbreak was the most serious, and the first indication that there were problems with the Sandwich Terns was when the females 'were seen laying badly and there was an unusually heavy loss of eggs to gulls; also examination of dead adult terns showed they 'all showed signs of diarrhoea and that many were egg bound' (Hickling, 1969). Approximately 1% of the adults died (Coulson *et al.*, 1968) and it was a contributing factor to the 12% decrease in adults breeding that season. The situation was further exacerbated by cold, wet weather with torrential rain in mid July that killed many young birds and also by heavy gull predation. However, the total number of chicks ringed was 1,689 which was around the normal number for each year at that time (Hickling, 1969).

The 1975 episode was less severe and was probably the reason that the majority of clutches only contained one egg. When the effect of the 'Red Tide' is combined with the low temperatures and high rainfall throughout May along with the intense predation, it is not surprising that there was a 17% decrease in the numbers of adults breeding that season (Hawkey and Hickling, 1975).

Sandwich Terns and Black-headed Gulls

Sandwich Terns have frequently been observed to nest in conjunction with Black-headed Gulls *Larus ridibundus* and there are several records of whole colonies moving when the

gulls have moved their breeding site (Sharrock, 1976). The terns are thought to benefit from the aggressive responses of the Black-headed Gulls to predation, and possibly from the fact that the predators find it easier to take the Black-headed Gulls' eggs and chicks (Gibbons *et al.*, 1993); moreover the Black-headed Gulls settle before the Sandwich Terns which might help reassure them that the location is safe (Chestney, 1993). It is of interest that in 1980 for the first time for at least thirty years, forty pairs of Sandwich Terns were on the Knoxes, and that was the only occasion when fifty pairs of Black-headed Gulls nested there also.

Figure 3 shows the numbers of breeding Sandwich Terns and Black-headed Gulls from 1972-2006, and though the use of a secondary axis has exaggerated the effect of the Black-headed Gulls, there are many years when there is an apparent correlation, particularly between 1994 and 2002. In 1992 and 2001 there was a significant increase in the terns, despite a drop in the Black-headed Gulls; both years however showed a decline in the large gull population. This relationship will be analysed more fully in a later paper on the gulls.

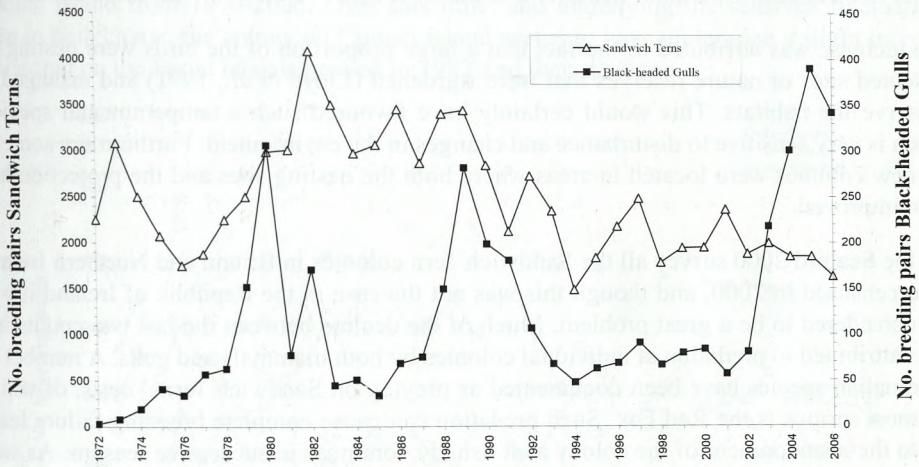

Figure 3 Sandwich Terns and Black-headed Gulls 1972-2006.

It may be worth commenting that in the last few seasons Black-headed Gull numbers have once again started to build up on Brownsman, and Sandwich Terns have nested successfully there in 2006 for the first time since 2000.

National Counts

Sandwich Terns exhibit the most erratic population trends and distribution of any seabird nesting in Britain and Ireland. Thus in order to avoid any bias when a national census is undertaken it is desirable for all the colonies to be counted in the same year; unfortunately there are so many that this is almost impossible to achieve within the same breeding season. They are generally counted in units of apparently occupied nests (AONs). These are usually obtained either by using a transect count or counting the adults from a vantage point. The former is particularly suited to Sandwich Terns as they nest on bare ground in discrete, dense colonies and have uniquely coloured eggs compared to the other tern species, while the high density of their colonies can make it very hard to keep track of the birds that have been censused, so the latter method tends to be less accurate (Ratcliffe in Mitchell e*t al.*, 2004).

There have been three national seabird surveys between 1969 and 2002: Operation Seafarer (1969/1970); the Seabird Colony Register (1985/1988); and Seabird 2000 (1998/2002). Table 2 lists the total number of breeding pairs of Sandwich Terns for each of these.

Survey	Operation Seafarer 1969-1970	Seabird Colony Register 1985-1987	Seabird 2000 1998-2002
Britain and Ireland	12,073	16,047	14,252
Farne Islands	1,200	3,456	1,950

Table 2 Survey counts for Sandwich Terns (breeding pairs).

During the Seabird Colony Register (SCR) census, counts of colonies within regions were often undertaken in different years, and those for the west coast of Ireland from the 1983 All Ireland Tern Survey. It is thus probable that there was some movement between the sites resulting in some pairs being counted twice and others omitted. Hence the actual magnitude of the rise between Operation Seafarer and the SCR must be viewed with some doubt.

The increase was attributed to the fact that a large proportion of the birds were nesting on protected sites or nature reserves that were wardened (Lloyd *et al.*, 1991) and managed to conserve the habitats. This would certainly have favoured such a temperamental species, which is very sensitive to disturbance and changes in the environment. Furthermore some of the new colonies were located in areas where both the nesting sites and the protection had been improved.

For the Seabird 2000 survey all the Sandwich Tern colonies in Britain and Northern Ireland were censused in 2000, and though this was not the case in the Republic of Ireland it was not considered to be a great problem. Much of the decline between the last two counts has been attributed to predation at individual colonies by both mammals and gulls. A number of mammalian species have been documented as preying on Sandwich Terns' nests, of which the most serious is the Red Fox. Such predation can cause complete breeding failure leading to the abandonment of the colony as it usually continues in successive seasons. As well as predating eggs and chicks the large gulls also compete for breeding space and can displace the terns to areas where they are more vulnerable to mammals (Ratcliffe in Mitchell *et al.*, 2004).

Table 2 also includes the relevant figures for the breeding Sandwich Terns on the Farne Islands. Between the first two surveys the colony on the Farnes increased by approximately 67%; around twice that seen nationally. Though this would be linked to the national increase there are a number of local contributory factors to this:

1. The appointment of a permanent Warden/Naturalist in 1970 with the formulation of a management plan.

2. The control of the predatory gulls.

3. The limitation of visitor numbers in the breeding season by restricting access to Inner Farne and the setting-up of specific paths round the island to keep the public away from sensitive areas.

The extent of the decline seen on the Farne Islands between the SCR and Seabird 2000 is difficult to explain, though the intense large gull predation towards the end of the 20th cen-

tury, coupled with the breeding failure in 1999, could well have caused desertion to Coquet Island in 2000, the year in which the census was undertaken. There has been a continuous overall decline for the whole period between the last two surveys, with the most obvious reason being a reduction in availability of food.

Sandwich Terns on the Farne Islands and Coquet Island

Selby (1826) was probably the first to document Sandwich Terns breeding on Coquet Island, but according to Bolam (1912) they had all deserted by the 1880s because of persecution. This could also have been at the time the Farne Islands Association had started to improve the conditions on the islands. The recolonisation of Coquet Island began in 1945 when a single pair bred there, and by 1973 this colony had reached a total of 1,800 pairs (Galloway and Meek, 1978-1983), no doubt helped by emigration from the Farnes caused by the build up of the predatory gulls.

Figure 4 compares the number of breeding pairs of Sandwich Terns on the Farne Islands and Coquet Island from 1970-2006. Over this time, and underlying the seasonal fluctuations seen in both charts, the colony on Coquet Island seems to have undergone a slight increase while that on the Farne Islands peaked in 1982 and then declined.

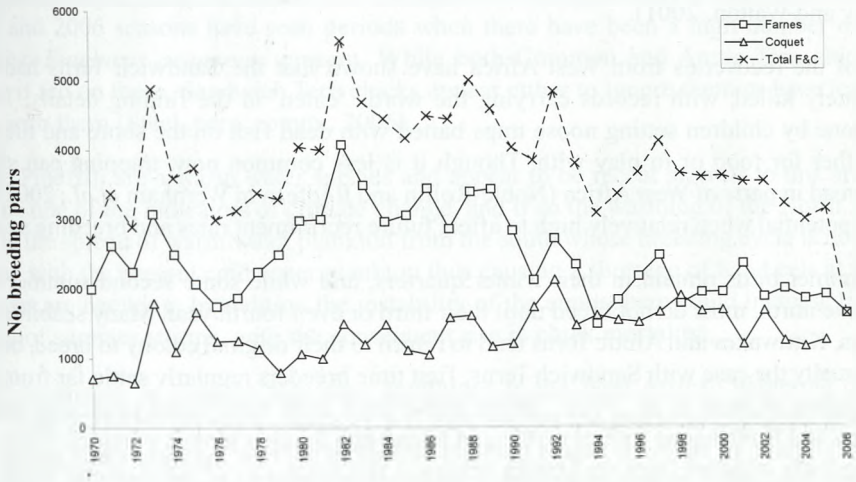

Figure 4 Sandwich Terns on the Farne Islands and Coquet Island 1970-2006.

The dashed line shows the combined total number of Sandwich Terns for both populations which not surprisingly mirrors the changes on the Farne Islands while it was the dominant colony. Changes in adjacent colonies are often linked (Lloyd *et al.*, 1991) and there are many occasions when this appears to be the case here, particularly over the last twenty years. Most recently this does not seem to be so; declines on the one island have not been compensated for by increases on the other, and in 2006 both colonies suffered a significant decrease which may indicate a wider decline in food availability.

Ringing

Sandwich Terns have been ringed on the Farne Islands from at least 1914 and by 1987 over 55,000 birds had been marked, of which the majority were nestlings. In that time there have been approximately 1,700 recoveries (3%), of which over 50% have been in West Africa.

Nationally to the end of 1987, over 132,000 Sandwich Terns had been ringed (Lloyd *et al.*, 1991) with those on the islands contributing over 40% of this total.

The Sandwich Tern is migratory through the Western Palearctic with British birds along with those from Ireland, the Netherlands, Denmark and Germany wintering together in West Africa. The post-fledging dispersal can be rapid with juveniles being recorded 65km from their natal colony three days after ringing (Noble-Rollin and Redfern in Wernham *et al.*, 2002). Recoveries have shown that Farne Island terns can disperse to the north with birds of the year being found regularly in Scotland as well as on the other side of the North Sea.

Within three to four months of ringing the juveniles head rapidly south to their wintering quarters off West Africa. Farne Island birds have been found in the Netherlands, France, Portugal and Spain, indicating the route they take south. They then continue to West Africa where they winter, usually from Senegal to Ghana. Exceptionally birds have been recovered from Natal (South Africa) (Hickling, 1957), South Africa (Hickling, 1967) and as far east as the Po Delta near Venice (Watt, 1953). Since this first record there have been further recoveries in this area. Sandwich Terns breeding in the Black Sea winter south and west in the Mediterranean and it is possible that on reaching the Mediterranean shore of the Iberian Peninsula some British terns subsequently move east to breed with the Black Sea population (Harvey and Walton, 2001).

Many of the recoveries from West Africa have shown that the Sandwich Terns had been deliberately killed, with records carrying the words 'eaten' in the finding details. This is often done by children setting noose traps baited with dead fish on the shore and the birds used either for food or to play with. Though it is less common now, trapping can still be widespread in parts of West Africa (Noble-Rollin and Redfern in Wernham *et al.*, 2002), and has the potential when relatively high to affect future recruitment rates and breeding success.

First summer birds remain in their winter quarters, and while some second summer birds may move north, most do not breed until their third or even fourth year. Many seabirds such as Shags, Kittiwakes and Arctic Terns tend to return to their original colony to breed, but this is not usually the case with Sandwich Terns; first time breeders regularly settle far from their native colony (Cramp *et al.,* 1985). Farne Island birds have been found nesting in Ireland, Germany and Romania as well as on Coquet Island and in other British colonies. They have been regularly reported from the Danish colony at Hirsholm, one of the sightings relating to an individual ringed in 1980 (Redfern in Steel, 2006); the Dutch colony at Griend (Harvey, 2003); and recent sightings from the Isle of May indicate that they have also joined this expanding colony (Harvey, 2002).

In addition individuals from Denmark, the Netherlands and a number of Scottish colonies have also been found breeding on the Farne Islands. In 1975 for example Sandwich Terns breeding on Inner Farne and Brownsman included ones from Coquet Island and the Sands of Forvie as well as 1966 and 1969 ringed Farne birds (Hawkey and Hickling, 1975).

With the death of Grace Hickling in 1986 the forty years of intensive ringing on the islands came to an end in 1987. For the next ten years when ringing did not take place on the islands the ringed Sandwich Terns from the Farne Islands continued to yield to the BTO a high percentage of the total returns from British ringed birds. This valuable information helped create an understanding of the wintering conditions of this species in Africa.

In 1996 when ringing was resumed the emphasis was on the survival of chicks and maintaining enough ringed Sandwich Terns to understand the movements both to wintering quarters and between colonies in Europe. These studies are fully covered in the annual reports of the Farne Islands since 1996.

CONCLUSION

Seabird 2000 showed the Farne Islands to be the second largest Sandwich Tern colony in Britain holding 18.5% of the total population, and if Coquet Island is included this figure rises to 35%. Furthermore the Sandwich Terns ringed on the Farne Islands have made a major contribution to the knowledge of this species. The colonies are thus of both national and international importance.

Over the last twenty years the Farne Islands' population has decreased by 52% which has not been compensated for by increases on Coquet Island; in fact for the last three seasons this population too has declined, as have Sandwich Terns nationally since the Seabird Colony Register census in 1985-1987. While these changes could be part of the natural cycle for this species, there must be some concern regarding the long term abundance of Sand eels, though Sandwich Terns are able to take Butterfish *Pholis gunnellus* at such times. Both the 2005 and 2006 seasons have seen periods when there have been a high number of Snake Pipefish *Entelurus aequoreus* present. While both Common and Arctic Tern chicks will choke if fed on these, Sandwich Tern chicks appear either to ignore them or have learned to cope with them (Steel, pers. comm., 2006).

Snake Pipefish are a warm water species and appear to be recent arrivals to this area. This may be one of the indicators of climate change, and if so the warming of the North Sea will lead to the spread of warm water plankton from the south whose breeding cycle is not in synchrony with the present cold water plankton thus causing a shortage of Sand eels at the time the eggs are hatching. In addition the instability of the atmosphere could increase the probability of summer storms, with the consequent rise in chick mortality.

There must also be concern regarding conditions in the West African wintering quarters; over fishing of the fish stocks there by EU trawlers has the potential to reduce food availability and hence survival, and the deliberate trapping causes the death of a large number of immature terns, thus limiting future recruitment to breeding colonies. There is also evidence that cohorts of first year terns that experience a high level of trapping produce fewer breeding adults than those that do not (Gibbons *et al.*, 1993).

Education programmes to reduce trapping activity have had some success in Ghana, but recent studies have shown some resurgence (Ratcliffe in Mitchell *et al.*, 2004) and further work is thus necessary.

Arctic Tern *Sterna paradisaea*

Historical Data to the Present Day

Arctic Terns were first specifically noted as breeding on the Farne Islands by Selby (1826), though it is almost certain that they were present well before this. Willoughby (1678), Pennant in 1771 (Hutchinson, 1778) and Darling (1795-1860) all refer to the Common Tern, and though they may have been more numerous than Arctic Terns during the 17th and 18th

centuries so the latter were overlooked, it may also mirror the situation with William Darling that has already been discussed.

From all the evidence available it appears that at the start of the nineteenth century Brownsman was the main island for Arctic Terns (Selby, 1826), with Longstone being colonised sometime after 1826 (Howitt, 1842). Howitt, who visited the islands around 1840, was told by William Darling that there were no terns on Longstone until he laid sand on the ledges opposite the lighthouse and gave them protection, and now there were hundreds. There were also probably smaller colonies on West Wideopens and Knoxes, though it is difficult to be certain because of the general nature of most of the accounts. Arctic Terns were definitely on West Wideopens by 1842 (Newton, 1864-1907) and Knoxes by 1865 (Saunders, 1866). In 1867 Booth found three large and two smaller colonies (Booth, 1881-1887); unfortunately he does not state where, though from his description one of the larger ones is clearly on Brownsman. The other two could be those on West Wideopens and Knoxes, while the smaller ones may both have been on Longstone. At high water Longstone is split into a number of small islands and rocks, of which the three most important areas are Northern Hares to the north, the Main Rock with the lighthouse, and Longstone End running north-east, and it is highly probable that records attributed to Longstone could refer to colonies on any of the three other islands. Chase (1884) lists Knoxes and the Wideopens as the main islands, with a few pairs on the Northern Hares, the first specific note of this island. Surprisingly there is no mention of Brownsman and it is doubtful whether he ever visited this island, but concentrated on the colonies on the inner group.

It thus appears that for the last two decades of the 19th and well into the 20th century the main colonies of Arctic Terns were on Knoxes, the West Wideopens and Brownsman with subsidiary ones on Longstone and the Northern Hares. In 1914 Miller (1911-1914) recorded breeding on Longstone End - described as Longstone Branches in his Diary - and sometime just after World War I Arctic Terns started to nest on Inner Farne (Best, 1921).

In 1925 Arctic Terns were breeding on six islands; Inner Farne, West Wideopens, Knoxes, Staple, Brownsman and Longstone, with Staple being mentioned for the first time in 1924 (Thorp, 1924; 1925). Between 1925 and 1939 regular nesting took place on Inner Farne, Brownsman, Longstone and Northern Hares with occasional attempts on Staple, West Wideopens and Knoxes as these last two long established breeding areas declined in importance, possibly due to heavy gull predation. After World War II Brownsman and Inner Farne remained the principal islands, though during the early 1950s the tern colonies flourished on the Longstone complex under the protection of W J Lewis, the principal light keeper. Unfortunately after his departure in March 1954 numbers declined rapidly because of visitor disturbance and gull predation and by 1959 only a few pairs bred sporadically. No terns have nested on West Wideopens, Longstone End and Northern Hares since 1963, 1974 and 1977 respectively. At the present time the only islands in use by Arctic Terns are Inner Farne and Brownsman with a few pairs on Staple and very infrequent attempts on the Knoxes, the last successful one being 1996.

Evidence for numbers

Until the last decade of the 19th century Arctic Terns were described as either being 'numerous' or that there were 'thousands' present. However when it is considered that Nelson (1887) regarded 50/60 pairs of Sandwich Terns as a large colony and that West Wideopens and Knoxes are both relatively small islands, it is understandable that 'thousands' may give an impression of larger numbers than were actually present and that the total Arctic Tern

population was probably numbered below a thousand. The earliest figures available are for the 1892 season, when Paynter (Anon, 1893) recorded 1,000+ pairs on West Wideopens and Knoxes together. Miller counted 1,050 nests on Brownsman in 1912 (Miller, 1911-1914: 16 June), and in both 1938 and 1939 Bullough in the first detailed study to be made of the Arctic Terns on the Farne Islands estimated that there were around 1,000 nests in total on Inner Farne (Bullough, 1942); it is a great shame that he was not granted similar access to Brownsman. At the same time Goddard considered there to be between 250-300 nests in St Cuthbert's Cove alone (Goddard, 1946): by 1947 numbers had risen to over 600 pairs (Goddard, 1947). It was not until 1978 that the number of breeding pairs of Arctic Terns was specifically counted; until then all the figures are estimates, though from 1971 these were done in a systematic way (Hawkey, 1991).

Figure 5 shows the total number of breeding pairs of Arctic Terns between 1924 and 2006; there are however a number of years, especially from 1960 to 1968, when no figures are available but using the annual Bird Reports, Goddard's and Hickling's Diaries and other accounts it has been possible to make either an estimate or deduce the overall shape of the chart.

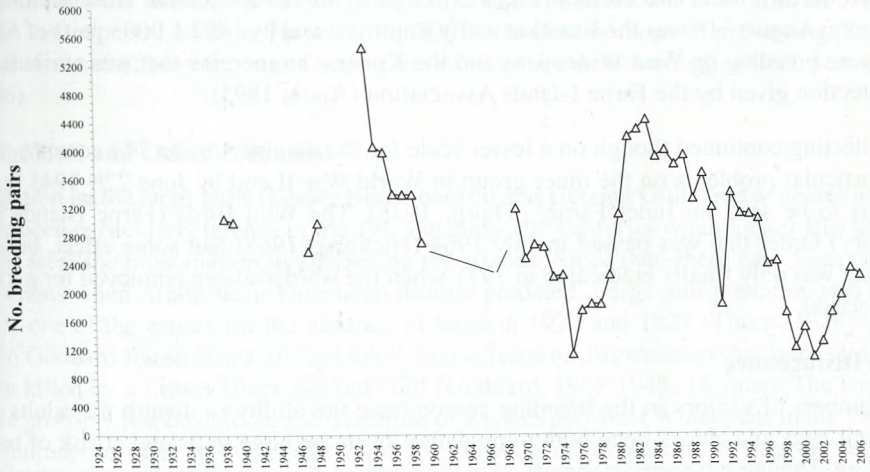

Figure 5 Arctic Terns on the Farne Islands 1924-2006.

There are reasons for the periods of decline and increase seen in Figure 5, but it is interesting however that there appears to be an overall cyclic pattern to them; the population reaches a peak, declines steadily over a number of years and then builds up again relatively quickly. Furthermore, since 1954 each maximum has been less than the previous one, though whether 2005 will prove to be the next is as yet unknown.

If there is such a pattern, then the maximum prior to 1954 should be in the 1920s and by all accounts 1925 was 'one of the best for the birds' (Thorp, 1925).

Reasons for Changes on the Farne Islands

Human Persecution and Egg collecting

The early 19th century saw a great increase in visitors, many of whom amused themselves by shooting the breeding birds, while others came to collect their eggs (Selby, 1826; Raine,

1828) and on occasions were known either to take entire broods of young birds or to kill them (Anon, 1841). These factors, coupled with the excessive exploitation of the birds by the long term lessees of the islands, John Blackett and his son William, led to the first recorded population decline (Selby, 1826; Raine, 1828). All the species suffered and eventually only a few pairs of terns remained (Tristram, 1858-1860). It was only because Archdeacon Charles Thorp, the lessee from around 1840, that the breeding populations survived, for at his own expense he hired Watchers or wardens to try to provide some protection (Tristram, 1858-1860). Unfortunately Thorp died in 1862 and though the paid Watchers remained they became lax and eventually themselves collected and sold the eggs (Fox, 1884-1885). Shooting and egg collecting increased and a further decline set in which, despite the passing of the Seabird Protection Act in 1880 and the founding of the Farne Islands Association around 1882, continued.

Finally in 1888 Hugh Barclay took responsibility for the Association and was at last able to provide some effective protection, though unfortunately as soon as the close season ended on August 1st the shooting recommenced and hundreds of terns were shot for the purpose of adorning ladies' hats. Wounded birds were captured, their wings cut off and then still alive they were thrown back into the sea (Pike, 1902). Only in 1890 when the close season was extended to August 31st was the situation really improved and by 1892 1,000+ pairs of Arctic Terns were breeding on West Wideopens and the Knoxes, an increase that was attributed to the protection given by the Farne Islands Association (Anon, 1893).

Egg collecting continued though on a lesser scale for the majority of the 20th century; there were particular problems on the inner group in World War II and by June 22rd 1945 'not a bird was to be seen on Inner Farne' (Thorp, 1946). The Wild Birds (Farne Islands Egg Sanctuary) Order that was passed in July 1964 (Hickling, 1965) had some effect, but egg collecting was only finally eradicated in 1971 when the wardens were employed for a much longer period.

Visitor Disturbance

High numbers of visitors in the breeding season have the ability to disturb the adults and leave their eggs and chicks open both to predation from the large gulls and at risk of being trodden on. Though it was never specifically documented, this must have been the case from 1839 onwards when hoards of sightseers flocked to see Grace Darling, and after her death to visit the site of the rescue. If they were like William Howitt they would land on other islands as well as Longstone (Howitt, 1842). Towards the end of the century the newly formed Farne Islands Association came in for much criticism for 'allowing their members and friends to spend time on the islands when the birds were sitting or feeding young' (Fox, 1884-1885).

Visitor disturbance continued with crowds of people in motor boats being held responsible for driving the terns away in 1922, and in 1929 Goddard picked up dead Arctic Tern chicks on Longstone and blamed people who were walking amongst them (Goddard, 1925-1948: 20 June), whilst even to 1946 Thorp condemned those visitors who spent whole days picnicking and touring the islands (Thorp, 1947). For a while in the late 1940s and early 1950s Lewis, the light keeper on Longstone, was able to provide some protection and the tern colonies on that group of islands flourished. He left in 1954 and by the early 1960s unrestricted egg stealing and disturbance had finally driven the terns away from Longstone End (Hickling, 1963).

1970 saw a record number of 25,000 visitors which, despite the licensing of boats and the visitors being restricted to specific paths on Inner Farne, had risen to a staggering 50,000 by 1973. This raised concerns about the productivity of the Arctic Terns nesting close to the path. In 1974 new regulations were introduced limiting the opening hours between May 15th and July 15th and allowing each licensed boat one landing a day on Staple Island and Inner Farne, Staple in the morning and Inner Farne in the afternoon (Hawkey, 1991). A further six year study on Inner Farne showed that after 1974 the level of disturbance then experienced had no adverse effect on the breeding success of those terns near the path, instead actually increasing the survival rate of the nestlings by reducing the time available for large gull predation (Hawkey, 1991). These restrictions on the visitors must have played some part in the large increase in Arctic Tern numbers seen from 1975 onwards.

The period of restricted access now extends over the whole of May, June and July, but nevertheless even with great care by the wardens, eggs and chicks are still trodden on by visitors at busy times. Although this is a minor effect (a combined total of twelve chicks for 2004 and 2005) compared to weather and food shortages any unnecessary loss of life should be avoided. To combat this the wardens have erected 'chick proof' barriers preventing any actual loss of life in the 2006 season. A new and wider boardwalk is to be built from the jetty to the visitor centre on Inner Farne for the 2007 season in the hope of preventing the crowding that occurs at busy times and causes the damage to chicks and eggs (Steel, pers. comm., 2006).

Large Gull and Other Predation

Predation by the large gulls (Lesser Black-backed and Herring Gulls) never ceases and must have been particularly intense in the 19th and early 20th centuries when Lesser Black-backed Gulls were the most numerous species on the islands. Since then there have been countless occasions when Arctic Terns have been heavily predated. Large gull predation was thought to be one of the causes for the absence of terns in 1922 and 1927 (Thorp, 1928) while in 1926 Goddard found heaps of dead adult Arctic Terns on Brownsman that were said to have been killed by a Lesser Black-backed Gull (Goddard, 1925-1948: 18 June). The large gulls were probably responsible for the desertion of Knoxes and West Wideopens in the 1930s and in conjunction with the visitor disturbance played a major part in driving the terns from Longstone End. In addition to taking eggs and young, because they nest before the terns they take up space that the latter could occupy.

By the mid 1970s the gull numbers had escalated and predation was taking its toll on all the breeding species with terns particularly badly affected as their numbers had suffered a large decline.

Since then many different strategies have been used to deter the gulls. Chick shelters, particularly canes and, in 2002, placing hard-boiled gulls' eggs back into their nests on the outer group (Brown, pers. comm., 2002) have all been used to good effect, and have enabled the population on Brownsman to return to over 1,000 breeding pairs and the average productivity/nesting pair to increase to reasonable levels.

One effect of the long term predation is that Arctic Terns are now commonly nesting round the buildings on both islands, round the cottage on Brownsman and in the courtyard on Inner Farne, where wardens and visitors are able to provide protection from the large gulls. Such crowding together however can exacerbate aggressive behaviour of the parent birds to their

neighbours young and reduce breeding success (Brown, 2001); nevertheless in both 2005 and 2006 the highest productivity was in the courtyard (Steel, pers. comm., 2006).

Figure 6 shows the Arctic Tern and large gull populations from 1972. The effect of the stricter controlling of the large gulls from 1975 onwards is obvious and is probably the major reason for the increase in Arctic Tern numbers seen from 1976 to a maximum in 1983. After that the population declined and by the end of the century had reached a point where there were approximately equal numbers of both large gulls and Arctic Terns. This resulted in extensive predation of both eggs and young, especially on Brownsman, leading to a reduced productivity and the lowest number of nesting Arctic Terns ever recorded on that island. In 2000 there was an average productivity of 0.5/pair compared to 1.2/pair for the nests monitored on Inner Farne (Harvey and Walton, 2001), while in 2001 both islands suffered with only three young fledged from 246 nesting attempts on Brownsman and the productivity on Inner Farne dropping to 0.5/pair (Harvey, 2002). While poor weather in June was responsible for some deaths, the major factor was a substantial increase in the large gull predation (Harvey, pers. comm., 2001).

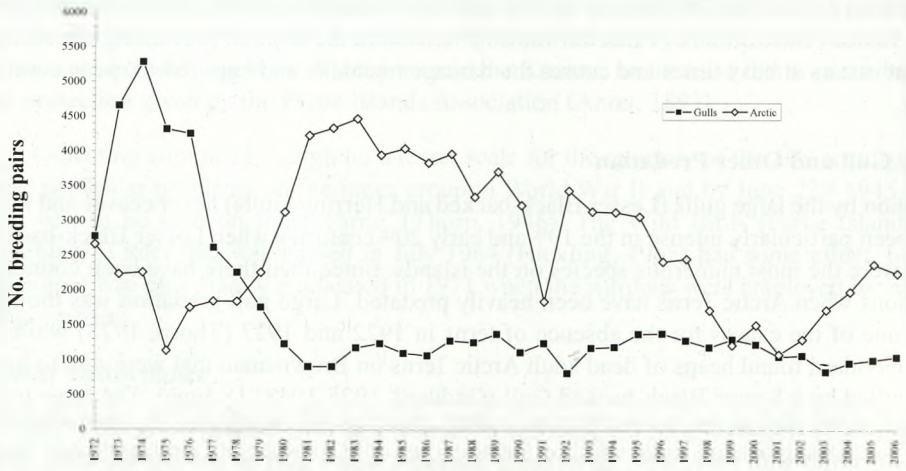

Figure 6 Arctic Terns and large gulls 1972-2006.

For a short time starlings *Sternus vulgaris* caused a problem on Inner Farne, particularly in 1968 when out of twenty-four monitored clutches containing fifty eggs originally only ten chicks hatched (Hickling, 1969), though this predation was probably exacerbated by the 'Red Tide' episode. More recently oystercatchers have been seen taking eggs, and in 2006 Black-headed Gulls were responsible for heavy predation in the cemetery area of Inner Farne (Steel, pers. comm., 2006). Interestingly in 2005 rabbits were responsible for the loss of twenty chicks (Steel, pers. comm., 2006). The island's Rabbits suffer from a severe calcium deficiency; the predation continued in 2006 with some chicks being found without beaks and wings.

Weather

All species suffer if there are prolonged periods of heavy rain and storms in the breeding season, especially before the young have fledged, and Arctic Terns are no exception. The 1888 season was especially disastrous with large numbers of nestlings killed by rain and

cold at the beginning of July (Barclay, 1889). There have been countless occasions since then when poor weather has led to a high mortality of young Arctic Terns, 1956, 1963, 1970, 1975 and every season from 1977 to 1882 to name but a few. Arctic Terns do not breed until they are three years old, so that the effect of a high mortality will not be seen for at least three years on the islands, in which case it is surprising that from 1976-1983 the population was increasing rapidly; this was however mainly attributed to the strict controlling of the large gulls which started in 1975. The large declines seen in 1975 and 1991 must in some part be a result of the exceptionally cold, wet and stormy weather in May and early June, though that in 1975 was complicated by the occurrence of a second 'Red Tide' episode and heavy predation, while in 1991 many birds relaid in June, so the overall total of nests would be much higher. These however were not included in the official count (Walton and Richardson, 1991).

1998 saw season-long atrocious weather with above average rainfall which once again led to low Arctic Tern productivity (Walton and Maher, 1999), whereas in 2004 a combination of poor weather, low temperatures and rough seas that hampered foraging trips, coupled with a scarcity of food, led to a 60% mortality of Arctic Tern chicks, with less than a hundred fledging from 732 nests on Brownsman (Steel, 2005).

Food Supply

Arctic Terns on the Farne Islands feed mainly on Sand eels which they catch in the top few centimetres of the water column. Their eggs are timed to hatch at the same time that the juvenile Sand eels arrive at the surface and if this does not happen then there will be massive breeding failure in that season.

There are at least three documented occasions prior to World War II when few, if any terns fledged. In each of the seasons 1891, 1922 and 1927 the majority of the Arctic Terns suddenly left in mid season, abandoning both eggs and hatched young. There seems little doubt that there was a food shortage in 1891 as adult birds were picked up in an emaciated condition (Paynter, 1892). While visitor disturbance and gull predation were cited as the causes in the desertions in 1922 and 1927, a lack of food was also suspected, but in 1922 was dismissed because other species had done well (Craw, 1926; Minutes of Conference, 1923; Thorp, 1928).

The 1999 season was disastrous, with only twelve young fledging from 1,223 nests. There was a lack of food in the top few centimetres of the sea and Arctic Terns were unable to dive deeply enough for them (Walton, 2000). Interestingly the terns on Coquet Island less than twenty miles away were unaffected, showing that the effect was localized, and the colony on the Long Nanny intermediate between the Farne Islands and Coquet Island, although not as successful as the latter, did not suffer as much as the former. It would not be surprising if this was the cause of the failure of the terns to breed successfully in 1891, and probably 1922 and 1927 as well. There could have been a food shortage in 1965 (Hickling, 1966) and more recently all the last three seasons have seen some problems with Sand eels. After the stormy weather in June 2004 they became scarce and adult Arctic Terns were seen to bring oversized sprats and pipefish to small young which subsequently died of starvation (Steel, 2005). There were two brief periods in 2005 when food appeared to be in short supply and pipefish were also abundant in the 2006 season, resulting in the loss of up to 25% of early hatchlings, and in the final week of July with sixty-eight dead chicks collected on Inner Farne and forty-nine on Brownsman (Steel, pers. comm., 2006).

Vegetation

The decline in Arctic Tern numbers during the 1960s is probably linked to changes in vegetation. Throughout this decade the increasing erosion with consequent lack of campion and an increase in dock, chickweed and nettles, especially on Brownsman, all contributed to driving the terns away from their traditional nesting sites on this island, and probably played some part in the recolonisation of Coquet Island. In addition a luxuriant growth of docks and nettles on Inner Farne not only hampered nesting (Hickling, 1971) but in wet conditions caused the chicks to become waterlogged and die.

Until 1968 Rabbits were breeding on a number of the islands, especially Inner Farne, West Wideopens and Brownsman, and their activities were a contributory cause of the increasing soil erosion. Following a consultation with the Ministry of Agriculture, Fisheries and Food and a visit from a Pest Officer, it was decided to undertake control measures using gas, trapping and a lined ferret. These were implemented in the autumn resulting in the total elimination of Rabbits from Inner Farne with a few remaining on West Wideopens and Brownsman (Johnson, 1968). However correspondence in late 1972 (Hudson, 1972) makes it clear that the vegetation had not responded as was expected and there was serious discussion as to whether Rabbits should be reintroduced on Inner Farne. The final decision was deferred and a combination of machinery and two goats was used in the 1973 season to try to keep the vegetation under control (Harwood, 1973). The dilemma was finally resolved by an unauthorised reintroduction in 1974 (Hawkey *et al.*, 1983). This has not however solved the problem of rank vegetation and other methods of control have been employed since this time, though the use of chick shelters in wet weather can help to prevent water logging, if the chicks use them.

'Red Tides'

The two 'Red Tide' episodes of 1968 and 1975 (caused by the dinoflagellate protozoan *Gonyaulax tamarensis*) affected the Arctic Terns as well as Shags and Cormorants. In the 1968 event Arctic Terns were found to have an abnormally extended breeding season which resulted in increased predation by both gulls and Starlings. In addition female terns suffered some mortality caused by the presence of low levels of toxin which led to problems with egg laying (Coulson *et al.*, 1968). There was also an overall deterioration in breeding condition which lowered the clutch size and reduced breeding success by 60%, mainly due to the reduction in small fish around the islands (Coulson and Horobin, 1976).

The 1975 episode, though not as serious, would be expected to show similar effects. However, the extremely low numbers were a combination of events, the adverse weather in May, the consequence of high gull predation and the annual count occurring in May so any late breeding females would not be included.

Arctic Terns on Coquet Island and the Long Nanny

Arctic Terns nested on Coquet Island in large numbers in the 19th century (Bolam, 1912), but were possibly driven away by disturbance and the lack of protection on that island. The recolonisation of Coquet that occurred in 1960 was probably triggered by the ongoing gull predation and visitor disruption on the Farnes as well as the erosional problems on Brownsman. By 1970 the numbers had risen to 800 pairs, and since then there has been an average of around 700 breeding pairs per year, with a maximum of 1,155 in 2005.

In the 1970s a further colony was started on the mainland at the mouth of the Long Nanny Burn. Initially there were only a few pairs nesting spasmodically, but by the early 1990s the numbers had increased considerably, rising to a maximum of 1,780 in 2002.

Figure 7 compares the numbers of breeding pairs of Arctic Terns on the Farne Islands, Coquet Island and the Long Nanny; the dashed line shows the total number of breeding terns for all three colonies. Until 1998 the numbers on the Farne Islands were the dominant factor in the combined total, but as the colony on the Farne Islands declined that on the Long Nanny increased and became more important. The move from the Farnes to the Long Nanny in the late 1990 and early 2000s may have been a response to the high gull predation at that time coupled with the food problems in 1999.

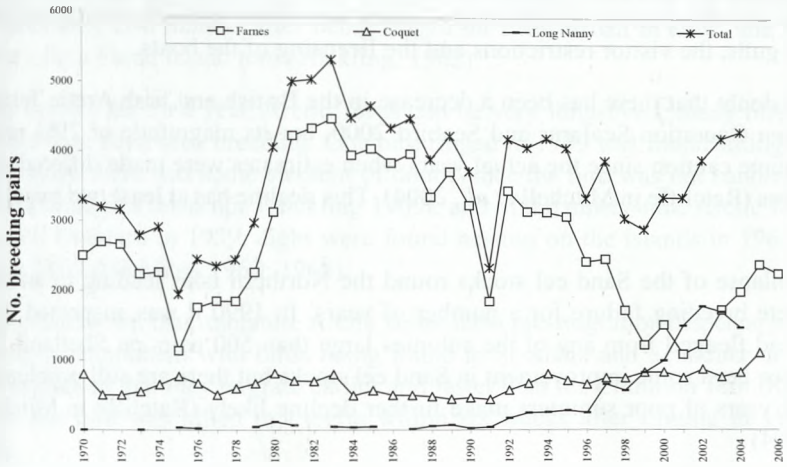

Figure 7 Arctic Terns on the Farne Islands, Coquet Island and the Long Nanny.

National Counts

Table 3 gives the total numbers of Arctic Terns in Britain and Ireland for the three major Seabird counts of the 20th century. The corresponding figures for the Farne Islands are also included.

There are however problems associated with counting Arctic Terns, one of which is that their nests are indistinguishable from those of Common Terns, and the adults can appear similar to inexperienced observers. Thus many counts pool numbers of both species and report them as Commic Terns. This is thought likely to provide only a minor bias from the estimate of national status and trends since Common Terns represent only a small proportion of the Arctic Tern population. It is also unlikely to affect the Farne Islands as the wardens know exactly where both species are. Other problems are due to the impractically of counting all the apparently occupied nests (the unit used) in a single season in areas where colonies are numerous and widely spaced. However, these can be overcome to a certain extent using flush counts of adults and then calibrating these against the number of nests at sample colonies to obtain an estimate for the number of breeding pairs (Ratcliffe in Mitchell *et al.*, 2004).

The 11% increase seen nationally between Operation Seafarer and the SCR can be somewhat explained by an increase in the population linked to food abundance, particularly

around Shetland and Orkney from the 1970s to the early 1980s. The Orkney figure was later substantially revised upwards after a reassessment of the large Papa Westray colony (Lloyd *et al.*, 1991).

Survey	Operation Seafarer 1969-1970	Seabird Colony Register 1985-1987	Seabird 2000 1998-2002
Britain and Ireland	52,288	78,764	56,123
Farne Islands	2,854	3,947	1,369

Table 3 Survey counts for Arctic Terns (breeding pairs).

The national increase would have made some contribution to the 38% increase seen on the Farne Islands over this period, but the major causes were most probably the controlling of the predatory gulls, the visitor restrictions and the licensing of the boats.

There is little doubt that there has been a decrease in the British and Irish Arctic Tern population between Operation Seafarer and Seabird 2000, but its magnitude of 29% must be treated with some caution since the actual years when estimates were made differed widely between regions (Ratcliffe in Mitchell *et al.*, 2004). This decline has at least two major causes:

1. The collapse of the Sand eel stocks round the Northern Isles leading to an almost complete breeding failure for a number of years. In 1990 it was suspected that no terns had fledged from any of the colonies large than 500 pairs on Shetland. There has since been some improvement in Sand eel stocks but there are still problems and several years of poor summers make further decline likely (Ratcliffe in Mitchell *et al.*, 2004)

2. Predation by Mink (*Mustella vison*) on the west coast of Scotland. Mink escaped from fur farms during the 1950s and 1960s, and by 1994 were widespread along the west coast and throughout Harris and Lewis. Their expansion has since continued into the Uists and along the mainland coast to Skye. Mink predation causes complete breeding failure and will eventually lead to the abandonment of the site. Measures are being taken including an eradication programme in the Outer Hebrides and the fate of Arctic Terns along the West Scottish coast could well depend on the success of this project (Ratcliffe in Mitchell *et al.*, 2004).

The complete failure of the tern colonies in the Northern Isles must have played some part in the decline seen on the Farne Islands between the Seabird Colony Register count and Seabird 2000 as such failures limit the number of potential recruits available. It is also unfortunate that Seabird 2000 took place at a time when there was a high level of gull predation which may account for the increases in the Arctic Tern population at the Long Nanny, but these however do not compensate for the decline on the islands and the most likely explanation is that there is a continuing reduction in the food supply (Ratcliffe in Mitchell *et al.*, 2004).

Ringing

There has been a long history of ringing on the Farne Islands, and up to 1986 over 49,836 Arctic Terns, mainly pulli, had been ringed. To this date there have been approximately 1,343 recoveries/retraps of which 1,087 (80%) were on the islands. It is hardly surprising

that there have been so few recoveries abroad since these terns undertake one of the most extensive migrations of any seabird. Much of their route is over the sea and their non breeding season is spent at the edge of the Antarctic pack ice (Monaghan in Wernham *et al.*, 2002). Nevertheless valuable information has still been obtained as to premigration dispersal, migration routes, longevity and inter colony exchange.

Most Arctic Terns are recovered within a few months of ringing, though by this time they can have travelled great distances. Birds have been found in the Urals (Hickling, 1963), Europe, West Africa, South Africa, and two have been recovered in Australia in 1973 (Hawkey and Hickling, 1973) and in 1982. This latter, an immature bird, was found within one hundred days of ringing and had travelled 17,509km (Hawkey and Hickling, 1982), while in 1961 one was killed against a Japanese whaling vessel in the Southern Ocean in December only five months after being ringed on Brownsman in July - the first Antarctic recovery for a Farne Island tern (Hickling, 1962).

If they survive the first year, Arctic Terns can be very long-lived; many birds over twenty years old have been seen breeding. One bird ringed in 1939 was found sitting in a scrape in 1968, though there was some element of doubt since the bird was not handled and the ring was read through a telescope (Hickling 1969), and of the ninety-nine Arctic Terns ringed by T Russell Goddard in 1939, eight were found nesting on the islands in 1966 and three of these in 1967 (Hickling, 1967; 1968).

Ringing has shown that immature Arctic Terns show pre-migration dispersal which can have a northerly component with birds being found in Scotland and Scandinavia. There is also some indication that they migrate earlier and faster than the Common Tern (Radford, 1962). In fact one bird was killed in Liberia within six weeks after ringing in 1964 (Hickling, 1965).

Much evidence has been obtained concerning inter colony exchange, with birds ringed on Coquet Island, the east coast of Scotland and Denmark being found on the Farnes, and Farne Island ringed birds found breeding on Coquet, the eastern Scottish colonies and probably Belgium and Scandinavia.

In 1986 ringing stopped on the Farne Islands (see Sandwich Tern). With the resumption of ringing in 1996 specific monitoring goals were set to estimate survival rates through recoveries and ring resightings, and chick survival rates from year to year in relation to colony habitat and the monitoring of the body condition of young terns to study variations in characteristics of growth in different years and colonies using the chick mass in relation to the total head length (Walton, 1998). Such data over a period of time may reveal nutritional constraints even in years without substantial chick mortality and could even indicate local differences in the food between the inner and outer groups (Redfern in Steel, 2006).

CONCLUSION

Arctic Terns are Britain and Ireland's most numerous breeding tern, though their population is concentrated in the North and West of Scotland. In the east their distribution ends in Northumberland with the exception of three tiny colonies in East Anglia (Ratcliffe in Mitchell *et al.*, 2004), and the Farne Islands together with Coquet Island and the Long Nanny held around 7% of the British total in 1996 (Walton, 1997).

Their population has always fluctuated since this species is particularly susceptible to disturbance and poor weather. However if the existence of a long term periodicity is correct these short term fluctuations are superimposed on a much longer cycle where the numbers build up rapidly to a maximum then undergo a lengthy decline.

It is most likely that the cause of the present decline of the Arctic Terns is a reduction in the food supply. One possible reason could be the high auk population. In 2006 there were over 55,000 pairs of Puffins *Fratercula arctica* together with 32,000 pairs of Guillemots *Uria aalge* and over 300 pairs of Razorbills *Alca torda*, and these species that can dive to a much greater depth than the dip feeding Arctic Terns may be depleting the food supply at the surface and forcing the terns to move to other colonies where this is not a problem. Studies by the Marine Research Group have shown however, that while the Arctic Terns forage around the islands the auks travel much greater distances.

The most likely reason for the decline of the food supply is climate change. It is feared that the consequent rise in sea temperature will force the cold water plankton in the North Sea to move further north, allowing warm water plankton into the southern North Sea. The breeding cycle of this warm water plankton is not in synchrony with the North Sea eco-system hence the small Sand eels will not be at the surface when the terns' eggs are hatching.

It must not be forgotten that Arctic Terns winter in Antarctica. If there is a meltdown of the Antarctic ice sheet it will leave a low salinity lid over the sea surface of unknown depth and extent and if this is the case the food supply could be at too great a depth for the terns to reach.

If either of the above problems occurs then numbers will inevitably continue to fall despite any management in place.

Common Tern *Sterna hirundo*

Historical records to the Present Day

Willughby (1678) stated that 'Pickmires or Sea Swallows' nested on the Farne Islands, and in 1771, Pennant reported that 'Great Terns' were so numerous that in 'some places it was difficult to tread without crushing some of their eggs' (Hutchinson, 1778). From the descriptions given these both appear to be Common Terns *Sterna hirundo*, and not the other tern species (Gardner-Medwin, 1985). The problems concerning both Common and Arctic Terns in the 19th century have already been discussed and are the main reasons why there is so much confusion regarding the status of Common Terns over most of this time.

All available accounts are however in agreement that the principal breeding island was West Wideopens, with in most years a few pairs on Knoxes and occasionally Brownsman (Saunders, 1866; Cordeaux, 1892) and though Cordeaux (1892) noted Common Terns at Longstone at the time of his visit, there is no evidence that they were nesting there at the time, though it is probable that they did earlier after Darling encouraged the terns to breed on Longstone after he moved from Brownsman in 1826 (Howitt, 1842).

In the 20th century West Wideopens and probably Knoxes remained the two principal islands until at least 1920, with a few breeding pairs on Brownsman (Miller, 1911-1914) and Longstone (Temperley, 1896-195; Miller, 1911-1914). The start of a small colony on Inner Farne was first documented in 1923. This was usually on the higher part of the island and

somewhat apart from the Arctic Terns (Craw, 1926). Common Terns appeared to desert both West Wideopens and Knoxes prior to 1925, as Goddard (1925-1948) never saw any on either of these islands despite a number of visits.

From around 1925 to the start of World War II, Inner Farne was the principal island, with occasionally a few pairs on Brownsman and the Longstone complex. There is no information available on the status of Common Terns on the islands during the war, and though individuals may have been present in both the 1946 and 1947 seasons there was no evidence of breeding, which was only obtained in 1948 when Goddard was convinced that some of the young terns he was ringing on Longstone End were of this species (Goddard, 1948).

Common Terns, as did all the tern species, flourished on Longstone while Lewis was the principal light keeper, but after he was transferred in early 1954 Inner Farne once again was quickly re-established as the favoured site. Though they continued to use Longstone for a few years after Lewis left, numbers declined rapidly and after 1959 breeding became very spasmodic and none has nested there since 1973. For a couple of seasons in the mid 1950s West Wideopens enjoyed a brief final resurgence, but Common Terns have not bred on this island since 1957.

For the last thirty years Inner Farne and Brownsman have been the only sites used, with usually the bulk of the population on the former island, though from 2001-2003 the whole population nested on Inner Farne. The 2004 season saw a welcome return to Brownsman, with successful breeding confirmed in 2005 for the first time since 2000 (Steel, 2006).

Evidence for Numbers

Numbers appeared high in the 16th and 17th centuries, at least at the time when Willughby and Pennant were writing (Gardner-Medwin, 1985), but it cannot be assumed that they would be the only tern species breeding. Common and Arctic had only been recognised as separate species in 1758 and 1763 and were not adequately described until the second decade of the 19th century (Holloway, 1996). Similarly Sandwich and Roseate Terns had not been distinguished until 1787 and 1813 (Peters, 1934) and these other species would almost certainly be present.

The majority of observers would be unable to separate Common and Arctic Terns throughout the whole 19th century and this is one of the reasons why most of the published accounts refer generally to 'terns' rather than specifying which species. It is thus not easy to ascertain the exact size of the Common Tern population, or even to be certain of any population trends.

For at least the first half of the century, numbers appeared low, Selby (1833) considering there to be up to eight breeding pairs each year, and in 1865 Brown (1866) thought that for every Common Tern there were ten Arctic Terns. Hancock (1874) and Chase (1884) both considered Common Terns to be abundant and so there does appear to have been some increase; however Hook (1882) only saw one and Nelson (1887) could not find any in 1885.

Nevertheless there does seem to have been a decline around the late 1880s (Gurney, 1889-1890) and in 1892 Paynter (Anon, 1893) reported that Common Terns had not bred recently and described an unsuccessful attempt to reintroduce them by placing their eggs into Arctic Terns' nests. However by the end of the century Bolam (1901) considered them to be 'as numerous as ever'.

For the whole of the 20th century to the present time Common Terns have only been a minor breeding species on the Farne Islands, and there are thus periods in the 20th century when the only information available is a note at the end of the annual report stating that they had bred and sometimes the number of chicks ringed.

There are hints of a decline in the early part of the 20th century (Bolam, 1877-1933a), but it seems that by 1908 numbers had crept up again (Bolam, 1877-1933a), and by 1920 Bolam recorded a large colony on West Wideopens (Bolam, 1877-1933a); even so Booth (1921) who had visited the islands each year between 1906 and 1914, considered that for every pair of Common Terns there were hundreds of Arctic Terns.

Little information is available between 1924 and 1946 but it would seem that only a few pairs nested, and in some years, such as 1935, none at all. The highest number recorded at that time was twelve pairs on Inner Farne in 1939 (Goddard, 1925-1948: 10 June 1939), though Marples claimed to have seen considerable numbers on Longstone in 1932 (Marples and Marples, 1934). Unfortunately these were not mentioned either by Goddard or in the Farne Islands Association report for that year, and in view of other inaccuracies in this book it must be regarded as a somewhat questionable record. Inner Farne seems to have been the favoured island from 1925-1939, with occasionally a few pairs on Brownsman, Northern Hares and Longstone. The inner group of islands were badly affected during World War Two and it is not surprising that they were not believed to have bred until 1948 (Goddard, 1948). During 1949-1952 the reports stated only the total numbers of the mixed Arctic and Common Tern colonies on the Longstone group; however, using the figures for each of these species given separately for 1953, and assuming a similar percentage of each, it has been possible to arrive at an estimate for Common Terns for some of these earlier years. Though these are only approximate, and do not include the few pairs on Brownsman they are in accordance with the Bird Reports, which indicate that the population was increasing, particularly on Longstone under the protection of Lewis the light keeper there. After the 1954 season gull predation and visitor disturbance caused a rapid decline and they moved to Inner Farne. The highest-ever number of Common Terns was recorded in 1956 with 300 pairs on Inner Farne and a second colony on West Wideopens giving a total of over 500 breeding pairs (Hickling, 1957). 1958 to 1968 is another period for which there is a lack of information though from the numbers of young ringed it appears that once again the population was declining. The appointment of a Peter Hawkey as the first permanent Warden-Naturalist in 1971 was the start of the regular bird counts.

Underlying the fluctuations seen in Figure 8 their population increased from 1969 to 1988. The initial impetus for this appears to have been in the early 1970s when the seasonal wardens became resident for a much longer period, together with the establishment of paths on Inner Farne which restricted access for the first time to specific areas rather than the whole island. From 1988 the population declined to 2003 when it reached the lowest level for twenty-five years. Since then there has been a welcome recovery. Previously the Common and Arctic Terns nesting on the 'top meadow' on Inner Farne formed separate colonies but in the last two seasons the two species have become intermixed, which can cause problems at the annual count as the eggs are very difficult to distinguish (Steel, pers. comm., 2006). Hence the exact extent of the increase in 2005 and the decline in 2006 should be treated with some caution.

Reasons for change on the Farne Islands

The reasons for the changes in population of Common Terns are in most cases the same as those for both Sandwich and Arctic Terns and are considered in some detail in the accounts for these species. Consequently it has been decided only to list them:

Human Persecution and Egg Collecting (see Arctic Tern)

Visitor Disturbance (see Arctic Tern)

Large Gull Predation

Gull predation would have been particularly intense for most of the 19th century and was probably the main reason why Common Terns were concentrated on the inner group, as Knoxes was considered to be relatively free from the Lesser Black-backed Gulls (Paynter, 1892; Morres, 1896). The disturbance and predation that were particularly intense in 1922 drove all the terns away and resulted in complete breeding failure that season (Minutes of Conference, 1923) and though they all returned in 1923, it is from this time that Common Terns deserted Knoxes and the West Wideopens, and Inner Farne became their principal island. There was a further desertion in 1927 that the watchers thought was again caused by predation (Thorp, 1928).

Figure 8 shows the total number of breeding pairs of Common Terns from 1924-2006. The most notable feature is the large fluctuation in numbers that can occur in successive seasons; decreases of up to 70% are followed by recoveries of over 100% in the next year. This is however typical behaviour for Common Terns; they can utilise a wide range of habitat and will move between colonies in different years in response to predation or habitat change. This and their generalist diet mean that variations in the proportion of mature birds that attempt to nest are minimized (Ratcliffe in Mitchell *et al.*, 2004).

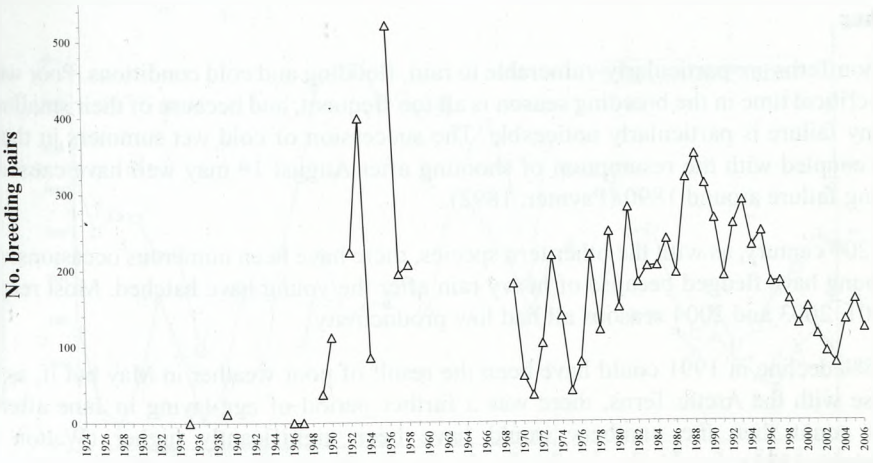

Figure 8 Common Terns on the Farne Islands 1924-2006.

The decline from 1989 was probably initiated by a build up of large gulls on the outer group, and the increasing predation on Brownsman throughout the 1990s led to a cessation of breeding on this island in 2001, after over thirty years of continuous use. In the same season a combination of heavy predation and poor weather on Inner Farne caused high chick mortality, with only nine young fledging from thirty monitored nests (Harvey, 2002). Hard

work by the outer group wardens has succeeded in reducing the predation and in 2005 Common Terns once again returned successfully to Brownsman (Steel, 2006); however all four nesting pairs failed at the egg stage in 2006 due to heavy predation (Steel, pers. comm., 2006).

Figure 9 shows the Common Tern and large gull populations from 1972 and though the use of a secondary axis may over-emphasise the change it appears that the effective controlling of the gulls from 1975 allowed the Common Tern numbers to continue their increase, especially on Inner Farne, to their highest level for over thirty years in 1988.

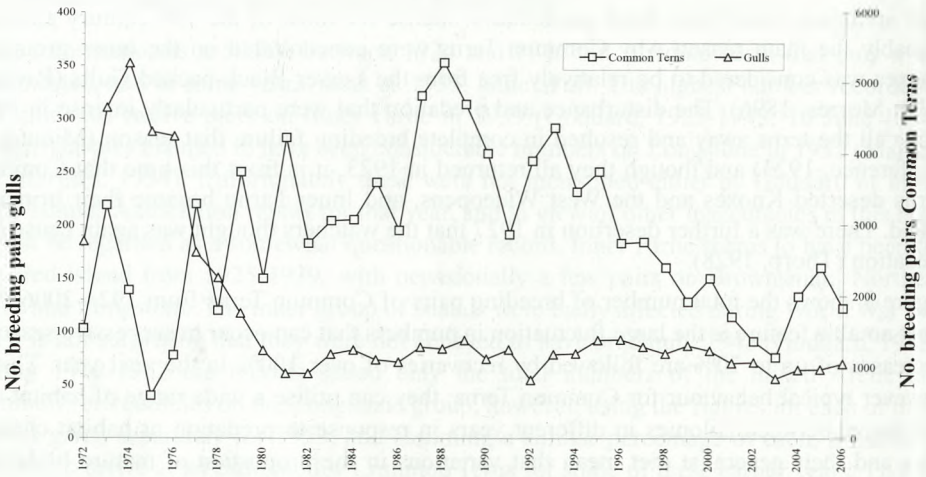

Figure 9 Common Tern and large gull populations 1972-2006.

Weather

Common Terns are particularly vulnerable to rain, flooding and cold conditions. Poor weather at a critical time in the breeding season is all too frequent, and because of their small numbers any failure is particularly noticeable. The succession of cold wet summers in the late 1880s coupled with the resumption of shooting after August 1st may well have caused the breeding failure around 1890 (Paynter, 1892).

In the 20th century, as with the other tern species, there have been numerous occasions when few young have fledged because of heavy rain after the young have hatched. Most recently the 2001, 2003 and 2004 seasons all had low productivity.

The 28% decline in 1991 could have been the result of poor weather in May but if, as was the case with the Arctic Terns, there was a further period of egg-laying in June after the annual count then the numbers would have been significantly higher (Walton and Richardson, 1991).

Food Supply

In comparison with the other tern species, Common Terns have a much broader diet, and so their survival and productivity are much less prone to changes in food availability (Ratcliffe in Mitchell *et al.*, 2004); even so there have been occasions on the Farne Islands when there have been problems. A further reason for the mass desertions in 1922 and 1927 was thought

to be a lack of food (Minutes of Conference, 1923), but at the time it was not taken seriously as other species had done well (Thorp, 1928).

More recently the 1999 season was a disaster for this species, as it was for the Sandwich and Arctic Terns, with only nine young Common Terns fledging from 128 breeding pairs because of the lack of Sand eels at the top of the water column (Walton, 2000).

'Red Tides'

Common Terns were affected, as were the other tern species, by the two 'Red Tide' outbreaks of 1968 and 1975. On each occasion the peak of mortality coincided with the onset of egg-laying. The terns had ingested the toxin from the Sand eels and though not in lethal concentrations it was sufficient to cause difficulty in laying, hence the majority of victims were females (Coulson *et al.*, 1968). In 1968, only nineteen Common Tern young were ringed in comparison to 320 the previous year (Hickling, 1969). The situation in 1975 was complicated by a prolonged period of cold, wet weather throughout May and for both outbreaks by a lack of small fish (Coulson and Horobin, 1976), thus the 71% decline seen this season is not too surprising.

Common and Arctic Terns on the Farne Islands

Competition has been suggested to occur among the tern species, though little has been documented (Ratcliffe in Mitchell *et al.*, 2004). Figure 10 shows the number of breeding pairs of Common and Arctic Terns on the Farne Islands from 1969 to 2006. Both species show a similar trend in increasing to a maximum and then declining, but the maximum for the Common Terns is a few years later than that for the Arctic Terns, and it seems that the Arctic are suppressing the Common Terns, and only when the former start to decline can the latter achieve their maximum.

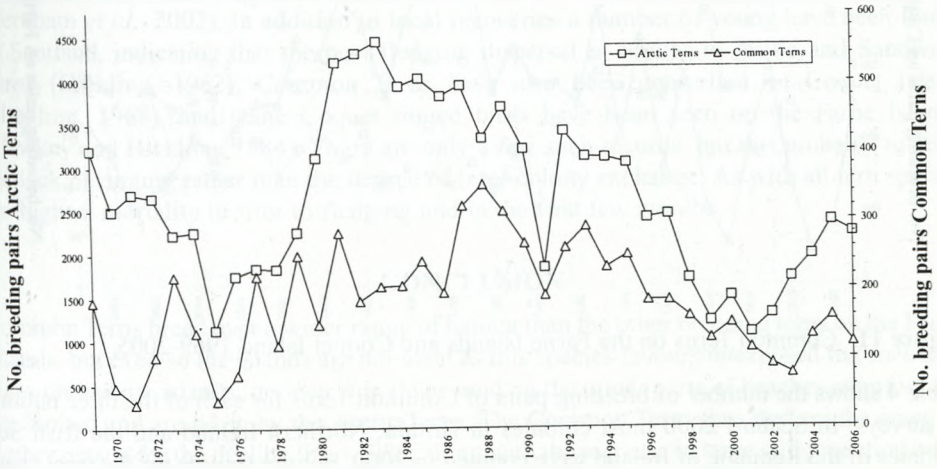

Figure 10 Common and Arctic Terns on the Farne Islands 1969-2006.

Common Terns on the Farne Islands and Coquet Island

Hewittson (1838) and Hancock (1874) both recorded Common Terns as nesting on Coquet Island in the 19th century, but the disturbance and vandalism which were prevalent during

many of these years probably caused the island to be deserted, and it was not recolonised until 1958 (Galloway and Meek, 1978-1983). This was at a time on the Farne Islands when there was increasing persecution from the predatory gulls, and egg stealing and other visitor problems were common.

National Counts

As with the other tern species Common Terns are counted in units of Apparently Occupied Nests (AONs), either along transects through the colony, or of apparently incubating adults from a vantage point. Identification problems can arise where Common and Arctic Terns can occur in the same colony; Common Terns often nest in discrete groups, so counts of each species can be separated spatially, however where the nests are intermixed, counts of incubating adults are preferable (Ratcliffe in Mitchell *et al.*, 2004).

Common Terns may move between colonies in different years in response to predation or habitat change, thus all the counts should be within a single year to minimise pairs being included twice, or not at all.

Figure 11 compares the Common Tern population on the Farne Islands and Coquet Island between 1969 and 2005. The large seasonal fluctuations, which were such a feature of Figure 8, can be seen again on Coquet Island and these can be synchronous or opposed to, those on the Farnes. Of the two Coquet is by far the most important site and though in the past they may have been behaving as a single colony, the increase in the dispersal of this species means that there are now a number of other small colonies in the area as well.

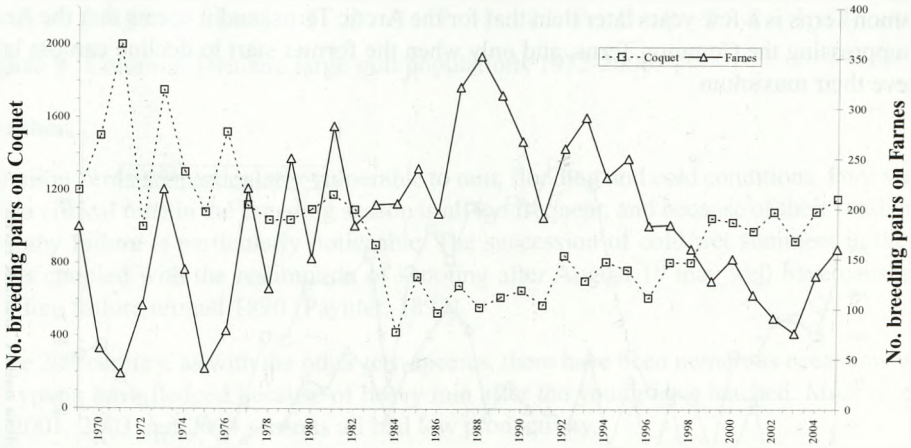

Figure 11 Common Terns on the Farne Islands and Coquet Island 1969-2005.

Table 4 shows the number of breeding pairs of Common Terns for each of the three national surveys. In Seabird 2000 most colonies in Britain, Northern Ireland and the Irish Sea colonies of the Republic of Ireland were counted in 2000, but the figures for the west coast of Ireland were from 1995 and those for County Wexford from 1999, though this was not however considered to be a problem. During the SCR survey, counts were made in different years within regions so intercolony movements may have produced some inaccuracies. Furthermore Common Terns,unlike the other tern species nesting in Britain and Ireland, have an extensive inland component in their breeding range, and coverage of such sites was probably less complete for the SCR count than for Seabird 2000. Thus the national decline

from the earlier count would be somewhat greater than indicated (Ratcliffe in Mitchell *et al.*, 2004).

Survey	Operation Seafarer 1969-1970	Seabird Colony Register 1985-1987	Seabird 2000 1998-2002
Britain and Ireland	14,890	14,861	14,497
Farne Islands	121	252	150

Table 4 Survey counts for Common Terns (breeding pairs).

Overall the status of Common Terns has remained broadly stable at national level though individual regions have seen changes in distribution reflecting local pressures, such as predation and habitat change. Common Terns have the ability to exploit new situations and will rapidly move into suitable industrial complexes, quarries, factory lagoons and gravel pits where rafts have been provided (Ratcliffe in Mitchell *et al.*, 2004).

Table 4 also includes the relevant figures for the Farne Islands. The large increase between Operation Seafarer and the SCR has already been discussed and is a consequence of the control of the predatory gulls and the new visitor restrictions. Between the SCR and Seabird 2000 is the period over which gradual increase in predation and possibly habitat change caused desertion to Coquet Island and the new inland colonies that were being created.

Ringing

Up to 1986 a total of 2,905 Common Terns had been ringed, out of which there had been seventy-eight recoveries (2.7%).

The majority of recoveries have been from their wintering quarters in North West Africa, where as with Sandwich Terns they are at risk from deliberate trapping (Norman in Wernham *et al.*, 2002). In addition to local recoveries a number of young have been found in Scotland, indicating that the post-fledging dispersal is similar to Arctic and Sandwich Terns (Hickling, 1962). Common Terns have also been controlled on Coquet Island (Hickling, 1968), and some Coquet ringed birds have been seen on the Farne Islands (Hawkey and Hickling, 1984). There are only a few such records, but this probably reflects the lack of ringing rather than the degree of inter-colony exchange. As with all tern species the highest mortality is prior to fledging and in the first few months.

CONCLUSION

Common Terns breed over a wider range of habitat than the other breeding terns on the Farne Islands, but even so the islands are not ideal as this species favours unexposed flat rock surfaces on inshore islands, or open shingle or sand on the upper parts of beaches, all of which are limited and are taken by the Arctic Terns. The Common Terns thus nest on the grass. A further reason for the decline from 1988, along with the increase in large gull predation, may be the change in the vegetation that has taken place.

This species is not as dependant on Sand eels as are the other breeding terns and has the ability to switch to other prey if necessary, so while they may be able to cope with this aspect of climate change, the increase in frequency and intensity of summer storms will still be a problem.

Common Terns are not and have not been for over a hundred years a major breeding species on the Farne Islands, but they are a part of the biodiversity of the Farne Islands and as such are valued.

Roseate Tern *Sterna dougallii*

Historical Records to the Present Time

Roseate Terns *Sterna dougallii* were first described as a distinct species in 1813 (Peters, 1934), and within a year or two of this date were identified by Darling as breeding on the Farne Islands (Selby, 1826; Darling, 1795-1860). However the first definitive record is from Bewick who in 1820 used an individual shot on the islands as a model for his woodcut (Bewick, 1826). Selby (1826) described two colonies, one next to Arctic Terns, probably Brownsman, and the other on one of the Wamses.

Though a number of accounts note the presence of breeding Roseate Terns little information is available concerning the actual islands, but it appears that Brownsman was in use until at least 1865 (Saunders, 1866), whereas Selby (1826; in Tate, 1857) is the only author to list the Wamses, though his account for 1857 is very similar to that of 1826. Nesting was reported on West Wideopens for the first time in 1851 and again in 1856 (Newton, 1864-1907), and on the Knoxes in 1884 (Bolam, 1877-1933b: 25 June 1884; Evans, 1911). These as far as can be ascertained were the only islands used until well into the 20th century. Evans (1911) however notes that 'It has also been reported to us on one occasion from the Longstone, whether rightly or wrongly it is impossible to say'.

Roseate Terns were found on the Longstone group in 1925 (Thorp, 1925), the only confirmed occasion until 1949 when, under the protection of Lewis, the principal light keeper, a colony became established. Though Lewis left in 1954, numbers remained high until 1958 after which gull predation and visitor disturbance caused a rapid demise, and none has nested there since 1959.

Until the mid 1920s, West Wideopens and Knoxes were the only islands regularly used, then in 1930 Goddard (1925-1948: 14-15 June 1930) recorded nesting once again on Brownsman where they have since bred each year to 1992. Among the nesting sites used have been under an overhang on the edge of the pond, at the north end near an old windlass and, most popular of all, in the rock wall and adjacent area overlooking the lower garden (Hickling, *ca* 1983).

Roseate Terns were first documented on Inner Farne in 1939 (Goddard, 1925-1948: 28 June 1939), and this and Brownsman were the only islands used until 1992, except when a few pairs nested on West Wideopens in 1955 and 1956. They failed to breed on the Farne Islands in 2003 and 2004, but happily one pair returned for each of the 2005 and 2006 seasons (Steel, 2006).

Evidence for numbers

Initially Selby described Roseate Terns as being 'numerous' (1826), 'in considerable numbers' (1831) and 'plentiful' (1833), in his first three accounts of breeding birds on the Farne Islands, yet Hewitson (1838), who probably visited just prior to the publication of his *British Oology* could only find a 'few pairs' mixed in with Sandwich and Arctic Terns (Bannerman and Lodge, 1962). If this is indeed the case, then despite the vagueness of words such as 'numerous', 'considerable numbers' and 'plentiful', there must have been a rapid decline.

For the remainder of the 19th century all accounts indicate that this was a scarce species with between one and three pairs breeding in most years, though the ability of the Watchers to distinguish between Arctic, Common and Roseate Terns was questioned (Nelson, 1887). It is however probable that there were occasions when none nested at all, especially from the mid 1870s to the mid 1880s when there was particularly intense persecution. The increase in protection afforded by the Farne Islands Association from 1888 allowed the few pairs to re-establish themselves. It is worth noting that though Bolam did not see any Roseate Terns on his visits in 1897, 1899 and 1901, the Watchers assured him that the usual two/three pairs were present on each occasion (Bolam, 1912).

There appears to have been a slight increase just before the First World War and Table 5 shows the numbers from 1912-1914; the seven pairs in 1914 were considered a high point in Roseate Tern numbers (Bolam, 1932).

Year	Reference	No of Breeding pairs	Comment
1912	Fortune (1913b)	4/5	Supposed to have nested, 2 pairs on Knoxes.
1913	Paynter (1914)	4	All said to have hatched off.
1914	Bolam (1932)	7	At least 6 pairs hatched, and most young reared.

Table 5 Roseate Tern numbers in the early 20th century.

Best (1916), who visited regularly, also considered that 'they were steadily if slowly increasing'; unfortunately after this account there is no other specific information until Goddard's accounts in the 1930s and his numbers are incorporated into Figure 12 (Goddard, 1925-1948). Though it is not noted, Roseate Terns presumably deserted along with the other terns in 1922 (Minutes of Conference, 1923).

Figure 12 shows the number of breeding pairs of Roseate Terns from 1930 to 2006. It appears the chart can be divided into four sections; (i) 1930-1952; (ii) 1953-1970; (iii) 1971-1990 and (iv) 1992-2006:

(i) 1930-1952. Starting in 1929 there was a slow but steady build up in their population (Thorp, 1930). This continued throughout the 1930s and reached its peak in 1940 with thirteen pairs nesting (Goddard, 1925-1948: 17 June 1940). No figures are available for World War II, and though Roseate Terns continued to nest on Brownsman (Thorp, 1941; 1945; 1946), there appears to have been some decline (Goddard, 1946), but by 1948 their numbers had returned to pre-war levels (Goddard, 1948). There was then a rapid rise starting with a 64 % increase in 1949 and reaching probably a record a total of thirty-three pairs in 1951.

(ii) 1953-1970. This period is characterised by dramatic fluctuations in numbers with large increases followed by sharp declines; the 200% rise in 1953 followed by a 55% decline in 1954 and the 72% increase in 1961 with the 76% decline in 1972 are perhaps the most extreme. It is no coincidence that the largest and possibly the most successful single colony of Roseate Terns on the Farne Islands was on Longstone End in 1953 where Lewis, the principal light keeper on Longstone, provided such effective protection that 140 young were ringed from ninety-three pairs (Watt, 1954). After 1959, the colonies on Brownsman and Inner Farne started to increase, rising quickly to a maximum of sixty

breeding pairs on Brownsman and forty pairs on Inner Farne in 1961 (Hickling, 1949-1986). This is possibly the greatest number of Roseate Terns ever seen on the islands and occurred at a time of increasing national population, which peaked in the early 1960s (Lloyd *et al.*, 1991). Unfortunately, from 1965-1967 inclusive the only information available for Inner Farne is the number of young ringed. Complete data is available for Brownsman, and using this, the average number of young per nest for each season has been calculated. This value has then been used to obtain an estimate for Inner Farne. Though the figures are only approximate they do mirror the trends noted in the relevant Bird Reports and give some idea as to the total number of pairs present in these seasons.

(iii) 1971-1989. Throughout these years numbers still fluctuated in successive seasons but not as intensely as previously, although the average number of fifteen breeding pairs per season compared to fifty-nine for 1952 to 1970 highlights the continuing overall decline in population. There was then another rise between 1984 and 1988, followed by a sharp decline. These changes were not reflected on Inner Farne, where from 1979 onwards, with the exception of 1982 when two pairs nested, only one breeding pair was present, and from 1984 to 1988, though they were seen displaying in at least two seasons, no nests were ever found. Nest boxes, which had been successful in other colonies, were put out on both islands in 1988 and 1989 but were not used (Hawkey, 1989a; 1989b).

(iv) 1990-2006. This period is characterised by a slow decline. Initially three to four pairs nested, then two to three and finally only one pair, then in 2003 no Roseate Terns nested on the Farne Islands, though displaying birds were seen in the 2004 season (Steel, 2005). Happily a pair returned in both 2005 and 2006.

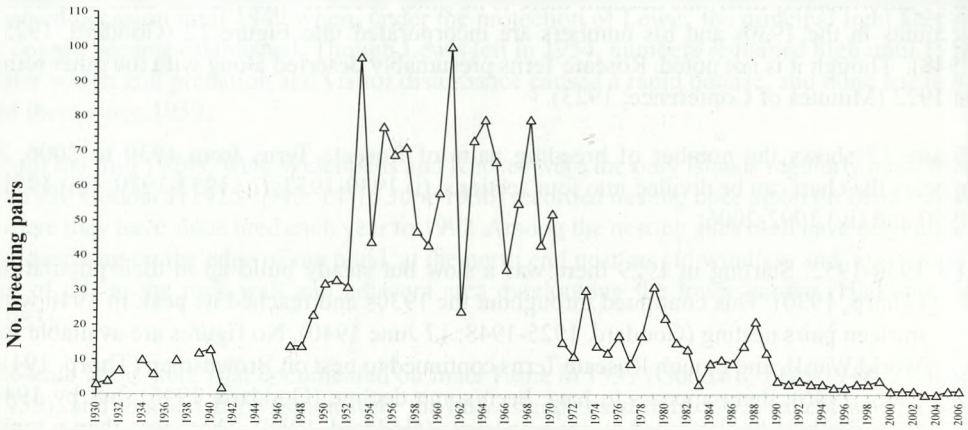

Figure 12 Roseate Terns on the Farne Islands 1930-2006.

Nest boxes, which were first pioneered in the USA, and were regularly used in most British colonies, were tried again in 1991 with the same results as previously (Walton and Richardson, 1991). However in 1993 they were not introduced until after the birds had nested and as the 1993 report states 'the chicks took to them like proverbial ducks to water' (Walton, 1994). In 1994 a tyre was placed on the Inner Farne breeding site, after an article in 'BBC Wildlife' had described their use with Roseate Terns on a reserve in the USA. Both pairs that year nested close to it, and the chicks initially used it as a shelter before moving into the nest boxes (Walton, 1995). Since then both tyres and nest boxes have been regularly used. A Roseate Tern terrace together with nest boxes was constructed on the bank over-

looking St Cuthbert's Cove on Inner Farne at the end of the 2001 season and though it was not used, additional ones were built for 2004 and 2005 (Harvey, 2002; Steel, 2004). In 2005 a single pair successfully bred on the most recent terrace (Steel, 2006), and while the returning pair nested in the rim of a tyre among the Sandwich Tern colony in 2006, after hatching the chick moved to a terrace where it was successfully raised (Steel, pers. comm., 2006).

Reasons for Changes on the Farne Islands

The reasons for change in the Roseate Tern population are in most cases the same as those for the other breeding tern species and they are dealt with in greater detail under Sandwich and Arctic Terns.

Human Persecution and Egg Collecting

The decline in the Roseate Tern population noted from around 1834 is in line with that seen for all the breeding species and is a consequence of the intense shooting and egg collecting that was particularly prevalent at that time (see Arctic Tern).

Visitor Disturbance

As with the other breeding species Roseate Terns were affected by the ongoing visitor disturbance prevalent throughout the 19th century (see Arctic Tern). The 55% drop in 1954 was a consequence of the departure of W J Lewis in the March of that year, and the continuing visitor disturbance and large gull predation on Longstone led to the decline and eventual demise of this most successful Roseate Tern colony by 1960 (Coulson and Hickling, 1961). The increase in Roseate Tern numbers on Brownsman and Inner Farne from that time is probably a direct result of the loss of Longstone End.

Figure 13 shows the changing populations on the individual islands. These movements are discussed throughout this section.

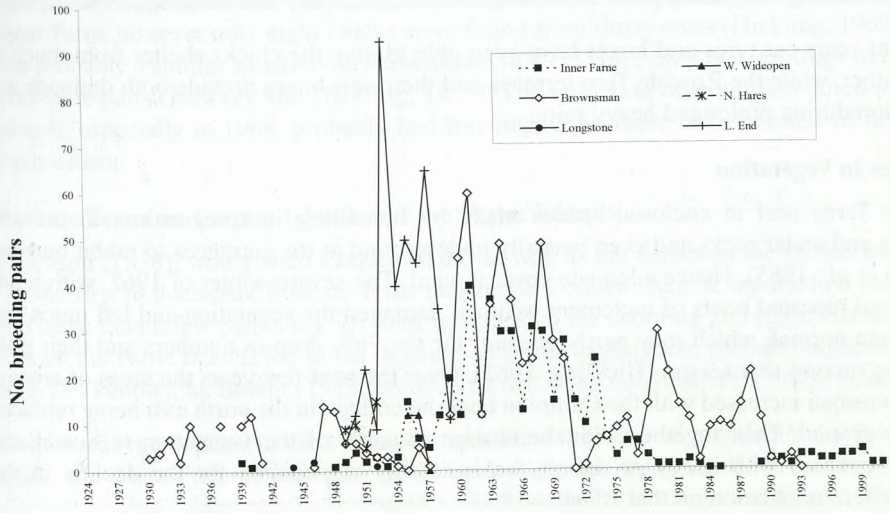

Figure 13 Roseate Terns on individual Farne Islands 1924-2003.

Large Gull Predation

Throughout the 19th and first part of the 20th century Lesser Black-backed Gulls were the dominant species on the islands (see Arctic Terns). The predation must have been particularly intense and was probably one of the reasons why, despite the increase in protection from the Farne Islands Association, Roseate Tern numbers did not increase (Blathwayt, 1902). It was also the main reason for the shift from the Knoxes and West Wideopens to Brownsman sometime in the 1920s, and as already stated large gull predation was an important factor in the destruction of the Roseate Tern colony on Longstone End.

Throughout the 1950s, despite continuous efforts to control these gulls, their population had inexorably increased. The implementation of the Egg Sanctuary Order (Hickling, 1965) in the 1965 season led to a dramatic rise in their numbers and was one of the reasons behind the decline of the Roseate Terns on Brownsman. In 1971 none nested on the outer group (Hickling and Hawkey, 1972) and the total of eleven breeding pairs in 1972 was the lowest since World War II (Hawkey and Hickling, 1972). The large gull population continued to increase and may have caused some terns to desert entirely; though it must be noted that during the 1970s Roseate Terns were rarely seen being harassed by these gulls (Walton pers. comm., 2007). Predation again increased on the outer group in the 1990s, and from 1993 Roseate Terns have nested only on Inner Farne, despite intensive efforts by the outer group wardens to encourage them back.

Weather

There is no information specifically relating to the effects of poor weather on Roseate Terns in the 19th, and little for much of the 20th century, though they would be affected by rain and storms as are the other tern species.

The 10% decline seen in 1983, however, was considered to be due to the continuous heavy rain and gales on May 26-27th that caused many of those Roseate Terns already present to disperse, leaving only three pairs remaining to breed (Hawkey and Hickling, 1983).

In recent years car tyres and boxes have been able to give the chicks shelter from much of the weather, while the Roseate Tern terraces and their nest boxes provide both drainage and protection during prolonged heavy rain.

Changes in Vegetation

Roseate Terns nest in enclosed spaces made by tunnelling into vegetation, in crevices between and under rocks and even partially underground at the entrances to rabbit burrows (Cramp *et al.,* 1985). Hence adequate cover is vital. The severe winter of 1962, with a late spring and repeated bouts of inclement weather, damaged the vegetation and left much less cover than normal, which may partly account for the 76% drop in numbers and their poor breeding success that season (Hickling, 1963). Over the next few years the areas of erosion on Brownsman increased with the Campion near the cottage in the north east being replaced by bare ground. This, together with the change in some of the vegetation to Sorrel and Nettles, coupled with heavy predation, was probably responsible for the decline in the Roseate Tern population on that island.

The stricter controlling of the large gulls from 1975 not only decreased the predation but would probably have enabled the vegetation to effect some recovery, as their activities are

one of the causes of erosion. This and the intensive work carried out by Hirons (1994) and Hornung (1976) finally enabled a high percentage of Brownsman to be successfully revegetated.

Food Supply

Roseate Terns are plunge divers, feeding on shoals of Herring, Sprat and Sand eels (Newton in Mitchell *et al.*, 2004), though they also practise kleptoparasitism and will steal prey from the other breeding terns, especially Arctic. This behaviour was first noted on Inner Farne in 1949 (Watt, 1951) and since then has been regularly observed.

The lack of food that drastically affected the breeding success of the other tern species in 1999 had less effect on Roseates. The four nesting pairs on Inner Farne were able to fledge three young, and at the same time provided enthralling viewing for the visitors (Walton, 2000), though this was an additional stress on both the Common and Arctic Terns.

The availability of food in their wintering quarters in Ghana is another factor that needs to be considered. There they feed mainly on Anchovies and Sardines which occur in dense shoals along the coast. However stocks fluctuate yearly and when food supply is low there can be problems of survival (Newton in Mitchell *et al.*, 2004).

The recent problems connected with the presence of Snake Pipefish locally round the islands seem not to have affected this species as they have been raising young quite late in the season at a time when Sand eels appear to have been relatively plentiful. Whether this will be a problem in the future remains to be seen.

'Red Tides'

Little has been written concerning the effect of the 'Red Tide' episodes in 1968 and 1975 on Roseate Terns. It would be expected that Roseate Terns would show similar effects (see Arctic and Sandwich Tern). Although forty pulli were ringed on Brownsman (from forty-nine pairs) fledging success was thought to have been low, with young being found dead. On Inner Farne however only eight chicks were found from thirty nests (Hickling, 1969). There was probably a similar situation on Brownsman in 1975 since only two nestlings were ringed from nine pairs (Hawkey and Hickling, 1975). The reduction of small fish noted round the islands, especially in 1968, probably had less impact on these terns because of their kleptoparasitism.

Roseate Terns on Coquet Island and the Farne Islands

Hewitson (1838), who visited Coquet Island as well as the Farnes in the 1830s, was probably the first to document Roseate Terns nesting on Coquet when he reported on each island 'no more than a few pairs only'. It then appears that the shooting and egg collecting prevalent on the Farne Islands led to the destruction of this colony too, probably sometime in the mid-18th century, as Bolam (1912) considered that none had nested for 50-60 years.

Coquet was recolonised in the 1950s at a time when the national population was reaching its peak, and when the predation and vandalism which was instrumental in the decline of the Longstone End colony may have caused some Roseate Terns to move to Coquet where there was much less disturbance. The population on Coquet grew rapidly in the late 1960s; the eighty confirmed pairs in 1965 had increased to 150 pairs by 1968 and to 230 in 1969, while at the same time there was also a small mainland colony of about ten pairs (Cadwallender,

2001). This increase is in contrast to the situation nationally where a decline had already started (Lloyd *et al.*, 1991) and it could well be that the deterioration of the vegetation on Brownsman and the predation from the ever rising large gull numbers caused a further movement from the Farne Islands to Coquet.

Unfortunately, this success is probably one of the reasons why, despite effort, numbers have not increased on the Farne Islands.

Figure 14 compares the population on both the Farne Islands and Coquet Island from 1970-2005. Both colonies show a significant decline in the 1970s though, as noted, this had already started on the Farne Islands, while the population on Coquet was still increasing. The data also mirrors the national trend, where numbers were continuing to fall from the peak in the 1950s and early 1960s Throughout the 1980s numbers remained stable with around 20-25 breeding pairs, then from 1990 the population started to increase. The intensive work carried out towards the end of the 20th century to create suitable habitat on Coquet, especially by building the Roseate Tern terraces with their nest boxes, has had a significant effect on the population (Cadwallender, 2001). In 2005 there were ninety breeding pairs, the highest number for over thirty years, thus making Coquet Island the most important British Roseate Tern colony.

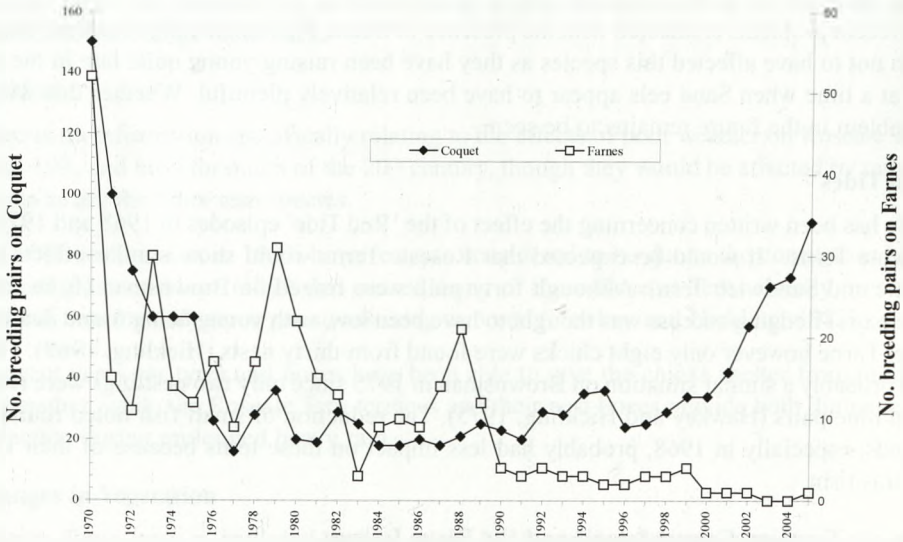

Figure 14 Roseate Terns on the Farne Islands and Coquet Island 1970-2005.

National Counts

Roseate Terns, as with all the British breeding tern species, may move between colonies in different years in response to predation or changes in habitat, and thus any census should survey all colonies within a single season. They are usually counted in units of AONs, ideally with transect lines, since surveying from a vantage point can miss nests hidden in long vegetation, among boulders or in Rabbit or Puffin burrows. Even though they nest in association with other tern species, both they and their eggs are easily distinguishable (Newton in Mitchell *et al.*, 2004).

Table 6 shows the number of breeding pairs of Roseate Terns in Britain and Ireland for each of the three national surveys, Operation Seafarer, The Seabird Colony Register and Seabird 2000.

At the start of the 20th century the Roseate Tern population was low, but better protection enabled them to increase, reaching a peak in the 1950s and early 1960s, with between 3,000-3,500 breeding pairs (Lloyd *et al.*, 1991). Thus by the time of Operation Seafarer numbers had already started to fall and so when the Seabird Colony Register count was undertaken in 1985-1987, the 77% decline from Operation Seafarer was the most severe of any British breeding seabird. The population then stabilised at around 500 breeding pairs until 1992, since when it has staged a slow recovery, with a 44% increase by the time of Seabird 2000. The 816 breeding pairs in 2003 was the highest seen nationally since 1980 (Newton in Mitchell *et al.*, 2004).

	Operation Seafarer 1969-1970	Seabird Colony Register 1985-1987	Seabird 2000 1998-2002
Britain and Ireland	2,384	550	790
Farne Islands	48	9	1

Table 6 Survey counts for Roseate Terns (breeding pairs).

The national decline in the 1970s was considered to be caused by poor immature survival which reduced the rate of recruitment into the breeding population. Roseate Terns winter in Ghana, where ringing studies have shown that large numbers of first year birds in particular are trapped by boys. An education programme implemented in the 1980s has had some success, and immature survival rates increased in the 1990s which may help to account for the increase seen by Seabird 2000 (Newton in Mitchell *et al.*, 2004).

A further important factor is the availability of good quality nesting sites to enable breeding pairs to maintain a high productivity to compensate for the relatively low adult survival. Such sites, which need the presence of other breeding terns, the absence of mammalian predators and large gulls are limited, particularly as most Roseate Terns nest on small off shore islands.

Table 6 also lists the corresponding figures for the Farne Islands. While the 81% decline seen between Operation Seafarer and the SCR survey is in line with that seen nationally, the increase in predation to 1975 and the erosional problems on Brownsman at that time must have caused a number to desert to other sites, probably Coquet Island.

Unfortunately, unlike the national trend shown by Seabird 2000 there was no increase in the number of pairs on the islands. The success of the Coquet colony in attracting new recruits and the increase in predation in the late 1990s and early 2000s may be two of the reasons to help account for this.

Ringing

Roseate Terns were first ringed on the Farne Islands in 1948, and from then to 1987 a minimum of 1,089 individuals have been marked, the majority as pulli. The first recovery came in August 1949, within three weeks of ringing (Watt, 1949) and subsequently at least a further nineteen have been found.

The first foreign recovery took place in 1961, when an immature was reported as being trapped in Ghana, West Africa, and then released without the ring (Hickling, 1962), since when an additional eleven others have been recovered in West Africa, the majority in Ghana. Of these individuals, a number have been released, probably lacking their rings.

Nationally to 1997, there have been a total of 873 recoveries, and of those found dead 75% were due to deliberate human capture. Roseate Terns migrate down the west coast of Africa and winter in Ghana. This is the time when trapping mainly occurs and is mostly carried out by boys, with the terns being caught for sport, food and profit. Furthermore as indicated by Farne Islands' records, it is the immature first year birds that are most at risk (Ratcliffe and Merne in Wareham *et al.*, 2002), thus posing a threat to future recruitment into the breeding population.

Resightings of adults show that there is a relatively high degree of natal dispersal, and inter-colony exchange, but because of the small number of Roseate Terns ringed on the islands there have been few such records. An individual was thought to have been controlled on Coquet Island in 1967 (Hickling, 1968) and in 1991 a bird ringed in 1982 was seen in Dublin (Walton and Richardson, 1991). In later years, colour ringed adults have been seen on the Farne Islands (Walton, 1993) while in 1995 one of the breeding birds was a two year old ringed on Rockabil, Ireland (Walton, 1996). Most recently the female that has nested in the last two seasons had been ringed on Rockabil in 2002, and 2005 was the first time she had bred (Steel, 2006) which raises hopes for the future. Since 1996 Roseate Tern chicks have been ringed on the Farne Islands and there is an intensive programme of ringing on Coquet Island using both BTO and RSPB rings (the latter can be read by a telescope in the field). This has led to the use of resighting of individual birds on a yearly basis and a detailed study of their movements between breeding colonies. At present the information is being collected and analysed and will be published in due course.

CONCLUSION

Roseate Terns have one of the most widespread distributions of any British breeding seabird and in the North East they are at the limit of their northern range.

They are at the present time only just surviving as a breeding species on the Farne Islands, and whether it will be possible to re-establish a viable colony while Coquet is so successful is debatable, despite all that has already been done. Nevertheless work must be continued to make the Farnes into a high quality site for this species. If Coquet were to fail for any reason, or if numbers there continued to increase, it is important that there is further suitable habitat for Roseate Terns in the north-east.

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TRANSACTIONS
OF THE
NATURAL HISTORY SOCIETY
OF
NORTHUMBRIA

Volume 68

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA
THE HANCOCK MUSEUM
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ANNUAL REPORT
OF THE
COUNCIL
FOR THE
YEAR ENDED 31 JULY 2007

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

Reference and Administrative Information

PRESIDENT James Alder[1]

COUNCIL

Vice Presidents

H H Chambers
Mrs S I Chambers
Dr J M Jones
Dr A G Lunn
I D Moorhouse
Mrs M A Patterson
Dr B J Selman
A M Tynan
R Wilkin

Chairman of Council Professor P S Davis

Honorary Treasurer D Johnson

(1) Elected by members:

2003 - A J Hewitt
2004 - Professor J Edwardson and J Steele
2005 - J Angel, M Turner

(2) Nominated by sections: H H Chambers (library), J Simkin (botany), D Scadeng (geology), Dr C P F Redfern (ornithology and Gosforth Park), Dr B J Selman (publications), V Carnell (mammals)

(3) **University of Newcastle Representatives**: Professor P S Davis, Professor A J Richards, Dr B J Selman, A Newman

BANK Lloyds TSB Bank plc, 102 Grey Street, Newcastle upon Tyne

FINANCIAL ADVISERS Brewin Dolphin Securities Ltd, 39 Pilgrim Street, Newcastle upon Tyne

INDEPENDENT EXAMINERS Tait Walker, Bulman House, Regent Centre, Gosforth, Newcastle upon Tyne

GENERAL PURPOSES COMMITTEE

Professor P S Davis, A J Hewitt, D Johnson, Dr A G Lunn, I D Moorhouse, Dr B J Selman; in attendance D C Noble-Rollin

SOCIETY REPRESENTATIVES

Coquet Island Advisory Management Committee: I D Moorhouse[2], D C Noble-Rollin
Coquet Island Research Sub-committee: Dr C P F Redfern, D C Noble-Rollin
Lindisfarne National Nature Reserve: Advisory Committee:
D G Bell and D C Noble-Rollin
Wildfowl Panel: D C Noble-Rollin

Museum Management Committee: D C Noble-Rollin, Dr B J Selman

STAFF D C Noble-Rollin (Secretary), J Holmes (Archivist), S Will (Office Manager)

GOSFORTH PARK NATURE RESERVE Warden: P Drummond

THE HANCOCK MUSEUM Senior Manager/Curator: S McLean (seconded to Great North Museum Project January 2007) then Dr Sarah Glyn Acting Manager

[1]Died during the year [2] Resigned

ANNUAL REPORT OF THE COUNCIL FOR THE YEAR ENDING 31 JULY 2007

Objectives and Activities

The Natural History Society of Northumbria is a registered charity and is governed by the rules of the Charity Commission. The objects of the Society, as set out in the constitution which was adopted by the membership at the Annual Meeting held on 3 December 2004, are 'the encouragement by every means of the study of natural history in all its branches and the conservation of the natural environment in the north east of England, including its geology, flora and fauna'. To further these objectives the constitution requires that the Society shall:

a) 'endeavour to ensure that the building and grounds of its property, the Hancock Museum and all its collections are maintained and, where appropriate, the collections are extended and made accessible to the general public' – to this end the Society has been working very closely with Newcastle University on a major refurbishment of the Museum costing some £25m which will provide improved display and storage facilities for the collections. The Museum is currently closed whilst this work, due to be complete by early 2009, is in progress. In the meantime arrangements have been made for as much as is practical of the collections to be viewed and consulted;

b) 'maintain and expand the Society's library' – library facilities will be improved by the present project and there is an ongoing programme of book purchases. A small library remains available to members during the closure. The HLF Archive Project, now completed, has also highlighted the extensive range of material available to members and the general public;

(c) 'publish the *Transactions* of the Society and other scientific papers' – three parts of the *Transactions* have been published during the year;

(d) 'organise lectures, discussions and field meetings' – a full programme of field and indoor meetings has been implemented during the year, which is described more fully within this report;

(e) 'co-operate with other scientific bodies and organisations with similar objects' – the Society works with a wide range of organisations including Wildlife Trusts, RSPB, Natural England, local Councils, especially their ecological and planning departments, and other museums: details are described more fully in this report;

(f) 'establish specialist sections within the Society' – such sections have long been established and are all active;

(g) 'maintain Gosforth Park Nature Reserve for so long as it holds the lease, and any other reserves the Council may consider appropriate' – the Gosforth Park reserve has been maintained during the year and negotiations are in progress for an extension of the lease to enable grants for improvements to be sought.

The voluntary input of our members is vital to the continued furtherance of our objectives. In total the Society has seventy-nine active volunteers who work in a wide range of tasks such as leading field meetings, giving lectures, running the sections, office work, committee work, delivering publications and maintenance work in the reserve.

INTRODUCTION

Once again the Great North Museum Project has dominated the time of both the Trustees and the Secretary and this is referred to throughout the report. The progress has been impressive and for the most part the project is on schedule. In the spring Society members were asked to contribute to the cost of the Northumbria Gallery and we are delighted to report that we have exceeded our target of £30,000.

This has been a very unusual year. The Society moved out of the Hancock Museum after 122 years and set up a temporary home at 3-4 Claremont Terrace. Our collections and most of the library went into store and our lectures relocated to the Percy Building within the main University campus. Although we had been discussing these changes and planning the exodus for over a year it proved both traumatic and incredibly hard work. Those who took part are thanked in other sections of this report but it cannot be stressed too strongly how dedicated our volunteers are and how willing they were to work very long hours to ensure the success of the move. The office staff should also be congratulated: despite the turmoil and the demands on their time they succeeded in maintaining a service to both the members and the public throughout this difficult period.

The three-year Archive Project, supported by the Heritage Lottery Fund, ended in September. However, June Holmes continued to work on the Archives in a voluntary capacity to oversee amongst other things the Pybus Lecture on British Nudibranchs and the publication of 'The Many Faces of Bewick and the Bi-Centenary of his Water Birds'. The latter has been praised for both its content and splendid appearance; everyone concerned should be thanked for an outstanding issue of the *Transactions*.

The year ended on a sad note with the death of our President, James Alder. James had a tremendous love for the Society and the Hancock Museum and took an active interest in the developments to the very end. There is an obituary by June Holmes later in this report but Council would like to record their sadness at the loss of such an important local naturalist and a great friend to the Society.

Structure, Governance and Management

The general management and conduct of the affairs of the Society, its property, the investment and expenditure of its funds and the enforcement of its constitution are the responsibility of an executive body called the Council. The Council comprises the following who are elected at the annual meeting: up to ten vice-presidents and an honorary treasurer, who stand for one year but may be re-elected; a representative proposed by each section and additional members proposed by the members, who are elected for three years. In addition the Council comprises up to three members nominated by Newcastle University. All members of the Council are trustees of the Society. At their first meeting after the Annual Meeting of Members, they elect a chairman to act for the following year. The President of the Society, who is elected by the members, is entitled to attend all meetings of the Society but is not a Trustee.

The governing document is the constitution and the charity is constituted as an unincorporated association. Whilst the Council oversees the general management of the Society, more detailed management is provided by the General Purposes Committee (GPC). This is chaired by the chairman of Council and consists of the honorary treasurer and Trustees appointed by Council.

Other sub-committees are as follows: the investment sub-committee, which is appointed by Council and has no fewer than three members, with delegated powers to manage jointly the Society's investment portfolio; section sub-committees, which elect their chairman and representative on Council; and the management of the Hancock Museum which is vested in a Museum Management Subcommittee of Newcastle University which reports to the University Museums and Galleries Board. This subcommittee includes up to three representatives appointed by our Council from those of its members who are not on the staff of the University, together with an equal number of University representatives and a chairman provided by the University.

The senior member of staff is the Secretary who is responsible for the smooth running of the Society and has such delegated powers as the Council shall decide.

MEMBERSHIP

The total membership on 31 July 2007 (with 2006 figures in brackets) was 824 (882). This was made up of 7 (7) honorary members, 42 (41) life members, 485 (522) members who receive *Transactions*, 262 (266) members who do not receive *Transactions*, 23 (42) associate members and 7 (6) complimentary members. There are twenty-five previous members who pay by standing orders various sums that were once the subscription rate: these are now considered as donors not members. This is the first year for five years that the membership has gone down. Council believes this is due to the closure of the museum and the consequent loss of membership privileges, such as reduced rates for the entrance to exhibitions, the lack of the library and the exposure that the Society gets when the museum is open. The total reduction in membership is approximately 7% but associates are 54% down, which indicates that access to the library and museum is one of the main reasons that students join the Society. (Note the reason for the total not adding up to 824 is that the Society has two life members who are also honorary.)

During the year the Society was informed of the deaths of five members: James Alder (1946), Sir John Burnett (1963), Peter Hawkey (1973), W Burn (1974) and Denys Smith (1981). The years in brackets are the dates of their election and there are obituaries for James Alder and Peter Hawkey later in this report. It was also with great sadness that we heard of the sudden death of Mrs Joan Shannon who worked in the Society's office for many years. Joan was the wife of our former Chairman, Derek Shannon. At the time of the death of Grace Hickling she took over the running of our *Transaction* exchanges and continued to deal with these until the 1990s when she retired.

ANNUAL MEETING

The Annual Meeting was held on 2 March 2007 and the Chairman, Professor Peter Davis, outlined from the Annual Report for 2006 some of the important events. The fact the Annual Meeting had to be postponed from its normal date in December to allow time for production of the Annual Report indicated how the year had been dominated by the Museum Project. He also said that the report reflected the wide range of activities undertaken by the Society and the large amount of work that had been done by the volunteers. He proposed the adoption of the report and this was seconded and agreed. Mr Doug Johnson then spoke about the Society's finances and brought members' attention to the deficit that had occurred. He said that this level of deficit was sustainable in the present circumstances but thought that action would have to be taken when the Society returned to the museum around 2009. He proposed the adoption of the finances and these were seconded and agreed. The officers of the Society were then unanimously re-elected. There had been no nominations of members to Council this year.

This concluded the business of the meeting after which there was a natural history quiz. Members were split into teams of four people and shown a Powerpoint display with questions. The winners were Mrs Janet Angel, Dr David Gardner-Medwin and Mr and Mrs Doug Johnson.

GREAT NORTH MUSEUM PROJECT

The Great North Museum Project has taken up a major part of the Society's time during the year. The autumn saw the final packing of the museum and the transfer of all the staff by the first week of October. This was a major achievement; packing up such a large and delicate collection and to have kept within the time limits that had been set was very noteworthy. Steve McLean, David Gardener-Medwin and David Noble-Rollin made a complete sweep of the building to check that everything had been removed. This included the cellars, all the galleries and all the areas of the roof space. Although a number of paper items were found, the main finds for the expedition were one rather dilapidated Little Owl specimen and a very old mouldy boot. For the numbers of hours of work, this was a very small reward. However, it did give us the satisfaction of knowing that our collections were ALL in store.

Everything was moved out of the the Museum. Photograph by Dr Parameswarran.

Since the closure, the Society has been involved in the various stages of the development and members of the GPC have been working very hard to make sure that the Society's voice has been heard in the negotiations. In a development of this size there are bound to be a number of unexpected and unforeseen problems and these have been dealt with by the Society with as much speed as possible. During the winter the major issue was the position of the boundary between the St Mary Magdalene Trust's land and that of the Society. The new building at the back of the museum was to come up to the boundary line, so the outer foundations and future access to this area would require permission from the St Mary Magdalene Trust. This led to an urgent series of meetings to resolve the situation so that the main contractors could be appointed. The final solution of the University indemnifying the Society against any future financial loss was not ideal but it leaves the door open for a negotiated final settlement in the near future.

In the winter, the plaque commemorating the opening of the Hancock Museum on 20 August 1884 by the Prince of Wales was very carefully removed from its position opposite the front door. This proved much more difficult than first thought as it had been inlaid into the stone. The plaque will be replaced in a prominent position in the museum at a later date. The trustees have made a number of visits and throughout have been impressed by the care taken by both the enabling contractors and the main project contractors. Most areas of stonework have been carefully covered to avoid damage and fixtures which could not be moved have been carefully protected.

The designs for the grounds of the new museum have gone through a number of stages during the year and Dr Angus Lunn and Dr Brian Selman have worked on the species list of plants and trees that will surround the new building. At the July 2007 meeting of Council Professor Eric Cross and Mr Steve McLean made a presentation of the findings of the various studies that have been undertaken to look at the naming options for the present Hancock Museum when it reopens in 2009. The presentation ended with the recommendation that the name should be 'The Great North Museum'. The Society Council where unhappy with this and asked the Steering Group for the project to reconsider and to look at ways of incorporating the Hancock name into the new museum title and bring back the proposals to our Council. The debate will continue into the present year.

COUNCIL AND GENERAL PURPOSES COMMITTEE (GPC)

At the July meeting in the previous year Dr David Gardner-Medwin presented a case for the retention of certain items of the museum's historic furniture, including the original library bookcase, the original display cases and one of the gallery balustrades in its original form. Although the principle was applauded by many members of Council, the problems of safety, plus the cost of redesigning the exhibits and the implicit financial responsibilities of the Society meant that the proposals were rejected. It was however agreed to retain the balustrade and several display cases in storage for future use. It was also agreed that as much as possible of the original library bookcases should be re-used in the Society's new rooms. David reflected on this decision and on 31 July he tendered his resignation as a Vice-President and Trustee of the Society and as a member of the museum planning team. This was deeply regretted by Council who have lost one of their hardest working members, one with a great knowledge and love of the Society. David is continuing to work through the Library Committee on the plans for the new joint library and the various committees that have been set up to deal with the logistics of running the enlarged library.

A great deal of Council's time is spent in discussing the Great North Museum Project and signing off the stages of the process. There is a need to ensure the Society is properly protected during this radical change in its history. During the year members of the GPC have been dealing with a wide range of museum issues. All the warranties were signed except for the main contractor and copies of the insurances have been given to the Society. Mr Jonathan Hewitt dealt with the many legal issues that crop up during a development of this size and Dr Brian Selman and Dr Angus Lunn looked at the planting proposals for the grounds of the Museum. Professor Peter Davis and other members of the negotiating group met regularly with the Project Office to review progress and during the year made visits to the site and the proposed permanent store at the Discovery Museum.

The repatriation of the Australian human remains took place at a ceremony at which Dr Selman represented the Society. Most of the other events of the year are mentioned elsewhere in the report.

PUBLICATIONS

This year has seen the production of four parts of the *Transactions*, the Annual Report (Volume 67 Part 1), *Birds on the Farne Islands in 2006* (Volume 67 parts 2 and 3) and Volume 65 part 3 *The Many Faces of Bewick and the Bicentenary of his Water Birds*. Since its publication the Bewick papers have received a great deal of praise for both their historical content and design. Council would like to thank the editorial team and the authors for an excellent issue.

THE OFFICE

The year began with the final two months of the great pack-up. As the time slipped by the momentum of the move began to grow and the office staff were not only packing the office and helping with the library and archives but having to consider objects discovered or proving difficult to pack.

As this was happening David Noble-Rollin was putting the winter programme together, finding suitable accommodation for the lectures and writing the Bulletin; Stuart Will was preparing the accounts for the end of the year. By late September the skeleton library had arrived at 3-4 Claremont Terrace in about 250 green plastic crates, as well as the office and the staff. Remarkably Hugh and Stella Chambers had the library up and working within a week and as soon as the computers were online the office began to function. The rest of the year has been relatively quiet!

Staff

David Noble-Rollin David's main job is to see that the wide range of activities of the Society run smoothly and that the programmes and publications are properly organised and out on time. In order to do this effectively he has to attend most of the committee meetings held by all sections of the Society and prepare the minutes of Council and GPC. During this year he has also been required to attend most of the meetings concerning the Great North Museum Project as he is the main contact for the Project with the Society. His job is to find the right Trustee to deal with a particular problem and then to assist them in dealing with this.

June Holmes June is the archivist for the Society and the last financial year was the third year of the Heritage Lottery Funded Archive Project. Towards the end of June 2006 the Society approached the HLF and asked for an extension of the Project to run until October 2006. This was to enable June to finish the various events connected to the Project, but also to deal with the enormous amount of work involved in the packing and storage of the Society's archives. During the latter months of the Project it had been impossible to ignore the amount of work required to safeguard these fragile documents and the HLF agreed to this extension. June has continued to work beyond this in a voluntary capacity for the rest of the year. It is hoped in the next financial year that a new Project will be funded to allow her to continue exploring the archives and bringing them to the public's attention.

Stuart Will Stuart is our office manager and is responsible for the smooth running of the office and looking after the membership database and the Society accounts under the direction of the honorary treasurer. His quiet efficiency has led to a very well organised financial base that allows us to track all the sections' expenses and budgets easily and deal with the many queries from members. At the January Council meeting, Stella Chambers said that she was very concerned about the workload in the office and particularly that a number of important jobs were not getting done. The main reason for this was the very

large backlog of typesetting that seemed to have built up because of the move out of the Hancock. Council agreed that Stuart should take on the responsibility for typesetting and to his being employed for a number of extra hours. His first major work was the Farne Island Bird Report for 2006 and Council would like to thank him for the excellent result. Stuart also undertakes voluntary work for the Society, particularly with the ringing group. This year he got his BTO C-Permit which allows him to ring independently of his A-Permit Trainer.

Office volunteers Apart from the staff, the Society is indebted to the volunteers who help to run the office. Margaret Patterson, Anne Wilson, Joan Holding and Rita Wolland come in each week to undertake the many tasks that are needed to keep the office running and get out all the material on time to the members. Margaret, Rita and Joan all helped with the packing of the office and have helped to give the Society a feeling of continuity that during such difficult times was very reassuring.

VOLUNTEERS

At present the Society has seventy-nine active member volunteers who undertake a wide range of activities and make it possible for the Society to carry out its commitments. Without this help it would be impossible to undertake such a varied and complex programme. Most of these volunteers are mentioned elsewhere in the report and many combine a number of roles to support the Society. However it is appropriate to thank our forty deliverers who go out in all weathers to make sure our members get their publications and to thank the many officers of the Society who put in untold hours making sure that our charity is properly run and managed. Also, the lecture programme and the field meetings rely on the voluntary help both of our expert members and the many lecturers who travel from all over the country to keep members informed about the latest research and developments in natural history.

MUSEUM MANAGEMENT COMMITTEE

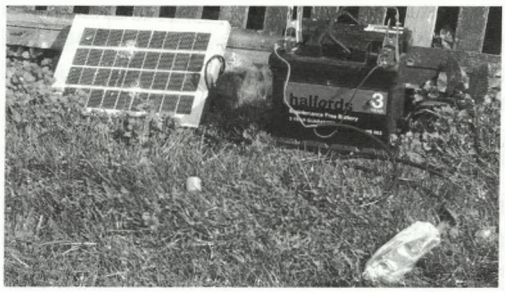
This committee, with members representing the Society, Newcastle University and Tyne & Wear Museums service, is chaired by Dr Eric Cross. The Society's representatives are listed on page 4. Apart from discussing the latest developments of the museum, the Management Committee recommended various loans of material to a number of other museums and institutions. These recommendations were then taken to Council. They were also responsible for looking at the repatriation of human remains to both Australia and New Zealand. As mentioned elsewhere, the Australian material has now been returned but there is ongoing research into the origins of one of the Maori heads. It is thought that perhaps this individual was actually a European who was involved in a conflict with the Maoris. The research is being carried out at Glasgow University. With the museum being closed it has been important to have as many as possible of our important collections displayed in other museums and suitable venues both locally and throughout the country, to maintain awareness of the Society. Many of these important exhibitions are discussed under the Hancock Museum section of this report.

DICKINSON MEMORIAL TRUST

This year's award went to the Society's ringing group to help towards equipment for a study into human disturbance of Arctic Terns on the Inner Farne. On the Farne Islands, Arctic Terns nest in a variety of locations. While some of these are relatively undisturbed, many pairs nest in areas close to paths used by the wardens and visitors to the islands.

The balance is placed under the nest.

These birds show remarkable tolerance to disturbance by visitors. Nesting in areas prone to human disturbance may confer some advantages in terms of protection from predators which will also be disturbed by the presence of human visitors. Nevertheless, intense visitor pressure for several hours each day does result in severe changes to the incubation rhythm as the incubating bird repeatedly rises from the nest to ward off each human threat. Anecdotal observations by the wardens suggest that this can lengthen the incubation period by a day. However, the extent of visitor disturbance has not been quantified in detailed studies, and it is not known if disturbed birds alter their incubation rhythm to minimise the effect of regular disturbance.



Data logger connected to its power source.

During the year Mrs Elizabeth Pestell increased the capital value of the fund by two gifts of £5,000 and £9,744 respectively; also her cousin, Mr Hardy, made an initial donation of £10,000 and intends to bring the total amount of the fund to £50,000 including gift aid. This will greatly increase the value to our members and sections creating a yearly interest of approximately £2,000-£2,500. The Council would like to thank the family of Tony Dickinson for their generosity and for maintaining such a positive link with the Society.

LIBRARY

At the start of the year the main library collections were safely packed into 700 crates ready to be moved into store, all carefully listed and recorded. The items to make up the 'skeleton' library were still in the old library, to be packed and moved to Claremont Terrace. This work was accomplished and, by mid September, the library room was set up in Claremont Terrace and available for use by our members, students and museum staff.

The old library was empty; the oak shelving stacks were donated to the Literary and Philosophical Society and are now in use in their building. Some of the wall shelving was dismantled and is currently in temporary storage. We are pleased it is all in use. With real regret the library staff and volunteers held a 'wake' before the room was deserted and left to the developers.

The routine service to members, researchers and students continued uninterrupted, although with limited resources. During the year Dr Les Jessop joined the volunteers, which means that help is available from volunteers most days of the week. Les arranged for the ethnographical collection of books from the museum and some of his own collection to be transferred to the library, which we were pleased to receive since ethnography forms such an important part of the museum. This section of the library now contains 127 books on such diverse subjects as *Fijian Weapons and Warfare* and *Designs on Prehistoric Pottery from New Mexico*.

As usual the direction of the library affairs was controlled by the library committee, which meets four times a year. The members are Hugh Chambers (chairman), Paddy Cottam (mammals), Peter Davis (marine biology), David Gardner-Medwin (history of natural history), Trevor Hardy (geology), June Holmes (archives), David Noble-Rollin (ornithology) and Bill Pickering (botany).

During the financial year forty-eight books were purchased covering all aspects of natural history; there were also nine updated ordnance survey maps. As usual ornithological books took a large part of the budget because two volumes were published in major long running series. Volume 11 of the *Handbook of Birds of the World* and the final volume (No.7) of the *Handbook of Australian, New Zealand and Antarctic Birds* although this was so large it was in two books. The quality of these works is quite superb. What is seen as our duty to maintain our collection as up-to-date as possible meant that bird books on the Bewick Swan, Stonechats, Gulls of Europe, Asia and North America, Tracks and Signs of Birds and '*On Sparrows and Man*' by Summers-Smith were purchased, together with seven more. Three books were published in the Collins New Naturalist series, *Woodlands* by Rackham, *Galloway and the Borders* by Ratcliffe and *Garden Natural History* by Buczacki. The main geological book purchased was the second edition of *The Geology of England and Wales* published by The Geological Society. Our collection of Mammal Society publications was updated with five of their books as well as a new book on *Whales, Dolphins and Seals* by Shirihai & Jarrett. Following Bernard E Picton's lecture on Nudibranchs, his book on *Shallow Water Echinoderms* was obtained. The Ordnance Survey maps of our area were updated with nine new ones together with a CD *Memory Map of Northern England.*

In addition to the ethnographic books twenty-seven items were donated together with three OS maps. Notable items were *Nature's Engraver, A life of Thomas Bewick*; *Flowers of the Amazon Forests, The Botanical Art of Margaret Mee* and *The Last Forest.* We must thank the generosity of David Gardner-Medwin, Les Jessop, John Yarham, Steve Lowe, June Holmes, Norman Moore and other friends for their donations.

More than 322 items of serial publications (Journals, Transactions etc.) were received from throughout the world by exchange, subscription and donation. All of these were recorded, scanned for any articles or papers that are particularly relevant to the Society (which are catalogued) and then shelved, to be available ultimately for binding. The library continued to be serviced by the office staff. Margaret Evans has worked steadily during the year on the paperwork involved in dealing with serial publications and the exchange system and also arranging the binding of periodicals. Fourteen volumes were sent for binding to become a permanent part of our collection. The system for the receipt of these items has worked well although it was necessary to purchase a further supply of A4 boxes during the year to cater for the increased size of several periodicals.

It proved necessary to replace one of the old donated computers in use in the library during the year with a new modern machine; this was to improve efficiency and facilitate the transfer of information on the exchange system from the office equipment. This was partly funded through the Archive Project's budget.

Representatives from the library have taken part in discussions on the working and development of the future arrangements when it moves into the suite of rooms on the third floor of the new extension at the back of the Hancock. Library space will be shared with the Society of Antiquaries, and combined catalogues, security, shelving and detailed layouts have been discussed.

The work of producing an index of our *Transactions* and of Goddard's History of the Society has proceeded during the year.

In addition to Margaret Evans, other volunteers gave reliable assistance during the year, in particular Stella Chambers, Martin Evans, Trevor Hardy, Les Jessop and Norman Moore. The Society thanks them all for their indispensable work.

ARCHIVES

The three-year Archive Project, generously supported by the Heritage Lottery Fund, due to end in June 2006 was extended for a further three months to enable our archivist, June Holmes, to complete the important task of packing up and storing the archives.

The huge task of cataloguing, preserving and packing was complicated by the constant re-discovery of archives missing for many years. The most amazing find was an extremely large map of The Silurian System given to the Society in 1838 by Roderick Impey Murchison, the famous geologist and an honorary member. The map, although recorded as a gift in our *Transactions,* had never been found until it came to light in the back of one of the Hancock Museum's many hidden cupboards.

By mid-October all the Society's archives were ready to be consigned to storage. A number of the most frequently requested and important items were retained and sent to Tyne & Wear Archive Services at Blandford House, enabling us to make them accessible during the closure of the museum.

It was very disappointing that the amazing work we had done on publicity during the last three years, with archive exhibitions, talks and other activities, had to be curtailed due to the closure. Our last public event, to celebrate the 200th anniversary of the birth of Albany Hancock and his work, with Joshua Alder, on Nudibranchiate Mollusca, was the Society's Pybus lecture in February 2007, an illustrated lecture on British nudibranchs in their natural habitat given by Bernard Picton, of the Ulster Museum, Belfast.

We have been concentrating on making the archives more accessible via our website and it was rewarding to see the full collection of Margaret Dickinson's *Watercolour Drawings of British Wild Flowers* available to view on the internet after many years of hard work by the volunteers and the archivist. This project had been generously funded by MLA North East.


Marsh Gentian

The Society was invited to join the Newcastle Heritage Partnership, a networking forum supported by Newcastle City Council, for groups interested in maintaining the heritage of the North East. We have also affiliated ourselves with *Inspire North East*, a new initiative which aims to make library, archive and information services across our region more accessible to everyone.

The Society agreed to a request from the National Trust for the loan of various items for their 2007-8 season. A selection from our collection of portraits of Thomas Bewick was given to Cherryburn for their *Many Faces of Bewick* exhibition as well as our famed Wombat specimen, illustrated by Robert Bewick in Fox's *Synopsis of the Newcastle Museum*. The oil painting of *The Entry of Alexander into Babylon* by Thomas Wilson Ewbank, which graced the east staircase of the museum for

many years, is now at Cragside for two years. Two carved oak chairs made for the Prince and Princess of Wales to use during the opening ceremony of the Museum in 1884 are also on loan to the National Trust. Lord Armstrong of Cragside, who was a great benefactor of the Society and its Museum, accommodated the Royal family many times during their sojourns in the North East.

After we had unpacked and settled into our new premises at Claremont Terrace in September, the archive volunteers, who had taken a short sabbatical, started to pick up where they left off and are once again activily researching.

Ann Stephenson is continuing to compile her digital database of the John Hancock manuscript correspondence and Colin Storey is carrying on with his work on the transcription of John Thomas Bold's entomological journal.

The archive database of Society members from 1829-1950 is slowly progressing under the able hand of Nigel Sprague; and Michael Kerr has progressed from re-typing the life history of 'Sparkie', the famous talking budgerigar, to a history of 'Percy the Pelican'.

Dr Parameswaran is thoroughly enjoying his work on transcribing the earliest correspondence of the Society, 1829-1848, collected together by the first secretary, William Hutton.

For many years, Dr Les Jessop has researched the wonderful collection of shell drawings by George Gibsone held in our collections. We were delighted when he volunteered to start a systematic catalogue of the species illustrated in the drawings. It is hoped that we can prepare this information for inclusion on our website in the future.

David Gardner Medwin's assistance with the archives over the year has been invaluable and with his support we were able to produce for the Society's *Transactions* the paper *The Many Faces of Bewick*, which catalogues our portrait holdings of Thomas Bewick. This publication was generously supported by the Sir James Knott Trust and the Heritage Lottery Fund.

This has been a bumper year for enquires about Thomas Bewick and his collection. The Bewick collection has been digitally photographed so we have been able to fulfil all of the public's requests, from providing Bewick's engraved fingerprints for a book on fingerprinting in the United States to supplying images for Jenny Uglow's (2006) biography *Nature's Engraver*. We have continued with our commitment to support The Bewick Society, assisting them with their enquiries and meetings whenever possible.

The background of knowledge accrued over the years and the previous cataloguing and digital recording has allowed the archive section to continue working as an information service even though most of the archives are in store. There is a great deal of interest in our archive collections and as we head into another year out of our museum we will strive to continue this high level of service to our members and the public while reinforcing the importance of our natural history archives.

Recent accessions to the archives include:

Photocopies of wills and documents etc. relating to the Hancock family. Presented by Marion and Graham Hancock.

The Nature-Lover's Handbook, 1911 by Richard Kearton, awarded to John Baxter as first prize in the Hancock Prize Essay competition for the year 1911-1912. Donated by Paul Jennings.

One page of a two page letter from Mr W D Anderson, dated 6 June 1839, to John Hancock. Remarkably the other page was already in our Hancock letter collection. Presented by Derek Bradford.

A black and white photograph of a group of botanists attending a luncheon at French House, Ithaca, New York on 19 August 1926. Presented by Mrs Molly Walker.

Thomas Belt

Three volumes of Ferns of Jamaica, manuscript books containing herbarium specimens of ferns with black and white photographs of the Royal Scots 1st of Foot Regiment during their deployment at Newcastle, Jamaica between 1882-4. Presented by Mrs Molly Walker.

Biographical material on the late Dr Trevor Walker, botanist and Society member. Presented by Mrs Molly Walker.

Framed lithographic portrait of the geologist Thomas Belt. Donated by Canon John Bowes (illustrated).

CONSERVATION AND PLANNING APPLICATIONS

At the Council meeting in July 2006, Dr David Gardner-Medwin said that he was finding it very difficult to find the necessary time to deal with the ever-increasing number of planning applications coming in to the Society. There was discussion at the meeting and it was decided that because the Northumberland Wildlife Trust already undertook to check those north of the Tyne, the Society should only support them when there is considered a serious threat to landscape or wildlife. During the current year the Society has followed up applications concerning Newton-by-the-Sea and the proliferation of wind farm projects throughout the North East.

ACTIVITIES

Pybus Memorial Lecture

The Pybus Memorial Lecture on 'Nudibranchs' was given on 2 February 2007 by Bernard Picton, Curator of Marine Invertebrates at the Ulster Museum, Belfast. This meeting was organised as part of the 200th anniversary celebrations of Albany Hancock's birth commemorated last year in the museum with an exhibition 'The Watercolour Drawings of British Nudibranchs' by Albany Hancock. The exhibition was a great success combining archival material, educational information on nudibranchs and wonderful colour photographs of nudibranchs in their natural habitat by Bernard Picton, one of the leading experts in British nudibranch research. Bernard talked about nudibranchs often being referred to as 'sea slugs' but they are actually a smaller group within the main sea slug group, known as the Opisthobranch molluscs. He observed that in the British Isles most of the nudibranchs were discovered and named by Victorian naturalists, especially Joshua Alder and Albany Hancock, who produced the first monograph on this group in the years 1845-56. At this time the only way to collect these delicate animals was by searching on the sea shore and by dredging with light naturalists' dredges or collecting from fishermen's lines and nets. The animals were painstakingly drawn and painted whilst still alive, so as to illustrate their bright colours and subtle camouflage. Bernard commented that in the last fifty years it has become possible to enter directly into the shallow sea using SCUBA diving and to take colour photographs. For the last thirty-five years he had been studying and photographing nudibranchs and had rediscovered almost all of the animals already known from our waters as well as adding a few new ones.

Bernard gave an extremely interesting Powerpoint presentation showing underwater and tank photographs of a number of species and told the audience some fascinating stories of their discovery or rediscovery. The lecture was well attended and had been advertised in Newcastle University's School of Marine Science and Technology with the result that a number of lecturers and students attended, crowding around Bernard at the end of the lecture with more questions.

Ornithology Section

On 30 September David Noble-Rollin met members at Boulmer. It was a bright, still and sunny day; everything the group looked at was beautifully clear and members were able to see the detail of the feathers on many of the birds. The group saw migrating Pinkfeet, Red-throated Diver, Redshank, Bar-tailed Godwit and a number of Little Stints with a flock of Dunlin.

Again the autumn trip to Holy Island had good weather and this made the viewing of the birds easy. However a long period of westerly winds meant that there were no small passerines to get excited about and try to make into rare birds! The group did see a flock that included a number of Black-bellied Brent Geese as well as the normal Light-bellied subspecies. Red-throated Divers were in the harbour and Black-tailed Godwits were seen.

On 12 May John Steele took a party of eleven members for a walk in the Harthope Valley. It was wet and cloudy and this made bird watching difficult. However they saw a good number of the breeding birds of the area including Grey Wagtail, glimpses of a Peregrine leaving the crags and a family of Stonechats being fed by the adults. They heard Ring Ouzel sing and had good views of Buzzard. In the valley Common Sandpiper and Goosander were on the river and they saw Cuckoo and Whinchat. John explained about the management schemes that he was involved in and how they helped to preserve the habitats that they visited.

On 3 June David Noble-Rollin led a joint meeting with The Friends of Saltwell Park to Holy Island which was aimed at looking at some of the summer visitors to the island. There was a real mix of both summer and winter birds that was not easy to explain. There were breeding Black-necked Grebes on the pond with Whitethroats singing in the car park bushes. There were Sanderling and Dunlin in full breeding plumage at Sandon Bay and a large flock of Bar-tailed Godwits in full winter plumage on the mud flats.

On 14 June David Noble-Rollin led a small group of members on a wet morning to listen to bird song in Gosforth Park Nature Reserve. They had good views of Red Squirrel and heard the songs of many of the common warblers including Sedge and Reed Warbler. From the Pyle hide they saw Little Grebe and watched the Common Terns sheltering their young on the platform while the Swans paraded their eleven cygnets in front of the hide.

On 4 and 5 July two Roseate Tern Evenings were organised as joint meetings between the North Northumberland Bird Club and the Society. Like last year's they proved to be very popular and in all there were three boats, two on 4 and one on 5 July. David Noble-Rollin led the first evening and as the second was mainly Bird Club members this was led by Ged Russell from the Club. Both evenings were a success with similar birds being seen. The following report by Ged on the second evening emphasies how enjoyable the events can be:

'The trip was fantastic with really close and clear views of all four species of tern, including all four literally sitting in a row at one point (it was like a plate out of an identification manual!) so it was useful to be able to point out differences to people. Interestingly, there

was a 'portlandica' Arctic Tern on the rocks next to the jetty. We also had stunning close views of an adult pale phase Arctic Skua down to about 5m off the side of the boat which was really nice'.

On 13 October, Dr Colin Bradshaw gave a talk entittled 'Beyond Balkash – the spirit of the Taukum Sands' on the birds and adventures he and a small party of friends had in the remote parts of Kazakhstan. He often played down the remoteness and the difficulties but his excellent pictures showed how primitive some of the accommodation could be and the distances that they had to travel. However like any adventure it brought its bird rewards and his new digital photographs of some of the species they found were stunning. As usual Colin's enthusiasm for his subject and fascination with identification detail both enthralled and educated his audience.

The next lecture was by David Noble-Rollin on 10 November on 'Bird watching in Majorca'. David has visited Majorca since the early 1970s and has watched the many changes that have taken place over the years. He outlined the best bird-watching places and showed the important species that can be seen. His enthusiasm for the Albufera Marshes and the nature reserve was evident from his idea of staying as close as possible so he could visit each morning. He has watched and photographed the breeding cycle of the Black-winged Stilts now on two or three separate years and never tires of sitting in the hide watching the daily drama of them defending their nests and young.

The winter season began on 5 January with 'Bird migration though the Farne Islands' by David Steel. David is the Head Warden on the Farnes and he gave an enthusiastic and entertaining talk. He included discussion of the breeding migrants which nicely counter-balanced the amazing rarity list. He showed excellent pictures of the various rare birds that had been seen, mentioning how some of the passerines ended up having to be rescued from the buildings and released, and made everyone in the audience want to sign up as wardens for the next season.

On 23 March the last ornithological lecture 'Studies on Icelandic Black-tailed Godwits: implications for population and evolutionary processes' was given by Becca Hayhow. Becca, an ex-Newcastle University Zoologist who graduated with a first-class Honours degree a couple of years ago, stood in for her PhD supervisor, Dr Jenny Gill of the University of East Anglia, to describe Jenny's studies on Icelandic Black-tailed Godwits and how her PhD studies are contributing to the international research effort on this species. As a result of expeditions to the breeding grounds in Iceland, an intensive colour-marking program and modern methods of stable isotope analysis, Jenny and her team have shown that the expansion of the wintering and breeding populations is accompanied by utilisation of apparently sub-optimal habitat, both for breeding and wintering. Becca is investigating this in more detail by studying these birds on their wintering grounds in Ireland. She gave an enthralling talk, confidently describing Jenny's work and how her own studies were beginning to elucidate the factors which affected the ways in which birds utilise wintering habitats.

Mammal Section

The Mammal section events were attended by members of the Natural History Society, Northumbria Mammal Group and the Wildlife Trusts North East.

On 20 October, Wendy Fail presented her PhD studies on the Harvest Mouse. Following a summary of the species's biology, distribution and preferred habitats, she described the captive breeding programme she had undertaken, and the subsequent re-introduction of 200+ individuals into the maturing reed-beds at East Chevington, a Northumberland Wildlife Trust reserve. Members of the audience included many of the volunteers who had helped with the breeding programme, especially Ms Sam Talbot, and the discussion following the presentation showed the interest which the project had engendered.

On 24 November, Dr Stephen Tapper, Director of Policy and Public Affairs for the Game Conservancy Trust (GCT) gave a talk entitled 'Hare today... gone tomorrow?,' in which after a brief introduction into Brown Hare ecology and UK distribution, he described how a partnership between the Mammal Society and GCT is, under his leadership, achieving its target of doubling Brown Hare numbers by the year 2010, largely by implementing Environmental Stewardship Agreements for farmland habitat management.

On 25 January 2007 the Mammal Group hosted a talk at Stannington Village hall by the Red Squirrel Conservation Project officers for 'Save Our Squirrels', led by Philippa Mitchell, (People and Wildlife Officer) and Mark Wilkinson (Conservation Officer). The talk described recent research into Red Squirrel conservation, application of the research in designated conservation areas and buffer zones and how volunteers could input into Red Squirrel conservation. The target audience included our members and the local community. Forty-five people attended and the resulting discussion showed the concern which people feel over the incursion of Grey Squirrels into their area; many of them requested further information about volunteering to help with the project.

On 26 January Mike Tetley, a recent graduate of Newcastle University, currently guest lecturer and PhD student at Bangor University, and a presenting member of the European Cetacean Society, gave an outstanding lecture on the habitat selection and foraging strategies of the Minke Whale – the subject of his PhD studies. After questions he then gave a short presentation on his own charity, 'ORCA' (Organisation Cetacea), which gets volunteer observers onto ferries across Europe to monitor cetacean distribution. This engendered a great deal of interest with a number of members considering volunteering to assist.

On 23 February Derek Gow, independent wildlife consultant and re-introduction specialist, enthusiastically presented the case for re-introducing the European Beaver *Castor fiber* to England. Drawing examples from similar re-introductions in Continental Europe, he described how the Beaver, a native species until at least the 18th century, would restore wetland habitats, and the benefits this would have, both for other wildlife and people. The audience responded well with questions and concerns.

On 6 August thirteen members attended a bat evening in Gosforth Park Nature Reserve, led by Tina Wiffen and Paul Drummond. A talk on some of the recent research into bat biology and habitat management was followed by the erection of a new oak bat box, a brief discussion on habitat management for bats, and a walk to look for bats in the reserve. A bat roost for Noctules had recently been found by the warden in an old Woodpecker nest hole, and the members were privileged to be able to watch nineteen bats emerge from the roost. Daubenton's Bats were seen hawking over the lake and reed-bed and Common and Soprano Pipistrelles were hunting under the tree canopy.

A pelagic cruise on the North Sea from Seahouses, led by Graham Bell on the afternoon of 2 September and attended by forty-five members, produced good numbers of feeding

Gannets sharing a shoal of Herring with two pods of 40-50 Harbour Porpoises. Members were fascinated to be able to spend a considerable length of time close to the Porpoises as they fed. Probably because of the heavy rain, other bird and mammal numbers were low, with a few Grey Seals, some auk and gull species, Shags, some late Arctic Terns and one Manx Shearwater.

A short presentation, followed by the examination of preserved small mammal specimens from the Hancock Collections and a guided walk round Gosforth Park Nature Reserve, was the gist of the Small Mammals day on 16 September, led by Veronica Carnell. From twenty-three Longworth traps set (seven re-set by members) we caught eleven Bank Voles (plus two possible re-traps) three Water Shrews, three Common Shrews and one Pygmy Shrew. Successful habitats included woodland edge, reed-bed bunds, willow carr and wet *Juncus* grassland.The event was repeated on a smaller scale on 29 October, when eighteen Longworths were set in the same habitats for the same length of time. On this occasion we caught one Common Shrew, two Water Shrews, five Pygmy Shrews and five Bank Voles (two male, three female, one pregnant).

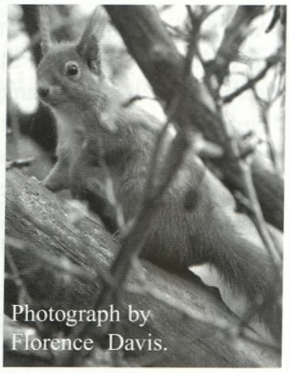
A second successful bat evening was held in Gosforth Park Nature Reserve on 24 September, led by Jonathan Pounder and Paul Drummond. On this occasion, members were able to observe a live Common Pipistrelle in the hand, and the same species were found as on the previous occasion, except for the Noctule roost, which appeared to have been deserted.

On 4 November twelve members sailed to the Farne Islands from Seahouses to see the Grey Seals and their pups. Although we had close views of the Seals, the sea was too rough to land, so David Steel, Head Warden of the Farnes, came aboard the boat and gave us an excellent talk on the Grey Seal's breeding biology and this year's local reproductive output, commenting that they had already suffered minor setbacks due to recent storms. We also saw a number of Little Auks, driven south of their usual wintering grounds in larger numbers than normal by the same storms.

A morning Small Mammal event held in Gosforth Park Nature Reserve on 20 February (school half-term) yielded one Water Shrew, two Common Shrews and six Bank Voles from eighteen Longworth traps.

Three more small mammal trapping sessions were held during Newcastle Science Week, and produced Water Shrew, Common Shrew and Bank Voles for members of the public to view.

Two public Red Squirrel events, led by Veronica Carnell and Philippa Mitchell, People and Wildlife Officer for the 'Save Our Squirrels' Partnership, were held in the nature reserve. On both occasions, all aspects of Red Squirrel conservation were explained and discussed, including the supplementary feeding project currently under way in the reserve. On each occasion a short walk enabled the public to watch Red Squirrels: on 24 May, they were seen feeding on Elm seeds and at the feeding station. On 7 July they were at both feeding stations and travelling through the woodland (six in all).


Photograph by Florence Davis.

In May Bob Wilkin and Paul Drummond led a number of Badger watches. The Bulletin came out earlier than expected and it was decided to begin the Badger Watch a week before

the official date of 9 May. Some eighteen members and friends attended the Watches spread over several weeks. Although most of the setts on the island showed a great deal of activity, e.g. fresh soil and discarded bedding material, the Badgers were much more reluctant to show themselves. Having said that, Badgers were seen on every night although only for short intervals, and in most cases left the island shortly after emerging from their setts. On one evening Paul had to abort the watch on the island because of lack of activity but redeemed the evening by a short walk along the South Path where Badger views were gained close to the old sluice. On most evenings other wildlife was observed, which included bats, Roe Deer, Rabbits, Great Spotted Woodpecker and Tawny Owls. Within two or three weeks of the Watches beginning, fern and Foxglove growth was rampant and a small amount of hand scything was required to maintain some open viewpoints.

The Mammal Day, now renamed Go Wild in Carlisle Park, went ahead with Bob Wilkin representing the Society in a Badger Walk for the general public. Eleven people attended the walk in unrelenting pouring rain. Badger setts, spoil heaps, snuffle holes (the results of feeding activity) and pathways were viewed.

On 6 June high tidal water levels on Derwenthaugh meant that the Otter Walk venue was Gosforth Park Nature Reserve. The known history of Otters in the area was given, then a group of nine people moved on to the boardwalk to look at and examine in detail Otter spraint from the previous night's activity. They then moved down close to where the Whitecroft Burn flows into the Ouseburn where they dropped into the water and made their way through a narrow tunnel observing Otter spraint on a ledge at waist height.

The next stops were in the second and first extensions of Jesmond Dene. In 1904 these areas were parts of the estates of two former Vice Presidents of the Natural History Society, Lt Col Adamson and Sir Andrew Noble. It was in these estates that a pair of otters caused great havoc by killing and eating geese, ducks and other livestock belonging to both the above. A hundred years later Otters are still in the area.

During the course of the evening the leader introduced two of his own relevant poems on Otters for the group's entertainment. The members then moved on to examine copious amounts of spraint beneath the old A1 over the Ouseburn near Brunton Park. The next site was at Newcastle Great Park where an examination of the new balancing ponds revealed through spraint that Otters were already using these waters. The evening was brought to an end beneath the Western bypass where in failing light members viewed a seventy-yard stretch of Otter padding (footprints) where the animal had travelled upstream.

Jonathan Pounder led a field event to Teesmouth Field Station on 8 July. Thirty-four Common Seals, accompanied by three pups, hauled out onto Seal Sands at low tide; one Grey Seal and sixteen species of birds were also observed.

A small mammal trapping session in the nature reserve for the Exploration Day on 28 July fascinated the public with catches of three Water Shrews, six Bank Voles, four Common Shrews, two Pygmy Shrews and two Field Voles from a total of twenty-four Longworth traps set early that morning in the reed bed bunds and a patch of new grassland.

Student training in the nature reserve included live trapping and marking small mammals for a population survey on the Long Nanny in Beadnell Bay.

Geology Section

The season started on 6 October with a talk by Denis Scadeng to introduce members to geology. He brought together two scientific Unifying Theories, Plate Tectonics for Geology and Evolution for Biology, and put forward the hypothesis that perhaps the origin of life would not have occurred without both tectonic activity and organic evolution. He finished with a suggestion that one particular tectonic event was responsible for the evolution of the human species.

On 3 November Stuart Clark gave a talk entitled 'I'm sorry I haven't a clue! A look at uncertainty in geological mapping and modelling'. This was an account of modern mapping and modelling techniques that reduce the uncertainty associated in trying to find out exactly what is present many kilometres under the surface of the planet.

The winter season began with Mike Walkden describing the problems of coastal erosion due to both natural forces and human activity. He dealt with new thinking on the suitability and practicality of engineering solutions to these issues. He finished with predictions of future erosion with a changing climate. The next speaker had to cancel at the last moment and Mick Jones came to the rescue with a fascinating and wide ranging talk on the history of mining in the area. The season finished with Steve Parman describing the evolution of the interior of Earth and the way in which the noble gases have properties which allow them to be used as tracers to interpret the events which led to the present structure of the planet.

Andy Lane took us to the Raisby Formation to look at the Magnesian Limestone in the Sunderland area. We managed to visit only two of the planned sites; by the time we had worked out the sequence of geological events we decided that it was best to postpone the final part for another visit in September 2007. In June, Gordon Liddle took us to the Northumbrian coast to see exposed coal measures at Cullercoats and the Ninety Fathom fault. After a discussion on coastal erosion we finished at the Tertiary dyke at Tynemouth. As always, Gordon demonstrated that it is always possible to find something new, even in familiar structures.

Botany Section

Unprecedentedly the winter programme saw two unavoidable last minute cancellations by speakers, but more than adequate replacements were able to be arranged. In October, at very short notice, Dr Anne Pickering spoke on 'Plants, people and purpose: the natural history of Zanzibar'. She set the biology of the island in its social and economic context, and described some of the many endemic plant species. The chief cash crop is cloves, introduced from the Moluccas.

In November, this time as planned, Jeremy Roberts spoke on 'Exploring Cross Fell's mountain flora'. He explained how, since foot-and-mouth disease and the ensuing reduced sheep-grazing , there has been a remarkable resurgence of the mountain vegetation of the Cross Fell range in the North Pennines. Many of the significant species have responded by flowering and fruiting in unprecedented profusion. Intensive surveys have revealed that some rarer specialities (such as Alpine Foxtail *Alopecurus borealis*) are far more widespread than we thought – even locally abundant, whilst species never previously recorded on the range have been discovered.

Another very late replacement was Professor John Richards, who in February lectured on 'Flowers of the French mountains'. He reminded us that southwestern and southeastern France are dominated by two great mountain systems. The talk described a journey from

the Alpes Maritimes in earliest spring, through the great mountains of Savoy to the Pyrenees, sampling the most attractive and interesting mountain flowers (and a few butterflies).

Finally, in March, Elizabeth Clark delighted a large audience with an account of 'The flora of Kazakhstan'. She described some of the great botanical interest of the Tien Shan mountains of Central Asia. The range, running approximately east-west, has high ridges extending along boundaries with China, Kyrgystan and Kazakstan, with peaks of over 7000m. Her visit took in ridges and valleys of the steep northern flanks, running down to the extensive steppes of Kazakstan. 745 plants in flower were seen during two weeks of exploration. Possibly the most astonishing was *Schmalhousnia nidularis,* which was quietly observed through binoculars for some time, being mistaken for a marmot!

Despite the very wet summer we were lucky with the weather for the field meetings. The first two were in June. Dr Anne Pickering led us at 'Thristlington Plantation', actually Magnesian Limestone grassland in County Durham, and possibly the best example of the habitat – the site is a National Nature Reserve. Among plants seen were Perennial Flax *Linum anglicum*, Dark-red Helleborine *Epipactis atrorubens* (although not yet in flower), Cat's-foot *Antennaria dioica* and Fragrant Orchid *Gymnadenia conopsea.* The reserve includes a transplant experiment. The Durham Argus butterfly was seen.

Later in the month Mike Porter guided us on 'Two Cumbrian wetlands'. He is helping to prepare a new edition of the BSBI sedge guide, so it was no great surprise that Tarn Moss (a basin mire with poor-fen vegetation near the northern Troutbeck) offered scope for his sedge expertise, including the use of stomata in identification. Among sedge species seen were Bog Sedge *Carex magellanica*, Smooth-stalked Sedge *C. lasiocarpa* and a strange hermaphrodite (*i.e.* non-dioecious) form of Dioecious Sedge *C. dioica*. Also on the fen was Narrow Buckler-fern *Dryopteris carthusiana.* We then went to sites by Derwentwater, where more sedges included Water Sedge *C. aquatilis*, Elongated Sedge *C. elongata* and Tufted Sedge *C. elata*. There was also Water Dropwort *Oenanthe fistulosa*, at its only Cumbrian site. A bonus was a recently-discovered site for Southern Marsh-orchid *Dactylorhiza praetermissa*, on a road verge at its northern-most locality in the northwest.

In July, Professor John Richards took us to Holy Island. In dune slacks on The Snook were splendid displays of Marsh Helleborine *Epipactis palustris* and of Bog Pimpernel *Anagallis tenella*, favoured by the virtual disappearance of Rabbits through haemorrhagic disease, and stoats. We saw the recently identified, and famous, Holy Island Helleborine *Epipactis sancta*, at its only known locality in the world, and also Round-leaved Wintergreen *Pyrola rotundifolia.* On The Heugh (a whin dyke) were no fewer than seven clovers (*Trifolium*) and on village walls was Sea Spleenwort *Asplenium marinum.* Owing to tide times we needed to be back on the mainland by about lunchtime, and later went down to the saltmarsh at Fenham Mill. Among species found there were Sea Arrowgrass *Triglochin maritimum*, Annual Sea-blite *Suaeda maritima*, Narrow-leaved Eelgrass *Zostera angustifolia* and the rare hybrid grass *Elytrigia* x *obtusiuscula* - a hybrid between Sea Couch *E. atherica* and Sand Couch *E. juncea* subsp. *boreoatlantica.*

Midweek Botany Group

The group has continued to flourish and has had almost weekly outings throughout the spring, summer and autumn.

The end of the 2006 season saw us visiting a Northumberland Wildlife Trust site near Alnwick, where we looked particularly at ferns, and Warkworth dunes and saltmarsh.

The first trip of 2007 was to look at the spring flowers in the woods near Plankey Mill, and this was followed by a coastal trip to North Gare near Hartlepool where we found several interesting species including the locally rare Bur Chervil *Anthriscus caucalis*.

Visits to Holy Island and Spindlestone Heughs enabled us to look carefully at the flora of whin grassland, and the River Tees near Middleton and Gowk Bank in Cumbria provided a wide variety of flowers.

A limestone bank in the North Tyne Valley was spectacular in early July with a display of Dropwort *Filipendula vulgaris*, Common Rock-rose *Helianthemum nummularium*, Betony *Stachys officinalis*, and many other attractive summer flowers.

The outings held during July and August highlighted the huge variety of habitats we have available to us in the region: woods in Allendale, coast at Maryport, a mire near Hadrian's Wall, grassland in County Durham, a disused railway line north of Kielder, mine spoil heaps and river bank near Blanchland and the cliffs of Falcon Clints in Upper Teesdale.

On a weekend away in Yorkshire we looked at the plants growing on limestone pavements and studied aquatic species at close range as we steered our hired boat along the canal near Skipton!

The group has been involved with three additional projects this year.

The first was to survey several hay meadows in order to help assess the effectiveness of restoration work being carried out by the North Pennines Area of Outstanding Natural Beauty in their Hay Time project.

We also led a botanical walk for the North Pennines AONB as part of their programme of events for the general public.

The third task was to survey some of Durham Wildlife Trust's sites to assess their condition as part of its Coalfields and Lowlands project.

Detailed species records are kept on all our field trips. Anyone who has an interest in botany will be welcome to join us next year, and can contact us via the Society office.

General Field Meetings

On 13 August David Noble-Rollin led the 'New Members' day' field meeting. A group of about twenty new and not so new members explored the Gosforth Park Nature Reserve. The weather was very wet and made seeing birds difficult. The group got good views of Red Squirrels and the secretary explained about the hides and different activities that go on in the reserve. The Ringing Group had abandoned their 'constant effort' morning due to the weather but Chris Redfern explained what they were doing and what members can expect to see on a Sunday morning when they visit the reserve.

On 28 July the 'Gosforth Park Nature Reserve Exploration Day' was hosted by the Society and the EYE (Exploring Your Environment) project. Over 200 visitors attended this event and excellent feedback was received from participants. Many people particularly enjoyed being able to explore the reserve at their own pace, following two different trails which had been marked out on a map and signposted, and finding out more about wildlife recording from staff around the reserve. Hopefully, this day will go some way towards encouraging people to further their understanding of the species and habitats around them and raise awareness of the valuable work of the Natural History Society.

Entomology

On 19 January Dr David Sheppard (Natural England) gave a talk entitled 'No Bones About It: Challenges in Insect Conservation': the meeting was a joint one with the Royal Entomological Society. David Sheppard has a life-long interest in insects (hence the 'No Bones' part of the title), their ecology and conservation. He studied as an undergraduate at Newcastle University where he also did his doctorate and, whilst in the North East, made regular contributions to records of butterflies and moths. He has worked for many years for English Nature (now renamed Natural England) as an invertebrate specialist with the Terrestrial Wildlife Team.

David spoke about Natural England's Species Recovery Programme and emphasised that insect conservation is not a 'one size fits all' discipline. Much of the field work that has helped conserve some of our most endangered species has involved the efforts of a range of amateur naturalists and others involved in land management. For example for many years, the Field Cricket *Gryllus campestris* survived on just two sites, one of which was a cricket pitch. A south-facing bank on the boundary covered in rough grass provided a last refuge and despite the crowds and trampling, the crickets continued to thrive, but went into decline when a different type of lawnmower was introduced. More recently, Natural England and London Zoo have been breeding Field Crickets and introducing them to new sites, a project which seems to be successful.

The Hazel Pot Beetle *Cryptocephalus coryli* was widespread in the southern half of England in the middle of this century, but is now known only from single sites in Surrey and Berkshire and, infrequently elsewhere. In the south, it occurs on Hazel in woodland edges or rides, or hedgerows, while in the north it lives on young Birch in heathland. The reasons for the decline are not well understood, but may be related to the reduction in coppicing. The beetle is at risk from clearance of Birch from heathland, but we know very little about the ecology of the species. A recent study has shown that 90% of the beetles may be eaten by Woodmice.

The Purbeck Mason Wasp *Pseudepipona herrichii* is a large red, black and yellow Mason Wasp which provisions its nest with the caterpillars of a tortricid moth which feeds on heathers. The flowers of Bell Heather are also the major nectar source for the adult wasps. The nest of the Purbeck Mason Wasp is dug in areas of bare, clayey ground within heathlands. This Mason Wasp has long been known to be restricted to a few lowland heathland sites in the Poole Basin area of Dorset. A survey of clay exposures on Dorset heathlands carried out in 1995 and 1996 failed to find any further breeding sites for the species. In 1997, the monitoring programme revealed that the population size on one site had reached a very high level and, at the same time, new nesting aggregations were discovered on six other heathlands, showing that insect populations can fluctuate dramatically over short periods of time. At present more information is being sought about the ecology of this species.

Over thirty people enjoyed David Sheppard's talk which brought a refreshing reminder of summer on a rather cool January night.

The annual 'Bug Day Out' was held at Newcastle University's field station at Close House, Wylam on 23 June – just after the wettest summer on record began. Despite the rain in the morning a wide range of insect material was obtained from light traps that had been run through the previous night. Later in the day we collected other material using nets, beating trays and pooters. The identity of some of the insects was discussed and many people

were introduced to species or groups with which they were not familiar. The meeting was organized in conjunction with the School of Biology at the University and the Royal Entomological Society. Fourteen people of all ages took part at some stage in the day. If you missed it this year then watch out for the event in June 2008.

HANCOCK MUSEUM

This has been another historic year for the Hancock Museum as the Great North Museum Project gathers momentum. In April 2006 the doors of the museum were closed to the public after 122 years and the pack up and decant of the museum's collections began in earnest. By the end of October 2006 the entire museum's collection, comprising over 500,000 specimens, had been documented, photographed, packed and sent to temporary storage. Even the offices had to be packed away as curatorial staff prepared for their move to temporary accommodation at Claremont Terrace. Following the successful completion of enabling works by Thompsons of Prudhoe, the Hancock buildings and grounds were handed over in the spring to the main building contractors, Kier Northern and the building work is now well advanced.

This has also been a busy year for the Hancock mummies and live animals. Over the summer Bakt hor Nekht underwent CT analysis at the RVI. The results enabled an accurate representation of her head to be modelled; this was unveiled in November. Irt Irw is also currently being actively researched. Samples have been taken to establish how she was embalmed and whether she had malaria. As autumn began the mummies and mummified heads were moved to their temporary home in the Land of the Pharaohs exhibition at Segedunum Roman Fort for the duration of the Hancock closure. The Hancock's live animals have also moved to a temporary home, Creature Corner, at South Shields Museum and Art Gallery. They have proved to be very popular at their temporary home attracting good visitor figures, particularly for special reptile handling days.

Despite the lack of a building the museum's learning and outreach programmes have continued to be active with a full range of formal and informal events. Highlights have included a rainforest day investigating the plants and animals of the jungle, mini beasts at the BBC Springwatch weekend event and the arrival of a large, working model of a volcano.

Exhibitions

There have been no exhibitions at the Hancock Museum owing to the current closure as part of the Great North Museum Project Capital Development programme.

Learning Programmes

Family Fun A series of family fun events covering a wide rage of themes have taken place throughout the year. These events were delivered by Hancock staff at other venues, owing to the closure of the Hancock Museum.

Newcastle Science Festival The museum contributed to the 2007 Newcastle Science Festival with a number of events including an A-level science careers day, live animal handling days and public lectures about the current research on the Hancock mummies. The assistant learning officer for Real World Science also went out to schools around the city to give an interactive lecture called 'This World Rocks' to secondary school science students. This lecture takes a look at the structure of the Earth, with interactive models and demonstrations, as well as current footage of the Earth in action. A new volcano model, generously funded by Newcastle Science Festival, was commissioned for this lecture.

The Mummy Bakt hor Nekht being removed from display.

Ichthyosaurus being removed from its position on the gallery wall.

The Frosterly Marble Slab is moved to its new position in the museum It will be one of the few items to remain in the building throughout the developement.

Galleries full of packed specimens ready for the move.

The temporary store at the beginning of the tranfer from the museum.

Outreach Staff have delivered an extensive series of learning programmes to schools across the region during the closure of the Hancock Museum. These workshops are primarily based around 'Rocks and Fossils' and 'Investigating Animals' and utilise collections from the Hancock to provide a hands-on learning experience in the classroom.

Magical Science Fair During March, learning and curatorial staff from the Hancock delivered a Magical Science Fair at Sunderland Museum and Winter Gardens (our main current delivery venue during the closure of the Hancock). The workshops, which investigated animals and rocks, minerals and fossils, were designed to develop scientific skills, knowledge and understanding of the natural world. This event was very well attended, attracting over 1,000 primary school pupils

Loans Boxes Another mechanism to encourage continued used of collections at the Hancock has been the development of loans boxes. Boxes on the themes of rocks and fossils, skeletons and mini-beasts are currently in schools.

Real World Science – Strategic Commissioning Project The success of the Real World Science Project in the year 2005/06 led to the creation and appointment of a dedicated member of staff to coordinate the project for the project year 2006/07. The year saw the development of a new workshop on the rock cycle and an outreach interactive lecture 'This World Rocks', as well as refinement and development of the existing 'Evolve!' workshop. During the project year (2006/07) the team have delivered to 1,480 secondary science pupils representing 135% of our original delivery target. As well as continuing to deliver these popular workshops and 'A Run Through Time' interactive lecture, this project year sees the addition of dedicated A Level (Key Stage 5) and Key Stage 3 activities to meet increased demand. Teacher training was also included in the 2007/08 programme that started in April 2007. The North East Regional Museums hub has also contributed funding to the new project year and Ian Read is spending one day a week working within the hub helping to set up a science teachers' network forum.

Last year the partnership programme was discussed in a House of Lords Select Committee meeting on science education in schools. It continued to attract attention from the government and in May the project was highlighted in the House of Commons as an example of museum-based secondary science support for teachers by the culture minister David Lammy. Staff were also invited by Newcastle LEA to address Key Stage 3 science coordinators on the role of museums in secondary science learning. This is the only secondary science DCMS-funded partnership in the country and our involvement is a testimony to the importance of the Hancock Museum and its collections.

Ofsted style evaluation of Real World Science Partnership

During the last quarter of the project year the partnership was evaluated by Bob Ponchaud and Vin Davis (both ex HMI subject advisors for secondary science). The results of this evaluation were recently received by the partnership; the main findings of this report were as follows:

> The Real World Science programme represents a major step forward in the development of museum science education services;
>
> The attention paid to establishing up-to-date curriculum links and interactive use of unique museum facilities combine to make sessions highly relevant to secondary science students;
>
> The involvement of practising scientists gives participants an improved understanding of science and how it works and is likely to encourage them to continue studies in science subjects.

The Real World Science programme fits into and significantly extends the partner museums' range of educational services. It combines the virtues of strong secondary curriculum relevance with the benefits of out-of-school learning experiences.

The programme is strongly based on a consultative study and available research on museum education and takes good account of both.

The programme as a whole is tailored to make good use of the museums' gallery resources, facilities and historical legacy. The access to scientists and trained explainers provides, in addition, a unique human resource.

The experience of attending RWS sessions is highly likely to have given participants an improved view of science, scientists and the way they work. In particular they are likely to have gained a better understanding of the role of evidence and its interpretation in science.

In March, Ian Read coordinated and hosted a regional conference, 'Science Outside the Classroom', for museum professionals in natural sciences who are considering introducing or extending provision for secondary school science students. Keynote speakers were attracted from the Regional Science Learning Centre, Northumbria University and Newcastle Local Authority. The ability to attract high profile speakers and museum professionals from across the North of England is confirmation of the importance of the Hancock Museum, its collections and the DCMS funded Strategic Commissioning Partnership

Learning at Work

For National Learning at Work day in May, members of the EYE Project and Biology Teams led a series of workshops for TWM staff themed around wildlife in the city. Participants were encouraged to explore the wildlife to be found in the area around the Discovery Museum.

Post Graduate Studies

Two post-graduate students from the University of Newcastle International Centre for Culture and Heritage Studies spent one month each at the museum. One worked with the biology team to produce material for a self led conservation trail in the new biology gallery. The other worked with the EYE Project developing wildlife identification sheets for the EYE Project website. Three other Museum Studies students (from ICCHS) spent an eight week placement at the museum offices in early summer. After appropriate training they assisted in research and conservation of the collections for the new displays.

Adult Education and Training

The collections are used extensively for the University of Newcastle's own undergraduate and postgraduate teaching as well as by visiting groups from other Higher Education Institutions (HEIs) as part of their own courses. Six members of staff regularly work with students from both Newcastle and other HEIs assisting with dissertation and thesis work.

Loans In addition to numerous research loans to academic institutions around the world several loans have been arranged as part of our plans to maintain the profile of the museum during closure. Our important collection of Blaschka glass models continues to be displayed at the National Glass Centre in Sunderland. 'Land of the Pharaohs' has been re-displayed at Segedunum Roman Fort and Museum in Wallsend. Thanks are due to Gill Scott who co-ordinated this and Sharon Wilson, one of TWM's conservation officers who man-

aged the conservation of the collections and their transfer to Segedunum. A great deal of TV and press coverage was generated as a result, continuing to raise the Hancock's profile. Material has also been loaned to National Trust properties including Cherryburn (Bewick's birthplace) and Cragside.

Research A great deal of internal and external research has taken place on the collections over the last year. Examples are given below:

Taxonomy of excavating sponges – reclassification of the genus *Aka* – Dr Christine H L Schönberg, Carl von Ossietzky University, Oldenburg.

Cliona excavating Sponges on the Pacific Window Pane Shell, *Placuna placenta* (Lamarck) – distribution and economic significance – Dr Susanne Pohler, University of the South Pacific.

Morphological diversity in Brown Babblers from North East India - Dr Pamela C Rasmussen, Michigan State University.

Plasmodium falciparium (malaria) study using ELISA technique

Samples from Irt Irw (NEWHM: AREGYPT604) taken by York University.

Embalming materials study using GC-MS techniques. Samples taken from Irt Irw (same as above). Awaiting report from York University – Dr Stephen Buckley.

Radiology of three mummified heads from the Egyptology collection to determine age at death, ante- or post-mortem trauma and to cast new light on the specimens. Carried out at RVI by Gill Scott and Dr Iain Macleod.

Radiology and forensic examination of three Maori toi moko. Research by Gill Scott and Dr Iain Macleod at the RVI.

CT scan imaging and assessment of Bakt hor Nekht's mummy (NEWHM AREGYPT605) carried out by Gill Scott and Dr Iain Macleod at Newcastle General Hospital.

Preparation for DNA analysis of NEWHM : CO13 Maori toi moko by Gill Scott in conjunction with Glasgow University for repatriation request.

Variation in squirrel coat colour using museum study skins – Dr Peter Lurtz, Newcastle University

Field Vole statistics including body length as a function of population variability in Northumbrian voles using museum study skins – Dr Peter Lurtz, Newcastle University

Water Vole DNA. Regional variation comparing Northumbrian Water

Vole genes with those from Cumbrian Water Voles. Liverpool University.

Checking historic distribution of *Diptera* from the Wingate collections – Andrew Grayson, Yorkshire Naturalists' Union

Checking butterfly records of Northern Argus butterfly against historic distribution to investigate decline in numbers in Northumberland – P Summers, National Museums of Scotland.

Historical research into John Hancock's Gyr Falcons – Ruth Pollitt, Newcastle University.

Research on the Hancock Museum holdings of Giant Deer skeletal material – Sian Smith, Newcastle University.

Investigating the provenance of an historic Capercaillie specimen using stable isotopes – Dr Richard Bevan and Dr Les Jessop, Newcastle University.

Papers:

Hewitt, N (2007). *Environmental recording in the Museum Context.* Conference Proceedings, NatSCA conference and AGM 2007.

Jeffery, J E (2006). The Carboniferous Fish Genera *Strepsodus* and *Archichthys* (*Sarcopterygii*: *Rhizodontida*): Clarifying 150 years of confusion. *Palaeontology*. Vol **49** (1): 113-132

Scott, G (2007). An unwrapped mummified head in the Hancock Museum. *Ancient Egypt Magazine*. Vol **7** (5).

Scott, G (2007). Newcastle Science Festival and Egyptology. March 2007, *Journal Culture Magazine*.

Great North Museum Project

Collections Management and Conservation Final packing of the collections and the museum decant marked the beginning of the year. Most of the Hancock collections were moved to a secure storage facility in Gateshead. This temporary storage facility has provided a safe and environmentally controlled area for the collections while the new permanent, purpose built stores and resource centre are designed and constructed. Whilst the majority of the collections are housed in the temporary store some are being cared for at other TWM venues, including: Segedunum, where the majority of the Egyptian collection is on display in the 'Land of the Pharaohs' exhibition; the Laing Art Gallery, where many of the oil paintings and watercolours are being cared for; and Sunderland Museum, where the geology type collection is currently housed. Some objects have also been given temporary homes at Cragside, Cherryburn and the Regional Resource Centre at Beamish.

The collections are managed through a series of databases held centrally at the Hancock Museum offices at 3-4 Claremont Terrace. There is good access to most objects within the store. This means that objects can continue to be used for research, loans and learning workshops when needed. Objects that will form part of the new permanent displays are currently being transferred to the new GNM conservation labs based in 1-2 Claremont Terrace, where a conservation team is hard at work, assessing and cleaning each individual object prior to exhibition installation. Although the new conservation team only started work in July 2007 they have already treated and documented over a hundred objects.

The new permanent store is scheduled to be complete by April 2008, at which point the reserve collections from the Hancock Museum and the Museum of Antiquities will be relocated to the Discovery Museum. The store and resource centre will not only provide new, modernised storage facilities for the internationally important collections, but will also provide an additional public attraction, designed to be available for supervised tours and also for research and learning.

Design and Funding Exhibition designers, Casson Mann, are working with the Hancock team to complete designs for each of the eleven new galleries. The galleries' subject matter in outline is as follows:

Hadrian's Wall archaeology

Northumbrian archaeology before the Romans (Prehistory)

Ancient Egypt

Ancient Greece, Etruscans and Roman Empire

World Cultures

Global biodiversity

Northumbria's Natural History

Fossils, Crystals and Gems

Planetarium

Under Fives' gallery

Discovery Centre (including Anglo Saxon and Medieval collections)

The exhibition design programme is currently the main priority for the curatorial staff. This year design stages D and E were completed and staff are now working hard to provide the exhibition's designers with the information required to complete the designs to the end of Stages F and G.

Plans are now well advanced for the procurement of the numerous specialist 'packages' that will contribute to the exhibition works. These include elements such as Graphic Production, Models, Audio Visual/ Interactive Computer Technology (AV/ICT) Software and Hardware, Aquaria and the Planetarium. The Graphic Design Services contract is currently out to tender. A series of user consultations is planned over the next six months to help inform the interpretation of the exhibitions, fit-out of other spaces such as the learning suites, and planting schemes and designs for the landscaping. These will include consultation with disabled people, community groups, teachers, schoolchildren, family groups, nursery groups, students, academics and out of region visitors. A presentation and discussion session will also take place with the two societies in early October.

Fundraising work continues in order to achieve the project target of £26.246m. To date, £25,852,634 has been raised. The remaining amount plus potential enhancement funding is being sought through the University's Development and Alumni Relations fundraising team, working with GNM Project Office, which has already raised over £1.8m from Trusts, Foundations, Business and individuals. Recent funding successes include £200K awarded by DCMS Wolfson Foundation. Several new grant applications have been submitted and decisions are pending. These include an application for a further £250k from the Northern Rock Foundation. Grateful thanks are extended to the members of the NHSN for raising the £42,524 received to date (September 2007) towards the project, greatly exceeding their target of £30k.

Construction works The museum building was handed over to the enabling contractors in late autumn. The enabling works were completed in spring 2007. Kier Northern were appointed as contractors for the main building works and they took over the site in April. Work on the new building began in earnest with the arrival of a tower crane in early summer and the extension is now well advanced with construction of the ground floor wall complete. In addition, the works to the inside of the existing building have commenced and roof and flooring works are well advanced. Kier are programmed to be on site until May 2008 after which the main exhibition fit-out works will commence.

A visit by Society Trustees to the Hancock Site in July 2007. The first floor of the extension was beginning to appear.

Awards Congratulations are extended to Naomi Hewitt and Francesca Leslie who were both presented with the Staff Award for Contribution to Supporting Volunteers, at the North East Regional Museums Hub volunteer awards. These awards were given in recognition of Naomi's and Francesca's 'outstanding contribution to volunteer support'. Gill Scott also deserves mention. A project led by Gill entitled 'Egypt – the research continues …' about the craning and conservation of the two Hancock mummies, as part of their move to temporary lodging at Segedunum, was short-listed for the prestigious restoration and conservation category of the Museum and Heritage Awards.

Grants and Sponsorship (excluding GNM Project)

Hancock Museum (learning):

Real World Science	DCMS Strategic Commissioning in partnership with Natural History Museum	£27289.00
Newcastle Science Festival	Volcano Model	£4300.00

Current Permanent Staff

Senior Manager: Vacant

Steve McLean: Seconded to GNM Project Manager, Newcastle University

Sharon Lewis: Administrative Assistant*

Sylvia Humphrey: Assistant Keeper, Geology*

Eric Morton: Assistant Keeper, Biology

Nicola McNicholas: Biology Curatorial Assistant

Gillian Mason: Seconded to GNM Interpretation Coordinator, Newcastle University

Caireen Butler: Hancock, TWM and GNM Communications Officer*

Emma Pybus: EYE Project and TWM Communications Officer*

Short-term Contract Staff

Joanne Anderson: GNM Curatorial Assistant; Neil Bywater: GNM Assistant Conservation Officer; Ana Flynn: GNM Conservation Officer; Sarah Glynn: Keeper of Geology/Acting Manager Hancock; Daniel Gordon: Seconded to Keeper of Biology; Andrew Hamilton: GNM Assistant Conservation Officer; Naomi Hewitt: EYE Project Coordinator; Christine Kirkham-Thompson: GNM Conservation Technician; Roy Lawson: Learning Officer*; Francesca Leslie: EYE Project Officer; Rebecca Morgan: Assistant Learning Officer North East Regional Museums Hub*; Ian Read: Assistant Learning Officer Real World Science; Sarah Walter: GNM Image Researcher*

*indicates part-time

Volunteers

Volunteers have been particularly critical to the operation of the museum this year. They were invaluable to the final pack up and decant of the museum which was completed in October. They were integral to the huge amount of work that was undertaken to document and pack up the collections for removal to temporary storage as part of the Great North Museum project. Much of the museum work would not be possible without the continued support of volunteers, including those listed below, and we are extremely grateful for their generosity and commitment.

Shelagh Bridges and Trevor Bridges (Mineralogy curation and GNM Pack up); Paddy Cottam (Osteology curation); Jess Fermie (Palaeontology curation); Michael Frankis (Northumberland bird records); Roger Stobbart (Entomology curation/bird curation); June Waites (Learning support).

Great North Museum pack up

Peter Charlton, Alison Coapes, Jonathan Cranston, Sarah Dresser, Katherine Farrimond, Jeremy Fay, Stacey Felton, Heather Froste, Gillian Griffiths, John Harvey, David Horsefield, Zahida Ibrahim, Gillian Laing, Debra Miller, Paul Myers, Lewis McNicholas, Lauren New, Andrew Park, Chris Pettigrew, Jillian Rees, David Rees, Maria Rodriguez, Angela Russell, Svetlana Ryle, Laura Sevil, Nikki Spaulding, Ellie Swinbank, Jess Weightman. Thanks also go to the members of the Natural History Society who helped greatly with the packing up of the Society's library. Those who helped were Chris Calver, Hugh and Stella Chambers, Margaret and Martin Evans, David Gardner Medwin, June Holmes, David Noble Rollin, Margaret Patterson, Stuart Will and Rita Wolland.

Work Placements

Naomi Howes (Cramlington High School); Christine Alford (MA student ICCHS); Euan Foreman (MA Student, ICCHS); Emma Kelly (MA student ICCHS; Kari Leiper (MA student ICCHS); Evgenia Stavraki (MA student ICCHS).

Selected Acquisitions to the Society's collections

Fox, Shrew, Swallow, 5 Moles – gift, Mary Leslie, Hexhamshire

Chaffinch – gift, Daniel Gordon, Newcastle upon Tyne

Tree Creeper – gift, Stuart Will, Newcastle upon Tyne

5 Rabbits – gift, Tina Wiffen, Thornley Woodland Centre

Badger, Shrew, Stoat and various British birds – transfer from Kendal Museum

2 Baboons, Serval – transfer from National Museum of Scotland, Edinburgh

Various Rhizodont fossils – collection from Cocklawburn Beach by Geology Team

Green Tree Python – purchase, livestock GNM Project

The EYE Project (Exploring Your Environment)

August 2007 was the end of the first full year of the EYE Project, a three year joint partnership project between Tyne and Wear Museums and Newcastle University. It aims to encourage people to think differently about the environment they live in through active involvement with biological and geological recording. At the same time it aims to develop a regional bank of information about the biodiversity and geodiversity of the North East of England, in order to inform the future planning of the region's natural environment. It is funded by the Heritage Lottery Fund, Northumbrian Water, Newcastle University, Tyne and Wear Museums and the North East Regional Museums Hub, Natural England, Northumberland Wildlife Trust and Tyne and Wear Museums Business Partners' Fund.

Regional Environmental Data Hub In order to set up the Regional Environmental Data Hub, the regional database of environmental records, the EYE Project team has been working on the construction of a data management system. This must manage information effectively, tackle duplication issues within the existing data and set up data agreements. The existing database has been consolidated and the data software, Recorder 6, has been installed on the University's central database server to ensure that the data is securely stored. Over the last few months, the Project has been working closely with organisations and individuals who have agreed to share their data with EYE, and the EYE team are very grateful to them for their contribution to the project, and indeed, to the future of regional biodiversity.

Volunteer Programme A large number of volunteers have been working with the EYE Project over the past few months, and this has made an enormous contribution to the Project, with just over 55,000 new records generated. Volunteers have been transcribing paper based data into an electronic form, in order to ensure that the data can best be used to inform for the future of the natural environment.

The following volunteers all contributed to the project during the year: Sara Allan, Karis Baker, Lindsay Bamforth, Katie Beckett, Alastair Blain, Michael Breslin, Lynn Bridgett, Kathryn Dale, Suzanne Desire, Richard Duff, Philippa Dyson, Giselle Eagle, Gillian Flint, David Hill, Rachel Hockey, Simone Johnson, Lee Jones, Sharron Kenny, Anne Larvin, Ian Laycock, James Learwood, Simon Lowe, Isabel Menendez, John Noble, Chinyere Okoro, Lee Patterson, Gabrielle Prendergast, Sarah Robertson, Alan Salkilld, Amy Shiel, Paul Spoors, Ruth Starr-Keddle, Stylianos Stavoulakis, Andy Steer, Fiona Stephenson, Geraldine Straker, Judy Summerson, Amanda Tomas, Hannah Ward, Libby Wilcox, Laura Wilkinson, Rachael Wright.

In addition, the EYE Project has run a number of training days, and volunteers have taken part in wildflower identification and wildlife interpretation courses.

EYE Project 'WikiTOID' website The Project team have been working closely with Newcastle University's Department of Civil Engineering and Geosciences and Tyne and Wear Museum's ICT and Web Development team to develop a unique web site, which uses WikiTOID technology developed by the University. This will allow people over the whole region to record their sightings of species on a digital mapping system and to find how to get involved with the activities of wildlife organisations across the North East. The website is a complex but exciting development, and the first year of the EYE Project has gradually seen the early stages of this website take shape.

Events The Project also aims to provide opportunities for people to get involved in recording, data collection and to find out more about species, habitats and identification techniques. Working closely with partners across the region, the Project team has run a regular events programme with activities for both adults and children held in a variety of locations around the region, including museums, parks, and nature reserves. Activities have included Red Kite safaris, a nest box day, animal tracks and signs investigations, wild flower trails, and the Gosforth Park Exploration Day with the Natural History Society, which have proved extremely popular with the public. The Project team also took part in the BBC Springwatch weekend at Blaydon Burn, Gateshead and the Green Festival in Leazes Park. Spring 2007 saw the launch of the first EYE annual survey, the Northumbrian Water *Wild Flowers on your Doorstep* Survey, designed to encourage people to record twelve common wild flower species which are indicators of rich wild flower grassland. The Project also ran a programme of school workshops at the Stephenson Railway Museum in North Tyneside.

The official launch of the EYE Project took place in December 2006. Pupils from Marsden Primary School worked with Mick Simpson from the National Trust and Durham Bird Club to identify coastal wildlife at Whitburn Coastal Park. David Milliband MP and representatives from our funding organisations and sponsors also worked with the children to help launch the Project.

GOSFORTH PARK NATURE RESERVE

The nature reserve continues to thrive but it is a great disappointment that negotiations to obtain a long-term lease have not progressed. This seems to have been due to the sale of Northern Racing PLC to new owners and we hope that they can be persuaded of the importance of Gosforth Park Nature Reserve and the Society's role in its management. Over the last twenty years, the area of *Phragmites* reedbed in the reserve has more than doubled as a direct consequence of the Society's financial input, management strategy and funding from English Nature (now Natural England). Reedbed management work again took place during the winter, funded once again by a generous grant of £5,000 from Natural England. Paul Drummond, the Reserve Warden, has formed his own landscape maintenance company and successfully tendered for the contract. This was of considerable benefit to the Society and meant that the work was carried out by someone who knows the area intimately, and also more of the money was available for reedbed maintenance rather than paying for the administrative costs of larger contractors. The University Conservation Society also came into the reserve on a couple of weekends to help the ringing team maintain the net rides – an important task for the Constant Effort monitoring program run by the ringing group and one which also contributes to reedbed conservation.

Following the success of the tern platform in the old lake area last year, this was extended by another two metres and covered in gravel during the winter. The result during the breeding season was a further increase in size of the Common Tern colony and at least twenty-one nests were occupied. Members of the ringing team made one visit to the platform in June and ringed thirty chicks. Mute Swans also had a productive year in the reserve, successfully raising eleven cygnets. Other conservation work was directed at the mammals of the reserve: the 'Wanted Red and Alive' campaign was launched as a joint initiative between the Society, and the City and North Tyneside Councils as part of the 'Save our Squirrels' effort to preserve the Red Squirrels. The increasingly-frequent sightings of Grey Squirrels are of great concern and we hope that the programme of research and direct conservation measures to encourage Red Squirrels will keep the invaders out. Two Bitterns seen during the winter were rather more welcome invaders, and at least one of these was present in the reserve until April. These birds were no doubt attracted by the large areas of healthy reedbeds; these, and their associated populations of reedbed specialists such as Reed Warblers, are the main reason why the reserve is designated as an SSSI. However, other plant species in the reserve are of national significance, notably the Coralroot Orchid and Young's Helleborine. Both of these flowered successfully in the reserve this year and Paul Drummond counted over a hundred spikes of Coralroot Orchid.

Bittern photographed by Keith Hildreth in the reserve.

Gosforth Park Nature reserve would not be the success it is without the dedication of many Society members who maintain security and take part in working parties and monitoring programmes. The Society is grateful to the Warden, Paul Drummond, for his firm stance in keeping vandalism to a minimum and for his hard work on the tern platform and other reserve management tasks. The Society is again grateful to Natural England for funding work to maintain the reed beds in a healthy condition and we hope this will continue for the foreseeable future. We have appreciated the continued co-operation with Gosforth Park Race Course in maintaining security and help in running the reserve and hope that relationships with the new racecourse owners are as cordial. The grant funding from Natural England is due to David Noble-Rollin's skill in negotiating grants to help manage the reedbeds and safeguard the Red Squirrels. The Society is very grateful to Veronica Carnell and other members of the squirrel team for their work on Red Squirrels and the campaign to keep out the Greys.

RINGING GROUP

Gosforth Park Nature Reserve With the start of the Constant Effort Site (CES) season at the end of April this year, the CES project at Gosforth Park entered its twentieth year. During this time, the ringing data generated have contributed to a national program to monitor the abundance and productivity (breeding success) of a range of bird species in the UK. Gosforth Park is one of around a hundred sites across the whole of the UK, so the Society's contribution to national bird-monitoring programs is significant. Capture totals (new-for-year birds) in Gosforth Park for the periods covered by this Annual Report for 2007 (1 August 2006 to 31 July 2007) and for the same period in 2006 are shown in Table

1. Overall, the total number of captures (new birds and new-for-year retraps from previous years) for this period was up by 272. Over one third of this increase can be accounted for by the ringing of Coal Tits, Blue Tits and Great Tits in the reserve during the winter as part of Dr Tom Smulders' and Rowan Cockroft's (Newcastle University) colour-ringing study of food-hoarding behaviour. The rest of the increase in capture totals is due to a few species which seem to have done rather well. Captures of Reed Warblers in particular were double the total for the previous period. This mirrors the continuing success of this species in the reserve which may be a consequence of good reedbed management. A paper analysing the survival rates of Reed Warblers in the reserve over the last nineteen years in comparison to a southerly UK site (Wicken Fen) was published in the BTO journal *Ringing and Migration* in December 2006 (http://www.bto.org/ringing/rmj/rmj-23-2.htm); this is the second paper in an international ornithological journal resulting from the ringing team's work in the reserve. Willow Warbler and Chiffchaff captures also increased, the former to nearly twice the total for the previous period. In contrast, captures of Sedge Warblers and Reed Buntings stayed about the same. Although there were no Bluethroats this time, one bird new for the ringing team was a Tree Pipit, caught early in 2007.

Table 1 Captures (new birds and new-for-year retraps) at Gosforth Park in the last two 'Annual Report' years.

Species	1 Aug 2005-31 Jul 2006	1 Aug 2006-31 Jul 2007	Species	1 Aug 2005-31 Jul 2006	1 Aug 2006-31 Jul 2007
Common Tern	21	30	Chiffchaff	48	69
Kingfisher	2		Willow Warbler	69	122
G S Woodpecker	1	4	Goldcrest	1	
Swallow	7	4	Long-tailed Tit	19	32
House Martin	1		Coal Tit		24
Tree Pipit		1	Blue Tit	79	99
Wren	42	47	Great Tit	29	111
Dunnock	12	20	Treecreeper	1	2
Robin	21	18	Jay	2	3
Blackbird	30	14	Magpie		1
Song Thrush	7	4	Starling		2
Grasshopper Warbler		1	Chaffinch	1	1
Sedge Warbler	91	88	Greenfinch	19	10
Reed Warbler	60	119	Goldfinch	4	6
Lesser Whitehroat		2	Linnet	2	1
Whitethroat	11	8	Bullfinch	6	4
Garden Warbler	1	4	Reed Bunting	34	36
Blackcap	44	52	**Total**	**666**	**938**

Seabird ringing Seabird ringing on the Farnes and Coquet Island became a major focus of the Society's ringing team in June and July. In terms of numbers ringed, the 2007 breeding season has been variable. The difficulty of getting out to the islands at the right time, the particularly bad weather this year and the annoying tendency of the Sandwich Terns on Coquet Island to nest close to the Roseate Tern colony meant that only 313 Sandwich Tern chicks were ringed (Table 2). However, this has been compensated for by an increase in the number of Arctic Tern chicks ringed, largely due to the efforts of Chris Bell and Kieren Alexander, resident wardens on the Farnes, and Laura Morris on Coquet Island, all of whom had ringing permits allowing them to ring seabird chicks. During the season, 141 adult Arctic Terns were also caught, either by hand, or using nest traps or hand-nets, and this contributes to understanding the patterns of mass change of adult terns in relation to breeding and weather conditions. Biometric data were obtained for Arctic Tern chicks as part of the annual growth-condition index, and for adults and chicks of Puffins and Kittiwakes, two species which, like Arctic Terns, depend on Sand eels but have differing foraging strategies. Other species ringed were Shags, Eiders (adult females), Black-headed Gulls (Coquet Island), and Fulmar chicks on Coquet Island (Table 2). The Shags and Eiders were ringed as part of a 'Retrapping Adults for Survival' study which the Society has been running for nearly ten years. The seabird ringing, particularly the biometric studies, will make a useful contribution to understanding the causes of variation in breeding success. The outcome of the 2007 season overall has been mixed. Signs were good in the early part of the season, but an apparent food shortage in mid-July resulted in the deaths of many fledged and near-fledged Arctic and Common Terns on Coquet Island while the Farnes seem to have been relatively unaffected.

Table 2 Seabird ringing totals for 2006 and 2007: Farnes and Coquet Island.

	2006		2007	
Species	**Ringed**	**Retrap/ Control**	**Ringed**	**Retrap/ Control**
Fulmar	24		11	
Shag	58	25	148	18
Eider	8	74	23	24
Black-headed Gull	200		175	
Kittiwake	325	5	386	13
Sandwich Tern	528		313	
Roseate Tern	1			
Common Tern	48	1	49	
Arctic Tern	802	91	938	62
Puffin	80		123	
Total	**2074**	**196**	**2169**	**117**

Ringing at Low Newton From September, the Society's ringing team concentrates on ringing at Low Newton where two sites are operated: a small group of nets around high tide mark on the beach and the main site around the pool. The totals of new birds ringed for both sites combined are shown in Table 3. The beach site continues to produce interesting data: the comparison with the previous year shows that greater numbers of pipits

(Rock and Meadow) were caught there in 2006. The numbers of wagtails was about the same as 2005 while approximately one-third fewer Starlings were caught. While the numbers are small, one interpretation of these changes in relative capture rates in the light of differing foraging requirements of Starlings and pipits is that the strand line habitat may vary from year to year in the foraging opportunities available to different groups of birds. Taking the two sites together, the range of species ringed overall was similar to the previous year. Robins were slightly down in numbers, but this is a species which is migratory to some extent. The number of Sedge Warblers ringed was well down on the previous year, while three Reed Warblers were ringed, a species which is never very numerous at Low Newton despite the expanding areas of *Phragmites*. The Low Newton site is not a hot-spot for rare migrants and the team operates nets in the main area around the pool in a similar manner (albeit much more relaxed) to the CES site at Gosforth Park. This means that the data can be used as a record of changing populations, both local and migratory. Furthermore, the data generated contribute to other studies, such as the stable-isotope study of Blackbird and Redwing migration carried out by Liz Coiffait, a member of the ringing team, for her PhD at Newcastle University.

The training of new ringers is a very important function of the Ringing Group. This year, two of the Group's trainees, Liz Coiffait and Stuart Will, were awarded their C permits. This allows them to ring without direct supervision by more-experienced ringers and is an intermediate stage towards being a fully-fledged and independent A-permit holder. The ability to ring without direct supervision conferred by having an A or C ringing permit can be of considerable value to anyone wanting to undertake ornithological research or a career in conservation. Indeed, a past member of the Society's Ringing Group commented that his ringing permit was more valuable to him than his PhD!

Many people support the ringing studies and the Society is extremely grateful for their input. John Walton and David Steel of the National Trust have been a particular strength, despite the distractions imposed by having to push forward improvements to the accommodation and infrastructure on the Farnes. Paul Morrison of the RSPB and Zoë Tapping, the resident warden on Coquet Island, have been generous with their time and energy in getting members of the ringing team across to the island; tea and biscuits in their cosy and surprisingly well-appointed kitchen have proved quite a distraction to the serious business of seabird ringing. Laura Morris, Chris Bell and Kieren Alexander have helped tremendously by ringing Arctic Tern chicks on Coquet Island and the Farnes. The Ringing Team put a tremendous amount of effort into the Society's ringing projects and the Society is very grateful for their hard work.

Coastal Research As in the last few years, the ringing projects have been complemented by studies to monitor the foraging locations of terns and other seabirds around the islands. These studies have been run by the Society in collaboration with Dr Richard Bevan and Dr Judy Foster-Smith from Newcastle University, members of the Farne Islands Marine Research Group (FIMRG). Staffing difficulties meant that rangefinder estimates of foraging locations were not obtained from the Farnes this year. However, Karen Ramoo, an MSc student from Newcastle University, made important contributions to the long-term dataset by recording the feeding frequency and meal sizes brought back to Arctic Tern chicks. Her observations were also directed at quantifying the effects of visitor disturbance on the nesting terns. For part of this work she used a system of nest balances, partly funded by the Dickinson Bequest, to determine the consequences of disturbance on the incubation schedule of Arctic Terns. Kate Jagger, another MSc student resident for a time on

the Farnes with Karen, studied feeding patterns of Guillemots on Inner Farne. Laura Morris returned for a second season on Coquet Island, keeping the warden, Zoë, company while ringing tern chicks to record mortality levels, recording chick feeding frequency and meal sizes, and estimating tern foraging locations using two rangefinders and compass binoculars. The Society is very grateful for their efforts on behalf of the Society and the FIMRG.

Coquet Island Advisory Committee

For many years the Society has had two representatives on the Committee, Ian Moorhouse and David Noble-Rollin. The Committee met twice during the year and at the July meeting Ian Moorhouse said that he had decided to retire from the Committee after twenty years. He had always considered it a privilege to be on the Committee and particularly remembered his involvement with the creation of the new terms of reference for the group, the protocol for gull management and his time as Chairman. He then suggested that Dr Chris Redfern should be asked to take his place as the Society's representative. This was agreed by the members of the Coquet Island Committee and the Society's Council.

In general the birds on the island have had a good year from the point of view of numbers of adults. Most of the Sandwich Terns that were absent last season returned, with 1,223 pairs compared with 759 last year, and there were increases in Arctic and Common Terns and Eider Ducks. There was a continued decline of the large gulls which are responding to the management strategy proposed by Natural England and the Committee. The Roseate Terns however have shown the first drop in number for many years, from ninety-four to seventy-five pairs. It is tempting to look for reasons but this may just be a natural fluctuation in the population. If the problem is on Coquet, the most likely cause is the fact that last year the Sandwich Terns not only dropped in number but also moved into one of the Roseate Tern areas. Their increase this year could have deterred some of the later arriving Roseate Terns. To compensate, it is planned to build more tern terraces away from this area to give the Roseates more room. During the season there was a period of food shortage and towards the end a very high mortality of nearly fledged young terns which has affected the overall success of the season. Following last year's possible attempted theft of Roseate Tern eggs, this year the RSPB mounted a twenty-four hour watch on the nests. This successfully stopped anyone landing to try to steal eggs but required additional staff on the island and great dedication from everyone concerned.

Lindisfarne National Nature Reserve

The Advisory Committee meets twice a year and its main remit is to advise Natural England on matters concerning the National Nature Reserve. The Committee has representatives from a wide range of local organisations and national institutions that have an interest in the area. As well as the report of the Wildfowl Panel, the committee gets updates on the other natural history features of the reserve. They reported for the 2006 season in November a record number of Little Tern pairs (54) but a disappointing number of fledged young (17) due to the depredations of a single Kestrel. This also applied to the Common Tern colony which had 110 pairs but fledged only twenty-five young. The Ringed Plovers had a good season and there was a healthy seal population with at least one Grey Seal born in the reserve and records of two Common Seal pups. The management of the dune system is important for the orchid population and again controlled cattle grazing had been used to control the grasses in the winter months. The site manager, Phil David, reported that in 2006 there had been over 200 spikes of the Lindisfarne Helleborine and about twenty spikes of Coralroot Orchid.

The other main issue discussed was the Beal Project which is an outline proposal for a café and interpretive facilities at Beal Farm. This wildlife orientation to the farm's activities could if properly managed have a positive benefit to the adjacent nature reserve. Also during the year a paper was presented outlining an assessment of the future structure of the committee. This was presented at the May meeting and will be looked at in the coming year.

Lindisfarne Joint Advisory Committee and the Wildfowl Panel

The Wildfowl Panel is concerned with the monitoring of wildfowling and other human activities on the Nature Reserve and their impact on the birds. At present the Society's representative, David Noble-Rollin, is the Chairman of the Panel and therefore also has a place on the Joint Advisory Committee. The wildfowl warden makes weekly counts of a wide range of waterfowl and from this calculates peak counts for each month. These showed similar patterns of numbers for Wigeon to last year's, around 14,000 in October, and an early influx of Teal in September but slightly lower numbers in the latter part of the autumn. The continued decline of the Mallard numbers is of concern but there has been an increase in the peak count of Brent Geese in October from 2,100 last year to 3,100 this year, although very few young birds were seen. Most remarkable were the peak counts for Pintail which showed almost double the previous year's number of birds throughout the winter with over 440 in December. The panel also instigates the monitoring of *Zostera* grasses, the main food source on the slake for Wigeon and Brent. This is part of a five year study to check the availability of food. In 2006 the results in year three of the study showed good amounts of food but that around Tealhole Point *Enteromorpha* was smothering the Dwarf Eelgrass. Avian influenza is still a potential hazard with waterfowl coming in from all over northern Europe and the National Nature Reserve is supplying swabs and specimens for analysis to DEFRA. So far all of these have proved negative.

OBITUARIES

James Alder (1920-2007)

I remember some years ago seeing James Alder on television, in a programme broadcast by the local ITV station. It was the first time I had heard of him and there he was a tall, athletic man striding through a river in his waders, sturdy stick in hand and a bag slung over his shoulder bursting with his artist's materials and no doubt a pair of binoculars.

Photograph courtesy of Northumbria University.

The programme was called 'Alder's Kingdom' and he talked about his life, his art and his love of natural history. I realised at the time that I was watching a very special individual but it was years later when I met him at the Hancock Museum that I understood just how extraordinary he was.

James's first exhibition at the age of thirteen. Courtesy of *The Journal*, Newcastle.

James, the son of a docker, was born on 'the banks of the River Tyne' in the east end of Newcastle on 5 July 1920. His artistic talent was recognised at an early age when he won a scholarship for art entitling him to attend evening classes at King's College, now Newcastle University. Athol K Caris, the headmaster at the Royal Jubilee School on City Road, where James was a pupil, fitted him out with paints and brushes and insisted that he should spend half a day, every day, out of school to practise drawing - 'to reach for freedom to express myself' James said. His other teachers treated him as 'a near idiot', as all he wanted to do was draw. By the age of thirteen he had already held his first exhibition at the school and been featured in the local paper as a child prodigy. It was Caris's foresight - a man James always credited with his early success - which was undoubtedly instrumental in shaping the man who was to become one of Britain's leading wildlife artists.

There was another hero in James's life, a man he revered and talked about endlessly, the great North East wood engraver, naturalist and artist, Thomas Bewick.

James would often refer to a copy of Bewick's *British Birds* which he had found abandoned on the local Ouseburn rubbish tip - a place much frequented by the local boys. From the moment of opening the book his eyes were opened to 'a wonderment of birds' - he absorbed the exquisitely beautiful detailed engravings of animals, birds and people. He felt drawn to Bewick's world and knew he had to explore it. The boy from the city set off into the country. In his own words, 'he had to go upstream to discover where all this beauty was.'

At the age of fourteen he discovered the 'joy of Devil's Water', a tributary of the river Tyne near Hexham. He called it 'a boyhood kingdom' with nature at his feet to study and draw. It was certainly his love of Bewick which encouraged the naturalist in him. Like Bewick he not only drew but studied the plants, birds, insects and animals he saw all around him, honing his observational skills and techniques.

Another great influence in James's early life was the Society's own Hancock Museum. He was drawn to it like a moth to a flame. He often recounted how he was such a frequent visitor that he was soon ushered in through the metal turnstile, without paying, by Miss Gladys Scott, one of the assistant curators. Inside he would have been acquainted with the Curator at that time, T Russell Goddard, and, of course, George Temperley, not only the Society's Honorary Secretary but a distinguished local ornithologist. They obviously all saw something to nurture in the budding naturalist and artist. He may well have also attended the afternoon lectures for 'young people' put on by Goddard and his staff.

By the age of fifteen, James was employed as an illustrator in the art department of the local Newcastle newspapers *The Journal* and *The Evening Chronicle*. When war broke out he joined the RAF, serving as a wireless operator, his greatest regret being that he never learned to fly; in 1952 he eventually achieved his ambition when he attained his private pilot's licence. It seems completely appropriate that the man who studied birds all his life eventually found his feet, or should I say 'wings', in their environment.

During the war years he met and married his wife, Lilian, on 27 September 1943. They met at a dance when James was stationed at the Catalina Flying Boat base on the Clyde. He was apparently an accomplished dancer too.

After his national service he returned to the *Chronicle*. He wrote weekly, illustrated nature columns for many years, which led into a regular slot on the Tyne Tees TV children's programme 'Happy Go Lucky' in the 1960s and later on 'Looks Natural.' There is an interesting note on the internet site Bird Forum by Alan Seaton who says James influenced his interest in ornithology. 'I used to look forward to seeing him on his television appearances where he would demonstrate his immense talent, sometimes sketching live on screen, or showing his wonderful sculptures. Even in black and white on a grainy television screen his greenfinch sculpture was immediately identifiable as a greenfinch.'

While carving out his career, James was still very active in the field of natural history, officially joining the Society in 1946 when he was then living in Mill Cottage, Whitley Mill near Hexham. A photograph, taken in 1951, in the Society's archives show a young James in Hamsterley Forest, Durham with a group of people, including George Temperley and Fred Grey, nest box ringing.

He had a passion for birds and his great love was Britain's only 'amphibious songbird' the Dipper, of which he began a study near his home on the Devil's Water, the place he had discovered in his youth. The birds were carefully observed over many years and James filled a number of notebooks with comments and drawings of Dipper behaviour. Although a world authority on the Dipper, the results of his research were, unfortunately, never fully published. There are two short papers in *British Birds* (Alder, J (1957) *British Birds* **50**, 267-9; (1963) *British Birds* **56**, 73-6) on Dipper behaviour, but he was consulted for the Dipper section in the *Handbook of the Birds of Europe and the Middle East and North Africa: the Birds of the Western Palearctic* (Vol. **5**) where his drawings are featured.

James, however, gave many lectures on the subject of his favourite bird, the last one to the Society in 2001 when it was reported in the annual report that the 'the audience was spellbound.' He said he was a 'crackpot about Dippers', he even invented a mechanical Dipper to emulate display.

In the 1970s James completely changed direction in his career. He joined the Royal Worcester porcelain company as their senior consultant sculptor, creating models of birds

and flowers. As an artist, James was often compared to Bewick. He had an eye to detail that was natural and inspired. He spent his time observing birds in the wild, sketching them and finally painting or sculpting them. He would first recognise the bird through 'bird listening' then look at it through binoculars. For his sketches he used the birdwatcher's skill of 'Jiz - capturing in a moment all that you've ever learned in life about that particular creature.' He said he used a technique 'almost like stop motion photography. I look at the bird intently, imprint upon my mind, my cells, the last picture I saw of the bird and then looking at the paper try to project that image onto the paper until it begins to fade.' With that he would 'catch the spirit of the bird.'

The attention to detail in all of his work was never more evident than in the two glorious books he produced for the Queen Mother and the Queen, *Birds and Flowers of the Castle of Mey* in 1993 and *Birds and Flowers of Balmoral* in 1997. The volumes were published in honour of the Royal family who fully endorsed their production in limited editions as a fund raising enterprise for the Royal Society of the Protection of Birds. He would arrive in the museum with a portfolio of sketches under his arm, ready to spend a day researching bird mounts and skins. Everything had to be perfect down to the last fine detail in a feather and he spent hours looking at botanical illustrations of the plants he used in his watercolours. James was overjoyed when the University of Northumbria republished his works as a more affordable single volume in 2003.

During the 2003 celebrations of the birth of Thomas Bewick, James was asked to give a talk on Bewick. He chose the subject of 'The Boyhood of Bewick', which he presented to a joint meeting of our Society, The Bewick Society and the University of Northumbria. It was a revelation to hear him talk comparing his and Bewick's techniques. James had trained his eye from a young child to perfect sketches and writing in miniature. Both he and his brother, like the Bronte sisters, had made tiny books with writing so small they had to be looked at with a magnifying glass. He demonstrated this skill at the lecture to a stunned audience by inviting the Vice-Chancellor Prof. Kel Fiddler to try to read something he had previously written in miniature on a large sheet of paper. Of course, he could not see it without the aid of a lens. It was James's belief that Bewick had this same ability - extraordinary eyesight which could focus on fine detail.

In 2005 James was asked by the Chillingham Cattle Association to produce, like Landseer and Bewick before him, a painting of the Chillingham Cattle. It was a fundraising and publicity exercise to raise the profile of Northumberland's rare Wild White Cattle, which James quickly agreed to. He created his largest watercolour, with the cattle grazing in the foreground and a Northumbrian backdrop of Chillingham Park. Although he had spent many hours in the back of the warden's Land Rover observing and sketching, he dashed into the museum one day desperate to look at the hooves of the Chillingham cattle in the Hancock collection. The specimens were still in their 1960's diorama hidden behind modern fittings and fixtures. Needless to say the museum staff moved mountains to made the specimens available. James sketched and made notes. Later when we saw the painting it was evident that the hooves could not really be seen, but that was not the issue, they had to be perfect in James's eye and no doubt if you look carefully behind the grass they will be.

He was very active within the Society, working as a member of Council and the leader of the Ornithological Section for a number of years in the '60s. He was honoured, for services to the Society, with the title of Vice President in 1979 and was elected as our President in December 2004. I remember him saying 'it was like the icing on the cake'. He was

'Capturing the moment'. The Merlin from *Northumberland's Birds.*

extremely proud to accept the Presidency and he promoted the Society with great enthusiasm.

James's skills as a bird illustrator were much in demand and many local authors used his drawings in their publications. The Society's own *Transaction* 'Northumberland's Birds' by Galloway and Meek was graced with beautiful illustrations, such as the Merlin, the Short-eared Owl and the Bluethroat. Henry Tegner, Sir James Steele and F Alex Wills (under his pseudonym 'Vagabond') all published books illustrated by James Alder. When the Society's indefatigable Honorary Secretary, Grace Hickling, died in 1986, James was asked to design and model a bronze commemorative plaque. The plaque, depicting Arctic Terns in flight, was subsequently sited in St Cuthbert's Cove on Inner Farne in her memory. James, himself, had assisted Grace with her research on the Grey Seals of the Farne Islands in the 1950s and 60s.

Over the years James worked tirelessly, and usually for no financial reward, for his favourite charities - the Society, the RSPB and the Northumberland Wildlife Trust, of which he was a founder member. He was also the Patron of the historic 18th century St Ann's Church, close to where he was born. James was recognised for his work and talents when he was made an Honorary Master of Science by Newcastle University in 1994 and later in 2002 when he received an honorary Doctorate of Civil Law from the University of Northumbria. An active member of the Newcastle Rotarians, James was awarded a Paul Harris Fellowship, the highest honour to be bestowed by the International Rotary. He also held honorary membership of both the Bewick Society and the Pen and Palette Club.

James was gregarious, charming, affable, welcoming and full of mischievous fun. He was generous with his skills and time, he wanted everyone to share the enthusiasm he felt for art and wildlife. A perfect gentleman, James made you feel at ease in his company; he greeted everyone he met as a friend. While imparting some knowledge or telling a story, he would fix you with his steely blue gaze to make sure you were paying your full attention but there would be a twinkle in his eye if he was being less than truthful; he loved to make jokes. He was an early riser, getting up at five every morning to work on his art, leaving the rest of the day to pursue energetically his many other interests and projects. A kind and thoughtful man, over the years a succession of injured birds was taken into his care and lovingly restored to full health. One of his favourites, a Kestrel named Kek, became the emblem of the RSPB's Young Ornithologist's Club in the 1960s.

Fascinated by the meaning and origins of words, he kept a dictionary by his bedside - just in case he needed it in the night, so he said, to pursue a word he was interested in. His use of vocabulary was eloquent; why say flock when you can say 'a bouquet of pheasants, a murmuration of starlings or an exaltation of larks?' Many of his talks featured his love of words. I learned recently of his addiction to *Gray's Anatomy* and how he memorised passages from the book so that no doctor could get the better of him. The last book I heard him say he was 're-analysing' was Charles Darwin's *The Origin of Species*. His energy and

Photograph courtesy of Marshal Hall.

love of life was truly inspiring: it was a typical 'James Alder moment' when, at the end of his funeral, we all filed out to the strains of 'What a Wonderful World' by Louis Armstrong.

James died on 17 June 2007 aged 86; there were numerous tributes, obituaries and comments written, and a few poignant words from his friends and admirers are worth recording here:

'James was a delightful, witty, affable man who was also a field naturalist and carried out a lot of research over many years.' Peter Davis, Chairman of the Natural History Society of Northumbria.

'James was a towering figure of natural history and wildlife illustration in the region for almost half a century.' Marshall Hall, art historian and author of *The Artists of Northumbria.*

'James Alder follows in the tradition of the famous Northumbrian naturalists of the last century, John Hancock and Abel Chapman, while his paintings clearly draw inspiration from our great Tyneside artist and engraver Thomas Bewick.' Viscount Ridley, President of the Natural History Society of Northumbria from 1996 until 2004 - from the Preface to *Birds and Flowers of Balmoral.*

'James was a lucky man: he found his life-time passion at an early period in his life and followed his star with a certainty and determination that can only be admired.' David Noble-Rollin, Secretary of the Natural History Society of Northumbria - from the Society's *Bulletin.*

James himself described Bewick as 'a brilliant artist, a tremendous craftsman and a remarkable observer of the Northumbrian countryside. His work, to me, had great energy, an energy that I still draw on. In fact, I think it is true of any great artist that he leaves this energy for others'. These sentiments could have been written about James himself, they sum up everything he stood for. They remain, a suitable epitaph not only to Bewick but also to his life long admirer, our late and much loved President James Alder, naturalist, artist and sculptor of birds and animals.

June Holmes

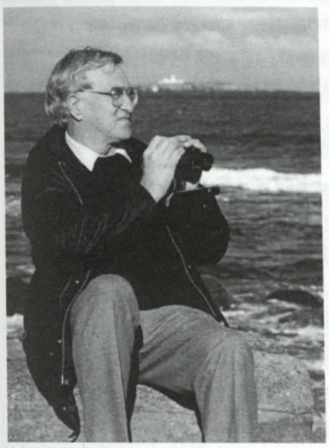
Sources

Alder's Kingdom - Tyne Tees Television 'About Britain' programme (28 Feb 1980).

Alder, James. *Birds and Flowers of the Castle of Mey and Balmoral.* Northumbria University Press, 2003.

James Alder Archive, Annual Reports and *Transactions* of the Natural History Society of Northumbria.

Peter Hawkey, MBE (1925-2006)



Peter Hawkey, for twenty years the resident warden-naturalist-manager of the Farne Islands died at the end of October 2006.

Prior to one, now memorable, day in 1970 Peter and his wife Joyce were quietly managing the Youth Hostel at Rock but then one of those strange little twists and chances in life occurred which can completely change a life or, indeed, an organisation.

The event was recalled by Lawrence Harwood, CBE in his tribute to Peter at a Service of Thanksgiving on 6 November 2006. In 1970 he was the Regional Director of the National Trust which had acquired the islands in 1925 and he was to become a long-time friend of Peter. He told the congregation ... 'the National Trust Committee for the Farne Islands decided, for the first time, to appoint a full-time warden for the islands. A short list of candidates had already been selected and a date for interviews, but on the evening before the interviews I received a telephone call from a certain Peter Hawkey, manager at the time of the Rock Youth Hostel, enquiring about the job. In the normal course of events I should have told the caller he was too late and out of time but there was something about the sound of his voice ... which made me hesitate to do so and that hesitation turned out to be one of the best hesitations I have indulged. I made enquiries about the man and heard nothing but good about him and his wife, Joyce, and therefore decided with the agreement of my colleagues to let him come for interview at the eleventh hour. Peter and Joyce both came and stood head and shoulders above the other candidates, so Peter got the job, and you could say the rest is history.'

Over the next twenty years Peter Hawkey made the position his and set the standard for his successors. With no string of academic degrees but with inexhaustible common sense, vigour, dedication and an ability to talk and put across his views, he set about his complicated and demanding task. He faced vegetation and soil erosion problems affecting the seabirds. Visitors had been allowed to roam at will over the islands and the Seahouses fishermen were only too pleased to take them out to the islands without any restrictions. Egg collecting and vandalism had to stop.

In 1974 a scheme licensing boats to land visitors on only two islands was introduced - Staple Island was open to visitors in the mornings and Inner Farne in the afternoons. Peter was particularly proud of the development of the paths and nature trails on Inner Farne and Staple Island that restricted the visitor and thus reduced the disturbance to the breeding birds. These measures are still in place today and all the species of birds previously affected by uncontrolled public access have steadily increased.

The seal cull carried out in 1972 and 1975 to limit soil erosion on some islands called upon Peter's skills as a diplomat. He and the Trust endured a very rough time from the press and animal rights groups as 600 cows and 130 bulls were killed in 1972.

His appointment brought about a much greater knowledge of the wildlife on and around the islands. Previously we relied upon keen lighthouse keepers, short term student study groups and local wardens only familiar with the resident seabirds. Peter appointed about

eight young wardens each year who were generally all keen naturalists of many interests, from moths and birds to flowers and whales; they lived on Brownsman and Inner Farne throughout the summer and some stayed on to monitor the Grey Seal calving in October/November. An enormous amount of valuable information has been collected and this work has been carried on by Peter's successor, John Walton, assisted by David Steel; the recent issue of the Society's *Transactions* 'Birds on the Farne Islands in 2006' is a full and detailed testimony of the progress made and the detailed studies initiated by Peter.

From his appointment, Peter worked in close liaison with this Society and our own Grace Hickling. The Society backed the necessity for the seal cull and Grace, as an authority on the Grey Seal, was a power-house and influential long-time member of the Farne Island Committee. She had an excellent working relationship with Peter ringing the islands' birds, for he arrived as she was to become more infirm yet fully capable of carrying out the time consuming paperwork and recording, while Peter organised the field work. However, in a private paper in 1985 she was concerned as to who could carry on with the paperwork after her. Peter was a registered ringer, so qualified to do it, but Grace recognised that he could not possibly find the time to take on more administrative work. Following her death at the end of 1986 the Committee decided to abandon ringing and it was ten years before the Society was allowed to resume on a limited scale.

It is in this same paper that Grace paid tribute to Peter just eighteen months before her death. The two did not always agree with each other but she wrote 'I think Peter Hawkey will retire within the next ten years and thought must, in due course, be given to his successor. We have been incredibly lucky in the service given by Peter and with hindsight his appointment seems almost miraculous. Conditions on the islands have changed so much in his time and he has done everything possible to improve things'.

Lord Richard Percy, chairman of the committee in 1986, referred to Peter 'having carried out a very difficult job with exceptional skill and diligence.'

In November 1989 Peter advised that he would retire in August 1990 but agreed to stay on until the end of the year. As he retired on 31 December 1990 it was announced that Peter had been awarded the MBE. So he joined Grace Hickling to build a small group of Farne Island stalwarts who have been awarded the MBE for their work in connection with the islands, for they have since been joined by Reggie Thorpe and Billy Shiel.

On retirement Peter and Joyce left their National Trust home overlooking the Farnes and lived at Rennington from where they travelled the world and pursued their love of Scottish country dancing despite considerable health problems.

Peter Hawkey's lectures to the Society were always a joy and he continued to spread the word about his love of the islands and their wildlife all over the country, including talks in the Royal Festival Hall in London.

We are all indebted to Lawrence Harwood for answering the telephone that evening.

D R Shannon

FINANCIAL STATEMENTS
31 JULY 2007

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA
REPORT OF THE TRUSTEES FOR THE YEAR ENDED 31 JULY 2007

CHARITY NUMBER 526770

The Trustees submit their Financial Statement for the year ended 31 July 2007. During the year, income exceeded expenditure by £15,602, compared to last year's deficit of £7,141. This surplus was occasioned by contributions of £26,154, including Gift Aid, from the Dickinson family bringing the total endowment of the Dickinson Memorial Trust to £32,564 at year end. Excluding this and other Restricted income and expenditure, Unrestricted funds suffered a deficit of £10,257, much as forecast.

The Society's investments, managed by Brewin Dolphin Securities, produced a net gain of £39,677 (both realised and unrealised). The overall value of the portfolio stood at £637,845 at year end.

The Society has benefited from the generous donation by a member of his fees in relation to research for BBC's TV programme on Urban Otters and field work for Northumbrian Water. This will finance fish stocking for the reserve over the coming years, making it ever more attractive to wildlife.

Although most of the funds involved did not pass via the Society's accounts, mention should also be made of the contributions of over £42,000 by our members to the Northumbrian Gallery in the restored Hancock Museum.

Finally, the Society has decided that the £1,663 donated in memory of James Alder should be set aside to finance the production of a new History of the Society. This will be added to the £100 'challenge' funding donated by James himself for this purpose.

Reference and Administrative Information

These details are disclosed on page 4 of the Annual report.

Objectives and Activities

These are detailed on page 5 of the Annual Report.

Structure Governance and Management

This is described in full on page 6 and 7 of the Annual Report.

Achievements and Performance

The detailed report of the Society's activities during the year appears on pages 5 to 43 of the Annual Report.

Risk Management

The Council as Trustees have assessed the major risks to which the charity is exposed, in particular those relating to its operations and finances, in order to be satisfied that systems are in place to mitigate the exposure to the major risks. The financial regulations approved by Council have been in operation throughout this period.

Reserves Policy

It is the policy of the Society to maintain unrestricted funds, which are the free reserve of the charity, at a level which equates to approximately one year of unrestricted expenditure.

This provides sufficient funds to cover management, administration and support costs and to respond to emergency applications for funds which arise from time to time. Unrestricted funds were maintained at a higher level than this through the year.

The Society has undertaken to offer £50,000 at the rate of £10,000 a year for five years from a date to be agreed as a contribution to the Great North Museum project. It is not envisaged that such a contribution will detract from the Society's current policy on financial reserves within this timescale.

Investment Policy

All investment transactions during the year under review have been carried out in accordance with the trustees' powers.

Financial Review	**2007**	**2006**
Net Incoming/(Outgoing) Resources	£15,602	(£7,141)

Trustees Responsibilities in relation to the Financial Statements

The law applicable to charities in England and Wales requires the trustees to prepare accounts for each financial period which give a true and fair view of the charity's financial activities during the period and of its financial position at the end of the period and adequately distinguish any material trust or other restricted fund of the charity. In preparing accounts giving a true and fair view, the trustees should follow best practice and:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether the policies are in accordance with applicable accounting standards and statements of recommended practice on accounting by charities subject to any departures disclosed and explained in the accounts; and
- prepare the accounts on the going concern basis unless it is inappropriate to presume that the charity will continue in operation.

The trustees are responsible for keeping accounting records which disclose, with reasonable accuracy at any time, the financial position of the charity, and which enable them to ensure that the accounts comply with Accounting Standards and Statements of Recommended Practice and the regulations made under s44 of the Charities Act 1993. They are also responsible for safeguarding the assets of the charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Independent Examiners

Tait Walker have expressed their willingness to continue in office as independent examiners, and a resolution to reappoint them will be proposed at the Annual Meeting.

Signed on behalf of the Trustees

PETER DAVIS

Chairman and Trustee

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA
STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED 31 JULY 2007

	Notes	Endowment	Restricted	Unrestricted	2007 Total	2006 Total
		£	£	£	£	£
Income and expenditure						
Incoming resources						
Incoming resources from generated funds:						
Voluntary income	2	26,154	59,892	24,907	110,953	58,215
Activities for generating funds	3	-	-	11,006	11,006	12,823
Investment income	4	-	-	25,543	25,543	25,419
Incoming resources from charitable activities:	5	-	-	3,588	3,588	4,061
Other incoming resources		-	-	3,640	3,640	691
Total incoming resources		26,154	59,892	68,684	154,730	101,209
Resources expended						
Charitable activities	7	-	60,187	73,440	133,627	99,176
Governance costs	8	-	-	5,501	5,501	9,174
Total resources expended		-	60,187	78,941	139,128	108,350
Net incoming/(outgoing) resources before other recognised gains and losses		26,154	(295)	(10,257)	15,602	(7,141)
Other recognised gains and losses						
Realised and unrealised on investments assets		-	-	39,677	39,677	44,088
NET MOVEMENT IN FUNDS		26,154	(295)	29,420	55,279	36,947
Transfer between funds		6,410	(1,307)	(5,103)	-	-
Funds brought forward			3,661	695,926	699,587	662,640
FUNDS CARRIED FORWARD 31 JULY 2007		32,564	2,059	720,243	754,866	699,587

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA
BALANCE SHEET AS AT 31 JULY 2007

	Notes	2007 £	2006 £
FIXED ASSETS			
Tangible assets for use by the society	11	11,902	13,358
Investments	12	637,845	621,736
		649,747	635,094
CURRENT ASSETS			
Stock		-	231
Debtors	13	5,494	4,743
Cash at bank and in hand		104,030	64,278
		109,524	669,252
CREDITORS:			
Amounts falling due within one year	14	4,405	4,759
NET CURRENT ASSETS		105,119	64,493
TOTAL ASSETS LESS CURRENT LIABILITIES		754,866	99,587
NET ASSETS		754,866	699,587
FUNDS			
General Fund		296,514	263,440
Expendable Endowments:			
T B Short Memorial Fund		230,993	230,993
Grace Hickling Memorial Fund		181,433	181,433
		708,940	675,866
Life Members Fund		1,541	1,346
Designated Capital Funds	15	9,762	18,714
Total Unrestricted Funds		720,243	695,926
Restricted Income Funds	16	2,059	3,661
Restricted Endowment Fund	17	32,564	-
TOTAL FUNDS		754,866	699,587

Approved by Council on 12 October 2007
and signed on its behalf by:

PETER DAVIS - Chairman and Trustee

DOUGLAS JOHNSON - Honorary Treasurer and Trustee

THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 JULY 2007

1. Accounting Policies

1.1 Basis of Accounting

The financial statements have been prepared under the historical cost convention and in accordance with the Statement of Recommended Practice: "Accounting and Reporting by Charities" (SORP 2005) issued in March 2005 and applicable accounting standards and the Charities Act 1993.

1.2 Realised and Unrealised Gains and Losses on Investments are recognised in the Statement of Financial Activities in the period in which they arose.

1.3 Investments are stated at market value at 31 July 2007.

1.4 Tangible Fixed Assets

Tangible fixed assets are stated at cost less depreciation which is provided in equal annual instalments over the estimated useful lives of the assets.

No value is attributed to the Hancock Museum at the date of its completion in 1884. The building is leased to the University of Newcastle upon Tyne which is normally responsible for all repairs and improvements.

The cost of Lake Lodge, less donations and grants received, of £3,899 is depreciated at 2% per annum. The cost of installing mains electricity at Lake Lodge, less donations received, of £5,300 has been fully depreciated.

The cost of the hides, equipment and office furniture is depreciated at 10% per annum and computers and office equipment at 20% per annum.

1.5 Statement of Financial Activities

Donations are recognised when received unless the receipt is certain, when they are recognised as accrued income. Expenditure is accounted for on an accrued basis. Any excess income over expenditure for the year is arrived at after making appropriations to special funds for the purpose of setting aside temporary surpluses of income to meet future expenditure.

1.6 Deferred Income

Deferred income represents amounts received for future periods and is released to incoming resources in the period for which it has been received.

1.7 Fund Accounting

The General Fund is unrestricted, and is expendable at the discretion of the trustees in the furtherance of the objects of the charity. The T B Short and Grace Hickling Memorial Funds were created from legacies and are invested in accordance with the Trustee Investment Acts and are subject only to expenditure for special projects. The Life Members Fund consists of amounts received in payment of life subscriptions and they are released to income over a period of 20 years in equal annual instalments. The charity has a single permanent endowment. The Dickinson Memorial Fund, which was set up from donations by living relatives, provides for the trustees to invest the capital in perpetuity, the income from which is free to be used at the discretion of the trustees.

1.8 Charitable activities

Costs of charitable activities includes grants made and an apportionment of overhead and support costs as shown in note 7.

1.9 Governance Costs

These comprise all costs involving the public accountability of the charity and its compliance with regulation and good practice. These costs include statutory audit and legal fees together with an apportionment of overheads and support costs, as shown in note 8.

2. Voluntary Income

	Endowment	Restricted	Unrestricted	2007 Total	2006 Total
	£	£	£	£	£
Subscriptions	-	-	20,865	20,865	20,098
Life Membership		-	400	400	-
Sir James Knott Trust (GNM)	-	50,000	-	50,000	-
Council Member (GNM)	-	100	-	100	-
National Heritage Lottery Fund (Archives)	-	2,285	-	2,285	21,433
Dickinson Bursary	26,154	-	-	26,154	1,410
Atkinson manuscript	-	-	-	-	6,531
Natural England (GPNR)	-	5,415	-	5,415	7,000
BBC for fish stocks (GPNR)		1,970	-	1,970	-
Northumbria Water for fish stocks (GPNR)		30	-	30	-
The Percy Hedley Foundation	-	-	500	500	500
Samares Investors Ltd	-	-	500	500	500
In memory of James Alder	-	-	1,663	1,663	-
General public donations	-	92	979	1,071	743
	26,154	59,892	24,907	110,953	58,215

3. Activities for Generating Funds

	Endowment	Restricted	Unrestricted	2007 Total	2006 Total
	£	£	£	£	£
Search fees	-	-	1,700	1,700	1,800
Council room hire	-	-	-	-	1,988
Lease payment	-	-	9,306	9,306	9,035
	-	-	11,006	11,006	12,823

4. Investment Income

All investment income is unrestricted:	2007 £	2006 £
UK equity dividends	16,514	17,437
UK fixed interest	3,756	3,124
UK unit trusts	55	1,222
Non UK unit trust	1,246	16
Non UK fixed interest	638	638
Non UK equities	992	627
Bank interest	2,342	2,355
	25,543	25,419

5. Incoming resources from Charitable Activities

	Endowment £	Restricted £	Unrestricted £	2007 Total £	2006 Total £
Publications	-	-	307	307	370
Field Trips	-	-	345	345	570
Transactions	-	-	1,621	1,621	2,071
Coastal Research - BTO	-	-	-	-	138
Ringing Group	-	-	680	680	912
Ornithological Research	-	-	635	635	-
	-	-	3,588	3,588	4,061

6. Allocation of support costs and overheads

Unrestricted	Basis	Direct Charitable £	Governance £	2007 Total £	2006 Total £
Depreciation	Staff time	2,541	145	2,686	2,615
General expenses	Staff time	364	21	385	605
Insurance	Staff time	2,111	120	2,231	3,724
Post and telephone	Staff time	3,215	184	3,399	2,890
Printing and stationery	Staff time	2,484	142	2,626	2,339
		10,715	612	11,327	12,173

7. Charitable Activities

	Note	Restricted £	Unrestricted £	2007 Total £	2006 Total £
Salaries, pension contributions and national insurance		1,582	43,548	45,130	50,467
Archive costs		2,690	-	2,690	7,598
Book purchases		-	-	-	5,995
Great North Museum project		50,100	580	50,680	657
Coastal Research		-	1,787	1,787	2,650
Gosforth Park Nature Reserve		5,415	1,603	7,018	9,425
Dickinson Memorial Fund		-	403	403	
Farnes Sand eels research		400	-	400	-
Library costs		-	2,727	2,727	2,618
Transactions		-	9,722	9,722	4,579
Other publications		-	831	831	1,350
Field expenses		-	388	388	540
Lectures		-	1,136	1,136	1,984
Allocated support costs	6	-	10,715	10,715	11,313
		60,187	73,440	133,627	99,176

8. Governance Costs

Unrestricted	2007 £	2006 £
Salaries, pension contributions and national insurance	2,465	3,114
Printing and stationery	142	165
Postage and telephone	184	204
Insurance	120	263
General expenses	21	43
Depreciation	145	185
Accountancy and bookkeeping fees	1,574	1,875
Independent review	850	825
Fee for valuation of library	-	2,500
	5,501	9,174

9. Information regarding Employees and Trustees

	2007	2006
Average number of employees during the year	3	3
Total emoluments	£47,595	£53,581

No trustee, or person related or connected by business to them, has received any remuneration from the charity during the year.

During the year, payments were made to six (2006 - four) trustees in respect of reimbursement of expenses incurred on the charity's behalf totalling £2,756 (2006 - £423).

10. Coastal Research

Coastal Research comprises boat and vehicle costs together with ringing expenses for Farne Islands and Coquet Island research.

11. Tangible Fixed Assets for use by the Society

	2007 £	2006 £
Hancock Museum	Not valued	Not valued
Lake Lodge : Cost	3,899	3,899
Electrical Installation	5,300	5,300
	9,199	9,199
Less Depreciation to date	7,640	7,562
Net book value	1,559	1,637
Hides, equipment, office furniture and computers		
Cost	50,575	48,458
Additions	1,230	2,117
Disposals	(27,757)	-
	24,048	50,575
Less Depreciation to date	13,705	38,854
Net book value	10,343	11,721
Total net book value	11,902	13,358

There were no capital commitments at 31 July 2007.

12. Investments

	2007 £	2006 £
Market value at beginning of year	621,736	610,334
Additions	171,382	339,149
Disposal proceeds	(194,950)	(371,835)
Net investment gains	39,677	44,088
Market value at end of year	637,845	621,736

The investment portfolio includes the following holdings which represent more than 5% of the market value of the portfolio:

Old Mutual Fund Managers	5.71%
Royal Dutch Shell	5.37%

	2007 £	2006 £
Investments at market value comprised:		
Listed on a recognised stock exchange	637,845	621,736
	637,845	621,736
Historical cost at end of year	514,805	511,432

13. Debtors

	2007	2006
	£	£
Trade debtors	605	1,018
Prepayments and accrued income	4,889	3,725
	5,494	4,743

14. Creditors

	2007	2006
	£	£
Trade creditors	220	-
Deferred income	1,835	2,409
Accruals	2,350	2,350
	4,405	4,759

15. Designated Funds

Gosforth Park Nature Reserve Restoration Fund	2007	2006
	£	£
General restoration -	-	804
Sir James and Lady Steel donation for lake rejuvenation	7,701	8,500
	7,701	9,304

	2006	New Designations	Utilised	Transfer	2007
	£	£	£	£	£
Gosforth Park Nature Reserve	9,304	-	(1,603)	-	7,701
Ornithological Research	-	16	-	138	154
Bewick Transactions fund	3,000	-	(3,000)	-	-
James Alder Memorial fund	-	1,663	-	100	1,763
Dickinson Memorial Fund capital	6,410	-	-	(6,410)	-
Dickinson Memorial Fund income	-	-	(403)	547	144
	18,714	1,679	(5,006)	(5,625)	9,762

16. Restricted Income Funds

	2006	New Designations	Utilised	Transfer	2007
		£	£	£	£
Archives	3,064	2,377	(4,272)	(1,169)	-
Farnes Sandeels Research	597	-	(400)	(138)	59
Great North Museam Project	-	50,100	(50,100)	-	-
Natural England	-	5,415	(5,415)	-	-
GPNR Fish stocking	-	2,000	-	-	2,000
	3,661	59,892	(60,187)	(1,307)	2,059

During the year, further designations were made following the receipts of £2,377 in respect of Archives from the HLF Lottery fund - £2,285, anonymous donations - £92.

Receipts for £50,100 for the Great North Museum Project from Sir James Knott Trust - £50,000 and a Council Member - £100.

Money donated by Natural England for specific works at Gosforth Park Nature Reserve.

Donations of £2,000 for fish stocks at Gosforth Park Nature Reserve, given by a Council Member in lieu of professional advice to other organisations.

17. Endowment Funds

	2006	New Designations	Utilised	Transfer	2007
	£	£	£		£
Dickinson Memorial Fund - capital	-	26,154	-	6,410	32,564
Dickinson Memorial Fund - income	-	547	-	(547)	-
	-	26,701	-	5,863	32,564

The Permanent Endowment fund, the Dickinson Memorial Fund, was established this year by the trustees to create a permanent visible memorial to a great supporter of the society. It was decided that all past and future gifts from the relatives of Tony Dickinson and the applied gift aid should be added to this fund. The income generated is to be designated to the Dickinson Memorial Income fund and expenditure offset for projects agreed by and at the discretion of the trustees.

BULMAN HOUSE
REGENT CENTRE
GOSFORTH
NEWCASTLE UPON TYNE
NE3 3LS

INDEPENDENT EXAMINERS REPORT TO THE TRUSTEES OF THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA

I report on the financial information of the charity for the year ended 31 July 2007, which are set out on pages 51 to 61 .

RESPECTIVE RESPONSIBILITIES OF TRUSTEES AND EXAMINER

As the charity's trustees, you are responsible for the preparation of the accounts; you consider that the audit requirement of Section 43(2) of the Charities Act 1993 (the Act) does not apply. It is my responsibilty to state, on the basis of procedures specified in the General Directions given by the Charity Commissioners under Section 43 (7)(b) of the Act, whether particular matters have come to my attention.

BASIS OF INDEPENDENT EXAMINER'S REPORT

My examination was carried out in accordance with the General Directions given by the Charity Commissioners. An examination includes a review of the accounting records kept by the charity and a comparison of the accounts presented with those records. It also includes consideration of any unusual items or disclosures in the accounts, and seeking explanations from you as trustees concerning any such matters. The procedures undertaken do not provide all the evidence that would be required in an audit, and consequently I do not express an audit opinion on the view given by the accounts.

INDEPENDENT EXAMINER'S STATEMENT

In connection with my examination, no matter has come to my attention:

(1) which gives me reasonable cause to believe that in any material respect the requirements:

to keep accounting records in accordance with Section 41 of the Act; and

to prepare accounts which accord with the accounting records and to comply with the accounting requirements of the Act

have not been met; or

(2) to which, in my opinion, attention should be drawn in order to enable a proper understanding of the accounts to be reached.

G. J. Moore

Independent Examiner
Chartered Accountants

TAIT WALKER
Chartered Accountants

BIRDS ON THE FARNE ISLANDS in 2007

BIRDS ON THE FARNE ISLANDS in 2007

NATURAL HISTORY SOCIETY
OF
NORTHUMBRIA

compiled by

DAVID STEEL
National Trust Warden

edited by

MARGARET PATTERSON

THE NATIONAL TRUST

Birds on the Farne Islands in 2007' is a production by the National Trust and The Natural History Society of Northumbria. The papers are published as a part of the *Transactions* of the Society (**Volume 68 Part 2** and **3**) and this off-print carries the original page numbers and the correct reference at the beginning of the paper.

CONTENT

Front Cover: ***Kittiwake in Flight*** by **Bas Teunis**

The maps of the Farne Islands have been drawn by Joan Holding and reproduced by kind permission of Ordnance Survey. © Crown Copyright NC/01/180

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BIRDS ON THE FARNE ISLANDS IN 2007

compiled by

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National Trust Head Warden

ringing report by

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INTRODUCTION

The annual report continues to improve year-on-year and the changes implemented in last season's report have continued for a second season.

The wardens sailed out on 23 March and manned the islands until 1 December and a total of 177 species were recorded during the season, including twenty-two breeding species. The inner group just edged the outer group for the total number of species recorded during the year, with 159 species compared with 156. However this may be attributed to having no resident wardens present on Brownsman during August and September.

The systematic list follows the order of the 7th edition of 'The British List: A Checklist of Birds of Britain' (Dudley *et al.*, 2006) and amendments in Sangster, *et al.*, (2007) and the scientific names have been amended to reflect the new taxonomic information in both papers. However, in a number of instances the older more familiar English name has been retained particularly when the new name just has the additive 'Northern', 'Common' and 'Eurasian'. In future years the situation will be reviewed and updated as required.

SEABIRD OVERVIEW 2007

It was another eventful season with breeding seabirds surpassing 100,000 pairs for the third consecutive year. Seabird seasons are never straightforward and whilst some species suffered others thrived during a very mixed season, dominated by unseasonal mid-summer weather. On an individual species basis, the population of Eiders increased by a welcome 18%, but the overall picture was not as encouraging as the poor weather resulted in a high number of females abandoning nest sites. This, combined with poor productivity and chick survival, means the species is becoming of increasing concern on the Farnes. Another species which suffered was the Kittiwake, which arguably had the worst season of all the

nesting seabirds. The population continues to decrease and further bad news was brought with the poor weather in early June, as heavy rain saturated nests and in some areas washed them clear into the sea. A second spell of cold wet weather towards the end of June brought a second wave of mortality of recently hatched chicks and as if life wasn't tough enough, food availability became a serious issue. Despite a high abundance of Sand eels in Farnes waters throughout the summer, adult Kittiwakes appeared to struggle to find suitable food and therefore relied heavily upon Snake Pipefish, which are low in nutrient levels. The end result was verging on catastrophic, as monitored nests suggested a very poor breeding season with very few chicks surviving to fledging stage.

As well as washing nests off cliff tops and chilling vulnerable chicks, the heavy rainfall during June also led to problems for the Puffin population. Where the soil cap was thin, large numbers were flooded out and Brownsman and West Wideopens appeared to suffer the most with some heavy losses reported, with estimations at 70% losses on both islands. The season was not a complete disaster as other islands, especially Inner Farne, appeared to escape the worst of the conditions and good numbers fledged from that particular island.

However it was not all doom and gloom for the breeding seabirds on the Farnes as all three tern species had exceptional years, fledging large numbers of young from the main colonies on Inner Farne and Brownsman. Sand eel availability appeared to be very good throughout the summer with no reports or suggestions of any shortage. Arctic Terns carrying three or four Sand eels at a time were not uncommon, further supporting the theory of good numbers of Sand eels. The population levels of both Arctic and Common Tern remained very healthy although Sandwich Tern numbers dropped for a second consecutive year, with only a handful nesting on Brownsman.

Other successes during the year included the auk family, with further record numbers of Guillemots nesting whilst Razorbill numbers remained above the three-hundred mark. Although the number of Cormorants declined again it appeared to be another reasonable nesting season, whilst Shags had a very good year with productivity. The large gulls remained abundant on the islands with the Great Black-backed Gull population reaching an all time peak. The two main nesting waders, Oystercatcher and Ringed Plover, had mixed fortunes. See Table 1 for breeding population details.

MIGRATION OVERVIEW 2007

At long last the islands produced a 'first', although no one expected it to be in the form of an American passerine, when a **White-throated Sparrow** graced the islands in early June. The bird became the official 292 species to be recorded and accepted onto the Farne Islands list. The year also produced other noteworthy reports including fifth ever Woodlark, Red-throated Pipit, Magpie and Hawfinch records, eighth Little Grebe and Greenish Warblers and ninth-twelfth Great Shearwater reports. Other records of note included Balearic Shearwater (2), Storm Petrel (51), Leach's Petrel, Moorhen, Coot, Little Stint, Wood Sandpiper, Grey Phalarope (7), Long-tailed Skua (3), Mediterranean Gull, Sabine's Gull (4), Iceland Gull, Glaucous Gull (2), Black Tern, Cuckoo (2), Shorelark, Richard's Pipit, Bluethroat (2), Icterine Warbler, Barred Warbler (2), Yellow-browed Warbler (5), Firecrest, Red-breasted Flycatcher, Treecreeper (2), Hooded Crow, Tree Sparrow, Common Redpoll (3), Common Rosefinch, Ortolan Bunting and Little Bunting.

As well as interesting records, the year witnessed new Farnes day records of Canada Goose, Shoveler, Storm Petrel, Little Tern and Swift along with a new British record of Little Auks.

Table 1 Farne Islands Breeding Birds 2007.

Breeding Birds	Population	+/- to 2006	Productivity	First Egg	First Fledgling
Shelduck	1	level	-	-	-
Mallard	13	+ 3	-	7 April	16 July
Eider	655	+ 99	2.04	18 April	19 May
Red-breasted Merganser	1	level	-	-	-
Fulmar	218	- 21	0.35	20 May	8 Aug
Cormorant	158	- 12	-	15 April	30 June
Shag	1059	- 61	0.94	19 April	19 July
Oystercatcher	35	+ 6	0.27	28 April	3 July
Ringed Plover	7	- 1	0.16	15 April	-
Kittiwake	4669	- 44	0.25	20 May	16 July
Black-headed Gull	276	- 64	0.35	28 April	22 June
Lesser Bb Gull	480	- 65	-	7 May	-
Herring Gull	566	+ 61	-	7 May	-
Great Bb Gull	9	+ 2	-	7 May	2 July
Sandwich Tern	1413	- 222	-	9 May	10 July
Common Tern	117	- 5	-	18 May	19 July
Arctic Tern	2256	+ 6	0.76	15 May	29 June
Guillemot	48,650 *	+ 724	0.59	19 April	17 June
Razorbill	314	- 8	0.54	27 April	18 June
Puffin	55,675	level	0.43	27 April	6 July
Rock Pipit	22	+ 4	-	29 April	28 May
Pied Wagtail	5	+ 1	-	13 May	18 June

* Individuals

Interestingly the northern sub-species known as 'Nordic Jackdaw' was recorded for only the second ever occasion on the islands. Whilst most common species were recorded during the year, the season failed to produce records of Long-eared Owl and no large birds of prey. However the most obvious absentee was the Yellow Wagtail, which for the first time in modern history was not recorded on the islands, possibly an indication of the species' plight in Britain. The following is a monthly summary of migration through the Farne Islands during the course of the season and species in bold are of particular interest.

March

The wardens returned to the islands on 23 March and were greeted by a Great Skua which buzzed the boat through Inner Sound. As usual the typical small handful of resident passerines greeted the wardens although a partial summer plumage **Red-necked Grebe** in the Kettle for three days (23-25) added a splash of colour. Other wintering birds still evident

included the small flock of Long-tailed Ducks and Goldeneyes behind the favoured West Wideopens area of the islands and a lingering **Black Guillemot**, probably an over-wintering individual. Highlights during this late March period included a **Hooded Crow** over Inner Farne on 26 and, although a very common Northumberland breeding species, a **Coot** on 27 to the north of Inner Farne raised a few eyebrows. Migration gradually picked up as the first returning Chiffchaffs were seen from 25 and Sandwich Terns returned from 28, with the island experiencing a light scattering of common migrants on 27 March. During this period, two **Black Redstarts** were discovered on Brownsman on 26 and Longstone on 27, with two **Stonechats** seen on Inner Farne and Longstone. Other birds of note included a **Mistle Thrush** on 27 whilst **Woodcock** and **Jack Snipe** were the pick of the bunch elsewhere.

April

There was still a wintry theme about the birds around the islands during the first week of April as two skeins of northern-bound **Pink-footed Geese** flew over on 5 and an **Iceland Gull** was discovered on West Wideopens on 7 April. However this was all forgotten when three **Magpies** arrived on Inner Farne on 11 representing the fifth ever record of this common mainland corvid to the islands. The last of the wintering seaducks eventually departed north by 8 and spring was well on its way. Migration had been slow to start as the first returning Wheatears were not recorded until 2 but gradually things began to improve as the first Swallow was seen on 9 and the first returning Willow Warbler was seen on Inner Farne on 15 April. Thereafter the arrival of summer migrants gathered pace as more favourable weather brought reasonable numbers with the first Tree Pipit and Redstart of the year found on 21, Blackcap on 22, Sand Martin and Whinchat on 25, Whitethroat on 26 and Lesser Whitethroat on 29 April. During this late April period a very early **Swift** appeared over Brownsman on 21, with the earliest ever **Reed Warbler** recorded on Longstone on 23, whilst a lingering female **Ring Ouzel** delighted visitors to Inner Farne on 25-29 April. The islands failed to produce any true rarities during this late flourish although five **Black-tailed Godwits** on 21 April were unusual for the time of year.

May

As spring gave way to summer, the last of the winter thrushes and resident Wrens and Robins departed the islands for another summer, leaving the Farnes to the vast numbers of breeding seabirds. As the breeding birds increased on a daily basis with some huge counts of terns, the **Little Tern** roost at St Cuthbert's Cove peaked with an all time high count of 130 mid-month. It was not just the breeding birds which peaked, as northern bound Purple Sandpipers were seen in large numbers early in the month, especially around the Longstone complex. Other waders of note included four records of Common Sandpiper, a lingering female **Ruff** on Brownsman from 9-14 and five **Sanderling** gracing the islands on 18 May. An unseasonal **Brent Goose** was seen on 6, a **Barnacle Goose** on 19 and a record count of Canada Geese on 30 May. Other non-passerine highlights included a third-summer **Glaucous Gull** on West Wideopens on 17 with a second-winter **Mediterranean Gull** on the same island two days later. As all of this was happening, passage migrants continued to be discovered as the first of two **Grasshopper Warblers** arrived on 3 with the islands' first Garden Warbler of the year noted on 6 May. The month also saw the first House Martin recorded on 6, Sedge Warbler on 12 and another **Ring Ouzel** on 10 May. A spell of south-easterly winds mid-month brought a reasonable arrival of migrants across the islands including Whinchats, Redstarts and a selection of common warblers. Noticeable highlights during this

'fall' included a female **Cuckoo** discovered on Longstone on 12 with a **Black Redstart** on Brownsman the same day. The spring's only Pied Flycatcher arrived and lingered on Brownsman on 14-15 whilst unseasonal **Wood Pigeons** were recorded on both the inner and outer group during this period. However the star bird of the spring arrived independently and without any classic fall conditions, as a summer plumage **Red-throated Pipit** was present during the early evening of 22 May on Staple Island, the fifth ever record for the islands. After the major excitement of the pipit, migration fizzled out as the lack of any favourable conditions resulted in just a handful of common migrants on the islands during the final week of the month.

June

Spring appeared to have passed the islands by without any favourable easterly winds although that was all about to change. As migration started petering out, a series of east or south-easterly winds dominated the first week, although surprisingly bringing very little reward in the opening few days. The disappointment was reflected on 1 June as fog combined with classic south-easterly airflow brought no birds to the islands and the log books for that particular day did not record a single passerine migrant between all the islands. However this disappointment soon turned to joy as the islands stepped up a gear. Following the arrival of a small smattering of migrants on 4, a **Wood Sandpiper** appeared briefly on Brownsman on 5 and was followed by the discovery of a stunning male **Ortolan Bunting** on 7 June. The bird favoured the vegetable garden although at times it was elusive but it remained loyal to the area for a further three days. This was not the only surprise of the day as a female **Bluethroat** was found in mid-afternoon, also on Brownsman, before settling on nearby Staple Island for a further day. Other birds of note on the islands during this period included an unseasonal Wood Pigeon, a small scattering of Spotted Flycatchers and late Garden Warblers and Whitethroats.

However this was all blown away as the inner group struck gold with a major rarity that made national headlines. On the morning of 11 June, the wardens discovered a 'strange bunting-like' bird in the lighthouse compound of Inner Farne and eventually the bird in question was identified as an American **White-throated Sparrow**. Not only was the bird a 'first' for the islands but it was also a first for Northumberland, and the shock waves registered on a high scale across the birding community. The bird was later caught within the confines of the office in the lighthouse before being released unharmed and made a truly remarkable sight amongst the breeding seabirds. It remained until dusk but unfortunately departed, much to the frustration of the wider birding audience. Although the sparrow grabbed all the headlines that day, a tantalising view of a **buzzard** species flying west in foggy conditions was disappointing as identification could not be confirmed, although most considered it to be a Honey Buzzard. Thereafter the pace of migration slowed as migrants became scarce with a female **Black Redstart** on 15-17 being the pick of the bunch, whilst an unseasonal Song Thrush was discovered on 19, and a juvenile Wheatear on 23 saw the month out.

July

It was not the quiet month everyone expected as two island 'rarities' were discovered and were bolstered by some other noticeable birds. The month heralded the start of wader passage through the islands with the first Golden Plover returning to the outer group early in the month. A **Green Sandpiper** appeared on Brownsman on three dates from 4-8 with

another on 22 July. Other waders of note included four Lapwings west on 5 and two **Sanderlings** on 31 with good numbers of Purple Sandpipers, Turnstones, Curlews and Whimbrels moving through the islands. Of more interest, nineteen **Black-tailed Godwits** landed on Inner Farne on 8 before eventually departing west later that day and nearby Knoxes Reef boasted another on 29 July.

Although, naturally, passage migrants remained scarce, the month brought some noticeable visitors, including another juvenile Wheatear on 3 before becoming regular from mid-month. Small numbers of Sand Martins and Swallows moved south although it was the passage of Swifts which really caught the eye. On the evening of 9, a total of 144 moved north but on 17 July there was a new Farnes record of 984 north. However for the budding rarity finder, a **Treecreeper** on Brownsman and then adjacent Staple Island on 13 was most unexpected and represented only the nineteenth Farnes record. The bird of the month arrived on Brownsman during the late afternoon of 22 when a stunning summer plumage **Icterine Warbler** entertained the wardens during its one day stay. The final surprise find came in the form of a juvenile **Cuckoo** which was seen circling Inner Farne on 23 but was soon seen off by the resident breeding birds.

August

August continued where July left off, as wader passage continued to bring a surge of waders through the islands with interesting records including reports of **Black-tailed Godwits** on four dates peaking with ten on 21 August. Common Sandpipers increased their presence with several seen during the month whilst **Green Sandpiper**, Lapwing, **Greenshank** and Grey Plover were more noteworthy. As expected, the first autumn passage migrants started filtering south through the islands when the first Sedge Warbler appeared from 3, Willow Warbler and Tree Pipit on 7, Whinchat on 10, Reed Warbler on 16, Robin on 17 and Garden Warbler on 23 August, amongst others. It was generally a disappointing season for the variety of raptors seen although a **'buzzard'** species high over Inner Farne on 3 could not be positively identified and became the second large buzzard of the season to 'get away'. However the year's second **Treecreeper**, favouring the walls of the chapel on Inner Farne the same day, was more straightforward to identify. The first noticeable east coast drift migrant of the autumn arrived on Brownsman when a **Barred Warbler** lingered from 10-12 and represented the first autumn returnee in the country. However the settled fine weather continued to dominate, leaving the islands quiet for long periods, although this all changed during the third week when a low pressure weather system dominated the Farnes for three days from 20 bringing strong northerly winds and with it, the first real autumn rarity. The second **Barred Warbler** of the month was discovered on Inner Farne on 21-22 although all the headlines were grabbed following the discovery of a **Greenish Warbler** on Inner Farne on 21 August. The bird favoured the area near the lighthouse and was part of a small influx down the east coast, and represented the eighth Farnes record. As the weather system moved through, the season's only **Common Rosefinch** arrived on Brownsman on 23 August and showed well for the admiring wardens. Thereafter small numbers of migrants passed through the islands and the weather once again settled with westerly winds dominating.

September

September witnessed major changes on the islands as the last of the breeding seabirds departed and passage migrants poured through the islands. The month heralded the return of

resident Robins and Wrens whilst the majority of common migrants were recorded during the month. Wader passage was still producing noteworthy birds with the season's only **Little Stint** on Brownsman on 3 followed a **Ruff** west over Inner Farne on 4 September. Other waders of note included two **Green Sandpipers** on 4, **Sanderling** on 12 and a reasonable scattering of Common Sandpipers, with high numbers of Golden Plovers remaining on the outer group. The majority of bird action was seen at sea although migrants continued to filter through including a stunning **Snow Bunting** on 15-16 September. Eventually the winds swung to the east in the final week and pulses raced as the Farnes came into their own during this period. The first winter thrushes appeared from 27 accompanied by good numbers of migrants including two **Stonechats** on 25, **Bramblings** from 27 and a **Ring Ouzel** on 29 amongst others. However it was the rarities which grabbed the headlines and the islands boasted a **Yellow-browed Warbler** on 25 with another on 29-30, a first-winter **Bluethroat** on 29 lingering into October and a first-winter **Red-breasted Flycatcher** on Inner Farne from 28-30 September. As well as these classic east coast drift migrants, a juvenile **Tree Sparrow** (a Farnes rarity) appeared on Brownsman on 29 and little did anyone know at the time, but the bird went on to stay well into December.

October

The start of the month continued where September had left off as easterly winds brought good numbers of migrants with the odd scarcity and rarity amongst them. Highlights included the lingering first-winter **Bluethroat** which remained on Brownsman for a further seven days, having arrived in late September, with two **Yellow-browed Warblers** from 2-5 and the first **Lapland Bunting** discovered on 2 October. Common passage migrants continued to move through with small scatterings of **Ring Ouzels**, three **Stonechats**, and a **Mistle Thrush** of note, whilst on Inner Farne a **Common Redpoll** and the autumn's second **Tree Sparrow** were discovered on 5 October. Another noticeable 'fall' on 7-8 brought even more migrants to the islands including star-studded birds such as **Richard's Pipit** and **Little Bunting**, whilst the first of several **Short-eared Owls** arrived on the latter date. The first major autumn influx of continental thrushes arrived on 9 including 6,000+ Redwings and with it the Farnes first ever autumn **Hawfinch** and another **Lapland Bunting.** Elsewhere, a **Black Redstart** lingered on 10-14 with two more from 23-28 and a major irruption of Siskin commenced mid-month, whilst the last records of several summer visitors were Swallow on 1, followed by Lesser Whitethroat on 5, Garden Warbler on 7, Pied Flycatcher on 9, Wheatear on 18 and Willow Warbler on 24 October. Another switch of wind direction on 23 brought a long overdue **Shorelark** to the outer group on 24 and the islands' fifth ever **Woodlark** on Brownsman the following day. Another Farnes oddity arrived on 21 in the form of a **Little Grebe** whilst a first-winter **Glaucous Gull** on 26 October was a nice distraction from all the passage migrants on the islands.

November

The month was quiet for passage migrants as focus again featured on the sea and especially the immense number of Little Auks. However November did not slip by without some highlights as small numbers of **Snow Buntings** moved through with three **Black Redstarts** recorded. A spell of south-easterly winds mid-month brought one final flourish to the islands with the most noticeable being in the form of a cracking **Firecrest** which lingered on Inner Farne from 19-21 November. Other birds of note during this spell included two lingering **Common Redpolls** on Brownsman and Inner Farne, whilst Brownsman attracted the year's only **Water Rail** on 20 and a juvenile **Moorhen** the following afternoon. Throughout the

late autumn period, good numbers of **Woodcock** were recorded with small numbers of Snipe and **Jack Snipe**. The final week saw the last of the summer migrants on the islands with the last Blackcap recorded on 20 and a Chiffchaff on 26 November completing the end of migration.

The wardens finally left on Saturday 1 December having spent a total of 254 days resident on the islands.

Table 2 Selected migrant dates 2007.

Migrant	First date recorded		Last date recorded		Mean arrival 1970-2005	Earliest Farnes record
	2007	2006	2007	2006		
Swift	21 Apr	3 May	20 Aug	13 Aug	24 May	16 Apr 1988
Sand Martin	25 Apr	15 Apr	8 Sept	6 Sept	24 Apr	30 Mar 1993
Swallow	9 Apr	1 Apr	1 Oct	18 Oct	21 Apr	31 Mar 1999
House Martin	6 May	24 Apr	23 Sept	8 Oct	6 May	12 Apr 2005
Tree Pipit	21 Apr	7 May	7 Aug	14 Oct	24 Apr	2 Apr 1972
Redstart	21 Apr	25 Apr	19 May	17 Oct	24 Apr	4 Apr 1971
Whinchat	25 Apr	5 May	23 Sept	2 Oct	30 Apr	19 Apr 1987
Wheatear	11 Apr	27 Mar	18 Oct	27 Oct	30 Mar	19 Mar 2005
Grasshopper Warbler	3 May	20 Apr	12 May	12 Sept	30 Apr	17 Apr 2000
Sedge Warbler	12 May	5 May	7 Aug	16 Sept	6 May	13 Apr 1992
Reed Warbler	23 Apr	18 Aug	14 Oct	24 Sept	28 May	23 Apr 2007
Lesser Whitethroat	29 Apr	1 May	5 Oct	24 Sept	6 May	18 Apr 2005
Whitethroat	26 Apr	21 Apr	29 Sept	26 Sept	2 May	17 Apr 1981
Garden Warbler	6 May	1 May	7 Oct	24 Sept	11 May	6 Apr 1982
Blackcap	22 Apr	25 Apr	20 Nov	15 Nov	22 Apr	31 Mar 1994
Chiffchaff	25 Mar	30 Mar	26 Nov	8 Nov	4 Apr	21 Mar 2005
Willow Warbler	15 Apr	15 Apr	24 Oct	15 Oct	14 Apr	2 Apr 2000
Spotted Flycatcher	4 June	8 May	21 Sept	17 Sept	15 May	4 May 1984
Pied Flycatcher	14 May	7 May	9 Oct	2 Oct	7 May	23 Apr 1975

Acknowledgments

Thanks go to the 2007 warding team of Kieren Alexander, Chris Bell, Neil Forbes, Jerry Gilham, Ben Griffiths, Anthony Hurd, Richard Mason, David Steel and Allan Taylor who provided the bulk of records from the islands during the year. Thanks also go to several observers for submitting records during the season to help complete this report, including Ross Ahmed, Alex Ash, Steve Bloomfield, Eric Bramley, John Dawson, Neil Dawson, Chris Dodd, Owain Gabb, Bill Holland, David Parnaby, Susannah Parnaby, Chris Redfern, Billy Shiel, George Shiel, William Shiel, John Walton and Anne Wilson amongst others. Thanks also go to the 'backroom staff' who make this report possible including David Noble-Rollin, Stuart Will and Anne Wilson and to editor Margaret Patterson. The final thanks is to ex-Farne warden Bas Teunis for another wonderful front cover illustration which so enhances the appearance of the report.

The status of each species/sub-species is classified using the following categories, which were implemented from 1 December 2006:

Abundant	more than 1,000 occurrences per annum
Common	101-1,000 occurrences per annum
Well represented	11-100 occurrences per annum
Uncommon	no more than 10 occurrences per annum but more than 20 in total
Scarce	11-20 occurrences in total
Rare	6-10 occurrences in total
Extremely rare	no more than 5 occurrences in total

SYSTEMATIC LIST

Mute Swan *Cygnus olor*

An uncommon visitor.

It is evident from records that birds move locally along the coast as 97% of all reports over the past twelve years have occurred through Inner Sound. The season produced two records (an average showing), both through Inner Sound as an adult was discovered sitting on the beach near Monks House on the mainland on 29 August before eventually flying strongly south, into the Farnes 'recording area'. The second sighting on 13 September involved two birds west through Inner Sound who continued directly over the mainland and out of sight.

Whooper Swan *C. cygnus*

An uncommon winter and passage visitor.

The past ten years have produced sightings on twenty-seven occasions, peaking in 2005 with six records totalling fifty-eight birds. There were no spring records this year (only 33% of records in the past ten years have occurred in spring) although the autumn produced a good handful of reports. Records included three north through Inner Sound on 19 October, five flying south-west calling over Inner Farne on 29 October and seven (four adults, three juveniles) on 31 October which landed on the sea by Seahouses Harbour. Further records in early November included a calling juvenile north through Staple Sound on 4 and another north through Inner Sound on 6 November.

Pink-footed Goose *Anser brachyrhynchus*

A well represented passage and winter visitor.

When the wardens arrive in late March, the majority of wintering birds in Britain have already departed to northern breeding grounds, although the last few stragglers are often encountered. On Inner Farne, two were discovered on 28 March grazing by the lighthouse and they remained for most of the morning before moving to nearby Knoxes Reef. The only other spring report concerned a total of eighty-nine north on 5 April in two skeins of thirty-seven and fifty-two. Every year, the first autumn returnees appear to return earlier and a skein of seventy-two south-west over Inner Farne on 14 September heralded the start of autumn. Thereafter September produced reports on six dates, with October passage logged on nine dates and six further dates in November. The majority of these sightings involved

small movements of between 1 and 119 birds heading in a south-westerly direction over the islands towards wintering grounds further south. However during this period, larger movements were reported with 300 north through Inner Sound on 4 October (in one large flock), 326 south-west on 30 October (in five skeins) and 259 south on 4 November (in two skeins). As with the spring, birds were seen on the islands as a lone individual favoured Staple Island and adjacent Brownsman from 6-9 October.

Greylag Goose *A. anser*

An uncommon passage and winter visitor.

Local feral populations are bolstered during the autumn months by influxes of wild birds, but despite this records from the islands remain scarce with an average of only five sightings per year. It was a lean year for records with only two confirmed sightings, including a bird on East Wideopens in foggy conditions on 21 May. Another individual flew north through Staple Sound on 12 November and this represented the poorest showing since 1999.

Greater Canada Goose *Branta canadensis*

An uncommon passage visitor.

The majority of Farnes records involve passage birds moving north to moulting grounds in the Beauly Firth in northern Scotland in late May-early June with the occasional local feral bird appearing. Sightings this year included ten north through Inner Sound on 5 May followed by two vocal birds on the sea near Inner Farne lighthouse cliff on 15 May which eventually flew west. The season's peak occurred on 30 May when four skeins totalling 207 flew north through Inner Sound, the highest ever number recorded from the islands, eclipsing the previous highest total of 159 in June 2004. Thereafter the only other record involved two on the sea near East Wideopens on 21 June.

Barnacle Goose *B. leucopsis*

A well represented passage and winter visitor.

Spring sightings on the islands have become more frequent in recent years and a lone individual seen flying west through the Kettle on 19 May represented the fourth consecutive spring that the species has been seen. Autumn passage commenced from mid-September with three north over Knoxes Reef on 13 September. Further September records included ten very low west over Brownsman and eventually over the mainland on 28 September with fifty-nine in two skeins west over Brownsman on 30 September. Passage remained light with a modest peak of seventy-one west on 9 October followed by four further reports of six north on 11, twenty-six north on 12, six west on 17 and sixteen north on 19 October. As has been the case in recent years, a bird was seen on the islands, with an individual at the south end of Brownsman on 11 October.

Brent Goose 'light-bellied' *B. bernicla hrota*

A well represented passage visitor.

It was an excellent year with the first bird discovered during the spring on 6 May as one battled west from Brownsman in a westerly gale and was relocated on Knoxes Reef where it remained for the day. This represents only the fifth May record for the islands in the past twenty years. More typical was the arrival of the first autumn returnees in early September with forty-three north in three skeins on 4 September. September was an excellent month for

records with reports of 2-33 on a further nine dates, peaking with thirty-seven north on 17 September. Passage continued throughout October and November with records of 1-22 on ten dates although intriguingly small numbers loafed on the islands, especially Knoxes Reef on the inner group, involving 'dark-bellied' **Brent Geese** *B. b. bernicla.* The status of this subspecies is changing rapidly on the islands, since this once scarce visitor has become an expected annual as larger numbers winter in Northumberland. Knoxes Reef attracted eleven lingering birds on 24 October with four present until the month's end. A lone individual on the same islands from 6-15 November may have been part of the original larger flock which arrived in late October. Regardless of race, it was an excellent year and wintering birds may become a new regular feature of the islands in the future.

Shelduck *Tadorna tadorna*

A well represented visitor and occasional breeder (Steel, 2004).

It was another intriguing year for this potential breeder as confirming breeding status is very difficult, although circumstantial evidence suggested a breeding attempt was once again made on the islands. The now recognisable pair which first appeared on the islands in 2002 has attempted to breed annually since 2003. The birds first appeared on Inner Farne on 25 March and were soon exploring potential nesting sites on the 'top meadow' area of the island (where they have been successful before). The prospecting continued throughout April and this behaviour was also documented on the north end of Staple Island. As the spring progressed the female became elusive, possibly suggesting breeding behaviour, as the male was seen on eleven occasions without the female. However the breeding outcome was never established and was suspected to have failed, as after a short absence, the pair were seen together again in early June and were last seen on the islands on 17 June. As well as the returning pair, a total of seven were seen on Inner Farne on the morning of 10 April, suggesting possible future colony expansion. Passage birds were recorded from Inner Sound with records including two north on 26 March, thirteen south on 10 July, six south on 11 July and one south on 13 August. As wildfowl passage increased during the autumn months, further records included 1-4 on nine dates between 1 September and 13 November with a peak of nine north on 20 October. The last record concerned one north through Inner Sound on 14 November.

Wigeon *Anas penelope*

A common passage and winter visitor.

Well represented on passage especially during the autumn months when good numbers are noted moving north to wintering grounds at nearby Lindisfarne. Small numbers were seen in late March lingering around the islands with up to ten present in the Kettle and six noted on Brownsman Pond. After this initial flurry only one more spring report was received with a female near the ladies path on Inner Farne on 21 April. Autumn passage commenced from 21 August with three noted on Knoxes Reef and passage birds were reported throughout September and October with daily counts of up to seventy-two, which included some loafing individuals around the inner group. However three-figure counts were made on six dates, all involving northerly passage with September counts including 115 on 11, 117 on 27, 108 on 28 and 110 on 29 September. The season's peak count involved 599 north on 20 October including 278 through Inner Sound and 321 through Staple Sound. As passage started to dwindle the final large movement was logged with 107 north on 13 November. Small numbers were again seen lingering around Knoxes Reef in late autumn.

Teal *A. crecca*

A common passage and winter visitor.

As usual, the bulk of passage was reported during the autumn months with small numbers seen lingering around the islands during spring. It was evident that small numbers were utilising the ponds on Brownsman and Inner Farne when the wardens arrived on the islands in late March with reports of 1-2 on ten dates from 23 March-26 April. A very late male was flushed off the Brownsman pond on 5 May. The first autumn returnees started appearing around the inner group from the early date of 4 July, with a male on West Wideopens that day and thereafter small numbers were seen on four July dates. The first noticeable autumn passage was logged during August with fifty-eight north on 20 August. Thereafter the species became a daily visitor, either on passage or loafing around the islands throughout September-October. Heavy northerly passage was disappointing with a modest peak of sixty-six north on 5 September. As usual a reasonable sized flock started building on Knoxes Reef throughout the autumn months peaking with a hundred throughout November.

Mallard *A. platyrhynchos*

A common winter and passage visitor and well represented breeder.

As usual, small numbers were evident around the islands throughout the early spring period and pairs were seen prospecting for nest sites on several islands. The first eggs were discovered in the lighthouse compound on Inner Farne on 7 April and on Brownsman east rocks on 12 April, with other nests located as the spring progressed. A total of 13 (10) pairs nested as follows: Inner Farne 5 (4), West Wideopens 3 (2), Knoxes Reef 0 (1), Staple Island 2 (0), Brownsman 2 (2), Big Harcar 1 (0) and South Wamses 0 (1). The first chicks started to appear from 29 April and unlike the previous season (due to heavy predation), young fledged from both island groups. The above average rainfall during mid-summer enabled females to keep broods on the ponds (which normally dry up) and keep young sheltered in dense cover, allowing them to go undetected by marauding large gulls. A total of seven (from a nest of nine) fledged on Brownsman by mid-July and two broods totalling four fledged from Inner Farne. After the breeding season numbers started building up on the islands, favouring Knoxes Reef with forty present in mid-August increasing to a peak of 125 on 17 November.

Pintail *A. acuta*

An uncommon passage and winter visitor.

A dreadful year, with only one confirmed record, a flock of eight north through Staple Sound on 19 October which included two males.

Shoveler *A. clypeata*

A well represented passage and winter visitor.

This well marked and distinguished duck was seen on passage with (more unusually for the Farnes) a flock lingering in late autumn which broke all previous records. Spring passage produced two sightings with a pair in the Kettle for several hours on 29 April and another pair north through Inner Sound on 11 May. The first autumn passage was reported early with six north through the Kettle on 14 July, and was followed by a male north on 2 August and five north on 2 October. A series of sightings from 28 October-17 November probably

involved all the same birds, as a flock associating with Mallards was seen commuting regularly from the nearby mainland (possibly Monks House pool) to Knoxes Reef. Numbers peaked at twenty-nine on 7 November, representing a new Farnes record and beating the previous highest of twenty-five on 21 September 1997.

Pochard *Aythya ferina*

An uncommon passage visitor.

This diving duck is usually recorded on only a handful of occasions with last season's four records representing the best showing since 2000. This year was no different with two records involving lone females north through Staple Sound on 14 October and 12 November.

Tufted Duck *A. fuligula*

A well represented visitor.

A good year for this pied diving duck, with reports on ten dates spanning six months. The first of the year was an intriguing sight, as a male was discovered in a dense raft of Guillemots off the lighthouse cliff on Inner Farne. The bird appeared very content with its 'colleagues' and remained in the raft for the majority of the day. The only other spring report concerned a pair south through Staple Sound on 13 May with further reports involving single drakes north on 17 and 22 July. Autumn passage brought a total of eighteen north in three groups through Staple Sound on 28 September, representing the highest day total since November 2005. October produced the bulk of northerly passage with three on 20, a single on 22 and two on 22 October. The last records involved six north through Inner Sound on 7 November and a pair north past the south end of Brownsman on 10 November.

Scaup *A. marila*

An uncommon passage and winter visitor.

Following last season's dismal showing (no records) the autumn produced three records. A flock of four males flew north past the south end of the islands on 27 September, followed by a female south through Staple Sound on 13 October and a male north through Inner Sound on 20 October.

Eider *Somateria mollissima*

An abundant breeding resident.

The breeding population is becoming a concern on the islands as the recent trend has seen the number of nesting pairs gradually decrease, hitting an all time low last season (the lowest breeding population since 1968). When the wardens arrived in late March, only small numbers were around the islands although with the aid of a mild spring numbers started to increase rapidly. The first prospecting pairs appeared on the island 'tops' from 11 April, with the first eggs discovered on Brownsman on 18 April and Inner Farne on 19 April. Twelve islands were colonised with a total of 655 (551) pairs as follows: Inner Farne 419 (337), West Wideopens 20 (7), East Wideopens 3 (5), Knoxes Reef 2 (4), Staple Island 20 (27), Brownsman 174 (154), North Wamses 3 (2), South Wamses 6 (9), Big Harcar 3 (4), Northern Hares 1 (1), Longstone Main 2 (4) and Longstone End 2 (2). The first chicks hatched on Brownsman and Inner Farne on 19 May and thereafter good numbers of young

were seen going to sea, the majority heading west towards the mainland. Throughout June numbers declined as successful family broods moved off the islands with the last breeding females departing by mid-July. Although improved numbers nested (population up by 18%) compared to the previous year, the season was poor in terms of overall productivity and chick survival, as the cold wet summer resulted in an above-average number of females abandoning nests. Coupled with the usual large gull predation, the season was not deemed 'great' and monitoring indicated this with 397 nests producing 1,513 eggs with 811 young fledging. The overall productivity of 2.04 was the lowest return this century.

Long-tailed Duck *Clangula hyemalis*

A well represented passage and winter visitor.

This striking sea duck winters in small numbers around the inner group, favouring the area behind the Bridges and the Wideopens. As usual, small numbers were still evident when the wardens took up residence in late March with four seen on 23 March. Thereafter 1-3 were present daily until a female on 10 April represented the final spring record. The first autumn returnees appeared in Farne waters from mid-October with five north on 19 and two north on 20 October. November produced reports of 1-4 passage birds on ten dates peaking at eight north through Staple Sound on 23 November. The wintering flock started to reappear from 9 November when three were present and up to five were seen daily until the wardens departed in early December.

Common Scoter *Melanitta nigra*

A common passage and winter visitor.

One of the most numerous members of the wildfowl family reported from the islands, with records from eighty-six dates throughout the course of the season (see Table 3). The majority of records referred to small numbers moving through either Inner or Staple Sound with a spring peak of ninety-seven north on 29 April. As usual mid-summer brought the season's peak count, as birds were recorded moving north to moulting grounds off north-east Scotland with 222 logged on 10 July followed by 106 on 20 July. Autumn was just as productive with regular sightings throughout the period with three figure counts including 122 on 11 September, 221 on 28 September and 126 on 5 November.

Table 3 Number of dates Common Scoters were recorded from the Farne Islands 2003-2007.

2007	2006	2005	2004	2003
86	**63**	**91**	**92**	**112**

Velvet Scoter *M. fusca*

A well represented passage and winter visitor.

An excellent year with passage birds reported on twenty-three dates, with 60% through Inner Sound and 40% through Staple Sound. The first of the year concerned a single north on 22 August through Staple Sound followed by a pair north through Inner Sound on 29 August. Small numbers continued to be reported during the autumn with 1-7 noted on six September dates, six October dates and seven November dates. During this period (and not included in the above data) peak counts included fourteen north on 13 October, eight north on 19 October and ten north on 20 October. Also of note, a female/immature took up residence in the Kettle off Inner Farne all day on 12 October.

Goldeneye *Bucephala clangula*

A common passage and winter visitor.

This distinctive northern duck was reported in good numbers, with a small wintering population being bolstered by good numbers on passage. The wintering flock behind the Wideopens on the inner group was still evident when the wardens arrived in late March with a peak of twenty-six on 23 March. However numbers dwindled rapidly over the following week as birds moved north with twenty on 24 and sixteen on 25-26 declining to five by the end of the month. The last few stragglers remained into early April with three from 1-7 and the last sighting involved five on 8 April. Following a five months' absence the first autumn returnees appeared in mid-October with two north through Staple Sound on 13 October. Thereafter passage was logged on a further twelve dates involving 1-21 between 18 October and 25 November with noticeable peaks of 135 north on 4 November (112 Inner Sound and 23 Staple Sound) and fifty-three north on 13 November. Gradually the wintering flock started to regroup at the favoured spot behind the Wideopens as a single on 9 November had increased to fifteen by the time the wardens departed in early December.

Red-breasted Merganser *Mergus serrator*

A well represented passage and winter visitor and rare breeder (Steel, 2007).

An interesting year in which the breeding pair returned for the second consecutive season and small numbers were noted on passage. The first record of the year concerned a male north through Inner Sound on 9 April and the returning pair first noted on 22 April in St Cuthbert's Cove on Inner Farne. Thereafter the pair regularly favoured the Kettle area, with almost daily records throughout May. As the summer advanced, the female became less conspicuous and it appeared another nesting attempt was being made. The male remained to moult around the islands and behaviour mirrored the previous summer's activities, with the female occasionally seen during June and July. However, unlike last year, the nest site was never discovered and although unable to accurately predict, it appeared a nesting attempt was made although the outcome remained a mystery. Thereafter passage was light past the islands with a modest peak of four north through Inner Sound on 8 July with 1-2 on eight dates during September-November and three north on 26 September.

Goosander *M. merganser*

An uncommon passage visitor.

Coastal records continue to increase with regular reports from the islands in recent years, and the trend continued this year with records on ten dates. The first of the year, and the only spring report, involved a stunning drake in full summer plumage in the Kettle on 29 March, which eventually departed west towards the mainland. Autumn witnessed a small influx in late October with seven south through Inner Sound on 21 followed by singles south on 24 and north on 26 and 31 October. Further records in November included two north through Staple Sound on 4, a female behind Knoxes Reef on 10, a male north through Inner Sound on 12 and four which circled Brownsman before heading north on 19 November. The final record concerned a male north through Inner Sound on 25 November.

Red-throated Diver *Gavia stellata*

A common winter and passage visitor.

Well represented around the islands with good numbers reported on eighty dates from every month including June and July. Small numbers lingered around the islands during the spring

period with peak passage involving thirteen north on 9 April and four north on 17 April. As spring progressed the number of reports declined with reports of three north on 4 May and singles on four dates between 4 and 13 May. Thereafter sightings became scarce although summer plumage individuals were seen on 30 May, 5 June and 4 July with an impressive (for the time of year) three north on 3 June. Autumn returnees started appearing from late July with three north on 20 July and 1-2 on five August dates. Passage increased as autumn progressed, with 1-5 recorded almost daily from early September with peak passage involving ten on 15 September, ten on 16 October and thirteen on 19 October. The season's peak numbers occurred during November with northerly passage involving fourteen on 4, twenty-one on 12, ten on 13 and twelve on 14 November.

Black-throated Diver *G. arctica*

An uncommon passage and winter visitor.

The year produced eleven records, all during the autumn, the best showing from the islands since 2001. The first bird of the year was seen on 18 September flying north through Inner Sound before eventually landing on the sea. Further records were soon to follow from Staple Sound with one south on 25 September and another north the next day. The run of records continued with two north on both 13 and 19 October which included a bird over the Longstone lighthouse. November produced more reports with two north together on 23 and the final record also involving two north on 26 November, all through Inner Sound.

Great Northern Diver *G. immer*

A well represented winter and passage visitor.

Birds were evident around the islands in small numbers during the autumn although there were no spring records. The first bird of the year was seen flying north through Staple Sound on 13 October with 1-2 noted on a further four dates from 19-28 October. November witnessed the largest number of reports with an impressive seven north on 4 and four on 13 November including one on the sea near Gun Rock on the latter date. The month produced further reports of 1-3 on eleven dates involving birds moving north past the islands with occasional sightings of birds on the sea.

Little Grebe *Tachybaptus ruficollis*

A rare visitor.

An unexpected autumn bonus arrived when an adult was discovered in the Kettle off Inner Farne on 21 October. The bird was seen feeding actively around the jetty system for most of the afternoon allowing all the wardens to appreciate this rare visitor to the islands (the species prefers freshwater habitats). This represents only the eighth ever Farnes record following sightings in 1956, 1965, 1980, 1984, 1985, 1999 and 2002.

Great Crested Grebe *Podiceps cristatus*

An uncommon visitor.

Despite being almost annual (last season was the first blank year since 1989), the islands only boast one or two records per year. The majority of Farnes records occur during the autumn and the season's only record concerned one flying north through Staple Sound on 12 September which eventually landed in choppy sea.

Red-necked Grebe *P. grisegena*

A well represented winter and passage visitor.

Small numbers winter around the islands and this was evident with a partial summer plumage bird discovered in the Kettle from 23-25 March, representing the only spring sighting. The first autumn returnees were seen in late September with singles north through Staple Sound on 26 and 28 September. Further records included one on the sea in Inner Sound on 15 October with two together north through Staple Sound on 20 October. November produced the bulk of records with reports of singles either flying north or on the sea on 9 and 22 November, with two on 13 November. The season's peak day count occurred on 25 November when three were noted, two lingering in Staple Sound and another in Inner Sound. The final sighting concerned a winter plumage bird in the Kettle on 27 November.

Slavonian Grebe *P. auritus*

An uncommon winter and passage visitor.

Despite good numbers wintering in north Northumberland the species is still regarded as very scarce around the islands, possibly due to the lack of observers during the winter months. This is demonstrated by the fact that the Farnes can only boast thirty-two previous records, following the first sighting in November 1930. Despite this, a single bird was logged flying north through Inner Sound on 20 October, the first record since 29 November 2005.

Fulmar *Fulmarus glacialis*

A common breeder, abundant on passage.

The Farnes were originally colonised in 1935 and the breeding population has increased year-on-year although it was 'checked' in 2004 following high winter mortality. Since then, the breeding population has bounced back and this year witnessed over 200 pairs attempting to nest. Small numbers were evident on the islands in late March and early April including the intermediate bird which was first noted on Inner Farne in 2003. Eventually, numbers started increasing from 14 April and pair bonding and copulating were observed from 23 April. As usual birds remained loyal to nesting sites and the annual 'honeymoon' (when all the breeding stock leave the islands) took place between 6 and 17 May. A total of 219 (240) pairs nested as follows: Inner Farne 18 (21), West Wideopens 10 (15), East Wideopens 12 (22), Knoxes Reef 21 (24), Staple Island 36 (36), Brownsman 57 (63), North Wamses 28 (25), South Wamses 25 (27), Big Harcar 7 (6) and Longstone End 5 (1). The first eggs were discovered on 20 May on North Wamses and Inner Farne and on most other islands over the following week. The lengthy incubation period (on average 49-53 days) resulted in the first young hatching from 7 July. It was a mixed season, as new restricted access to Big Harcar resulted in five chicks fledging (none fledged from the island in 2006) although success was poor on Inner Farne and East Wideopens and was possibly linked to the poor summer weather. Sadly an adult female Peregrine took a liking to the chicks on Brownsman which resulted in the loss of four individuals during the late summer. The first fledglings appeared over the islands from mid-August and thereafter birds started to disperse until the species became scarce from early September. Monitoring was below average with sixty-six chicks fledging from 189 nests, an overall productivity of 0.35. Following several weeks' absence birds reappeared around the islands from mid-November.

Great Shearwater *Puffinus gravis*

A rare visitor.

An incredible year for this large majestic oceanic species as large numbers were reported in the Irish Sea and off north-west Scotland in mid-September, resulting in up to sixty penetrating the southern North Sea. As a result, the majority of north-east coastal watch-points reported record numbers with the Farnes producing no fewer than four different individuals. 11 September recorded three as a single flew north through Staple Sound at 11:30 and was followed by two more birds moving off the south end of the islands at 14:17 and 14:50 that day. Amazingly, a fourth was seen on 28 September, when one was observed skirting around the south end of the islands to complete a remarkable year. The Farnes boast eight previous records with two in 2005 and singles in 1954, 1960, 1968, 1976, 1991 and 2002.

Sooty Shearwater *P. griseus*

A well represented to common passage visitor.

Since the turn of the century the islands have recorded some impressive numbers of this ocean wanderer, culminating in the third largest ever British count in 2005. This year started typically, with a single north through Staple Sound on 17 July and 1-3 recorded on a further five July dates. Thereafter any reasonable northerly winds produced good numbers with reports of 1-86 on twenty-five dates from 2 August-27 October. During this period three-figure counts were made on eight dates as shown in Table 4, peaking with an impressive 307 north on 27 September, the highest Farnes count since the record breaking figure of 2005. As expected, numbers dwindled throughout October with late reports involving singles north daily on 8-10 November. The last record of the year concerned one north through Staple Sound on 11 November.

Table 4 Three figure counts of Sooty Shearwaters past the Farne Islands 2007.

August		September					
27	28	11	15	18	26	27	28
113	**167**	**245**	**112**	**201**	**100**	**307**	**128**

Manx Shearwater *P. puffinus*

A common passage visitor.

An excellent year in terms of sightings from the islands with reports from ninety-eight dates (as shown in Table 5) although numbers remained modest during the season. The first record involved two north through Inner Sound on 29 April and spring passage was generally light, involving 1-25 and peaking with fifty-one on 26 May. The summer months provided regular sightings of from 1-25, peaking at a modest twenty-seven on 30 July. August witnessed the largest numbers recorded with sixty north on 22 followed by a season's peak of 171 on 28 August. Numbers dwindled as autumn advanced with a peak of sixty-seven on 15 September and records of singles on three October dates. The last record involved a late individual north through Staple Sound on 10 and 11 November.

Table 5 Number of dates Manx Shearwaters were recorded from the Farne Islands 2007.

Apr	May	June	July	Aug	Sept	Oct	Nov
1	**17**	**18**	**21**	**16**	**20**	**3**	**2**

Balearic Shearwater *P. mauretanicus*

An uncommon passage visitor.

Following the breeding season this critically endangered Mediterranean species heads north to the Bay of Biscay in late summer to moult, with small numbers penetrating the North Sea during this period. This now expected annual on the Farnes appeared twice, with a single south through Staple Sound on 12 August followed by another north (which circled the Sound before heading north) on 28 August.

Storm Petrel *Hydrobates pelagicus*

An uncommon passage visitor.

As recent phenomena go, the appearance of numerous birds around the islands over the past few years has re-written all record books. During a twenty year period between 1970 and 1990, the islands produced a total of eight sightings. Putting this into context, the previous three seasons have produced no fewer than 108 birds and this year brought another huge haul of fifty-one individuals. Records were spread over five months, with twenty-six through Staple Sound, twenty-two past the south end of Brownsman and a further three tape-lured to Inner Farne. The first birds of the year were seen following a spell of strong northerly winds in late June with an impressive eighteen logged during an all day sea watch on 26, followed by four on 27 and a single on 28 June, all heading north past the islands. Further northerly passage included 1-4 on 19 July, 19 and 20 August and 3 and 27 September with a peak of eight north on 30 July. A final burst of records occurred in November, following more strong northerly winds, with four on 9, three on 10 and two on 11 November. Tape luring and ringing occurred on the islands for the first time, with three successfully trapped on Inner Farne during the evening of 8 August.

Leach's Petrel *Oceanodroma leucorhoa*

An uncommon visitor.

This oceanic specialist infiltrated the southern North Sea in early November with a dozen logged down the east coast including one seen from the islands. The bird was observed flying north out to sea from the south end of Brownsman on 9 November and represents the eighteenth Farnes record following the first in November 1952.

Gannet *Morus bassanus*

An abundant passage and non-breeding summer visitor.

This wonderful charismatic seabird breeds in huge numbers around the British Isles and the species is well recorded throughout the year around the islands, helped by the presence of breeding colonies in nearby Lothian and East Yorkshire. Typical heavy spring passage was logged off the islands with 496 north on 30 March followed by 742 north on 31 March, both in one hour counts. Further one hour timed counts revealed 843 north on 3 April, with a spring peak of 1,628 north on 7 April. Occasionally adult birds are discovered sitting on the islands and an adult was noted on the south end of Brownsman in mid-May. During the late summer large feeding frenzies were evident and plunge diving was frequent, with a noticeable count of 1,027 north on 20 July. Numbers gradually declined as the autumn progressed and the species became scarce in the final week of November.

Cormorant *Phalacrocorax carbo*

A common breeding resident.

Good numbers were present at the two main colonies on East Wideopens (inner group) and North Wamses (outer group) from early March, with some individuals standing alongside old nest structures. The mild start to spring encouraged early nesting activity and nest building was observed from 28 March. Due to access difficulties to the colonies and without causing major disturbance, the species remained difficult to monitor and this made judging the dates of the first egg and first young very difficult. Despite this, the first eggs were suspected by 15 April with young from 17 May. A total of 158 (170) pairs nested as follows: East Wideopens 103 (102) and North Wamses 55 (65). Unlike the previous year there were no recorded nesting attempts on Big Harcar, although with added protection following new restrictions of open access to the island, it is hoped that it might be colonised in future years. Worryingly the colonies witnessed another drop in numbers, to the second lowest population figure in thirty years. Despite this, the breeding season appeared to be above average, with large numbers of fledged young seen from late June, and thereafter most dispersed around the islands and to the nearby mainland. Small numbers remained around the islands during the winter period.

Shag *P. aristotelis*

An abundant breeding resident.

When the wardens arrived in late March, small numbers occupied nesting ledges around the islands and copulating was recorded from 27 March. The mild start to spring encouraged further breeding activity and nest building commenced from 30 March with several advanced nests noted from 8 April. The first eggs were discovered from 19 April and first evidence of predation soon followed, as a Herring Gull claimed one egg on 22 April. A total of 1,059 (1,120) pairs nested as follows: Megstone 27 (30), Inner Farne 316 (319), West Wideopens 57 (61), East Wideopens 132 (113), Skeney Scar 47 (50), Staple Island 154 (201), Brownsman 116 (110), North Wamses 43 (40), South Wamses 59 (67), Roddam and Green 8 (10), Big Harcar 77 (94) and Longstone End 23 (25). Although statistically the population declined by 5%, overall it remained healthy and above the one-thousand pairs mark. The first chicks started hatching from 22 May and interesting observations of note during the season included the continued expansion of the small colony on the cliff below the Brownsman cottage. A total of nine pairs nested in this Kittiwake dominated area, increasing from the three pairs which attempted in 2006. The weather provided problems during mid-June as nests were observed being washed off cliff tops in two areas of Staple Island, whilst following heavy seas starvation appeared to be a problem for some young birds in St Cuthbert's Gut on Inner Farne. In both cases, breeding pairs reattempted and went on to have a successful season. As well as the weather, predation was again evident in areas with relatively flat cliff tops, where birds were easily accessible for the larger gulls, especially Herring Gulls. Despite the problems, productivity was excellent with 321 monitored nests resulting in 302 fledged young, the highest productivity return since 2002. The first young fledged from 19 July and as usual, the season was protracted with the last chick successfully fledging from a nest on the south side of Inner Farne on the late date of 15 October. As usual, large post-breeding flocks were very evident around the islands throughout the autumn months, indicating a good successful season despite its problems.

Grey Heron *Ardea cinerea*

A well represented visitor. Bred in 1894 (Paynter, 1894).

Well reported throughout the season with records from sixty-eight dates from the inner group and twenty-nine dates from the outer group. As usual, the undisturbed islands of Knoxes Reef and the Longstone complex were favourite locations with regular counts of 1-3 throughout the season and peak counts of four east on 10 August and five west on 11 September. A bird was observed stalking migrants on the dock bank on Inner Farne on 17 November.

Sparrowhawk *Accipiter nisus*

An uncommon visitor.

The islands usually produce a good number of records annually, especially during the autumn months, although this year was more noticeable for the lack of birds. There were only three confirmed reports, all from the inner group. A male was noted over Inner Farne on 8 April with another west on 13 August. The third and final record concerned a female hunting on Inner Farne on 12 October. This was the poorest showing since three in 1994.

Kestrel *Falco tinnunculus*

A well represented passage visitor. May have bred in 1916 and 1943 (March, 1916; Thorp, 1944).

It was a quiet year with the islands producing eleven records, with only one spring report of a single over Inner Farne on 18 April. Autumn passage commenced when a juvenile circled Inner Farne on 20 July and landed briefly on the lighthouse, but was soon chased off by an angry mob of breeding birds led by the Arctic Terns. Potential immigrants were noted from early August as two moved west over the inner group on 9 August with further reports of singles on seven dates from 10 August-27 September. The only Brownsman record was noted during this period with one over the south end of the island on 19 September. The final record concerned one west over Inner Farne on 5 November.

Merlin *F. columbarius*

A well represented passage and winter visitor.

When the wardens returned in late March it was evident that at least one bird was still in residence and favouring the outer group, as records related to a female/immature frequently recorded throughout March and April. What was considered to be the same bird was last seen over Brownsman on 12 May and Inner Farne the following day. Following a gap of three months, the first autumn returnee was seen hunting a Pied Wagtail over Staple Island on 3 September. Thereafter records increased with at least three different individuals in residence, each 'working' the islands, especially on the outer group where tired migrants are more accessible. Prey items varied during the year but one lucky Pipit species survived an attack from all three birds on 19 October.

Peregrine *F. peregrinus*

A well represented passage and winter visitor. May have bred in 1925 (Watt, 1951a).

The early part of the year saw sporadic sightings on the islands suggesting only occasional use by birds wandering from the nearby mainland. Two different individuals were recorded

in late March, an adult male and female hunting daily, although the number of records dropped thereafter as birds moved back to upland breeding grounds. Late records included singles on 3, 26-27 April and 18 May and, more unusually, a bird seen in mid-summer over Inner Farne on 13 June. As usual the late summer heralded the first autumn returnees when one drifted west over Inner Farne on 14 August. Thereafter the species became a regular feature with almost daily records throughout the autumn period. Interestingly an adult pair was seen hunting and interacting together throughout the autumn months and both roosted together nightly on Staple Island throughout October and November. This pair was seen 'dual hunting' successfully on several occasions, and on one occasion they were observed on 13 September chasing off another Peregrine from their 'territory'. On 19 October the same pair was responsible for a Blackbird kill which the female dropped into the sea and the male was observed attempting (unsuccessfully) to fish it out of the water on several occasions. Other records during the autumn suggested at least two other different immature birds utilised the islands. Arguably the Farnes is probably one of the best localities in the north-east of England to see Peregrines during the autumn. Prey items varied as usual with birds seen taking Fulmar (chick), Woodcock, Turnstone, Puffin, Little Auk, Feral Pigeon, Fieldfare and Blackbird.

Water Rail *Rallus aquaticus*

An uncommon passage visitor.

Following a spell of easterly winds during late autumn, on 23 November a bird was flushed from the north hill on Brownsman which flew directly west towards the mainland. The species still remains a 'good find' on the islands, as passage birds have been recorded in twenty-two of the previous thirty years, with the last blank year back in 2002.

Moorhen *Gallinula chloropus*

An uncommon passage visitor. Bred in 1901 (Miller, 1959) and 1947-48 (Goddard, 1947, 1948).

Each year usually brings one sighting, with forty-one records from the previous thirty years including nine November records, and this was extended to ten as a juvenile was discovered on Brownsman on 21 November. The bird appeared following an easterly airflow and was found near the south end of the island before flying over the wardens' heads and landing again near the vegetable garden. Despite a search it could not be relocated, showing just how elusive the species can be on the islands.

Coot *Fulica atra*

An uncommon passage visitor.

This abundant Northumberland breeding species still remains a true island rarity with only twenty-two previous records with the most recent seen off Staple Island in August 2005. A lone bird was discovered on the sea in thick fog at the north end of Inner Farne on the morning of 27 March. It lingered for several hours before disappearing into the mist.

Oystercatcher *Haematopus ostralegus*

A common winter and passage visitor, well represented breeder.

The species was present all year on the islands with reasonable numbers nesting. Displaying

birds were seen on 5 April and copulating soon followed on 15 April. Thereafter the first nest scrapes were discovered followed by the first eggs on Inner Farne on 28 April and Brownsman on 6 May. The population showed a welcome increase with more pairs discovered on the small satellite islands of the outer group. A total of 35 (29) pairs bred as follows: Inner Farne 7 (6), West Wideopens 3 (5), East Wideopens 2 (2), Knoxes Reef 3 (3), Staple Island 4 (4), Brownsman 9 (7), North Wamses 2 (0), South Wamses 1 (1), Big Harcar 1 (1), Northern Hares 1 (0), Longstone 1 (0) and Longstone End 1 (0). The first young hatched on 28 May with the first fledgling noted in early July. It was an indifferent season as official monitored nests indicated a poor season with only four young fledging from fifteen nests. The productivity return of 0.27 was poor and well below average but it appeared not to show the full picture as it was generally considered a reasonable season, as non-monitored nests appeared to do well. The main cause of failure was due, as usual, to large gull predation. Following the breeding season, post-breeding flocks started increasing with peaks of 112 on West Wideopens on 18 August, 223 across the islands on 1 September and ninety-four on 8 November.

Ringed Plover *Charadrius hiaticula*

A common passage visitor, uncommon as a breeding species.

The habitat of the islands restricts any expansion of the breeding population as there is a general lack of shingle and sandy shoreline on which to nest. The population remained low with 7 (8) pairs nesting as follows: Inner Farne 3 (4), Staple Island 1 (1), Brownsman 3 (3). The first eggs were discovered on 15 April on Inner Farne and it was another eventful season as nesting pairs faced many problems, with gull predation being the cause of the majority of failures, and an attempt below the tide-line never bodes well for a successful outcome. A total of eleven breeding attempts were monitored with nine chicks hatching but sadly only one making it to fledging age. The extreme and brutal nature of life was demonstrated by a pair on Inner Farne which nested in St Cuthbert's Cove, as they lost all five young within five hours of hatching on 29 July. Success was marked by a single fledgling on Brownsman on 7 July. Following the breeding season, small numbers were seen during autumn wader passage with a modest peak of thirty on Knoxes Reef on 12 September. Following ten on 13 October on Inner Farne, only a handful lingered on the islands into the early winter period.

Golden Plover *Pluvialis apricaria*

A well represented passage visitor.

Scarcely reported during spring passage, two records involved two north over Inner Farne on 11 April and the following day a single flew west over the same island. As usual a post-breeding flock started building up on the islands, favouring Longstone on the outer group of islands from early July. The first indications of this build-up concerned four east over Inner Farne on 1 July. Thereafter numbers increased slowly with 1-8 daily and a peak of thirty-seven on 10 July and the avalanche of juveniles and adults started utilising either Longstone or Staple Island, dependant on disturbance levels. The flock increased with thirty-eight on 17 increasing to 148 on 30 July, 211 on 2 August and rising to 450 on 24 August. Over the following six weeks (late August-early October) up to 900 were present daily, often given away by the swirling mass over the islands. As usual numbers decreased sharply, probably as a result of moving to wintering grounds on the mainland, with the final autumn record involving eight west over Inner Farne on 26 October.

Grey Plover *P. squatarola*

A well represented passage visitor.

It was a generally disappointing year with the islands failing to produce any spring records, the first such occasion since 1986. Although the autumn months produced a handful of records it was noticeable that the year produced no multiple sightings or lingering records. The first of the year involved a bird over Inner Farne on 28 August and was followed by further singles moving north over the inner group on 10, 12 and 29 September. The outer group witnessed a similar light movement with records of singles on 30 September and 2 and 10 October. The final record involved one north with Bar-tailed Godwits through Staple Sound on 7 November.

Lapwing *Vanellus vanellus*

A well represented passage visitor. Sporadic breeder in past; last attempt in 1962 (Hawkey, 1991).

Despite good numbers on the nearby mainland with a strong wintering flock in Seahouses harbour, the islands only produced reports of 1-5 on eleven dates. The first passage birds of the year involved four west over Inner Farne on 5 July with a juvenile lingering on the island the following day. Thereafter singles were seen on 6 August and 11 September with small groups of 1-5 noted heading west on three dates between 22 and 26 October. Late autumn passage birds were seen on 5 and 13 November with the last record involving the season's peak count of seven west over Brownsman on 21 November.

Knot *Calidris canutus*

A well represented passage visitor.

Birders in the north-east of England regard this as a classic 'winter wader', but its complete reverse on the islands, with the majority of sightings made during the summer months. Northern bound individuals were seen during May with a single on Inner Farne on 19 May followed by seven on the islands the following day. As spring gave way to summer, birds started to become regular with 1-15 on nine June dates and peaking at nineteen on Longstone on 29 June. Thereafter the summering flock was recorded daily until late August with peaks of thirty-six on 18, forty on 19 July and regular counts of twenty or more on several dates. Numbers gradually decreased throughout August with a peak of fifteen on 12 August. September produced 1-10 on six dates with a season's best of fifty south through Inner Sound and late records of two on Knoxes Reef on 10 October and twenty on 29 October.

Sanderling *C. alba*

An uncommon passage visitor.

Continuing the trend of recent years the season produced five records, matching that of the previous year. A noticeable spring influx brought four to Inner Farne and one to Brownsman on the afternoon of 18 May involving three summer and two winter plumage individuals. Further records involved a partial summer plumage bird on Brownsman on 16 July, three briefly on Brownsman on 31 July and one lingering on Inner Farne on 2 August. The final record concerned an adult summer plumage bird which circled the Kettle before heading west on 12 September.

Little Stint *C. minuta*

An uncommon passage visitor.

It was another quiet year locally and this was reflected on the Farnes as the islands produced just a single record, with one feeding around a pool on the west rocks of Brownsman on 3 September, representing the worst showing since 2003.

Purple Sandpiper *C. maritima*

A common passage and winter visitor.

A set of rocky islands would not be complete without this classic rocky shore wader. The Farnes boast nationally important numbers during the autumn and winter months, and as normal the species was recorded in every month of the year (something not many sites can equal). As usual small numbers were present throughout late March and April when the wardens arrived on the islands, with peaks of 124 on 28 April. During a high tide systematic count on 1 May, a total of 297 were present with 120 on Megstone and 177 on Longstone. Further impressive counts were made on Longstone with ninety-seven on 3, 123 on 11 and 184 on 14 May. As expected the species became scarce in mid-summer with numbers dwindling in the latter part of May with one noted on 24 May. It was a similar story in June with the only records involving a single on Brownsman on 28-29 June with four present on 30 June. Post-breeding flocks started to gather with 17-47 daily throughout July and a peak of seventy-seven on 22 July. Thereafter the islands remained colonised throughout with up to 300 evident during the autumn and winter period.

Dunlin *C. alpina*

A common passage and winter visitor.

Well represented on passage with the spring period producing a flurry of summer plumage adults moving through the islands with 1-6 noted from 7-19 May. The following few days produced peak spring counts of ten on 20 May and nine on 23 May. Although many moved through the site, the species maintained a continued presence with 1-2 noted until 26 May, with an adult on Brownsman favouring the flats area of the islands from 31 May-14 June and two present until 5 July. Thereafter numbers started to increase once again with mid-summer peaks of twenty-three on 19 July and nineteen on 22 July. The first juvenile of the year was noted on West Wideopens on 27 July and small numbers were recorded throughout late July and August. Apart from sixteen on 7 August, wader passage was generally disappointing with no large counts and 1-7 recorded sporadically throughout the autumn.

Ruff *Philomachus pugnax*

A well represented passage visitor.

Last year produced the lowest number of records in a season since 1989 and sadly this year matched that unwanted record. Only two records were received for the year with a lingering female on Brownsman from 9-14 May representing the first spring record since 2004. The bird favoured the pond or flats area throughout its stay. The only other record during a poor autumn showing concerned one west over Inner Farne on 3 September.

Jack Snipe *Lymnocryptes minimus*

A well represented passage visitor.

This distinctive but secretive passage and winter visitor was recorded during the spring with

a single on Inner Farne on 26-27 March which may have been the same individual seen on the same island on 29 March. The first autumn returnees started moving through the islands from early October with singles on Staple Island and Inner Farne on 9 October. Further individuals were seen on Staple Island on 10 October and Inner Farne on 23 October. The final record concerned one on the top meadow on Inner Farne on 2 November.

Snipe *Gallinago gallinago*

A well represented passage visitor.

It was another good season and as usual the bulk of records occurred during the autumn months. Spring was represented by singles on Inner Farne from 25-30 March with a peak of three west on 29 March. The only other spring records concerned a single over Brownsman on 12 April and, unusually, one lingering on Staple Island from 30 April-15 May. The first returning autumn birds were typically seen in late August with two west on 21, four on 24 and two on the Inner Farne pond on 27 August. September was quiet with 1-3 on six dates although the species became more regular on passage from early October. Peak autumn counts included five on 6 and six on 9 October with six on 21 November and 1-3 recorded on a further thirty-one dates until last seen on 27 November.

Woodcock *Scolopax rusticola*

A well represented passage visitor.

Northern bound migrants moved through the islands during early spring with five present on 27 March when the wardens arrived including two on Brownsman and singles on Staple Island, Longstone and Inner Farne. The only other spring record concerned two on Inner Farne on 29 March. As expected, the first autumn returnees appeared from 6 October and thereafter were recorded on twenty-five dates throughout October and November. Usually records related to 1-3 with influxes including thirteen on 22 October, seven on 26 October and ten on 5 November. The peak occurred on 13 November with a total of eighteen recorded across the islands including ten on Brownsman. Thereafter small numbers were noted with the last record involving two on the outer group on 24 November.

Black-tailed Godwit *Limosa limosa*

An uncommon passage visitor.

It was another good showing following the trends of recent years, with records from eight dates spanning four months. The first sighting concerned up to five in a mixed flock of Curlews heading west past the islands on 21 April and a partial summer-plumage adult lingered on Brownsman during the high tide on 5 June. Further records included nineteen summer-plumage birds observed circling the Kettle on the inner group on 8 July before settling down on the ladies path on Inner Farne, eventually departing west as dusk approached. The inner group continued to dominate records as small numbers were present on Knoxes Reef with one on 30 July, three on 2 August, seven south on 4 August and one west on 16 August. The final record of a good season involved ten west over Inner Farne on 21 August.

Bar-tailed Godwit *L. lapponica*

A well represnted passage visitor.

Over recent years it has been a matter of course to have records from the islands as birds have been present throughout the season, favouring Knoxes Reef on the inner group and

including impressive counts of 205 in 2003 and 121 in 2004. Rather than record counts, the year was more noticeable for the birds' absence as the islands produced records on only thirteen dates. This low number may be reflected in the species being overlooked on Knoxes Reef, with a modest peak of thirteen on 26 April. Smaller numbers of 1-4 were noted on two dates in April, three days in July and two days in August, with single records in September and October and two November reports of a single through Staple Sound on 7 and four on Knoxes Reef on 11 November.

Whimbrel *Numenius phaeopus*

A well represented passage visitor.

This summer visitor gives away its presence by its high pitched distinctive call and good numbers were reported on passage from the islands. The first bird of the year was noted over Big Harcar on the typical arrival date of 22 April with further spring records involving 1-2 on seven dates between 2 and 20 May. Return passage from 7 July saw an increase in regular records with daily reports during July and August bolstered by 'resident' birds on Inner Farne, Brownsman and Longstone. Sightings generally involved 1-3 birds with peaks of seven on 26 July, four on 2 August, seven on 10 August and six on 15 August. As numbers dwindled, reports in early September involved individuals on 2 and 4 with the last record involving one over Inner Farne on 11 September.

Curlew *N. arquata*

A common passage and winter visitor.

Recorded throughout the year with large numbers concentrating on Knoxes Reef and small numbers reported elsewhere. The trend on the Farnes is usually reasonable numbers in March and April with a noticeable drop in reports throughout May and early June. Records then increased marginally until early July when a large post-breeding flock gathered on Knoxes Reef and these good numbers remained evident throughout the remainder of the season. Table 6 shows peak monthly counts for Knoxes Reef during the course of the year.

Table 6 Peak Curlew count on Knoxes Reef throughout the season.

Mar	Apr	May	June	July	Aug	Sept	Oct	Nov
78	**170**	**12**	**80**	**350**	**400**	**300**	**320**	**120**

Common Sandpiper *Actitis hypoleucos*

A well represented passage visitor.

Reports on passage through the islands in spring can be patchy and this year produced three sightings, all on the outer group. Records included singles on Staple Island on 30 April, Brownsman pond on 2 May and west over Staple Island on 5 May. The first autumn returnees were seen from mid-July with individuals on Staple Island on 16-17, Knoxes Reef on 19, two on Brownsman and one on Inner Farne on 28 July and another on Staple Island on 30 July. Thereafter August produced reports of 1-2 on sixteen dates with a peak of four on 24 August. Late passage was noted with singles on 8 and 14 September on Inner Farne.

Green Sandpiper *Tringa ochropus*

An uncommon passage visitor.

Recorded annually in small numbers, with four records reported on six dates, one less than

the previous season (see Table 7). A lingering individual favoured the north hill of Brownsman from 4-8 July and another was on the pond on the same island on 22 July. Other autumn records concerned one calling as it flew high west over Inner Farne on 6 August with two east over the inner group on 4 September.

Table 7 Number of Green Sandpiper records per year 2000-2007.

2007	2006	2005	2004	2003	2002	2001	2000
6	**7**	**1**	**5 +**	**1**	**6**	**9**	**2**

Greenshank *T. nebularia*

A well represented passage visitor.

A dismal year was probably not helped by the lack of any observers present on the outer group during peak wader passage in August. The islands had just two records, with one west over Inner Farne on 26 August and another in the Kettle on 29 August.

Wood Sandpiper *T. glareola*

An uncommon passage visitor.

Following last year's unprecedented influx which brought record numbers to the islands, this season was more typical with a single record of a summer plumage adult on Brownsman pond on 5 June. The bird was discovered at 06:00 but was gone thirty minutes later, raising the interesting question of how many must slip through the islands unnoticed at this time of year.

Redshank *T. totanus*

A common passage and winter visitor. Bred in eight years 1924-46 (Goddard, 1925-1948; Hawkey, 1991; Wilson, 2000-2008).

This former breeder remains a common visitor to the islands although very few are recorded during May and June, probably as a result of birds away on breeding grounds. Small numbers were seen throughout March and April with peaks of five on Longstone on 5 April. A noticeable count of thirty-seven on Longstone on 21 April probably involved northern bound passage birds. May produced only three confirmed records with 1-2 on 2, 11 and 20 May followed by singles on five June dates. A count of three on Longstone on 12 June was exceptional for the time of year. As usual, good numbers started moving through the islands from early July with 1-17 recorded almost daily with peaks of twenty on 8, twenty-nine on 23 and twenty-two on 30 July. Good numbers continued to be seen throughout August with forty-one on 2, twenty-nine on 7 and thirty-six on 12 August. Thereafter passage birds dwindled and the usual 1-15 were seen throughout the autumn months.

Turnstone *Arenaria interpres*

A common passage and winter visitor, uncommon in summer.

Present all year round with large numbers reported in late summer as passage birds filter back into Britain from high northern breeding grounds. The spring period produced regular reports from several islands with up to a hundred present on Longstone and the inner group with small numbers noted elsewhere. As usual the species maintained a presence throughout the summer although in small numbers from May-June but increases occurred thereafter. Peaks of 300 on Inner Farne on 31 July were superseded by 408 counted at high tide on the

same island on 2 August and up to 200 remained throughout the autumn. The outer group reported similar good numbers with 450 on Longstone in early August followed by 150-300 noted throughout the autumn period.

Grey Phalarope *Phalaropus fulicarius*

An uncommon autumn passage and winter visitor, extremely rare in spring.

Since the turn of the century the islands have boasted an impressive twenty-three records involving twenty-eight birds (as shown in Table 8). This year was superb with good numbers reported in Northumberland including six records involving seven birds from the islands. The first sighting concerned two north through the Kettle during a strong northerly gale on 26 September and another north past Brownsman the following day. Further records followed in early November, with a very showy individual lingering in the Kettle off Inner Farne for three days from 6-8 November. Seawatching produced further reports of individuals north past Brownsman on 10 and Inner Farne on 11 November. The final record of an incredible year involved a single lingering around Inner Sound and Knoxes Reef on 25-26 November.

Table 8 Numbers and records of Grey Phalaropes per year 2000-2007.

	2007	2006	2005	2004	2003	2002	2001	2000
No. of records	**6**	**2**	**5**	**4**	**1**	**3**	**1**	**1**
No. of birds	**7**	**3**	**5**	**5**	**3**	**3**	**1**	**1**

Pomarine Skua *Stercorarius pomarinus*

A well represented passage visitor, common in some years.

This powerhouse of a skua can be seen in reasonable numbers if the right weather conditions prevail. The season produced reports from ten dates, mostly involving juveniles, improving on last season's dismal record of sightings on three dates. The first of the year involved a stunning adult with full 'spoons' noted heading north through Staple Sound on 27 June. Further sightings included an adult north on 28 August and 10 September with a 'sub-adult' north on 11 September. All other records referred to either sub-adults or juveniles moving north in November with six on 10, two on 11, a single on 18 and three on 19 November. The final record involved two lingering in Staple Sound on 25 November.

Arctic Skua *S. parasiticus*

A common passage visitor.

Well represented on passage especially during the late summer with small numbers lingering around the islands. Spring passage was light with three reports of singles north, including individuals through Inner Sound on 11 and 17 May and one north through Staple Sound on 26 May. The first returnees appeared around the islands from 12 June and 1-4 lingered on ten days until the end of the month. Thereafter an impressive showing involved almost daily reports (recorded on seventy-seven dates) from July-September with up to ten lingering throughout. Great views were obtained during the summer as birds were often seen sitting on the islands waiting for terns and other seabirds to return with food. Passage peaked at thirty-seven north on 28 August and ten north on 27 September. Numbers dwindled rapidly thereafter with reports of 1-2 between 10-14 October. Late passage involved 1-2 on 4, 7 and 10 November with the last record concerning one juvenile north through Staple Sound on 18 November.

Long-tailed Skua *S. longicaudus*

An uncommon passage visitor.

This still remains a 'seawatchers bird' as a combination of its rarity status and the difficulty in identification at juvenile level result in only small numbers being seen annually. The year produced only three confirmed records, all involving juveniles, with a single north through Staple Sound on 27 September and two north in the same area on 28 September.

Great Skua *S. skua*

A common passage visitor.

This ferocious visitor is recorded in small numbers on spring passage with large influxes during the late summer and early autumn. The wardens were greeted on their return to the islands as one flew over the boat on arrival day on 23 March and this was followed by singles north on five dates between 18 April and 4 May. Mid-summer usually provides the first returning birds, possibly non-breeders or failed breeders, as one flew low over Inner Farne on 2 June. A bird lingered on Knoxes Reef on 9-10 June much to the consternation of the local gull population and it was thought that the bird had killed at least one large gull chick. Further records were produced as the summer progressed with singles north on 26 and 29 June. Thereafter the number of reports increased as birds wandered from northern breeding grounds with reports on twelve July dates, eleven August dates, eighteen September dates, nine October dates and four November dates. Generally records related to 1-8 on passage with peaks of nine north on 11 September and a season's best of thirty-three north on 28 September. Late stragglers were seen in early November with the final record involving two south through Staple Sound on 9 November.

Sabine's Gull *Xema sabini*

A rare passage visitor.

This rare Nearctic wanderer was only recorded for the first time on the Farnes as recently as 1991, but a further fifteen since has changed the species status on the islands and includes five in both 1997 and 2005. Exceptional numbers moved into the southern North Sea during September and the islands produced a very respectable four during the month all involving juveniles. The excellent series of sightings started with one north off the south end of Brownsman on 3 September followed by another north through Staple Sound in heavy seas on 26 September. The final two records occurred on the same day north through Staple Sound on 28 September during heavy Kittiwake passage, with one north at 13:30 and another at 17:50. This excellent set of reports brings the Farnes tally to twenty records.

Kittiwake *Rissa tridactyla*

An abundant breeder and passage visitor, well represented in winter.

It was a very poor year as the species appeared to suffer the worst breeding season of any seabird on the islands with a combination of poor weather in June and the apparent lack of suitable food resulting in very low productivity. Small numbers were active around the main colonies when the wardens arrived in late March although numbers gradually increased in early April. Nest building activity was noted early this year as birds started collecting from 17 April on Brownsman and this was followed by the first indications of copulation on 30 April. The first week of May then witnessed extensive nest building activities by the majority

of the population and the first eggs were discovered on Inner Farne and North Wamses on 20 May. Thereafter eggs were discovered over the majority of the colonies although nest building was still being observed in early June. A total of 4,669 (4,713) pairs nested as follows: Megstone 14 (18), Inner Farne 1,324 (1,420), West Wideopens 226 (207), East Wideopens 249 (262), Skeney Scar 156 (175), Staple Island 1,173 (1,168), Brownsman 1,296 (1,185), North Wamses 74 (96), South Wamses 52 (70), Roddam and Green 22 (20) and Big Harcar 83 (92). The weather had a really detrimental effect on the breeding success, as birds appeared to suffer at the egg stage when heavy rain early in the breeding season washed off many constructed nests and small chicks suffered later following more heavy rain. The first chicks started hatching from 11 June on Staple Island and 16 June on Inner Farne, with the first fledglings reported on the wing from 16 July. Unlike any other nesting seabird on the islands, the species appeared to struggle to find food and relies solely on Snake Pipefish. The result was damaging as large chicks almost ready to fledge were not finding enough nutrient levels required and many perished at this late stage. Productivity was very poor with 151 chicks fledging from 606 monitored nests at an overall productivity level of 0.25.

Black-headed Gull *Chroicocephalus ridibundus*

A well represented breeding species and common visitor.

The species is one of the first to colonise the islands during the early spring as large numbers (up to 1,000) were present in late March, with many in full summer plumage. Nesting activity increased as spring developed, displaying birds were noted on the favoured colonies on Inner Farne in early April and copulation was observed on 25 April. Well constructed nests were discovered in the final week of April and the first eggs were discovered on Inner Farne on 28 April and Brownsman on 9 May. A total of 276 (342) pairs nested as follows: Inner Farne 256 (302) and Brownsman 20 (40). The decrease in the population may have been due to a direct result of predation although the presence of only a handful of nesting Sandwich Terns on Brownsman this year may also have contributed to the reduction on that particular island. The first chicks started hatching on Inner Farne on 29 May and Brownsman on 5 June. As usual, predation from the larger gulls was heavy although this did help act as a 'buffer zone' to nesting terns. The first fledglings started dispersing from 22 June on Inner Farne and 1 July on Brownsman. Monitoring in the cemetery on Inner Farne revealed a total of eight fledglings from twenty-three nests. As late summer progressed the breeding population dispersed with only small numbers lingering during the autumn months.

Little Gull *Hydrocoloeus minutus*

A well represented passage and winter visitor.

The north-east experiences annual influxes of birds in mid-summer along the coastline with the Farnes usually producing several records during this period and this year was no different. The first report involved a first-summer bird which lingered on the ladies path on Inner Farne on 27-28 May and it or another was present on Staple Island on 27 May. Further reports of first-summer birds in June were noted on Staple Island on 3, West Wideopens on 10 and Inner Farne on 21 June. The first adult was observed flying north on 20 July followed by a group of four north the following day. Autumn passage was generally light with 1-5 noted on eight September dates with a peak of seven north on 29 September. Late stragglers were seen moving north through Staple Sound on 14 October and 4 November.

Mediterranean Gull *Larus melanocephalus*

An uncommon passage and winter visitor.

A very quiet year by recent standards with just one confirmed record during the season involving a first-summer individual roosting on West Wideopens on 19 May.

Common Gull *L. canus*

A common visitor. Bred in four years 1910-14 (Booth, 1911, 1912; Miller, 1911-1914; Paynter, 1914), probably in 1916 (March, 1916) and attempted breeding in 1974 (Hawkey and Hickling, 1974).

The majority of Farne records occur in spring as birds move north to breeding grounds, with a distinct build-up on Knoxes Reef on the inner group during evening roosts. When the wardens arrived in late March up to thirty were seen nightly at the roost and this gradually increased with a peak of sixty on 1 April. Although the species remained evident at the roost throughout April, numbers dwindled with just a handful of birds present by early May. During this period diurnal passage was noteworthy, with large vocal groups flying at high altitude and heading direct east over the islands with a peak of 304 on 6 May. Thereafter small numbers were reported with twenty-one on 17 and eighteen on 19 May. Following a first-summer individual on Knoxes Reef on 25 May the species became very scarce around the islands. The odd mid-summer record was reported with first-summer birds seen on 21 and 28 June and the first fledged juveniles arrived around the islands from 27 July. Numbers gradually increased during late autumn although only in small numbers with a peak of twenty-five on 28 October.

Lesser Black-backed Gull *L. fuscus*

A common breeding species and passage visitor.

The Farnes population is completely migratory, moving through the north-east of England in early March to return to the islands for the summer breeding season. As wardens arrived on the islands in late March the species was scarce although numbers increased rapidly and most breeding sites were occupied by early April. Nesting activity soon commenced with the first eggs discovered on 7 May. A total of 480 (545) pairs nested as follows: Inner Farne 29 (16), West Wideopens 143 (121), East Wideopens 58 (63), Knoxes Reef 4 (33), Staple Island 12 (55), Brownsman 9 (8), North Wamses 76 (75), South Wamses 75 (78), Big Harcar 59 (81) and Roddam and Green 15 (15). As with all the large gulls, a small number of birds caused havoc to other nesting seabirds as the species was again responsible for heavy predation, especially of Black-headed Gulls on Inner Farne. Following the breeding season, birds soon dispersed, although they lingered longer than usual, with small numbers noted in early November. Once again the species was absent from the islands during the winter months.

Herring Gull *L. argentatus*

A common breeding species, abundant in winter.

This very abundant resident nested in good numbers with the population showing a small increase, the first in three years. Large numbers were evident when the wardens arrived in

late March and nesting activity was noted soon after with copulation occurring from 31 March. Nest building activity increased throughout April and the first eggs were discovered on 7 May. Fourteen islands were occupied with North Wamses remaining as the number one breeding site. A total of 566 (505) pairs nested as follows: Inner Farne 8 (2), West Wideopens 59 (70), East Wideopens 52 (83), Knoxes Reef 64 (20), Skeney Scar 14 (12), Staple Island 52 (14), Brownsman 8 (6), North Wamses 120 (120), South Wamses 43 (40), Roddam and Green 19 (9), Big Harcar 58 (67), Longstone Main 1 (2), Longstone End 39 (33) and Northern Hares 29 (27). A good number were once again responsible for the majority of predation recorded on the islands during the season, although this was much reduced in some areas, especially on Inner Farne. The first chicks started hatching from 4 June and large numbers remained following the breeding season, roosting on the islands throughout the autumn period with good numbers of northern race birds *argentatus* reported during the latter part of the autumn.

Iceland Gull *L. glaucoides*

An uncommon winter and passage visitor.

As with all the 'white-winged' gulls, the species remains a scarce visitor to the islands with just twenty-seven documented records following the first in 1955. A second-summer bird was discovered at the evening roost on West Wideopens on 7 April; this is the best month to see the species on the islands as the last six records have all occurred in this month only. Interestingly the inner group monopolises records, as the last outer group record occurred in 1997.

Glaucous Gull *L. hyperboreus*

An uncommon winter and passage visitor.

The north-east has seen a huge reduction in the number of wintering birds and this has been mirrored on the Farnes as the islands have only produced three records in the past five years. However, two records this season was a positive step forward as a large third-summer bird was discovered roosting on West Wideopens on 17 May, representing the first May record since 2000. Interestingly a second bird, a first-winter was seen lingering around Brownsman before heading off towards Staple Island on the afternoon of 26 October.

Great Black-backed Gull *L. marinus*

An uncommon breeder, common winter and passage visitor.

This huge bulky bird keeps a small breeding presence on the islands and small numbers were evident during the early spring period. The first eggs were discovered 7 May on West Wideopens and 15 May on North Wamses and a total of 9 (7) pairs nested as follows: West Wideopens 2 (2) East Wideopens 3 (3), Brownsman 1 (0), North Wamses 2 (1) and South Wamses 1 (1). This modest breeding total actually represents a new Farnes record for the number of pairs nesting in one season. Breeding returned to Brownsman for the first time since the death of one of the established adults in early 2005 but again nesting attempts were thwarted by predation from other large gulls. The first chicks hatched on 24 May with fledglings noted from 2 July. As usual, reasonable numbers flooded into the islands from late July from northern breeding grounds with good numbers present throughout the autumn period.

Little Tern *Sternula albifrons*

A well represented passage visitor.

An excellent year with the traditional evening roost at St Cuthbert's Cove, Inner Farne attracting record numbers in mid-May (as shown in Table 9). The first bird of the year arrived as usual in early May with one at the roost on 1 May. Thereafter numbers rapidly increased to a peak with a Farnes record count of 130 on 15 May. Numbers remained high throughout the following few days but soon declined as birds moved to breeding sites nearby. However poor weather which washed out many early nesting attempts saw a second build-up at St Cuthbert's Cove in early June with twenty-four present on 4 June. Thereafter the species maintained a presence with up to thirty on 24 June and 2-8 until last seen on 28 June. Presumed failed breeders were recorded in mid-July as the beach attracted fourteen on 15 July although a fledged juvenile was seen in the roost of twelve birds on 1 August and this represented the final record of the year.

Table 9 Evening roost counts of Little Terns on Inner Farne, May 2007.

May											
1	2	5	6	10	13	14	15	18	19	20	23
1	**12**	**27**	**44**	**58**	**95**	**111**	**130**	**106**	**115**	**91**	**19**

Black Tern *Chlidonias niger*

An uncommon passage visitor.

A very disappointing year for this elegant marsh tern, with just a single record of a juvenile north through Staple Sound on 29 August, representing the worst showing on the islands since 2002.

Sandwich Tern *Sterna sandvicensis*

An abundant breeding summer and passage visitor.

The first returning birds appeared, as usual, on time in late March as a lone bird was at the traditional roost site on Knoxes Reef on 28 March. It was a slow, gradual build up of numbers (as shown in Table 10) but by the first week of May the islands were alive with displaying birds as very vocal displays commenced. Up to 3,000 were present nightly throughout the first two weeks of May and it was not long before the first prospecting birds were on the favoured nesting localities of the top meadow on Inner Farne. At least a hundred had settled in the area on 6 May and this increased daily thereafter with the first eggs discovered on Inner Farne on 9 May. Although a late development, for the third consecutive year birds nested on the north-east side of Brownsman, with the first eggs discovered on 21 June. A total of 1,413 (1,635) pairs nested as follows: Inner Farne 1,408 (1,429) and Brownsman 5 (206). The first young hatched on 6 June on Inner Farne and 19 July on Brownsman and food availability appeared very good, with large prey items being brought in on a regular basis. Despite the poor mid-summer weather, the species appeared to be largely unaffected as huge numbers of young fledged from Inner Farne, with the first flying youngsters noted from 10 July. On Brownsman only two young (from five nests) made it to fledgling stage, but this was still regarded as good news considering the late development of the colony. Post-breeding flocks gathered on the islands throughout early August and started dispersing soon after, with the last fledgling leaving Inner Farne on 9 September. Late individuals were seen heading south through Inner Sound on 2 and 8 October.

Table 10 Evening roost counts of Sandwich Terns, Knoxes Reef 2007.

Mar	April									
28	5	7	11	13	16	18	19	20	22	28
1	**3**	**10**	**19**	**52**	**92**	**179**	**258**	**329**	**493**	**709**

Common Tern *S. hirundo*

A common breeding summer and passage visitor.

Only small numbers nest on the Farnes, with the majority on Inner Farne, although a small handful continue to nest on Brownsman. The evening roost on Knoxes Reef attracted the first bird of the year with a single on the evening of 22 April which slowly increased with five present on 28 April. Interestingly birds were quick to inspect a potential nest site as a pair was seen prospecting Inner Farne on 29 April. The bulk of the breeding birds had returned to the islands by the first week of May and many had settled in the traditional area on Inner Farne, to the west of the Sandwich Tern colony on the top meadow. The first eggs were discovered on 18 May and 117 (122) pairs nested as follows: Inner Farne 115 (118) and Brownsman 2 (4). The first young hatched in mid-June and although not monitored, it appeared to be another reasonable year with good numbers of fledged juveniles noted around the islands from 19 July. Two pairs were successful on Brownsman, an improvement on the previous season when no young fledged. The majority of the population dispersed with the last record of the year involving two south on 9 September.

Roseate Tern *S. dougallii*

A well represented summer and passage visitor, uncommon breeding species.

Following two consecutive years of successful breeding, the Farnes once again registered no breeding attempts, despite the presence of adult birds during the summer. After a very slow start the first returnees appeared late with three over Inner Farne on 26 May although records became daily over the following fortnight. However there was a noticeable lack of records from 6-20 June when the islands produced none and this crucial period is when breeding pairs would settle on the islands. A second wave of new birds arrived from late June, with up to four present throughout July including a pair observed copulating on Brownsman, but no breeding attempt was made. The disappointment was mirrored at the species' stronghold down the coast at Coquet Island, where the number of breeding pairs at that site also declined. As in 2005, a post-breeding roost occured on Inner Farne from 20 July as successful family groups from Coquet roosted on the north side of Inner Farne. The first fledged juveniles were seen from 20 July and numbers gradually increased with six on 23 July, seven on 1 August and eight on 6 August. The roost peaked with twenty-one on 7 August which included fourteen adults and seven juveniles. Thereafter numbers decreased rapidly following poor weather and the last record concerned a single adult on 12 August.

Arctic Tern *S. paradisaea*

An abundant breeding summer and passage visitor.

The population of Arctic Terns on the Farnes is well studied and closely scrutinised throughout the season as the two main breeding colonies surround the main dwellings on both Inner Farne and Brownsman. Throughout the season Arctic Terns are intensely studied through monitoring work and various research works. The first returning bird appeared in the

evening roost on Knoxes Reef on 17 April and thereafter numbers gradually increased (as shown in Table 11). Impressive aerial courtship displays commenced soon after and the first prospecting birds started to land on Brownsman on 4 May and Inner Farne the following morning. The first scrapes were discovered on 10 May and the first eggs were found on Brownsman on 15 and Inner Farne on 16 May, with the first chicks hatching on 6 June. A total of 2,256 (2,250) pairs nested as follows: Inner Farne 1,096 (1,163), Brownsman 1,153 (1,086) and Staple Island 7 (1) pairs. Each season brings its own story and this year was good as the quality and quantity of Sand eels appeared to be excellent and on occasions young birds were even seen to reject food due to full stomachs. However every season has its problems and predation was an issue at the south colony on Brownsman and Staple Island, although Snake Pipefish appeared not to be such a problem this year due to the abundance of Sand eels. The most limiting factor during the year was the weather, as strong winds literally blew eggs away from some nests in May and others were flooded out due to exceptional rainfall on 7 June. Further problems were encountered when pairs had young chicks, as cold overnight temperatures combined with heavy rain at the crucial time in late June caused further mortality. Despite the problems, it was regarded as an excellent season and figures revealed that 361 chicks fledged from 475 monitored nests and was the best productivity since 2003. Youngsters started fledging from the colonies from 29 June and good numbers left the breeding sites throughout July. As the summer progressed numbers dwindled and most had departed the islands by the third week of August. Some late stragglers were seen with an adult on West Wideopens on 26 September, and seawatching through Inner Sound produced one south on 15 and two south on 22 October.

Table 11 Evening roost counts of Arctic Terns, Knoxes Reef, April-May 2007.

April					May			
17	22	23	24	26	1	2	3	4
1	**2**	**8**	**30**	**37**	**160**	**452**	**1100**	**2500**

Guillemot *Uria aalge*

An abundant breeding resident and passage visitor.

The species continues to thrive on the Farnes and the islands will probably boast 50,000 individuals in the very near future. A visit during late winter revealed good numbers around the islands on 14 February, with breeding ledges occupied on 14 March. As usual in this early spring period, the population remains unsettled and any spell of poor weather can send birds away from the islands. Such occurrences took place between 25 and 29 March and again from 7-15 April. Eventually birds began to settle from mid-April and mating activity was observed from 17 April with the first egg discovered on Staple Island on 19 April and thereafter mass synchronised laying commenced across all of the colonies. A total of 48,650 (47,926) individuals were counted as follows: Megstone 257 (277), Inner Farne 5,798 (5,739), West Wideopens 2,016 (2,147), East Wideopens 3,346 (3,161), Skeney Scar 2,446 (2,539), Staple Island 24,647 (24,647), Brownsman 6,906 (7,136), North Wamses 2,239 (1,388), South Wamses 480 (392), Roddam and Green 170 (230) and Big Harcar 345 (270). The population continues to thrive, although due to poor weather for counting throughout early June an accurate figure for Staple Island was unattainable and therefore the previous season's figure was used. The first chicks started hatching from 25 May and the first jumplings were noted on the sea from 17 June. Thereafter huge numbers were seen leaving

cliff tops, including many which departed during the day, from all the island colonies. As usual, by mid-July the islands were bare with 99% of the breeding population gone and only a handful of stragglers remaining, with the last fledgling noted on 25 July. Predation by Herring Gulls was heavy in certain areas, but this appears not to have a detrimental effect on the breeding stock as the Farnes population continues to rise year-on-year. Following on from last year, a small proportion were again monitored which revealed that a respectable 117 chicks fledged from 200 monitored nests. As usual the species became very scarce following the breeding season, although good numbers returned in mid-September with small numbers remaining to winter in Farnes waters.

Razorbill *Alca torda*

A common breeding resident and passage visitor.

The season saw the population stabilise following ten consecutive years of growth. Small numbers were evident around the islands on 14 March with good numbers occupying cliff ledges when the wardens arrived in late March. As with the other auks, unsettled weather can result in erratic behaviour with birds appearing for a few days at a time on nesting ledges before disappearing for several days at a time. Eventually birds settled with copulation observed on 23 April and the first eggs discovered on the early date of 27 April on the lighthouse cliff on Inner Farne. Thereafter good numbers were reported on eggs and a total of 314 (322) pairs nested as follows: Inner Farne 143 (143), West Wideopens 63 (69), East Wideopens 23 (21), Skeney Scar 10 (10), Staple Island 29 (35), Brownsman 5 (6), North Wamses 7 (9), South Wamses 15 (16) and Big Harcar 19 (13). The first chicks started hatching from 4 June with the first jumplings noted from 18 June. As with the Guillemots, the cliffs became bare from early July as successful parents took youngsters to sea and the species became scarce from late July. In mid-September, the first wintering birds reappeared around the islands. The number of monitored nests increased again and productivity was hampered by the poor weather although forty-seven chicks fledged from eighty-seven monitored nests. Due to new restricted access policy on Big Harcar, the population showed an instant increase and monitoring revealed six chicks fledging from ten nests on the island.

Black Guillemot *Cepphus grylle*

A well represented winter and passage visitor. Breeding 17th and possibly 18th centuries (Gardner-Medwin, 1985).

It was an excellent year as the Farnes cemented its position as the number one north-east site for the species. An early visit to the islands on 16 January produced a winter plumage bird near Gun Rock off Staple Island, an indication of the presence of a wintering population. When the wardens arrived in late March, a bird drifting into summer plumage was discovered in Inner Sound on 25 March and was seen again in a similar area on 29 March. Following a six months' absence, a winter plumage adult was found on the sea just north of Inner Farne on 5 October. This confiding bird remained in this area and was seen almost daily throughout October and was still present until at least 9 November, when poor weather made viewing more difficult. Other autumn reports suggested up to three were lingering in Staple Sound favouring the Gun Rock area with records on nine November dates. Peak counts included nine north on 9 November and four north on 13 and 25 November and overall this was the best island showing since 2001.

Little Auk *Alle alle*

A well represented winter and passage visitor. Large numbers can occur after northerly gales.

It was a phenomenal year for the Farnes as the islands broke the all-time British record day count, not just once but twice, and made national headlines during the incredible movement. There was little indication of the mind-boggling numbers to come when the first two birds arrived in Staple Sound on 13 October. Further records of 3-6 were noted on 19, 20 and 31 October and this pattern continued in early November with 1-9 in the first week. At this early stage, a season's peak of 178 north on 7 November was deemed 'respectable' but that was all about to change. Following a series of violent north-westerly storms in the second week of November, several east coast sites recorded four-figure totals on 9 and 11, but nothing seemingly could compare to the phenomenal count of 18,381 that whizzed north past the islands on 9 November, a new British record. Nevertheless just two days later and all that changed when 18,900 flew by St Abb's Head (Borders) in just four hours breaking the Farnes newly set record. However the islands were not to be beaten, and the two marvellous tallies of nigh-on 19,000 apiece were cast aside in the grandest of fashion by the astounding total of 28,803 heading north past the Farnes on 11 November. This broke all records, both in a County and National context. Thereafter huge numbers were seen around the islands daily until the wardens departed in early December but as usual, many fell prey to large gulls or hunting Peregrines.

Puffin *Fratercula arctica*

An abundant breeding summer and passage visitor.

A very small number of birds had returned to Farnes waters by 14 March and this increased slowly with the first real influx occurring on 27 March. The first birds were seen making landfall on 1 April and the following day witnessed a vast invasion of the island tops across all the colonies. Despite this encouraging start, unsettled weather soon pushed birds out to sea again for a few more days. Copulating at sea was noted on 8 April and despite varying weather, birds were settled by mid-April with the first eggs discovered on 27 April on Inner Farne. Thereafter mass synchronised laying took place in the first week of May. Again there was no census of the population this year, with the next full census scheduled for next season and so the current population is based upon the 2003 census which revealed nesting pairs as follows: Inner Farne 13,069, West Wideopens 8,704, East Wideopens 1,676, Staple Island 15,583, Brownsman 14,438, North Wamses 977, South Wamses 1,059 and Big Harcar 168. Sadly there was no confirmed sighting of the thirty-year old colour ringed individual on Staple Island this year. The poor mid-summer weather had a profound effect on the breeding season and large numbers were flooded out where the soil cap was thin. The islands of Brownsman and West Wideopens appeared to suffer the most with some heavy losses reported, with estimations of 70% losses on both islands. Productivity over five islands indicated a total of forty-seven chicks fledging from 107 monitored nests, the lowest return this century. The first young started fledging from 6 July and the mass departure of adults began from late July with very few lingering into August. The species then became absent from the islands until small numbers returned to Farnes waters in early October.

Feral Pigeon *Columba livia*

A common breeding resident.

The Farnes population remained as strong as ever, with good numbers commuting from the nearby mainland and small numbers breeding on several islands. Peak counts occurred during the autumn months with up to 500 present and as usual, they became favoured prey for some resident raptors.

Wood Pigeon *C. palumbus*

An uncommon passage visitor.

As with the previous year, the bulk of the records occurred on spring passage with only one bird reported during autumn. The year started with a single on Longstone on 27 March followed by one west over Inner Farne the following day. Further spring individuals were recorded over the islands on 21, 22 April, 15 and 20 May. As spring passage petered out a lingering individual took up residence on Staple Island on 8-10 June. Disappointingly the only autumn record was of one on the artificial tree on Brownsman on 29 September.

Collard Dove *Streptopelia decaocto*

An uncommon passage visitor.

The recent boom period on the Farnes continued, suggesting both local and near-continent irruption. The year produced six records, matching that of the previous three years, and all occurred on the inner group. A single flying west over Inner Farne on 14 March represented the earliest ever Farne record. Further sightings followed with a single west on 18 April, one lingering on 7-8 May, and another on Inner Farne on 9 June. The only autumn record concerned a bird on 27 October calling from the top of the lighthouse on Inner Farne before moving to the vegetable garden.

Cuckoo *Cuculus canorus*

An uncommon passage visitor.

The species is highly regarded on the Farnes with thirty-nine records from the previous forty years. The last three occurrences on the islands were in 2000, 2003 and 2006, all involving two sightings each year. That pattern of records continued as two individuals appeared during this year. An adult female was discovered being mobbed by Pied Wagtails by the Longstone lighthouse during an easterly spell of weather on 12 May. The bird perched for several minutes allowing the wardens good views before it flew off and landed on the nearby Blue Caps. A second record concerned a juvenile being harassed by all the breeding seabirds as it circled low over Inner Farne on 23 July. It eventually got the hint, but not before it sought refuge in the visitor centre and eventually headed high west towards the mainland. This represented the first juvenile on the islands since September 1999.

Short-eared Owl *Asio flammeus*

An uncommon passage visitor.

Although very scarce on spring passage, the year was the first since 2001 that the islands had failed to produce a record between March and June. The first bird of the season arrived on Inner Farne on 8 October and eventually settled on the top meadow where it remained until dusk. Thereafter further singles in October were seen or flushed off Staple Island on 9, high west over Inner Farne on 18, lingering around the inner group on 19, off Brownsman on 23 and high west over the outer group on 26 October. The most noteworthy day occurred

on 2 November as three different individuals were recorded with one west through Inner sound, another west over Brownsman and a third which lingered on Inner Farne. The final record was on 21 November with one west high over Inner Farne.

Swift *Apus apus*

A well represented summer and passage visitor.

An intriguing year started well with a single west over Brownsman on 21 April, representing the second earliest Farnes record and falling just short of the all-time earliest on 16 April 1988. Although May and June are generally the best time to see the species over the islands, there was just a single record of five west over Inner Farne on 21 June. However this was all forgotten as they came into their own during July with sightings on twelve dates including a record Farnes count mid-month. Indications were good as eight flew north on 8 July, followed by 142 north the following evening. The next week produced daily counts of from 3-54 and then on a calm sunny evening on 17 July, a total of 984 were counted flying north over Inner Farne. This total smashed the previous all-time highest record of 900 on 10 July 1984. Thereafter smaller numbers were recorded with 1-10 noted on six August dates and the last record involving a single bird roosting on the Pele Tower on Inner Farne on 20 August.

Woodlark *Lullula arborea*

An extremely rare visitor.

Still regarded as a major rarity in Northumberland despite a slow northward shift of the British population, a vocal bird was discovered on Brownsman during the afternoon of 23 October. It lingered around the north hill area and was successfully seen by all the wardens before it departed west towards the mainland. (October is the best time to see these vocal songsters on the islands with three of the four previous sightings recorded in this month in 2000, 2001 and 2004. The fourth Farnes record involved a singing individual on Inner Farne in April 1980.)

Skylark *Alauda arvensis*

A common passage visitor. May have bred in 1865 and 1883 and *ca* 1900 (Brown, 1866; Harvie-Brown *et al.*, 1884; Pike, 1902).

Spring passage was light as small numbers moved north through the islands with some lingering. A single on Inner Farne from 23-30 March was accompanied by passage birds moving west with two on 26 and four on 27 March. Thereafter the inner group only produced two more records with singles west on 9 and 10 April. On the outer group, singles lingered on three dates during April with the final spring record involving one which remained from 30 April-6 May on Brownsman. As expected, mid-summer produced an unusual record of one in full song flying high west over Staple Sound on the morning of 11 June. Autumn passage commenced from 18 August with a lingering individual on Inner Farne and thereafter 1-8 were recorded almost daily throughout September-November with peaks of ten west on 10 October, eleven west on 13 October and ten on 2 November. Passage declined throughout November although resident birds were evident until the wardens departed in early December with two on Inner Farne and one on Staple Island.

Shorelark *Eremophila alpestris*

An uncommon passage and winter visitor.

The wait is over. This attractive charismatic regular British visitor has been going through a lean spell nationally and that has been mirrored on the islands with the last record dating back to 14 October 2003. However on 24 October a vocal individual flew low over Brownsman and appeared to land on the adjacent North Wamses. This represents the thirty-fourth Farne record although only four have appeared this decade.

Sand Martin *Riparia riparia*

A well represented summer and passage visitor.

A typical year as the Farnes boasted eight records spanning six months. The first of the year involved a single over Inner Farne on 25 April and was followed by four north on 17 and two north on 20 May. Thereafter records appeared to indicate autumn return passage as 1-3 were seen over the islands on 8-9 July, 18 July and 24 August. Two birds lingering on Inner Farne before flying west on 8 September were the last records of the year and the latest Farnes records since 1998.

Swallow *Hirundo rustica*

A common summer and passage visitor. Bred in 19th century; *ca* 1900 (Selby, 1826; Pike 1902); 1984 (Hawkey and Hickling, 1984) and 1990-1997 (Walton and Richardson, 1990-1991; Walton, 1993-1998).

Records suggested that the species was as numerous as ever as birds were recorded on seventy-three dates during the season (forty-eight in spring and twenty-five in autumn). The first bird of the year was seen flying north over Inner Farne on 9 April and was followed by steady passage throughout the spring with peaks of fifteen north on 3 May and forty-four north on 17 May. Numbers decreased during June with 1-2 until 9 although a pair constructed a nest in the chapel on Inner Farne between 11-20 June. Although no eggs were laid, it may indicate possible future breeding and the last successful nesting attempt on the islands occurred in 1997. As usual stragglers were seen in mid-July with 1-3 on three dates. Thereafter 1-17 appeared on the islands from 2 August-25 September, southward bound, with an autumn peak of ninety-six on 25 August. The final record was two south over Inner Farne on the typical final date of 1 October.

House Martin *Delichon urbicum*

A well represented summer and passage visitor. Six pairs attempted to breed in 1950 (Watt, 1950).

This summer and passage visitor occurred on eleven occasions, the majority on the inner group. The first bird of the year flew north over Inner Farne on the slightly late arrival date of 6 May and was soon followed by 1-2 on four dates between 7 and 13 May. An interesting record involved a bird discovered in the dormitory in Brownsman cottage as dawn broke on 2 June. Passed off as a figment of the wardens' imagination the team soon realised what was happening and released the bird unharmed moments later. Return autumn passage commenced with one south over Brownsman on 3 August and was followed by 1-3 on 24 and 25 August and 22 September. The final record was one west over Inner Farne on 23 September.

Richard's Pipit *Anthus richardi*

A scarce visitor.

An easterly airflow in mid-September or early October can produce one of these large robust Siberian pipits, as 95% of all Farnes records fall between 14 September and 14 October. A vocal bird was discovered on Brownsman on the afternoon of 7 October and although difficult to see in long grass, its presence was given away by its distinctive, almost sparrow-like call. It remained until midday the following day when it was watched flying high west, calling. This represents the fourteenth record for the Farnes and the third consecutive year the species has been recorded on the islands.

Tree Pipit *A. trivialis*

A common passage visitor.

A dismal year, arguably one of the worst in Farnes history, as the islands produced only two records (probably relating to birds being overlooked). A bird was flushed from Brownsman on 21 April and flew west calling and another was on Inner Farne briefly on 7 August.

Meadow Pipit *A. pratensis*

A common passage visitor. Bred *ca* 1901 and in eleven years 1946-1973 (Pike, 1902; Wilson, 2000-2007).

Well represented on both spring and autumn passage with daily records throughout peak times. Spring passage brought 1-44 throughout late March-April with noticeable peaks of 111 west on 28 March and a hundred north on 9 April. The last spring record involved two north over Brownsman on 3 May. An unusual mid-season record concerned one on Longstone Main on 12 June. Autumn passage commenced from 25 August when one appeared on Inner Farne and thereafter birds were recorded daily throughout September and early October. Numbers were generally low, probably due to the lack of any 'fall' conditions with peaks of thirty-four west on 9 and thirty lingering on Brownsman on 27 September. Small numbers of 1-8 were recorded throughout October with a late straggler noted on Inner Farne on 10 and 16 November.

Red-throated Pipit *A. cervinus*

An extremely rare visitor.

The most noticeable highlight of the spring was the discovery of a stunning summer plumage bird on Staple Island in the early evening of 22 May. This eastern vagrant showed well during its brief two hour stay on the islands before it departed. This represents the fifth Farnes record following individuals in May 1974, May 1991, September 1997 and October 2005.

Rock Pipit *A. petrosus*

A common resident well represented as a breeding species.

The 'Farnes Pipit' is very at home on the islands with a reasonable breeding population which increased from the previous year. When the wardens arrived in late March birds were observed in song flight, establishing territories on the islands. Nest building soon commenced with the first birds noted carrying nest material from 15 April and the first eggs were discovered on Brownsman on 29 April. A total of 22 (18) pairs nested as follows: Inner

Farne 5 (5), West Wideopens 2 (2), Staple Island 4 (2), Brownsman 9 (8), Longstone Main 1 (1) and Longstone End 1 (0). As usual, a number of pairs took advantage of man-made features including stone walls and the two lighthouse buildings on the islands. The first young started fledging in late May and second broods were discovered at two localities on 17 July. Small numbers lingered on the islands after the breeding season and local breeding birds were swelled in the autumn by northern breeding birds, with up to twenty-five resident on Brownsman and up to twenty on Inner Farne.

Grey Wagtail *Motacilla cinerea*

An uncommon passage visitor. Bred in the early1890s (Kearton, 1898).

Early spring passage can produce records from the islands and a single on Inner Farne on 24 March was typical for the time of year. The only other spring record concerned a bird on the south-east rocks of Inner Farne on the unseasonable date of 13 June, representing the first ever June record from the islands. Autumn passage commenced with a single on Inner Farne on 12 September with the first outer group record on Brownsman on 7 October. Five were recorded on westerly passage over the islands on 9 October, representing a joint Farnes day record. The final report involved a single around the north-east rocks of Brownsman on 20 October.

Pied Wagtail *M. alba*

A well represented summer and passage visitor and uncommon breeding species.

Spring witnessed the movement of small numbers through the islands with resident breeding pairs establishing territories and in late March two males were seen in a territorial dispute on Inner Farne. As the spring progressed, activity intensified and from 15 April nest material was seen being carried with mating noted on 24 April. The first eggs were discovered on 13 May on Inner Farne and Staple Island and a total of 5 (4) pairs nested as follows: Inner Farne 2 (2), Brownsman 1 (1), Staple Island 1 (1) and Longstone Main 1 (0). The Longstone nest site was in the old radio tower foundation, whilst the remains of the lighthouse tower on Staple Island was utilised as a nest site there. Unlike the previous two seasons, a pair failed to use the small hole in St Cuthbert's Chapel as a nest site on Inner Farne, preferring to use the stone wall boundary of the courtyard. Overall the season was a success despite two nests being flooded out, as young started fledging from 18 June. Successful second broods were also reported and monitoring indicated eleven fledged young from four nests. Following the breeding season good numbers were reported, especially on Inner Farne where birds gathered for evening roosts. From late July numbers increased with thirty-five present most evenings throughout August and a peak of forty on the evening of 8 August. In a Farnes context, this represented the second highest ever count, after the forty-six counted on 21 August 1995. Numbers gradually dwindled during September and the species became very scarce once again, during the autumn months.

Wren *Troglodytes troglodytes*

A common visitor and passage migrant. May have bred in the 1880s (Bolam, 1912).

The small over-wintering population was still evident when the wardens arrived in late March with up to five present on Inner Farne and two on Brownsman. As the spring progressed, these small numbers declined with the Inner Farne population gradually dropping throughout April until the last record on 21 April. On the outer group a similar

story unfolded although migrants occasionally bolstered numbers with one on Longstone on 23 April and a bird which remained loyal to Brownsman until it was last seen on the late date of 13 May. The first autumn returnee appeared on Inner Farne from 25 August with two present daily from 27 August. There was no influx of migrant birds as the local population increased thereafter with up to ten present on Inner Farne from mid-October, two on Brownsman and a single on Staple Island. As autumn gave way to winter, it appeared that birds were again over-wintering on the islands.

Dunnock *Prunella modularis*

A common passage visitor. May have bred in the 1890s (Pybus, 1903).

A quiet spring period was highlighted by the fact that only two birds, singles on Inner Farne and Brownsman, appeared to have over-wintered on the islands until both were last seen on 28 March. During this period a migrant was discovered on Longstone End on 27 March. The only other spring record was a single on Brownsman from 13-15 May. Return autumn passage commenced from 5 October when three arrived on the islands (two on Inner Farne and a single on Brownsman). Thereafter Inner Farne numbers increased to a maximum of five on 27 October although it appeared that only two remained on the islands to winter from early November. On Brownsman, following the single on 5 October, two were present from 6-10 October with the last record of one noted on 13 October.

Robin *Erithacus rubecula*

A common passage visitor. Bred in 1951 (Watt, 1951b).

The small wintering population was still evident in late March with two seen daily on Inner Farne and a single on Brownsman. However, during an easterly airflow a noticeable influx occurred on 25-26 March, bringing five to Brownsman and four to Inner Farne, with these birds lingering over the course of the following few days. Longstone Main on the outer group also boasted two individuals on 27 March which were seen into early April. Thereafter numbers dwindled on all the islands with the last seen on 7 May and a very late migrant appeared on Inner Farne on 20 May. The first returnees to the islands were noted on the species' stronghold of Inner Farne from 17 August and became daily thereafter. Interestingly a bird in juvenile plumage appeared on this island from 25 August and throughout its stay was seen to moult and take up residence. Numbers increased during the autumn migration with up to five on Inner Farne and four on Brownsman from late September. However, due to the lack of any serious 'fall' conditions, poor numbers were reported from Brownsman during the autumn with 1-2 on six October dates until last seen on 30 October. As usual, Inner Farne recorded birds daily as resident individuals were still present when the wardens departed in early December.

Bluethroat *Luscinia svecica*

An uncommon passage visitor, well represented in some years.

Long gone are the days when the islands experienced large 'falls' of this stunning east coast drift migrant as the species' status on the islands has changed from a 'guaranteed annual' to a 'welcome bonus'. However, despite the demise of records, the year was noticeable as it produced two individuals, the first such occasion since 2002. Following a south-easterly weather front in early June, an adult female was seen briefly on Brownsman, before settling on nearby Staple Island where it showed well on open rocky terrain on 7-8 June. This was

one of only a dozen seen nationally during the spring. The Farnes produce far fewer autumn reports as only 12% of all records have occurred between 14 August and 4 November although a first-winter bird arrived on Brownsman on 29 September and remained for eight days until last seen on 7 October. It favoured the artificial tree and became very confiding during its stay and represents only the third autumn record in the past ten years.

Black Redstart *Phoenicurus ochruros*

A well represented passage visitor.

The Farnes continued to produce records throughout the migration periods in both spring and autumn, maintaining their position as the number one site in the north-east of England. Spring passage was marked by the presence of a female-type individual on Brownsman on 26-27 March, followed by a female on the same island on 12 May. The final spring record concerned another female favouring the lighthouse compound on Inner Farne from 15-17 June. As usual, the bulk of the autumn records occurred in October as a female/immature lingered on Brownsman from 10-14 October. On Inner Farne a moulting male was discovered near the lighthouse and remained on the islands from 23-28 October. During this spell a second individual, an immature, appeared with the male on the island on 27-28 October. Further records included one on Longstone Main on 2 November. A late flurry of activity brought an adult male and female to Inner Farne on 21-23 November, and during this same spell one appeared briefly on Brownsman on 21 November.

Redstart *P. phoenicurus*

A common passage visitor.

A splash of colour was added to the islands as an excellent spring period produced seven different records but was followed by the worst ever autumn for the species. An adult female was discovered on Staple Island on 21 April before it relocated to nearby Brownsman and a summer plumage male was present on the same island the following day. Further records brought a female to Longstone Main on 12 with two on Brownsman the following day and one lingering until 14 May. On the inner group, an adult female was seen on 12 and 16 May with a male present all day on 19 May. Disappointingly the autumn produced no records, a good indication of the lack of any 'fall' conditions at the right time of year.

Whinchat *Saxicola rubetra*

A common passage visitor.

Numbers on spring passage in recent years have been poor, although with a total of four records 2007 was the best year since 2004. The first bird appeared on the dock bank of Inner Farne on 25 April and was quickly followed by a male on Brownsman on 27 April. Further spring passage involved a female on Brownsman on 1 May and another lingering on the same island from 12-14 May. Autumn passage was very light, with singles on Brownsman on 10 August and 23 September.

Stonechat *S. torquatus*

An uncommon passage visitor. Bred in 1946 (Goddard, 1946).

If proof was needed that the species is going through a boom period in the north-east of England, the number of records from the Farne Islands reflects this rapid increase in the population. The 1990s produced a total of only eleven records on the Farnes compared to thirty-eight records from 2000-2006. That total continued to increase with the year producing seven records with single adult males on Longstone End on 27 March and Inner Farne on 30 March. All other records referred to autumn birds as individual first-winters graced both Inner Farne and Brownsman on 25 September. Others soon followed with a pair on Brownsman on 7 October and that island produced two further records of a male on 10 and a female on 13 October.

Wheatear *Oenanthe oenanthe*

A common passage visitor. Bred in six years 1931-59 (Goddard, 1925-1948).

This stunning summer visitor is one of the first migrants to appear on the islands as birds filter through the Farnes heading for northern breeding grounds in early spring. The first record of the year, a pair on Inner Farne on 2 April, was followed by a quiet spell of seven days, but birds started to appear regularly on the islands from 11 April, with three on that particular day. Thereafter 1-7 were recorded on forty days until 24 May with peaks of fourteen on 26 April, twenty on 15 May and thirteen on 22 May. A very late straggler, a female, lingered on Inner Farne from 1-6 June. Mid-summer can bring unusual sightings and fledged juveniles were discovered on Staple Island on 23 June and on Brownsman on 3 July. Thereafter autumn passage commenced with a single on Inner Farne on the early date of 14 July although the first real passage did not commence until mid-August. Birds were recorded on thirty-seven dates from 14 August-10 October with a peak of seven on 3 September and a noteworthy twenty-four on 7 October. As usual two late individuals were noted, a single on Brownsman on 15 October and another which lingered on Inner Farne from 10-18 October.

Ring Ouzel *Turdus torquatus*

An uncommon passage visitor.

This distinctive summer visitor graced the islands during both spring and autumn passage. From 25-29 April a confiding female appeared on Inner Farne, favouring the lighthouse compound and allowing many visitors to see this unique species. A second female was in the same spot on the same island on 10 May: however this bird was not as obliging because it flew directly west towards the mainland soon after. Autumn passage was light, with a single immature on Inner Farne on 29 September, another on Brownsman on 7 October and a final record of two over Brownsman during thrush passage on 9 October.

Blackbird *T. merula*

An abundant passage visitor. Bred in four years 1893-1914, 1934, 1962 then annually 1964-74 (Miller, 1911-1914; Pike, 1902; Thorp, 1935; Hawkey, 1991).

Good numbers are recorded on passage especially during the autumn months when birds move into Britain from the nearby continent. It was evident that birds move early through the islands as three were noted on Inner Farne on 14 March. More typical was the presence

of small numbers when the wardens arrived in late March with 1-2 noted from 23-26 March. A light influx occurred on 27 March with ten recorded on the islands and twenty west the following day. Thereafter 1-6 were present daily until 21 April and late singles were noted on Brownsman from 28 April-1 May. The first autumn returnees arrived in late September with four noted on 27 September followed by 1-4 over the following few days. Daily sightings were made throughout October with 1-49 present and this was backed by some impressive westerly passage over the islands as shown in Table 12. November witnessed a gradual decline in records with peak passage involving eighty-two west on 2 November. As usual, small numbers lingered on the islands throughout with up to ten present when the wardens departed in early December.

Table 12 Thrush passage on selected October dates, Farne Islands 2007.

	9	13	22	25	26
Blackbird	**200**	**463**	**149**	**146**	**107**
Fieldfare	**659**	**165**	**22**	**237**	**35**
Song Thrush	**25**	**26**	**9**	**4**	**10**
Redwing	**6,701**	**522**	**139**	**180**	**346**

Fieldfare *T. pilaris*

A common passage visitor.

This charismatic large thrush typifies classic diurnal migration on the east coast, as birds can be seen battling west over the islands heading for wintering grounds on the mainland during the autumn months. The islands also produce small numbers of northern bound birds in the spring and records this year included a flock of nine over Inner Farne on 28 March which was followed by 1-6 on the islands on 12-15 April. The final spring passage report concerned two lingering on the outer group on 21 April. The first autumn birds can appear from early August if favourable conditions prevail, although this year it was a much quieter start to the autumn as the first was not seen until singles appeared on Staple Island and Inner Farne on 27 September. Thereafter westerly passage increased throughout October with noticeable movements shown in Table 12. November witnessed a gradual decline in passage with forty west on 2 and 1-20 noted on ten dates until last seen on 29 November.

Song Thrush *T. philomelos*

A common passage visitor.

Generally overlooked as a migrant, the islands attracted small numbers on passage with 1-2 present on twelve dates from 14 March-25 April and a spring peak of five which flew west over Brownsman on 21 April. The only other record during the first part of the year concerned an unusual sighting of one on Inner Farne on 19 June. Autumn passage commenced from 5 September with the arrival of a lone individual on Inner Farne on 5 September and thereafter 1-3 were recorded on five dates, peaking with six on 30 September. Passage continued to gain momentum as the autumn progressed, with daily sightings throughout October and peak passage shown in Table 12. Numbers gradually decreased during November with only a handful of reports of 1-2 birds, with the last record being two on the inner group on 25 November.

Redwing *T. iliacus*

An abundant passage visitor.

During spring small numbers are recorded annually returning to their breeding grounds in the north, although the large influxes occur during autumn when many thousands can be seen heading west to wintering grounds in Britain. This distinctive vocal thrush was recorded on eight dates between 27 March and 29 April with peaks of sixteen on 27 March and eight on 29 March. All other sightings involved 1-5 with the last spring record concerning one heard calling over Brownsman on the evening of 2 May. The first autumn returnees arrived on 27 September with three on the outer group and three on the inner group. Thereafter the floodgates opened as daily records brought twelve on 28, twenty-two on 29 and nine on 30 September. October heralded the start of the major invasion as following a low-pressure weather system with constant rain, the islands experienced a spectacular movement on 9 October as shown in Table 12. Following these large movements, numbers gradually declined during November although up to twenty were recorded daily before eventually dwindling to a handful of birds by the end of the month.

Mistle Thrush *T. viscivorus*

An uncommon passage visitor.

The species remains scarce on passage as the islands only produce a handful of records per year and generally this is the rarest *Turdus* family member to grace the islands during a season. This year was no different with three records, all from the outer group. On Brownsman on 27 March an individual circled the cottage and landed briefly before departing and this was followed by another bird which landed on the east rocks on 7 October. The only other record concerned one flying west over the outer group during thrush passage on 24 October.

Grasshopper Warbler *Locustella naevia*

A well represented passage visitor.

This skulking streaky *Locustella* warbler always has the heart racing when one appears although it was a very poor year with only two records, both from Brownsman. An elusive bird favoured the vegetable garden during its two day stay from 3-4 May and another was discovered following easterly winds on 12 May. There were no autumn records.

Sedge Warbler *Acrocephalus schoenobaenus*

A well represented passage visitor.

This distinctive trans-Saharan migrant had a disappointing season with only a handful of records from the islands. As usual, the first birds appeared in mid-May when two were discovered on Brownsman on 12-13 May and a different individual appeared on the same island the following afternoon. Thereafter spring passage was represented by one on Staple Island on 22 May and an elusive bird was discovered on the dock bank of Inner Farne on 4 June. Autumn passage was light with a single on Inner Farne on 3 August with it or another on the same island daily between 5-7 August. The lack of observers on Brownsman throughout August may have contributed to the scarcity of autumn records.

Reed Warbler *A. scirpaceus*

A well represented passage visitor.

This species has a good history on the islands, compared to nearby Holy Island where it is still regarded as a 'rarity'. The majority of the Farnes records generally occur during the autumn migration with an all-time island high count of twenty-five on 1 October 1993. Despite this, the islands have only laid claim to eleven spring records in the past ten years, so an individual on Longstone on 23 April was noteworthy. The bird was discovered on the support ladder for the lighthouse house and staggeringly wiped almost three weeks off the previous earliest Farne record, which had stood since 15 May 1979. However, the rest of the year was disappointing as only two more individuals were discovered: an elusive bird on Inner Farne on 16 August and a very late obliging one on Brownsman on 14 October.

Icterine Warbler *Hippolais icterina*

An uncommon passage visitor.

This robust east coast drift migrant has appeared on forty-nine occasions involving sixty-one birds on the Farnes between 20 May and 16 June and 4 August-2 October. The records are also heavily biased towards the autumn period with only 19% occurring during the spring compared with 81% in the autumn. All of these facts made the only record of the year more impressive, as the islands boasted a summer plumage adult on Brownsman on 22 July. The bird showed well on the artificial tree and represented the only individual recorded nationwide during the month and the first ever July record on the Farne Islands.

Blackcap *Sylvia atricapilla*

A common passage visitor.

Without any 'fall' conditions at the right time of year, the islands can struggle for various passerine records and this was expressed by the lack of any real numbers of this species. Spring passage was light with a female on Inner Farne on 22 and 24 April representing the first records of the year. Thereafter a female graced Brownsman on 29 April and the same island hosted individual males on 1 and 3 May. Autumn was not much better with all records occurring from 4-15 October with 1-2 present across the islands and a peak of three on 10 October. However a short spell of south-easterly winds in late November brought a late male onto Brownsman on 20 November.

Garden Warbler *S. borin*

A common passage visitor.

This large robust *Sylvia* marked its arrival on the islands with an individual on Brownsman on the typical first arrival date of 6 May. Thereafter spring passage was light with singles on Brownsman on 12-13 May and Inner Farne on 14 and 16 May. Onshore easterly winds in early June resulted in two appearing on Brownsman on 8 June with one remaining until the following day. Following last season's unprecedented 'fall', the autumn was more typical producing only a handful of records with a peak of four on 23 August (two each on Brownsman and Inner Farne) with singles on 25 September and the final record of the year from Brownsman on 7 October.

Barred Warbler *S. nisoria*

An uncommon passage visitor.

Officially the Farnes can now be classified as the 'best English birding site' in recent years

for this power-house of a warbler. The islands have laid claim to no fewer than thirty-four individuals since the turn of the century, and can be rivalled by no other English site. This year they produced a modest two records as a first-winter bird arrived on Brownsman on 10-12 August and had the distinction of being the first autumn returnee recorded in Britain (even surpassing the Northern Isles). The second record was a bird seen on Inner Farne on 21-22 August following a northerly spell of wind, which became very elusive during its stay, favouring the extensive dock bank area of the island.

Lesser Whitethroat *S. curruca*

A common passage visitor.

This long distance migrant appeared on eight days during spring passage, although in only very small numbers. The first bird of the year appeared on Brownsman on 29-30 April with another one on Inner Farne on the latter date. Thereafter up to two different individuals were on Brownsman between 12 and 15 May and Inner Farne registered singles on 12 and 22 May. Autumn passage was light with 1-2 on five dates between 27 September and 1 October and the last bird of the year was discovered on Inner Farne on 5 October.

Whitethroat *S. communis*

A common passage visitor.

It was a good spring for this distinctive summer visitor following the first bird seen on Brownsman on 26 April. Thereafter 1-2 appeared on the islands on eleven dates during May including an interacting pair on Brownsman on 2 May. Unusually for the Farnes the spring migration was protracted, resulting in a series of records in early June with 1-2 on Brownsman from 6-13 including a singing male on 9 June. Despite the good spring the autumn was disappointing with singles on Brownsman on 19 and 29 September and Inner Farne on 20-22 September.

Greenish Warbler *Phylloscopus trochiloides*

A rare visitor.

The transformation of records on the Farnes has been unprecedented as up to July 2004, the islands only had one record. However an individual on Inner Farne on 21 August was the eighth Farnes records following two in 2004, a single in 2005 and three in 2006. The bird was part of a small influx along the east coast which brought three to Northumberland. It favoured the lighthouse compound and around the pond and remained all day despite the strong northerly winds.

Yellow-browed Warbler *P. inornatus*

An uncommon passage visitor.

This now annual Siberian waif could not match last season's record count of seventeen although the islands produced a very respectable five individuals. Following a brief spell of easterly winds, a single appeared on Brownsman on the morning of 25 September where it lingered throughout the day. The expected arrival of more soon moved up a gear as another graced the islands, again on Brownsman, on 29 September. Early October witnessed a series of sightings on Brownsman with a single bird on 2-3 October being joined by a second bird and both were present throughout 4-5 October. The final record was the most intriguing as a bird was heard calling in near-darkness at the lighthouse on Inner Farne on 25 October.

Amazingly it was caught at the door of the cottage and taking into consideration the poor weather conditions, it was kept overnight. Despite the protection of indoors, the bird died early the following morning and body fat scores indicated it had virtually no fat reserves remaining.

Chiffchaff *P. collybita*

A common passage visitor.

As the climate changes bringing milder winters, the population is increasingly wintering further north in Europe and small numbers are even present all year round in the south-west of Britain. As usual, the species became the first summer migrant to arrive on the islands with the appearance of a single on Inner Farne on the typical arrival date of 25 March. Thereafter small numbers started filtering through the islands with three on 26 and six on 27 March including two on Longstone. Spring reports of 1-4 were logged on a further twenty-five occasions until last noted on 19 May when two were present on Brownsman. The first autumn bird was noted on Inner Farne on 22 August and due to the lack of any 'fall' conditions, numbers remained light on passage. The islands recorded 1-2 on five September dates and six October dates. The late spell of easterly winds during November brought very late individuals to Inner Farne on 20-21 and Brownsman on 19-26 November.

Willow Warbler *P. trochilus*

A common passage visitor.

This summer songster had a delayed start to the season as 'blocking' northerly winds halted any real arrival to the islands in early spring. The first bird of the year appeared on Inner Farne on 15 April and thereafter small numbers moved through the archipelago with 1-7 recorded on twenty-seven dates throughout April and May. Peak counts during this period included fourteen on 13 and eight on 14-15 May. An easterly airflow in early June brought stragglers to the islands with singles on Inner Farne on 8 and 12-13 and on Brownsman on 12 June. As usual the first autumn birds started reappearing from early August including good numbers of juveniles, with the first arriving on 5 August. Thereafter 1-8 were noted almost daily throughout August and on seven September dates with a modest peak of nine on 23 August. Small numbers continued to arrive during October, suggesting more northern origins, and 1-3 were noted from 1-7 October. Interestingly a bright adult took up residence on Brownsman from 5-17 October. However the last bird of the year involved a ringed individual seen briefly on Brownsman on 24 October, which probably involved a bird of northern origins.

Goldcrest *Regulus regulus*

A common passage visitor.

The presence of this dinky sprite is often given away by its distinctive high pitched call and the islands attract good numbers during both spring and autumn passage. The first bird of the year arrived on 25 March with three noted on Inner Farne and increasing to eight on 26

March. The following few days brought a noticeable influx and a spring peak to the islands, with nineteen on 27 and twenty on 28 March. Thereafter numbers dwindled with nine on 29 declining to five on 30 and 1-3 present daily until 7 April. The final spring record was a single on Inner Farne on 12 April. Autumn was slow to start with 1-2 noted on 26-28 August and singles on 7, 15 and 23 September. However the final week of September brought the first real influx as numbers increased rapidly, quickening the pulses of the resident wardens. Day totals during this period included five on 27, nineteen on 28 and a peak of sixty-two on 29 with thirty still present on 30 September. Thereafter numbers dwindled in October with 1-7 noted on fifteen dates until the last was seen on Staple Island on 28 October.

Firecrest *R. ignicapilla*

An uncommon passage visitor.

A cracking female/immature livened up a cold bleak day on Inner Farne on 19 November, following a south-easterly weather system. The bird was noted grubbing around on the ground for food and remained on the islands throughout the following day. This represents only the third ever November record for the Farnes and only the twenty-third in total. The previous latest record from the islands was an individual on Inner Farne on 7 November 1994.

Spotted Flycatcher *Muscicapa striata*

A well represented passage visitor.

The islands have had some lean years recently as the number of records hit an all time low of two in 2003, although since then numbers have increased. The first bird was found on Longstone on 4 June with another on Brownsman the following day. Longstone was certainly the place to be, as another appeared on that island on 7 followed by two on 12 June. The first bird on the inner group was noted on Inner Farne on 16 June. Autumn produced two records with singles on Brownsman on 2 September and another on Inner Farne on 21 September.

Red-breasted Flycatcher *Ficedula parva*

An uncommon passage visitor.

Despite being a regular east coast drift migrant and the islands boasting forty-three previous records, the species has become a real rarity in recent years. Since the turn of the century the Farnes have produced only one record, an adult male in September 2005. However this year a first-winter bird was discovered near the pond on Inner Farne on 28 September and remained on the island for three days until it was last seen on 30 September. It favoured the Elders in the vegetable garden, showing well on occasions, and was often heard alarm calling.

Pied Flycatcher *F. hypoleuca*

An uncommon passage visitor.

This majestic black and white flycatcher had one of its poorest years on record on the islands as the lack of any 'fall' conditions during August and September resulted in only three confirmed records. During the spring a female was discovered on Brownsman on the east rocks on 14 May and soon relocated to the artificial tree where it remained throughout the following day. Autumn failed to produce any good numbers with two together on Inner

Farne on 23 September and an individual on Brownsman on 9 October representing a poor autumn return.

Treecreeper *Certhia familiaris*

A scarce visitor.

This cryptic woodland exotic graced the islands twice during the season and probably both involved wandering juveniles from the nearby mainland. A bird was discovered as it crept up the main jetty system on Brownsman on 13 July and quickly relocated to nearby Staple Island. It performed well to the admiring wardens and was watched as it fed around the old lighthouse buildings on the island. Amazingly a second individual was discovered on Inner Farne on 3 August which remained around the monastic building all day. These records represent the nineteenth and twentieth Farnes records respectively and the first since three appeared during 2004. The majority of Farnes records refer to individuals on the inner group as the Brownsman bird represented only the third ever outer group record following singles in October 1983 and August 1996.

Magpie *Pica pica*

An extremely rare visitor.

This almost mythical Farnes rarity appeared on Inner Farne when three were discovered near the lighthouse on 10 April. The birds lingered for thirty minutes before departing high west and represent only the fifth Farnes record, following two sightings in 1983 and individuals in September 1993 and April 1997.

Jackdaw *Corvus monedula*

A well represented visitor. Former breeder, last in 1966 (Hawkey, 1991).

This inquisitive *Corvid* is always a welcome bonus on the islands and as usual the majority of records involved birds on spring passage. The first of the year was noted flying over Inner Farne on 23 March with three more over on 26 March. Further inner group records included a single west on 8 April and two noted on 16 April. The only spring outer group record was one on Brownsman and Staple Island which was observed foraging down Puffin burrows on 28 April. The final spring reports concerned two over Inner Farne on 7 and 9 May with one high west on 16 May. Away from the intriguing autumn reports (see Nordic Jackdaw below), a bird was discovered exhausted on Inner Farne on 8-9 November.

The most noticeable sightings of the year involved two birds showing the characteristics of **Nordic Jackdaw** *C. m. monedula* on Brownsman on 20 October. The birds, much paler in colouration, were photographed and confirmation of the race will be made in the near future. One of the two birds remained on the island throughout the following day. Although unable to be confirmed, seven west over Inner Farne on 20 and four over Brownsman on 22 October probably involved further northern birds, as the Northern Isles experienced a similar influx during the same October period. If accepted, this will represent the second ever sighting of this northern race following one on Brownsman from 23-27 October 1990.

Rook *C. frugilegus*

A well represented visitor.

An interesting year with a bumper number of records bolstered by a lingering pair during the autumn months. The islands produced 1-2 birds on fourteen dates from 24 March-28 April with the majority seen over the inner group. During this period numbers peaked at four west on 17 and 28 April. Although the species is regularly recorded on spring and autumn passage, birds very rarely land on the islands and therefore it was a notable event when a pair started landing on Knoxes Reef and the nearby Wideopens. They were also recorded landing on the outer group on several occasions during their stay, which lasted from 22 September-28 October, although not subsequently. Other autumn records included eleven in three flocks over the inner group on 9 September, five west on 29 September and four west on 28 October.

Carrion Crow *C. corone*

A well represented visitor and rare breeding species.

The year produced a series of interesting sightings as in early April the wardens discovered a large nest structure in the old lighthouse on Brownsman adjacent to the cottage. The structure was removed and the birds appeared to retry on the west face of Inner Farne, but the local Shag population was too difficult to handle and the breeding attempt failed. This was the first nesting attempt on the islands since 2002. Other spring reports suggested almost daily occurrences with peaks of eighteen on 7, twenty-six on 23 and twenty-two on 26 April. Further impressive *Corvid* movements included seventeen on 1 and thirteen on 9 May with the last passage birds noted on 16 May. However the species maintained its presence on the islands as a pair lingered on Inner Farne until 20 June, possibly the failed breeders. Thereafter a large gap of seventy days followed without a trace of a bird before two eventually appeared on 29 August. As in spring, birds were seen daily throughout the autumn with small numbers lingering and a peak movement of eighteen over on 26 October.

Hooded Crow *C. cornix*

An uncommon visitor.

This once common winter visitor is now a real scarcity on the islands with only seven records from the previous ten years, six of which have occurred between 18 March and 10 April. The year produced a lone record during this period, with one west over Inner Farne on the morning of 26 March.

Starling *Sternus vulgaris*

A common visitor, extremely rare breeder.

One of the most numerous passerines recorded on the islands during the year, especially from mid-summer when local birds commute daily to the islands, with more arriving from northern Europe during the autumn months. As usual, small numbers were present daily in late March when wardens arrived but these numbers dwindled in early April with the final spring record concerning one on Inner Farne on 23 April. There were no breeding attempts again (the last was in 2000) but the first family parties appeared on the islands from early June, taking advantage of the relative safety of the predator-free environment. Numbers gradually increased with three on 4 increasing to twenty on 8 with up to a hundred noted on

Inner Farne on 20 June. Thereafter up to a hundred were recorded daily throughout July-September with a peak of 215 on Inner Farne on 1 August. As usual, late autumn brought the major influxes from the continent with strong westerly passage documented on several dates and peaks of 258 west on 22 October, 300 west on 15 November and an impressive count of 600 on 16 November.

Tree Sparrow *Passer montanus*

An uncommon visitor.

Following a spell of easterly winds in late September, a juvenile appeared on Brownsman on the morning of 29 September. It initially favoured Brownsman and could be located by its direct flight and call, as it moved around the island on a daily basis. As the autumn progressed it was evident the bird was content with its surroundings and it moved to adjacent Staple Island. It remained throughout the entire autumn period and gradually moulted into adult plumage. The bird was still resident when the wardens departed on 1 December. This staggering bird, affectionately known as 'Spug Spug' by the wardens, became the longest ever sparrow Farnes resident. More impressively, the autumn produced a second individual, as a vocal adult was discovered on Inner Farne on 5 October and lingered throughout the morning on the island. These sightings represent only the third and fourth ever Farnes autumn records, following 'several' on 2 November 1987 and one on Brownsman on 10 September 1991.

Chaffinch *Fringilla coelebs*

A common passage visitor.

This large, often vocal, finch was evident during both the spring and autumn periods although not in any great numbers. The first bird of the year appeared on Inner Farne on 28 March and thereafter 1-3 were noted daily until 5 April. Autumn passage was light with the first returnees noted on 29 September with a male on Brownsman and two on Inner Farne. Disappointingly, no big numbers were reported with 1-2 on five dates from 30 September - 24 October. Interestingly, a female avoided capture by the resident Merlin on Brownsman on 22 October by flying into the cottage but unfortunately stunned itself against an internal window. Despite the bird's knock, it recovered soon after and was released unharmed, and was later seen on the island feeding by the artificial tree.

Brambling *F. montifringilla*

A common passage visitor.

A splash of colour is brought to the islands with the appearance of this handsome northern finch. Nationally it had been a poor winter, as birds were locally scarce and this was reflected by the fact that the Farnes failed to produce any spring records, the first instance in modern history. The bulk of Farnes records occur during autumn and the first of the year involved a moulting male on Inner Farne on 27 September. A few days later and five appeared on the islands but failed to linger, and thereafter birds became very evident on passage. October produced reports on twenty-three dates of 1-14 on or over the islands. Peak counts during

this period included eighty-seven west on 9 with nineteen lingering on Brownsman on 10-11, twenty-six west on 24 and eighteen west on 25 October. As autumn progressed numbers dwindled, with 1-3 on eight dates and the last record being a female on Brownsman and then Inner Farne (chased into the tower by a Merlin) on 27 November.

Greenfinch *Carduelis chloris*

A well represented passage visitor.

Recent years have seen a real surge of reports with good sized flocks lingering on the islands and favouring the largest island of Inner Farne. However this was not the case during a disappointing year which produced no spring records. The expected autumn avalanche of records also failed to materialise with the first bird of the season occurring on 30 September when a single flew over Inner Farne. Thereafter 1-2 were seen on six dates between 12 and 25 October on the inner group, occasionally seen feeding on bird seed provided by the wardens. The outer group faired no better as only two records were produced all year, with three briefly on the artificial tree on 12 October and a male on 25 October.

Goldfinch *C. carduelis*

A well represented passage visitor.

This colourful visitor was well represented during the spring although a disappointing autumn produced only a single record. As usual there was a reasonable showing during April as following one bird found in the vegetable garden on Inner Farne on 11 April, 1-2 were seen on a further seven April dates. Peak counts of the month (and season) were three on Inner Farne on 19 and 25 April. The last spring sighting involved one west over Brownsman on 3 May. During a disappointing autumn, the only record concerned two feeding on thistles on Inner Farne on 28 October.

Siskin *C. spinus*

A common passage visitor.

An excellent season was complemented by a nationwide influx during the autumn months. Spring passage was light through the islands, with two west over Inner Farne on 28 March followed by a single over the same island on 6 April. The first autumn returnees appeared on the islands in late September, with a juvenile lingering on Brownsman from 29 September-3 October and two on Inner Farne on 29 September. There was little evidence of the influx to come, with 1-4 seen on 12 and 15 October. However that all changed, with an impressive day count of 121 west on 17 October and thereafter birds were recorded daily until the wardens left the islands in early December. Daily counts ranged from 1-46, all involving small vocal parties heading directly west towards the mainland, with very few stopping over on the islands. Further large counts during this period included 159 west on 30 October (second highest ever Farnes count), forty-six west on 31 October, 149 west on 3 November (third highest ever Farne count) and eighty-five west on 6 November (see Table 13). This was the best showing nationally and on the Farnes since the big invasion of 1993, when the Farnes day record was achieved with 350 on 7 October 1993.

Table 13 Peak numbers of Siskin flying west over the Farnes during Oct-Nov 2007.

October			November	
17	30	31	3	6
121	**159**	**46**	**149**	**85**

Linnet *C. cannabina*

A common passage and winter visitor. May have bred in the 1890s (Miller, 1911-1914).

Numerous throughout the year with good numbers lingering and small numbers recorded on passage. A typical mid-winter sighting involved five on Inner Farne on 16 January and birds were present when the wardens arrived on the islands in late March. Spring passage was generally light with daily reports throughout April and early May with a peak of ten on 29 March. During this period birds were often heard singing from song posts on the islands and an individual was observed on Inner Farne carrying nesting material on 7 April. The final spring report concerned one on Brownsman on 17 May. Following an absence of three months, the first autumn birds were seen calling over Inner Farne on 24 August. Autumn passage was slow to gather pace with 1-3 on five dates during late August and September but eventually passage increased and good numbers were recorded throughout the autumn. Up to thirty were present daily, taking advantage of various seeds on the islands, and flocks peaked at fifty-three on Inner Farne on 26 October and seventy on Brownsman on 20 October.

Twite *C. flavirostris*

A well represented passage visitor.

This upland breeder winters along the Northumberland coast with small numbers recorded on passage through the Farnes, predominately during the autumn months. The year was typical, with records all occurring during October following a single on Brownsman on 14 October accompanying a small Linnet flock. Thereafter 1-2 were noted on Brownsman and Inner Farne on four dates between 16 and 30 October with a peak of three on 17 and 19 October.

Lesser Redpoll *C. cabaret*

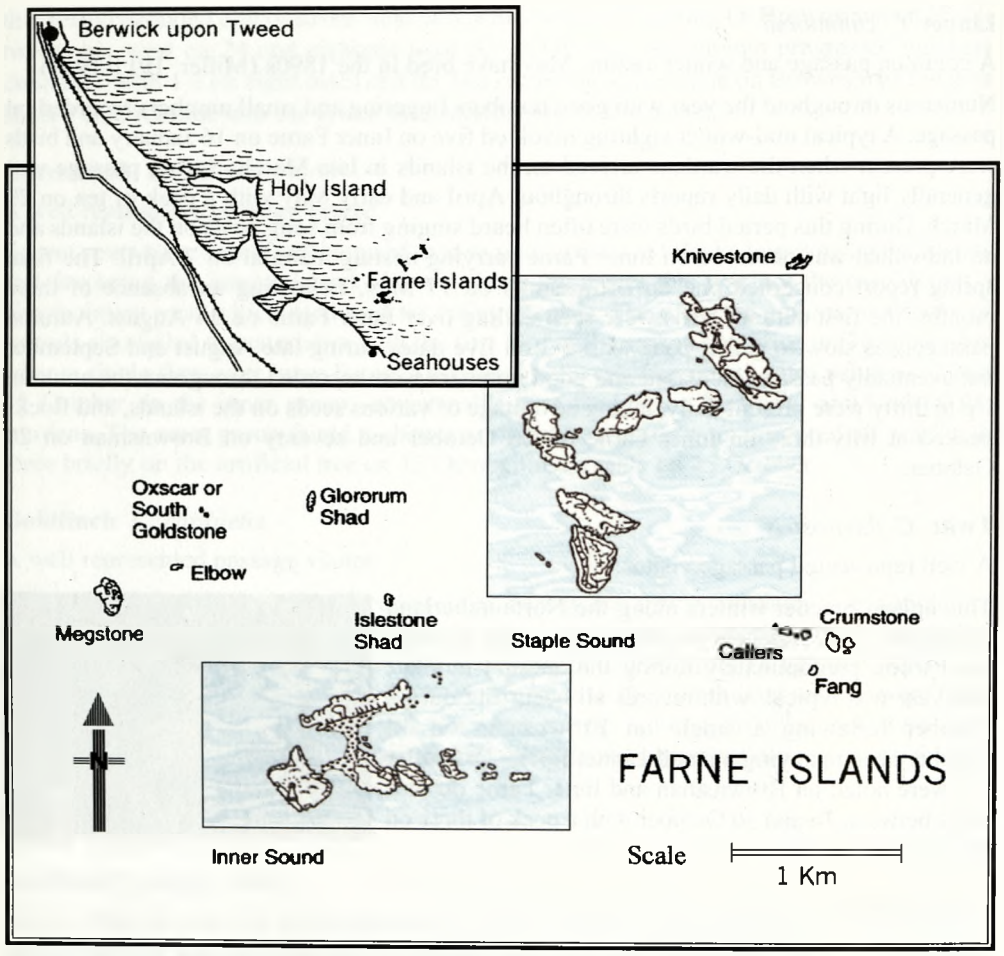
An uncommon passage visitor.

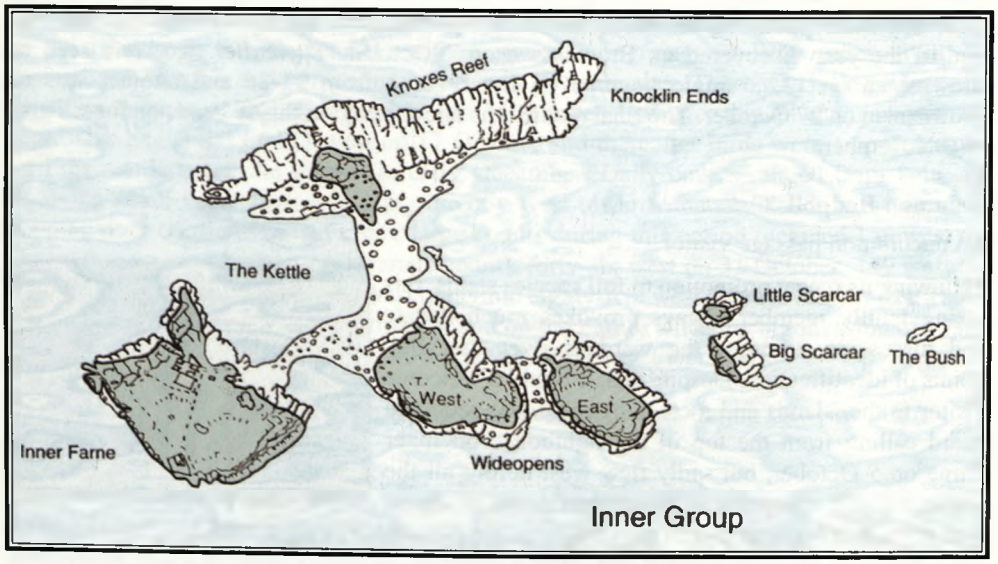
Generally a disappointing season as the islands produced no spring records, with the first bird of the year discovered on Brownsman on 1 October. Thereafter two were seen on Brownsman on 13, a single lingered on Inner Farne from 22-26 and another was on Brownsman on 27 October. The final record was one feeding on thistle heads on Inner Farne on 3 November.

Common Redpoll *C. flammea*

An uncommon passage visitor.

Following its recent promotion to full species status, this taxing family member always provokes much debate and discussion amongst the wardens over the finer points of identification. Despite this, it is still a welcome visitor to the islands and a cracking male was seen and heard calling from the top of the lighthouse on Inner Farne on 5 October, but sadly flew west before all the wardens could appreciate it. However a series of south-easterly winds brought two to the islands in late November, with a confiding individual on Inner Farne on 19-21 November and another lingering on Brownsman on 21-25 November.

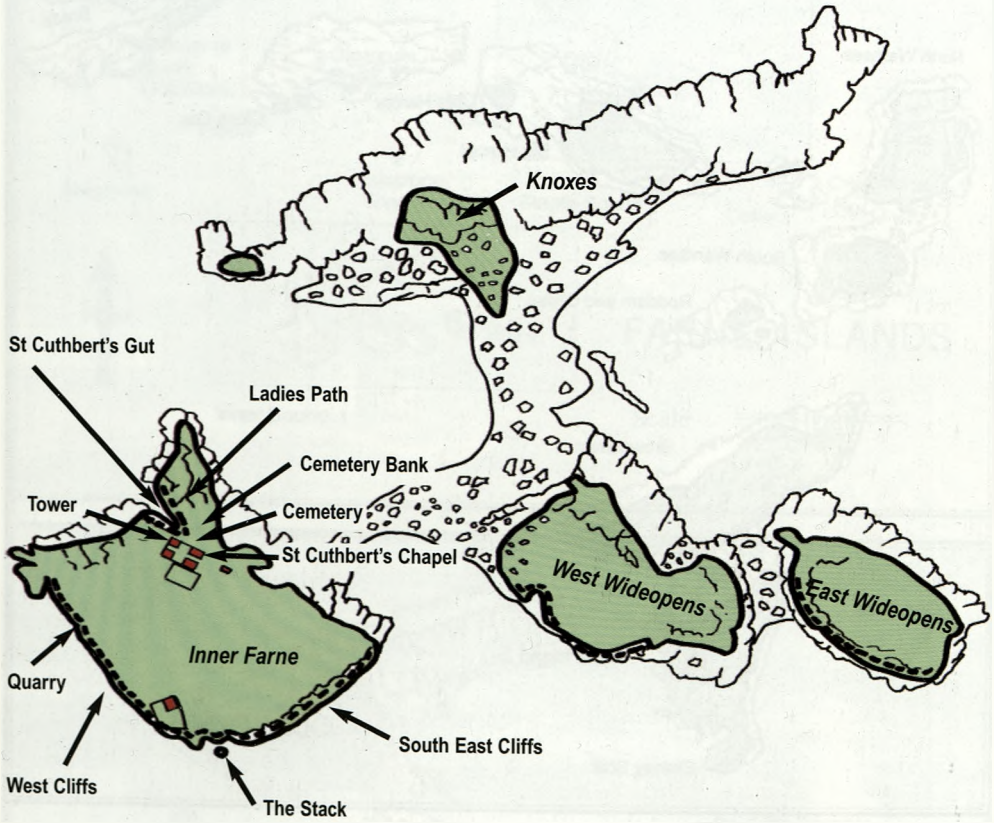

Berwick upon Tweed
Holy Island
Farne Islands
Seahouses
Knivestone
Oxscar or
South
Goldstone
Glororum
Shad
Elbow
Megstone
Islestone
Shad
Staple Sound
Crumstone
Callers
Fang
N
FARNE ISLANDS
Inner Sound
Scale
1 Km


Knoxes Reef
Knocklin Ends
The Kettle
Little Scarcar
Big Scarcar
The Bush
West
East
Inner Farne
Wideopens
Inner Group


Northern Hares
Longstone
Brada
North Wamses
Little Harcar
Clove Car
Big Harcar
South Wamses
Roddam and Green
Brownsman
Gun Rock
Staple Island
Outer Group
Skeney Scar

Maps of the Farne Islands

The maps of the islands have been created to help with orientation of particular locations where birds have been seen. The following more detailed maps of the Inner Farne, Brownsman and Staple Islands have the names of structures (buildings coloured red) and landmarks (*e.g.* cliff faces indicated with dashed lines) that are mentioned in the text of both the bird report and the paper on historic numbers of breeding birds.




North Brownsman
Wardens Cottage
Cottage Cliff
The Flat
Brownsman
Brownsman's Gut
South East Cliffs
North End
Central Gully
Staple
West Cliffs
Pinnacles
Kittiwake Gully
Cliff opposite Skeney Scar
Skeney Scar

Common Rosefinch *Carpodacus erythrinus*

An uncommon passage visitor.

This beady eyed, bulky continental finch was recorded again on the islands, despite it being a very scarce bird on mainland Northumberland. The Farnes boast records in twenty-five of the previous thirty-one years and this year's individual added another to that tally. A first-winter bird was discovered on Brownsman on the afternoon of 23 August following a north-easterly weather front, allowing good views for the resident wardens. The bird favoured the artificial tree and occasionally the vegetable garden but was not present the following day.

Hawfinch *Coccothraustes coccothraustes*

An extremely rare visitor.

One of the highlights of the autumn was the appearance of this monster finch on 19 October. During an impressive diurnal Thrush movement, a bird was heard calling as it flew low over the observer's head and the vegetable garden on Brownsman heading directly west. Despite a search of nearby Staple Island, the bird could not be relocated and was suspected to have continued on towards the mainland. This represents the fifth record for the islands, although the first ever autumn record, following spring individuals in 1953, 1991, 1995 and 2005.

White-throated Sparrow *Zonotrichia albicollis*

An extremely rare visitor and first record for the Farne Islands.

No-one predicted it, no-one dreamt it, but it really did happen, as an American passerine reached the shores of the Farne Islands for the first time. The shock discovery of an adult on Inner Farne on 11 June will long be remembered. The bird was discovered in the lighthouse compound and was later caught in the lighthouse office before being released unharmed. After showing well for a brief period, it moved into thicker cover near the pond as dusk approached and as it proved, was the final sighting of this unique visitor. Despite several hours of searching the following morning, the bird could not be relocated, much to the disappointment of the team and local birders. The species is the commonest of the Nearctic sparrows to reach Britain, with thirty-one previous records following the first on the Western Isles in 1909 and although the majority have occurred in spring, most have appeared on the Northern Isles. Interestingly it became the sixth American passerine ever to reach the north-east of England following four Red-eyed Vireos and a Yellow-billed Cuckoo.

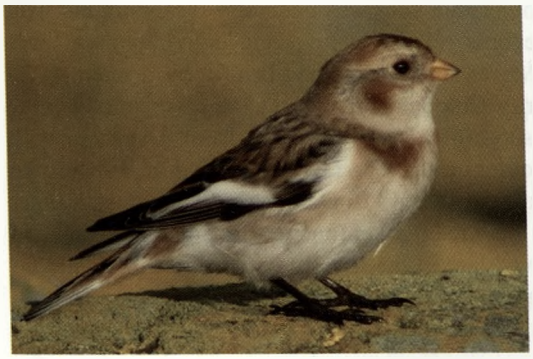
Lapland Bunting *Calcarius lapponicus*

An uncommon passage visitor

Always a welcome bonus to the islands, this predominately autumn passage bird (the last Farnes spring record occurred in 2002) was seen on only two occasions, mirroring the previous season's low total. An individual was discovered on Brownsman on 2 October where it showed well in the south-east corner of the island and the other record related to a vocal bird west over Inner Farne on 9 October.

Snow Bunting *Plectrophenax nivalis*

A well represented passage visitor.



The spring period can bring small numbers of this well-marked bunting to the islands although a quiet spell produced only a single bird, with one calling over the Pele Tower on Inner Farne on 24 March. As ever, the bulk of records were obtained during the autumn with the first returnee noted on Inner Farne on 15-16 September, lingering in the south-east corner of the island for its two day stay. Thereafter two moved through the islands on 14 October followed by singles on a further three October dates. The bulk of records occurred in November with 1-4 on twelve dates, peaking with six on 23 and five on 25 November. There was no evidence to suggest that any were over wintering on the islands this year.

Yellowhammer *Emberiza citronella*

An uncommon passage visitor.

It was a lean year as, unlike the previous two seasons, there were no spring records and the autumn produced only two sightings. A first-winter bird was discovered feeding in the courtyard on Inner Farne on 23 October and was joined soon after by an adult female. Later that day both birds were seen to depart the island together, heading directly west for the mainland. The following morning a bird was seen briefly on Brownsman and may have been the same individual (a male) which appeared on Inner Farne later that day.

Ortloan Bunting *E. hortulana*

An uncommon passage visitor.

The species has become nationally scarce and the appearance of a cracking male on 7-10 June on Brownsman was most welcome. The bird was generally elusive during its stay and was seen commuting to the nearby Wamses. This represents the first spring record in seven years and the first Farnes record since an individual on Brownsman in September 2003.

Little Bunting *E. pusilla*

An uncommon passage visitor.

Following the first record in 1977, the Farnes boast thirty-eight records of this demure bunting, and the species has become an almost annual migrant to the islands despite it still being a very rare visitor to Northumberland. To put the islands into context, there have only been four 'blank years' when the species was not recorded on the Farnes, and this year was the third consecutive one in which they have been recorded. A first-winter bird was discovered on Brownsman on 8 October where it remained all day, at times showing particularly well to the admiring wardens. Despite its good Farnes reputation it is noticeably becoming an outer group bird only, the last inner group record having occurred in October 2003.

Reed Bunting *E. schoeniclus*

A well represented passage visitor.

Small numbers are recorded annually although this year was generally disappointing with only a modest autumn peak. All spring records related to lingering individuals on Inner Farne: a female was present from 25-30 March and was joined briefly by a male on 26 March. Autumn passage commenced in early October with 1-2 on Brownsman and Inner Farne from 2-4 October, and thereafter a surge of records occurred from 9 October with small numbers lingering, especially on the outer group. The favoured island of Brownsman attracted 1-3 daily from 9-14 October, peaking at five on 10 October, with singles on Inner Farne on 9 and 11 October. Further records included two on Inner Farne on 17 October, and a second surge of passage birds which arrived late in the month, with up to three daily on Brownsman from 24-30 October and a single on Inner Farne from 23-27 October. The last record concerned a late individual on Brownsman on 21 November.

RINGING AND RESEARCH REPORT FOR 2007

Seabird biometrics

Since the resumption of ringing studies on the Farnes in 1996, the collection of biometric data has been a major priority and the number of species from which these data are collected has expanded as results of value have begun to emerge. For the last few years, adult Arctic Terns have been trapped each season on the Farnes and also on Coquet Island, and we have recorded body mass, wing length, total head length and tail-fork depth. With a sample size of over 700 birds we are now in a position to use these data to find out more about their breeding biology. A preliminary analysis has shown a linear, sex-independent reduction in body mass throughout the season, and significant differences in body mass between seasons and between birds on the Farne Islands and Coquet Island. After taking into account year and season effects on body mass, Arctic Terns on the Farne Islands are about 2.5g heavier than those on Coquet Island 30km further south. This may indicate that, on the whole, foraging conditions are slightly better for birds breeding on the Farnes compared with Coquet Island. Other factors which affect differences in adult body mass between years and within seasons are also being investigated and the data are beginning to show what weather factors are likely to influence foraging success. A full analysis of these data is currently in progress and is utilising data on chick feeding intervals and fish size and the results of Sand eel trawls, demonstrating the important link between the ringing studies and observational work by the Farne Islands Marine Research Group.

Two other species which rely on Sand eels for a major proportion of their diet are being studied: Puffins and Kittiwakes. Like Arctic Terns, Kittiwakes are surface feeders and food availability may be affected by weather conditions and water turbulence as well as fish availability. Conversely, Puffins can feed throughout the water column and variation in body mass of this species between years compared with terns and Kittiwakes may be a marker of fish abundance rather than surface availability. Data for the last two years for Puffins and the last three for Kittiwakes (Figure 1) suggest that, like adult Arctic Terns (Figure 2), adults were in rather better condition in 2007 than the previous year. Data for the Kittiwakes were from one visit to the colony and more data are required for this species and for Puffins to correct for possible intra-seasonal declines in body mass. Nevertheless, the relative differences in body mass for Arctic Terns and Kittiwakes in 2005 compared with

2007 (Figures 1 and 2) suggest species-specific differences in food availability that may be a consequence of different foraging strategies.

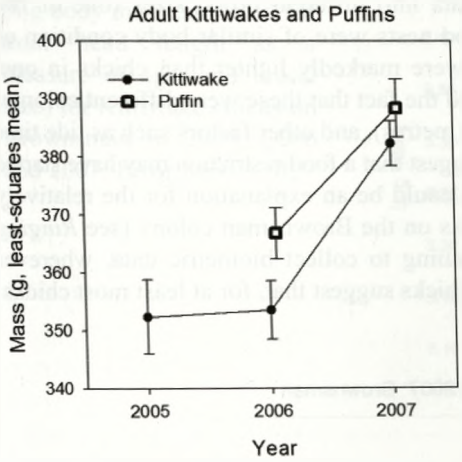


Figure 1 Body mass (g), corrected (Least-squares mean) for bird size (total head length), of adult Puffins (squares) and Kittiwakes (filled circles) on the Farne Islands in 2005 (Kittiwakes only), 2006 and 2007. Error bars: ± standard error (SE).

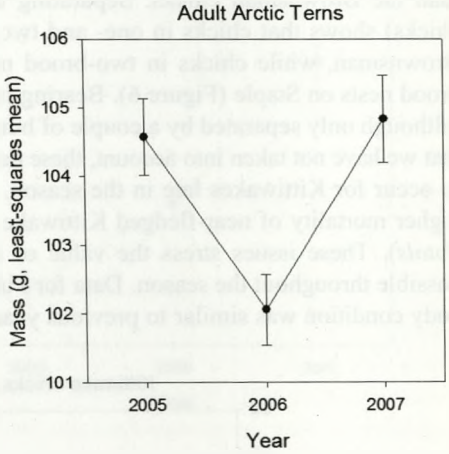
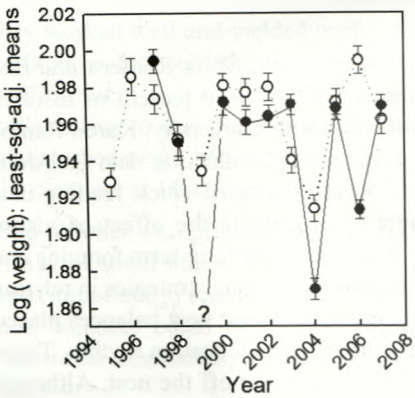


Figure 2 Body mass (g), corrected (Least-squares mean) for bird size (wing length) and the within-season decline in body mass, of adult Arctic Terns on the Farne Islands in 2005, 2006 and 2007. Error bars: ± SE.

Size-independent measures of body condition in chicks have been gathered for Arctic Terns since 1997 (Figure 3), and more recently for Kittiwake and Puffin chicks. For Arctic Terns, there were no differences in body condition between chicks on Inner Farne, Brownsman and Coquet Island, in contrast to previous years (Figure 3). These body-condition measurements relate to a narrow window of chick growth in late June-early July each year and do not take into account food restrictions that might occur later in the season as the chicks are fledging. The importance of fluctuations in food availability within a season is illustrated by body-condition data for Kittiwake chicks. As with the Arctic Terns, these measurements relate to a narrow time span and for the Brownsman colony. Data for the last three years, corrected



○ Coquet

● Farnes

Figure 3 Body condition index (log body mass corrected for total head length as a measure of age) for Arctic Tern chicks on the Farnes (filled circles) and Coquet Island (open circles) since 1997/1995 Error bars: ± SE.

for differences in brood size, show that chick condition on Brownsman was highest in 2007 (Figures 4 and 5). However, about a week later, we made similar measurements for a smaller sample of birds nesting on Staple Island and these were substantially lighter, size-for-size, than the Brownsman chicks. Separating the data into different brood sizes (one or two chicks) shows that chicks in one- and two-brood nests were of similar body condition on Brownsman, while chicks in two-brood nests were markedly lighter than chicks in one-brood nests on Staple (Figure 6). Bearing in mind the fact that these were different colonies (although only separated by a couple of hundred metres), and other factors such as tide time that we have not taken into account, these data suggest that a food restriction may have started to occur for Kittiwakes late in the season. This could be an explanation for the relatively higher mortality of near-fledged Kittiwake chicks on the Brownsman colony (see *Ringing Totals*). These issues stress the value of continuing to collect biometric data, wherever possible throughout the season. Data for Puffin chicks suggest that, for at least most chicks, body condition was similar to previous years.

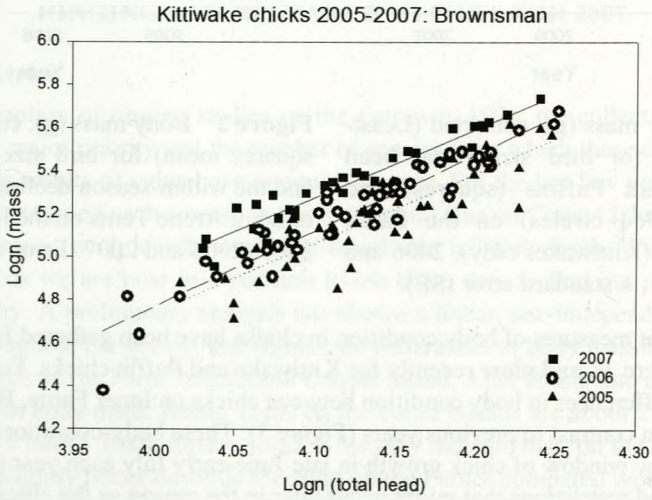


Figure 4 Body mass (g; ordinate, log transformed) plotted against total head length (mm; abscissa, log transformed) for Kittiwake chicks on Brownsman in the last three years. Lines are linear regression lines through the data.

Farne Islands Marine Research Group (FIMRG)

Work by the research group (Richard Bevan, Judy Foster-Smith, Chris Redfern and Bob Foster-Smith) continued during the 2007 season. Instead of the usual pattern of research assistants collecting the data, two MSc students from Newcastle University, Karen Ramoo and Kate Jagger, were resident on Inner Farne for a few weeks, collecting data on Arctic Terns and Guillemots as part of their MSc projects. Karen collected chick feeding data (feeding intervals and fish size) as part of a project to investigate the effect of visitor disturbance on Arctic Tern breeding. These data also form part of the long-term foraging and chick-feeding dataset that is being accumulated for analysis of foraging strategies in relation to Sand eel availability. In addition, Karen was using eight electronic nest balances placed under Arctic Tern nests to study the effect of visitor disturbance on incubation rhythm. These balances recorded changes in mass as an incubating bird got on or off the nest. Although

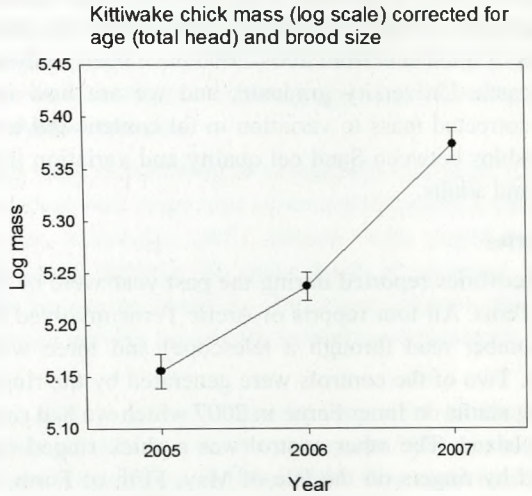


Figure 5 Body condition (log body mass corrected for total head length as a measure of age, and brood size) for Kittiwake chicks on Brownsman in 2005, 2006 and 2007. Error bars: ± SE.

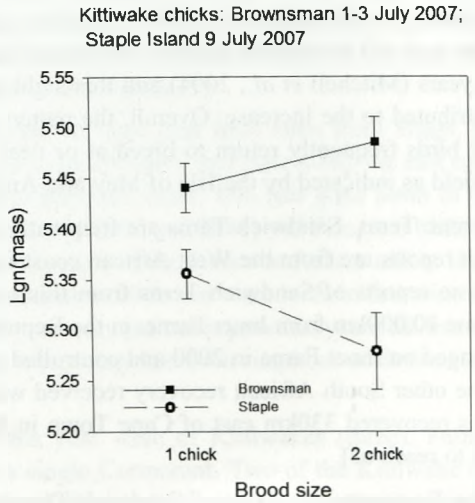


Figure 6 Body condition (log body mass corrected for total head length as a measure of age) for Kittiwake chicks in brood sizes of one and two on Brownsman (filled squares) and Staple Island (open circles) in 2007. Error bars: ± SE.

they worked well and yielded useful data, a lightning strike on the Inner Farne courtyard in early June damaged the electronics in most of the balances and associated data loggers, causing premature termination of that part of the project. Nevertheless, the data she had collected up to that point indicate differences in incubation rhythm between disturbed and undisturbed nests and that birds in areas disturbed by visitors may compensate by leaving the nest less at other times of the day. We hope to repeat these studies in the 2008 season.

Bad weather also prevented Richard's studies on Puffin foraging involving the temporary fitting of small time-depth loggers to adult Puffins: nests suitable for catching adult birds and (importantly) recovering the loggers became flooded. Plan B was to investigate whether nest balances could be used to monitor Puffin chick feeding and growth, and the two functional nest balances that remained after the lightning strike were deployed for this purpose.

Meanwhile, Judy directed the Sand eel trawling programme and we now have a good run of Sand eel data (lengths and body mass) from the major sandbanks around the Farnes. Samples of Sand eels from 2004-2006 have been analysed for fat content by Stephen Kelly, a Newcastle University graduate, and we are now in a position to relate variation in length-corrected mass to variation in fat content and to use this information to investigate relationships between Sand eel quality and variation in the body condition of Arctic Tern chicks and adults.

Recoveries

Most recoveries reported during the past year were of Shags, Sandwich Terns, Eiders and Arctic Terns. All four reports of Arctic Terns involved living birds: one was a sight record (ring number read through a telescope) and three were controlled (retrapped by other ringers). Two of the controls were generated by the ringing team and were birds caught as breeding adults on Inner Farne in 2007 which we had ringed as chicks in 1998 and 1999 on Coquet Island. The other control was a chick ringed on Brownsman in 1984 which was captured by ringers on the Isle of May, Firth of Forth, in August 2006. The sight record was also of a Brownsman chick from 1983 which was seen on The Skerries, Anglesey, North Wales, in June 2006. The Skerries are a small group of rocky islets off the coast of Anglesey which hold important seabird colonies, including around 1,700 pairs of Arctic Terns. The size of The Skerries Arctic Tern colony has increased substantially over the past fourteen years (Mitchell *et al.*, 2004) and this sight record suggests that Farnes birds may have contributed to the increase. Overall, the pattern of these Arctic Tern recoveries is as expected: birds frequently return to breed at or near their natal colony, but may disperse further afield as indicated by the Isle of May and Anglesey birds.

Unlike Arctic Terns, Sandwich Terns are frequently recovered in their wintering quarters. Most such reports are from the West African coast from Senegal to Ghana. Unusually, we have had no reports of Sandwich Terns from this region last year, but two much further south, some 10,000km from Inner Farne, in the Republic of South Africa. One of these was a chick ringed on Inner Farne in 2000 and controlled on 6 April 2007 140km north of Cape Town. The other South African recovery received was of an Inner Farne chick from 1979 which was recovered 330km east of Cape Town in March 1996 (the details have taken a long time to reach us).

Among the European recoveries of Sandwich Terns was an Inner Farne chick from June 1978 which was controlled at Zeebrugge, Belgium, on 22 April 2007, almost twenty-nine years old. A chick from Inner Farne in 1998 was not so lucky and was found dead on the Baltic coast of Germany at Fehmarn in August 2007; this had presumably been recruited as a breeding bird into one of the Sandwich Tern colonies in the Danish Islands. In previous years, a number of birds ringed as chicks on the Farnes have been recorded in the Sandwich Tern colony on the Danish Island of Hirsholm, 340km north of Fehmarn. This year was no exception, and eight Farnes-ringed Sandwich Terns have been identified by reading ring numbers with the aid of a telescope at Hirsholm in May and June 2007 by Kjeld Tommy Petersen. These birds were ringed on Inner Farne (six birds) or Brownsman in 1996, 1998 (four birds), 2001 (two birds) and 2003. Over his observation period in 2007, Kjeld identified twenty-two BTO-ringed Sandwich Terns at Hirsholm, so the Farnes birds were over one-third of the total; with an additional four birds from the ringing team's efforts on Coquet Island, Sandwich Terns from Northumberland represented over half of the BTO-ringed

Sandwich Terns identified at Hirsholm. Since the Northumberland Sandwich Tern colonies represent 25% of the total for Britain and Ireland (Mitchell *et al.*, 2004), this illustrates the value of ringing Sandwich Terns on the Farnes, an activity which has made and continues to make an important contribution to our knowledge of the migration and mortality patterns of Sandwich Terns breeding in Britain and Ireland.

The effort that has gone into reading rings at Hirsholm is remarkable: this year, 1,100 ring readings were made (most birds have had their rings read on several occasions), comprising Sandwich Terns, Black-headed Gulls, Kittiwakes and Common Gulls ringed by twelve European ringing schemes. If we could achieve the same level of coverage in other Sandwich Tern colonies throughout Europe we would be able to get accurate estimates of the extent of dispersal between colonies and the population dynamics of Sandwich Terns at a European scale.

Apart from three local recoveries, there was only one recovery of a Sandwich Tern elsewhere in the UK and that was of a chick ringed on Brownsman in 1984 and seen at the Sandwich Tern colony on Brownsea Island, Dorset in May 2007. The same bird has also been seen there in May 1998 and 2004. Of the three local recoveries, two, both of which were ringed as chicks on Inner Farne in 2002, are of interest: one was apparently taken by a Peregrine on the Long Nanny in July 2007; the other was found dead at Low Hauxley in June 2007 but had been controlled previously, in December of its first winter, in Swakopmund, Namibia, 8,800km south of the Farnes.

The greatest number of recoveries during the past year have been from Shags. All seven were ringed as chicks and recovered between February and June along the east coast of the UK and with a northern bias similar to previous years: five had gone north to Grampian region (three birds, ringed on Staple Island in 2000 and 2001) and Fife (two birds, ringed in 2001 and 2003), and two were recovered south of the Farnes at Redcar and at Hunstanton, Norfolk; both of these birds had been ringed in 2006 and were in their first winter. Eider is another species that has shown a similar recovery pattern to previous years: all five recoveries were within a few miles of the Farnes where they had been ringed as adult females in 2000 (two), 2002, 2003 and 2004.

The remaining recoveries received this year were of Kittiwakes (three), Fulmar (one), Lesser Black-backed Gull (one) and a single Cormorant. Two of the Kittiwake recoveries were movements two and from the Isle of May: a chick ringed on Brownsman in 1998 was controlled on the Isle of May in June 2007, where it was presumably breeding; conversely, a chick ringed on the Isle of May in June 1989 was controlled by the ringing team as a breeding bird on Brownsman in July 2007. This bird was also seen on Brownsman in 1998 where the ring number was read through a telescope by National Trust Wardens. The third Kittiwake recovery was of a chick ringed on Inner Farne in July 2007 which made it only as far as Saltburn in Cleveland where it was found less than two months later. The remaining recoveries were for relatively old birds, as might be expected for three species which have not been ringed on the Farnes in recent years: the skeletal remains of a Fulmar, ringed on Knoxes Reef as a chick in 1985, were found at Texel, the Netherlands in July 2007; a Cormorant ringed as a chick on East Wideopens in July 1982 was found at Berwick, also in July 2007, and, finally, a Lesser Black-backed Gull chick from the Wideopens in August 1983 was controlled in Gloucester in February 2007 and then seen later in February near Cannock, Staffordshire.

Ringing totals

The ringing totals for 2007 are summarised in Tables 14-16. With 1,691 birds ringed, retrapped, or controlled, the total is just twenty-seven lower than 2006. The ringing is focused as much as possible on obtaining biometric data to maximise the scientific return from ringing effort, and this inevitably limits the number of birds ringed. The efforts of the land-based team were complemented by two of the island wardens, Kieren Alexander and Chris Bell who were able to measure and ring Arctic Tern, Puffin and Shag chicks when weather or other commitments (such as work) prevented the Ringing Group from landing. The total of adult Shags ringed or recaptured was about the same as the previous year, but there was an increase in the number of chicks ringed, partly due to Chris Bell's efforts and to increased coverage of the Staple Island colony. There was again a substantial reduction in the number of adult female Eiders ringed or recaptured, but this was a result of reduced coverage of Inner Farne by the ringing team. The number of adult Kittiwakes caught at the Brownsman colony was very similar to last year, but there was an increase in the number of chicks ringed. Conversely, the number of adult Arctic Terns caught was down by half on 2006, and this was a result of a reduction in the use of the hand net in favour of nest traps earlier in the season. Thanks to Kieren and Chris, more Arctic Tern and Puffin chicks were ringed than in the previous year.

The ringing of tern and Kittiwake chicks allows an estimate of the minimum mortality rate which can be compared between years, given similar effort in searching for those that did not make it. In 2006 there was a substantial mortality of Arctic Tern chicks on Brownsman and Inner Farne with 43% of the ringed chicks found dead; a substantial proportion of this mortality occurred relatively late in the season. This year, the outcome was somewhat better and only 14% of the chicks were found dead, a total which might be expected in an average year. Conversely, just down the road on Coquet Island, 27% of the ringed Arctic Tern chicks were found dead in 2007, an increase on the 22% in 2006, and most deaths occurred relatively late in the season. Compared with Arctic Terns on the Farnes, mortality of Kittiwake chicks on the Cottage Cliffs colony on Brownsman was high with 25% mortality compared with 10% in 2006. Most of the chicks that died were well developed or fledged and biometric data also suggested that this was a late-season event, perhaps reflecting a food shortage.

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Table 14 Adult seabirds retrapped or 'controlled' in 2007 compared to 2006.

Species	2006	2007
Shag	26	18
Eider	74	24
Kittiwake	5	14
Arctic Tern	69	57
Total	**174**	**113**

Table 15 New adult seabirds ringed in 2007 compared to 2006.

Species	2006	2007
Shag	17	27
Eider	8	23
Kittiwake	58	52
Arctic Tern	138	62
Puffin	48	39
Total	**269**	**203**

Table 16 Chicks ringed in 2007 compared to 2006.

Species	2006	2007
Shag	41	114
Kittiwake	250	302
Sanwich Tern	503	313
Roseate Tern	1	0
Arctic Tern	450	542
Common Tern	0	3
Puffin	22	101
Oystercatcher	4	0
Ringed Plover	4	0
Total	**1275**	**1375**

CETACEAN AND BASKING SHARK REPORT 2007

Introduction

Systematic recording of Cetaceans is a relatively recent development on the Farne Islands with records available from 2003-2007. During this period recording has been good although the numbers of sightings of each species are heavily influenced by the weather conditions in any particular year. The location of the islands (approximately one to four miles from the mainland) coupled with the presence of a team of wardens from late March until early December each year means that there is great potential for recording Cetaceans in the area.

2007 was a mixed year for Cetacean sightings from the Farnes. The most interesting record concerned a mixed pod of White Beaked and Risso's Dolphins on 25 September. This was only the third ever record of Risso's Dolphin from the islands and the second year in succession in which it has been recorded. However, the undoubted highlight of the year from a marine point of view was the first ever record of Basking Sharks from the islands.

Common Bottlenose Dolphin *Tursiops truncatus*

This species has a worldwide population, being found in all of the world's oceans (Reid *et al.*, 2003). In the UK there are three well known inshore populations of which the resident population in the Moray Firth (Scotland) is the closest to the Farnes. There is a wide variation in individuals and up to twenty possible forms have been described, which may actually represent several distinct species (Shirihai and Jarrett, 2006).

The first sighting of the year came early, as a pod of up to thirty was seen and photographed near Longstone on 23 February. Thereafter a single was recorded from Inner Farne on five dates between 15 April and 21 May. It is thought that these records refer to the same individual due to its distinctive markings, with a pale shoulder blaze contrasting with its darker cape. It favoured the Inner Sound and was also seen to the south of Inner Farne. There is a similar record from 2004/2005 when a single Bottlenose Dolphin was recorded around the islands between November and June. These records were also thought to refer to an individual dolphin.

White Beaked Dolphin *Lagenorhynchus albirostris*

The White Beaked Dolphin is fairly common in the central and northern North Sea and moves inshore in late summer and autumn (Carwardine, 2003). The population for the North Sea and the Channel was estimated at 7,856 individuals (4,032–13,301 in 1994) (Hammond *et al.*, 1995 in Reid *et al.*, 2003).

This species was recorded on seven dates in 2003 but since then it has only been recorded on one or two dates each year. The first sighting of 2007 occurred on 23 July when a pod of four animals was observed feeding in the Inner Sound between eight and nine am. The second record involved a minimum of four animals in a mixed pod with three Risso's Dolphins on 25 September. The dolphins were watched from the Brownsman cottage between four and five pm as they headed north through Staple Sound in heavy seas. The conditions made counting very difficult and the figures given above are minimum counts. The whole pod was observed to stop and feed several times and the White Beaked Dolphins were also seen to wave surf. The two species appeared to separate just before they disappeared from view with the White Beaked Dolphins stopping again to feed whilst the Risso's Dolphins continued to head north.

Risso's Dolphin *Grampus griseus*

Risso's Dolphin is widely distributed along the west coast of Britain and is commonly recorded around the Isle of Man, Lewis and Bardsay (Carwardine, 2003). In 1996 the Farne Islands produced the first ever documented record of this species off the east coast of the British Isles south of the Firth of Forth (Seawatch Foundation in Foster-Smith, 2000). There were no further records from the Farnes until 2006 but incredibly this species has now been recorded for two years in succession.

2007's record came on 25 September when two adults and a calf were seen in a mixed pod with at least four White Beaked Dolphins (see that species for a description of the circumstances). Despite the very heavy seas the Risso's Dolphins gave fantastic views, regularly half breaching and twisting in mid air. The large size of the adults was obvious in direct comparison to the White Beaked Dolphins and the heavy scarring and blunt foreheads were seen well. They were seen to stop and feed in company with the White Beaked Dolphins on several occasions and were finally lost from sight north of Megstone.

Harbour Porpoise (Common Porpoise) *Phocoena phocoena*

This species is the 'most numerous marine mammal in north-western European shelf waters' and the North Sea population has been estimated at approximately 280,000 individuals (Reid *et al.*, 2003). However, populations have declined in some areas including the southern North Sea (Reid *et al.*, 2003). There is a resident population in the Farnes area.

There was a total of forty-nine sightings over forty-two dates in 2007. Thirty-six of these records involved either one or two animals and the maximum count was ten on 27 October. The majority of the records came in spring with forty-eight percent of records from the period 23 March to 23 May. The first calf was noted on 24 June. The largest counts around the islands have been recorded between mid August and late October, representing post-breeding groups. The maximum count of ten recorded this year was disappointing compared to groups of at least thirty in August of 2004 and 2005. Harbour Porpoise has been recorded on between forty-two and fifty-nine days per year (mean forty-eight) between 2003 and 2007. Recording of this species is heavily dependent on sea conditions and it is rarely seen in rough seas. Harbour Porpoises are also generally wary of boats (Carwardine, 2003) and this may lead to reduced sightings throughout the summer months when leisure boat traffic is at its peak around the islands.

Northern Minke Whale *Balaenoptera acutorostrata*

This species is the most common baleen whale that occurs in UK waters. In 1994 the North Sea population was estimated to be *ca* 8,500 (5,000–13,500) (Hammond *et al.*, 1995 in JNCC, 2003). It is the only baleen whale recorded from the Farnes thus far and between seven and fifteen sightings were recorded per season between 2003 and 2005. There was just a single record in 2006, despite the calm seas through the summer creating ideal conditions for spotting cetaceans. The 2007 season represented something of a return to form with a total of seven sightings between 12 July and 28 September. Each sighting consisted of a single individual and most sightings were brief. Several individuals were picked out by scanning the sea around feeding flocks of Gannets *Morus bassanus* and other seabirds.

Basking Shark *Cetorhinus maximus*

Basking Sharks are commonly sighted off the west coast of Britain with a peak in records from south-west England in May-June and from Scottish waters in August-September

(Marine Conservation Society, 2007). They had never been recorded from the Farnes prior to 2007 although there have been nineteen confirmed or probable records of this species from the local area and there are said to have been frequent sightings by local fishermen during the summer months (Foster-Smith, 2000).

The first record occurred on 8 September when two individuals were seen in Staple Sound, close to Brownsman and Staple Island. These were likely to have been the same animals recorded in the Budle Bay area on 7 September by Seahouses boatmen. They stayed in the area, feeding between four and five-fifteen pm and appeared unconcerned by the presence of Seahouses visitor boats and the Warden's Zodiacs. Individuals were seen on a further three dates in September and the final record of the year concerned a Basking Shark heading north through Inner Sound on 27 October. The best view was obtained on 12 September when an individual was observed approximately ten metres from the north rocks on Inner Farne.

Additional records

A pod of four dolphins was seen from a Seahouses visitor boat in the Inner Sound on 26 April but the species involved was not confirmed.

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BREEDING BIRDS ON THE FARNE ISLANDS: GULLS

by

A E Wilson and D C Noble-Rollin

INTRODUCTION

The five species of gull that currently nest on the Farne Islands have a long and fascinating history. In the present paper they will be taken in the order of importance to the islands, not in the current systematic order used in the rest of this year's Annual Report. All five species were recorded as being present in the 18th century, although whether Great Black-backed Gulls *Larus marinus* actually bred is debatable. Lesser Black-backed Gulls *L. fuscus* and Kittiwakes *Rissa tridactyla* especially were probably breeding well before that time.

In his original Annual Bird Reports for 1946 to 1948 Goddard listed both Herring Gull and Lesser Black-backed Gull separately, but from 1950 to 2002 they were listed under a single heading, with for many years little attempt to distinguish between each species. In many of the earlier reports, *i.e.* 1950s and 1960s, they were discussed under headings which also included Great Black-backed and Black-headed Gulls *Chroicocephalus ridibundus*. Furthermore as it is only since 2002 that individual totals have been recorded, it has been decided for comparison with earlier Reports to discuss them together under the heading Lesser Black-backed Gull and Herring Gull.

The final Gull species considered is the Common Gull which over the past century is only known to have bred, or attempted to breed, on six occasions.

A list of the major sources of material used in preparing this paper has already been given, as has the reason for publishing this account of the breeding birds on the Farne Islands in parts (Wilson and Noble-Rollin, 2006; 2007).

Lesser Black-backed Gull *Larus fuscus* and Herring Gull *L. argentatus*

Historical records to the present day

Pennant (1771) was the first to document the presence of the large gulls, when in July 1769 he described seeing Herring Gulls on the Farne Islands. At the same time he also saw 'brown and white gulls' and as he had earlier described such a bird as an immature Lesser Black-backed Gull, this suggests a possible identification (Gardner-Medwin, 1985). That is the only specific record prior to the 19th century. Throughout that century there are numerous references to both species starting with Darling (1795-1860) and ending with Bolam in 1899 (Bolam, 1901). Selby (1826) noted that they 'colonised two of the largest islands, the Wamses and the Harkers' on which they still nest today. It is also certain that these two species of large gulls were breeding on other islands (Culverduck, 1859; Booth, 1881-1887), but there are no specific references until 1865 when Saunders (1866) noted 'numbers of Lesser Black-backed Gulls on Staple'. Clark (1881) recorded them on Brownsman and Bidwell (1882) considered that they were 'widely distributed'. Both Gurney (1889-1890) and Morres (1896) found the two species on West Wideopens. By the end of the 19th century there were only a few islands that had not been named as having breeding Herring and Lesser Black-backed Gulls, though it is probable that these too were in use and were not considered sufficiently important to be noted.

Edward Miller, a Watcher on the outer group from 1911 to 1914, has left a comprehensive record of the distribution of all the breeding species on this group. He lists Lesser Black-backed and Herring Gulls as nesting on Brownsman, Skeney Scar, Staple, Big Harcar, Little Harcar, South Wamses, North Wamses and Roddam and Green; in addition Fortune (1913a) recorded them on the Wideopens – particularly East Wideopens and Longstone, but not on Knoxes. However by 1924 the Farne Islands Association Report indicates that they were also on this island too (Thorp, 1924).

The situation regarding Inner Farne is interesting. Prior to the departure of the resident light keepers in September 1910 there were no breeding seabirds, and it was not until after this that the island began to be colonised. The Northumbrian naturalist George Bolam in his diary for 1926 is the first to record the presence of the Herring and Lesser Black-backed gulls with the comment 'men say that they only came to Inner Farne a few years ago' (Bolam, 1877-1933a, 13 July).

It thus appears that by the 1920s Herring Gulls and especially Lesser Black-backed Gulls were breeding on most of the available Farne Islands. This situation continued for the rest of the 20th century with the gulls breeding on every island that was available. In 2007 they were nesting on fourteen out of the fifteen islands used by the breeding birds.

Evidence for numbers

Ratios and individual totals

There are no satisfactory figures for the separate species until 2002; until then they were considered together under a single heading, and any individual totals quoted were based on the estimated ratio of each species.

All the numerous 19th century accounts agree that the Lesser Black-backed Gulls were by far the most abundant. Selby (1826; in Tate, 1857) described them as being in 'large numbers', with 'only a few pairs' of Herring Gulls, and by the end of the century Lesser Black-backed Gulls were reported to be the most numerous species on the islands ('D', 1881; Morres, 1896), with Dixon (1900) believing that the Farne Islands could be regarded as one vast colony of Lesser Black-backed Gulls and was probably the most densely populated one in the British Isles.

A few authors try to give some idea of the relative proportions of each species. Saunders (1866) thought that Herring Gulls were 'scarcely in the proportion of 1:200'. Other estimates were 2% ('D', 1881); 1:8/10 (Pigott, 1888) and 1:100 (Morres, 1896). These are widely differing ratios, but they were made on four separate occasions only, most likely on different islands and are thus each observer's subjective estimate, so it should not be assumed that Herring Gulls increased during the 1880s, since this is not borne out by other accounts.

This situation continued well into the 20th century with Fortune (1907; 1913a) describing the Lesser Black-backed Gull as 'the bird of the islands'. By the mid 1920s there is some evidence that the Herring Gull population was increasing and they had expanded their range with new colonies on Megstone and Inner Farne (Bolam, 1887-1933a, 13 July 1926), and though Goddard could only find 'a few' in 1925 (Goddard, 1925-1948, 12-15 June) he was not at that time familiar with the Farne Islands. By 1931 however 'the few' had become a 'fair number' (Goddard 1925-1948, 21 June) which is borne out by Bolam who considered the Herring Gulls had increased as a breeding species (Bolam, 1932). This situation appeared to be maintained and in 1936, for the first time in Goddard's experience, he

thought that the Lesser Black-backed Gull had started to decline (Goddard, 1925-1948, 14 June).

There is no information regarding the status of the two species during World War II, but when regular visiting was resumed in 1946 Herring Gulls were found to be in the majority, causing Goddard to remark that 'this reverses the state of affairs which has prevailed for the past twenty years' (Goddard, 1946). This majority was not as marked the next season (Goddard, 1947), and by 1949 there were approximately equal numbers of each (Watt, 1949).

It is almost impossible to find any information concerning these species throughout the 1950s, but in 1951 though Herring Gulls were the dominant Gulls on the outer group (Watt, 1951a) Watt privately considered the Lesser Black-backed Gulls were now slightly more numerous and gave the proportions as 60:40 (Watt, 1951b). However when the ringing totals of the 2,285 Herring and Lesser Black-backed Gulls ringed in this decade are considered, 98% were Lesser Black-backed Gulls, so it would appear that by the late 1950s they were once again the dominant species.

This predominance has continued into the 21st century, though with some variations. For Operation Seafarer (1969/70) and The Seabird Colony Count (1985/87), the two national seabird surveys up to 1998, a ratio of Herring Gulls to Lesser Black-backed Gulls of 1: 4 was assumed. In 1994 rough counts on both island groups suggested that the population split was 2:1 in favour of the Lesser Black-backed Gulls (Walton, 1995), while similar estimates in the 1998, 1999 and 2000 seasons suggested that this ratio was unchanged (Walton and Maher, 1999; Walton, 2000; Harvey and Walton, 2001). The first complete census of the individual species in 2002 gave equal numbers of each (Steel, 2004), and by 2004 Herring Gulls had once again become dominant (Steel, 2005). There was a slight drop in the number of Herring Gulls in 2006 (Steel, 2007) but a 12% increase in 2007.

Total Numbers

Throughout the 19th century the Lesser Black-backed Gull was said to breed 'abundantly' (Hancock, 1874), and during the final twenty-five years and into the 20th century it was described as being the most plentiful species on the islands ('D', 1881; Morres, 1896; Fortune, 1913a). No actual figures are ever given so it is interesting to consider the number of eggs that were deliberately gathered. Barclay (1899) quotes a figure of 1,800 to 24 May for 1889 and in the 1891 season 3,000+ were taken in May (Paynter, 1892). If it is assumed that if the eggs are continuously collected each pair will lay up to twelve eggs (Cott, 1951) then these totals approximate to 150 and 250 pairs respectively. These figures do not seem particularly high, but it is probable that they only refer to the inner group and Brownsman, with no account being taken of the other islands, especially on the outer group which held the bulk of the population.

Miller (1911-1914) recorded the number of eggs collected on Brownsman throughout the 1913 and 1914 seasons. In 1913 a total of 894 eggs were taken which had fallen to 620 in 1914 and if the same conversion factor given previously is used these totals correspond to seventy-five and fifty-two pairs respectively on that island. However in an undated letter written to *Country Life* after the 1914 season, he comments that there were 'never less than 20 pairs of Herring and 2,000 or more (probably pairs) of Lesser Black-backed Gulls' on the outer group (Miller, *ca* 1914). This is a particularly interesting and important estimate and is also in line with an estimation by Graham who considered there to be around 6,000 breeding pairs of Lesser Black-backed and Herring Gulls in 1938 (Graham, pers. comm., 2000).

The only other attempts to estimate the total numbers of Herring and Lesser Black-backed Gulls were both in the early 1950s. In 1951, Watt received a request from H Cott of Cambridge University for information regarding the number of gulls' eggs gathered that year (Cott, 1951). Table 1 summarises the data obtained from two of the Watchers and a local boatman.

Table 1 Average number of eggs and gulls per season on selected Farne Islands.

Island	The Wideopens	Brownsman and Staple	The Wamses	Roddam and Green	The Harcars	Total
Eggs/season (avg)	2,950	600	3,500	200	1,900	**9,150**
Gulls/season (avg)	246	50	292	17	158	**763**

The conversion factor of twelve eggs/nest was supplied by Cott. Whilst this is interesting it should not be considered as accurate since Cott does not indicate how he arrived at the factor and furthermore eggs would also have been taken by other fishermen, and no account is taken of the Longstone complex, especially Northern Hares.

A further estimate of 200 pairs of the two species was given by Watt for the 1953 season (Watt, 1953); though this may be the number of gulls that actually fledged young, no count was ever made so this too is suspect.

Perhaps the best evidence as to the population trend of these species from the mid 1950s to the mid 1960s comes from the numbers of young ringed each season. From 1956 to 1960 an average of 296 pulli were marked each year, which rose to 652 per year in the second five year period. Though this might be a reflection of the intensity of ringing, it does suggest that the population was increasing during this time. It is also of interest to note that over this same interval the number of Herring Gulls ringed annually rose from an average of seven per year to sixty-eight per year from 1961 to 1965.

The passing of The Wild Birds (Farne Islands Egg Sanctuary) Order 1964 in July 1964 (Hickling, 1965) had a profound effect on the Herring and Lesser Black-backed Gull population in 1965. Initially there was confusion regarding their status and the fishermen and boatmen were forbidden to gather any eggs – though these two species were in fact exempt (Colling, 1965) – and the Watchers, especially those on Brownsman, showed reluctance too, so thus very few eggs were taken that season (Hickling, 1966a) which resulted in the gull numbers escalating. Though measures were reintroduced in succeeding years it seemed impossible to regain control of the population and in 1970 740 nests were destroyed on the East Wideopens alone (Hickling and Hawkey, 1972). At the first count in 1972 there were found to be 2,776 clutches (Hawkey and Hickling, 1972).

Figure 1 shows the Herring and Lesser black-backed gull population from 1972 to 2007. The 90% increase from 1972 to a maximum of 5,284 breeding pairs in 1974 made it obvious that a more rigorous method of control was essential. This was implemented in the 1975 breeding season, and was so successful that in a space of six seasons the numbers had dropped to approximately 1,200 pairs. Since then they have fluctuated between 1,389 and 820 pairs with an average of around 1,100 breeding pairs per year.

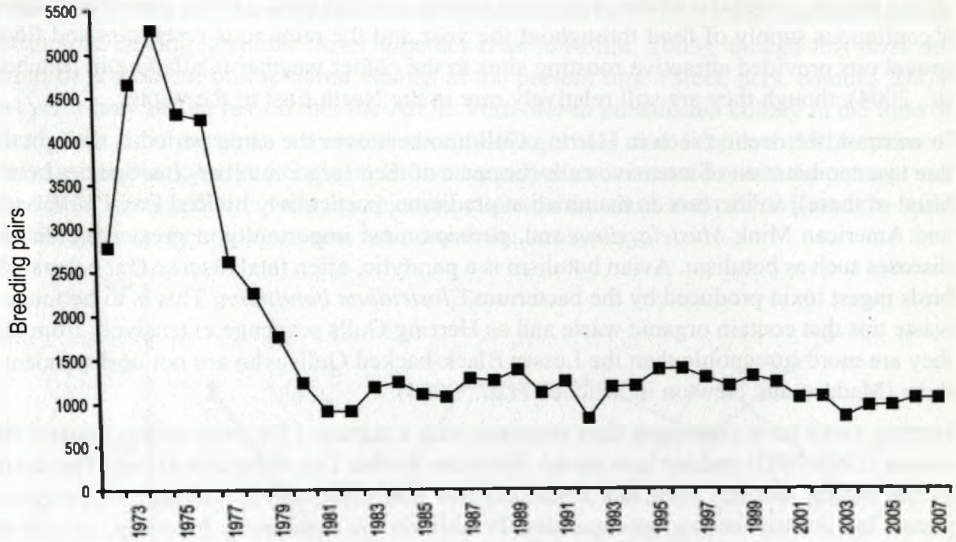

Figure 1 The total number of breeding pairs of Lesser Black-backed and Herring Gulls on the Farne Islands 1972-2007.

National Counts

There have been three major seabird surveys within the last forty years, Operation Seafarer (1969-1970), The Seabird Colony Register (SCR) (1985-1987) and Seabird 2000 (1998-2002), and Table 2 gives the number of breeding pairs of Lesser Black-backed and Herring Gulls along with the total number of these species in coastal colonies for Britain and Ireland.

Table 2 Survey counts for Lesser Black-backed and Herring Gulls (breeding pairs).

National Survey	Operation Seafarer 1969-1970	Seabird Colony Register 1985-1987	Seabird 2000 1998-2002
Lesser Black-backed	50,035	64,417	91,323
Herring Gulls	343,586	177,065	147,114
Total	**393,628**	**241,482**	**238,114**

In common with most seabirds, the increased protective legislation and reduced exploitation caused a national increase throughout the first half of the 20th century such that by Operation Seafarer there were *ca* 50,000 breeding pairs of Lesser Black-backed Gulls and about seven times that number of Herring Gulls. However by the time of the SCR (1985-1987), Lesser Black-backed Gull numbers had increased by 29% while those for Herring Gull had seen a 48% decline.

Unlike Herring Gulls, Lesser Black-backed Gulls are migratory, and overwinter on the Atlantic coasts of Iberia and North Africa, and migration together with its attendant risks had helped to control their population. From the 1960s however many more wintered in Britain because of increased feeding opportunities, particularly further south. This was due to the development of landfill sites containing an abundance of edible garbage and the expansion of the fishing industry with the increased availability of discarded fish and offal.

These factors, coupled with the increase in sewage outfalls from a rising population, ensured a continuous supply of food throughout the year and the numerous reservoirs and flooded gravel pits provided attractive roosting sites in the colder weather (Calladine in Mitchell *et al.*, 2004), though they are still relatively rare in the North East in the winter.

In contrast, the decline seen in Herring Gull numbers over the same period is thought to be due to a combination of intensive culls (because of their larger numbers this species bore the brunt of these), an increase in mammalian predation, particularly by Red Fox *Vulpes vulpes* and American Mink *Mustela vison* and, perhaps most importantly, a greater incidence of diseases such as botulism. Avian botulism is a paralytic, often fatal disease that occurs when birds ingest toxin produced by the bacterium *Clostridium botulinum*. This is to be found on waste tips that contain organic waste and as Herring Gulls scavenge extensively from these they are more susceptible than the Lesser Black-backed Gulls who are not as dependant on them (Madden and Newton in Mitchell *et al.*, 2004).

Herring Gulls have continued their decrease with a further 17% drop to the Seabird 2000 census (1998-2002) and are now on the European Amber List of species at risk. The decline in the fishing industry with less discarded fish and offal, and the closure of processing plants, has limited feeding opportunities. In addition the trend away from the use of waste tips for disposal of rubbish and the banning of raw sewage discharge into the sea have had a further impact on food supply and thus breeding success. However the restrictions imposed by the EU Common Fisheries Policy that became more severe from 2000 are too recent to have played a part in the decline (Madden and Newton in Mitchell *et al.*, 2004).

It is interesting that the Lesser Black-backed Gull population increased by 42% between the SCR count and Seabird 2000, despite being affected by the same factors as the Herring Gull and therefore shows a continued upward trend since the 1960s. When considering the opposing trends of these two species, the following facts may help to clarify the situation. From the Farne Island information it would appear that in breeding terms they compete for nesting sites and therefore a decrease in the number of Herring Gulls could lead to an increased presence on the breeding grounds of Lesser Black-backed Gulls. In the past there have been changes in the relative numbers with at least one change in dominance clearly recorded on the islands (see historical information). The changing wintering behaviour of Lesser Black-backed Gulls in beginning to winter further north may have increased its winter survival ability by spreading the wintering population. The trend to begin nesting inland and particularly in towns and cities could help to push the overall population up or spread the population over a wider geographical area, thus removing birds from the areas covered by the Seabird surveys. This could account for some of the decrease in Herring Gulls in the three national counts shown in Table 2. However recent studies in some cities show significant dominance of Lesser Black-backed over Herring Gull (Rock, 2005).

Figure 2 shows the individual counts since 2002 for the Farnes, suggesting that the population at present has about equal numbers of pairs but there is no obvious trend and the data set is still very small. There have recently however been some regional declines in Lesser Black-backed Gulls and there is a suggestion that increases in some areas have halted or perhaps reversed and Lesser Black-backed Gulls are now also on the Amber List.

Problems associated with the Lesser Black-backed and Herring Gulls

Territory Size

These large gulls nest relatively early, before many breeding species especially the terns have returned, and so can take space from the other nesting birds. Work on Coquet Island

has shown that they have an influence out of proportion to their colony size and will squeeze other ground nesting seabirds closer together (Noble-Rollin, 2003), though this does not seem to be a problem on the Farne Islands at the present time (Steel, pers. comm., 2007). However it may be the reason that the Arctic Tern *Sterna paradisaea* colony in the time of Miller, when there were an estimated seventy-five (1913) and fifty-two (1914) pairs of mainly Lesser Black-backed Gulls on Brownsman, was concentrated round the cottage, and in the 1960s in conjunction with the vegetation loss on the south end of that island the build up of the gull numbers in this same area drove the terns away.

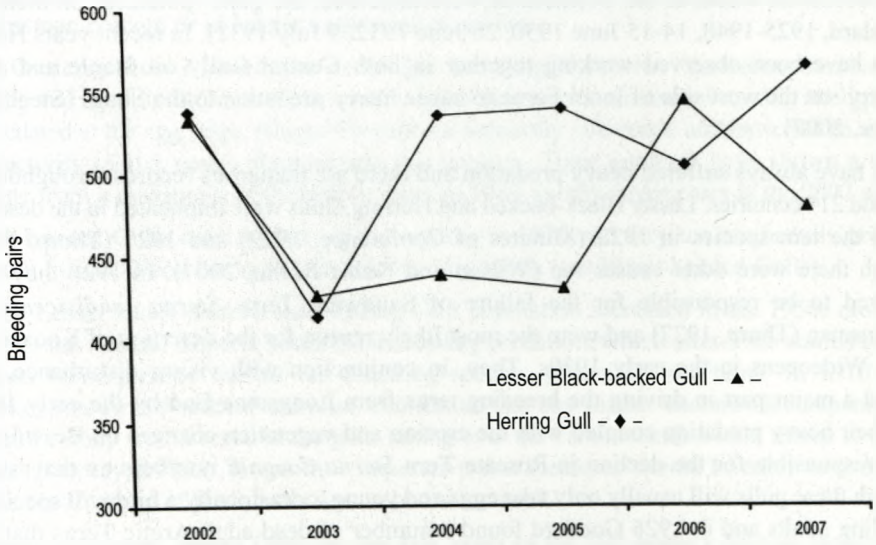

Figure 2 Individual Lesser Black-backed and Herring Gull totals.

Erosion

Herring and Lesser Black-backed Gulls tear up vegetation to make their nests and cause damage by trampling. Throughout the 1960s there was concern regarding the increasing soil erosion, particularly on the south end of Brownsman and the Wideopens, both of which areas showed a corresponding rise in the gull numbers. Though Puffins *Fratercula arctica*, Rabbits *Oryctolagus cuniculus* and Shags *Phalacrocorax aristotelis* usually cause more erosion, it is interesting that despite measures to counteract this, the situation only started to improve from 1975 after the gull population declined.

Predation of the other breeding species

The major problem associated with both these gulls is that they will predate eggs, young and sometimes the adults of the other breeding birds. The earliest accounts date from the 19th century with Selby (1833) being the first to document particularly the Herring Gulls as devouring the eggs of other 'seafowl' on the islands, with two or three who also 'plundered' the nests of the other gulls as well. Cormorants *Phalacrocorax carbo* (Gurney, 1878), terns and Eider ducks *Somateria mollissima* were all targeted (Anon, 1893; Morres, 1896; Bolam, 1901), though the intensive egg collecting that was taking place would to some extent have masked the gull predation. By the end of the century the predation was so bad that many authors wrote of the need to restrict the numbers of breeding large gulls (Morres, 1896; Bolam, 1901; Blathwayt, 1903).

The problem has continued throughout the 20th century to the present time with many of the breeding species suffering. In 1914 Miller could only find twenty-four Cormorant's nests on North Wamses which contained fifty-three young and twelve eggs and which he considered to be the total hatch that season since all the other chicks and eggs had been destroyed (Miller, 1911-1914, 10 August). He also found the few Herring Gulls to be far more aggressive overall than all Lesser Black-backed Gulls on the outer group (Miller *ca* 1914). During the early 1930s the Cormorant colony on Little Harcar was especially at risk from the Lesser Black-backed Gulls breeding on the adjoining Big Harcar and Goddard documented at least three occasions when, as the Cormorants were disturbed, the gulls 'pounced' on their eggs (Goddard, 1925-1948, 14-15 June 1930, 26 June 1932, 9 July 1932). In recent years Herring Gulls have been observed working together in both Central Gully on Staple and at the 'Quarry' on the west side of Inner Farne to cause heavy predation to the Shags (Steel, pers. comm., 2007).

Terns have always suffered heavy predation and there are numerous records throughout the 20th and 21st centuries. Lesser Black-backed and Herring Gulls were implicated in the desertion of all the tern species in 1922 (Minutes of Conference, 1923) and 1927 (Thorp, 1928), though there were other causes too (Wilson and Noble-Rollin, 2007). In 1926 they were believed to be responsible for the failure of Sandwich Terns *Sterna sandivicensis* on Brownsman (Thorp, 1927) and were the most likely reason for the desertion of Knoxes and West Wideopens in the early 1930s. They, in conjunction with visitor disturbance, also played a major part in driving the breeding terns from Longstone End by the early 1960s and their heavy predation coupled with the erosion and vegetation changes on Brownsman were responsible for the decline in Roseate Tern *Sterna dougalli* numbers on that island. Though these gulls will usually only take eggs and young, occasionally a bird will specialise in killing adults and in 1926 Goddard found a number of dead adult Arctic Terns that had been killed by a Lesser Black-backed Gull (Goddard, 1925-1948, June 18-23).

After the reduction in the Lesser Black-backed and Herring Gull numbers from 1975 the Arctic Tern population increased to a maximum in 1983; however this was followed by a long decline and by the start of the 21st century there were approximately equal numbers of both Arctic Terns and these large gulls. This resulted in extensive predation of both eggs and young, especially on Brownsman where in 2000 there was an average productivity of 0.5/pair compared to 1.2/pair on Inner Farne (Harvey and Walton, 2001). In 2001 both islands suffered with only three young fledging from 246 nesting attempts on Brownsman and the productivity on Inner Farne dropping to 0.5/pair (Harvey, 2002). Proactive wardening and the employment of a number of strategies have done much to improve the situation, but nevertheless in 2006 the Brownsman north beach colony of *ca* 150 nests was wiped out by one particular Lesser Black-backed Gull individual (Steel, pers. com., 2006).

The Auks, especially Guillemots *Uria aalge* and Puffins which breed in more accessible areas – the Guillemots on open cliff ledges and the Puffins in burrows – are both species that can be targeted by the Lesser Black-backed and Herring Gulls. As with the other breeding sea birds, the egg collection that took place for much of the 19th century would have tended to mask the heavy predation from these large gulls, and may have been one of the factors that restricted the Guillemot population to the Pinnacles. The dinoflagellate eruption that caused the 'Red Tide' episode in 1968 did not have a direct effect on the Auks, but the death of large numbers of Shags led to increased predation on the Guillemots with the result that few young were reared (Hickling, 1969).

In 1929 Goddard found heaps of dead Puffins, each with a hole through their breast, that were all said to have been killed by a Lesser Black-backed Gull (Goddard, 1925-1948, 30 June), and every season these gulls are found round the Puffin burrows predating the fish brought back. It was estimated in 1970 that 25% of fish loads were lost or partially lost (Hickling and Hawkey, 1972).

Miller was the first to specifically document the predation of Eiders. He noted that each spring they destroyed a relatively high number of nests on the outer group with many ducks deserting when their eggs were due to hatch (Miller, 1911-1914). Today many Eiders choose nest sites that offer some protection, either close to buildings such as round the Brownsman cottage or in longer vegetation or nettles.

Both Oystercatchers *Haematopus ostralegus* and Ringed Plovers *Charadrius hiaticula* are targets, and though the former can usually hold their own a number of nesting attempts can be predated at the egg stage. Ringed Plovers are especially vulnerable and have had an average productivity of 0.5 young fledged/nest this century. Their numbers have shown a steady decline from a maximum of thirty-four pairs in 1983 to only seven pairs in the 2007 season.

Black-headed Gulls only started regular nesting in 1972 and they too are heavily predated by both Lesser Black-backed Gulls and Herring Gulls (see Black-headed Gulls).

As the Lesser Black-backed and Herring Gull population increased in the 1950s more and more of the Annual Reports noted the increasing predation, which after 1965 started to have serious consequences for all the breeding species, especially the terns. In 1970 Peter Hawkey, the first Warden/Naturalist, considered that any further uncontrolled expansion of the gull colony would result in the gulls taking over the Farne Islands within fifteen to twenty years (Hawkey, 1970a). It was thus imperative that measures should be taken to avoid this if the biodiversity of the islands was to be maintained.

Finally an account dating from the last few years of the 19th century records Jackdaws as flying over from the mainland and taking the eggs of the Lesser Black-backed and Herring Gulls as well as other species such as terns (Kearton, 1898).

Methods of Control on the Farne Islands

Egg Collecting

Gulls' eggs have most likely been gathered for centuries and possibly until the 19th century had some effect in keeping their numbers in check. However, despite the continuous intensive egg collecting over much of that time, gull numbers were increasing, especially on the outer group. There are probably a number of reasons for this:

(a) The public and the fishermen were indiscriminate in the collecting; the eggs of all species were taken, allowing some gulls' eggs to be overlooked though Thorp employed Watchers from around 1840 to try to protect the breeding species (Wilson and Noble-Rollin, 2006; 2007). Thus for at least twenty years while there was some control over egg collecting, Lesser Black-backed and Herring Gulls were also protected.

(b) After the end of June a number of nests were deliberately left to hatch so that the fishermen would have young birds to show to the visitors in August when the other seabirds had left.

After Thorp's death in 1862 the intensive collecting and other acts of vandalism resumed until the situation had deteriorated to such an extent that the survival of many species on the Farne Islands was in doubt (Pigott, 1888). The Farne Islands Association was founded

around 1881 to try to give some protection to the breeding seabirds, and though initially egg collecting continued, in 1888 Hugh Barclay assumed control and employed paid Watchers to try to prevent this. In the 1889 season he ordered that all the gulls' eggs should be collected three times a week until 24 May and the 1,800 eggs gathered were then given to the local fishermen. After this date any eggs were left to be incubated (Barclay, 1889). This practice was continued in future seasons, with 3,000+ eggs being distributed in 1891 (Paynter, 1892). There was no effect on the population and Lesser Black-backed and Herring Gull numbers continued to increase. By 1899 the Watchers were instructed to take as many eggs as possible from the inner group where most of the terns bred, but this was not implemented on the outer group where the bulk of these young large gulls were reared (Bolam, 1901).

The Lesser Black-backed and Herring Gulls' eggs continued to be gathered throughout the 20th century and by the 1930s most were being collected; the Watchers were expected to take all they could find, not only from the island on which they were based, but from the surrounding ones also. Local fishermen collected from the Wamses, the Harcars and later the Wideopens while the light keepers were responsible for the Longstone complex (Hickling, 1962a). However collecting usually stopped at the end of June or early July, so in practice a number of young fledged each year and by 1965 Hickling considered that at least 1,000 young were reared each year (Hickling, 1965b).

The implementation of The Wild Birds (Farne Islands Egg Sanctuary) Order 1964 caused problems in 1965. The order made it an offence to take the eggs of any species of wild bird and was designed to stop the ever increasing problem of egg stealing by the visitors and local fishermen who made little distinction between gulls' eggs and those of other species. Because of confusion regarding their status, only a few eggs were gathered by the Watchers, particularly on the inner group (with the permission of the Farne Islands Local Committee) and by the close of the 1965 season the gull population had escalated.

Following advice from the Nature Conservancy Council (Natural England), in succeeding years licences were issued to approved individuals to collect both Lesser Black-backed and Herring Gulls' eggs on the condition that they then destroyed any young that had hatched. Not surprisingly this proved to be unsatisfactory; there was no market for the eggs after mid-June, so collecting ceased allowing many birds to relay; furthermore there was a very considerable reluctance to kill the young that hatched (Hickling, 1967; Hawkey *et al.*, 1983).

For many years there was an 'open access' policy regarding Big Harcar with boatmen able to take eggs from the large gulls. However as other breeding seabirds, especially Fulmars, gradually colonized the island the human disturbance caused the failure of most of the nesting attempts. This together with health and safety concerns led to the closure of the island in 2007.

All the egg collecting today is now carried out by the wardens and helps to keep the Lesser Black-backed and Herring Gull population at around 1,100 breeding pairs each season.

Pricking/injecting, painting and hard-boiling

All of these strategies have been advocated or carried out on the Farne Islands at some time. Pricking the Lesser Black-backed and Herring Gulls eggs was first advocated by Fortune around 1913 (Fortune, 1913a), and by Watt in 1951 (Watt, 1951c), though there is no evidence that it was ever carried out. It was also considered by Hawkey in 1970 (Hawkey, 1970a). Eggs were however both injected with formalin and painted with an oil/formalin and dye mixture (Hawkey *et al.*, 1983; Hawkey, 1970b), with 3,000 nests being treated in 1971 (Galloway *et al.*, 1972).

Hard-boiling of eggs was first trialed in the 2001 season and continued in 2002. The eggs were removed from the nest, hard-boiled and replaced in the hope that the gulls would not relay. Despite all the hard work involved, it was considered to be successful (Harvey, pers. comm., 2002; Wilson and Noble-Rollin, 2007).

Destroying nests

The raking out of gulls' nests was a suggestion put to the Farne Islands Committee in 1965, but there was reluctance to do this since the eggs would be lost and these were considered to be potentially valuable (Hickling, 1965b). This option was also put forward by Hawkey in 1970 but was never acted on as the gulls would only re-nest causing additional erosion (Hawkey, 1970a).

The use of chick shelters and canes

Both of these methods are used to try to prevent predation rather than to decrease the breeding Lesser Black-backed and Herring Gull population. Chick shelters have been in use on the Farne Islands for a number of years in an effort to try to prevent the waterlogging of young terns in wet weather and also to limit predation. Chick shelters together with the use of canes to protect eggs and young as well as the hard-boiling of the gulls' eggs were successful in enabling the productivity of the Arctic Terns to increase from 0.015/pair in 2001 to 0.73/pair on Brownsman in 2002.

The two above strategies used in conjunction with each other have since proved the most successful method to counteract predation.

Shooting

The indiscriminate shooting and vandalism that took place for much of the 19th century affected the populations of all the breeding species, and together with the constant egg stealing would have kept some check on the Lesser Black-backed and Herring Gull numbers. However this was all unauthorized and was not specifically aimed at controlling the gulls. The first documented instance of this was in 1927, when in this and succeeding seasons the Watchers were issued with an RSA air rifle for use against the 'worst offenders'. This does seem to have been used (Thorp, 1928; 1930) and there are photographs showing dead gulls being hung up as a warning to other individuals (Graham, pers. comm., 2000). In private correspondence in 1951 Watt stated the intention to shoot in the next season (Watt, 1951c). Usually 'rogue gulls' that were a particular danger to other breeding birds were targeted with around 6-12 being shot each year (Watt, 1962a). In 1966 however, 160 adults were shot on the south east end of Brownsman in an attempt to relieve the pressure on the Campion *Silene uniflora* (Hickling, 1967). By 1971 shooting had been abandoned in favour of other methods of control although the 1983 Management Plan advocated this method of dealing with any large gull that caused particular damage (Hawkey *et al.*, 1983).

A relatively recent paper has shown that only a few Lesser Black-backed and Herring Gulls cause damage and if these are removed the predation drops significantly, though it does need to be repeated each year as new individuals learn the technique (Guillemette and Brousseau, 2001).

Culling

In 1928 a recommendation was made to the Committee of the Farne Islands Association that the Lesser Black-backed and Herring Gulls should be poisoned. This was rejected at the time as being too drastic (Thorp, 1929), but it was obvious by the end of the 1974 season

that the existing control methods were ineffective. Heavy predation was taking its toll on all the breeding seabirds and it was feared that if nothing was done, within a decade the Lesser Black-backed and Herring Gulls would have taken over the islands; there had already been a 90% increase in numbers within the three seasons from 1972-1974. It was clear that more severe measures were necessary to ensure the future populations of the other species on the islands. The decision was taken under licence from the Nature Conservancy Council to kill breeding adult gulls (Hawkey *et al.*, 1983) and by 1982 their population had been reduced to 912 breeding pairs.

The effect of the cull on the major breeding seabirds is seen in Figures 3, 4, 5, 6, 7 and 10.

On analysis there are three different responses to the changing numbers in Lesser Black-backed and Herring Gull numbers:

(a) Species that were in decline prior to the cull which showed an immediate short term increase and then declined, such as Sandwich, Common and Arctic Terns.

(b) Populations that were increasing slowly initially, and then from the early 1980s underwent a long term increase such as the auks, Shags, Fulmars, and Black-headed Gulls (see Figure 9 and Black-headed Gull section).

(c) Species on which the cull seemed to have little effect. These are Cormorants, Eiders, Roseate Terns and Kittiwakes (see Figure 7 and Kittiwake section).

Each of the above responses has been or will be discussed in more detail in the relevant papers (see Wilson and Noble-Rollin, 2006; 2007).

Systematic culling was ended around 1982 and since then egg collecting and shooting the occasional rogue gull have been sufficient to maintain the population of Lesser Black-backed and Herring Gulls at around 1,100 breeding pairs per year.

Lesser Black-backed and Herring Gulls on Coquet Island and the Farne Islands

Coquet Island lies around nineteen miles south of the Farne Islands and like them supports major colonies of breeding seabirds. These include Sandwich, Roseate, Common and Arctic Terns and Black-headed, Herring and Lesser Black-backed Gulls. Distribution maps have shown that on Coquet each species maintains a mutually exclusive area for breeding and there is concern that the large territory sizes of the Lesser Black-backed and Herring Gulls have caused a decrease in territory size for the other species, especially the terns. The Black-headed Gulls have encroached on the Common and Arctic Terns and the Roseate Terns now occupy areas near the lighthouse and on specially constructed terraces by the jetty (Noble-Rollin, 2003). The management of the large gulls has been directed at preventing them from establishing territories early in the season by the use of a number of disturbance strategies rather than more direct methods, with some apparent success (Morrison and Allcorn, 2006).

On the Farne Islands the situation regarding the Lesser Black-backed and Herring Gulls is very different to that on Coquet Island. The most obvious differences are that the gull numbers are very much higher and their colonies are dispersed over a number of islands. In a similar manner their target species too are often on a number of islands. There is still enough space so there is not the same problem with territory size as on Coquet.

While it might be possible on Inner Farne and Brownsman to use disturbance tactics to prevent the gulls from settling they would only move to other nearby islands to breed, with the resultant predation. Thus strategies on the Farne Islands have to aim at maintaining the total population of the gulls around the present level and to protect the breeding species, especially the terns, from as much predation as possible.

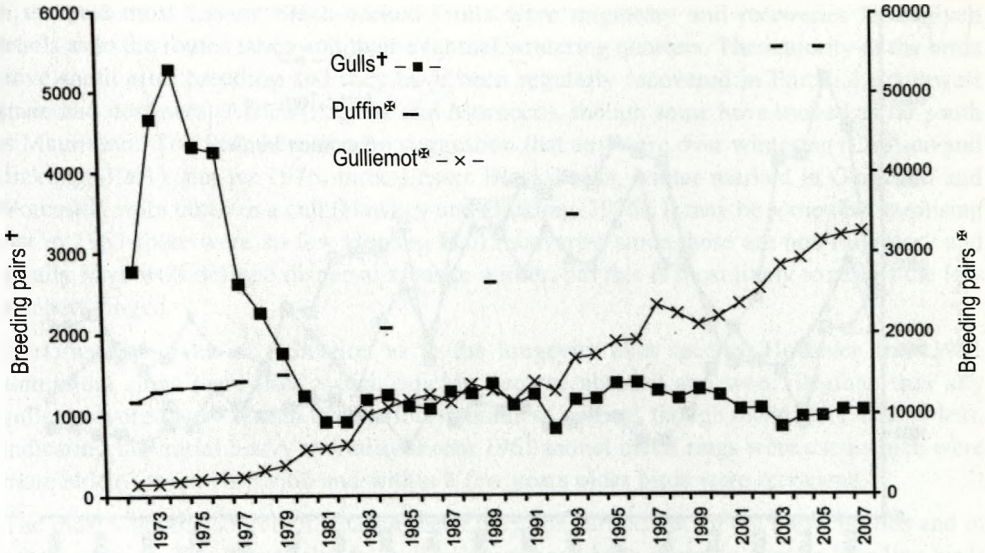

Figure 3 Lesser Black-backed and Herring Gulls, Guillemots and Puffins.

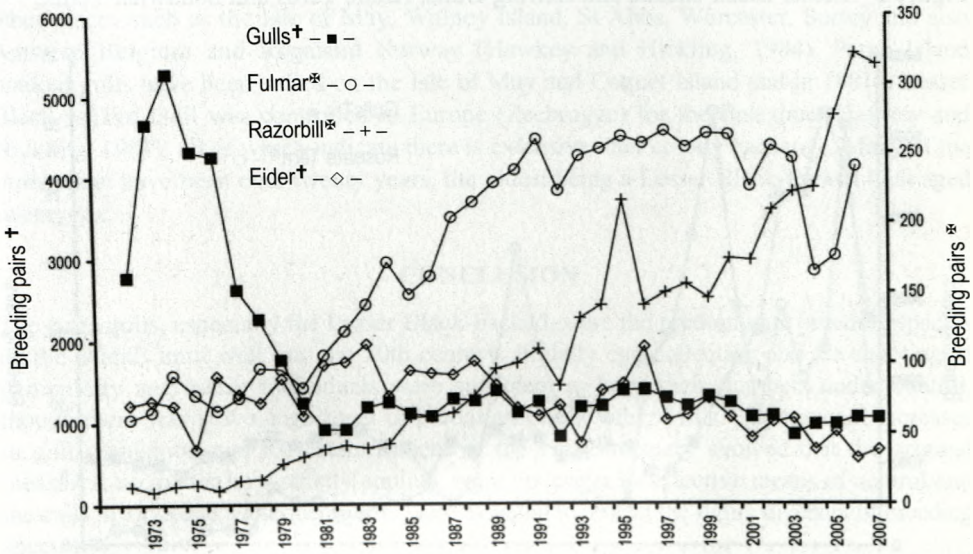

Figure 4 Lesser Black-backed and Herring Gulls, Fulmar, Razorbill and Eider.

Ringing to 1986

There is a somewhat chequered history of Lesser Black-backed and Herring Gull ringing on the islands. Initially they were the earliest species to be marked, and a letter in an undated edition of *Country Life* describes the finding of a Herring Gull in the Algarve carrying a white metal ring inscribed 'CL 28 London-H'. This was considered to be one of the birds ringed on the orders of E Hudson on the Farne Islands in June; this was prior to 1911 when Miller was on the islands (Hickling, *ca* 1983). The first Farne Islands record in British Birds is of a Lesser Black-backed Gull ringed in 1910 by Lord William Percy and recovered at Hartlepool in 1911 (Witherby, 1911). Edward Miller ringed at least 1,084 (1,000 Lesser

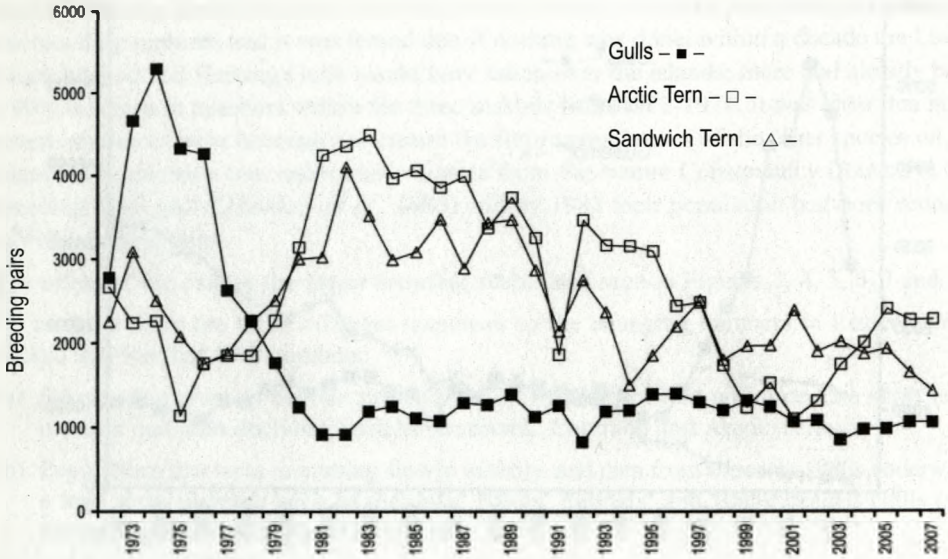

Figure 5 Lesser Black-backed and Herring Gulls, Arctic Terns and Sandwich Terns.

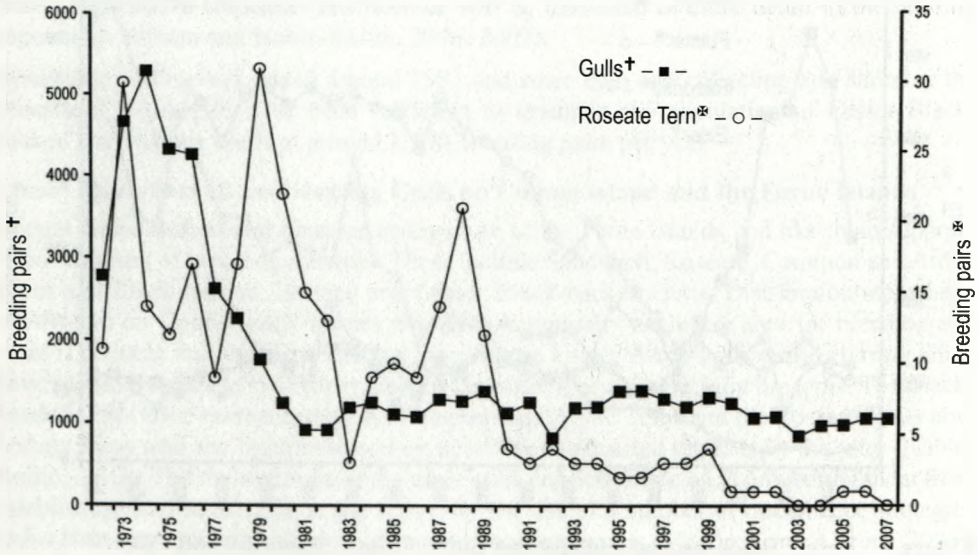

Figure 6 Lesser Black-backed and Herring Gulls and Roseate Terns.

Black-backed and eighty-four Herring Gulls) in 1914, of which forty-six were subsequently recovered (Miller, 1911-1914, August 6). Ringing was halted in 1967, though little had been done since 1965. At that time at least 6,950 birds had been marked (6,482 Lesser Black-backed and 468 Herring Gulls), with 270 (3.8%) being recovered, of which 92% were the former species. Some ringing was resumed in 1982 when it was decided to mark a few gulls annually to help in the reserve management (Hawkey and Hickling, 1983), though this only lasted until 1986 when ringing ceased altogether. Even when it was started again in 1996, no Lesser Black-backed and Herring Gulls were included.

In the past most Lesser Black-backed Gulls were migratory and recoveries have given details as to the routes taken and their eventual wintering quarters. The majority of the birds move south after breeding and they have been regularly recovered in Portugal, southwest Spain and northwest Africa (Algeria and Morocco), though some have moved as far south as Mauritania. To 1960 there was no suggestion that any were over wintering (Coulson and Hickling, 1961), but by 1976, three Lesser Black-backs, winter marked in Guildford and Worcester, were taken in a cull (Hawkey and Hickling, 1976). It may be somewhat surprising that to 1967 there were so few Herring Gull recoveries since these are non-migratory and usually have well defined dispersal areas in winter, but this is most likely to reflect the low numbers ringed.

Marking also gives an indication as to the longevity of a species. However until 1961 aluminium rings were used which quickly became abraded and were illegible: thus any gulls recovered were within twenty-four months of ringing, though many were usually less, indicating the initial heavy mortality. From 1961 monel metal rings were used which were more able to resist corrosion and within a few years older birds were recovered.

The most valuable source of data has been the culls carried out on the Farne Islands and in other colonies. The Farne Islands' gull colonies have been found to contain breeding birds (both Herring and Lesser Black-backed) ringed on the islands, and locally, as well as in other places such as the Isle of May, Walney Island, St Abbs, Worcester, Surrey and also Antwerp Belgium and Rogaland Norway (Hawkey and Hickling, 1984). Farne Island marked gulls have been culled on the Isle of May and Coquet Island and in 1981 a Lesser Black-backed Gull was controlled in Europe (Zeebrugge) for the first time (Hawkey and Hickling, 1981), all of which indicate there is extensive inter colony exchange. Many of the birds taken have been over twenty years, the oldest being a Lesser Black-backed Gull aged twenty-six.

CONCLUSION

The large gulls, especially the Lesser Black-backed, were the predominant breeding species on the islands until well into the 20th century. Initially egg collecting and the shooting of particularly aggressive individuals were sufficient to keep their numbers under control, though there was still a high level of predation on the other birds. The national increases in gull population and the establishment of the Egg Sanctuary showed that the original measures, no matter how strictly applied, were no longer an effective means of control and the culls in 1975 and subsequent years were essential to protect the future diversity of breeding species.

Controlling from 1975 achieved its aim of allowing the populations of other breeding species, especially the terns, to recover, but nevertheless despite the lower gull numbers over the last twenty-five years the tern population is once again in decline and has been for many years, and there is some evidence that Kittiwakes too are slowly decreasing (see Kittiwakes). In contrast the auk numbers have continued to rise and there is now a combined total of over 87,000 breeding pairs of Guillemots, Razorbills and Puffins. The most probable reason for the decline of the terns and Kittiwakes is a decrease in food supply caused by an increase in sea surface temperature especially in winter (Frederiksen *et al.*, 2004; see Kittiwakes). There is however an unproved suggestion that the relatively low Lesser Black-backed and Herring Gull population has led to the unrestricted increase of the auks, to the detriment of the surface breeding species. There is no doubt though that the culling in 1975

and subsequent years was essential to protect the other breeding species but the long term benefits of such methods are not so clear.

The 'amber' listing of both Herring and Lesser Black-backed Gulls has the potential to pose a future problem (especially, as is likely, the Herring Gull will soon become 'red' listed). This endangered status for two species that can have such a major impact on the diversity and population levels of the other breeding species is very worrying and will need careful and inventive management.

Kittiwake *Rissa tridactyla*

Historical records to the present day

The story is told that Bartholomew, a hermit on Inner Farne between 1150 and 1193, rebuked two men, Roger of Embleton and his nephew William, for throwing stones at young gulls. The gulls are not identified, but as they were apparently in nests on the cliffs, and Bartholomew was alerted by the 'clamour of the adults', they were likely to be Kittiwakes, and this is the earliest reference (Gardner-Medwin, 1985). There are no further records until the 17th and 18th centuries when Ray (Willughby, 1678) and Pennant (Hutchinson, 1778) each noted they were breeding. Both of these authors used the old name 'annet' and also listed 'tarrock' (immature Kittiwake) as a separate species.

All the numerous 19th century accounts place them on the ledges of the Pinnacles; some of the more important references are as follows: Selby (1826; in Tate, 1857), Hancock (1874) and 'D'(1881); in addition Selby (1826; in Tate, 1857) also found them on the ledges on Staple Island opposite the Pinnacles as did many of the later authors including Saunders (1866), Blathwayt (1903), Bolam (1912) and Bidwell (1882) who is the only one to note that a few were nesting near Skeney Scar, the small peninsula at the southerly tip of Staple Island.

Miller gives the first indication that Kittiwakes had extended their distribution, when in 1911 he recorded breeding round the south side of Staple and on the west cliff towards Skeney Scar (Miller, 1911-1914, 23 July). Exactly when Skeney Scar was colonized is not known, but it was some time after 1894 (Miller, 1911-1914, 6 June 1913); however by 1913 Miller recorded six breeding pairs (Miller, 1911-1914, 6 June). He also observed the build up of Kittiwakes on the south end of Brownsman; and though a nest was built in 1912, no eggs were ever laid (Miller, 1911-1914, 7 June). The first recorded successful breeding on that island was in 1913, when two young were hatched (Miller, 1911-1914, 7 July). In 1914 four nests were found, but were all destroyed by storms or high seas (Miller, 1911-1914, 11 June, 26 June). Inner Farne was the next island to be colonised, when at some stage after World War I Kittiwakes started to nest on the west cliff (Graham, pers. comm., 2000). Thus by 1925 they were breeding on Inner Farne, Staple including Skeney Scar, and Brownsman. Numbers gradually increased, but initially it was by expanding their area on these islands rather than by colonizing new ones.

By the late 1920s the numbers on the west cliff of Inner Farne had increased to around 300 breeding pairs and had reached the ledges opposite the Stack (Graham, pers. comm., 2000) and in 1932 Goddard noted Kittiwakes were nesting for the first time on the sides of the Stack and on the south cliff (Goddard, 1925-1948, 26 June). There is no further specific mention of Inner Farne until 1951 when the colony was reported to be extending north along the west cliff (Watt, 1951a), and in 1964 there was a slight extension on the southeast cliff (Hickling, 1965).

Miller (1911-1914, 23 July 1911) described the Kittiwakes on Staple Island as breeding on the south and part of the west sides of the island, as well as on Skeney Scar. The south part may have included Kittiwake Gully, for in 1925 Goddard noted that it was 'well stocked' (Goddard, 1925-1948, 15 June). (When the gully was first used and named is unknown, but this comment seems to comprise the first written record.) Kittiwakes first nested on the cliff opposite Skeney Scar in 1951 (Watt, 1951a), with an extension on the west face in 1959 (Hickling, 1960) and they moved into the north end and Central Gully on Staple in the mid 1960s (Hickling, *ca* 1983).

The colony that started on the southeast end of Brownsman in 1912 appeared to be flourishing by 1925 (Watt, 1951d) and continued to increase. At the end of World War II, Kittiwakes were also breeding on the south side of the island (Goddard, 1946) and a few were on the southwest side above the Gut west of the Flat (Goddard, 1925-1948, 25 June). During the 1950s and 1960s the northwest area was utilised (Hickling, 1958) as well as the north of Brownsman, and the centre overlooking Brownsman's Gut (Hickling, 1949-1986, 19 July 1968). Cottage Cliff just above the Brownsman Flat was colonised in 1987 (Steel, pers. comm., 2007).

West Wideopens was the first new island to be colonised in 1956 (Hickling, 1957) followed by East Wideopens in 1961 (Hickling, 1949-1986, 31 July), Megstone in 1964 (Hickling, 1965) and Roddam and Green in 1968 (Hickling, 1949-1986, 19 July). At first nesting on all these islands was spasmodic and it was not until 1972 and 1973 that regular breeding commenced. Big Harcar was colonized in 1972 and both North and South Wamses in 1981, though abortive attempts had been made on North Wamses in 1972 and South Wamses in 1969 and 1975. Today Kittiwakes are breeding on ten of the islands that are available at high water.

Evidence for numbers

Selby sometime in the mid 19th century, considered Kittiwakes to be 'in great numbers' (Selby in Tate, 1857) and Brown (1866) and Saunders (1866) who both visited in 1865, probably within a few days of each other in June, described them as being 'plentiful' (Brown) or 'in reasonable numbers (Saunders). However Booth (1881-1887) could only find a 'few' on the sides of the Pinnacles in 1867, though whether Kittiwakes were also on the island cliff ledges is not noted. Nevertheless such statements do emphasise how subjective such descriptions are.

The first evidence of any numbers came in 1881, when according to Gurney (1889-1890) there were sixty to seventy nests of which fifty-five were on the sides of the Pinnacles ('D', 1881), and by 1889 117 nests were counted with fifty-five on the Pinnacles (Gurney, 1889-1890). Bolam in July 1897 saw around 100-200, but whether these were nests or birds is not clear (Bolam, 1877-1933b). No further figures are available until the mid 20th century, but all the evidence suggests that the population continued to increase steadily. Fortune (1907) wrote 'one of the most pleasing results of the protection (provided by the Farne Islands Association) is the great increase in the number of ... Kittiwakes', and when describing the 1912 season he considered that 'Kittiwakes occupied practically every space available for them on the cliffs of the island and the pinnacles' (Fortune, 1912b). This by today's standards is no doubt an exaggeration, particularly since photographic evidence, admittedly from eight years earlier, does not show this (Pike, 1902), but nevertheless photographs taken in the late 1930s do show them relatively close together, especially in Kittiwake Gully, with around two pairs of Shags as the only other breeding species present (Graham, pers. comm.,

2006). This is in total contrast to the situation today with Guillemots as the dominant species and only a small number of Kittiwakes on the sides.

The first indication of the total population is from 1953 when there were estimated to be between 1,350 and 1,750 breeding pairs (Watt, 1953). This is only an approximation but it does provide a bench line for future counts. A national census of Kittiwakes in 1959 found around 1,750 pairs on the islands, and though the figures for Staple and Brownsman were almost the same as in 1953, the 65% rise on Inner Farne and the sporadic breeding on West Wideopens from 1956 indicated that the colony had increased.

Figure 7 shows the number of breeding pairs of Kittiwakes on the Farne Islands from 1971 to 2007. When this chart is studied it appears to be broken up into four sections; (i) 1971-1986, (ii) 1987-1997, (iii) 1998-2005 and (iv) 2006 onwards.

(i) 1971-1986: overall this period shows a steady build up in population culminating in the 35% increase in 1987. The 13% decline in 1972 is difficult to understand as general observations by the wardens did not support a change of such magnitude (Hawkey and Hickling, 1972); it may be that there were a higher than usual proportion of non breeding adults present.

(ii) 1987-1997: the colony continued to increase until 1990 when it reached a record 6,393 breeding pairs. After declines in 1991 and 1993 and 1994 the population then leveled out to an average of *ca* 6,000 pairs/season.

(iii) 1998-2005: the appalling weather throughout the 1998 season may well have played some part in the 18% drop seen at this time, especially since gales and rough seas destroyed some early nests and may have led some individuals to desert. Despite some initial large swings in numbers at the start of this period, from 2002-2005 the population stabilized to around 5,200 breeding pairs/season, a drop of 13% from the previous average.

(iv) 2006 and 2007: the 2006 season saw yet a further decline of 12%. However as Kittiwakes now seem to be breeding a month later than three decades ago, the cliff counts in the first three weeks of June may no longer accommodate this habit as 2006 nest building was still active over this period; thus total numbers were probably higher than counted (Steel, pers. comm., 2006), but this was not the case in 2007 with yet a further drop in numbers.

National counts

During the 20th century there have been five major censuses, either of or involving Kittiwakes. The first in 1959 was an enquiry organised by the BTO into the status of the species in Britain and Ireland with a follow up in 1979. Operation Seafarer (1969-1970), the Seabird Colony Register (1985-1987) and Seabird 2000 (1998-2002) were national surveys of all the breeding seabirds.

Table 3 shows the total number of breeding pairs of Kittiwakes for each count nationally, for England, Wales and the Isle of Man where the 1979 census was the most complete, and finally the corresponding figures for the Farne Islands.

These birds are highly colonial at their breeding sites on sea cliffs and stacks. They build conspicuous nests on narrow ledges and have a relatively synchronized breeding cycle. They thus appear to be an easy species to census.

The count unit is the Apparently Occupied Nest (AON), which is defined as a well built nest

capable of holding eggs or young at which at least one adult is present. At some colonies most nests are visible from cliff top vantage points and are easily counted. The main problem is with those colonies on off shore stacks, inaccessible islands or on long linear stretches of cliff. These have to be counted from the sea from an unstable boat and can cause problems. The recommended count period is from late May to mid June (Heubeck in Mitchell *et al.*, 2004).

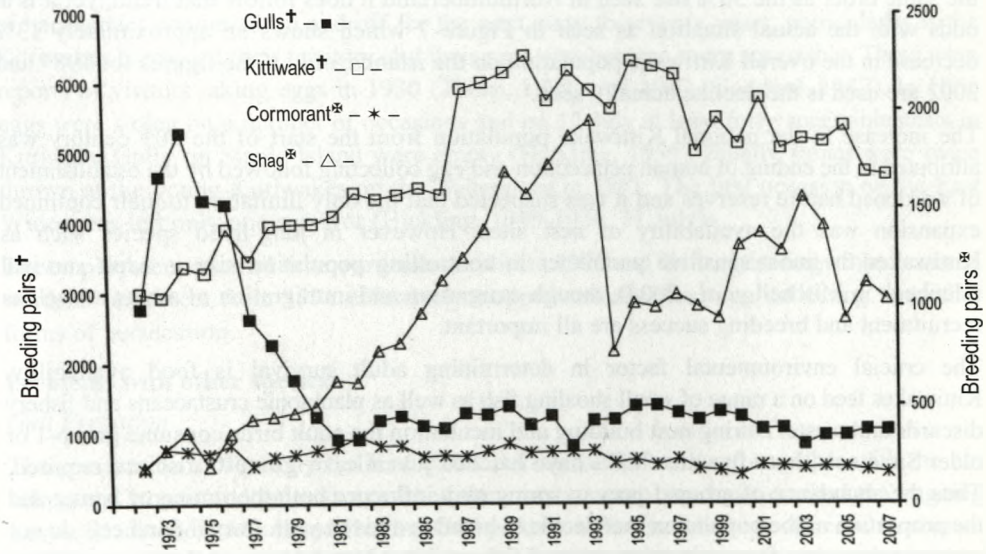

Figure 7 Lesser Black-backed and Herring Gulls, Kittiwakes, Cormorants and Shags.

The 1959 survey and Operation Seafarer indicated that there had been no halt to the increase that had been seen from the start of the 20th century. However while both the 1979 follow up and the Seabird Colony Register (SCR) census showed a continuation of the rise in the overall Kittiwake population, some areas, especially south and west Britain in 1979 and Caithness and Orkney by the time of the SCR, had declined. In addition regional coverage, especially of remote colonies, was more comprehensive for the later survey; it is thus highly probable that Operation Seafarer had underestimated the total population (Heubeck in Mitchell *et al.*, 2004).

Table 3 Survey counts for Kittiwakes (breeding pairs).

National Survey	1959	Operation Seafarer 1969-1970	1979	Seabird Colony Register 1985-1987	Seabird 2000 1998-2002
Britain and Ireland	**170,000 - 180,000**	**447,967**	-	**539,645**	**415,995**
England Wales and I.O.M.	**37,000**	**57,467**	**113,000**	**136,000**	**84,622**
Farne Islands	**1,752**	**2,244**	**3,968**	**4,929**	**5,292**

The figures for the Farne Islands can be seen to mirror the national trends, particularly for the expansion between Operation Seafarer and the SCR, which is of the same order of the steep increase that occurred from the Moray Firth to the Isle of Wight where nest counts had almost doubled (Lloyd *et al.*, 1991). However the information in Table 3 gives a misleading view of the change between the SCR and Seabird 2000. The figures quoted in both cases are an average over all the seasons of the census and indicate a 7% increase, and though not of the same order as the 30% rise seen in Northumberland it does follow that trend, yet it is at odds with the actual situation as seen in Figure 7 which shows an approximately 13% decrease in the overall Kittiwake population on the islands; only if the figures for 1987 and 2002 are used is the decline actually seen.

The increase in the national Kittiwake population from the start of the 20th century was attributed to the ending of human persecution and egg collecting followed by the establishment of wardened nature reserves and it was suspected that the only limitation to their continued expansion was the availability of nest sites. However in long-lived species such as Kittiwakes the most sensitive parameter in controlling population size is adult survival (Heubeck in Mitchell *et al.*, 2004), though emigration and immigration of adults as well as recruitment and breeding success are all important.

The crucial environmental factor in determining adult survival is food availability. Kittiwakes feed on a range of small shoaling fish as well as planktonic crustaceans and fishery discards and waste. During nest building and incubation the adult birds consume group-1 or older Sand eels, but after the chicks have hatched juvenile, or group-0, fish are required. Thus the abundance of group-1 prey in spring may influence both the timing of laying and the proportion of the population that decide to breed in a given year. Larval Sand eels do not metamorphose into free-swimming group-0 fish until late May or June, so the timing of their appearance and availability as well as abundance and nutritional quality is important for the survival of the chicks and possibly of the adults after breeding (Heubeck in Mitchell *et al.*, 2004).

Human persecution and egg collecting

In common with all other breeding birds Kittiwakes suffered from the vandalism that was prevalent during the 19th century. Booth (1881-1887) writes; 'none of our birds have been so horribly persecuted as the unfortunate Kittiwake'. Newly fledged young were in great demand as their barred wings were a fashionable millinery adornment (Holloway, 1996). Each year parties would steam past the cliff ledges indiscriminately shooting all the birds they could see (Norman, 1884). Kittiwake eggs would also have been taken too, but not as assiduously as those of the more accessible species though Nelson (1887) describes how eggs on the Pinnacle ledges could be reached by means of a net on the end of a pole. The persecution was so intense that the survival of the islands as a seabird colony was in doubt (Pigott, 1888).

The Wild Birds Act of 1880 granted some protection to the end of July, and the Farne Islands Association was established in the early 1880s to uphold the Act on the islands. Initially however little altered, the eggs were still collected in their thousands (Fox, 1884-1885) and as soon as 1 August arrived the shooting recommenced. In 1888 under Hugh Barclay, a Norfolk banker, stricter measures were enforced, though he did allow Her Majesty's Office of Works to collect a number of young birds including a Kittiwake to be taken to St James Park in London, where not surprisingly all except the Cormorants died (Barclay, 1889). Barclay's actions in enforcing the 1880 Act together with the extension of the close season

to 31 August in 1890 allowed all species to recover to some extent. Unfortunately on 1 September the shooting parties resumed. Pike (1902) provides a graphic description; 'the wounded birds are captured; their wings are then cut off, and the birds are thrown into the sea'. Nevertheless from 1890 fewer and fewer parties arrived in steamers and this form of persecution is not recorded again.

Though the shooting had stopped by the end of the century, egg collecting and other forms of harassment continued on and off for the next sixty to seventy years, particularly as the Kittiwakes expanded their territory and their nest sites became more accessible. There were reports of visitors taking eggs in 1930 (Thorp, 1931) and 1947 (Goddard, 1947). In 1958 eggs were stolen on a number of occasions and on 17 July at least forty accessible nests in Kittiwake Gully on Staple Island were empty (Hickling, 1959). Finally stones were twice thrown at the young Kittiwakes on the Wideopens in 1961. The first occasion on the East Wideopens left only one survivor (Hickling, 1949-1986, 31 July).

The employment of a full time warden/naturalist in 1970 and the lengthening of the seasonal wardens' contracts from 1971 effectively stopped unauthorized egg collecting and other forms of persecution.

Problems with other species

Gull Predation

The persecution suffered by the Kittiwakes during the 19th century, together with the not infrequent storms and gales that washed their nests away, may have masked the ongoing Lesser Black-backed Gull and Herring Gull predation that must have occurred each season. Goddard was the first to document this specifically when he reported that many eggs had been destroyed by gulls, with Hall (a Watcher) noting that there were at least thirty empty nests on Staple (Goddard, 1925-1948, 25 May 1946). In 1972 a few pairs of Kittiwakes attempted to establish a new colony on North Wamses, but the eggs were all predated (Hawkey and Hickling, 1972) and it was not until 1981 after the Lesser Black-backed Gull and Herring Gull numbers had dropped substantially that the island was successfully colonised (Hawkey and Hickling, 1981).

Figure 7 also shows the effect of the controlling of the two species of large gulls from 1975. It is particularly interesting as despite their known predation the only difference seen in the Kittiwake population is that from 1978 their numbers rose steadily without the erratic swings seen previously. The most noticeable change does not take place until 1987 when there was a 35% increase. The reason for this is difficult to explain, but it may be related to the disruption in the Sand eel stocks around Shetland and the consequent movement of the adult birds to other sites.

Most recently, though, storms and food shortages have probably been the main reasons for the poor productivity, and a contributory factor has been the continuous predation, especially in 2006, when East Wideopens, West Wideopens and Central Gully on Staple all produced lower productivity than expected (Steel, pers. comm., 2006).

Shags and Guillemots

The increase in the Shag and Guillemot populations during the 20th century has displaced Kittiwakes from some of their traditional nesting areas. This can be seen as far back as the late 1930s when a photograph of Kittiwake Gully shows at least two pairs of Shags present (Graham, pers. comm., 2006) and was then documented by Watt in 1949 (Hickling

1949-1986, 9 June). The encroachment continued with comments in the 1964 and 1968 annual reports (Hickling, 1965a; 1969) but the two 'Red Tide' episodes of 1968 and 1975 which had such a devastating effect on the Shags halted their expansion, and it was Guillemots and not Kittiwakes that moved into the vacant areas, especially in Kittiwake Gully. A photograph taken in 1967 or 1968 on which there are at least three Guillemots may be the first evidence of their presence (Weatherill, pers. comm., 2007). By 1978 Guillemots and not Kittiwakes were the dominant species in Kittiwake Gully (Hawkey and Hickling, 1979), which is still the case today. It is worth noting however that in comparison to the late 1930s and 1960s there is now no longer any grass at the top of the Gully as it has been denuded by the Guillemots.

The growth of the Guillemot population was such that by 1980 they had virtually taken over the 'corrie' area on the south east cliff and nearby peninsula on Brownsman from both Kittiwakes and Shags (Hawkey and Hickling, 1981). Interestingly, through this period the Kittiwake numbers were increasing and it appears that this competition for nesting sites led Kittiwakes to colonise new areas.

Weather

All cliff-nesting species are particularly at risk from storms, rain and high tides, and there have been numerous occasions when Kittiwake nests have been flooded and/or blown off the cliff ledges. After Miller in 1914 (Miller, 1911-1914, 26 June) the first such occasion to be documented was in 1932 when fifty nests were washed off the east end of Brownsman and a number of adults drowned by a heavy storm at the end of June (Thorp, 1933). Similar events have been repeated regularly throughout the 20th and into the 21st centuries. Some of the worst times were in 1997, 1998, 2004 and 2007. In 1997, forty-eight hours of torrential rain in early June followed by a week of rain and gales at the end of the month left 60% of the nests deserted or washed away. It was estimated that 3,700 nests with 7,000 eggs and young were lost (Walton, 1998). The situation was no better in 1998 with heavy rain and cool winds in mid to late June again causing heavy losses. On the outer group 1,048 eggs from 533 nests produced only 273 young with 139 fledging, a productivity of 0.26/nest (Walton and Maher, 1999). In addition, gales and rough seas in May could have caused some of the adults to desert or breed very late which would help to explain the 18% decline observed in that season. The 12% drop in 1977 may have been partly because many early nests were washed off the cliffs on the outer group and the adults did not relay (Hawkey and Hickling, 1977).

In the 21st century, both the 2004 and 2007 seasons saw appallingly low Kittiwake productivity. The storms struck in mid-June 2004 just as the first young hatched, and were so devastating that nests were observed being washed off cliff faces on Staple. The heavy seas and rain affected all the nesting areas and decimated the whole colony. This coupled with a food shortage meant that only fifty-five young fledged from 551 monitored nests (Steel, 2005). The 2007 season was even worse, rain and cool weather and once again a lack of food causing almost complete failure of the colony (Steel, pers. comm., 2007).

Food supply

As far as can be ascertained problems with food supply have only been specifically documented in the 21st century and all after spells of bad weather that have caused the loss of young, though it is difficult to believe that Kittiwakes have not suffered in the past. Recent occasions were in 2001, 2006 and 2007. In 2001 there was some apparent starvation on

the outer group (Harvey, 2002) while in 2004 and 2007 both island groups were affected (Steel, 2005; Steel, pers. comm., 2007). The situation in 2007 was particularly interesting as other species such as terns that forage further afield appeared to find a good supply of Sand eels, while the Kittiwakes foraging round the islands brought back large quantities of Pipefish *Entelurus aequoreus* which the young were unable to cope with (Steel, pers. comm., 2007).

Productivity

Productivity, defined as the number of successfully fledged young per breeding pair, is an important factor in determining future recruitment to the breeding population, and if this is consistently low over a period of time then inevitably there will be a decline in breeding numbers.

Figure 8 shows (i) the overall, (ii) the inner group and (iii) the outer group productivity on the Farne Islands and it is obvious that throughout the 21st century the overall productivity has been falling and has been low from 2004 with the highest being 0.57 in 2005. With regard to the island groups, the Kittiwakes on the outer group have on average been more productive than those on the inner group, though this was not the case in 2007.

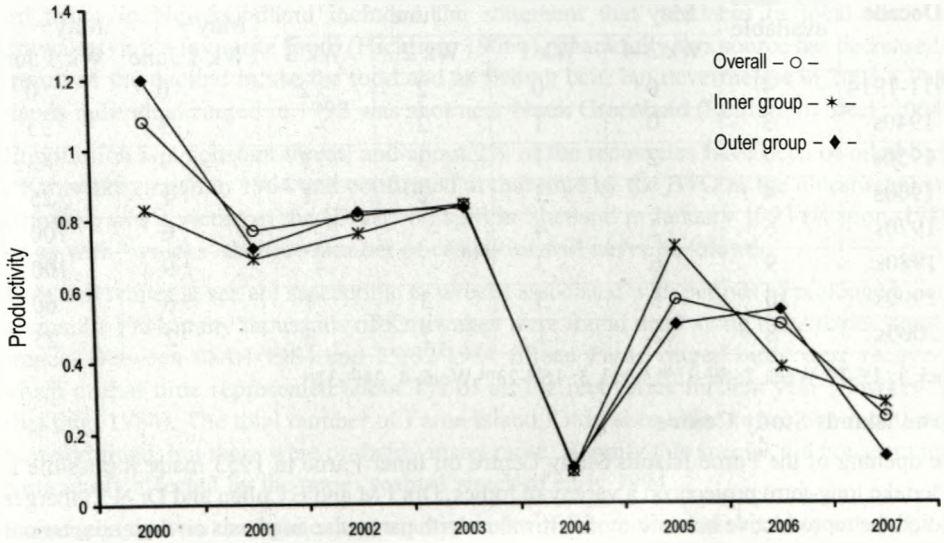

Figure 8 Kittiwake productivity on the Farne Islands.

Food supply, large gull predation and weather are all important for productivity and all have played some if not a major part in this century. In 2001 some starvation caused young to die on Brownsman, while poor weather badly affected East Wideopens (Harvey, pers. comm., 2001). Storms were a major factor in both 2004 and 2007, though in the latter season it was compounded by problems with food supply. Despite the excellent weather in 2006, Lesser Black-backed and Herring Gull predation was one cause for the relatively disappointing productivity in that season.

Studies from 1986 to 2002 on the Isle of May have indicated that breeding success and adult survival were low when the Sand eel fishery on the Wee Bankie was active (1991-1998) and are both influenced by winter sea surface temperatures. Sand eel recruitment is reduced in warm winters, possibly because of a shortage of food for the larval stage. Kittiwakes start

to feed on such group-0 Sand eels during June when they rear their chicks. It is too late to have a major effect on productivity in that season, but adults and young will then be in a poor condition to survive the winter. In the next spring the breeding adults feed mainly on the reduced stocks present and their poor condition leads to lower breeding success. A cold winter produces the opposite situation (Frederikson *et al.*, 2004).

Table 4 gives the week that the first Kittiwake chicks hatched on the Farne Islands for as much of the 20th and 21st century as possible. It shows that over much of 20th century the breeding season gradually advanced until during the 1970s, 1980s and up to the mid-1990s the first chicks usually appeared either at the end of May or in the first week of June. Since then there have been fewer years when this has occurred and the first young are not seen until the second or even third week in June. Similarly the date on which the first egg has been found is now almost over a month later than three decades ago (Steel, 2006). This obviously ties in with the study carried out on the Isle of May as recently winters have been on average unseasonably warm.

Table 4 Kittiwake chick hatching date.

Decade	No. dates available	Week when first hatched				Total	%
		May	June			May + Wk 1 June	May + Wk 1 June
		Wk 3-4	Wk 1	Wk 2	Wk 3		
1911-1914	4	0	0	2	2	0	0
1940s	3	0	1	2	-	3	33
1950s	7	2	1	3	1	3	43
1960s	4	-	1	2	1	1	25
1970s	6	2	4	-	-	6	100
1980s	9	6	3	-	-	9	100
1990s	10	3	3	3	1	6	60
2000s	8	1	1	2	3	2	25

Week 1: 1st-7th Week 2: 8th-15th Week 3: 16th-23rd Week 4: 24th-31st

Farne Islands Study Centre

The opening of the Farne Islands Study Centre on Inner Farne in 1953 made it possible to undertake long-term projects on a variety of topics. Drs J M and E Cullen and Dr N Tinbergen studied the reproductive behaviour of Kittiwakes with particular emphasis on their adaptations to cliff nesting, where they found that the change to nesting on tiny ledges and steep cliffs had repercussions on many aspects of their life and produced morphological changes that were not seen in ground nesting gulls (Cullen, 1957). Students of Dr J C Coulson researched the factors that influenced clutch size and the time of breeding, where previous breeding experience and the time of laying, as well as possibly inherited genes which caused some individuals to lay a consistently higher or smaller clutch than may be expected by chance, were all of significance (Coulson and White, 1961). In addition there were also a number of shorter projects concerning Kittiwakes.

Ringing to 1986

Edward Miller in his Diary for July 1914 wrote that four young Kittiwakes had been ringed (Miller, 1911-1914, 8 July). From then until 1986 over 30,614 birds were marked, with at least 1,512 recoveries/retraps/sightings, and in 2002 the ringing total of Kittiwakes at the Farne Islands comprised over 40% of the National total (Harvey, 2003).

The recoveries illustrate both the extent of their movements outside the breeding season and the dangers faced by species which winter at sea. In August 1924 a Kittiwake ringed as a nestling in June 1923 was recovered at St Barbe, Newfoundland; this was the first bird ringed in the British Isles that was recorded as having crossed the Atlantic (Witherby, 1925). Others soon followed and by 1986 there had been at least thirty-eight transatlantic recoveries – including one in Massachusetts, USA (Hawkey and Hickling, 1984) – and a minimum of forty-four in Greenland. The aluminium rings used up to 1960 had a life of less than four years, and since most birds were ringed as chicks it was mistakenly thought that only the young Kittiwakes crossed the Atlantic; however the introduction of more durable alloys has shown that transatlantic flights are made by Kittiwakes of all ages (Coulson in Wernham *et al.*, 2002). As well as this westerly movement there is a certain amount of dispersal north-south along the east coast of the North Sea. Farne ringed individuals have been recovered in France, Germany, the Netherlands, Spain, Portugal and Italy, as well as Scandinavia, the Faeroe Isles, Ireland and Great Britain.

An analysis of the published recoveries has shown that about seventy (4.6%) have been shot and of those 79% occurred in Newfoundland and Greenland. A letter in 1965 reporting a bird taken in Newfoundland included the statement that 'ticklaces (a local name for Kittiwakes) are a favourite food' (Hickling, 1966b). Thankfully this source has decreased as a result of the decline in use for food and as fishing bait, but nevertheless in 2003 a Farne Islands individual ringed in 1998 was shot near Nuuk Greenland (Redfern in Steel, 2004).

Oil pollution is a constant threat, and about 2% of the recoveries have been of oiled birds. A Kittiwake ringed in 1964 and confirmed at that time by the BTO as the oldest recovered Kittiwake was a victim of the 'Braer' oil spill in Shetland in January 1993 (Walton, 1994), but as with 'wrecks' the true number of casualties will never be known.

Birds that winter at sea are susceptible to wrecks associated with periods of prolonged winter storms. In 1984 many thousands of Kittiwakes were found dead along the Atlantic coast of France. Between 08/01/1984 and 25/02/1984 fifteen Farne ringed birds were recovered, which at that time represented about 1% of all the recoveries for that year (Hawkey and Hickling, 1984). The total number of Farne Island Kittiwakes killed in the wreck can never be determined, but there were probably many more. Happily this species did not seem to be particularly affected by the major seabird wreck of early 1994.

Ringing has shown that while most marked males return to their natal colony to breed, only a small minority of females do, though most nest in colonies within a few kilometres of their birthplace (Coulson in Wernham *et al.*, 2002). While most recoveries of Farne ringed birds have been of individuals breeding on the islands, others have been found nesting at North Shields, Dunstanburgh, Marsden Rock, the Isle of May and Coquet Island.

All ringing stopped at the end of the 1986 season and did not restart until 1996, since when approximately 200 chicks have been ringed each year.

CONCLUSION

Seabird 2000 showed that the Kittiwake population in Britain and Ireland had decreased by 23% since the SCR census (1985-1987) with some regions such as Shetland (69%), Copinsay (54%) and Bempton (50%) showing massive declines.

On the Farne Islands numbers continued to rise after the SCR until they reached a peak in 1990 with a record 6,393 breeding pairs. They then began a slow decline punctuated by periods

of some stability such that it might be thought that in comparison to the spectacular population crashes in some areas numbers could be considered to be constant. However when Figure 8 is studied it is obvious that this is not the case and that the colony on the islands is in a state of slow decline, especially when the low productivity is taken into account.

It is probable that climate change has already begun to affect the North Sea, causing a rise in sea surface temperature leading to an influx of warm water plankton. This not only has a major effect on Sand eel recruitment and ultimately Kittiwake productivity but can also explain the proliferation of Snake Pipefish that has been evident recently.

Seabirds however are adaptable, but it remains to be seen whether Kittiwakes are able to change their feeding habits sufficiently quickly to offset the effects of climate change; if this is not the case then further decline is inevitable.

Black-headed Gull *Chroicocephalus ridibundus*

Historical records to the present day

It is probable that Black-headed Gulls bred on the Farne Islands in the 17th and 18th centuries. Ray (Willughby, 1678) was told that 'Mirecrows' or 'Pewits' built on the islands and Pennant noted 'Pewit Gulls' on his visit in July 1769 (Hutchinson, 1778). Both 'Mirecrow' and 'Pewit Gull' are old names for the Black-headed Gull and Ray's description of a bird that was 'all white bodied, only hath a black head, a little bigger than a pigeon' certainly seems to point to this species. The first actual confirmation of breeding is by William Darling. In the front of his original journal there is a page describing 'Birds Nests and Eggs' (Darling, 1795-1860). Unfortunately it is not known when this was written, but we believe that it was prior to 1826 because between 1826 (Selby, 1826) and 1881 no Black-headed Gulls are noted in any available bird lists as being present. The next record is of at least one individual present in 1882 (Harvie-Brown *et al.*, 1883) while large numbers were seen in the autumns of both 1883 and 1887 (Harvie-Brown *et al.*, 1884; 1889).

Prior to regular sightings noted from 1948, Black-headed Gulls were only recorded on two occasions and though Miller described them as 'occasional visitors throughout the season' (Miller, 1918) he only specifically documented them in 1914 (Miller, 1911-1914, 18 May, 10 June, 30 June, 1 July). The second time was in 1928 when two immature gulls on Brownsman in mid-late July were called 'Askew Hens' by the Watchers, and 'Askew Hen' was according to Bolam (1912) the local name for this species. Thorp, the Honorary Secretary of the Farne Islands Association, assumed they had bred there (Thorp, 1929), but there is no supporting evidence for this.

The first proven breeding in the 20th century was in 1961 when there were single pairs on both Inner Farne and Staple (Hickling, *ca* 1983), though those on Inner Farne later deserted (Hickling, 1962). Black-headed Gulls first nested on Brownsman in 1963, and breeding was then irregular on both islands until 1973 when yearly nesting commenced.

Inner Farne has always been the principal island, though in most years except in the early 2000s, there have been reasonable numbers on Brownsman. In addition to these two islands, Knoxes was used in 1980 and Staple in 1983 and 1987. In 2007 the bulk of the population was on Inner Farne.

Evidence for numbers

Between 1961 and 1965 no more than two pairs of Black-headed Gulls at the most bred with varying success on Inner Farne and Brownsman, and though they were present each season

from 1966 to 1971 there was no proof that they had nested. Regular breeding started on Inner Farne in 1972 and Brownsman in 1974.

Figure 9 shows the total number of breeding pairs of Black-headed Gulls from 1972 to 2007. The most significant feature is the rapid fluctuations in the breeding population that have occurred over three separate time periods: 1976-1983; 1986-1994; and 2002-2007. The species will readily move and change their breeding colony and the increase noted from 2002 was probably because of adults leaving the Newton Pool and Holy Island Lough colonies, both of which suffered a major decline at this time (Walton, pers. comm., 2007). The rise in numbers seen around 1986 most likely has a similar cause, though this time it was Coquet Island that declined from 1987. In each case numbers then increased until probably large gull predation caused some birds to move elsewhere.

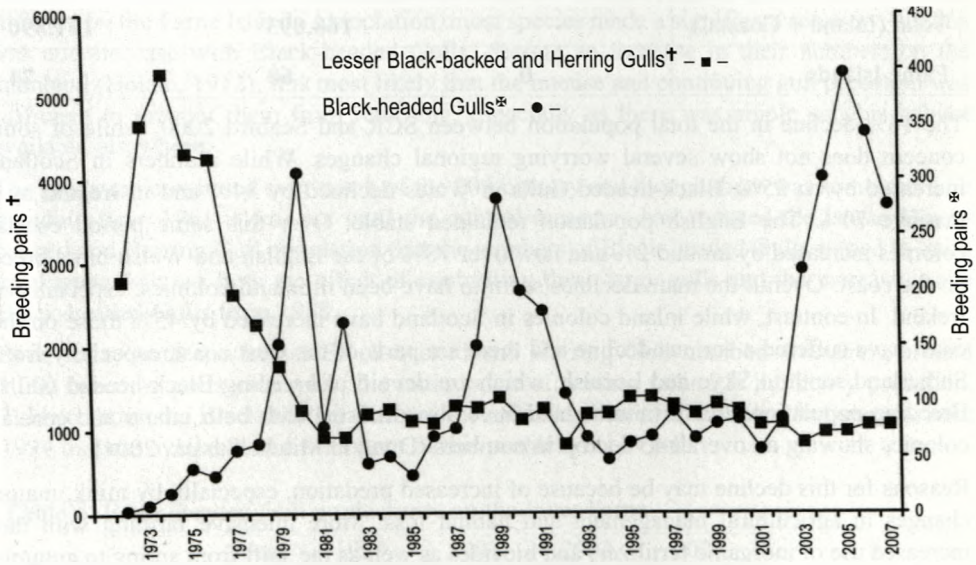

Figure 9 Lesser Black-backed and Herring Gulls and Black-headed Gulls.

National Counts

The Black-headed Gull has the widest range of any seabird breeding in Britain and Ireland, with similar numbers nesting inland as on the coast. The majority of the breeding population is resident, though numbers are boosted during winter by birds from northern and eastern Europe, especially in east and south-east England (Dunn in Mitchell *et al.*, 2004).

During the 19th century, uncontrolled egg collecting and loss of habitat caused the extinction of many colonies with a consequent decline in numbers which was only halted by the Sea Birds Preservation Act of 1869 (Holloway, 1996). However the rise in protection coupled with this species' ability to exploit a range of new habitats and food sources created by the continually burgeoning human population led to an ever increasing population of Black-headed Gulls for much of the 20th century (Dunn in Mitchell *et al.*, 2004).

Table 5 shows the British and Irish coastal populations for the three national seabird counts in recent years. It also gives the total number of breeding pairs of Black-headed Gulls for the SCR and Seabird 2000 counts; inland colonies were not counted for Operation Seafarer.

The recommended count unit for this species is the Apparently Occupied Nest (AON) and counts should be conducted either from within the colony or from a suitable vantage point if the former is not possible. This latter method can result in underestimating numbers and to compensate for this, nests in a sample of accessible sub-colonies are counted from both within the colony and from a vantage point outside. A correction factor is then used to correct counts of AONs for the inaccessible areas of the colony (Dunn in Mitchell *et al.*, 2004).

Table 5 Survey counts for Black-headed Gulls (breeding pairs).

National Survey	Operation Seafarer 1969-1970	Seabird Colony Register 1985-1987	Seabird 2000 1998-2002
Britain and Ireland	**74,927**	**77,573**	**79,392**
Total (Inland + Coastal)	-	**168,093**	**141,890**
Farne Islands	**0**	**60**	**74**

The 16% decline in the total population between SCR and Seabird 2000, while of some concern does not show several worrying regional changes. While numbers in Scotland increased by *ca* 25%, Black-headed Gulls in Wales declined by 34% and in Ireland by a massive 70%. The English population remained stable. Over this same period coastal colonies increased by around 2% and now over 78% of the English and Welsh birds breed on the coast. Overall the main declines seem to have been in inland colonies, especially in Ireland. In contrast, while inland colonies in Scotland have increased by 45% those on the coast have suffered a serious decline and there are parts of the west coast, especially from Sutherland south to Skye and Localsh, which are devoid of breeding Black-headed Gulls. Breeding populations in Northumberland have also declined with both inland and coastal colonies showing an overall 43% drop in numbers (Dunn in Mitchell *et al.*, 2004).

Reasons for this decline may be because of increased predation, especially by mink, major changes in agricultural management and habitat loss. More intensive farming with the increased use of inorganic fertilizers and biocides as well as the shift from spring to autumn sowing have led to a reduction in the quality or the abundance of food available to birds. This coupled with the draining of wetland for agricultural and urban development may have affected the condition of Black-headed Gulls and reduced their productivity (Dunn in Mitchell *et al.*, 2004).

Immigration of gulls from such areas could also have contributed to the increase in some coastal colonies, and is probably another reason why the colony on the Farne Islands seems to undergo periodic increases in numbers, only to decline again. The initial increase to 350 pairs in 1980 may have been linked to the decrease in Lesser Black-back and Herring Gulls; however the other peaks suggest that the fluctuating numbers are due to external circumstances and the very fluid breeding population both locally and nationally as outlined above.

Since Operation Seafarer, Black-headed Gulls have seen an ongoing reduction in their range with the breeding population being concentrated into a lower number of high quality sites (Dunn in Mitchell *et al.*, 2004).

Table 5 also shows the relevant figures for the Farne Islands. Unfortunately each of the three counts was at a time when the population was relatively low, and in fact regular breeding had not started at the time of Operation Seafarer. This data thus provides little in the way of information.

Human persecution and egg collecting

There is no actual evidence that Black-headed Gulls have been specifically targeted on the Farne Islands, but it is probable that the intense egg collecting and persecution experienced during the 19th century was responsible for their demise as a breeding species at some time prior to the publication of Selby's 1826 paper.

Predation

Black-headed Gulls predate other species but are themselves predated on by the larger species of gulls.

Predation by Lesser Black-backed and Herring Gulls

Once protection measures were introduced in the 19th century, first by Archdeacon Thorp and later by the Farne Islands Association, most species made a significant recovery, but this was not the case with Black-headed Gulls, despite an increase in their numbers on the mainland (Bolam, 1912). It is most likely that the intense and continuing gull predation was sufficient to prevent them from returning, especially as there was ample suitable habitat available elsewhere.

The predation continued over much of the 20th century and though there was some sporadic breeding from 1961 it was not until the control measures had reduced the Lesser Black-backed and Herring Gull population that the numbers of Black-headed Gulls started to build up. Figure 9 shows both the effect of controlling these large gulls and the increase in the Black-headed Gulls from 1978.

Even today with the Lesser Black-backed and Herring Gull numbers averaging around 1,000 breeding pairs each year, the main cause of nesting failure is the heavy predation. Table 6 shows the Black-headed Gull productivities on Inner Farne for the few seasons from 1999 that are available and the extent of this problem is obvious.

Table 6 Black-headed Gull productivity on the Inner Farne.

Year	1999	2001	2002	2007
Productivity/bp	**0.27**	**0.38**	**0.70**	**0.37**

On Inner Farne in 2001 out of a total of forty-four eggs from sixteen monitored nests only six young survived to fledge mainly because of the predation, though poor weather was partly responsible (Harvey, pers. comm., 2002). In 2002 it was the Black-headed Gulls that nested among the Sandwich Terns that were breeding round the ladies path on the cemetery bank below the tower on the Inner Farne that were the most successful while those on the cemetery wall which is more accessible were largely unsuccessful (Harvey, pers. comm., 2002).

Lesser Black-backed and Herring Gull predation is probably the main reason why the Black-headed Gull population on Brownsman declined, especially at the end of the 20th and the start of the 21st centuries. The influx from Low Newton Pool and Holy Island in 2003, as well as hard work by the outer group wardens in reducing the threat from the gulls, eventually led to some increase in that colony with forty breeding pairs present in 2006, though once again heavy predation, especially at the nesting stage (Steel, pers. comm., 2006), may have caused yet another decline as only twenty pairs attempted to nest in 2007.

As predators

By 1979 the increase in the Black-headed Gull population was starting to cause some concern as they will predate other species, especially terns and Puffins. Though there was at that time

no evidence that this had reached a serious level it was feared that their further expansion would greatly restrict the area available for the terns (Hawkey and Hickling, 1979). However no action was taken until 1980 when the continued increase in numbers, especially on Inner Farne, led to some Black-headed Gulls undoubtedly preying on the Sandwich Terns and it became necessary to remove certain individuals (Hawkey and Hickling, 1980). It may have been this controlling together with an influx of Sandwich Terns on Brownsman that was responsible for a shift in the Black-headed Gull population to Brownsman in both 1981 and 1982. Virtually the whole Sandwich Tern population was on this island in both of these years but the lack of space controlled the numbers of Black-headed Gulls that actually nested (Hawkey and Hickling, 1981).

The fear of a further build up in numbers led to control measures being instigated prior to the 1983 season in an attempt to discourage nesting (Hawkey and Hickling, 1983), but by 1986 Black-headed Gulls were all breeding among the tern colonies and were thus very difficult to monitor or control (Hawkey, 1987). However by that time it was becoming clear that these gulls acted as a buffer zone and reduced the Lesser Black-backed and Herring Gull predation on the terns, and consequently any control measures were abandoned.

As with all gull species, Black-headed Gulls are opportunistic predators. In 2006 the predation on the Arctic Terns in the cemetery area on Inner Farne was such that out of a total of ninety-six eggs, only nineteen chicks hatched and four survived to fledge, while on Brownsman a few newly fledged young Black-headed Gulls predated the last few small Arctic Tern chicks late in the season (Steel, pers. comm., 2006). There is no doubt that both Sandwich and Common Terns also suffer from the Black-headed Gulls, but it is not possible to monitor these two species without causing unacceptable disturbance.

Puffins also suffer kleptoparatism from these gulls. Each season Black-headed Gulls are seen gathering round Puffin burrows waiting to steal the Sand eels that are brought in and frequently an individual is set on by two or three gulls.

Black-headed Gulls and Sandwich Terns

Black-headed Gulls have often been observed to breed in association with other species, especially Sandwich Terns, as is the case on the Farne Islands and Coquet Island. The terns are thought to benefit from the gulls' aggressive response to predation. In addition Sandwich Terns are packed together in their colonies which make any large gull predators take the Black-headed Gulls' eggs and young in preference as their nests are raised above the ground level on nest vegetation.

The Black-headed Gulls themselves may also gain some protection from this relationship. In 2002, the most successful pairs were those that nested in association with the Sandwich Terns on the ladies path on Inner Farne, while those on the cemetery wall were largely unsuccessful (Harvey, pers. comm., 2002).

Figure 10 shows the number of Black-headed Gulls and Sandwich Terns from 1972 to 2007. A statistical analysis showed a significant correlation but this does not necessarily imply a causal relationship, just that they are fluctuating together which may simply be due to similar environmental influences (Redfern, pers. comm., 2007). Nevertheless it is of particular interest that in 1980, for the only time, fifty pairs of Black-headed Gulls were on Knoxes and that was also the first occasion since 1925 that Sandwich Terns nested there too. It is also worth noting that from 2004 Black-headed Gull numbers started to increase on Brownsman and in 2006 over 200 pairs of Sandwich Terns bred successfully for the first

time since 2000. However the predation experienced by the Black-headed Gulls at that time may be the reason for their 50% decline there in 2007 coupled with an almost 100% drop in Sandwich Terns.

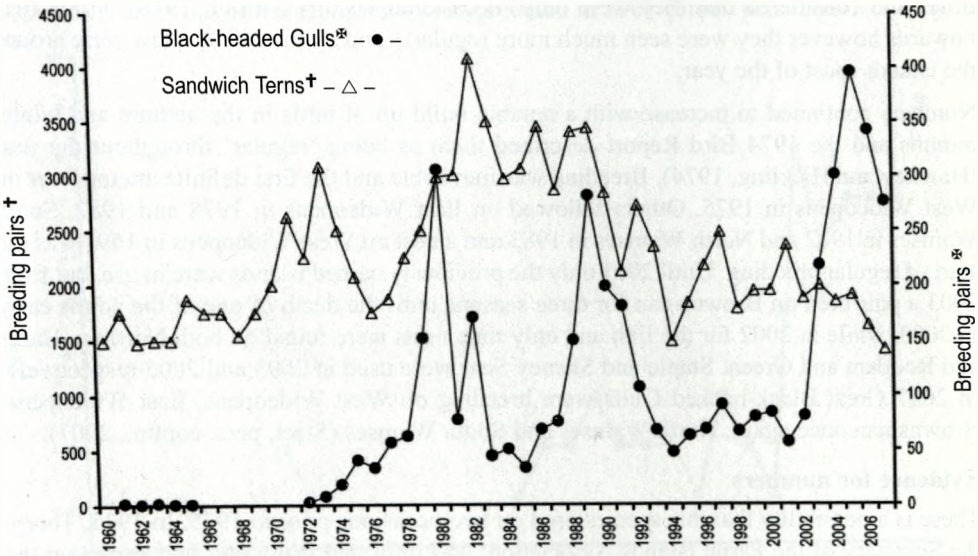

Figure 10 Black-headed Gulls and Sandwich Terns.

Ringing to 1986

There is no evidence that Black-headed Gulls were ever ringed on the islands.

CONCLUSION

The Black-headed Gull is a common breeding species in Northumberland with a number of colonies both inland and on the coast, of which Coquet Island is probably the largest. Colony interchange is relatively frequent; hence it is not surprising that numbers on the Farne Islands fluctuate depending on the conditions locally and in other areas.

On the islands they play a valuable part in acting as a buffer zone to predation on the Sandwich Terns, though they will themselves act as predators. Thus any large build up in their population needs to be carefully monitored as does their level of predation each season.

Great Black-backed Gull *Larus marinus*

Historical records to the present day

Great Black-backed Gulls were present and taken for food on Holy Island in the 9th and 10th centuries (Kerr, 2001) but the first record of them on the Farne Islands is in July 1769 when Pennant saw 'black and white Gulls' at the time of his visit (Hutchinson, 1778; Gardner-Medwin, 1985). Though Bolam (1912) considered them to be relatively common on the Northumberland coast in the late 19th century there is only one reference for the islands from 1897, when about six individuals were seen in July (Bolam, 1877-1933b). It is probable however that a few were around at times during most seasons, but the large numbers of Lesser Black-backed Gulls would make identification difficult.

Sightings were still somewhat infrequent during the early 20th century and the only reference during the first decade is of several at some time around 1905 (Miller, 1911-1914, 9 July 1913). During his four seasons on the Farne Islands Miller just recorded them a handful of times and considered that they were only 'occasional visitors (Miller, 1918). From 1924 onwards however they were seen much more regularly and by the 1950s a few were around the islands most of the year.

Numbers continued to increase with a notable build up of birds in the autumn and winter months and the 1974 Bird Report described them as being 'regular' throughout the year (Hawkey and Hickling, 1974). Breeding was inevitable and the first definite attempt was on West Wideopens in 1975. Others followed on East Wideopens in 1978 and 1982, South Wamses in 1982 and North Wamses in 1983 and a nest on West Wideopens in 1991 was the start of regular breeding. Until 2001 only the previously named islands were in use, but from 2003 a pair bred on Brownsman for three seasons until the death of one of the adults early in 2005, while in 2002 for the first and only time nests were found on both Northern Hares and Roddam and Green. Staple and Skeney Scar were used in 2003 and 2005 respectively. In 2007 Great Black-backed Gulls were breeding on West Wideopens, East Wideopens, Brownsman once again, North Wamses and South Wamses (Steel, pers. comm., 2007).

Evidence for numbers

There is a possibility that this species bred on two occasions prior to 1975. In 1925, Thorp, the Secretary of the Farne Islands Association, was informed that a pair had nested on the Wideopens and that the young had been seen by a visitor (Thorp, 1925), and breeding was also suspected in 1936 (Graham, pers. comm., 2000), but there is no further evidence to support this latter report.

Figure 11 shows the breeding population of Great Black-backed Gulls on the Farne Islands from 1975 to 2007. From 1975 to 1983, with the exception of 1982, only single pairs were found nesting. A change was noted from 1991 after regular breeding started, with an average of two breeding pairs per season to 2001. The period 2002 to 2007 has seen a marked increase in numbers to around seven pairs each year, culminating with a record total of nine pairs in the 2007 season, with the main increase appearing to be on the Wideopens, particularly East Wideopens.

Predation

Great Black-backed Gulls are voracious predators and kill by stabbing and shaking, often leaving their victim turned inside out (Cramp *et al.*, 1983); consequently when they first nested in 1975 they were not a welcome addition to the Farne Islands' list of breeding species. This was also the time during which the Lesser Black-backed and Herring Gull populations were around their maximum numbers and the adults were being culled in an attempt to reduce their numbers. With the intense predation on the other seabirds by the large gulls it is not surprising that, until 1982 at least, the nests of Great Black-backed Gulls were destroyed (Hickling, *ca* 1983). Over the years Great Black-backed Gulls have been recorded predating Puffins (Hickling, 1963; Hawkey and Hickling, 1977) and Eiders (Hawkey and Hickling, 1977) and in 1983 an individual was recorded chasing small migrants in flight over Inner Farne (Hawkey and Hickling, 1983). Although at present the numbers of this species are small, their size means that predation on adult Puffins and other species may become significant in the future. It is also interesting to speculate as to whether the Great Black-backed Gulls breeding on the Wideopens and near North Wamses may not have played some part in the continued slow decline of the Cormorant population.

From 2001 some record has been kept of breeding success. This does not seem to have been particularly high, and in many years fewer than half the nests have fledged young. In 2006 at least three nesting attempts were lost by predation from Herring Gulls (Steel, 2007), while at least four nests out of a total of nine were predated in 2007 (Steel, pers. comm., 2007).

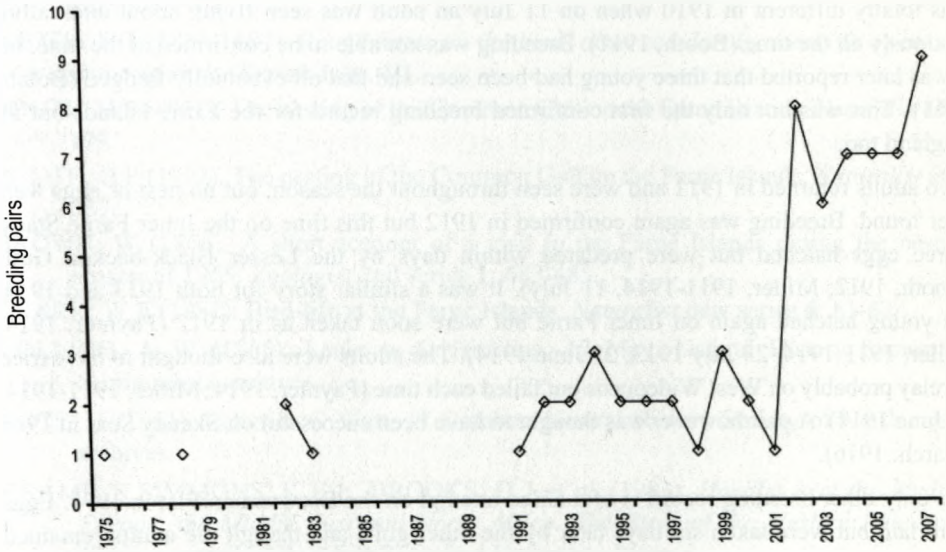

Figure 11 Great Black-backed gulls 1975-2007.

Ringing to 1986

No gulls of this species have ever been ringed on the Farne Islands, but there have been at least two recoveries. A bird ringed as an adult at Castlecraig, Nigg, Cromarty on 7 July 1960 was found 'long dead' on the Wideopens on 28 April 1961 (Hickling, 1962) and in 1979 a pullus ringed in Norway was recovered on Staple within three months of marking.

CONCLUSION

Great Black-backed Gulls are very much in the minority on the Farne Islands with only a handful of breeding pairs. Though they are avid predators, at the present time there does not appear to be too great a problem. Figure 11 however indicates that numbers may be increasing and if this is the case the situation needs to be carefully monitored.

Common Gull *Larus canus*

Pennant saw Common Gulls or Annets (a local name) when he landed on the Farne Islands in July 1769 (Hutchinson, 1778). Although seen in the middle of their breeding season, it should not be assumed that they were breeding, especially as there is no supporting evidence.

Prior to the 20th century, there are only two further references. Saunders (1866) was told by a friend that in May 1863 while visiting he (the friend), had both seen and shot several of these gulls, and in 1911 Fortune in a note in The Zoologist wrote 'about 25 years ago, I identified a pair of Common Gulls nesting on the Outer (East) Wideopens' (Booth, 1911). He also thought that John Hancock had taken eggs from the nest. This was discounted by Bolam

(1912), who was a friend of Hancock and believed that he would have been told if this was so. He adds however that he had seldom visited the Farne Islands without seeing several in flight.

Though Common Gulls had been present during the season for several years, the situation was totally different in 1910 when on 11 July an adult was seen flying about and calling anxiously all the time (Booth, 1911). Breeding was not able to be confirmed at the time, but it was later reported that three young had been seen and that all eventually fledged (Bolam, 1911). This was not only the first confirmed breeding record for the Farne Islands but for England too.

Two adults returned in 1911 and were seen throughout the season, but no nest or eggs were ever found. Breeding was again confirmed in 1912 but this time on the Inner Farne Stack. Three eggs hatched but were predated within days by the Lesser Black-backed Gulls (Booth, 1912; Miller, 1911-1914, 11 July). It was a similar story for both 1913 and 1914: the young hatched again on Inner Farne but were soon taken as in 1912 (Paynter, 1914; Miller, 1911-1914, 23 July 1913, 27 June 1914). The adults were also thought to have tried to relay probably on West Wideopens but failed each time (Paynter, 1914; Miller, 1911-1914, 27 June 1914). A pair however was thought to have been successful on Skeney Scar in 1916 (March, 1916).

The only other breeding record is of a failed attempt on the Brownsman Flat in 1974. Eggs were laid but were taken six days later by the other gulls and though the adults remained nearby for the remainder of the season they did not relay (Hawkey and Hickling, 1974).

Common Gulls have never been ringed on the Farne Islands, but there is however one record of a recovery when an adult ringed in Vågaland, Norway was found dead on Big Harcar eleven months later (Hawkey and Hickling, 1979).

Today Common Gulls are most frequently seen around the islands in spring as they move north to their breeding grounds. Numbers then fall, but gradually increase towards autumn and winter. Though there have been no other breeding attempts since 1974, there is always the possibility, especially with the increase in the coastal population in Scotland noted by Seabird 2000 (Tasker in Mitchell *et al.*, 2004).

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