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# Northumbrian *Naturalist*



Birds on the Farne Islands  
2009





# Northumbrian Naturalist

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Birds on the Farne Islands in 2009 and associated Ringing and Research, Cetacean, and Grey Seal Reports, are produced by the National Trust and The Natural History Society of Northumbria. These papers are published as a part of the *Transactions* of the Society (Volume 70, Part 1) under the banner *Northumbrian Naturalist*.







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## **BIRDS ON THE FARNE ISLANDS IN 2009**

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### **INTRODUCTION**

The systematic list follows the order of The British List, the official list of bird species recorded in Great Britain (British Ornithologists Union, 2009). 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.

The wardens sailed out on 20 March and manned the islands for a total of 260 days before departing on 5 December. A total of 178 species was recorded – twenty five of which were breeding species. An estimated 80,174 pairs of seabirds bred on the islands.

### **SEABIRD OVERVIEW 2009**

The breeding season on the Farne Islands was one of the most productive in recent history with good numbers of young fledging. The influencing factors during the year included the weather, which remained settled throughout the spring/early summer months, and the food supply which was excellent, verging on brilliant. Sandeels of good size were abundant whilst the problematic pipefish were almost non-existent. This was one of the most 'settled' seasons for many years (Table 1).

Following the trend of the previous decade, numbers of Guillemots and Razorbills continued to increase and huge numbers of Puffins nested. With no full census of the population this season exact breeding numbers remain unknown. The terns remained at good levels, with Sandwich, Common and Arctic Terns all showing relatively stable populations and the islands welcomed back two pairs of Roseate Terns, the first breeding attempts since 2006 and the first time multiple pairs have nested since 1999. Sadly both breeding attempts ended in failure.

On a negative note, Kittiwake numbers decreased for the fifth consecutive year and, in just over a decade, numbers have dropped from over 6,000 nesting pairs to a worryingly low 3,700 pairs. During this period productivity has been poor but, in complete contrast to recent years, the islands experienced a bumper season with huge numbers of chicks fledging. Other species giving cause for concern included Eider, with numbers dropping by thirty-seven pairs, and the Shag population which decreased by 17%. This may have been a direct result of the storm which washed away a number of nests in mid-May before nest-counting commenced. Another concern was the continued Cormorant decline with the loss of another four pairs, the ninth consecutive year that the population has decreased. Interestingly, the colony on North Wamses is now moving to Big Harcar following the latter island's closure in 2007.

The large gulls continued to cause problems for other nesting seabirds through predation – their overall population remained stable at just over 1,000 pairs. Great Black-backed Gulls maintained their toehold on the islands with eight pairs. The desertion of one of the major Black-headed Gull colonies on Inner Farne resulted in a drop in numbers. Away from the 'usual', the Red-breasted Mergansers bred successfully for the fourth year whilst



at least one pair of Shelduck nested with another pair prospecting. The season also brought the first breeding Swallows since 1997 and the second consecutive year that Wrens have nested.

**Table 1** Farne Islands breeding birds 2009.

Breeding Birds	Population	+/- to 2008	Productivity	First Egg	First Fledgling
Shelduck	1	+ 1	-	-	-
Mallard	10	- 1	-	21 Mar	27 July
Eider	681	- 37	3.03	13 April	14 May
Red-breasted Merganser	1	level	-	-	-
Fulmar	258	+ 29	0.51	15 May	24 Aug
Cormorant	141	- 4	-	Early April	23 June
Shag	838	- 177	1.50	1 April	29 June
Oystercatcher	38	- 1	0.77	10 May	7 July
Ringed Plover	9	level	1.80	9 April	17 July
Kittiwake	3,699	- 576	1.18	19 May	20 July
Black-headed Gull	260	- 109	-	30 April	24 June
Lesser B-b Gull	498	- 11	-	30 April	-
Herring Gull	575	+ 45	-	30 April	-
Great B-b Gull	8	level	-	3 May	-
Sandwich Tern	1,415	+ 57	-	9 May	28 June
Common Tern	98	- 6	-	19 May	19 July
Roseate Tern	2	+ 2	0	3 July	-
Arctic Tern	2,198	- 41	1.14	17 May	30 June
Guillemot	48,126*	+ 4,262	0.92	19 April	11 June
Razorbill	332	+ 6	0.80	29 April	13 June
Puffin	36,835	level	0.91	28 April	26 June
Swallow	1	+ 1	-	29 June	28 July
Wren	1	level	-	-	7 June
Pied Wagtail	6	level	-	14 April	22 June
Rock Pipit	25	+ 1	-	2 May	22 May

\* Individuals



## MIGRATION OVERVIEW 2009

It was another good year for the range of birds which were seen during March-December with 178 species recorded, the outer group just edging the inner group by 159 to 158 for the total number of species noted. Three stunning highlights captured the headlines, as the islands boasted their second ever (and twelfth English) record of **Lanceolated Warbler** in late September, with a fourth **Black-headed Bunting** and a fifth **Fea's Petrel**, all three worthy contenders for 'bird of the year'.

Although spring passage was disappointing compared with the previous season's impressive showing, the islands produced their sixth and seventh **Red-throated Pipits**, both on Brownsman in late April and mid-May respectively. As well as the outstanding rarities, other birds of note included Spoonbill, Balearic Shearwater (2), Cory's Shearwater (3), Leach's Petrel, Storm Petrel (10), Garganey, Osprey, Marsh Harrier (3), Hen Harrier, Quail (2), Wood Sandpiper, Spotted Redshank, Grey Phalarope, Glaucous Gull, Iceland Gull, Mediterranean Gull (4), Sabine's Gull, Long-eared Owl, Wryneck, Cuckoo (3), 'Blue-headed' Wagtail (2), Richard's Pipit (2), Bluethroat (2), Barred Warbler, Icterine Warbler, Yellow-browed Warbler (5), Red-breasted Flycatcher (2), Firecrest (4), Red-backed Shrike, Hooded Crow, Common Rosefinch, Common Redpoll, Crossbill (6) and Ortolan Bunting.

Although generally a good year for scarcities, spring passage was quiet and autumn wild-fowl movement was almost non-existent. Noticeable absentees included Great Crested Grebe for the second consecutive year whilst Little Stint and Scaup were others missed.

### Acknowledgments

Thanks go to the 2009 warding team of Joe Cockram, Adam Hick, Paul McDonald, Terry Morris, Jason Moss, Adam Scott, David Steel, Davy Still and Tim Wallis 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 Alex Ash, Neil Dawson, Bill Holland, David Parnaby, Susannah Parnaby, Bobby Pearson, Chris Redfern, William Shiel, John Walton, Stuart Will and Anne Wilson amongst others. The report is also very grateful to Bas Teunis for another impressive front cover illustration and Joe Cockram for some top quality photographs. Final thanks go to the 'unseen' hard work of John Walton, Stuart Will and Anne Wilson for advice and constructive criticism on the contents of the report and to editor Margaret Patterson.

**Table 2** Selected migrant dates 2009.

Migrant	First date recorded		Last date recorded		Mean arrival 1970-2009	Earliest recorded arrival date
	2009	2008	2009	2008		
Little Tern	25 Apr	-	6 July	-	-	-
Sandwich Tern	30 Mar	-	5 Oct	-	-	-
Common Tern	19 Apr	-	5 Oct	-	-	-
Roseate Tern	25 May	-	15 Aug	-	-	-
Arctic Tern	19 Apr	-	4 Oct	-	-	-
Swift	8 May	27 Apr	1 Sept	16 Sept	24 May	16 Apr 1988
Sand Martin	18 Apr	22 Apr	3 Sept	18 Aug	24 Apr	30 Mar 1993
Swallow	10 Apr	18 Apr	25 Sept	1 Oct	21 Apr	31 Mar 1999
House Martin	8 Apr	27 Apr	9 Sept	14 Sept	6 May	12 Apr 2005
Chiffchaff	30 Mar	1 Apr	8 Nov	16 Nov	4 Apr	21 Mar 2005
Willow Warbler	6 Apr	18 Apr	27 Oct	25 Sept	14 Apr	2 Apr 2000
Blackcap	8 Apr	12 Apr	6 Nov	12 Nov	22 Apr	31 Mar 1994
Garden Warbler	7 May	28 Apr	15 Oct	21 Sept	11 May	6 Apr 1982
Lesser Whitethroat	25 Apr	21 Apr	10 Oct	7 Oct	6 May	18 Apr 2005
Whitethroat	28 Apr	27 Apr	14 Sept	30 Sept	2 May	17 Apr 1981
Grasshopper Warbler	15 Apr	21 Apr	2 Sept	15 Sept	30 Apr	17 Apr 2000
Sedge Warbler	1 May	6 May	8 Sept	12 Sept	6 May	13 Apr 1992
Reed Warbler	28 Apr	18 Aug	4 Sept	24 Sept	28 May	23 Apr 2007
Spotted Flycatcher	30 Aug	8 May	4 Sept	8 Oct	15 May	4 May 1984
Redstart	14 Apr	6 May	31 Oct	19 May	24 Apr	4 Apr 1971
Whinchat	15 May	9 May	11 Oct	23 Sept	30 Apr	19 Apr 1987
Wheatear	21 Mar	31 Mar	23 Oct	18 Oct	30 Mar	19 Mar 2005
Pied Flycatcher	12 May	31 Jul	3 Oct	24 Sept	7 May	23 Apr 1975
Yellow Wagtail	22 Apr	23 Apr	24 Aug	15 Sept	27 Apr	14 Apr 1995
Tree Pipit	25 Apr	21 Apr	15 Sept	22 Sept	24 Apr	2 Apr 1972



### SYSTEMATIC LIST

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.

#### **Mute Swan** *Cygnus olor*

An uncommon visitor.

This Northumberland breeding resident remains uncommon on the islands with the majority of records referring to local movement through Inner Sound. There were two confirmed records, both during the spring. An impressive herd of fourteen flew north together through Inner Sound on the evening of 24 May, representing the second highest ever count (the highest was of twenty on 8 April 1987). The only other record in a quiet year involved three west through Inner Sound on 29 May. A swan moving north through Inner Sound on 10 November, observed from Brownsman, was not identified due to distance but was considered to be this species.

#### **Whooper Swan** *C. cygnus*

An uncommon winter and passage visitor.

Although the autumn period is generally the best time to see this elegant swan on passage over the Farnes, it was evident that in the spring birds were using the east coast as a northerly flyway. The majority of records occurred in late March with herds using Inner Sound and significant passage began with nine north on 7 March followed by thirty-five north on 20 March, flying over the wardens' heads as they arrived on the islands. Strong northerly passage continued with four on 21 and an impressive ninety-two north in three flocks (46, 17 and 29) on 22 March. Passage continued with twenty-four north on 26 and fourteen north on 29, ending with twelve north on 30 March. This passage broke all previous Farne records and was also logged at several other east coast localities. Surprisingly, the autumn period was very quiet with just a single record of six south through Inner Sound on 4 November.

#### **Pink-footed Goose** *Anser brachyrhynchus*

A well represented passage and winter visitor.

There were no spring reports for the second consecutive year. A skein of twenty-nine south over the islands on 17 September was the start of birds moving to wintering grounds further south in the UK. The following day produced 210 in total and the season's biggest move-



ment was logged three days later with 622 south-west throughout the day on 23 September. Thereafter passage continued on a daily basis in late September with 342 west on 24 and from 34-123 west on four dates until the end of the month. Passage tailed off thereafter as October produced just three skeins, with a peak of ninety-four west on 7 October. A second surge of birds moved through the islands in mid-November with eighteen west on 18, seventy on 23 and ninety-seven on 27 November. Interesting observations during this period included birds landing on the islands: Brownsman on 25 September and Knoxes Reef on 29 November. A juvenile was 'called in' to the Kettle off Inner Farne on 23 September and approached a visitor boat within three feet before realising its mistake and leaving, joining another overhead skein to head south.

**Greylag Goose** *A. anser*

An uncommon passage and winter visitor.

Only a handful are recorded from the islands each year and although local feral birds are suspected to be involved, there is some evidence to suggest wild birds on passage. The first bird of the year was seen flying south through Inner Sound on 11 April and was followed by two west over Inner Farne on 29 April. Further spring movement was logged in May and included five north on 2, sixty-two north through Inner Sound on 9 and nine north on 30 May. A single north over Megstone on 11 June can only be presumed to be from a local feral population. The autumn produced just two single birds, with one north with Pink-footed Geese on 10 October and another west over the Wamses on 18 October.

**Greater Canada Goose** *Branta canadensis*

An uncommon passage visitor.

The annual passage of birds to moulting grounds in the Beaully Firth in northern Scotland produces the majority of Farne records, with peak passage occurring in late May and early June. This year was no different although it was a disappointing showing with just three confirmed records. A skein of nine north through the Kettle on 4 June was followed by sixty-two north through Inner Sound on 11 June (in two skeins). The third and final record concerned seven north through Inner Sound on 12 June.

**Barnacle Goose** *B. leucopsis*

A well represented passage and winter visitor.

Birds move from northern breeding grounds in Svalbard during the autumn although the Farnes have experienced remarkable spring passage in the previous five years (although not this year). The first sighting of the year involved seven west over Inner Farne on 29 September. The season's heaviest passage remained a modest ninety-one west on 30 September in three skeins with forty-two logged on 2 October. Passage remained light as seventeen west on 5 October was bolstered by five birds which landed on East Wideopens and remained to graze during the day. The final record was a single west in a Pink-footed Goose skein on 18 November.

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

A well represented passage visitor.

In general wildfowl passage was below average during the autumn months and this was reflected with only small numbers recorded. The first sighting of the year was of five south

through Staple Sound on 11 September, followed by daily counts over the following week. A total of twenty-nine moved north on 12, fourteen on 13, five on 14, six on 15 and eight on 17 September, all moving north to wintering grounds on nearby Lindisfarne. Thereafter there were just two confirmed sightings: two on Knoxes Reef on 16-17 October and one north on the latter date.

#### **Shelduck** *Tadorna tadorna*

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

A pair has been faithfully returning to the islands since 2002 and this year breeding was confirmed on Inner Farne, with a second pair 'showing interest'. The first pair arrived back on the islands on 20 March and thereafter the female was noted prospecting down numerous burrows on the inner group throughout April and May. It was noticeable during this period that a second pair was present on the outer group, raising hopes for a potential increase in the breeding population although nothing more came of this. The female eventually settled at a nest site on the top meadow on Inner Farne and was seen entering and leaving on several occasions until last reported in early June. Due to the fragile nature and sensitive nesting area, it was decided not to check the burrow but it was safe to assume that the pair was successful in a breeding attempt. Away from the breeding pair, 1-2 were seen occasionally on the islands during the spring with passage including four north on 29 March and 20 April with five north on 3 May. Mid-summer reports though Inner Sound included a season peak of fifteen south on 20 July, four south on 30 July and eight north on 24 August.

#### **Wigeon** *Anas penelope*

A common passage and winter visitor.

Following last seasons surprising no show on spring passage, small numbers were logged on twelve dates between 20 March and 29 April. A small number were noted around Knoxes Reef on the inner group with three on 20 March, seven on 21-22 and a single on 27 March and 1 April. On the outer group a female was on Brownsman pond on 25-27 April whilst passage included four south on 3, two north on 19 and a single south on 29 April. Autumn brings the largest numbers of the year although this was a quiet autumn. Small numbers were logged on twenty-seven dates from 3 September-30 November with a modest peak of fifty-one north on 14 October. As usual small numbers lingered on the islands, with birds recorded on occasions on Brownsman pond although the favoured Knoxes Reef maintained birds throughout the autumn period with a peak of thirteen on 27 November.

#### **Teal** *A. crecca*

A common passage and winter visitor.

One of the most widely recorded wildfowl on the islands with small numbers favouring traditional islands with standing water. 2-4 lingered on Knoxes Reef until 3 April with a peak of ten on 29 March. On the outer group a pair were on Brownsman pond on three dates in mid-April and a party of three north past Brownsman on 12 May was more unusual. Return autumn passage commenced with the appearance of six north through Inner Sound on 6 August and thereafter birds returned to favoured island localities including Knoxes Reef, Staple Island, Brownsman and North Wamses. Passage was the main focus with small numbers recorded including forty-one north on 24 August. However this was all eclipsed on 3 September when 885 moved north (including 706 through Inner Sound). This new Farnes



record beat the previous highest total of 500 north on 28 November 1998. Thereafter passage dropped to the 'usual' levels with peaks of forty-seven north on 11 September and forty north on 26 September. As expected, small wintering flocks were discovered on several islands with peaks of twenty-five on Staple Island, eighty on Knoxes Reef and ten on North Wamses.

**Mallard** *A. platyrhynchos*

A common winter and passage visitor and well represented breeder.

It was a quick-fire start to the season as two occupied nests were discovered on Inner Farne within the first few days of the wardens' arrival. A nest containing ten eggs was discovered in the vegetable garden and another with eleven eggs in the lighthouse compound – a nest site used for the third consecutive year. A total of 10 (11) pairs nested as follows: Inner Farne 4 (4), West Wideopens 1 (1), Knoxes Reef 0 (1), Staple Island 1 (3) and Brownsman 4 (2). The first chicks were seen on Inner Farne on 27 April but despite the promising start, predation was responsible for the failure of these early nesters on both island groups. However the season did have some successes, as at least eleven fledged from Inner Farne in late July/early August from three different broods. Thereafter small numbers lingered around the islands favouring Knoxes Reef on the inner group with eight on 20 August increasing to eleven on 20 September, thirty on 31 October and 40-50 present throughout November. The season's peak of seventy-one occurred on 11 November.

**Pintail** *A. acuta*

An uncommon passage and winter visitor.

Between 2000-2006 there were just over seven records per year (apart from a peak of fourteen records in 2005) but since then there has been a real dearth of reports with just a single in 2007 and two in 2008. This year the trend continued with just two records: a female-type flew along the Bridges and landed on Knoxes Reef on the inner group on 4 August whilst another flew north past the west face of Inner Farne on 10 October.

**Garganey** *A. querquedula*

A scarce passage visitor.

Always a delightful surprise on the islands, a drake in full summer-plumage was discovered in the Kettle off Inner Farne on 27 April. Sadly it only remained for ten minutes before disappearing west. In a Farnes context, this represented the earliest spring record and the first since May 2006. It was also the eighteenth record, involving twenty-two birds, following the first on 21 May 1979.

**Shoveler** *A. clypeata*

A well represented passage and winter visitor.

It was a quiet year with a scattering of records including a pair north with Common Scoters through Inner Sound on 21 May, three west over the inner group on 29 September and a male north through Staple Sound on 4 October. In recent years, small numbers have mixed with wintering wildfowl on Knoxes Reef and an individual with Mallards on 11 November was part of this trend. However due to non-resident wardens on the inner group by mid-October, the species probably went under-recorded.



**Pochard** *Aythya ferina*

An uncommon passage visitor.

The islands produce only one or two records of this diving duck annually and this year was no different, the only report concerning two east over the inner group on 2 October.

**Tufted Duck** *A. fuligula*

A well represented visitor.

The season produced reports on twelve dates, a return to form following last season's four records. There were two spring sightings with two males north on 23 April followed by a pair north through the Kettle on 11 May. Thereafter mid-summer produced a handful of reports, with northerly passage logged through Staple Sound in July including a male on 7, four males on 9 and three (two males and a female) on 15 July. Passage continued with 1-2 north on 4 and 6 August, 3, 16 and 20 September, seven south through Staple Sound on 10 September with the last record of the year being a male north on 4 October.

**Eider** *Somateria mollissima*

An abundant breeding resident.

It was another good season despite breeding numbers remaining below the 1,000 mark for the sixth consecutive year. Displaying birds were evident in early spring and the first prospecting pairs were seen on the islands by 10 April. Soon after that the first eggs were discovered on Brownsman on 13 and Inner Farne on 16 April. Eleven islands were colonised with a total of 681 (718) pairs: Inner Farne 411 (446), West Wideopens 25 (21), East Wideopens 5 (6), Knoxes Reef 8 (5), Staple Island 30 (25), Brownsman 183 (198), North Wamses 4 (3), South Wamses 5 (6), Big Harcar 4 (3), Northern Hares 0 (0), Longstone Main 4 (2) and Longstone End 2 (3). As usual, predation was an issue for early nesters, with the usual culprits, the large gulls, causing havoc and a Carrion Crow was seen on several mornings preying on eggs. Eventually large numbers of nesting females colonised the islands, the first chicks were noted on 14 May and thereafter good numbers of young were seen going to sea, the majority heading west towards the mainland. Numbers declined throughout June as successful family broods moved off the islands, with the last breeding female seen departing on 9 July. Following last season's successful breeding season, this year mirrored that performance with 382 monitored nests producing 1,159 young, resulting in productivity of 3.03, the highest return this decade. Following the breeding season, small numbers remained around the islands throughout the autumn period, with pair bonding and courtship display noted from early October.

**Long-tailed Duck** *Clangula hyemalis*

A well represented passage and winter visitor.

This spectacular sea duck winters in small numbers around the inner group, favouring the area behind the Bridges and the Wideopens. As usual, small numbers were evident when the wardens took up residence in mid-March with a peak of twelve on 28 March including a full summer-plumage drake. Numbers dwindled rapidly as birds moved north to breeding grounds, with nine on 29 March representing the final spring report. Autumn passage was almost non-existent with singles seen on 16, 18 and 26 October and six north through Inner Sound on 29 November. The wintering flock returned to the usual area behind the Bridges with five noted on 5 December.

**Common Scoter** *Melanitta nigra*

A common passage and winter visitor.

This season witnessed the lowest annual total of sightings for several years (see Table 3). Passage was logged on sixty days in all months and the majority of records referred to small numbers moving through either Inner or Staple Sound with a spring peak of fifty-eight south on 10 May. However during this period a flock took up residence in Inner Sound in late April and remained into mid-May with sixty-one present on 22 April increasing to an impressive 165 the following day. This large flock remained with 150 on 26 April and sixty on 21 May, including several displaying males. Passage continued throughout the summer months although no large movement was noted. Autumn brought further records with a modest peak of thirty-five north on 14 September and 5 November.

**Table 3** Number of dates Common Scoters were recorded on the Farne Islands, 2003-2009.

2009	2008	2007	2006	2005	2004	2003
60	81	86	63	91	92	112

**Velvet Scoter** *M. fusca*

A well represented passage and winter visitor.

A below-par showing compared to recent years. A pair which circled Inner Sound before tracking north through Staple Sound on 11 May was the first spring record in five years. Small numbers are usually recorded in mid-summer as birds head north to moulting grounds off the north-east coast of Scotland. Evidence of this movement included a female north on 27 June and singles north on 2 and 20 August. The autumn months produced just four records with three north through Staple Sound on 5 September, a male north on 18 October, another north on 29 November and a male north on 3 December.

**Goldeneye** *Bucephala clangula*

A common passage and winter visitor.

This handsome northern breeder winters in small numbers around the inner group, mixing with other sea ducks behind West Wideopens. When the wardens arrived in mid-March up to eight were present on 20-21, decreasing to five over 22-24 before increasing again to nine on 25 March. The last spring sighting was of three on 28 March. The first autumn returnees were six south over the Wamses on 13 October followed by five over the inner group on 11 October. Small numbers returned to the wintering grounds behind West Wideopens by early November with a peak of fifteen on 3 December.

**Red-breasted Merganser** *Mergus serrator*

A well represented passage and winter visitor and rare breeder (Steel, 2007).

Another year and another breeding success as our loyal pair nested on the islands for the fourth consecutive year. They returned to Farnes waters in late April, being seen in St Cuthbert's Cove on 27 April, and were recorded throughout May. In a repeat of last season, the female was seen in early June inspecting a nest site on Inner Farne in a similar area to last year and nesting was confirmed. As usual, the male remained around the islands to moult whilst the female was occasionally seen off the nest, to bathe or drink in the nearby Kettle. Passage was logged throughout the year, especially through Inner Sound with 1-2



noted on four spring dates including three north on 22 April. Despite an encouraging start to autumn passage with four south on 14 August, the September-November period proved to be very disappointing with just three records including one north on 18 September, four west over the inner group on 11 October and two north on 12 October.

**Goosander** *M. merganser*

An uncommon passage visitor.

The islands produce a handful of records each year despite the species being regarded as a predominately inland waterways bird. There were four records, all in the autumn with the first, a juvenile, noted on Brownsman 'flats' on 3 September attempting, without much success, to head west in a gale force westerly. Further records included a female-type which circled the outer group before heading north on 27 October, and a male which flew west over Brownsman on 20 November. The final record involved a group of four males west through Staple Sound on 2 December.

**Quail** *Coturnix coturnix*

A scarce passage visitor.

It was an excellent year for this inconspicuous small game bird, occurring for the second consecutive year. Whilst the inner group team were completing a nest count survey, a bird was flushed from central meadow on 6 June before landing at the far side of the meadow, never to be seen again. Since the first record on the islands in June 1964, the outer group have dominated sightings with eleven of the seventeen Farnes records to their name and this represented the first inner group sighting since June 1999. However for only the third time in Farnes history, the islands produced a second record during the year when a bird was flushed off the north end of Brownsman on 10 October. It landed near the pond and was seen again before disappearing to Staple Island. Amazingly the bird was relocated as it ran over a lifejacket on that island before returning to Brownsman. This represented the latest ever Farnes record and first October sighting.

**Red-throated Diver** *Gavia stellata*

A common winter and passage visitor.

It was an indifferent year as birds were logged on forty-six dates, which is well below the recent average on the Farnes of from 71-80 dates annually over the last five years. Although this was partially down to lack of observer coverage on the inner group in late autumn, there was a general lack of birds in Farnes waters. Spring was represented by small numbers either moving north or loafing around the islands on thirteen dates between 22 March and 26 April. Late stragglers were noted heading north on 11, 12 and 29 May with two north on 4 June. Following a two month absence, the first autumn returnee was a single north through Inner Sound on 7 August. Thereafter only small numbers were recorded with a very modest autumn peak of nine north on 5 November.

**Black-throated Diver** *G. arctica*

An uncommon passage and winter visitor.

It was another interesting season for this uncommon winter visitor as the islands produced only two reports – a reflection of the lack of diver passage during the autumn. During the



only spell of northerly winds in the autumn, two individuals moved south through Staple Sound on 29 November with another south the following day.

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

A well represented winter and passage visitor.

This hulk of a diver is rarely recorded during the spring: however this year a bird was noted on passage when an adult summer-plumage individual moved high north through Staple Sound on 10 May. The first autumn returnee arrived on 17 October with a single on the sea in Staple Sound followed by three the following day (all lingering). The expected late autumn influx failed to materialise with records on just a handful of dates in November including two north on 5, two on the sea on 29 and two north on 30 November. The spell of northerly winds in late November appeared to trigger movement as early December brought three on 1 and singles on 3-4 December.

**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 was 'checked' in 2004 following high winter mortality. Since then, the breeding population has bounced back and this year it continued to grow in strength. The late winter period brought small numbers to the breeding ledges as birds were present on several dates during January and February. Good numbers were present when the wardens returned on 20 March, although poor weather towards the end of March moved them back out to sea. Eventually breeding pairs settled and the 'intermediate-phase' bird, present on Inner Farne since 2003 was again noted during the spring. As usual, the breeding stock disappeared in early May for their annual 'honeymoon' and the first eggs were discovered the following week on 15 May. The population was almost at its highest ever (record of 266 in 1997) with a total of 258 (229) pairs nesting as follows: Inner Farne 29 (21), West Wideopens 9 (14), East Wideopens 12 (8), Knoxes Reef 28 (21), Staple Island 35 (23), Brownsman 67 (71), North Wamses 31 (29), South Wamses 26 (26), Big Harcar 16 (11) and Longstone End 5 (5). The breeding season was typically protracted with the first young discovered on 6 July and the first fledglings not taking to the wing until the final week of August. Monitoring revealed a reasonable season as 92 chicks fledged from 180 nests, an overall productivity of 0.51. As usual, following the breeding season the species became almost absent from Farnes waters throughout the autumn, although good numbers had returned by 5 November and were present on nesting ledges on 1 December.

**Fea's Petrel** *Pterodroma feae*

An extremely rare visitor.

A truly outstanding rarity for the avid seawatcher, this incredibly rare Western Palearctic breeder has only been recorded on thirty-four previous occasions in British waters. Staggeringly, the Farnes can now lay claim to five of these records (some 14% of all British records), as the islands produced yet another of these ultra rare gadfly petrels. An individual was observed as it moved north past the south end of Brownsman on 5 October, eventually being lost to view beyond Longstone. It was considered to be the same individual seen from Spurn (East Yorkshire) earlier that day. This represents the fifth Farnes record following singles on 5 September 1993, 20 September 1996, 19 November 1999 and 23 September 2002.

### **Cory's Shearwater** *Calonectris diomedea*

A scarce visitor.

An outstanding year for this Mediterranean breeder as the year produced a total of three records, matching the previous best showing in 2002. On the evening of 11 July, an individual flew north past the Scarcars and out beyond the outer group, and was followed by a second following the same flight-line on 5 September (the latter was seen by both the inner and outer group wardens). Interestingly both birds had been seen flying north past Newbiggin-by-the-sea earlier in the day. The third and final record concerned a distant individual flying north past Crumstone on 4 October. Although the first Farnes record was in September 1976, the species has only become more regular this decade. The overall season's total of three brings the current Farnes number of records to fourteen and it was last recorded on 8 August 2005.

### **Sooty Shearwater** *Puffinus griseus*

A well represented to common passage visitor.

Recent years have seen some boom times with huge counts made from the Farnes including a new Northumberland record in 2005. With expectations now higher, it was a slightly disappointing season with no three figure counts. The first bird of the year, seen from the mainland, flew north through Inner Sound on 15 March. This was followed by a single moving north off the south end of the islands on 11 July followed by August reports of one south on 4, two north on 8 and five north on 20. As the autumn progressed, seawatching produced 1-17 north on twelve dates in September and October with a noticeable influx between 13-16 September. Northerly passage during this period included twenty-four on 13, thirty on 14, forty on 15 and a peak of forty-three on 16 September. However the season's best showing was not until early October when seventy-one moved north past the islands on 9 October during a spell of south-easterly winds. The final records involved very late sightings, with a single north off the south end of the islands on 28 November with two north the following day, in northerly winds. These latter sightings were the second latest record for the islands, following the latest on 2 December 1986.

### **Manx Shearwater** *P. puffinus*

A common passage visitor.

This distinctive tube-nose is one of the commonest stiff-winged visitors to the islands and it was an excellent year as good numbers were recorded with reports from seventy-three dates. As expected spring passage remained light with singles north off the south end of the islands on 27, 28 and 30 April, with an increase during May. Following a single north on 8 May, passage increased with eleven north on 11 and thirty-four north on 12 with 1-5 north on 13, 17 and 25 May. It was an excellent summer with 1-50 noted on forty-one dates during June-August with some noticeable influxes as shown in Table 4. As the summer moved into autumn, strong northerly passage continued with a season's peak of 456 north on 14 September and reports of 1-54 on seventeen September-October dates. The final record concerned a single south through Staple Sound on 23 October.

**Table 4** Three figure counts of northerly passage of Manx Shearwaters, Farnes Islands.

June		July		August		September					October	
20	10	11	3	7	5	13	14	15	16		1	9
312	224	109	155	137	197	190	456	128	156		112	244



**Balearic Shearwater** *P. mauretanicus*

An uncommon passage visitor.

The islands have produced annual records over the past seventeen years as, following the breeding season, this critically endangered Mediterranean seabird heads north to the Bay of Biscay in late summer to moult and small numbers penetrate the North Sea during this period. Two records: a single south through Staple Sound on 4 August followed by another north off the south end of Brownsman on 20 August.

**Storm Petrel** *Hydrobates pelagicus*

An uncommon passage visitor.

In recent years this oceanic specialist has gone from a 'rare' visitor on the Farnes to an expected annual with a total of 176 having been logged through Farnes waters in the past five years – in complete contrast to the eight noted in twenty years from 1970-1990. Despite the upsurge of records, this year was below average with one noted flying north near Crumstone on 8 July and overnight ringing activities resulting in five being trapped on Inner Farne by tape-lure on the evening of 7 August. The only other record concerned one feeding around Brownsman in Staple Sound during a spell of northerly winds on 29 November. The bird lingered for over four hours and represents the latest ever Farnes sighting.

**Leach's Petrel** *Oceanodroma leucorhoa*

An uncommon visitor.

This oceanic specialist infiltrated the southern North Sea in late November following two days of northerly gales. A bird was observed flying north through Staple Sound on 30 November, approaching Brownsman to within 100m. It showed well amongst the breaking wave troughs and represents the nineteenth Farnes record following the first in November 1952.

**Gannet** *Morus bassanus*

An abundant passage and non-breeding summer visitor.

This very abundant seabird is seen almost daily throughout the season as large numbers move through on foraging trips from nearby breeding colonies in East Yorkshire and Lothian. The first adult returned to Farnes waters on 5 January but birds remain very scarce in late winter. Eventually good numbers were reported on spring passage with timed counts of 1,194 north in one hour on 19 April and 559 north in thirty minutes on 20 April. Further strong northerly passage was logged with 672 north on 25 April and 1,835 north in one hour off the south end of the islands on 27 April. Despite daily presence, birds are rarely seen on the islands although adults were recorded on Big Harcar, Staple Island, West Wideopens and Inner Farne during the season. One bird, an adult on Inner Farne in mid-August, was rescued by the wardening team as the bird had entangled itself with a fishing line. Thankfully the team arrived in time and the bird showed no ill-effects and was in very good health when it was released moments later from the nearby jetty. The late summer witnessed numerous fledged youngsters around the islands and passage included 886 north in thirty minutes on 3 September and 1,585 north in one hour on 13 September. Thereafter numbers dwindled as birds moved south to southern wintering grounds and the species became almost absent from early December.

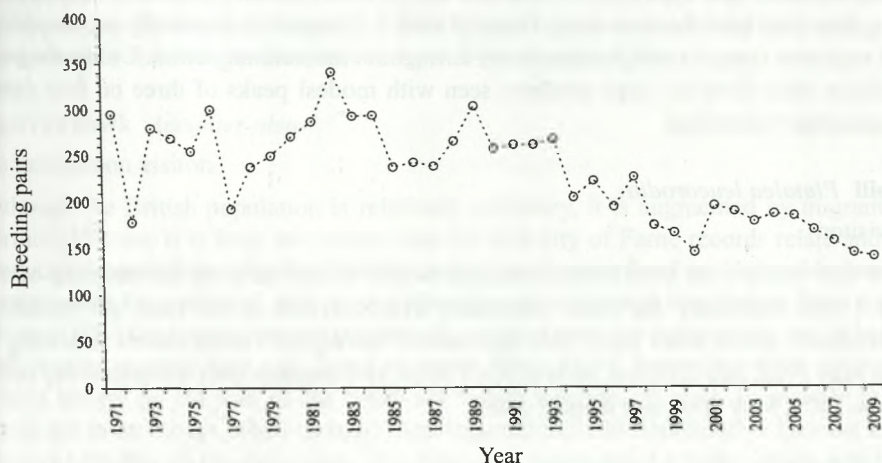


### **Cormorant** *Phalacrocorax carbo*

A common breeding resident.

The slow and steady decline continued as the breeding population dropped to its lowest level since 1962 and more worryingly, has halved in just twenty years (Figure 1). The reason behind the dramatic drop is unclear. A total of 141 (145) pairs nested as follows: East Wideopen 80 (84), North Wamses 38 (54) and Big Harcar 23 (7). Since the closure of open access to Big Harcar in 2007, the island has begun to be colonised by birds moving off the nearby North Wamses and if this trend continues, it is only a matter of time before it becomes the main Farnes colony. The shift resulted in the lowest breeding numbers on North Wamses since 1964. As with the majority of nesting seabirds, the breeding season was quick to commence following a mild spring and birds were observed nest building in early April. The first chicks were seen on 16 May with fledglings noted on East Wideopens on 23 June and North Wamses on 29 June. All three colonies appeared to have reasonable breeding success and, as usual, birds dispersed from the breeding grounds during late summer and only small numbers remained to winter around the islands.

**Figure 1** Breeding pairs of Cormorants on the Farne Islands from 1971 to 2009.



### **Shag** *P. aristotelis*

An abundant breeding resident.

It was a mixed season as numbers dropped to their lowest level since 1994 but the breeding productivity was very impressive. The breeding season was quick to start as copulating pairs with well constructed nests were seen when the wardens arrived on 20 March. The mild spring had encouraged early nesters but a strong northerly wind on 28 March resulted in many of the nests being blown away. However persistence paid off and the first eggs were discovered at lighthouse cliff on Inner Farne on 1 April, some twenty-five days earlier than the previous year. Thereafter a good number of pairs were on eggs by mid-April (the first clutch of three was recorded on 6 April) and a total of 838 (1,015) pairs nested as follows: Megstone 22 (27), Inner Farne 278 (303), West Wideopens 51 (62), East Wideopens 83 (127), Skeney Scar 32 (44), Staple Island 135 (145), Brownsman 106 (109), North Wamses 23 (40), South Wamses 41 (64), Roddam and Green 3 (17), Big Harcar 48 (54), and Longstone End 16 (23). It was difficult to explain the decrease in the population, although

it may have been a case of birds taking 'a year off' as opposed to any serious decline within the breeding population. The first chicks hatched from 10 May and the summer season was generally trouble-free although storms on 15-16 May washed a good number of nests off several islands, but pairs soon re-built. As part of a long term study, a small number of young and adults were fitted with readable plastic 'darvic' rings for the first time (red in colour), enabling birds to be tracked by sharp eyed spotters in the field. Productivity was outstanding as 333 nests produced 499 fledged chicks, the best seasonal return since 1992. The first fledglings took to the wing from 29 June and as usual the breeding season was protracted with late young successfully fledging in early October from West Wideopens. The majority of the Farnes population remained around the islands throughout the autumn favouring Megstone to loaf and roost on a daily basis.

**Grey Heron** *Ardea cinerea*

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

There was a good presence on the islands, especially during the autumn, with birds becoming 'resident' on the favoured Knoxes Reef and Longstone complex. As is usually the case, the spring produced just a handful of records with 1-2 noted on twelve dates between April and July. However birds became more frequent with 1-2 recorded, especially on the undisturbed Longstone complex and Knoxes Reef, throughout the autumn period. Unlike the previous season there were no large numbers seen with modest peaks of three on four dates from September-November.

**Spoonbill** *Platalea leucorodia*

A rare visitor.

An adult flew north-west over Brownsman and Staple Island early on the morning of 19 April and was potentially the same individual which arrived at the Loch of Strathbeg (Aberdeenshire) seven hours later. This represented the eighth Farnes record following a single in May 1988, two different birds in April 2002, two together over a fourteen day period in June 2003, May 2006 and August 2006.

**Red-necked Grebe** *Podiceps grisegena*

A well represented winter and passage visitor.

It has been noted in recent years that numbers wintering in Northumberland have decreased significantly. However the Farnes have always had one or two and an adult appeared to be wintering off the west side of Brownsman as it was present daily from 3 November into early December, when the wardens departed. Otherwise passage was light with one north through Staple Sound on 13 September and another south on 30 November.

**Slavonian Grebe** *P. auritus*

An uncommon winter and passage visitor.

Despite good numbers wintering in north Northumberland, the species is increasingly becoming more difficult to see around the islands. A single flying north through Staple Sound on 15 October was the first since October 2007 and only the thirteenth recorded in the previous ten years.



**Marsh Harrier** *Circus aeruginosus*

A scarce visitor.

An outstanding year for this migratory raptor in Northumberland (breeding was confirmed for the first time in the county) and on the Farnes which boasted a record total of three sightings. The first bird of the year, a female, was observed being mobbed as it flew west from the outer group before eventually skirting Megstone on 21 April and on to the mainland. A second bird was seen flying high north over Staple Sound on 12 June, but due to distance its age could not be attained. The third and final record involved a juvenile flying west over the inner group on 11 September which made landfall near Bamburgh. This was the second consecutive year the species has been recorded from the islands and represents the seventh-nineteenth records following the first in May 1954.

**Hen Harrier** *C. cyaneus*

A scarce visitor.

The small British population of this spectacular aerial predator is bolstered during the winter months by northern European individuals and these migrants make up the majority of the thirteen previous Farnes records. A 'ringtail' was noted flying east over Brownsman on 25 April, presumably a bird moving out of the UK, and represented only the third spring record for the Farnes following individuals in April 1993 and May 2003.

**Sparrowhawk** *Accipiter nisus*

An uncommon visitor.

Although the British population is relatively sedentary, it is augmented by migrants from northern Europe. It is from this source that the majority of Farne records relate and spring produced three sightings, with a female landing on Knoxes Reef on 11 April before flying west towards the mainland, and another female over the central meadow on Inner Farne on 24 April. The final spring record concerned one west over the inner group on 10 May. The first autumn passage bird was found on Inner Farne on 18 September when an immature landed briefly on the wall of the courtyard before heading off west. Eventually the outer group got in on the act, when an individual lingered from 30 September-1 October and was observed feeding on tired migrants. The final record concerned a large female noted taking a Redwing off Brownsman on 10 October.

**Osprey** *Pandion haliaetus*

A scarce passage visitor.

The Farnes are now experiencing a surge of records as the British population increases, with four gracing the islands last year. This season produced a single autumn record, an individual which was watched as it flew east over the inner group and out over Staple Sound before heading south on 20 August. This represents the fourteenth Farnes record and only the sixth autumn sighting following individuals in August 1989, August 1991, September 1995 and two in September 2008.

**Kestrel** *Falco tinnunculus*

A well represented passage visitor. May have bred in 1916 (March, 1916).

This well known small hovering falcon is partially migratory within its range as birds move



from the near-continent during the autumn and this produces the bulk of Farnes records. However it was a particularly quiet year as reports involving four birds were received on only three dates. The first of the year arrived from the north and flew directly west over Inner Farne on 24 August and was followed by two together (seen squabbling in mid-air) over the inner group on 10 September. The final record was of a single flying north over Brownsman on 1 October.

**Merlin** *F. columbarius*

A well represented passage and winter visitor.

This impressive winged-wizard breeds in the uplands of Northumberland and winters on the lowlands including the Farne Islands. When the wardens returned in late March it was evident that at least one was patrolling the islands as sightings of a female/immature bird were noted on 22 March, 4, 21 and 30 April. It was a strange year, as for the first time in recent history the islands did not have a 'Merlin in residence' during the autumn, since birds failed to take up winter quarters on the islands. Despite this, there were still reports on twelve dates from 22 August-26 November, but this was noticeably low by recent Farne standards (only five sightings on the outer group all autumn). Generally records involved female/immature birds but an adult male was seen on Brownsman on 26 November.

**Peregrine** *F. peregrinus*

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

This ultimate aerial predator reigned supreme throughout the spring and autumn on the islands as, unlike its smaller relative, birds took up residence. Spring produced reports of at least two individuals (adult male and female) on fifteen dates between 20 March and 25 April, with the final spring sighting of a male over Brownsman on 12 May. It was not long before birds returned when a recently fledged juvenile was seen on eight dates from 20 July-15 August. Thereafter adults resumed business on the islands, alongside a few juveniles, and birds became resident throughout the autumn and early winter, including birds roosting overnight on Inner Farne and Staple Island. The large feral population of pigeons on the islands provided a good food source whilst other prey items included Woodcock, Redshank, Oystercatcher and Turnstone.

**Water Rail** *Rallus aquaticus*

An uncommon passage visitor.

Although recorded annually, autumn produces the bulk of reports as birds migrate into the UK, with the last Farnes spring record dating back to April 2003. This year produced two individuals with one flushed from the central gully on Staple Island on 22 October, vanishing almost immediately. The second record concerned a similar sighting when one was flushed from the dock bank on Inner Farne on 29 October, never to be seen again.

**Moorhen** *Gallinula chloropus*

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

A total of fifty-seven have been recorded on the islands in thirty-four years since they bred in the late 1940s and the islands usually produce just a single record per year. An adult was

seen amongst Puffins on the central meadow on Inner Farne on 31 March, but slipped away without being admired by the majority of the wardens. The species was last recorded on 21 November 2007 with the last inner group record dating back to March 2005.

**Oystercatcher** *Haematopus ostralegus*

A common winter and passage visitor, a well represented breeder.

This pied wader breeds in reasonable numbers on the rocky islands and good numbers remain around the islands all year. Birds were occupying breeding sites when the wardens returned in mid-March and copulation was observed on 20 March although the first nest scrape was not discovered until 23 April. The first eggs were discovered on Inner Farne and Longstone on 10 May and the population remained healthy with a total of 38 (39) pairs nesting as follows: Inner Farne 5 (6), West Wideopens 5 (5), East Wideopens 1 (1), Knoxes Reef 3 (3), Staple Island 6 (6), Brownsman 10 (10), North Wamses 2 (2), South Wamses 2 (1), Big Harcar 2 (2), Longstone 2 (1) and Longstone End 0 (2). As usual it was another difficult breeding season with predation of eggs and young causing problems and despite a pair utilising a Ringed Plover cage for safe nesting (the female managed to squeeze in!), the eggs were taken, possibly by a Carrion Crow. Despite this, the first chicks hatched on Staple Island on 9 June and Inner Farne on 11 June. The first chicks started fledging from Inner Farne on 7 July and a total of ten fledged from thirteen monitored nests, the best productivity in four years. Throughout the season there were some sizeable counts with up to eight present in spring peaking with eighty-nine on 28 March. Post-breeding flocks gathered following the breeding season with noticeable counts of 127 on 9 July, 164 on 23 July and 146 on 20 September.

**Ringed Plover** *Charadrius hiaticula*

A common passage visitor, uncommon as a breeding species.

The islands continue to be home to a small breeding population, although each year various problems restrict breeding success. Displaying birds were noted in mid-February as the mild start to spring encouraged early nesting. Nest scrapes were discovered on Inner Farne on 2 April and the first eggs were found on 9 April with another nesting pair on 13 April. The population maintained itself and a total of 9 (9) pairs nested as follows: Inner Farne 3 (3), Knoxes Reef 1 (0), Staple Island 1 (2), Brownsman 3 (3) and Longstone 1 (1). The first chicks started hatching from 9 May with fledglings noted from 17 July. The species is notorious for being predated at the egg stage and an enterprising warden constructed large chicken-wire cages, which allowed access by nesting adults but restricted any large gulls. This had a marked success as caged pairs reached hatching stage, giving their broods a sporting chance of success. Without doubt this protection helped ensure that nine chicks fledged from the islands (four from Inner Farne and five from Brownsman), the highest number of fledged chicks this century. A fledged juvenile on Inner Farne on 8 July was not of 'Farnes stock' and as usual, a small post-breeding flock appeared on Inner Farne during the late summer, with a peak of fifteen on 10 August. Small numbers of 1-2 remained on the islands during the autumn and winter months.

**Golden Plover** *Pluvialis apricaria*

A well represented passage visitor.

For the second consecutive year it was a below-par season for this northern upland moor-



land plover, as despite the usual post-breeding flock congregating on the Longstone complex in late summer, numbers remained lower than expected. Spring passage produced a handful of reports in May with six north over the outer group on 9, one west with Turnstones on 11, fourteen north on 22 and thirty south on 25 May. A very late record of three east over the outer group on 4 June may have involved non-breeders. As usual mid-July signalled the start of the post-breeding build up, favouring the Longstone complex. A single west on 15 July increased with fifteen present the following day, eventually peaking at forty on 31 July. August produced the biggest numbers, all on Longstone, with birds seen almost daily, often commuting from the outer group to the nearby mainland. Numbers continued to increase with 145 on 3, increasing to 250 on 4 with 400 present by 20 August. The season's peak count concerned 503 on 28 August. Thereafter birds began to disperse with 310 on 4 September decreasing to 200 by 10 September with small numbers recorded throughout the rest of the month. A count of 360 north on 1 October was out of keeping with the trend, and birds were recorded on only a further six dates with the final record being one over Brownsman on 13 November.

**Grey Plover** *P. squatarola*

A well represented passage visitor.

The erratic seasons continue for this globally widespread wader, as 2007 was one of the worst seasons on record followed by one of the best in 2008. However it was back to a quiet year with just six confirmed sightings. An adult summer-plumage individual was flushed off Megstone at high tide on 1 June with other summer-plumage individuals noted through Inner Sound on 4 August and on Knoxes Reef on 21 August. The outer group had a single on Staple Island on 30 September with two on the south-east rocks of Brownsman on 4 October. The final record in a disappointing season involved two north through Staple Sound on 30 November.

**Lapwing** *Vanellus vanellus*

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

Despite good numbers wintering on the nearby mainland and in Seahouses harbour, only a handful were reported on passage through the Farnes. Spring produced singles west over the inner group on 21 and 30 March with two west on 1 April. On the outer group singles were logged on 2 and 25 April. Autumn passage produced 1-3 on four dates from 15-30 October with a season's peak of four west over the islands on 22 October. The final autumn passage birds included two lingering on Brownsman on 10 and two west on 22 November. Interestingly an individual appeared on Brownsman on 2-4 December and appeared settled amongst the Grey Seals.

**Knot** *Calidris canutus*

A well represented passage visitor.

This high arctic breeder is commonly found around the coasts of the UK. In recent years the Farnes have supported a small summering flock and that trend continued this season. Northern bound birds were recorded on fifteen dates between 13 April and 31 May with peaks of seventy on Knoxes Reef on 28 April and eighty on 13 May. Thereafter a summering flock commuted between Knoxes Reef and Longstone with numbers fluctuating



between one and twenty-five and a peak of fifty-one on Longstone on 10 June. As the summer progressed more became evident as non-breeders and failed breeders gathered, with a daily presence throughout July and a peak of sixty-two on Knoxes Reef on 12 July. Gradually numbers started to decline with twenty-two on 1 August dropping down to single birds by 19 August. Thereafter the islands produced just three records, with the final report of six east on 16 September.

#### **Sanderling** *C. alba*

An uncommon passage visitor.

It was an excellent year for this long distant migrant although this was mainly due to birds lingering (an unusual habit for the species on the Farnes) and all records were confined to the inner group. A summer-plumage adult arrived in St Cuthbert's Cove, Inner Farne on 16 May and remained around this area (and Knoxes Reef) until 4 June, whilst another summer-plumage adult was noted on Knoxes Reef on 10 July. Thereafter two moved south through Staple Sound on 3 August, two juveniles arrived in St Cuthbert's Cove on 10 August and an adult was present on 19 August. Interestingly the year finished with some lingering individuals, and a juvenile on West Wideopens' beach on 6 September was joined by a second on 9, both remaining until at least 20 September.

#### **Purple Sandpiper** *C. maritima*

A common passage and winter visitor.

This classic rocky-shore wader is commonly found around the islands throughout the year and has an almost complete all-year round presence. Spring passage appears to bring the largest numbers with seventy-two counted on 28 March on Knoxes Reef with eighty on Longstone on 14 April. Numbers on both island groups remained high throughout late April and early May, peaking at 227 on 10 May. Thereafter numbers dwindled with six present on 27 May and two on Brownsman on 25 June. Soon after post-breeding dispersal brought good numbers back to the islands with sixteen counted on Longstone on 29 June followed by a daily presence throughout July and peaking at fifty-two across the islands on 12 July. As usual good numbers returned for the autumn and winter months around the islands although numbers appeared lower than usual, with a modest peak of eighty on 27 November.

#### **Dunlin** *C. alpina*

A common passage and winter visitor.

This common passage visitor was recorded in small numbers during spring passage with 1-4 on seventeen dates between 14 April and 30 May and generally involving summer-plumage adults. During this period a group of six west on 7 May was the highest count. Following singles on 25 and 29 June, returning birds arrived in reasonable numbers and were present daily throughout July and August. Numbers fluctuated daily with 1-13 including the first juveniles moving through the islands from 9 July, whilst peak counts included twenty on 23 July and twenty-five on 11 August. As autumn arrived records declined and 1-4 were recorded on nine dates including eight north on 1 September. The final two records concerned a single on Brownsman pond on 3 October with another on North Wamses the following day.

**Ruff** *Philomachus pugnax*

A well represented passage visitor.

This striking sexually dimorphic summer visitor has been going through a lean spell on the islands in recent years and this trend continued with the worst showing since 1989. A group of four circled Staple Island with a flock of Snipe on 3 September before heading west. A single over Inner Farne later that day may have been part of this group, but regardless it was a very disappointing year.

**Jack Snipe** *Lymnocyrtes minimus*

A well represented passage visitor.

This distinctive but secretive passage and winter visitor was recorded in small numbers on autumn passage. Individuals were flushed from Staple Island and Inner Farne during 'fall' conditions on 10 October with further singles seen by Brownsman pond on 22 and 24 October. The outer group continued to produce records with a single on 1 November and the last sighting involved another feeding around the pond on 5 November.

**Snipe** *Gallinago gallinago*

A well represented passage visitor.

This cryptic wader was well reported during autumn passage although numbers remained low during spring migration with just three records. Reports included a single flushed from the pond on Inner Farne on 20 March followed by further individuals on 3 and 5 April. Autumn passage commenced with a single on the 'flats' on Brownsman on 18 August and thereafter the species was well reported throughout the autumn period. Generally 1-5 were recorded although a noticeably large movement involved twenty-eight west over both island groups on 3 September, the third highest Farnes count. Other counts included seven west on 30 September and five on 14 October with 1-2 on twenty-five dates from September-November. As autumn faded so did the number of reports with the final record concerning two on Knoxes Reef on 27 November.

**Woodcock** *Scolopax rusticola*

A well represented passage visitor.

This cryptic woodland breeder moves through the Farnes on passage especially in the autumn. Spring passage was represented by just a single record of one flushed from the dock bank on Inner Farne on 20 March. Autumn passage commenced with a single seen on the north hill of Brownsman on 10 October. Thereafter 1-3 were noted on a further twenty-five dates until the final record of a single on Brownsman on 4 December. During this period an influx on 22 October brought six to the outer group whilst there was another influx in late October and early November, with six on 27 increasing to fifteen on 30 October and eight counted on 1 November. Interestingly a second, very late surge brought seven on 2 December with five on Brownsman and two on Inner Farne. Birds were often seen feeding around the buildings on the islands and individuals were seen feeding within the relative safety of the calor gas cages on 21 October and 20 November.



**Black-tailed Godwit** *Limosa limosa*

An uncommon passage visitor.

This elegant wader is recorded annually on the islands although only in small numbers as birds move to and from northern breeding grounds. A stunning summer-plumaged bird was discovered on Staple Island on 25 April and moved to nearby Brownsman, where the pond was to its liking and it remained until 29 April. The bird then switched island groups and was seen for two days feeding around the pond on Inner Farne from 30 April-1 May. Overhead passage was logged through Inner Sound with two south on 22 June and seven south on 1 August. Other records included two east over the Pele Tower on Inner Farne on 27 August with another (the final record of the year) on Knoxes Reef on 11 September.

**Bar-tailed Godwit** *L. lapponica*

A well represented passage visitor.

It was a return to form for this long distant migrant with good numbers reported throughout the season although, as usual, the majority of records referred to sightings on the inner group. Spring passage commenced with the appearance of fifty in a mixed flock (with Knot) observed heading north through Staple Sound on 13 April. Thereafter a hundred were present on Knoxes Reef on 20 April and a summer-plumage individual favoured St Cuthbert's Cove on Inner Farne from 25-30 April. The excellent start continued as it was evident that a reasonable flock was roosting at high tide during May on Knoxes Reef, with occasional records on the outer group. Up to fifty were present on 3 May increasing to 120 on 16 followed by a hundred on 17 and 130 on 28 May. Numbers declined during June-July as birds moved north to breeding grounds, but birds were still occasionally noted including sixty on 3 June and thirty-three on 26 July. However the best was yet to come, when an impressive 200 were counted on Knoxes Reef on 11 August and numbers continued to increase, peaking at a new Farnes day record of 341 on 27 August with 250 on 28 August (the previous record was 205 on 15 May 2003). However following the euphoria of record numbers, the flock rapidly decreased with just 1-16 present on seven September dates. The final record concerned nine roosting on West Wideopens on 4 October.

**Whimbrel** *Numenius phaeopus*

A well represented passage visitor.

It was a good season for this evocative summer visitor and the first returnees arrived on 18 April when nine vocal birds flew east over the inner group. Spring passage went on to produce 1-3 on twelve dates between 19 April and 14 May with a peak of twelve north on 7 May. As usual birds utilised the rocky shores of the islands as valuable feeding sites and a single on Staple Island on 27 June heralded the autumn passage. On the outer group, up to three were resident daily from July-September whilst 1-2 lingered on the inner group for short periods. There were some noteworthy numbers recorded in August as passage gained momentum, with eighteen east on 6, thirteen west on 10 and eleven west on 18 August. Numbers declined as the autumn progressed, with the final record being a lingering individual on Brownsman from 30 September-1 October.

### **Curlew** *N. arquata*

A common passage and winter visitor.

This upland breeder is recorded throughout the year with large numbers concentrating on Knoxes Reef on the inner group (Table 5). Numbers generally peak during the late summer when post-breeding birds gather at high tide roost. Elsewhere smaller numbers use several other islands throughout the year including Longstone, Brownsman and Staple Island although numbers remain low on these outer group of islands, with numbers peaking at a modest thirty on 15 July.

**Table 5** Peak Curlew counts on Knoxes Reef, Farne Islands.

Mar	Apr	May	June	July	Aug	Sept	Oct
66	203	11	40	135	110	300	250

### **Common Sandpiper** *Actitis hypoleucos*

A well represented passage visitor.

It was a slow start for this summer migrant with the first arriving on Brownsman on 12 May, the latest arrival in four years. However, once the first appeared a good number followed with at least three across the islands on 16 May followed by singles lingering on Brownsman and Inner Farne on 17-19 May. Return passage commenced with singles on Brownsman on 27 and 30 June, and thereafter 1-2 were recorded on twenty-seven dates during July and August, evenly split between the inner and outer groups with peaks of three on 24 and 31 July and 4 August. Records declined with birds moving south as the summer disappeared, with 1-2 noted on five dates from 1-6 September and the final record involving a single on Staple Island on 7 September.

### **Green Sandpiper** *Tringa ochropus*

An uncommon passage visitor.

The birds' eye-catching white rump and distinctive call help locate and identify this elegant wader and the first one was flushed from Staple Island on 26 June before moving to nearby Brownsman where it remained until the following day. The second arrived on Brownsman on the south-east rocks on 18 July. Passage brought an influx in early August, when a single graced Brownsman on 4 with two west over Inner Farne the same morning. There was almost a repeat of circumstances the following day as one was discovered on Brownsman (possibly the same bird) whilst two lingered on Inner Farne (on the north rocks and pond). Inner Farne then produced its last record with a single west over the lighthouse on 6 August. The final records of the year concerned singles on Staple Island on 20 and Brownsman on 22 August.

### **Spotted Redshank** *T. erythropus*

An uncommon passage visitor.

This distinct summer visitor graced the islands for the first time in three years with an adult summer-plumage bird discovered on Brownsman pond on 11 May before flying west to the inner group. Having travelled over Staple Sound it decided to return to Brownsman, where it remained on the pond until dusk and could occasionally be observed swimming. Following the first on 17 August 1953, the islands have produced fifty-six birds in twenty-



nine years with the last record on 29 September 2006. Interestingly, despite all these records there have only been five previous spring reports with singles in April 1968, May 1974, April 1977, May 2001 and April 2003.

**Greenshank** *T. nebularia*

A well represented passage visitor.

This familiar and distinctive passage wader had an excellent season although records were obscured by a long staying 'resident'. The first record involved two west over Brownsman on 17 August followed by two west over the inner group the following day. A newly arrived bird on Brownsman on 17 August found the island to its liking (especially the pond) and remained in residence until 11 September, occasionally wandering over to nearby Staple Island for feeding expeditions. Other passage birds were seen on the inner group with a single seen at the Churn pool on Inner Farne on 22 August – a bird in the same area on 25-26 August may have been the same individual.

**Wood Sandpiper** *T. glareola*

An uncommon passage visitor.

This striking sandpiper was seen for the fifth consecutive year with the season producing a single record: an adult on Brownsman pond on 23 June.

**Redshank** *T. totanus*

A common passage and winter visitor. Bred in eight years 1924-46 (Goddard, 1925-1948; Hawkey, 1991; Wilson, 2000-2009).

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 being away on their breeding grounds. Small numbers were seen throughout March and April with peaks of eight on Knoxes Reef on 19 April and thirteen on 20 April. Thereafter the species became scarce with two on Knoxes Reef on 16 May followed by singles on the islands on nine dates throughout May and June. Birds gradually filtered back following the breeding season with three on 3 July increasing to nine on 10 and peaking at twenty-five on 13 July, with a continued presence thereafter. Wader passage during the later summer brought the season's peak counts with thirty-eight on 10 August, thirty on 11 August and twenty-six on 9 September. As usual, up to twenty-five remained to winter on the islands, favouring several islands but especially Longstone and Knoxes Reef.

**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 arctic breeding grounds. The spring period produced regular reports of up to a hundred present throughout March and April from several islands with a spring peak of 353 on 10 May (124 on the inner group and 229 on the outer group). Although present throughout the summer months, numbers remained low with no more than twenty non-breeding individuals lingering. Post breeding flocks started to gather from early July with 165 present on 12 and 264 counted on 24 July. Numbers remained high in early August and counts suggested 200 on the inner group and 300 on the outer group in the first week, with numbers declining thereafter with 150 present throughout the autumn and early winter months.

**Grey Phalarope** *Phalaropus fulicarius*

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

This has become very much a Farnes bird across the north-east of England as this surface feeding specialist was recorded for the eleventh consecutive year from the islands. A crossing through Staple Sound on the Zodiac inflatable boat between Inner Farne and Brownsman, was cut short in its tracks when a bird was discovered feeding on the sea on 23 October. As is usually the case with this species, it continued to feed and allowed the boat and three admiring wardens to within a few feet. A second, more distant individual was noted during a seawatch as it flew south-west through Staple Sound before landing on the sea on 1 December. This brings the total number of birds seen to an impressive thirty-one since 2000.

**Pomarine Skua** *Stercorarius pomarinus*

A well represented passage visitor, common in some years.

This powerhouse of a skua had a modest season although it was a good year for adult birds. The first of the year was an immature observed on 1 August harrying gulls east of Longstone. Passage produced an adult with full 'spoons' past the south end of the islands on 15 September followed by a dark juvenile north through Staple Sound on 26 September. A noteworthy four moved north during 30 September with another adult with full 'spoons' seen flying low over the observers' heads on Brownsman on 1 October. The final record concerned another four north on 9 October, all adults in full summer plumage.

**Arctic Skua** *S. parasiticus*

A common passage visitor.

This aerial sea pirate was well represented during spring and autumn migration. Spring passage produced three records with a dark phase adult north on 5 May, a pale phase north on 4 June and another dark phase individual north on 5 June. Following a thirty-four day absence the first returnees started appearing in Farnes waters from 8 July with a single south through Staple Sound. Thereafter 1-3 lingered around the islands throughout July and August as birds harried the local seabird population, especially the terns, for valuable food. It was interesting to note that numbers were much lower than in recent years and this may have been a direct result of successful breeding seasons to the north, ensuring adults remained on their breeding grounds longer to raise chicks. Passage was generally low with 1-9 on twenty-two dates in September and October with peaks of thirteen south on 3 and ten south on 8 September. The year's peak movement occurred on 9 October with thirty-five north past the south end of the islands. The final record was a single south through Staple Sound on 26 October.

**Long-tailed Skua** *S. longicaudus*

An uncommon passage visitor.

This still remains a prize for seawatchers and following last season's disappointingly blank year, the islands produced two records in early October. A juvenile flew south past Brownsman on 3 October and another, a stunning adult, also moved south on 8 October.



### **Great Skua** *S. skua*

A common passage visitor.

It was a very unlikely start to the season for this ferocious passage visitor when a bird was discovered on the very early date of 17 February. The individual flew off Inner Farne and landed on the nearby West Wideopens, where it was observed eating a rabbit (there were plenty of dead rabbits on Inner Farne). This is the first ever February record for the islands. More in keeping with the usual records, spring passage commenced with a single on 2 and 12 May with 1-2 on three dates from 3-9 June. Thereafter passage became more regular from early July as 1-8 were logged on thirty-one dates between 8 July and 16 October. Peak counts included twenty-five north on 14 September and twelve north on 16 September, with a season's best of sixty-four north on 9 October (the fifth highest ever count). The final record was a single south through Staple Sound on 1 November.

### **Sabine's Gull** *Xema sabini*

A scarce passage visitor.

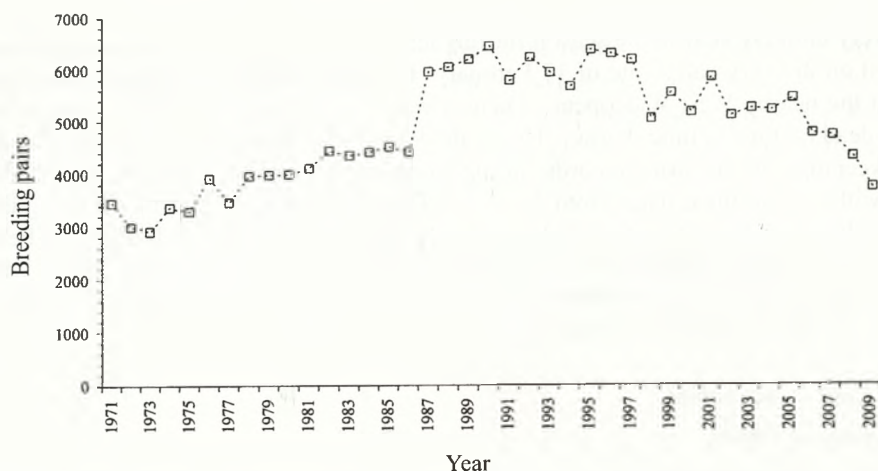
This rare Nearctic wanderer was only recorded for the first time on the Farnes as recently as 1991, but a further twenty since has changed the species' status on the islands, including five in both 1997 and 2005, with four in 2007. A moulting adult was discovered roosting with Kittiwakes early on the morning of 1 August on Brownsman 'flats' but departed south soon after. This represents the first record since two juveniles were noted on 28 September 2007.

### **Kittiwake** *Rissa tridactyla*

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

Once again, for the fifth consecutive season, the population declined but at long last the breeding season was a huge success. Small numbers were present in late March although numbers remained sporadic until mid-April when the majority of nesting ledges were occupied. Nest building was observed soon after, as birds collected nesting material from around the ponds on several islands (especially Inner Farne and Brownsman) and copulating was noted from 10 May. The first eggs were discovered on West Wideopens on 19 May and Staple Island on 20 May. Worryingly the population declined again with a total of 3,699 (4,275) pairs nesting as follows: Megstone 9 (13), Inner Farne 1,223 (1,163), West Wideopens 165 (187), East Wideopens 220 (240), Skeney Scar 118 (152), Staple Island 883 (1,198), Brownsman 974 (1,166), North Wamses 42 (57), South Wamses 17 (29), Roddam and Green 4 (14) and Big Harcar 44 (56) representing the lowest breeding population since 1977. The first chicks started hatching on 15 June on Brownsman and three days later on Inner Farne. The species has suffered in recent years due to either weather related problems or the ability of parent birds to find a sufficient food source (Snake Pipefish have provided the staple diet in recent years, although with low nutritional value, resulting in very poor breeding seasons). However this year witnessed the almost complete disappearance of these troublesome fish and adult birds returned to preferred prey items, especially sandeels, which were abundant during the season. The result was an excellent breeding season, as good numbers of young were raised across all the colonies. The first young started fledging from nests on 20 July and thereafter huge numbers of fledglings were seen around the islands. It was a complete contrast to recent years, as birds reared two or three young – a rarity in recent seasons. Monitoring results showed 593 nests produced 702 fledged chicks with an overall productivity of 1.18 – the best result since 1996. As usual, only small numbers remained around the islands following the breeding season.

**Figure 2** Breeding pairs of Kittiwakes on the Farne Islands from 1971 to 2009.



#### **Black-headed Gull** *Chroicocephalus ridibundus*

A well represented breeding species and common visitor.

Usually one of the first breeding birds to establish territories on the islands, and the wardens arrived on Inner Farne in mid-March to be greeted by the sound of displaying birds. There proved to be a reduction in the breeding numbers and a total of 260 (369) pairs nested as follows: Inner Farne 247 (320), Staple Island 1 (5) and Brownsman 12 (44). The reduction could partially be put down to the almost complete desertion of the main colony on cemetery bank on Inner Farne. A number of these birds moved to the nearby top meadow but it was evident some moved away from the islands completely. As usual good numbers roosted on Knoxes Reef in the early spring with up to 1,000 present on 20 April. Nest building was noted soon after and the first eggs were discovered on 30 April on the inner group, with the outer group following soon after on 4 May. Once again predation from the larger gulls was intense, although this did help act as a 'buffer zone' to nearby nesting terns. The first chicks appeared in early June with the first fledglings flying from 24 June. Although not monitored, approximately a hundred fledged chicks were counted on the picnic site of Inner Farne on 19 July. As late summer progressed, the breeding population dispersed with only small numbers lingering during the autumn months with a peak count of 108 north on 24 August.

#### **Little Gull** *Hydrocoloeus minutus*

A well represented passage and winter visitor.

It was almost a repeat of the previous season, with only small numbers recorded on passage. The first bird of the year was an adult summer-plumage individual north-west over Brownsman on 20 April, with a first-summer noted on the inner group on 6-9 May. Further spring records included a second-summer on Staple Island and Brownsman on 15-16 May, with another first-summer in the Kettle on 19 May. It was a very disappointing late summer with just one adult north through Staple Sound on 8 July, and a very late adult south through Staple Sound on 1 December.



### **Mediterranean Gull** *Larus melanocephalus*

An uncommon passage and winter visitor.

Over the last ten years the number of records has spiralled, following a national trend, as only twelve had been recorded on the islands before 2000, but twenty-four have been added since. A first-summer bird was discovered roosting on Knoxes Reef on 7 April and was seen again on 8, 9, 12, 22 and 24 April. It continued to linger into May as it was discovered in the Black-headed Gull colony on Inner Farne on 9 May. Interestingly, breeding was confirmed for the first time in Northumberland with two pairs nesting on nearby Coquet Island and it may only be a matter of time before they follow suit on the Farnes. The only other record concerned an adult summer-plumage bird over the jetty on Inner Farne on 2 July.

### **Common Gull** *L. canus*

A common visitor. Bred in four years 1910-14 (Booth, 1911, 1912; Miller, 1911-1914; Paynter, 1914) and 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 east to breeding grounds in Scandinavia, with a distinct build-up on Knoxes Reef on the inner group during early spring. Numbers quickly increased from mid-March and eight on 23 March increased to twenty-four on 7 April with a peak of ninety-seven on 19 April. As the spring progressed, numbers started to decline and from mid-May the species was very scarce around the islands with single first-summer individuals seen on three dates. Following an almost two months' absence, the first fledged juvenile arrived on the inner group on 13 August and 1-2 were recorded on eleven dates in September with a peak of seven on 27 September. Thereafter small numbers were recorded with up thirty present throughout the late autumn.

### **Lesser-black Backed Gull** *L. fuscus*

A common breeding species and passage visitor.

The Farnes population is completely migratory and birds returned in early March with good numbers present on the breeding colonies by the end of March. Pair bonding and copulation were observed soon after although the first eggs were not discovered until 30 April. The population remained healthy with a total of 498 (509) breeding pairs nesting as follows: Inner Farne 16 (31), West Wideopens 150 (155), East Wideopens 70 (64), Knoxes Reef 5 (8), Staple Island 35 (31), Brownsman 6 (8), North Wamses 55 (57), South Wamses 86 (81), Roddam and Green 15 (14) and Big Harcar 60 (60). Once again the species was responsible for predation amongst other nesting seabirds especially Eiders on Inner Farne. Good numbers of young fledged from nests and as the summer progressed birds started departing the breeding grounds for southern Britain. As expected, the species was absent during the winter months with no confirmed records after 20 September.

### **Herring Gull** *L. argentatus*

A common breeding species, abundant in winter.

This very abundant resident nested in good numbers across all the islands and large numbers were evident when the wardens arrived in late March. Breeding activity intensified during April as pair bonding, territorial disputes and nest scraping were all observed with the first eggs discovered on 30 April. A total of 575 (530) pairs nested as follows: Inner Farne 3 (4), West Wideopens 65 (66), East Wideopens 55 (58), Knoxes Reef 52 (57), Skeney Scar

20 (17), Staple Island 20 (21), Brownsman 7 (8), North Wamses 118 (101), South Wamses 54 (49), Roddam and Green 23 (17), Big Harcar 82 (61), Longstone Main 4 (0), Longstone End 31 (37) and Northern Hares 41 (34). This species was responsible for the majority of predation recorded on the islands during the season, as attacks on several nesting species were very evident. The first chicks started hatching from 1 June and there were good numbers of fledged young. Following the breeding season, good numbers remained to winter around the islands with influxes of northern European birds during late autumn. The autumn months also see some huge nightly roosts; due to access difficulties these counts go uncounted, but are considered to be in the region of 10,000 individuals.

**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-eight records following the first in 1955. A first-summer was discovered feeding amongst large numbers of gulls over the Bridges on the inner group on 28 March. Interestingly the previous seven records have all occurred during April with the inner group continuing its dominance, the last outer group record occurring in 1997.

**Glaucous Gull** *L. hyperboreus*

An uncommon winter and passage visitor.

This large pale northern gull can brighten up even the coldest of days and it was the fifth consecutive year the islands claimed a record. A first-winter (moulting into first-summer plumage) landed in the Kettle off Inner Farne on 22 March before showing well at the roost on nearby Knoxes Reef.

**Great Black-backed Gull** *L. marinus*

An uncommon breeder, common winter and passage visitor.

This monster gull maintains a toe-hold on the islands as the small population continues to rear young on the Farnes. Small numbers were evident in mid-March, the majority breeding birds which had already established territories. The first eggs were discovered on East Wideopens on 3 May and Brownsman 15 May and a total of 8 (9) pairs nested as follows: West Wideopens 0 (1) East Wideopens 3 (3), Brownsman 1 (1), North Wamses 2 (2), South Wamses 1 (1) and Big Harcar 1 (1). The brutal reality of having even a very small breeding population was noted on the inner group, as one bird specialised in killing adult Puffins. The first fledglings started flying in early July and at least six nests were successful in rearing young although, perhaps surprisingly, predation by other large gulls was the cause of failure at one nest site. As expected, a noticeable influx of northern breeding birds occurred during the late summer, with roosts of up to 200 recorded on the outer group in October-November. Interestingly an adult was seen being hit by a Peregrine and although the bird survived, it appeared shocked and stunned by its encounter.

**Little Tern** *Sternula albifrons*

A well represented passage visitor.

Although birds do not breed on the islands, a pre-breeding evening roost on St Cuthbert's Cove throughout May has attracted some impressive numbers in recent years. However, for the second consecutive year numbers remained low with a modest peak. The first arrival



involved two birds at the roost on 25 April with an increase to eight on 27-29 April with Table 6 showing the roost counts in May. The peak count of fifty-eight on 14 May was some way off the peak of two years ago when 130 were counted. As usual, following the peak, birds dispersed to local breeding areas on the mainland and the roost dwindled in the final few weeks of the month. However June produced three reports: four on 3, six on 4 and four on 9 June.

**Table 6** Evening roost counts of Little Tern, Inner Farne 2009.

May											
1	4	6	7	9	12	14	19	23	25	26	31
13	14	24	31	50	53	58	42	31	23	14	6

#### **Black Tern** *Chlidonias niger*

An uncommon passage visitor.

The islands are going through a very lean spell for this elegant marsh tern as the last two years have produced just a single record. That trend continued when two juveniles moved north through Inner Sound on the evening of 24 August, having flown over the Zodiac inflatable.

#### **Sandwich Tern** *Sterna sandvicensis*

An abundant breeding summer and passage visitor.

The largest and most vocal of all the breeding terns returned to Farnes waters in late March, when a switch in wind direction brought seven into the evening roost on 30 March. Thereafter the traditional evening roost on Knoxes Reef increased nightly (as shown in Table 7). During this period loud vocal displays occurred over the traditional nesting site on Inner Farne and copulation was observed on the Ladies Path in late April. Following the first birds settling on Inner Farne on 2 May, the first eggs were discovered on 9 May. A total of 1,415 (1,358) pairs nested as follows: Inner Farne 1,311 (1,358) and Brownsman 104 (0). As with recent seasons it was evident that breeding birds arrived in two waves, because a large group of birds was three weeks ahead of others within the same colony. Even more intriguing, a third wave brought over a hundred to Brownsman with the first eggs not discovered on that island until 8 June. Following the first chicks hatching on 2 June on Inner Farne, the breeding season appeared to be very successful with large numbers of young fledging from the main colony. However it was the complete opposite for the late arrivals on Brownsman as weather conditions, late arrival and predation accounted for the majority of eggs and young with only thirteen young fledging from late July. As the summer progressed the colony dispersed and it was noteworthy that adults and fledged juveniles left the islands from mid-August with the last fledgling seen departing on 21 August. Good numbers remained in Farne waters during early September with the final record of one west through Inner Sound on 5 October.

**Table 7** Evening roost counts of Sandwich Terns, Knoxes Reef 2009.

April									
1	5	7	8	10	12	15	20	24	26
9	24	61	102	178	256	367	392	554	549

### **Common Tern** *S. hirundo*

A common breeding summer and passage visitor.

Small numbers nest on the islands and the first returning bird was seen in the evening roost on Knoxes Reef on 19 April. Numbers slowly increased with three present on 24, increasing to twenty-four on 29 April with the bulk of breeding birds back on the islands in early May. The first pair was seen settling on Inner Farne at the traditional nesting area near the Sandwich Tern colony on the top meadow from 3 May with twenty-four present on 14 May. The first eggs were discovered on 19 May and 98 (104) pairs nested as follows: Inner Farne 94 (103) and Brownsman 4 (1). The first young hatched from 25 June and, although not monitored, it appeared to be a disappointing season with only a handful of young fledging. The first chicks took to the wing from 19 July and thirty fledglings were counted on 23 July. As the summer progressed, reports became scarce with a final record of two west through Staple Sound on 5 October.

### **Roseate Tern** *S. dougallii*

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

It was a very interesting season, with confirmed breeding for the first time in three years although without a happy outcome. As is usually the case the first birds arrived late, with two flying over the Inner Farne jetty on 25 May signalling their return although only small numbers of 1-2 were seen over the following week. From early June birds became very elusive and it appeared, for the third consecutive year, that a breeding attempt was not going to be made. However following the late arrival of a Sandwich Tern colony on Brownsman in early June, a pair associated with these birds from 15 June. It then became obvious that two pairs were establishing themselves as vocal aerial displays and nest scraping were noted. The two pairs went on to nest amongst the Sandwich Terns although on the peripheries of the colony, on almost bare open rock. Three eggs in total were laid (clutches of two and one) by 3 July and although hatching took place with the clutch of two on 23 July, all three were lost to predation soon after. Despite the placing of nest boxes, the failure was compounded by the desertion of the nearby Sandwich Tern colony, therefore losing extra protection against the large gulls. Despite the failure, it was an encouraging step forward and the first confirmed breeding on the outer group since 1993. Nesting has now taken place in six of the past ten years. Following the breeding attempts good numbers were evident in late July as successful breeders from nearby Coquet Island started filtering through the islands with up to five daily from 18 July-12 August, including fledged juveniles. The final record was an adult over Inner Farne on 15 August.

### **Arctic Tern** *S. paradisaea*

An abundant breeding summer and passage visitor.

This long distant wanderer is closely scrutinised throughout the season on the islands and the first of the year, two individuals, arrived into the evening roost on Knoxes Reef on 19 April. Thereafter numbers built up rapidly (as shown in Table 8) and aerial displays commenced over the islands in early May. Copulating was observed from 10 May and nest scraping soon followed with the first eggs discovered on 17 May on both Brownsman and Inner Farne. The population remained healthy with a total of 2,198 (2,239) pairs nesting as follows: Inner Farne 1,092 (1,038), Brownsman 1,066 (1,178) and Staple Island 40 (23). The first chicks were discovered on 9 June and good numbers hatched over the following



week. The breeding season proved to be excellent as good weather, backed by a plentiful supply of sandeels, resulted in good numbers of young fledging. The first young took to the wing from 30 June and evening roosts increased in size as more and more fledged young joined parents at traditional sites. During this period first or second-summer birds joined the colonies with 1-2 present in late May increasing daily with a peak of seventy-one on 1 July. Following the breeding season, birds remained in Farnes waters until early September with the final report being a first-winter north through Staple Sound on 4 October.

**Table 8** Evening roost counts of Arctic Terns, Knoxes Reef 2009.

April					
19	21	24	25	27	29
2	7	14	41	146	315

### **Guillemot** *Uria aalge*

An abundant breeding resident and passage visitor.

The mild start to spring produced an early surprise, as huge numbers were evident in the breeding colonies when the wardens arrived on 20 March. However a bout of poor weather in late March brought typical erratic behaviour as birds departed for several days before returning on 6 April. They soon settled and the first eggs were discovered on Inner Farne on 19 April and Brownsman on 21 April. The population increased with a total of 48,126 (43,864) individuals counted as follows: Megstone 290 (222), Inner Farne 3,770 (4,289), West Wideopens 2,315 (1,993), East Wideopens 6,830 (2,929), Skeney Scar 2,180 (2,203), Staple Island 20,948 (22,597), Brownsman 8,908 (7,173), North Wamses 1,787 (1,476), South Wamses 588 (600), Roddam and Green 100 (110) and Big Harcar 410 (272). Food availability appeared to be very good although predation was again evident, especially during the early and later stages of the breeding season. Following the first chick hatching on 26 May on Staple Island and Inner Farne on 31 May, good numbers of young were seen in the main colonies. The first 'jumplings' started to take to the open sea from 11 June and thereafter good numbers were witnessed jumping and, as usual, the mass clear-out of all the cliffs occurred in the first two weeks of July. The once packed cliff-tops were almost all clear by the second week of July with the exception of Skeney Scar, with 800 still present in late July due to late nesting (eggs from the original nesting attempts being lost to storms in early May). The final fledglings departed the islands on 5 August and as usual the species became very scarce following the breeding season, although small numbers returned in mid-October to winter around the islands. Productivity revealed a good season as 158 chicks fledged from 171 monitored nests with a productivity rate of 0.92, equal to the previous year.

### **Razorbill** *Alca torda*

A common breeding resident and passage visitor.

Another season, another record breeding population. Although vastly outnumbered by its common relative, it has been a real success story of the islands and the population continued to increase. Early spring witnessed the typically erratic behaviour as poor weather forces birds back to sea, although good numbers were settled by 6 April on the breeding ledges. The first eggs were discovered on 29 April and a total of 332 (326) pairs nested as follows: Inner Farne 148 (149), West Wideopens 62 (64), East Wideopens 17 (18), Skeney Scar 8 (9), Staple Island 36 (31), Brownsman 8 (6), North Wamses 10 (12), South Wamses

23 (19), Roddam and Green 2 (0) and Big Harcar 18 (18). As well as impressive numbers nesting, the breeding season was superb as monitoring revealed a total of fifty-six fledged chicks from seventy monitored nests, matching last season's productivity of 0.80. The first chicks started jumping from 13 June and thereafter youngsters began moving away from the breeding cliffs with the final fledgling jumping by 24 July. The species became scarce until mid-October when small numbers returned to the islands.

**Black Guillemot** *Cephus grylle*

A well represented winter and passage visitor. Breeding 17<sup>th</sup> and possibly 18<sup>th</sup> centuries (Gardner-Medwin, 1985).

The Farnes remain the number one site for birds as they remain rare along other stretches of the Northumberland coast. The first autumn returnee was discovered on the sea in Staple Sound on 16 October. This may have been the same individual visible from the mainland, and it took up residence in Inner Sound from 30 October-9 November. Elsewhere around the islands 1-2 were present in Staple Sound during November with peaks of four on 10 November and five noted on 29 November. The final record before the wardens left the islands concerned an adult by the favoured Gun Rock on 1 December.

**Little Auk** *Alle alle*

A well represented winter and passage visitor.

Large numbers can occur after northerly gales and the islands boast the all-time British record, set in 2007, when over 28,800 moved north on 11 November. However without northerly winds during the late autumn, only small numbers penetrate the North Sea and this was very evident this year, with just a remarkable two individuals. A single was tracked up the north-east coast on the very early date of 14 September and was seen off the south end of Brownsman as it continued its way north. The autumn produced just one other report, a single north through Staple Sound on 29 November.

**Puffin** *Fratercula arctica*

An abundant breeding summer and passage visitor.

Following last season's full census of the entire breeding population, the population went uncensored this year although productivity and ringing data were collected. The first birds started returning in early March and good numbers were present on the islands on 20 March. However the mass invasion of the island 'tops' was short-lived as birds returned to sea following poor weather in late March. Eventually they settled and the first eggs were discovered on 28 April on Inner Farne and 29 April on Brownsman. Following last season's disappointing drop in the population (by 33%) good numbers appeared to be nesting, with the first chicks noted from 26 May. The breeding season was excellent and following the first fledgling on 26 June huge numbers fledged, with monitoring revealing ninety-one chicks successfully leaving from a hundred nests. During the late summer, new technology (Geolocators) were attached to several birds on Brownsman and hopefully, when re-trapped next season, their winter whereabouts will be revealed. Following the breeding season, almost 95% of the population had departed by 28 July with very few birds noted in August, although an adult was still attending a burrow on Inner Farne on 17 August. As usual, the autumn months produced only a handful of records with 1-2 noted on several dates during November and December.



**Feral Pigeon** *Columba livia*

A common breeding resident.

This species was abundant throughout the year with a noticeable peak in the autumn of *ca* 400, especially on the inner group. A reasonable number of pairs bred on the islands and an indication of their 'all-year round' breeding were fledged young seen in early April and mid-November.

**Wood Pigeon** *C. palumbus*

An uncommon passage visitor.

Small numbers are recorded annually, predominately on spring passage as birds move north from the near-continent and, for the third consecutive year, the total number of records for the year remained below ten. Following an individual in the lighthouse compound on Inner Farne on 2-3 April, the spring produced a further six records with singles on Brownsman on 10 and 18 and two on 26 with one of these birds remaining on Staple Island until 27 April. Further records included one on Longstone End on 1 May and once again, the islands produced a mid-summer record of one on Brownsman on 14-15 June. The final records, and only autumn reports, concerned singles on Brownsman and Staple Island on 22 October, both of which departed west towards the mainland.

**Collared Dove** *Streptopelia decaocto*

An uncommon passage visitor.

The recent boom period on the Farnes continued suggesting both local and near-continent irruption, and the year produced seven records, the best showing since 1994. The first bird of the year was discovered at the lighthouse on Inner Farne on 27 April and flew off west, followed by an individual on Brownsman on 3 May. The third of the year was seen on the chapel roof on Inner Farne on 8 May before relocating to Brownsman later that morning. All further records came from the outer group: one flew west over Longstone lighthouse at dusk on 11 May followed by singles on Brownsman on 17 and 19 May. The final record was a single in the artificial tree on Brownsman on 26 May.

**Cuckoo** *Cuculus canorus*

An uncommon passage visitor.

Following a slow start to the decade, the number of records since 2000 has exceeded any other decade in Farnes recording history. An adult flushed from the upper vegetable garden on Brownsman on the afternoon of 15 May relocated to Inner Farne later that day and remained on the island throughout 16 May, before moving to nearby West Wideopens. The autumn produced two juveniles, with the first seen feeding on caterpillars in the central meadow on Inner Farne on 31 July before departing high west towards the mainland. The third and final record involved another juvenile which favoured Inner Farne for an impressive ten days between 22 and 31 August. The bird showed well throughout its stay, favouring the north rocks area of the island and became the second longest ever 'resident' in Farnes history, following a juvenile on Brownsman from 10-28 August 1974. It was the fourth consecutive year the islands have produced records, bringing the total number for the decade to thirteen records.

**Long-eared Owl** *Asio otus*

An uncommon passage visitor.

This impressive nocturnal immigrant has been recorded annually since 1983 apart from a surprisingly blank year in 2007. This year started well when a roosting bird was discovered in the lighthouse compound on Inner Farne on the morning of 21 April. It remained all day and was enjoyed by the visiting public and wardens alike. It represented only the eighth spring record in modern history following individuals in 1971, 1976, 1987, 1992, 1997, 1998 and 2006. There were no further records.

**Short-eared Owl** *A. flammeus*

An uncommon passage visitor.

Continuing the trend of recent years, the islands produced three spring records but overall the year was generally disappointing as the autumn failed to produce any serious numbers. The first bird of the year flew high west over Inner Farne on 21 March and was followed by another west over the same island on 1 April. The third and final spring record concerned an individual flushed from the east side of Staple Island on 5 May which moved out towards Longstone, being heavily mobbed by large gulls in the process. The expected autumn influx failed to occur, something mirrored across the north-east of England as the species remained scarce on passage. The first bird of the autumn flew low over Brownsman before landing on nearby Staple Island on 10 October with another mobbed by gulls as it flew west over Inner Farne on 13 October. The final record of a disappointing autumn was one flushed from Brownsman on 21 October.

**Swift** *Apus apus*

A well represented summer and passage visitor.

This aerial master was first seen in Farnes airspace on 8 May when an individual flew west over Brownsman followed by two north over Inner Farne the following day. It took some time for passage to gain momentum and May went on to produce only a further three singles, all west on 16, 17 and 25 May. The first noticeable count of the season involved eleven west over Inner Farne on 1 June followed by 1-7 on twelve dates between 23 June and 31 July. The species is one of the first to leave the UK for southern winter climes, as birds move south in August and for the second consecutive year a noticeable movement, by Farnes standards, was logged during the month. Twelve moved south on 1 followed by 1-2 on five dates including four south on 4 August. The final record concerned two west over the inner group on 1 September.

**Wryneck** *Jynx torquilla*

An uncommon passage visitor.

This cryptic east coast drift migrant has been recorded in thirty of the previous forty years including some impressive numbers in recent seasons including eight in 2004, seven in 2006 and five in 2008. However this year was more typical and the islands produced just a single record: one was discovered on the east side of Staple Island on 30 April before disappearing into the rocky area of the island.



**Red-backed Shrike** *Lanius collurio*

An uncommon passage visitor.

This migratory predator was recorded on the islands for the second consecutive year although could not match last season's impressive eight records. An elusive and flighty first-winter was discovered on Inner Farne on 10 October and remained on the island throughout the day. A total of eighty-six have now been recorded in the past forty years, with the majority of records occurring in the spring.

**Jackdaw** *Corvus monedula*

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

This species still remains scarce during the year with the majority of reports involving birds passing overhead during the early spring period. The first of the year was noted flying west over Inner Farne on 26 March followed by three west on 31 March. Further spring records included 1-3 on 9, 20 and 25 with four east on 26 April. The spring season was (unusually for the Farnes) extended into May with a pair on the Pele Tower roof on Inner Farne on 10 and 12 May and one heavily mobbed by Arctic Terns on the morning of 20 June. Autumn normally produces few records and a single west over Inner Farne on 15 September and two landing on the Pele Tower on Inner Farne on 20 September was a fairly typical showing.

**Rook** *C. frugilegus*

A well represented visitor.

This town and country *Corvid* wanders to the islands in small numbers in spring and autumn although rarely landing and often returning west after brief fly-overs. The first of the year involved two west over the inner group on 20 March followed by three west on 31 March. Light spring passage continued during April with singles recorded on five dates from 19-26 April with the final spring passage bird seen flying west over the outer and then the inner group on 28 April. As expected, autumn passage was quiet with two west over Inner Farne on 24 September and two south over Brownsman on 31 October.

**Carrion Crow** *C. corone*

A well represented visitor and rare breeding species.

As usual, the species was well reported throughout the spring and autumn periods with large numbers noted. Spring produced almost daily sightings of up to seven from March-May with peak counts of twenty east on 19 April, twenty-four east on 25 April and twenty-seven west on 26 April. An individual carrying nesting material was seen on the inner group in late March but no nesting attempt was made. The species' predatory instincts were all too clear as an individual predated Eider eggs on at least two occasions. The summer months produced 1-2 on nine dates and last season's summering individual did not return. Records became more regular from early September although numbers remained low with 1-6 seen on thirty dates from 2 September-4 December.

**Hooded Crow** *C. cornix*

An uncommon visitor.

This once common winter visitor is now a real scarcity on the islands with only eight records from the previous ten years, seven of which have occurred between 18 March and 10 April.

A lone individual was noted flying north over Inner Farne on the morning of 31 March and is the first record since a single was seen on 26 March 2007.

**Goldcrest** *Regulus regulus*

A common passage visitor.

The presence of this diminutive sprite (known romantically as the Owl Pilot) is often given away by its distinctive high pitched call and the islands normally attract good numbers during both spring and autumn passage. However it was a noticeably quiet year, reflected down the east coast with a lack of any serious numbers during the autumn. Spring passage was light with peak passage in the first few weeks of April with six on 2-4, declining to three on 5 and two on 6-7 April. Thereafter only singles were noted on 10 and 27-28 April (the latter the only outer group record of the spring). Following a single on Longstone on 14 September, the expected autumn avalanche of birds failed to occur. Following no more records in September, October produced reports of 1-5 on twelve dates with a modest peak of ten on 22 and nine on 23 October. The only November records involved singles on 5 and 6 with the last report of the season on North Wamses on 11 November.

**Firecrest** *R. ignicapilla*

An uncommon passage visitor.

It was an excellent year for this fire-sprite as a good east coast influx brought a record four to the islands. The first of the year involved a cracking male discovered feeding in the Hemlock around the pond on Inner Farne on 10 October, and was present throughout the day. A very confiding female/immature was on Brownsman on 21-24 October and roosted overnight in the dormitory on the evening of 22 October. During this period another showy individual was found on the dock bank on Inner Farne on 23 October. The fourth and final record concerned an elusive bird on Brownsman on 26 October, favouring the pump house area of the island. The Farnes have boasted twenty-four records since 1970 with 66% of all records occurring between 2 October and 20 November. The last spring report was in March 2001.

**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).

This declining farmland vocalist was recorded throughout the spring and autumn with peak passage in October. The first record of the year involved one singing over Inner Farne on 21 March followed by four west on 24 March. Spring passage was slow throughout with 1-2 on thirteen dates between 1 April and 8 May with the last record being one on the central meadow on Inner Farne on 13 May. Following the species' absence during the following three months, the first autumn returnee arrived on Inner Farne on 18 September. Thereafter there was a continued presence throughout late September and October, with peaks of thirty-three on Inner Farne on 29 and seven west on 30 September. October produced the bulk of records with 1-12 almost daily between the island groups and a strong passage logged on 21 and 22, with twenty-one and thirty-eight west over the islands respectively. Numbers started to dwindle as the autumn progressed, with five west over Brownsman on 3 November. Thereafter the month contributed five further records of 1-2 although, as with the previous season, there was a hint of over-wintering, when an individual was noted on Brownsman on 4 December.



### **Sand Martin** *Riparia riparia*

A well represented summer and passage visitor.

This summer hawk was seen on nine dates, a typical annual total. The first bird of the year was a single seen feeding around the Longstone complex on 18 April, a typical arrival date for the islands, followed by two west over Inner Farne on 21 and two north on 22 April. Further spring passage included singles on 3, 10, and 13 May with the last bird of the spring seen over Brownsman on 16 May. The only autumn record, and the last of the year, was of two west over Inner Farne on 3 September.

### **Swallow** *Hirundo rustica*

A common summer and passage visitor. Scarce breeder.

It was a very noteworthy year for this attractive summer visitor: birds used the islands as a north-south fly-highway and this year provided the first confirmed breeding in over a decade. Passage was logged on seventy-four dates (fifty during spring and twenty-four in autumn) with spring producing the bulk of the reports. The first bird of the year was seen flying north through Brownsman Gut on 10 April with 1-25 noted on a further forty-nine dates, peaking at a modest thirty-four north on 16 May. However the big news was that a pair successfully nested on the islands for the first time since 1997. They arrived on Inner Farne on 8 June and appeared to take an interest in the lighthouse store soon after. The promising start developed into nest building and confirmation of the first breeding attempt in twelve years was made on 29 June when the nest was inspected and five eggs were discovered. Thereafter the pair remained loyal to the site and five chicks were seen on 21 July although only four fledged on 28 July. The family party remained on the islands throughout August, often taking excursions out towards the mainland before finally departing the Farnes in early September. Autumn passage commenced on 31 July with fourteen over the islands, and passage was logged on a further twenty-three dates until the last record in late September. Passage generally involved 1-37 with peaks of forty-four west on 8, but this was all eclipsed by a total of 251 north on 3 September, representing a new Farnes day record and beating the previous record of 204 set the previous year. The last sighting involved twenty-six south on 25 September.

### **House Martin** *Delichon urbicum*

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

It was another good year for sightings, as the islands produced reports on eighteen dates during the season: twelve in spring and six in autumn. The first bird of the year was seen flying over the north-east of Inner Farne on 8 April. This represented the earliest ever Farnes record, shaving four days off the previous one of a bird on 12 April 2005. Thereafter 1-3 were seen on 27 April and on nine dates from 14-23 May with a peak of four west over Inner Farne on 16 May. Following a two month absence, the first autumn returnees involved four west over Inner Farne on 14 August followed by two west on 21 August. An impressive movement of forty-one was recorded in three flocks moving west over the islands on 31 August – the second highest count for the islands. Numbers dwindled as autumn developed, with seven west on 1 and the final record concerned one lingering on Inner Farne on 8-9 September which, bizarrely, was heavily mobbed by Pied Wagtails on the first day.

**Yellow-browed Warbler** *Phylloscopus inornatus*

An uncommon passage visitor.

Records of this Siberian sprite continue to increase annually, a statistic mirrored nationally, and the Farnes have boasted fifty-two records in the previous nine years compared with thirty-eight in the 1990s and twenty-four in 1980s. The first of the year arrived on Inner Farne when a bird was seen briefly near the lighthouse on 29 September but departed west towards the mainland soon after. However a second and more obliging bird appeared on 4 October on the same island by St Cuthbert's Chapel and showed well throughout the day. The 'fall' on 10 October produced two vocal birds, with singles all day on Inner Farne (favouring the central meadow) and Brownsman (favouring the area around the cottage). The fifth and final record was one discovered just before dusk on the Celandine bank on Brownsman on 22 October.

**Chiffchaff** *P. collybita*

A common passage visitor.

This early returning summer migrant is one of the first to appear on the islands and this year was no exception as a singing bird was found on the dock bank on Inner Farne on 30 March. Thereafter spring produced reports of 1-5 on forty-two dates throughout April and May including occasional singing birds. Spring peaks included sixteen on 17, thirteen on 18 and seven on 17 April with seven on 15-16 May. The final spring report concerned a single on Brownsman on 20 May. Autumn passage commenced with a juvenile arriving on Inner Farne on 7-8 August with two present on 9 August. Thereafter the autumn produced records on thirty-one dates with the bulk occurring in October. Generally records involved 1-4 with an influx of eighteen across the islands on 10 October (eight on Brownsman, six on Inner Farne, three on Longstone and one on Staple Island). The final record was a single lingering on Brownsman from 30 October-8 November.

A bird showing the characteristics of the eastern race *P. c. tristis* was seen well and photographed on Brownsman on 17 October and was last recorded on the islands in 2004.

**Willow Warbler** *P. trochilus*

A common passage visitor.

It was a good year for reports although, unlike the previous season, there were no major falls during the autumn months. The first bird of the year arrived on Inner Farne around the pond on 6 April and thereafter 1-9 were reported on thirty spring dates. Spring peaks occurred on 16-17 April with sixteen and twenty across the islands respectively. During this spell 1-2 individuals showed characteristics of the eastern races *P. t. acredula* and *P. t. yakutensis* with a total lack of colour in the plumage. The only other double figure counts were eleven on 1 May and ten on 16 May. The final spring record was noted on Brownsman on 15 June. Autumn passage brought sightings on forty-five dates following the first returnee on Brownsman on 3 August. Numbers generally involved 1-11 as good numbers of juveniles were logged on southerly passage with an influx of birds in late August. Fifteen were logged on 23, with sixteen the following day and thirteen on 26 August. Daily records continued throughout early September with fourteen on 2 September. Numbers dwindled as the autumn progressed with October producing just two records, both on Brownsman, with singles on 2 and 23-27 October. The latter record was the latest island record since 2005.



**Blackcap** *Sylvia atricapilla*

A common passage visitor.

This distinctive summer visitor usually arrives on the islands in mid-April as small numbers move from the nearby continent to summer in Britain. It was an excellent showing on spring passage with reports on seventeen dates with the first bird, a male, arriving on Inner Farne on 8 April and lingering until the following day, representing the earliest sighting since 2005. Thereafter small numbers were recorded throughout April with peaks of seven on 17 April and three on 26 April. The final spring record concerned a female lingering on Brownsman from 29 April-1 May. The first autumn passage bird arrived on Brownsman on 3 September followed by further singles on 15, 18-19 and 26 September. October brought the bulk of the records with reports of 1-4 on eleven dates and a peak of fifteen on 10 October (five on Inner Farne, eight on Brownsman and singles on Staple Island and Longstone). Following a pair on Brownsman on 3 November, the final record was a female on the same island on 5-6 November.

**Garden Warbler** *S. borin*

A common passage visitor.

It was generally a quiet year for this robust *Sylvia* as the first bird of the year was not discovered until 7 May on Brownsman, arriving in gale force westerly winds and maintaining the mean arrival date on the islands of 11 May. Spring passage remained light with singles on Brownsman on 15-16 May, Inner Farne on 16-17 May and again on the outer group on 21 May. The final spring record was a late individual on Brownsman on 31 May. Autumn passage was generally disappointing with no major 'falls' and birds recorded on only sixteen dates. The first returnees were discovered in late August with three on 24 with one lingering until 27 August. Thereafter 1-2 were noted on five September dates and three October dates until 12 October. A lingering individual on Inner Farne on 13-15 October was the latest Farnes record in four years.

**Barred Warbler** *S. nisoria*

An uncommon passage visitor.

This bulky *Sylvia* has been going through a purple patch on the islands, with no fewer than forty-three in the previous nine years including an impressive seven last season. However, in complete contrast this year produced just a single record, the lowest annual total since 1997. A first-winter bird was discovered on Staple Island on 14 September and showed well throughout the day.

**Lesser Whitethroat** *S. curruca*

A common passage visitor.

It was a reasonable spring for this long distance migrant, followed by a very poor autumn when only a handful were recorded. The first sighting of the year involved four newly arrived birds on 25 April with two present on both Inner Farne and Brownsman, with one of the former staying until the following day. Thereafter three were noted on 28 April with 1-2 recorded on six dates until late May. During this period a small influx occurred on 14-16 May with five present including three lingering on the inner group and two on the outer. The final spring reports concerned singles on Staple Island and Inner Farne on 31 May. The

autumn was very disappointing with birds recorded on only three dates: three on 14 September including two on Longstone lighthouse, with a single the following day. The final record was one on Brownsman on 10 October.

**Whitethroat** *S. communis*

A common passage visitor.

A reasonable year with sightings scattered across five months during spring and autumn passage. The first of the year, a male, arrived on Brownsman on the afternoon of 28 April followed by another on Staple Island on 11 May. The spring peak of three occurred on 12 May when singles arrived on Inner Farne, Staple Island and Brownsman, with all three remaining until 16 May. Thereafter singles were noted on 17-19 May. The final spring record was noted on Brownsman on the late date of 8 June. The first autumn bird arrived on 16-17 August on Inner Farne followed by singles on nine dates between 19 August and 6 September. During this period a peak of five arrived on 2 September (three on Brownsman, two on Inner Farne) with four present the following day. The final record concerned one on Brownsman on 14 September.

**Lanceolated Warbler** *Locustella lanceolata*

An extremely rare visitor.

The 'bird of the year' in terms of rarity context, as the islands produced their second ever record of this stunningly rare *Locustella* warbler. Following a shift of winds to the east in late September, a bird was discovered creeping over open rocks on the very eastern edge of Longstone Main on the evening of 29 September. The bird showed well for the three admiring wardens in the final hour of daylight as the weather deteriorated – sadly it was not present the following morning. A total of 120 have been recorded in the UK although Shetland and Fair Isle account for no less than a staggering 87% of these records. Away from the northern isles, it remains an outstanding British rarity with only eleven English records which include two in Northumberland, Yorkshire, Lincolnshire and Norfolk, with singles in Suffolk, Isle of Scilly and Hampshire. A further three have been seen in Wales, all on Bardsey Island. The two previous Northumberland records concerned individuals at Prior's Park, Tynemouth on 13 November 1984 and on Brownsman on the Farnes on 16-17 September 1995.

**Grasshopper Warbler** *L. naevia*

A well represented passage visitor.

It was an excellent year for this skulking, streaky *Locustella* warbler as the islands produced a minimum of ten individuals, the best showing in five years. The first of the season was discovered in the vegetable garden on Brownsman on the afternoon of 15 April and represented the earliest ever Farnes record, beating the previous record of 17 April 2000. The bird was incredibly confiding and would allow close approach as it crept through the vegetation. It was joined by a second bird the following day and both were present on 18 with one lingering until 19 April. The excellent spring passage continued with singles on Brownsman on 28-29 April and a fresh, emaciated, bird found dead in the tower on Brownsman on 4 May, with further individuals on Staple Island on 12 and Brownsman and Inner Farne on 13 May (the first spring inner group record since 2005). Spring passage was completed by another on Brownsman on 19 May. The first autumn returnee was discovered on the early



date of 20 July by the jetty on Brownsman and was followed by another on 28 August. The final records concerned a single on Brownsman on 1 September and another on nearby Staple Island on 2 September.

**Icterine Warbler** *Hippolais icterina*

An uncommon passage visitor.

The Farnes is an excellent locality for this classic robust east coast drift migrant, although it was a quiet season with just a single record. An individual lingered by the pond on Brownsman in poor weather conditions throughout 4 September, but eventually showed well during a break in the rain. It was the fourth consecutive year the islands have boasted records and it brought the islands' total to sixty-seven in thirty years since the first on 3 September 1963.

**Sedge Warbler** *Acrocephalus schoenobaenus*

A well represented passage visitor.

It was a disappointing spring for this trans-Saharan migrant as the island produced just two records, representing the worst showing in over twenty years. One was discovered on Brownsman on 1 May and was followed by an individual on Inner Farne from 8-10 May, occasionally singing in vegetation around the pond. Autumn passage was more productive with one in the Hemlock on Inner Farne on 1 August, and singles on Brownsman on 5, 25 and 28 August. The end of the month finished off with two on Inner Farne on 30 August. The final records of the year occurred in early September, with a single noted on Inner Farne on 2 September and two frequenting Brownsman and Staple Island on 3-6 September with one of these individuals remaining until 8 September.

**Reed Warbler** *A. scirpaceus*

A well represented passage visitor.

This reedbed specialist is recorded annually (unlike on nearby Lindisfarne) with an autumn bias for records. It was a quiet year as the islands produced just three sightings, with the first bird of the year discovered near the cottage on Brownsman on 28 April, representing only the second ever April record for the Farnes, following the earliest on 23 April 2007. However the expected autumn arrival was disappointing with just two records: singles on Brownsman on 3 September (which nearly drowned in the sea) and another on Inner Farne on 4 September.

**Wren** *Troglodytes troglodytes*

A common visitor and passage migrant. A rare breeder.

When the wardens returned to the islands in mid-March it was evident that small numbers had over-wintered as up to four were present on Inner Farne with at least one on Brownsman. These birds remained resident throughout April although numbers gradually declined with apparently just one present on 4 May. However for the second consecutive year a pair successfully bred on Inner Farne; last season's success was the first ever occasion that the species had bred on the islands. The male established a territory in the vegetable garden on Inner Farne throughout April and nest building was seen in early May. Once again the nest was never discovered but appeared to be within the safety of the stone wall surrounding the garden. As the season progressed, adults

were seen in late May carrying food and three young fledged on 7 June. Two of these young were found in the Information Centre and caught using a butterfly net and ringed. The family party remained on the islands, although incredibly elusive, at least until the middle of July: one of the ringed youngsters was found yet again inside a building (the lighthouse) on 14 July. As with last season, the entire party departed, presumably for the nearby mainland. Passage birds returned to the islands from late September with singles on Inner Farne and Brownsman on 25 September. Thereafter numbers increased with up to eight on Inner Farne, at least two on Brownsman and a single on Staple Island, all appearing to be set to winter on the islands.

#### **Starling** *Sturnus vulgaris*

A common visitor, extremely rare breeder.

One of the most numerous passerines recorded 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 early spring with 1-4 noted on seven dates from late March to early May. After an adult with a recently-fledged juvenile was noted on 31 May, numbers increased in June as parents from the mainland use the relative safety of the islands to raise young. Numbers increased with four on 2 June increasing to eight by 9 June with a peak of sixty on 25 June. Thereafter there was an almost daily presence until the wardens left the islands in early December. Resident groups were bolstered by northern-European visitors during the autumn months as birds move from the near-continent to winter in Britain. Up to seventy were regularly recorded with a peak of 170 west on 14 October. A bird with a complete white tail seen on 2 November may have been the same individual as seen the previous year.

#### **Ring Ouzel** *Turdus torquatus*

An uncommon passage visitor.

This 'upland Blackbird' had a much improved year following last season's single record although the spring failed to produce any records for the first time since 2003. October is *the* month for the species on the Farnes and this year produced a scattering of records when a female/first-winter arrived on Brownsman on 9 October with a male on Inner Farne the following day. Further records were on Brownsman: a first-winter male was noted on 15 October and three including an adult male were present on 20 October with the male lingering until the following afternoon.

#### **Blackbird** *T. merula*

An abundant passage visitor. Bred in the 1880s, then in four years 1893-1914, 1934, 1962 and annually 1964-74 (Kearon, 1898; Miller, 1911-1914; Pike, 1902; Thorp, 1935; Hawkey, 1991).

Very small numbers over-winter on the islands, mainly on the largest island of Inner Farne, and a single was noted on 17 and 20 February with two present when the wardens arrived on 20 March. However passage was already underway and twenty-seven dropped in briefly on 21 March and thereafter 1-3 were present daily until 5 April. On the outer group, 2-3 were present from 14-20 April with a peak of five on 16 April. Thereafter the species was very scarce with a male on Inner Farne on 2 May and a female on Brownsman on 3 May. The last spring record concerned a late female on Inner Farne on 23 May. Autumn heralds the return of birds onto the islands as birds move from the near-continent to winter in the UK. The first record of the autumn involved three on Brownsman on 6 October and passage soon increased



with seventy-one across the islands on 10 October. Thereafter there was a daily presence with birds moving west, with peaks of 119 on 13 and sixty-one on 22, but this was all eclipsed with an impressive 1,736 west over the outer group on 27 October. This represented the fifth highest day count from the islands and the highest since 2004. Although present thereafter and throughout November, numbers were much reduced with a peak of seventy-two west on 30 October. However the species is prone to late irruptions into the UK and following a cold snap in Scandinavia, a total of 249 moved west over Brownsman on 2 December.

#### **Fieldfare** *T. pilaris*

A common passage visitor.

This large winter thrush moves through the islands on passage, with the biggest numbers recorded during autumn migration. Spring passage remained light, as birds moved north out of Britain with 1-2 recorded on nine dates between 1 and 28 April with a peak of sixteen west on 3 April. The final spring sighting concerned a single on Inner Farne on 29 April. October witnessed the first autumn returnees when a single south over the outer group on 9 October was followed by ninety-four west on 13 October. Although never recorded in the same quantity as its smaller relatives, good numbers moved through the islands with 1-14 daily although there was a noticeable peak of 766 on 27 October. Following this influx very few were recorded with 1-10 recorded on eight November dates until last seen on 23 November.

#### **Song Thrush** *T. philomelos*

A common passage visitor.

As thrushes move over the islands, this species is often overlooked as a migrant, as small numbers of northern breeders move through the islands during spring and autumn migration. Spring passage was light with 1-2 noted on fifteen dates from 21 March-30 April with peaks of three on 14 April and four on 29 April. The final spring record was a single on Brownsman on 16 May. Autumn passage commenced from 15 September with a single discovered in the cemetery on Inner Farne followed by another on Brownsman on 18 September. Following 1-3 on 27 and 29 September, there was an almost daily presence throughout October and November as birds moved west to the mainland for the winter. Passage during this period included thirty-five scattered across the islands on 10 October, twenty-one on 15 October and twenty-three on 22 October. Otherwise daily counts of 1-10 were usual. Oddly, a singing individual was heard on Brownsman on 11 October. Numbers dwindled as the autumn progressed, with just a single present in the final week of November although three were counted in a small movement of thrushes on 2 December.

#### **Redwing** *T. iliacus*

An abundant passage visitor.

Although small numbers of northern-bound migrants move through the islands on spring passage, the autumn months are the time to witness heavy passage, especially if weather conditions from the east prevail in October. Spring passage was light with records of 1-2 on ten dates between 21 March and 20 April, peaking with six over Inner Farne on 3 April. The final spring record involved a single east over Brownsman on 20 April. The first autumn bird arrived on Brownsman on 29 September and thereafter the floodgates opened. Immigrants moving from Scandinavia to winter in Britain can pour over the islands and October did not disappoint. Following last season's poor showing (highest count of 600 on 6 November),

four-figure counts were made on two occasions. The month began with small numbers moving west in the first week but an impressive 3,545 were counted in just a two hour movement early on the morning of 10 October. Thereafter reasonable numbers of 1-92 were logged daily with further big counts of 778 west on 22 and 1,506 west on 27 October. Passage gradually dwindled in November; although an almost daily presence was still maintained. The final movement of the year concerned nineteen west on 2 December.

**Table 9** Westerly passage of thrushes over the Farnes on selected dates.

	October				December
	10	13	22	27	2
<b>Blackbird</b>	71	119	61	1,736	249
<b>Fieldfare</b>	0	94	0	766	0
<b>Song Thrush</b>	35	0	23	20	3
<b>Redwing</b>	3,545	778	64	1,506	19

**Mistle Thrush** *T. viscivorus*

Once again this proved to be the rarest *Turdus* to be reported during the year, as the islands produce only a handful of records each season. An individual flew from South Wamses to Staple Island on 25 April and represented the only record of the year – the lowest annual total since the single record from 2002.

**Spotted Flycatcher** *Muscicapa striata*

A well represented passage visitor.

Following last season's impressive showing it was an almost complete reversal with just five individuals recorded all season (last year produced eight in one day!). There were no spring records and the first bird of the year arrived in the vegetable garden on Inner Farne with another on Brownsman on 30 August. Singles were on both islands on 2 September and the final record concerned a lingering adult on Inner Farne on 3-4 September. This was the worst showing since 2004.

**Robin** *Erithacus rubecula*

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

Small numbers were evident when the wardens arrived on 20 March with at least two on Inner Farne, suggesting over-wintering on the islands. Spring passage was generally light with a peak of eight on 18 April (six on Inner Farne and two on Brownsman) with 4-5 present on 17-23 April. Thereafter numbers dwindled with a single on Inner Farne which lingered into early May and was last noted on 4 May. Following a three months' absence the first autumn bird arrived on 6 August to Inner Farne although it was a quiet start with just 1-2 noted on ten dates between 30 August and 1 October, the exception being five across the islands on 14 September. Thereafter small numbers became resident, especially on Inner Farne, throughout October and November as small numbers settled for the winter. Influxes occurred during this period, including a notable forty-seven on 10 October and twenty-six on 22 October. Numbers dwindled as autumn progressed, with four wintering on Inner Farne and a single on Brownsman.



**Bluethroat** *Luscinia svecica*

An uncommon passage visitor, well represented in some years.

Following the first record in the spring of 1952, the species has occurred in a further forty-one years and this was the fourth consecutive year the islands welcomed one of these stunning European visitors (last season brought six to the islands). A cracking spring male was discovered near the cottage on Brownsman on 13 May and remained in residence for a further three days. The bird performed and showed well throughout its four days to a very admiring warden team as it favoured the area around the Brownsman cottage. For the third consecutive year, the islands hosted an autumn individual with a first-winter discovered on Staple Island on the afternoon of 14 September. The bird appeared to be a reluctant flyer as it preferred to run between cover and was present until dusk.

**Black Redstart** *Phoenicurus ochruros*

A well represented passage visitor.

The Farnes remains one of the best north-east localities for this stunning summer visitor as the year produced eight individuals scattered over five months. The first of the year concerned a female/first-winter bird discovered on Inner Farne on 4 April which lingered until the following day, whilst a second arrived on the Longstone lighthouse on 14 April. The only other spring record concerned a female which favoured Inner Farne from 14-18 May, spending long periods within the Information Centre sheltering from easterly winds and rain. The first autumn returnee arrived in late October with one on Brownsman from 21-23 and another on Inner Farne on 23 October. A spell of south-easterly winds in late October produced two first-winters on Brownsman which remained in residence from 31 October-4 November. Interestingly a very late record concerned an individual on Inner Farne on 3 December.

**Redstart** *P. phoenicurus*

A common passage visitor.

It was an average season for this colourful upland breeder. The first bird of the year, a stunning summer-plumaged male, arrived on Brownsman on 14 April. With a mean arrival date of 24 April over the previous thirty-eight years, this represented the third earliest ever recorded on the islands. Another early arrival, a first-summer male, arrived late in the afternoon of 16 April in the vegetable garden on Inner Farne and stayed until 21 April. Thereafter spring passage gained momentum with single males on Brownsman on 24 April and Inner Farne on 29 April whilst a pair graced the inner group from 30 April to 1 May. May continued in the same manner with a male on Inner Farne on 2 May and Brownsman on 3 May with the last spring passage birds seen on Staple Island and Inner Farne on 16 May. The first autumn bird appeared on Inner Farne on 3-4 September with 1-2 on 14 and 18 September. It was generally a disappointing autumn although a series of easterly winds in mid-October brought a flurry of records with four on 10 October and 1-2 on 12 and 22-23 October. The last record of the year involved two late individuals on Brownsman on 31 October.

**Whinchat** *Saxicola rubetra*

A common passage visitor.

Although it was an excellent year last season, the general trend has been poor (only four records in 2007) and this year was not much better as it produced only seven confirmed

records over twelve dates. Spring passage brought just a single record, with a female lingering on Inner Farne on 15-17 May. Autumn passage was slightly better, but still disappointing, with the first autumn returnee on Brownsman from 23-25 August with other singles on Inner Farne on 26-27, Brownsman on 28 and Inner Farne on 29 August. There was just a single September record, with one on Staple Island on 4 September. The last of the year involved an individual which favoured the area around the cottage on Brownsman on 10-11 October.

**Stonechat** *S. torquatus*

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

Since the turn of the century records have increased markedly following warmer winters and an increased population in Northumberland. However this season mirrored the previous year, as only three were noted on passage across the islands. A fledged juvenile was seen in mid-morning by the lighthouse on Inner Farne on 8 June and remained for the rest of the day. The only other records were confined to autumn with a first-winter on 1 October and a winter plumage adult male on 5 October, both on Brownsman.

**Wheatear** *Oenanthe oenanthe*

A common passage visitor. Bred in six years 1931-59 (Goddard, 1925-1948.; Wilson, 2000-2009).

The sentinel of the uplands was very evident on passage through the islands with reports on forty-seven spring and fifty-seven autumn dates. The mild, calm spring encouraged early migration and a female on the top meadow on Inner Farne on 21 March was the second earliest ever recorded (the earliest was seen on 19 March 2005). This was followed on 25 March by a male on the same island, by the lighthouse. Thereafter spring passage began in earnest and birds were present almost daily throughout April and early May with peaks of thirteen on 11 April and twelve on 8 May. Interestingly birds will stop off on any islands as found on 10 May when a female was noted on Megstone. Eventually numbers dwindled with the final record concerning a female on Inner Farne on 21 May. The first autumn returnees arrived on 31 July with two on Brownsman and a single on Inner Farne. Thereafter there was an almost daily presence of up to six throughout August and September with peaks of sixteen on 29 August and eighteen on 5 September. During this spell the islands produced their highest count of the year with thirty-five on 2 September. Numbers gradually decreased as birds moved south with 1-2 on nine dates until 14 October. A very late straggler was noted later in the month with a female on Brownsman on 22-23 October, the latest since 2006.

**Red-breasted Flycatcher** *Ficedula parva*

An uncommon passage visitor.

The good run of records continued for this east coast drift migrant as, during a good 'fall' of common migrants on 10 October, a vocal first-winter bird was discovered on Inner Farne. It favoured the Hemlock patch on cemetery bank where it remained and showed well all day. A second record involved a briefer sighting when another first-winter was discovered on the 'flats' area of Brownsman on 22 October just before dusk, but was not seen subsequently. Despite a five year absence from 2000-2005, this represented the third consecutive year, involving six individuals, that the species has been seen on the islands. The Farnes now boast a total of forty-nine records, following the first in September 1949.



**Pied Flycatcher** *F. hypoleuca*

An uncommon passage visitor.

It was not a great year for this majestic black and white flycatcher, but the species was recorded on spring passage for the first time in three years. Following a spell of easterly winds a first-summer male arrived on Brownsman on 12 May but moved on within an hour of its arrival. It was a better showing on Inner Farne where a pair arrived on 15 May, with both present the following day and the female was noted on 17 May. Both birds favoured being around the buildings and the male was seen to enter the toilet block briefly. The autumn period brought just six individuals and the first returnees arrived on 24 August with two on both Brownsman and Inner Farne. The only other autumn records concerned female/first-winter individuals on Inner Farne on 2 and Brownsman on 3 October.

**Dunnock** *Prunella modularis*

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

Despite the British population being generally sedentary, small numbers of the nominate race *P. m. modularis* migrate from the breeding grounds in Fennoscandia to wintering grounds in southern Iberia. It is considered that birds on the east coast in spring involve these birds returning to northern breeding grounds and following one on Inner Farne on 20 March, 1-2 were recorded on seven dates between 4 and 19 April. Spring passage saw two late individuals on Brownsman on 1 and Inner Farne on 16 May. The first autumn returnee was discovered on Inner Farne on 15 September and there was a continued presence throughout the autumn. Numbers increased during passage in October with eleven on 10 and nine on 21 with 6-7 noted on several dates. Small numbers were present in November with four on Inner Farne and two on Brownsman, all looking to be settling for the winter.

**Yellow Wagtail** *Motacilla flava*

An uncommon passage visitor.

The species is now a noteworthy visitor to the Farnes as the diminishing number of records has mirrored the national decline – there were no island records in 2007. Following last season's improvement, this year produced four records with a party of six flying north over Inner Farne on 24 April (the third highest ever Farnes count) and another over the inner group on 29 April. Autumn passage was just as quiet with a single south over Brownsman on 20 August and two west over Inner Farne on 24 August.

The continental sub-species 'Blue-headed Wagtail' *M. flava flava*, appeared on the islands for the second consecutive year as a male circled Inner Farne before landing on the central meadow on 22 April. The bird eventually flew off west towards the mainland. A second male was noted in St Cuthbert's Cove feeding amongst seaweed covered rocks on 16 May and bringing the Farnes total number of records to twenty-two, following the first in April 1961.

**Grey Wagtail** *M. cinerea*

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

The population in Scotland and northern England are partial migrants as birds move to southern Britain for the winter. They remain noteworthy birds on the islands, and autumn passage always eclipses spring passage. The only spring record involved a northern bound individual in St Cuthbert's Cove on Inner Farne on 22 March. Autumn passage commenced

with five on Inner Farne on 17 September including two north, with three on the Ladies Path representing an equal record day count for the species. Further autumn records included four on the outer group on 30 September (including three on Longstone) whilst another five went south over Brownsman on 6 October. The final records of the year were one near St Cuthbert's Chapel on 8 October and on Brownsman east rocks on 4 November.

#### **Pied Wagtail** *M. alba*

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

Spring witnessed the establishment of territories as well as passage, as nine west on 31 March were eclipsed by ten west on 7 April. It was another good breeding season and the first eggs were discovered on 14 April on Inner Farne and 30 April on Staple Island. The population maintained itself with 6 (6) pairs nesting as follows: Inner Farne 2 (2), West Wideopens 0 (1), Brownsman 2 (1), Staple Island 1 (1) and Longstone Main 1 (1). On Inner Farne the hole above the window in St Cuthbert's Chapel was again used whilst an open fronted nest-box was used at the lighthouse. Both these nesting pairs were successful and went on to raise second broods. On the outer group, whilst the two pairs succeeded on Brownsman the first attempt on Staple Island was washed out by storms on 14-15 May. A pair again nested on Longstone Main Rock, utilising a well positioned bin within the lighthouse compound. The first chicks hatched on 2 May followed by the first fledglings seen from 22 June whilst fledged young were noted from second broods from early August. Following the breeding season, the now traditional evening roost on the dock bank on Inner Farne attracted good numbers throughout the late summer with a peak of thirty-seven on 8 August. Numbers gradually dwindled during September and the species became very scarce once again during the autumn months, with no records from the outer group from mid-September to the end of the year.

The continental sub-species '**White Wagtail**' *M. alba alba* is recorded annually on the islands with the majority of records occurring in mid-April. A first-summer male was on Inner Farne on 11 with adult males on 18 and 20 whilst other individuals were on Brownsman on 16 and Longstone on 19 April. The only record away from this period involved a male in St Cuthbert's Cove on 8 May and a female on the Ladies Path on 21 May.

#### **Richard's Pipit** *Anthus richardi*

A scarce visitor.

This large Siberian Pipit remains a scarcity in the UK and the Farnes can boast sixteen records including an impressive seven in the past four years. The prime time for records are the months of September and October and the islands' purple patch continued when two appeared in mid-October on the outer group. A vocal individual arrived on Brownsman on 11 October before flying to nearby Staple Island and then returning to Brownsman later that day. It took a liking to Brownsman and it was, astonishingly, joined by a second individual on 13 October. Both birds teamed up and favoured a freshly cut grass area on the island and both remained in residence until they were last seen on 30 October. Overall it was a staggering twenty days of residence, breaking all other previous records (only three of the previous sixteen had ever lingered for more than a day). A combination of good feeding and the noticeable absence of predators (there were no resident Merlins for the first time for several years) without doubt helped keep them on Brownsman.



### **Tree Pipit** *A. trivialis*

A common passage visitor.

Following last season's bumper haul, there was a return to normality with small numbers recorded on both spring and autumn passage. On the afternoon of 25 April two were feeding around the lighthouse compound on Inner Farne. A few days later up to four were present on Brownsman and Staple Island on 28 with 1-2 lingering until 30 April. Spring records continued with two on Brownsman on 1, with singles on Staple Island on 4, another lingering on Inner Farne from 15-18 and one on Brownsman on 16 May. The final spring record was heard and seen flying over the dock bank on Inner Farne on 26 May. The first autumn returnee arrived in the vegetable garden on Inner Farne on 22 August and was followed by singles on Longstone and Inner Farne on 25 August. Passage was disappointing during September with just four confirmed records: singles on Inner Farne on 4 and 11, with another on Brownsman on 14 September. The final record was a single west over the inner group on 15 September.

### **Meadow Pipit** *A. pratensis*

A common passage visitor. Bred *ca* 1901 and in eleven years 1946-1973 (Pike, 1902; Wilson, 2000-2009).

One of the most numerous passage migrants on the islands. Small numbers were evident in mid-March when the wardens arrived with 1-3 noted on Inner Farne and peaking with five west on 22 March. As spring progressed passage gradually increased with almost daily sightings of 1-17 throughout April and a peak of fifty-seven north on 15 April. Numbers dwindled in May with a final record of three east over Longstone on 10 May. Autumn passage commenced with the appearance of a juvenile on Inner Farne on 12 August, small numbers infiltrating the islands during the following few weeks and a peak of nine west on 24 August. September witnessed the strongest passage with daily records of 4-30 with peaks of thirty-one west on 6, fifty-five lingering on 7, and up to sixty present in the final few days of the month. Gradually autumn passage started to dwindle as October advanced with small numbers present until the end of the month and a peak of fifteen west on 29 October. The final record concerned eight west over the outer group on 3 November.

### **Red-throated Pipit** *A. cervinus*

A rare visitor.

The most noticeable highlight of the spring: the islands boasted two of these stunning eastern vagrants. An adult with a small amount of red on the throat (suggesting an adult female) was discovered by two wardens by Brownsman pond on 28 April but was spooked by an incoming Shelduck. The bird moved to the south end where it was seen again briefly before disappearing and sadly could not be relocated. A second bird, with a brick red front (suggesting an adult male) was discovered on the 'flats' on Brownsman on 15 May. However this bird was more obliging as it remained until dusk, showing well to the admiring warden team. These sightings represent the sixth and seventh Farnes records following individuals in May 1974, May 1991, September 1997, October 2005 and May 2007.

### **Rock Pipit** *A. petrosus*

A common resident well represented as a breeding species.

This quintessential coastal pipit breeds in good numbers across the rocky islands of the Farnes. Birds were singing on territory on 25 February and when the wardens arrived in mid-March territories were well established. Nest building activities were observed from 14 April and as usual a number of pairs took advantage of man-made features including stone walls, a gas cage, and the two lighthouse buildings. The first eggs were discovered on Inner Farne on 2 and Brownsman on 5 May with a total of 25 (24) pairs nesting as follows; Inner Farne 4 (4), West Wideopens 2 (2), Staple Island 5 (5), Brownsman 10 (10), North Wamses 1 (1), Big Harcar 1 (0), Longstone Main 1 (1) and Longstone End 1 (1). The first young hatched by 14 May and the first fledglings were seen across the islands on 22 May. The good breeding season encouraged second broods (new family parties seen in late June) whilst potential third broods were discovered with four chicks on Inner Farne on 1 August. Following the breeding season, small numbers lingered on the islands and these were swelled in the autumn by northern breeding birds with up to twenty-five resident on Brownsman in late November.

On 30 March a striking bird on northern passage was identified as belonging to the Scandinavian race *A. p. littoralis* on Inner Farne. This represents only the fourth confirmed record of this race on the islands following a single in 1991.

### **Chaffinch** *Fringilla coelebs*

A common passage visitor.

As with finch passage in general on the Farnes during the year, it was a poor season with records on only three spring and ten autumn dates. The only spring passage recorded involved a pair on Inner Farne on 3 April with the female lingering until the following morning, whilst another was heard on 6 April. The first autumn returnees arrived on 30 September with thirty-eight scattered across the islands including seventeen on Brownsman, twelve on Inner Farne and nine on Longstone. These birds remained on the islands into early October although numbers decreased on a daily basis with eleven on 1, five on 2-4 and only one on 5 October. The disappointing autumn was completed by a second surge with thirteen on 10, nine on 11 and four on 12 October. The final autumn record concerned a female on Brownsman on 23 October.

### **Brambling** *F. montifringilla*

A common passage visitor.

This handsome northern finch was noted on both spring and autumn passage although in only modest numbers. The first northern bound individuals were seen, as usual, in mid-April with a pair on Brownsman on 16-19 April whilst a female arrived on Inner Farne on 16 with two males on 17 April. The only other spring report involved an individual on Brownsman on 28 April. The first autumn returnees moved through the islands in early October and six were recorded on 6 followed by the season's best showing of sixteen on 10 October. The following few days produced daily records of 1-14 across the islands with the last sighting during this influx involving three on 15 October. The final record was a male on Brownsman on 16 November.



**Greenfinch** *Carduelis chloris*

A well represented passage visitor.

This large seedeater had another disappointing season, and it has now been three years since large numbers congregated on the islands during the late autumn. The year produced records on a pitiful five dates, all during the autumn with the first seen flying over the Pele Tower on Inner Farne on 29 September. A small influx on 10 October produced seven west over Longstone and five on Brownsman, with four of the latter lingering until 11 with three on 12 October. The final record of a dismal season involved two west over Inner Farne on 28 October.

**Goldfinch** *C. carduelis*

A well represented passage visitor.

As is the usual with this colourful visitor the bulk of records involved spring sightings. One was seen flying west over Inner Farne on 21 March and further spring records in April included 1-2 over the islands on seven dates, including a male singing from the vegetable garden on Inner Farne on 25 April. During this period passage peaked with three west on 19, four east on 25 and five west on 20 April. As spring progressed records decreased with 1-3 noted on 1, 2 and 3 May and the final spring sighting involving one north over Inner Farne on 13 May. Autumn was very quiet with just a single record of three feeding on Ragwort by the boardwalk on Inner Farne on 5 October.

**Siskin** *C. spinus*

A common passage visitor.

In keeping with the majority of the finches, it was a quiet year with passage birds recorded on only seven dates during the season including only once on the outer group. The first of the year involved two west, calling over Inner Farne on 10 April followed by a single over the outer and then inner group on 15 April. Spring passage continued with four west on 23 April and 1-2 lingering on Inner Farne on 12-14 May. The only autumn record in a very disappointing showing involved two over the dock bank on Inner Farne on 29 October.

**Linnet** *C. cannabina*

A common passage and winter visitor. Bred in the early 1890s (Kearton, 1898).

Numerous throughout the year with good numbers lingering alongside passage birds moving through the islands. There was a daily presence from March to early May with up to eleven recorded including singing individuals on Inner Farne on several dates. Passage was difficult to detect during this period due to the highly mobile nature of the 'resident' flock, although light westerly passage was recorded on several dates. The final spring sighting was two on Brownsman on 17 May. Following an absence of three months, two on Inner Farne on 6 September signalled the beginning of autumn passage with a daily presence until the wardens departed in early December. Inner Farne was the favoured locality for the large flocks although Brownsman witnessed a few reasonable counts. Autumn flocks on the inner group varied from 12-30 with sizeable counts including sixty on 29 October and forty-one on 11 November, with Brownsman claiming a peak of forty on 29 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, predominantly during the autumn months (the last Farnes spring record occurred in 2003). The first bird arrived on Brownsman in late October with twenty-one lingering with Linnets on 29 and thirty-five present on 31 October, the latter count representing the third highest ever Farnes day total. This impressive showing was mirrored regionally as good numbers appeared to filter down the north-east coast during late autumn. November brought further records with ten west over Staple Island on 3 whilst five were present on Brownsman and four were noted on Inner Farne the same day. The month went on to produce reports of 1-4 on a further seven dates with peaks of fifteen on 9 and twenty-one on 21 November. Overall this represents one of the best ever autumn showings and brought the highest counts since 2003.

**Lesser Redpoll** *C. cabaret*

An uncommon passage visitor.

It was a quiet season for this small distinctive visitor, and the spring produced a handful of records with the first bird of the year arriving on Inner Farne on 6 April, feeding around the pond during the course of the day. The first bird for the outer group was seen flying over on 24 April (also seen over the inner group) with two on Brownsman on 25 April. The only autumn records came in late October with one south over South Wamses on 25 and another west over both the outer and inner group of islands on 29 October.

**Common Redpoll** *C. flammea*

An uncommon passage visitor.

For the fifth consecutive year the islands played host to this taxing family member, which always provokes debate and discussion amongst the wardens over the finer points of identification. A confiding first-winter showed well on Brownsman on 17 October, feeding on dock around the pond and lingered for most of the day.

**Crossbill** *Loxia 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 during the late summer and early autumn. On the islands, a stunning male was discovered feeding in the Hemlock on cemetery bank on Inner Farne on 22 July before flying north. A second record, involving a flock of five, flew high west over the inner group late on 2 September. The species has been recorded in sixteen previous years including impressive irruptions in 1990, 1991 and 2002 and was last recorded on the Farnes on 27 October 2005.

**Common Rosefinch** *Carpodacus erythrinus*

An uncommon passage visitor.

The Farnes have the monopoly of records of this bulky east coast drift migrant in Northumberland, as it still remains very scarce on the mainland compared with almost annu-



al reports from the islands. Following a purple patch of drift migrants discovered on the islands on the afternoon of 14 September, a vocal individual was found feeding around the Longstone lighthouse before moving to nearby Brownsman where it remained in residence for a further four days and was last seen on 18 September. This represented the eleventh consecutive year of Rosefinch records on the islands.

#### **Snow Bunting** *Plectrophenax nivalis*

A well represented passage visitor.

It was a good year for this charismatic visitor with one north over Inner Farne on 25 February and another north on 21 March. The majority of Farne records occur during the autumn and it was an excellent spell as birds were present almost daily throughout October and November. The first bird of the autumn flew west over Inner Farne on 29 September followed by a winter-plumage male lingering on Brownsman from 3-12 October. Thereafter 1-2 were seen flying over the islands on several dates but an influx late in the month brought a reasonable showing. Three favouring the 'flats' on Brownsman on 26 October increased to six the following day before peaking at fifteen on 29 October. At least nine of these lingered into early November before being joined by a further eleven bringing the flock to a sizeable twenty on 3 November. This surge brought good numbers to other east coast localities and the approachable individuals showed well on Brownsman throughout their stay. The flock size decreased soon after with fifteen on 4 November, thirteen on 5, six on 6 and three from 7-13 November before just one remained until the month's end. During this period six were present on the inner group on 4 November.

#### **Lapland Bunting** *Calcarius lapponicus*

An uncommon passage visitor.

Predominately an autumn passage bird through the islands, the species is recorded annually but in very small numbers. This year the Farnes produced two records with one calling as it flew north over Inner Farne on 29 September and another east over the inner group on 11 November.

#### **Yellowhammer** *Emberiza citrinella*

An uncommon passage visitor.

Following last season's shocking 'no show' (the first time the species has not been recorded on the islands since 1989) a single bird graced the outer group in late October. A female/first-winter individual arrived on Brownsman on 29 October and remained for an hour before flying west.

#### **Ortolan Bunting** *E. hortulana*

An uncommon passage visitor.

The species has become nationally scarce in recent years and the appearance of a first-winter on Inner Farne on 24 August was a welcome addition to the islands' year-list. The bird was discovered during a 'fall' of birds which arrived on the islands that afternoon and showed well on the north rocks of the island. This represents the first since a cracking male on Brownsman in early June 2007 and the thirty-eighth Farnes record overall, since the first in September 1956.

**Reed Bunting** *E. schoeniclus*

A well represented passage visitor.

It was a return to form for this annual visitor following last season's worst showing since 1979 (only four records all year). A singing male was discovered in the Elders in the vegetable garden on Inner Farne on 2 April and returned to repeat the feat on 5 April. Further spring passage reports concerned a male on Brownsman on 15 and 30 April as well as 1 May. Following an absence of four months, October heralded the first autumn returnees with a female noted on Brownsman on 9 October. Thereafter 1-3 were recorded daily throughout the month with peaks of four on three dates and seven on 22 October, with the final record involving a single on 29 October.

**Black-headed Bunting** *E. melanocephala*

An extremely rare visitor.

One of the outstanding records of the year involved the discovery of a first-winter Black-headed Bunting (considered by some to be a female) on Brownsman on the afternoon of 14 September. The bird was discovered whilst four members of the team returned from Longstone, having just found a Common Rosefinch and Bluethroat amongst others on their travels. The bird flushed from under their feet before showing well on the upper vegetable garden wall and it remained around the cottage area until dark but was not present subsequently. There have been 189 British records but only thirty-two recorded after 1 September and this represented the Farnes fourth record following a male from 23-28 July 1971, another male from 10-20 July 1999 and a first-winter on 23 August 2004.

**Exotica**

**Bar-headed Goose** *Anser indicus*

An adult was seen flying north through Staple Sound on 9 May and was seen again in the Kettle off Inner Farne on 23 May. The latter record involved the bird calling and following the Zodiac inflatable boat from Inner Farne, through Inner Sound to Seahouses, where the bird returned to the Farnes and was present the following day. It was presumably the bird which had lingered at Low Newton, just south of Seahouses during the earlier winter period. The Farnes have produced previous records including four in 1962 and a single on 29 April 2001.



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## RINGING AND RESEARCH REPORT FOR 2009

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### RESEARCH PROJECTS

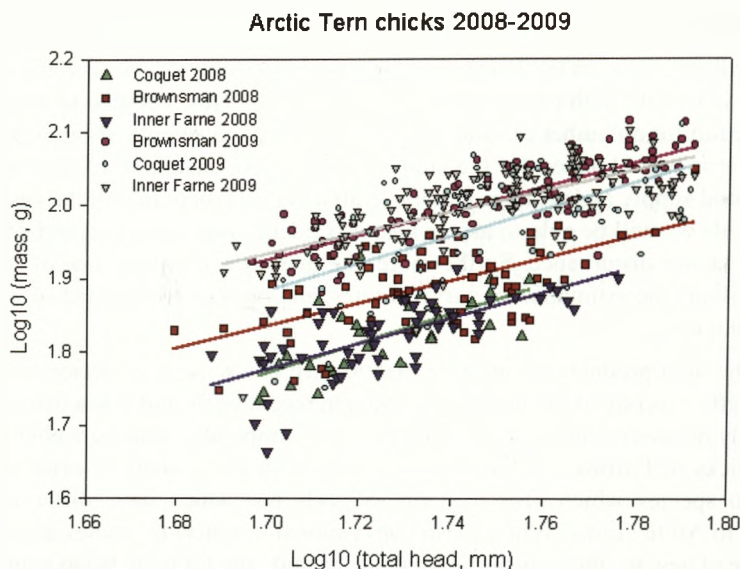
The 2009 breeding season on the Farnes was successful in many respects; seabirds generally had a good year, with high productivity for Arctic Terns. This was also an excellent year for data collection for a number of long term projects. A good sample of biometric data for adult Arctic Terns was obtained for the study of body-mass change in relation to seasonal progression, food supply and weather factors. With increased recording of the nest locations of captured birds we will be able to assess nest site fidelity between years and whether this is affected by visitor disturbance. Furthermore, the increased recapture rate of adult Arctic Terns will facilitate the estimation of survival rates, and rates of recruitment of young birds from other colonies.

In line with the high productivity in 2009, Arctic Tern chick mass, corrected for age using total head length, was one of the highest recorded in recent years and was a marked contrast to the low body masses recorded last year (Figure 1). Comparable data were obtained for the adults and chicks of Puffins and Kittiwakes, in line with the strategy to expand biometric monitoring to species which also feed on sandeels but which have differing foraging requirements to Arctic Terns. While these conventional monitoring studies are continuing, increasing use of new technologies is being made to study the foraging behaviours of Farnes seabirds. Dr Richard Bevan is leading studies using global positioning system (GPS) loggers to record the foraging strategies of Puffins and Shags and the data from these devices will complement his extensive dataset on the foraging behaviour of these species using time-depth recording loggers. The use of these devices generated considerable media interest and Richard's use of the technique was broadcast on national television by the BBC. The availability of relatively cheap and lightweight GPS loggers, a development driven by the consumer market for 'satnav' technology, will have a substantial impact on our understanding of the foraging strategies and feeding locations of a wide range of seabirds in the future.

With the 2009 season, somewhat older technology to determine the foraging locations of terns and Shags around the Farnes Islands has now been in use for ten years: with optical co-incidence rangefinders, designed in the late 19<sup>th</sup> century (although the ones we use were built in the 1970s), we have built up an extensive dataset showing how foraging locations relate to seabed characteristics. These data indicate, at a population scale, preferred foraging locations and how these vary in relation to tidal and seasonal factors; with more GPS loggers fitted to Shags, and now that GPS loggers small enough to fit to Arctic Terns are available, we will be able to quantify the time-dependent foraging behaviours of individuals and how these relate to population-scale data. The collection of foraging location data has been carried out in parallel with observations of the prey size and provisioning frequency of Arctic Tern chicks (Figure 2). These data were collected in 2009 by Stuart Will and provide an important link between studies on the body condition of adult and chick Arctic Terns. Adult terns were certainly bringing in good quantities of sandeels and sampling trawls using the Newcastle University Research Vessel *Bernicia* also brought up good numbers of the fish, in marked contrast to the previous year.



**Figure 1** Plots of body mass against total head length, both expressed as log10 transformations, for Arctic Tern chicks on Inner Farne, Brownsman and Coquet Island in 2008 and 2009. The solid lines are regression lines fitted through the data, coloured to match the symbol colour for each island/year combination, and nicely illustrate the parallel relationships between years which is important for year-to-year comparisons.



Finally, the project using nest-balances (Figure 3) to investigate the effect of visitor disturbance on the incubation behaviour of Arctic Terns was continued again this year, but the number of balances was increased to fourteen to ensure an adequate sample size. The balances worked well with no major problems this year, and the data are currently being analysed.

#### Ringling totals and activity in 2009

Ringling and capture totals for 2009 are summarised in Tables 1-3. Compared to the previous year, we increased the number of adults ringed and retrapped (Tables 1 and 2), and the number of chicks ringed (Table 3), giving a grand total for 2009 of 1,406 ringed and 159 adults retrapped. The increase in the number of Arctic Tern chicks and adult Puffins (Figure 4) ringed was due to the presence on Inner Farne of the Natural History Society's Assistant Secretary, Stuart Will, for a period of six weeks. Stuart was collecting data on feeding intervals of Arctic Tern chicks and foraging locations of terns and Shags around the islands, but as he also holds a ringling permit he was able to put any spare time to good advantage. Through his efforts we were also able to maintain the numbers of adult Arctic Terns ringed and retrapped. As the Society's ringling group rings up to 90% of all the adult Arctic Terns in the UK, we now have a considerable dataset of ringling and recapture events. These include birds ringed on the Farnes as chicks and recruited into their natal colony, as well as birds recruited from the adjacent colonies on Coquet Island and the Long Nanny. There was also a welcome increase in the numbers of Eiders ringed and retrapped and in the numbers of adult Shags ringed. Many of the Shags were fitted with uniquely-lettered, red 'darvic' rings, and these generated a number of sightings during the winter (see below). Compared

**Figure 2** Arctic Tern bringing a large sandeel back to feed its chicks.



Photograph by Stuart Will.

**Figure 4** Adult Puffin being ringed – they are not quite as cuddly as they look!



Photograph by David Steel.

**Figure 3** Arctic Tern sitting on nest balance (concealed under nest).



Photograph by Stuart Will.

**Figure 5** Biometrics of Puffins: measurement of bill length.



Photograph by David Steel.

to previous years, we have also substantially increased the sample size of adults and nestling Kittiwakes ringed and this has also been helped by Stuart's presence on the islands. Stuart also ringed four Pied Wagtail chicks and two juvenile Wrens during his stay, and an early August expedition with mist-nets and sound lures resulted in the ringing of five Storm Petrels on Inner Farne.

### Ringing Recoveries

With the focus of the ringing studies on obtaining biometric data (Figure 5), annual ringing totals since 1996 are less than half than in pre-1986 days, and ringing was not carried out in



**Spoonbill** (Joe Cockram).



**Moorhen** (Joe Cockram).



**Black-tailed Godwit** (Joe Cockram).



**Roseate Tern** (Joe Cockram).



**Long-eared Owl** (Joe Cockram).



**Hooded Crow** (Joe Cockram).





**Firecrest (Davy Still).**



**Grasshopper Warbler (Joe Cockram).**



**Bluethroat (Joe Cockram).**



**Icterine Warbler (Joe Cockram).**



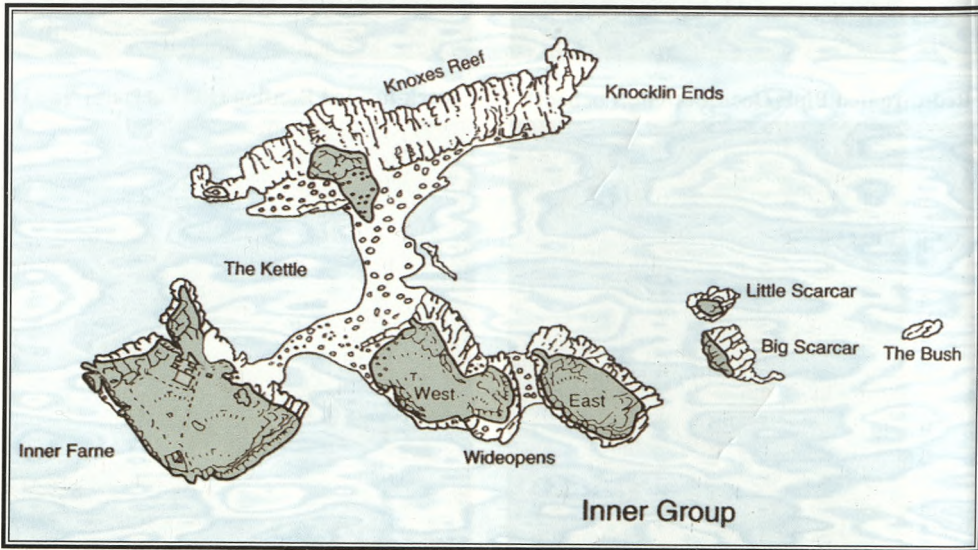
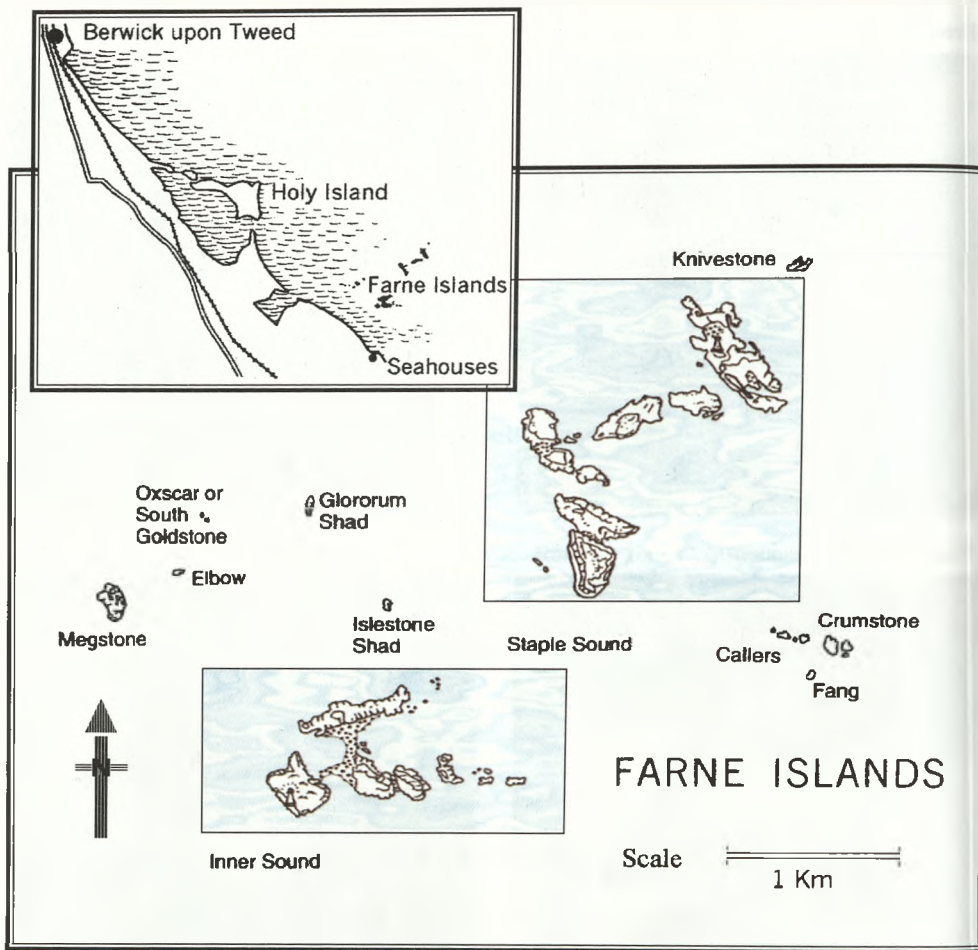
**Red-throated Pipit (Joe Cockram).**



**Black-headed Bunting (Joe Cockram).**













the ten-year period between 1986 and 1995. Consequently, the number of recoveries that we receive of birds that have died is decreasing each year. This is compensated, to some extent, by an increase in 'recoveries' due to rings being read through telescopes. The increasing availability and use by birders of high-quality telescopes, coupled with the increasing popularity of bird watching as a rewarding hobby, is undoubtedly driving this trend.

For Sandwich Terns, recoveries as sight records or controls (recaptures of live birds by ringing teams operating elsewhere) outnumbered dead recoveries, and all twelve recoveries came from Europe, with none, as last year, from the main wintering grounds along the west coast of Africa. Outside the UK, European recoveries (all of which were sightings with one control) were concentrated in Denmark (5) with one from Germany and two from Belgium. The German recovery was a sight record of Sandwich Tern DB67125, originally ringed as a chick on Inner Farne in 2001 and seen on 29 June 2009 at Norderoog, North Frisian Islands, situated on the German North-Sea coast at the bottom, western edge of the Danish peninsular. This bird has also been seen in previous years, 350km north-north-east in the Danish colony at Hirsholm (Jutland, on the north-east coast of Denmark). At Hirsholm, DB67125 was seen in July 2006, and between May and June 2007, so was presumably breeding there. Since there are large Sandwich Tern colonies in the North Frisian Islands, it is possible that this bird had switched breeding colonies; alternative explanations are that perhaps this bird was not breeding that year or was a failed breeder moving south. The dispersal of young birds to breed away from their natal colony is well known, but the degree to which adult birds will switch breeding colonies during their lifetime is unknown. The sighting of DB67125 emphasises the value of sighting records coupled with detailed behavioural observations (*e.g.* breeding or non-breeding) in helping to elucidate the breeding population dynamics of seabirds.

The Danish sightings of Sandwich Terns for 2009 were all during May and June from the colony at Hirsholm, and three of the five birds were also seen there in previous years. The birds involved were Inner Farne chicks from 2003 (also seen at Hirsholm in 2007) and 2005, and Brownsman chicks from 1982 (also seen there in 2003, 2004 and 2005), and two from 1998, one of which was seen on Hirsholm in 2005, 2006 and 2007. With consistent resighting effort over a number of years, co-ordinated at a number of European breeding colonies, it might be possible to obtain annual survival rate estimates taking into account the rates of breeding dispersal of adults between colonies. However, the use of coloured and lettered plastic darvic rings on a European scale might make this goal more achievable.

At the time of re-sighting on Hirsholm, the Brownsman 1982 bird would have been almost twenty-seven years old. One of the two Belgian recoveries, a control at Zeebrugge on 28 March 2009 of a chick ringed on Inner Farne in 1981, was nearly twenty-eight years old. The current European longevity record for Sandwich Terns is a BTO-ringed bird (from Coquet Island in 1967) which was thirty years and nine months old when it was recovered. With any luck we can look forward to this record being broken in the near future, perhaps with a Farnes bird. The other Belgian recovery received was a very late report: a Brownsman chick from 1985 apparently seen at Ostend in August 1987 – a record perhaps only recently extracted from a field notebook.

The four UK recoveries of Sandwich Terns consisted of one controlled in a cannon-net catch on Seal Sands, Teesmouth, in August 2009 (ringed on Inner Farne in 2006), and three dead recoveries, one local at Hauxley in July 2009 (ringed on Inner Farne 1999) and two in Lothian Region in April and July 2009 (ringed on Inner Farne 1999 and 2002, respectively).

Table 1 Adult seabirds retrapped or 'controlled' in 2009 compared to 2008.

Species	2008	2009
Shag	29*	26*
Eider	29	54
Puffin	2	0
Kittiwake	11	12
Arctic Tern	54	67
<b>Total</b>	<b>125</b>	<b>159</b>

\*Includes sight records of birds by Emily Barlow.

Table 2 New adult seabirds ringed in 2009 compared to 2008.

Species	2008	2009
Storm Petrel	0	5
Shag	6	34
Eider	11	36
Puffin	79	128
Kittiwake	24	53
Arctic Tern	78	68
Common Tern	1	0
<b>Total</b>	<b>199</b>	<b>324</b>

Table 3 Chicks ringed in 2009 compared to 2008.

Species	2008	2009
Fulmar	0	47
Shag	45	41
Puffin	100	
Kittiwake	108	237
Black-headed Gull	3	4
Sandwich Tern	273	161
Arctic Tern	365	512
<b>Total</b>	<b>894</b>	<b>1082</b>



Sightings also accounted for the two recoveries of Kittiwakes received for 2009. Both of these were ringed as chicks on Brownsman in 1998: one was seen at Pointe du Raz, Finistere, France on 6 July 2007 and the other was at Fraserburgh, Grampian on 19 September 2009. Reports of ringed birds from France often take a while to filter through the system.

Unusually, we received no recoveries of dead Farnes-ringed Shags during 2009. However, many of the Shags (adults and chicks) ringed on Inner Farne, Brownsman and Staple Island during the 2009 breeding season were also fitted with red, uniquely-lettered darvic rings provided by Francis Daunt and Emily Barlow, seabird researchers working on the Isle of May. Sightings of these birds received via Emily since then account for all our Shag recoveries in 2009. Emily is working on Shag dispersal as part of her PhD studies, so the use of highly-visible rings is an effective way to increase the amount of data available. Nine of the darvic-ringed Shags were seen away from the Farnes. One of these (TBI) was an adult that also contributed to Richard Bevan's studies on Shag foraging behaviour by carrying a back-mounted GPS receiver and logger for a few days in early July 2009. The fact that TBI was seen in the Portknockie area, close to the Moray Firth, 240km further north, on 6 December, shows that the use of such devices to increase our understanding of bird biology has no long-term detrimental effects. It is also interesting that two other adults from adjacent nests in the Brownsman colony were also seen in the Portknockie area on the same day. Seven other darvic-ringed Shags, all of which were first-year birds, were seen during the autumn at sites ranging north from the Firth of Forth (Port Seton and Fifeness) to Aberdeen and further north in Grampian Region. Two of these birds were reported twice: TAP was in Aberdeen Harbour on 22 September and 10 October, and SZB was reported from Port Seton, Firth of Forth, on 26 August and then from Quarryhead, north of Aberdeen, on 19 September. Although the northerly movement of all these birds is in accordance with the northerly bias of recoveries of conventionally-ringed birds, the distribution of these sightings is heavily influenced by the distribution of observers, most of whom were ringers and likely to be keen to obtain sightings of ringed birds. Conversely, dead recoveries of ringed birds are likely to be found by people walking along the shoreline and the distribution of such recoveries (accepting the confounding effects of tidal movements) are likely to be a closer approximation to the winter distribution of Farnes birds.

The majority of recoveries of dead Farnes seabirds this year were of female Eiders. Six were found between February and August 2009, all them locally, and were ringed as nesting females on Inner Farne in 2000 (three birds), 1998, 2004 and 2005. The longest movement of this group was a recovery near Berwick-upon-Tweed, 22km north of Inner Farne.

Two other seabird recoveries of note reported this year were that of a Guillemot, one of only thirty ringed as chicks on Inner Farne in July 1996, and a Storm Petrel ringed as an adult (caught using a mist net) on Inner Farne in August 2007. The Guillemot was an oil victim, cleaned and released at Yport, Seine-Maritime, France in April 2003; this bird was also reported controlled at Dunkerque in January 2003. The Storm Petrel was one of only three ringed on Inner Farne by warden Chris Bell in 2007 and was controlled by ringers on the Isle of May in early August 2008. Storm Petrels caught away from breeding colonies using sound lures tend to be young pre-breeding birds up to four-years old and the recapture frequency drops as birds reach reproductive age.

### Acknowledgements

John Walton and his wardening team, led by Head Warden David Steel, and the Local Management Committee chaired by Charles Baker-Cresswell, have again been very supportive of the research and ringing studies on the Farne Islands and we are extremely grateful to be allowed to carry out these studies. The wardens frequently gave up their time to help get the team across to the islands and this has been pivotal in enabling our studies to be continued. During planned and unplanned stopovers on the islands, the wardens generously shared their accommodation, and their culinary expertise and company were of an excellent standard; we are also grateful for their interest and help with the ringing studies. Emily Barlow again spent some time on the islands reading Shag rings and helped with the Shag ringing this year; we are grateful for the opportunity to add the darvic rings to Farnes Shags and thank Emily, and Francis Daunt of CEH, for providing the rings. We certainly hope this will continue in future years as the data from the use of these rings will add considerably to our knowledge of Farnes birds. We would like to thank Stuart Will for collecting the nest provisioning and foraging location data for us during his extended stay on Inner Farne. Stuart also monitored and downloaded data from the nest balances which were again in operation this year. We are also grateful to William Shiel and his crews on the *Glad Tidings* boats for lifts back to Scaphouses. We continue to be indebted to the Sir James Knott Trust for their support of the seabird foraging project and thank the crew of RV *Bernicia* for their help with the trawl sampling. We are grateful to the Natural History Society of Northumbria for providing the rings, essential equipment and backup, to the ringing team for their time, expertise and enthusiasm, and to the Dickinson Memorial Fund of the Natural History Society which allowed us to purchase the nest-balance equipment.



## CETACEAN REPORT 2009

Davy Still

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### INTRODUCTION

Every year the wardens record all cetaceans encountered in the sea area visible from the Farne Islands. In 2009 a total of thirty-seven sightings were reported between mid-March and the end of November. Although Bottlenose Dolphin, Risso's Dolphin, Minke Whale and Harbour Porpoise were reported, for the first time on record no White-beaked Dolphins were seen from the islands. In addition Harbour Porpoise sightings have continued to decline this year, but 2009 will always be remembered for a Humpback Whale – a first for the Farne Islands – appearing twice in September.

#### **Humpback Whale** *Megaptera novaeangliae*

On 13 September the Farnes had a very unusual visitor. While wardens helped visitors onto the island, a very exciting radio call came through. A Humpback Whale was reported to be surfacing very close to a dive boat operating just behind Longstone. Immediately the wardens rushed to various vantage points to catch a glimpse. The rough seas prevented the Inner Farne wardens from using the boat and they were forced to watch from the top of the Pele Tower. However, two wardens from Brownsman managed to launch the Zodiac boat to get a closer look from Big Harcar. After an hour and a half of scanning through difficult conditions, the animal was located beneath a large ball of Gannets *Morus bassanus* two miles north of the outer group. The wardens, including those watching from the tower, could not believe their eyes as the whale breached clear from the surface, showing its long white flippers, before landing on its back and producing a huge splash, visible for miles.

Photographs of the animal were sent to the Whale and Dolphin Conservation Society in the hope the whale could be identified to individual level. Unfortunately, identification could not be made with the pictures available. However observers should continue to photograph cetaceans when (non-invasive) opportunities arise; a good picture of a fin or tail fluke could present further opportunities to research the movements of an animal.

Potentially a second record of a Humpback Whale came on 20 September. After hearing reports of a humpback sighted from Newton Point that day, a warden saw a large splash two miles south of the inner group. The splash was 'enormous' and could have only been produced by a very large animal.

Interestingly, in the same month, two Humpback Whales were reported from Lindisfarne on 7, and a juvenile male was found stranded in the River Thames on 12 September. Humpback Whales are rare visitors to the North Sea and sightings are usually exclusive to water depths in excess of 200m (Reid et al., 2003). The two Humpback Whale sightings on 13 and 20 September were likely to be the same animal. These records represent the first sighting of this species from the Farne Islands.

#### **Minke Whale** *Balaenoptera borealis*

Minke Whales were recorded on five days over the 2009 season. The first report – one animal surfacing close to Megstone – came on 1 July whilst later that month on 12, 'up to five' were seen by a visitor boat behind Longstone. Sightings ceased until 7 September

when, again, a visitor boat reported one animal moving through Staple Sound. However, it was not until 11 September when the wardens witnessed their first Minke of the season. In between giving the lighthouse store a fresh coat of paint, the Inner Farne wardens watched while an animal moved north through Inner Sound as it travelled towards Lindisfarne. Interestingly, at the same time three Harbour Porpoises were in the Sound – the third report of porpoises that day. The final sighting came on 9 October from a visitor boat near the south end of Longstone. The whale surfaced three times, uncharacteristically showing its tail fluke before a dive.

#### **Bottle-nosed Dolphin** *Tursiops truncatus*

Bottlenose Dolphins were recorded on seven days in 2009. The first report came on 22 April when four animals were observed travelling south through Inner Sound early in the morning. The next two sightings came in May when six animals were reported travelling north through Inner Sound on 24 and eight animals were watched bow riding a visitor boat near to the entrance of Seahouses Harbour on 27 May. Records continued in June, with eight breaching and porpoising near the Shorestone Buoy on 8, whilst five travelled south through Inner Sound on the morning of 25 June. This pod were seen again later that day at 13:00 when wardens watched the group, accompanied by three visitor boats, as they travelled north. There were no sightings in July; however there were two further reports in August – each of five animals – on 13 and 17, both pods travelling north through Inner Sound.

#### **Risso's Dolphin** *Grampus griseus*

On 14 September two wardens on the outer group and one warden on the inner group watched three dolphins travel south past the south end of Staple Island. All three animals had blunt, rounded heads, a large falcate dorsal fin and showed white scarring on their flanks and consequently they were identified as Risso's Dolphins. There are few records of this species in the southern North Sea (Reid *et al.*, 2003) and this is only the fourth record from the islands.

#### **Common or Harbour Porpoise** *Phocoena phocoena*

Last year Farnes wardens reported a marked decline in Harbour Porpoise sightings and group size (Hurd, 2008). In response a survey was set up and implemented from May to August 2009, which involved recording porpoise presence/absence systematically, with timed watches over Inner Sound carried out twice daily over those four months.

The results produced very disappointing reports of two porpoise sightings from twenty-one hours of focused sea watching. However, casual sightings reveal the species to have a greater presence. In total, porpoises were reported on twenty-four occasions on seventeen days. However, between 2003 and 2007, porpoises were recorded on an average of forty-eight days. Also, in keeping with 2008, maximum group size remained low this year; as records only once exceeded three animals when four porpoises were observed travelling through Inner Sound on 21 August. This may be a concern compared with 2003-2007 when larger aggregations numbering ten to thirty animals were reported annually in late summer/autumn. Disappointingly, in addition to the low number of sightings and small group sizes, the year failed to produce a report of a calf.

It is more encouraging to report that porpoises were recorded in all nine months of island occupation (Table 1). Bad weather and high sea states may have limited the chance of detection during months when fewer sightings were reported. This too could account for the drop in sightings this year and last. However, the results of this year's pilot survey do



not reflect this, as timed watches of Inner Sound were only carried out in low sea states. Instead this begins to suggest that Harbour Porpoises currently have a low abundance around the Farne Islands.

**Table 1** 2009 sightings of Harbour Porpoises per month from the Farne Islands.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Sightings	3	4	3	5	1	2	4	1	1

### Unidentified Dolphin Records

On 22 June a warden watched a large dolphin travelling south during a timed cetacean watch of Inner Sound. The animal was reported to have a tall sickle-shaped dorsal fin but was too far away to identify. Later in the season on 19 July two dolphins of the same description surfaced close to the warden's Zodiac boat near to the Blue Caps. Unfortunately, the dolphins did not reappear and identification could not be confirmed.

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## GREY SEAL REPORT 2009

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### Grey Seal *Halichoerus grypus*

Births on fourteen of the Farne Islands for the last ten years are summarised in Table 1. The first seal pup of the autumn was discovered on South Wamses on 4 October, a slightly late start to proceedings. As usual, pupping was slow with just twenty-six born across the colonies by 18 October although numbers rapidly increased with a peak during the first week of November. Ten islands were utilised, including two inner group islands (Table 2). South Wamses regained its crown as the number one seal colony, edging past last season's winner, Staple Island. Active monitoring and wardening on Brownsman helped keep the numbers in check, and the island population remained stable following several years of increase. Despite the relatively mild autumn weather – the first serious northerly storm did not arrive until late November – the mortality remained at almost 50%:

Successful: 684

Unsprayed dead: 66

Sprayed dead: 76

Missing: 520

**Mortality: 49.2%** (662 missing or dead from 1,346 pups).

**Table 1** Grey Seal pup births from fourteen of the islands, 2000-2009.

	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
North Wamses	277	260	294	315	345	393	501	508	540	590
South Wamses	413	344	345	387	366	417	496	470	506	442
Northern Hares	87	86	67	108	100	140	146	145	154	107
Longstone Main	11	3	12	2	2	10	7	6	2	-
Longstone End	-	-	1	-	1	-	-	2	3	-
Big Harcar	7	10	6	5	7	15	10	4	15	12
Nameless	1	7	-	-	1	-	1	-	1	-
Crumstone	-	-	-	-	-	-	2	-	1	6
Brownsman	170	219	134	141	171	39	39	37	19	10
Staple Island	367	380	305	294	145	119	64	25	6	-
Knoxes Reef	9	9	-	1	-	-	-	3	-	1
Scarcars	-	-	-	-	-	-	-	-	-	2
West Wideopens	4	-	-	1	-	-	-	-	-	-
Bluecaps	-	-	-	-	-	-	-	-	-	1
<b>Total</b>	<b>1,346</b>	<b>1,318</b>	<b>1,164</b>	<b>1,254</b>	<b>1,138</b>	<b>1,133</b>	<b>1,266</b>	<b>1,200</b>	<b>1,247</b>	<b>1,171</b>



**Table 2** Grey Seal pup birth dates and islands for 2009.

	North Wamses	South Wamses	North Hares	Longstone Main	West Wideopens	Big Harcar	Nameless	Brownsman	Staple Island	Knoxes Reef	Total
29 September	-	-	-	1	-	-	-	-	-	-	1
4 October	-	1	-	-	-	-	-	-	-	-	1
14 October	2	2	-	-	-	-	-	-	-	-	4
15 October	-	-	-	-	-	-	-	-	1	-	1
18 October	15	4	-	-	-	-	-	-	-	-	19
20 October	-	-	-	-	-	-	-	1	1	-	2
23 October	35	31	-	-	-	-	-	1	1	-	68
28-29 October	51	56	-	-	-	-	-	9	24	-	140
3-4 November	71	132	11	-	-	-	-	10	46	-	270
8 November	30	57	18	-	-	-	-	19	60	-	184
13-15 November	34	74	19	-	-	-	-	24	66	-	217
23-24 November	-	-	21	3	-	6	1	76	116	-	223
26 November	31	36	-	-	-	-	-	-	-	4	71
2-3 December	8	20	18	7	4	1	-	30	52	5	145
<b>Total</b>	<b>277</b>	<b>413</b>	<b>87</b>	<b>11</b>	<b>4</b>	<b>7</b>	<b>1</b>	<b>170</b>	<b>367</b>	<b>9</b>	<b>1,346</b>

## BREEDING BIRDS ON THE FARNE ISLANDS: DUCKS, WADERS, PASSERINES AND OTHER SPECIES

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### INTRODUCTION

This final part of the series concerned with documenting the breeding birds on the Farne Islands considers Ducks, Waders and Passerines as well as a few other breeding species that have been recorded on the islands. This account is based on a number of key sources in addition to the Farne Islands Association reports from 1924 and the Farne Islands annual reports from 1946. The Natural History Society archives contain a number of private diaries and notebooks of individuals who have either visited or spent time on the islands. The most important are those belonging to Edward Miller, a Watcher on Brownsman, T Russell Goddard a former curator of the Hancock Museum, and Grace Hickling (née Watt), a former Honorary Secretary of the Natural History Society until her death in 1986. In addition the diaries and notes of George Bolam and George Temperley have also proved invaluable, as well as numerous accounts of visits dating from the 16<sup>th</sup> to the 20<sup>th</sup> centuries.

As this series has progressed the authors have been indebted to many wardens on the Farne Islands for their comments and insights, particularly David Steel and John Walton, both of whom have given much support as well as unique information that has enriched all of these accounts.

### DUCKS

Of the four species of ducks that have bred on the Farne Islands the most important is the Eider *Somateria mollissima* whose breeding history can be traced to the time of St Cuthbert in the 7<sup>th</sup> century. The most recent is the Red-breasted Merganser *Mergus serrator* which only started to breed in 2006. The other two species are Shellduck *Tadorna tadorna* and Mallard *Anas platyrhynchos* both of which have bred in former centuries.

These are discussed in order of their historical perspective as breeding species on the islands *i.e.* Eider, Shellduck, Mallard and Red-breasted Merganser.

#### *Eider Somateria mollissima*

##### Historical records to the present day

The Eider has the longest recorded history of any of the breeding species on the Farne Islands and because of its association with St Cuthbert it is still locally called 'Cuthbert's Duck' or 'Cuddy's Duck'. St Cuthbert lived as a hermit on Inner Farne between 676 and 684 AD and ancient manuscripts tell how he gave the ducks special protection and forbade visitors to molest them during the breeding season (Watt, 1951a). The 12<sup>th</sup> century chroniclers, Geoffrey of Coldingham and Reginald of Durham, described the tameness of the Eiders at this time (Parbury, 1983) and it is almost certain that from then they have bred continuously to the present day. Prior to the dissolution of the monasteries in 1536, records indicate that the cell of monks established in the 13<sup>th</sup> century on Inner Farne regularly supplied both eggs and birds to the parent monastery at Durham, and in the late 1530s, John Leland in his



*Itinerary* noted 'Certen bigge foules, caullid S Cuthebertes Byrdes, brede in them,' (Gardner-Medwin, 1985). Ray recorded them in 1671 (Raven, 1950) and in the 18<sup>th</sup> century Wallis (1769) referred to the Eider as 'the beautiful native of the Farne Islands' while Pennant included a description of their nesting on a beach when he visited in 1769 (Hutchinson, 1778).

The majority of 19<sup>th</sup> century accounts contain references to breeding Eiders, but prior to 1857 the only note of a location is given by Raine (1828) who describes seeing a duck nesting in a stone coffin. This had to be on Inner Farne, as etchings from the late 18<sup>th</sup> century show such a coffin near St Cuthbert's chapel (Thompson and Hickling, 1973). Tate (1857) places Eiders on the Wideopens and possibly Knoxes Reef on the inner group, and Brownsman, North Wamses, The Harcars, Northern Hares and Longstone on the outer group. Staple Island is first noted in 1881 ('D', 1881), South Wamses in 1889 (Gurney, 1889-1890) and the next mention of Inner Farne is in 1892 (Cordeaux, 1892; Paynter, 1892), though it is probable that breeding was taking place on all of these islands in most years. In the early 20<sup>th</sup> century in addition to all the previously listed islands, Miller (1911-1914) recorded nesting on Roddam and Green (1913), the Blue Caps (1914) and Skeney Scar (1912) but only on one occasion for each island.

In 1924 the Farne Islands Association Report (Thorpe, 1924) indicated that Eiders were nesting on Inner Farne, Knoxes Reef, the Wamses and Longstone, and though Brownsman is not specifically mentioned it is certain that they were there too, since any absence would have been reported by the Watchers. Between then and the start of World War II, Inner Farne was the principal island followed by Brownsman and possibly Longstone. Breeding was occasionally recorded on Staple Island, West Wideopens, Knoxes Reef and Northern Hares, but how frequently these last three islands were visited in the season is not known, and it is likely that some Eiders would be present each year.

When T R Goddard produced the first of the annual Bird Reports in 1946, Eiders were nesting on Inner Farne, West Wideopens, Knoxes Reef, Staple Island, Brownsman, Northern Hares and Longstone. Longstone held a significant part of the population in the early 1950s when W J Lewis was the Head Lighthouse keeper, but after his departure in early 1954 numbers declined rapidly and today there is only the occasional duck nesting. This decline also took place on Northern Hares and Longstone End. West Wideopens and Knoxes Reef had only occasional breeding until 1969 and 1970 respectively, since when breeding has taken place each year until 2009. East Wideopens was colonised in 1970 with regular breeding from 1974, North Wamses and South Wamses were recolonised in 1971 and 1974 respectively, and Big Harcar in 1976. In addition Roddam and Green has been used on three occasions and Skeney Scar and Little Harcar twice in the last thirty-five years. In 2009 Eiders were nesting on the following islands: Inner Farne, both East and West Wideopens, Knoxes Reef, Staple Island, Brownsman, North Wamses, South Wamses, Big Harcar, Longstone and Longstone End.

#### **Evidence for numbers**

Both Wallis in the 1740s and Pennant in 1769 appeared to find a healthy breeding population of Eiders on the Farne Islands (Rossiter, 1999; Hutchinson, 1788); however by the third decade of the 18<sup>th</sup> century Selby (1826) and Raine (1828) each separately documented a severe decline in their numbers. The situation continued to deteriorate with the ducks deserting all their usual breeding places on the east coast, until according to Tristram (1858-1860) there was not more than one pair on Coquet Island and only around two pairs on the Farnes.

However, due to the action of Archdeacon Charles Thorp, the lessee of the islands, by 1857 Selby (in Tate, 1857) was able to write; '... the Eider ... are now pretty numerous'. Culverduck too in 1859 found them in considerable numbers (Culverduck, 1859).

Unfortunately Thorp died in 1862 and by 1874 Hancock (1874) considered that only 'several pairs' of Eiders bred on the Farne Islands. Though the Farne Islands Association was founded in the early 1880s, it was not until Hugh Barclay took control in 1887 that the population started to increase (Table 1).

**Table 1** The numbers of clutches known to have hatched on the inner and outer island groups in five seasons from 1888 to 1895.

Year	Inner Group	Outer Group	Reference
1888	76	60	Barclay, 1889a
1889	72	66	Barclay, 1890
1891		50	Miller, 1911-1914, 12 June 1914
1892	70+		Anon, 1893
1895	150		Bolam, 1912

The increase continued into the 20<sup>th</sup> century, with Fortune writing in 1907 that 'Another gratifying feature is the great increase in the number of Eider ducks. They are found everywhere...' (Fortune, 1907); in fact it was estimated that as many as 300 pairs were breeding in 1908 (Halliday, 1909). Inevitably the number of successful clutches would probably be considerably less with desertion and the constant predation from the large gulls. It was not until 1935 that Goddard estimated that between 250 and 300 broods regularly hatched out each year (Goddard, 1936).

Edward Miller was a Watcher on the outer group for four seasons from 1911 and his personal diaries contain many valuable records *e.g.* successful Eider nests (Table 2).

**Table 2** Eider nests hatched on the outer group from 1912 to 1914.

Year	No. of nests hatched
1912	27
1913	42
1914	28

It is interesting to compare Miller's figures in Table 2 with those for the outer group in Table 1. All the available accounts state that Eider Ducks had greatly increased under protection, but this does not seem to be supported by the evidence here. There could be a number of reasons for this apparent discrepancy:

- (i) These are the successful broods for each season and it is not known if the figures from Table 1 were only for clutches that had hatched or included nests that had been abandoned or predated. Furthermore, apart from Brownsman and to some extent Staple Island, Miller was not able to visit the other islands on a regular basis, hence broods could have been missed;



- (ii) The continuous and intensive predation from the large gulls could well have driven some ducks onto the inner group, especially Knoxes Reef where predation was reported to be much less (Morres, 1896). In addition Miller noted that the gulls destroyed a relatively high number of nests on the outer group, and each year females deserted when their eggs were close to hatching (Miller, 1911-1914);
- (iii) On Brownsman, the principal island in the outer group, there were always nests among the Arctic Tern *Sterna paradisaea* and Common Tern *S. hirundo* colonies and their incessant harassment may also have caused desertion.

The Eiders on the inner group would also suffer in these ways, but it does seem that the outer group was particularly badly affected. It is a great pity that there are no figures available for the inner group for this time.

After Miller left in 1914, there is no additional information regarding Eiders until the Farne Islands Association reports compiled by Thorp from 1924. However Goddard writing in 1935 stated that prior to 1924 a hundred nests on Inner Farne were considered to be a large number (Goddard, 1935), yet by 1929 there were a record 205 nests (Thorp, 1930) and in 1932 the Watchers counted over 300 Eiders on the island (Thorp, 1933), while seven years later in 1939 Temperley was told that there were 333 nests on Inner Farne (Temperley, 1896-1951, 2 July).

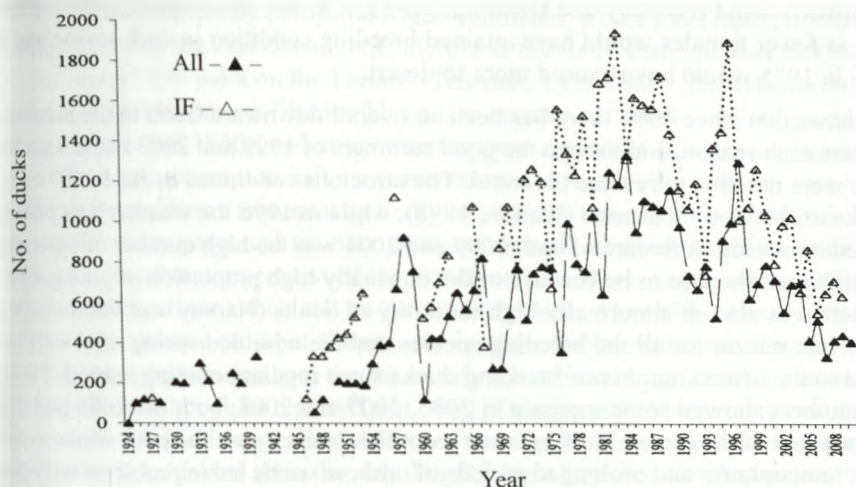
The first attempt to provide an overall total for the Farne Islands was made by T Russell Goddard in the Farne Islands' Ornithological Report for the 1946 season (Goddard, 1946a). Unfortunately this was an atypical year since Eiders, as was the case with all the breeding species on the inner group, had suffered badly during World War II (see later) and the overall total of 132 nests was only approximately half of the number of Eiders on Inner Farne alone before the war.

After Goddard's death in 1948, Grace Watt (later Hickling) took over the production of the report and continued Goddard's efforts to document the breeding Eiders. However any figures for the 1950s and 1960s should be regarded as the minimum for each season, since any females sitting in the long grass or nettles were not included. Systematic counting methods were only carried out from 1970.

Figure 1 shows the total number of sitting Eiders from 1924 to 2009 on all the islands, as well as the numbers on Inner Farne. At the present time, nests that have been either deserted or predated are not included in the total (Steel, pers. comm., 2009) and it is assumed that this was also the case previously. In a long-lived species such as the Eider, individuals are likely to produce more offspring in their lives if they avoid breeding in years in which their own chance of survival is potentially low (Coulson, 1984). Eider eggs are incubated for between 24-28 days, during which time the female rarely leaves the nest, so unless she has sufficient body mass to survive this period, she will not breed. Figure 1 shows only the number of sitting females in a particular season, and not the total colony size.

Figure 1 illustrates that the number of Eiders breeding on Inner Farne correlates with the total breeding population for the islands as a whole for the same period. It appears that from 1924 there was a general increase in the breeding birds reaching a record number of 1,952 ducks in 1983. This maximum in 1983 has been followed by a long decline, which in 2006 resulted in the lowest number of sitting females since 1967, though there was a brief respite from 1994 to 1996, when the second highest total was seen. In addition to these long term trends, Eiders seem to be particularly prone to short term fluctuations, with decreases in one year often being offset by increases the following season. Eiders feed on bottom-living

Figure 1 Number of sitting Eiders on all islands (All) and Inner Farne (IF), 1924-2009.



species, especially molluscs which they collect by surface diving and if the water is shallow, by head dipping and upending. Most dives are less than four metres, hence storms and heavy swell can make it difficult for them to feed. If there are prolonged or numerous stormy conditions during the first few months of the year, many ducks may not be able to attain breeding condition; thus, this may lead to reduced numbers of females returning to breed in some years. In addition, disturbance, predation and poor weather while sitting can lead to females deserting clutches before they have hatched. Although the adults have a high survival rate, the chicks are especially vulnerable to wet and windy weather when they are taken to the sea. Such conditions prevent them from feeding and make them more susceptible to gull predation, since if they are badly nourished they do not respond correctly to the alarm signals of the accompanying females (Gibbons *et al.*, 1993). Thus a stormy June in which relatively few survive to fledging could have a corresponding effect on the number of breeding birds two to four years later. All of these factors help to make the short-term variations more understandable.

The mild winter and spring in 1957 led to the highest number of sitting Eiders recorded to that time, especially on Inner Farne (Hickling, 1958), but by contrast the prolonged winter and spring gales in 1967 caused an absence of sitting females not just on the Farne Islands, but generally all along the east coast (Hickling, 1968). In fact most of the short-term fluctuations can be linked to problems in feeding prior to the breeding season and, once sitting, disturbance. Initially the main problem causing desertion was because of egg collectors, but from the early 1970s the main reason was predation from Lesser Black-backed Gulls *Larus fuscus* and Herring Gulls *L. argentatus*, though at the present time visitor disturbance on Inner Farne may be causing some problems.

Though the severe 'Red Tide' episode in 1968 and the milder one in 1975 mainly affected Shags *Phalacrocorax aristotelis* (Wilson and Noble-Rollin, 2009), they were considered to have contributed to the low numbers of Eiders found in each year. However it must be noted that a complete count was not made in 1968 (Hickling, 1969) and that both these springs were cold with onshore winds, particularly in 1975 when for the whole of May to the start



of June the wind direction was between north-west and north-east; the rainfall was above average and the temperature below average. The climax on 2 June saw driving sleet with a force 7 northerly wind (Hawkey and Hickling, 1975). It is thus not surprising that numbers were low, as fewer females would have attained breeding condition in each season and the conditions in 1975 would have caused more to desert.

Figure 1 shows that since 1996 there has been an overall downward trend in the number of sitting Eiders each season, and though the good summers of 1999 and 2003 had a beneficial effect they were not able to reverse the trend. The atrocious conditions in June 1997 caused many ducks to abandon their nests (Walton, 1998), while in 1998 the weather was poor the whole breeding season. A feature of both 2000 and 2001 was the high number of desertions, which in 2000 was thought to be because of the unusually high proportion of younger birds nesting; there was also an abnormally high mortality of adults (Harvey and Walton, 2001). 2004 was a late season for all the breeding species and the unsettled spring may well have contributed to the lowest number of breeding ducks since regular counting started. Though breeding numbers showed some increase in 2005, 2007 and 2008, both the 2006 and 2009 seasons saw some of the lowest numbers ever recorded. In each case the poor winter weather with low temperatures and prolonged periods of onshore winds led to problems with feeding, thus leaving many adults in poor breeding condition. There is no doubt that at the present time the Eider population on the Farne Islands is becoming a major concern.

#### **Human persecution and egg collecting**

The exploitation of Eiders can be traced back to the monastic period on Inner Farne. During this time the monks and their servants both ate and sold the birds and their eggs, and in addition sent regular consignments to the parent monastery at Durham for use on feast days (Watt, 1951a). The dissolution of the House of Farne in 1536 did not stop this trade, for the tenants of the islands continued to supply birds and eggs to those who were willing to pay. An account of the expenses for the funeral dinner of Sir John Forster in 1602 lists 'For fewle which came forth of the Farne 10/- [50p]', while twenty-seven years later a similar sum was paid for 'sea foule out of the Farne yland' that were served at a dinner in Newcastle (Watt, 1951a).

While this exploitation was ongoing it must have been on a sustainable level since Wallis (1769) and Pennant (Hutchinson, 1778) both seemed to find healthy populations of Eiders at the time of their visits in the 1740s and 1769 respectively. However by the third decade of the 19th century Selby (1826) and Raine (1828) each separately documented a massive decrease. In 1826 Selby wrote '... the eggs of the Eider have been taken indiscriminately ... and sold for a mere trifle to the inhabitants of the Main. In consequence the young annually produced have been few and those only of a later or second hatching.' Raine echoes this but more bluntly 'their eggs (Eiders) have been broken, their nests prematurely taken away, their young destroyed and they themselves wantonly shot by crowds of idlers who every summer visit Farne and her sister islands.' This is the first intimation of a disastrous decline affecting most of the breeding species and which had its roots in the changes brought about by the Industrial Revolution, and the attitude of the two long term lessees, John and later his son William Blackett.

The Industrial Revolution had brought about easier travelling, more efficient firearms and the emergence of a middle class with the time and money to devote to fashionable hobbies such as natural history, which at that time involved shooting specimens and collecting eggs. While the Blacketts both father and son are known to have killed numerous Grey Seals *Halichoerus grypus* for their oil, they would also have similarly exploited the birds, for

food, eggs and down. An account as late as 1841 (Anon, 1841) still appears to stress the importance of Eiders being used in the last two ways.

The decline documented by Selby and Raine continued, with Eiders deserting all their usual breeding places on the east coast, until 'there was not more than one pair on Coquet Island and only around two pairs on the Farnes' (Tristram, 1858-1860). The islands owe an incalculable debt to Archdeacon Charles Thorp. He became the lessee of both groups probably sometime in the late 1830s, and at his own expense employed Keepers or Watchers to protect the birds in an attempt to halt the persecution and reverse the decline. That he was successful is obvious from a comment by Selby in 1857 (in Tate, 1857), '... the Eider have been protected for many years and are now pretty numerous'. Unfortunately Thorp died in 1862 and though the protection continued the Watchers became lax and once again, egg collecting and shooting all took their toll on the breeding birds. By 1874 Hancock (1874) considered that only 'several pairs' of Eiders now bred on the Farne Islands. Gurney (1878) too, was extremely pessimistic about the future when he wrote 'summer after summer the birds are misused', and though he reported that 'they [Eider] breed in large numbers', exactly how many is not said. Furthermore it would be a novelty for him to see them nesting since the Farnes and Coquet Island were the only English breeding sites for this species.

The Farne Islands Association was founded in response to the passing of the Wild Birds Protection Act of 1880. Initially there seemed little change: fishermen and collectors still took countless eggs and the Watchers continued to exploit the birds for their own personal gain. In 1887 the situation was so bad that by early June when Hugh Barclay, a Norfolk banker, took over the islands there was 'hardly an egg left' (Barclay, 1888). Immediately, he enforced stricter measures that at last had a beneficial effect on all the breeding species. Table 1 shows the effect on the breeding Eiders with the numbers of sitting females almost doubling by 1895.

Though persecution and egg collecting were certainly curtailed throughout the period when the Watchers were present, they did not arrive on the islands until around the second week of May. Hence as Eiders are relatively early nesters they frequently lost most of their first clutches to egg collectors or gull predation. Miller felt strongly that the Watchers should have started at least a week earlier. This situation was not fully addressed until the appointment of a warden/naturalist in 1970.

There is little information regarding egg collecting and persecution between the wars, though a comment by Thorp in his 1932 Farne Islands Association Report indicates that there were problems on Longstone because of the difficulty of protecting the island both from egg collectors and gull predation (Thorp, 1933).

It is particularly unfortunate that during World War II the Admiralty had forbidden any Watchers to be stationed on the islands from 1941 to 1943. However in 1944 and 1945 two were allowed on Brownsman for a short time each season, but as a result of the lack of protection all the birds, particularly on the inner group, had suffered. T Russell Goddard was especially distressed by the plight of the Eiders: 'It appears that the machine gunning of the Eiders; drakes, ducks and ducklings by the troops stationed at Seahouses and thereabouts and the taking of the eggs by the crews of the minesweepers and other naval vessels during the past few years has brought a serious diminution of the species. It is tragic ...' (Goddard, 1925-1948, volume 5, 31 May p99). Apparently the ducks and ducklings were raked by machine gun fire by the troops on the coast when they came inshore during the summer evenings, and members of the minesweepers' crews stationed there shot many more. Their



bodies were packed into sacks and removed, probably for the sake of their down and soft feathers. Furthermore, despite Admiralty regulations, between 1941 and 1944 practically every egg laid was collected (Goddard, 1946a). Thus the exceptionally low numbers of Eiders in 1946 is not surprising.

There was a further incident when, in December 1946 Goddard received confidential information that eighteen crates of Eiders, all consigned in boxes labelled "Seahouses", had been seen in Leadenhall Market, London, and in a private letter he wrote 'The wholesale destruction of Eider is an outrage ... It is tantamount to extermination of the Northumberland colony.' (Goddard, 1946b). Happily, despite the labels, the Eiders may have originated elsewhere, since over 300 ducks nested in 1947. A further factor in protecting the colony was the closing of Inner Farne to the general public except for the area around the chapel and the tower, for a few years from 1947. This allowed the majority of sitting Eiders on the island to be undisturbed and gave the colony a chance to recover.

Despite the presence of the wardens after the war, Eider eggs continued to be stolen. Several clutches were taken over the holiday weekend in 1946 (Goddard, 1946a) and there were further occasions in 1959 and 1964 when eggs were taken (Hickling, 1965). In 1959, the Watchers were late in returning to the islands and when they finally arrived on 22 May they found most areas on Inner Farne unpopulated with only empty nests and broken eggs. It was thought that at least 150 eggs had been stolen (Hickling, 1960). The *Newcastle Evening Chronicle* (1959) reported that hundreds of eggs were being sold in North Northumberland fishing villages, though fishermen strongly denied that they were to blame (*Berwick Advertiser*). This disturbance is probably the reason for the lower number of ducks on Inner Farne that year.

In the early 1950s a significant part of the Eider population bred on Longstone where Lewis, the Head Lightkeeper, was able to provide some protection from the visitor disturbance and the Lesser Black-backed and Herring Gull predation. Unfortunately Lewis was transferred in early 1954 and after his departure visitor disturbance and egg collecting had driven most of the Eiders to other islands by the early 1960s.

The Wild Birds (Farne Islands Egg Sanctuary) Order that was passed in July 1964 (Hickling, 1965) had some effect in restricting the egg collecting, but this was only finally eradicated in 1971 when the wardens were employed for a much longer period.

The visitor disturbance however was ongoing. An interesting experiment was carried out in 1965 when the wardens constructed wooden stalls on Inner Farne to encourage the ducks to nest in areas where they would not be disturbed (Hickling, 1966). Though this was successful it does not appear to have been repeated in succeeding seasons. Perhaps the main factor in cutting down visitor disturbance was the appointment of Peter Hawkey as a warden/naturalist in 1970. He did much to alleviate this by putting in paths round Inner Farne, licensing visitor boats and restricting visitor access in the breeding season.

#### **Lesser Black-backed and Herring Gull predation**

The only specific record of the Eiders being predated in the 19<sup>th</sup> century is not until the very end (Morres, 1896), but there is no doubt that predation must have reached a very high level at times as Lesser Black-backed Gulls were considered to be the most numerous species on the islands. The next record comes from Edward Miller who noted this species predated Eiders in 1913 when he notes 'Gulls took eggs from a nest on the South Wamses' (Miller, 1911-1914, 1 June). He also made the point on two separate occasions that Eiders' eggs were

predated before the Watchers came on in the second week of May (Miller, 1911-1914, 20 June 1912, 27 June 1913).

Except for Miller, there is little information concerning the predation of Eiders prior to World War II. The problems with persecution during the war have already been discussed, but there is no doubt that, in addition, Eiders also suffered heavy predation (Thorp, 1942, 1943).

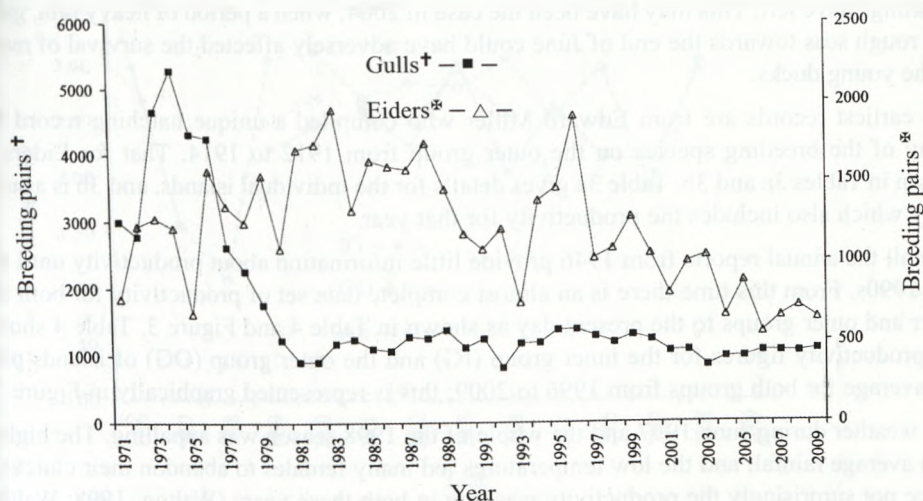
The part played by the large gulls in destroying the colonies on Longstone from the mid 1950s has already been noted (Wilson and Noble-Rollin, 2007), and it could also have been a factor in the high level of desertions seen in some seasons (Hickling, 1959, 1962). The Wild Birds (Farne Islands Egg Sanctuary) Order came into effect in the 1965 season, while this did restrict the egg collectors; an unexpected outcome was that very few of the large gulls' eggs were gathered. This allowed their population to escalate, with the resultant increase in predation on all the breeding species. By 1981 however, their numbers had been reduced from around 5,000 to fewer than 1,000 pairs (Wilson and Noble-Rollin, 2008), and Figure 2 shows the effect this may have had on the Eider population.

It appears superficially that the control of the Lesser Black-backed and Herring Gulls allowed the numbers of sitting Eiders to increase; however the influence of winter and early spring weather conditions is a particularly important factor in allowing the Eiders to attain good breeding condition. It is this that critically affects the breeding numbers and as far as can be ascertained the winters throughout the early to mid 1980s did not appear to be particularly severe, and thus many ducks should have been in good condition.

With respect to the large gull population, the decrease in numbers should have reduced the predation on the sitting females and also the number of desertions when compared to those seen prior to the culling. Today predation is still a constant presence, and appears to have been a problem in most years since 2003.

It is not surprising to find that Eiders will if possible choose nest sites that offer some protection, whether man-made or natural. Many ducks nest in the longer grass and nettles, and others cluster around the buildings: the courtyard on Inner Farne, Brownsman cottage and in the past the lighthouse buildings on Longstone. At the present time many nest beside the paths on Inner Farne where the proximity of the visitors may give them some additional pro-

Figure 2 Eiders compared with Lesser Black-backed and Herring Gulls, 1971-2009.





tection. They have also sat inside the rope handles of old fish boxes, on top of fishing nets, inside an old motorcar tyre on Knoxes Reef and beneath an old wire mattress on Brownsman (Watt, 1951a). In 1978, despite the building operations on Prior Castell's tower, females continued to sit against the tower walls. Planks and fish boxes were used to shield them from the rubble that rained down on them and they remained apparently undisturbed (Hawkey and Hickling, 1978). Many females will also use the same nest sites year after year, and one particular female had been known to nest in the same place by the chapel wall on Inner Farne for seven seasons (Kearton, 1898a).

Miller was particularly fond of these ducks and in 1912 he was thrilled when a female laid in a nest that he had made with Sea Campion *Silene maritima*, and in 1913 recounted how the light keepers on Longstone had put grass around the lighthouse for them (Miller, 1911-1914, 1912, 1913). In a revival of this, in 1953 Eiders used artificial nests on Longstone that had been made by the light keepers (Watt, 1954), and as already noted wooden stalls were constructed on Inner Farne in 1965 in a successful effort primarily to encourage the ducks to nest in undisturbed areas, but also offering some protection from the Lesser Black-backed and Herring Gulls (Hickling, 1966).

Soon after incubation begins the male Eiders usually desert the breeding area and congregate in safe offshore moulting sites, leaving the females to nest alone. Once the young have hatched they are led down to the water accompanied by their mother together with one or two 'escorts' or 'aunties'. These are either non-breeding birds or ducks that have lost their eggs. Goddard noticed this behaviour on a number of occasions and was told by George Archbold (the Watcher on Inner Farne) that it was common for the 'escorts' to wait near a sitting duck until she was ready to take the family to the water. (Goddard, 1925-1948; 22 June 1930 and 16 June 1934) According to Watt in 1951 this practice appeared to be peculiar to the Farne Islands (Watt, 1951a), but is now known to be normal.

### Productivity

This is generally defined as the number of young fledged per breeding pair. As Eiders take their ducklings to the sea within twenty-four hours of hatching, their productivity is taken as the number of young hatched, since once they are at sea their fortunes cannot be followed. However healthy productivity figures may be misleading if the weather is poor once the ducklings have left. This may have been the case in 2004, when a period of heavy rain, gales and rough seas towards the end of June could have adversely affected the survival of many of the young ducks.

The earliest records are from Edward Miller who compiled a unique hatching record for many of the breeding species on the outer group from 1912 to 1914. That for Eiders is shown in Tables 3a and 3b. Table 3a gives details for the individual islands, and 3b is a summary which also includes the productivity for that year.

Overall the annual reports from 1946 provide little information about productivity until the late 1990s. From this time there is an almost complete data set of productivity for both the inner and outer groups to the present day as shown in Table 4 and Figure 3. Table 4 shows the productivity figures for the inner group (IG) and the outer group (OG) of islands plus the average for both groups from 1996 to 2009; this is represented graphically in Figure 3.

The weather during June 1997 and the whole of the 1998 season was appalling. The higher than average rainfall and the low temperatures led many females to abandon their clutches, hence not surprisingly the productivity was low in both these years (Walton, 1998; Walton

Table 3a Eider nests, number of young and productivity for the individual islands, 1912-1914.

	Brownsman			Staple Island			North Wamses			South Wamses			Harcars		
Year	Nests	Young	Avg./nest	Nests	Young	Avg./nest	Nests	Young	Avg./nest	Nests	Young	Avg./nest	Nests	Young	Avg./nest
1912	18	57	3.2	4	12	3.0	1	3	3.0	1	3	3.0	3	9	3.0
1913	34	121	3.5	6	16	2.7	1	3	3.0	-	-	-	-	-	-
1914	26	83	3.2	1	2	2.0	1	3	3.0	-	-	-	-	-	-

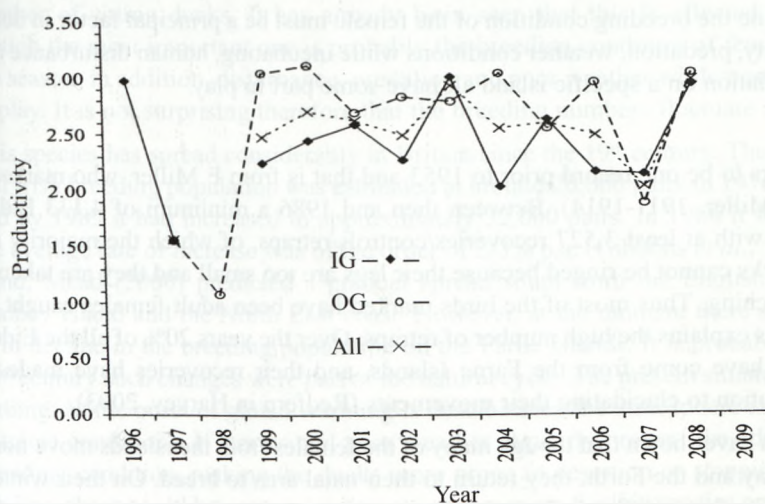
Table 3b Summary of Table 3a, including overall productivity.

Year	Nests	No. young	Average young/nest
1912	27	84	3.1
1913	41	140	3.4
1914	28	88	3.1

Table 4 Eider productivity for the inner group (IG) and the outer group (OG) of islands plus the overall (All) for both groups from 1996 to 2009.

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
IG	2.98	1.57	-	2.25	2.45	2.59	2.28	3.02	2.04	2.64	2.17	2.15	2.95	2.91
OG	-	1.56	1.08	3.05	3.12	2.70	2.84	2.80	3.05	2.56	2.97	1.89	3.05	3.19
All	-	-	-	2.48	2.71	2.63	2.50	2.94	2.56	2.61	2.50	2.04	2.99	3.03

Figure 3 Eider productivity on the Farne Islands, 1996-2009.





and Maher, 1999). The desertions and unusually high adult mortality in 2000 have already been noted, however despite these problems the outer group productivity was the highest recorded since the start of this dataset in 1996.

Many seasons from 2003 have suffered from high levels of predation, which when coupled with cold wet summers and stormy winters has had an effect on the productivity, as can be seen from Table 4. Problems with chick survival, desertions, and predation in 2007 combined with particularly poor weather saw the lowest productivity return for ten years (Steel, 2008), with the outer group especially suffering. From 164 monitored nests only 310 young actually managed to leave the islands (Steel, pers. comm., 2007).

In 2005 Neil Dawson, the senior warden on the outer group, suggested that when the Eider population was high, the productivity appeared to decrease. He speculated that at these times less healthy or immature females are forced into areas that are more open to predation or inclement weather. Though the hatching success did not seem to be unduly affected in such areas, the average clutch size was lower (Dawson, pers. comm., 2005), presumably because ducks in these positions may not be in good breeding condition or they may experience higher stress levels in such sites. It is thus interesting to compare the average productivity and numbers on Brownsman in Miller's time with that of today. This is shown in Table 5. The final row gives the corresponding figures for Inner Farne. When Table 5 is studied, it does appear that there could be some relationship between the size of the population of Eiders breeding on a specific island and the productivity.

Another factor that needs to be considered is that of human disturbance, since many females can be found sitting by the path on Inner Farne. However when individual productivity reports are studied the designated 'disturbance plot' on Inner Farne only rarely has the lowest productivity figures, and it may be that human presence can often give protection from the large gull predation. Overall it is usually East Wicopens that has the lowest figures, because of the incessant predation from the Lesser Black-backed and Herring Gulls.

Finally it is of interest to note that a higher percentage of eggs consistently hatch on Brownsman than on Inner Farne; whether or not this is related to a higher rate of disturbance on Inner Farne, with eggs becoming cooled when females are disturbed by visitors is unknown.

In conclusion, while the breeding condition of the female must be a principal factor in determining productivity, predation, weather conditions while incubating, human disturbance and possibly the population on a specific island all have some part to play.

### Ringling

There only appears to be one record prior to 1953 and that is from E Miller, who marked a female in 1913 (Miller, 1911-1914). Between then and 1986 a minimum of 4,133 Eiders have been ringed with at least 3,527 recoveries/controls/retraps, of which the majority are retraps. Eider chicks cannot be ringed because their legs are too small and they are taken to sea soon after hatching. Thus most of the birds marked have been adult females caught on the nest which thus explains the high number of retraps. Over the years 20% of all the Eiders ringed in Britain have come from the Farne Islands, and their recoveries have made an important contribution to elucidating their movements (Redfern in Harvey, 2003).

Recoveries/retraps have shown that though many of the females from the islands move north to winter on the Tay and the Forth, they return to their natal area to breed. On their wintering grounds they overlap with birds from the Sands of Forvie, but despite this only a rela-

Table 5 Eider average populations and productivity comparisons from the early 20<sup>th</sup> and 21<sup>st</sup> centuries.

	Period	Population	Productivity
Brownsman	1912-1914	26	3.3
	2001-2008	200	2.82
Inner Farne	2001-2008	485	2.48

tively small number ringed on breeding areas further north outside Northumberland have been found on the Farne Islands. Up to 1986 one or two ducks that had been ringed at Newburgh, Aberdeenshire were found breeding in a number of seasons. Most inter-colony exchange has been with the local populations from Budle Bay and Coquet Island and these included a female ringed at Budle Bay in 1959. She was last seen nesting in the 1982 season aged twenty-three years (Hawkey and Hickling, 1983). Most interestingly, a duck ringed at Bornholm, Denmark was found dead in May 1974, and is the first (and only) recovery of a foreign-ringed duck on the islands (Hawkey and Hickling, 1974).

Shooting, oil pollution and accidental capture in fishing nets are the main identifiable causes of death in recovered birds (Wernham *et al.*, 2002). While a few have been found oiled, the only record of one being shot was of an Eider shot in Denmark in 1963; though it had been marked as a juvenile at Seahouses it probably hatched on the Farne Islands (Hickling, 1964). The most recent episode of oiling was in October 2008 when a small number of Eiders were caught up in an unidentified oil slick off the north-east coast (Steel, 2009).

Unfortunately little is known about the movements of the males. They pair while on their wintering grounds and will follow their mate back to her natal area to breed.

Ringling ceased in 1986 and though there were further recoveries, it was not until 1996 that the present programme was initiated. Since that time 620 adults have been marked with at least 655 retraps together with some recoveries and a number of sight records.

## Conclusion

The short-term variations in numbers seen in Figure 1 represent the seasonal changes in the number of sitting ducks. It has already been seen that this is affected by many factors, though the most important one is probably the breeding condition of females at the start of the season; in addition, disturbance, predation and poor weather while nesting all have a part to play. It is not surprising therefore that the breeding numbers fluctuate as they do.

This species has spread considerably in Britain since the 19<sup>th</sup> century. The combined British and Irish breeding population was estimated at around 20,000 pairs in 1976 (Sharrock, 1976) and by 1989 it had increased to approximately 32,000 pairs. In 1984 it was calculated that the average rate of increase was of the order of 2-3% p.a. (Gibbons *et al.*, 1991). With this in mind, Mead (2000) predicted a gradual spread south from the English breeding sites of Walney Island and the North East coast. However, at the moment there seems to be a long term decline in the breeding population on the Farne Islands. It is probable that prior to the 19<sup>th</sup> century such changes were part of the natural cycle. The present situation is however disturbing; as the onset of global warming is destabilizing the atmosphere and leading to more extreme conditions. If storms and poor weather regularly prevent the adults from reaching breeding condition, making the ducks more prone to desertion or stopping the chicks from feeding, there could be serious long term consequences for this species on the Farne Islands.



## **Shelduck *Tadorna tadorna***

### **Historical records to the present day**

Wallis was the first to note their presence on the Farne Islands in 1740 when he reported them as a 'native of Farne' (Rossiter, 1999). Nearly thirty years later Pennant described them as a resident, but not a common one (Rossiter, 1999). There are no further records until probably the second decade of the 19<sup>th</sup> century, when William Darling documents them as a breeding species in his 'Description of Fern Islands birds nests and eggs' (Darling, 1805-1860). This is a brief description written in the front of his original diary; unfortunately it is not dated, but it must have been prior to Selby's paper in 1826 (Wilson and Noble-Rollin, 2008).

There are no further records until Tate (1857) who described them as an occasional breeder on the islands. Subsequent breeding records to the end of the 19<sup>th</sup> century are shown in Table 6.

The only record prior to World War I is from Edward Miller on Brownsman. He reported the presence of this species in three out of his four seasons, though he never found any nests on the outer group. However he was told that a pair had bred on the Wideopens, probably West Wideopens, in 1912 (Miller, 1911-1914, 19 May), and Cuthbertson, a former Watcher, reported that a pair had nested near the old garden wall on Staple Island in the 1890s (Miller, 1911-1914, 23 June 1912) – which is the first note of Staple Island being used. Between the two world wars Shelducks bred on Brownsman in 1935 (Goddard, 1925-1948, 16 June; Thorp, 1936), 1937 (Thorp, 1938) and 1939 (Goddard, 1925-1948) and in an old drain on Inner Farne in 1937 (Thorp, 1938). In 1926 and 1928 pairs were seen on Brownsman when the Watchers were put onto the islands in May, but there is no evidence that they bred (Thorp, 1926, 1929). In 1946, Shelducks were found breeding on three islands, Inner Farne, Brownsman and Staple Island. Since then this species has mainly used Inner Farne and Brownsman, but breeding has been reported on Staple Island on four occasions and at least five times on West Wideopens. A pair bred for the first recorded time on Knoxes Reef in 1964 (Hickling, 1965), and possibly on another three occasions after that. The last definite breeding on this island was in 1985 (Hawkey and Hickling, 1985). In 1971 breeding was confirmed on East Wideopens and in 1985 on North Wamses. During the 21<sup>st</sup> century Inner Farne has been the only island in use; a female identified by a distinctive facial pattern summered on the islands in 2002 and since then she has appeared every year, raising young on five occasions (Figure 4).

### **Evidence for numbers**

Shelducks nest underground in burrows, which on the Farne Islands are usually those originally excavated by Rabbits *Oryctolagus cuniculus* or Puffins *Fratercula arctica*. Because of the fragility of the soil cap, nests cannot be looked for or investigated. Hence unless the young are actually seen or there is other definite evidence, it is difficult to be certain that breeding has actually taken place. There is therefore doubt concerning a number of records, and any numbers quoted may be the minimum for that season.

As far as can be ascertained during the 19<sup>th</sup> and the first part of the 20<sup>th</sup> century, Shelducks were only occasional breeders with between one and two pairs breeding in any season. However from the mid to late 1920s they seemed to breed more frequently (Watt, 1951a).

Figure 4 shows the number of Shelducks from 1924 to 2009. These are, as far as possible, definite records, although any numbers quoted may be the minimum for that season.

Table 6 Shelduck definite or possible breeding from 1866 to the end of the 19<sup>th</sup> century.

Year	Description	Comment	Reference
1866	A pair or two in rabbit burrows.	Visited June.	Brown, 1866
1867	A few pairs on the islands.	Possible breeding reference.	Booth, 1881-1887
1875	A nest seen.		Adamson, 1878
1877	Author received 2 eggs. Noted pair breeding.		Bolam, 1912 Clark, 1881
1880	Pair seen on the Wideopens.	Not certain if breeding.	Gurney, 1889-1890
1884	First young seen at sea on 22 June.		Harvie-Brown <i>et al.</i> , 1885
1885	Two broods hatched off Inner Farne.		Harvie-Brown <i>et al.</i> , 1886
1886	Adult with young. Brood noted.		Harvie-Brown <i>et al.</i> , 1887 Bolam, 1912
1889	Two ducks seen, one with four and one with thirteen young. One pair hatched.	Some confusion as to the number of broods that hatched. But definite breeding record.	Gurney, 1889-1890 Barclay, 1889b
1890	One pair.	Letter from Paynter pasted into Diary.	Bolam, 1877-1933, 19 March 1891
1896	Brood of young seen on the islands in June.		Bolam, 1912

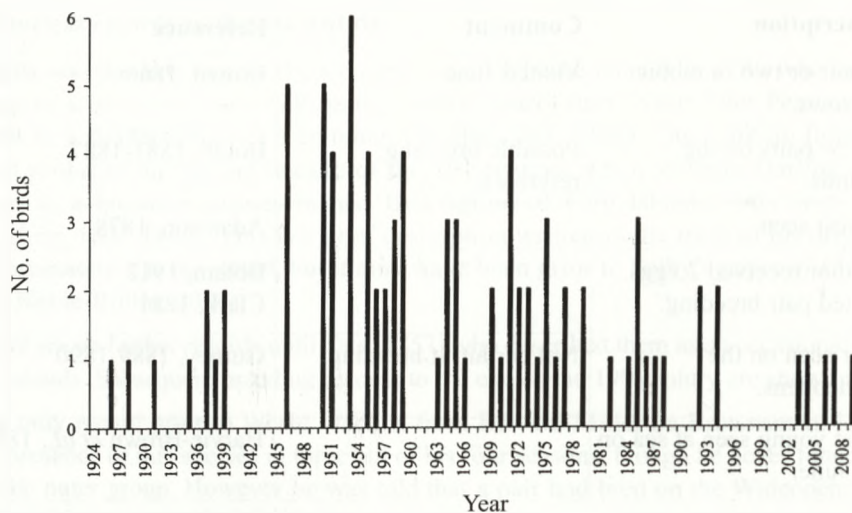
The increase that appears to start around the mid to late 1930s can probably be related to the disturbance on Ross Links by the military authorities prior to and during World War II. Ross Links was then, and had been for a long while, the main breeding ground for the species in this area of Northumberland. There are no records from World War II though it is likely that they bred on the outer group, but in 1946, at the start of the annual reports, five pairs were found which at the time was a record. Numbers remained at around this level until 1959 and reached a maximum of six breeding pairs in 1953. Unfortunately there is no note of which islands were used in that season. Since then there has been a gradual decline and in the last decade of the 20<sup>th</sup> century nesting was only confirmed on two occasions.

#### Persecution, predation and productivity

The only evidence of persecution is from the 19<sup>th</sup> century. Bolam (1912) received two eggs from the lighthouse keepers in 1887, and Adamson (1878) reported that Shelducks had nested in 1875 but that the inhabitants of the outer group (the lighthouse keepers) had taken the eggs. No doubt these were not the only occasions this happened! In all probability, Shelducks would probably have been shot to be collected as specimens and also killed by



**Figure 4** Number of Shelducks, 1924-2009.



the shooting parties that frequently visited the islands during a large part of that century (Wilson and Noble-Rollin, 2006, 2007, 2008 and 2009). There is no evidence of any persecution during the 20<sup>th</sup> century, but while this species may have bred on the outer group during the war, they would have been driven off the inner group by the egg collecting and shooting from the minesweeper crews that was prevalent then (Goddard, 1925-1948, volume 5, 31 May p99).

As Shelducks nest in burrows, egg predation by the large gulls is impossible; however when the ducklings hatch and go to sea they are vulnerable. As far as is known there are only two possible records of such predation. In 1969 five young with an adult were seen on Inner Farne on 24 June. They then spent July on the pond in the centre of the island, but unfortunately the adult was absent for long periods and the young gradually disappeared, some killed by gulls and the last one starved (Hickling, 1971). The second reference is from 1994, when an adult with seven young seen on Staple Island pool had lost three of them by 23 July (Walton, 1995). It is most likely that they were predated.

As is the case with Eiders the fate of the young when they have left the islands is not known. However there have been occasions prior to taking them to the sea when young have died. Of the eight that hatched on Inner Farne in 1959, six of the ducklings were found dead in a tank near the lighthouse and the others died subsequently (Hickling, 1960). The records from 1969 and 1994 have already been discussed above. At times abandoned nests have been found such as in 1970 when a deserted clutch with eight eggs was found on Staple Island (Hickling and Hawkey, 1972) and in 1994 when a nest was found on Brownsman which contained one broken egg and another one pressed into the soil. This was presumed to have been abandoned (Walton, 1995).

Table 7 shows the years and number of young Shelducks seen.

There are many years however when there is no direct evidence, and breeding can only be assumed because the adults have been seen entering a burrow, or became elusive suggesting nesting activities. Failure can sometimes be surmised if a pair is seen on a pond at the end of May without any young, or both adults are seen regularly on the island from a relatively early date in May.

## Conclusion

Shelducks have a lengthy history on the Farne Islands and are an interesting if minor part of the fauna. Because of their habit of breeding in the Puffin burrows there is probably not much scope for their population to increase substantially in the future. It would be a great shame if they ceased to use the islands.

Table 7 Number of Shelduck eggs or young noted.

Year	Description	Reference
1877	A burrow with thirteen eggs found.	Clark, 1881
1886	One pair with nine young seen.	Harvie-Brown <i>et al.</i> , 1887
1889	Two pairs seen one with four young, the other with three young.	Gurney, 1889-1890
1937	One pair with nine young on Brownsman.	Thorp, 1938
1947	Eight taken to sea 30 June.	Goddard, 1947
1951	Two pairs raised eight young.	Watt, 1951b
1956	Parents seen with nine young.	Hickling, 1957
1957	One pair raised three young on West Wideopens.	Hickling, 1958
1958	Five young seen on Brownsman.	Hickling, 1959
1959	Eight young from a nest on Inner Farne.	Hickling, 1960
1966	Two adults and seventeen young seen on 14 June.	Hickling, 1967
1969	Five young seen 24 June Inner Farne.	Hickling, 1971
1971	Adult and four young seen in the Kettle.	Hawkey and Hickling, 1972
1994	Two adults and seven young seen on Staple Island Pool.	Walton, 1995
2003	Eight eggs found in a burrow on Inner Farne, all hatched and seen being led to the water.	Steel, 2004

## Mallard *Anas platyrhynchos*

### Historical records to the present day

William Darling is the first to document both the presence and breeding of Mallards on the Farne Islands in his original handwritten diary (Darling, 1805-1860). Though no specific date or island is noted, it is prior to 1826 because breeding is not mentioned by Selby (1826) or by any other 19<sup>th</sup> century author. The most likely sites are on the outer group as Darling was the lighthouse keeper on Brownsman at that time.

The only other records prior to 1939 are of winter sightings from the various lighthouse keepers in the 1880s as well as Darling's notes to 1860 of Mallards he shot in winter (Darling, 1805-1860). In the 20<sup>th</sup> century T Russell Goddard recorded their presence on his visits to study the Grey Seals in the 1930s (Goddard 1925-1948, volume 6).



The first documented breeding in the 20<sup>th</sup> century occurred in 1939 when Goddard was told that two pairs had nested on North Wamses (Goddard, 1925-1948, 27 May). Though Mallards were seen in most subsequent years – especially in winter – they only bred occasionally up to 1970 but since then they have become one of the regular breeding species.

The islands that have been used in the 20<sup>th</sup> century are shown in Table 8. The columns show the first and last dates of breeding, any periods of three or more consecutive seasons and the total number of occasions a specific island has been used.

Initially Mallards bred mainly on the undisturbed islands *i.e.* those on which visitors were not allowed such as North Wamses, East Wideopens and Brownsman, though one of the two pairs breeding in 1964 was on Inner Farne.

As already outlined above, Mallards began to breed regularly from 1970 when the management changed. They also began to breed on Staple Island in 1984 where similar visitor restrictions were imposed. In 2009 Mallards were nesting on Inner Farne, West Wideopens, Staple Island and Brownsman.

#### **Evidence for numbers**

Mallard numbers only really started to increase from the late 1970s, rising to a record of thirteen sitting females in 1988, 2003 and 2007. Before this there are only sporadic counts: 1939 – two pairs; 1947 – one pair; 1962 – one pair; 1964 – two pairs; and 1970 – two pairs. The maximum number on any island was in 2007 when there were five on Inner Farne. In 2003, 2006, 2008 there were four females on Inner Farne, while in 2009 four were sitting on both Inner Farne and Brownsman.

#### **Predation from Lesser Black-backed and Herring Gulls**

Like all duck species, Mallards lay a large number of eggs and on the islands clutches have frequently been seen containing ten eggs; however there has rarely been an occasion when all have managed to hatch and the chicks to fledge.

The main reason for this is the incessant predation from the Lesser Black-backed and Herring Gulls. Each year nests on each island group are abandoned and both eggs and young taken. This led to few successful seasons prior to 1970 and is ongoing today. In 1996 a nest on Knoxes Reef with ten eggs was found deserted (Walton, 1997) and three attempts all failed in 1999 (Walton, 2000). No chicks survived to fledge in 2006 (Steel, 2007) while only one egg hatched out from six nesting attempts on the outer group in 2005, and this was in a nest in the vegetable garden on Brownsman where an Eider Duck had removed all but one egg and then incubated this with her own clutch (Steel, 2006). Broods that are most likely to succeed are those that are well hidden, such as the one under Rhubarb plants *Rheum rhabarbarum* in the Brownsman garden in both 2003 and 2004 (Steel, 2004, 2005), or as in 2007 when the higher rainfall kept the ponds filled and females could keep broods on them and the young sheltered in dense cover (Steel, 2008).

Figure 5 shows both the Mallard and Lesser Black-backed and Herring Gull populations from 1971 to 2009 and it can be seen that the main increase in the Mallard population started from around 1982 when the large gull numbers had fallen to around 1,000 pairs.

In Figure 5 the dramatic change in gull numbers has already been outlined in this paper and discussed in detail in Wilson and Noble-Rollin (2008): the effect on Mallards is not clear;

Table 8 Breeding Mallard details for the 20<sup>th</sup> and 21<sup>st</sup> centuries.

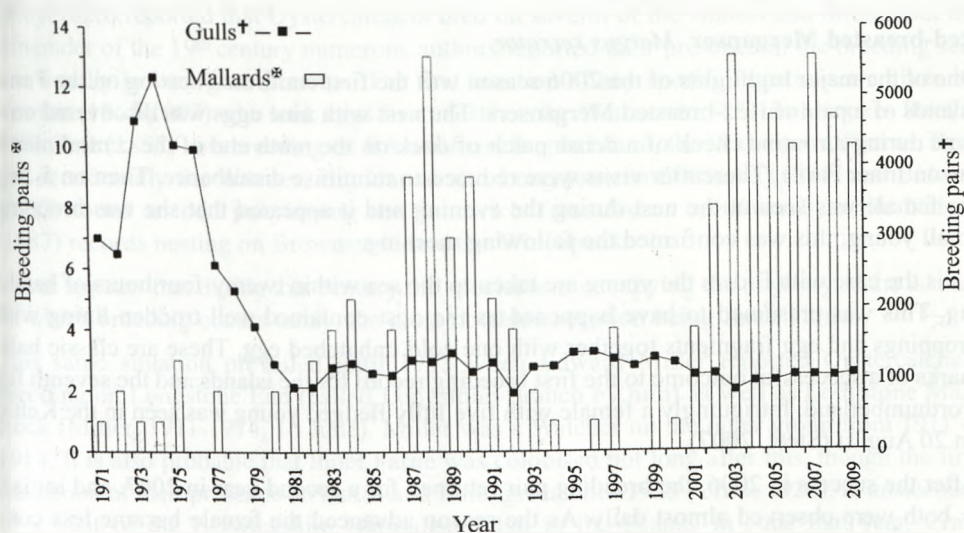
Island	First record of breeding	Last date of nesting	No. of occasions	Periods
Inner Farne	1964	2009	22	1970-1974, 2001-2009.
East Wideopens	1964	2005	6	
West Wideopens	1975	2009	21	1975-1977, 1980-1983, 1986-1991, 2002-2009.
Knoxes Reef	1972		12	2002-2004.
Staple Island	1984	2009	12	1986-1988, 2007-2009.
Brownsman	1962	2009	15	1987-1992, 2002-2009.
North Wamses	1939	2004	15	1987-1990, 2000-2005.
South Wamses	1982	2006	12	1986-1988, 2001-2003.
Big Harcar	1947	2007	13	

numbers increased after the decline of gulls but then decreased during the 1990s to rise again in the 2000s. The species is the most numerous duck in Northumberland except for the Eider, (Day, Hodgson and Rossiter, 1995) and it is difficult to draw any conclusions from a small population varying from one to thirteen pairs.

### Productivity

Unlike Eiders and Shelducks, Mallards do not usually take their young to the sea within twenty-four hours of hatching: they can often be seen around the small ponds on Inner Farne and Brownsman. Hence it is occasionally possible to follow the Mallard ducklings for a longer time than for other duck species. Even so there is still only a very limited amount of information available concerning productivity. The data shown in Table 9 have been com-

Figure 5 Mallards, and Lesser Black-backed and Herring Gulls, 1971-2009.





**Table 9** Mallard nesting records from 1996-2006.

Year	1996	1997	2000	2001	2002	2003	2005	2006
Nests/attempts monitored	1**	1**	2*	5	3*	5*	6*	10
Total eggs laid	10	10	14	22 +	33	41	-	-
Chicks hatched	0	10	0	6	23	27	1	-
Chicks fledged	0	10	0	3	22	27	-	0
Productivity	0	10	0	-	7.33	5.40	0.17	0

\*\*Inner group \*Outer group

piled from the productivity reports (Steel, pers. comm., 2009) and the annual report for the relevant year. It must be noted that the productivity in some years is higher than shown as ducklings are known to have fledged from the other island group, but numbers are unknown.

As has already been indicated, in many seasons the majority of eggs and ducklings are usually predated by the large gulls and relatively few survive, hence low productivity as seen in 2005 can often be the norm, rather than an exception. Thus years with productivity figures of 10, 7.3 and 5.4 per nesting female are considered to be good seasons. In recent years however there has been an improvement with reasonable numbers fledging each season. In 2007, the above-average rainfall enabled the females to keep broods on the ponds (which normally dry up) and to keep young sheltered under dense cover which protected them from the large gulls (Steel, 2008). As would be expected, the most successful females are those able to choose well hidden nest sites and keep any young covered so as to avoid predation.

### Conclusion

Only a small population of Mallards actually breed on the Farne Islands. Over the last few seasons between ten and thirteen females have nested each year, though not usually with great success. While there is probably the potential for some population expansion, the main barrier to this is the incessant predation from the Lesser Black-backed and Herring Gulls and seasonal lack of fresh water on the islands.

### Red-breasted Merganser *Mergus serrator*

One of the major highlights of the 2006 season was the first confirmed nesting on the Farne Islands of a pair of Red-breasted Mergansers. The nest with nine eggs was discovered on 4 June during a routine check of a dense patch of dock on the north end of the central meadow on Inner Farne. Thereafter visits were reduced to minimise disturbance. Then on 5 July the female was seen at the nest during the evening and it appeared that she was brooding small young; this was confirmed the following morning.

As is the case with Eiders the young are taken to the sea within twenty-four hours of hatching. This was presumed to have happened as the nest contained well trodden lining with droppings and egg fragments together with one cold unhatched egg. These are classic hallmarks of a successful outcome to the first breeding record for the islands and the seventh for Northumberland. Intriguingly a female with five fully fledged young was seen in the Kettle on 20 August (Steel, 2007).

After the success in 2006, the breeding pair returned for a second year in 2007, and initially both were observed almost daily. As the season advanced the female became less con-

spicuous and although the nest site was never found there was no doubt that a breeding attempt had been made (Steel, 2008).

Unlike the previous season breeding was once again confirmed in 2008. The nest containing eight eggs was discovered in early July and on 24 July the female took seven chicks to sea. The nest was inspected and the remaining egg was found to be infertile (Steel, 2009). Breeding was again confirmed in 2009 at the same location as the previous year; on the dock bank on Inner Farne. The nest site was discovered but not checked.

The importance of these four breeding records cannot be over-stressed. This the first new duck since Mallards in the early 19<sup>th</sup> century and the first entirely new species to be added to the list of breeding birds on the Farne Islands since the Lesser-crested Tern *Sterna bengalensis* in 1985 and the White Wagtail *Motacilla alba alba*, the continental race of Pied Wagtail, in 1991. Hence the discovery in 2006 of breeding Red-breasted Mergansers was both unexpected and exciting.

## WADERS

Oystercatchers *Haematopus ostralegus* and Ringed Plover *Charadrius hiaticula* are the two Wader species that have bred regularly over a number of centuries on the Farne Islands, though never in large numbers. There are in addition two other waders that have bred in the past, but ceased to breed in the 20<sup>th</sup> century as well as two further species for which the evidence is unsound and two that are unlikely to have bred.

### Oystercatcher *Haematopus ostralegus*

#### Historical records to the present day

The first mention of Oystercatchers occurs in the 17<sup>th</sup> century when Ray includes them in his list of birds that 'build' on the Farne Islands (Willughby and Ray, 1678). The only other reference prior to the 19<sup>th</sup> century comes from Pennant who saw some on his visit in July 1769 (Hutchinson, 1778). In both cases they are referred to as 'Sea Pie' an old and universal term used until recent times (Gardner-Medwin, 1985).

Selby(1826) reported that Oystercatchers bred on several of the islands and throughout the remainder of the 19<sup>th</sup> century numerous authors reported their presence in the breeding season, usually in very general terms. The first mention of any specific locations are given by Newton (1864-1907) who took eggs from nests on the Wamses in 1851 and Knoxes Reef in 1856. Tate (1857) lists breeding on Brownsman, Staple Island, the Wideopens, Knoxes Reef and occasionally the Wamses, Big Harcar and Longstone; both Clarke (1881) and Bidwell (1882) found an odd pair among the Sandwich Terns *Sterna sandivensis*, while Nelson (1887) records nesting on Brownsman and the Wideopens.

It thus appears that during this century the species was occupying the majority of the islands on which breeding occurs today; the most notable exception being Inner Farne.

This same situation prevailed until 1913 when Edward Miller reported Oystercatchers breeding on Longstone End (called Longstone Branch by him) as well as Longstone Main Rock (Miller, 1911-1914, 16 June). Miller was a Watcher on the outer group from 1911 to 1914. It is also probable that Inner Farne was colonised not long after this, though the first indication of their presence on that island is not given until 1923 (Craw, 1926). In an account of a visit of the Berwickshire Naturalists Club to the islands in June that year, Craw



describes finding a nest on Inner Farne 'near the edge of a cliff to the west' since then (with perhaps the exception of the Second World War) they have bred on that island each season. The first nest was reported on Northern Hares in 1934 (Goddard, 1925-1948, 30 June), and they returned to the Big Harcar in 1980, though neither island was used subsequently.

In 2009, Oystercatcher bred on Inner Farne, West Wideopens, East Wideopens, Knoxes Reef, Staple Island, Brownsman, North Wamses, South Wamses, Big Harcar, Longstone and Longstone End.

#### **Evidence for numbers**

The first definite evidence for any numbers comes from Booth (1881-1887) who visited the islands in 1867 and was told by Darling (a Watcher and a nephew of Grace Darling) that there were around 12 breeding pairs. Prior to that all the accounts simply said that the species bred 'on several islands' (Selby, 1826) or that eggs had been collected from particular islands (Newton, 1864-1907). However Tate (1857) did comment that Oystercatchers were 'numerous on Brownsman and Staple' and in 1895 Lodge (1904) reported five or six pairs on the Wideopens. Fortune considered that the species was 'fairly common and seen on most of the islands' and that 'a pair had nested regularly on the remains of the old light on Staple' (Fortune, 1907). The most valuable information comes from Miller who during his four seasons on Brownsman thought that around eight pairs bred regularly each year on the outer group (Miller, 1918). In addition he recorded not only the date when the first eggs hatched, but has also left a unique hatching record for this species. His information has been summarised in Table 10.

His diary makes fascinating reading but it is not always clear how many individual nesting attempts were made, though it is obvious that a significant number failed because of predation from the Lesser Black-backed and Herring Gulls. Furthermore on both the Wamses and the Harcars attempts would be missed as visiting each day was probably not possible due to the weather or time constraints.

Prior to the Second World War, with the exception of 1923 when twenty nests were discovered (Clark, 1924), there was a maximum of around fifteen breeding pairs (Watt, 1951a). Though there is little information regarding Oystercatchers during the war, it is known that they bred on the outer group (Thorp, 1944, 1945 and 1946), however by 1946 when visiting was resumed Goddard reported that their numbers had increased (Goddard, 1946a).

Figure 6 shows the total numbers of breeding pairs of Oystercatchers from 1946 to 2009. There is however a lack of data from the 1950s. During this time the Watchers concentrated on the main breeding species so Oystercatchers were not a high priority and in some years such as 1954 and 1960 only nests on the main islands of Inner Farne and Brownsman were counted, thus any numbers quoted are the minimum for that season. Once regular counting was resumed for this species, Figure 6 shows that fluctuations in the breeding population with increases in one season followed by decreases the next seems to be the normal course of events for them on the Farne Islands.

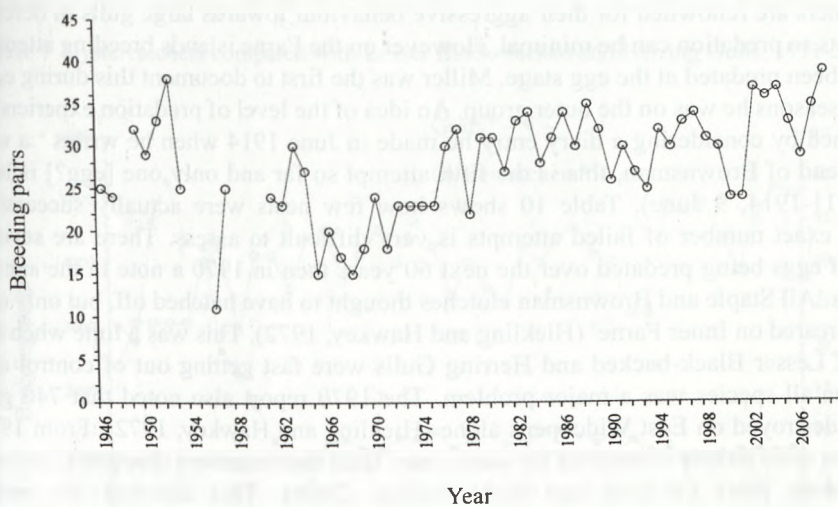
For the period from 1946 to 2008 the total number of breeding pairs has increased overall and this is shown in Table 11.

Except for the period 1991-2000, from 1961 to the present day the average number of breeding pairs of Oystercatchers on the Farne Islands has steadily increased and in 2008 reached a record level.

Table 10 Oystercatchers on the outer group 1911-1914.

Year	Island	No. of successful nests	No. of young hatched	Date of first young
1911	Brownsman	1	-	23 June (Staple Island)
	Staple Island	-		
	South Wamses	-		
	Longstone	-		
1912	Brownsman	2	4	27 June (Staple Island)
	Staple Island	2	3	
	South Wamses	0		
1913	Brownsman	1	3	13 June (Staple Island)
	Staple Island	3	5	
	South Wamses	0		
	Longstone End	-		
1914	Brownsman	3	7	7 July (Brownsman)
	Staple Island	2	2	
	South Wamses	0		

Figure 6 Breeding pairs of Oystercatchers from 1946 to 2009.





**Table 11** The average number of breeding pairs of Oystercatchers over ten year periods.

Period	Breeding pairs
1961-1970	21
1971-1980	26
1981-1990	31
1991-2000	30
2001-2009	34

### **Human persecution and egg collecting**

There is no direct evidence, but it is highly probable that Oystercatchers suffered along with all the breeding species during the persecution and egg collecting that was prevalent for much of the 19<sup>th</sup> century (Wilson and Noble-Rollin, 2006, 2007, 2008 and 2009). The 20<sup>th</sup> century was however a different matter and there were occasions when eggs were lost because they were stepped on by visitors who for many years were able to walk anywhere on Inner Farne and Staple Island. It is likely too that Oystercatchers were among the victims of the vandalism that occurred on the inner group from the minesweeper crews during the Second World War. During the 1950s they suffered from the egg collecting that was a feature at this time. The 1958 and 1959 seasons were particularly bad with 14 clutches of eggs taken by fishermen in 1958 (Hickling, 1959), and though Oystercatchers were not specifically mentioned, every accessible egg was collected from the Wideopens in 1959 (Hickling, 1960). This is probably another reason why there are incomplete figures for some years. By 1971 egg collecting had largely ceased, and from that time the residence of the seasonal wardens for longer periods meant that this was no longer a problem.

### **Predation from Lesser Black-backed and Herring Gulls**

Oystercatchers are renowned for their aggressive behaviour towards large gulls in defence of their nests so predation can be minimal. However on the Farne islands breeding attempts have often been predated at the egg stage. Miller was the first to document this during each of the four seasons he was on the outer group. An idea of the level of predation experienced can be gained by considering a diary entry he made in June 1914 when he writes ‘a nest at the east end of Brownsman, this is the fifth attempt so far and only one [egg?] is left’ (Miller, 1911-1914, 9 June). Table 10 shows how few nests were actually successful, though the exact number of failed attempts is very difficult to assess. There are several instances of eggs being predated over the next 60 years then in 1970 a note in the annual report reads ‘All Staple and Brownsman clutches thought to have hatched off, but only one young was reared on Inner Farne’ (Hickling and Hawkey, 1972). This was a time when the numbers of Lesser Black-backed and Herring Gulls were fast getting out of control and predation on all species was a major problem. The 1970 report also noted that 740 gull nests were destroyed on East Wideopens alone (Hickling and Hawkey, 1972). From 1975 these species were strictly controlled for some years until their numbers dropped to around 1000 breeding pairs (Wilson and Noble-Rollin, 2008). This allowed the small Oystercatcher population to show some increase as can be seen from Figure 7 which shows the number of breeding pairs of Oystercatchers compared with Lesser Black-backed and Herring Gulls.

Unfortunately from the year 2000 gull predation has once again become a problem and is one of the major reasons for lowered productivity in some years. Great Black-backed Gulls *Larus marinus* have been a regular but minor breeding species from 1991, and though at present they do not appear to be a particular threat to Oystercatchers one was seen to kill a chick that was close to fledging (Walton, 1996). In 2009 for the first time a pair were seen to move into a cage designed to protect Ringed Plovers after the plovers and their young had left the nest. They laid eggs, though unfortunately the eggs were later predated (Still, pers. comm., 2009).

### Oystercatchers as predators

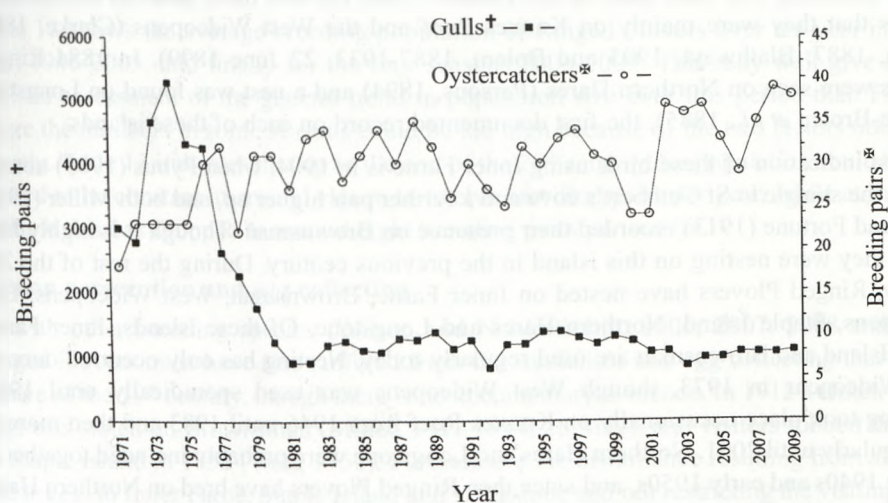
Oystercatchers can predate other species eggs and young including both gulls and terns Roselaur (1979). On the Farne Islands in the past, Oystercatchers have been seen predated the eggs of Eiders, (Hawkey and Hickling, 1972; 1979), Ringed Plovers (Hawkey, 1989) and Arctic Terns (Hawkey and Hickling, 1972). The Arctic Tern record is particularly interesting as the Oystercatcher was seen to force the sitting bird off the nest. More recently an Oystercatcher was seen to predate this species on at least two occasions in 2006 (Steel, pers. comm., 2006), it was suspected in 2007 and observed again in 2009 (Steel, pers. comm., 2009).

### Productivity

On the Farne Islands the main factors that determine Oystercatcher productivity (Table 12) are predation, weather conditions and high tides. These factors according to Miller were responsible for the relatively poor productivity seen for the 1911 to 1914 breeding seasons, when it is considered that the large gulls were then most numerous species on the islands, and were particularly concentrated on the outer group.

There is little further information available until the late 1990s, however productivity could have been low in the late 1950s when egg collecting was such a problem, and again probably in the early to mid 1970s at the time of the large gull population explosion. The only other figure prior to 1999 is for Inner Farne in 1988 when 66% of the eggs fledged (Hawkey, 1989).

Figure 7 Oystercatchers compared with Lesser Black-backed and Herring Gulls, 1971-2009.





**Table 12** Oystercatcher productivity on the inner (IG) and outer (OG) groups from 1998 to 2008.

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
IG	0.41	0.42	0.50	1.44	0.73	0.89	0.33	1.60	0.70	0.50	0.63
OG	0.29	0.29	0.75	0.75	1.07	1.62	0.65	1.37	0.60	0.20	0.27
Overall	0.35	0.35	0.43	1.32	0.90	1.32	0.54	1.42	0.65	0.33	0.42

### Ringling

As far as can be ascertained, forty-seven Oystercatchers have been ringed as pulli on the Farne Islands between 1952 to 1966. Usually only small numbers were marked each season reflecting the number of young present. There has been only one recovery an immature bird ringed as a chick on the islands in 1956 and recovered at Embleton Northumberland in December 1957 (Hickling, 1958).

### Conclusion

At the present time the Oystercatcher population seems to be undergoing a slow increase, though their productivity fluctuates markedly from year to year. They have never been an important breeding species on the Farne Islands; however, the Farne Islands with Coquet Island represent the main coastal breeding populations for this species in the north-east of England. They have a long history on the islands and add to their biodiversity.

### Ringed Plover *Charadrius hiaticula*

#### Historical records to the present day

The first record of this species on the Farne Islands is from 1769 when Pennant found 'Sea larks' or 'Brockets' present. These names were both used by the author for the Ringed Plover (Gardner-Medwin, 1985). Selby (1826) provides the next records of the species when he writes 'a few breed upon the gravel beds which are met with in the creeks and bays of the islands'. There are a number of references for this century but mainly of a very general nature indicating that they bred on the islands. From the few more detailed comments it appears that they were mainly on Knoxes Reef and the West Wideopens (Clarke, 1881; Nelson, 1887; Blathwayt, 1903 and Bolam, 1887-1933, 22 June 1899). In 1884 Ringed Plovers were seen on Northern Hares (Parsons, 1894) and a nest was found on Longstone (Harvie-Brown *et al.*, 1885); the first documented record on each of these islands.

The first indication of these birds using Inner Farne is in 1904, when Pybus (1905) noted a pair on the shingle in St Cuthbert's cove and a further pair higher up, and both Miller (1911-1914) and Fortune (1913) recorded their presence on Brownsman. Though it is highly likely that they were nesting on this island in the previous century. During the rest of the 20<sup>th</sup> century, Ringed Plovers have nested on Inner Farne, Brownsman, West Wideopens, East Wideopens, Staple Island, Northern Hares and Longstone. Of these islands, Inner Farne, Staple Island and Brownsman are used regularly today. Nesting has only occurred once on East Wideopens in 1973, though West Wideopens was used sporadically until 1997. Breeding took place occasionally on Knoxes Reef from 1946 until 1983 and then more or less regularly until 2001. Northern Hares and Longstone were probably included together in the late 1940s and early 1950s, and since then Ringed Plovers have bred on Northern Hares on three occasions from 1976 to 1982, nesting has occurred on Longstone in seven seasons

from 1992 to 2008. In 2009, Ringed Plovers were breeding on Inner Farne, Knoxes Reef, Staple Island and Brownsman.

### **Evidence for numbers**

There are no total numbers available for Ringed Plovers until well into the 20<sup>th</sup> century. Most 19<sup>th</sup> century authors indicate that only a few pairs were present (Selby, 1926; Smith, 1876; Clarke, 1881; Bidwell, 1882). This was still the case in the second decade of the 20<sup>th</sup> century, with Fortune (1913) noting they 'were not at all common, with odd nests on West Wideopens, Knoxes Reef and Brownsman, with 'certain places used every year'. In 1946 when the first of the annual bird reports was published, it was thought that around ten to fourteen pairs were breeding on the islands each season (Goddard, 1946a), with the highest number of nests on the Longstone-Northern Hares complex, where they probably received some protection from the lighthouse keepers.

Figure 8 shows the number of pairs of Ringed Plovers on the Farne Islands from 1946-2009. Though as with Oystercatchers there are a couple of seasons when figures are not available.

There are however at least two particular difficulties when counting this species, both of which can lead to an erroneously high number of breeding pairs:

- (i) Ringed Plovers can and often do, hatch out more than one brood; Miller certainly noted this in 1911, 1912 and 1913 (Miller, 1911-1914).
- (ii) If a clutch is lost, breeding pairs will relay probably at a different nest site, for example in 1988 at least eighteen attempts were noted by seven pairs of birds (Hawkey, 1989).

Thus, when Figure 8 is considered the actual breeding population in any season may be less than the figures stated, especially perhaps in 1952, 1961 and 1982 where the numbers seem atypically high. In 1974 new restrictions designed to reduce the number of visitors in the breeding season and hence the disturbance to the nesting birds were considered to have benefited the Ringed Plover population as there was a 30% rise in numbers from the previous season (Hawkey and Hickling, 1974). However the changes seen at that time appear just to be part of a general pattern of year-to-year fluctuation (Figure 8) rather than being specifically related to changes in human disturbance.

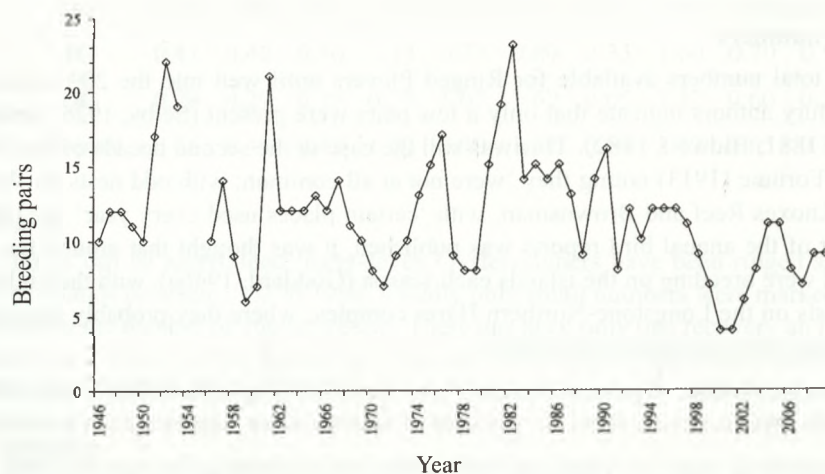
Table 13 shows the average breeding population of Ringed Plovers over ten year intervals from 1946-2005, and finally for the four seasons 2006-2009. This may well give a more realistic assessment of the general trend in population size over this period than Figure 8 where the numbers in some seasons could be too high because of the two factors noted previously. Table 13 indicates that up to the end of the 20<sup>th</sup> century the population could be considered to be constant at around eleven to twelve breeding pairs per year, while at the present time this has dropped to around eight breeding pairs per season.

### **Human persecution and egg collecting**

As with other breeding species (Wilson and Noble-Rollin, 2006, 2007, 2008 and 2009) Ringed Plovers must have also suffered from the vandalism and egg collecting that were a feature of the 19<sup>th</sup> century, though there is no documentary evidence. In 1912 a clutch of four eggs was stolen on Brownsman (Miller, 1911-1914, 26 May), and visitors robbed the nests on Staple Island in 1952 (Watt, 1954). Furthermore the disturbance resulting from allowing free access to Inner Farne, Staple Island and Longstone and not restricting the visiting times in the breeding season may have added to the stress on this species.



**Figure 8** Breeding pairs of Ringed Plovers from 1946 to 2009.



### Predation

Ringed Plovers are predated by a number of species, particularly Lesser Black-backed and Herring Gulls. There have however been seasons when Oystercatchers have had a significant impact on the productivity especially in 1988 (Hawkey, 1989) and in recent years too including 2009. In 1971 it was suspected that Starlings *Sturnus vulgaris* were responsible for the disappearance of a clutch of four eggs late in April (Hawkey and Hickling, 1972), and Watt (1951a) noted that Jackdaws *Corvus monedula* had been seen destroying eggs on at least one occasion. Unusually, Turnstones *Arenaria interpres* were observed predating eggs in 2005 (Steel, 2006). There is however no doubt that both Lesser Black-backed and Herring Gulls are the main cause of breeding failure on the Farne Islands and will take eggs and young. Some idea of modern levels of predation experienced by Ringed Plovers can be obtained by considering Table 14.

Figure 9 shows the total numbers of Ringed Plovers, Lesser Black-backed and Herring Gulls from 1971 to 2009.

It would have been hoped that the Ringed Plover population would have increased from 1975 onwards when the large gulls were culled. However the population of adults declined

**Table 13** The average number of breeding pairs of Ringed Plovers over 10-year intervals, and from 2006-2009.

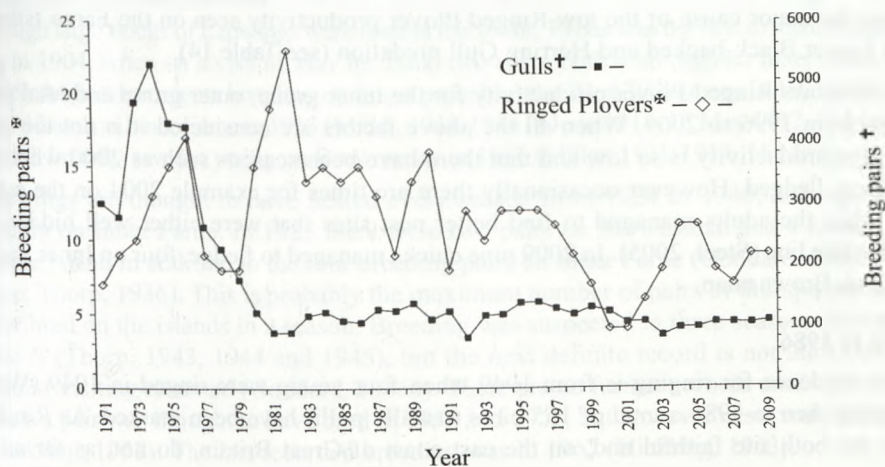
Interval	Breeding pairs
1946-1955	11
1956-1965	12
1966-1975	11
1976-1985	14
1986-1995	12
1996-2005	8
2006-2009	8

Table 14 Lesser Black-backed and Herring Gull predation suffered by Ringed Plovers.

Year	Predation	Reference
1977	12 clutches lost.	Hawkey and Hickling, 1977
1997	2 fledged young from 55 eggs.	Walton, 1998
2000	Outer group: all the eggs were lost. Inner Farne: from 16 eggs, 7 hatched and all disappeared in a few hours	Harvey and Walton, 2001
2003	Outer group: 15 eggs, 9 hatched, 2 fledged. Inner group: 5 attempts, 2 fledged.	Steel, pers. comm., 2009
2004	Eight taken to sea 30 June.	Steel, pers. comm., 2009
2007	A pair in St Cuthbert's Cove lost all 5 young within 5 hours of hatching.	Steel, 2008
2008	A brood of four were all taken within hours of hatching.	Steel, 2009

steeply at the time of the main reduction in these predators. This was followed by a rapid increase between 1979 and 1982. This fluctuation continues although not as dramatically as in the 1970s and 1980s. This suggests that the size of the adult population was not being affected by the gulls and that other factors were controlling the numbers of breeding pairs. The changing distribution within Northumberland (Day *et al.*, 1995) and the whole of Britain (Gibbons *et al.*, 1993; Burton and Conway, 2008) may be having a larger effect than the changes in predation on the islands. The other internal change that may have affected the adult population was the regulation of visitors in the early 1970s. A better estimate of the effects on the Ringed Plovers of the changes in gull numbers would be from changes in productivity, which is discussed below. The birds make every effort to prevent the loss of eggs and young; Miller recounts that Patterson, a former Watcher, had once seen an adult alight on a Rabbit's back on Inner Farne in order to drive it away and he himself noted an

Figure 9 Ringed Plovers, and Lesser Black-backed and Herring Gulls, 1971-2009.





Oystercatcher being driven away from a nest (Miller, 1911-1914, 20 May 1914). Their 'injured bird display' in defense of their nest is well known and Goddard gives a most delightful description of this when he was on Inner Farne on 3 May 1931: 'Its tail was spread to full extent, bent down and trailing in the sand. Both wings and both legs appeared to be broken. The bird was wallowing in the sand apparently unable to make any progress. It would have appeared to the uninitiated to be *in extremis*' (Goddard, 1925-1948).

### Productivity

Miller (1911-1914) provides the earliest information regarding the hatching success of the breeding pair of Ringed Plovers on Brownsman from 1911 to 1914 inclusive. This is shown in Table 15 which seems to indicate a very successful four years; however it does not include failed attempts prior to fledging.

**Table 15** Ringed Plovers on Brownsman, 1911-1914.

Year	No. of nests	No. of eggs	No. of young	Date of first young
1911*	1	4	4	16 June
1912	1	4	Eggs stolen	-
	1	4	4	24 June
1913	1	4	4	9 June
	1	4	4	2nd brood
1914	1	4	4	13 June

\*The 1911 pair was thought to have had a second brood.

At the present time, the productivity or the number of young fledged by each pair on the Farne Islands has been low for an appreciable period. This is thought to be due to human activity, predation and the choice of nest sites that are below the highest tide lines. Nationally the marked increase in nest failures at the egg stage has been noted with concern (Leech and Barimore, 2008).

In 2002 a nest was washed out and another abandoned (Harvey, 2003), while in 2006 the only surviving chick on Brownsman was drowned on the 'flat' in early August (Steel, 2007). However the major cause of the low Ringed Plover productivity seen on the Farne Islands is from Lesser Black-backed and Herring Gull predation (see Table 14).

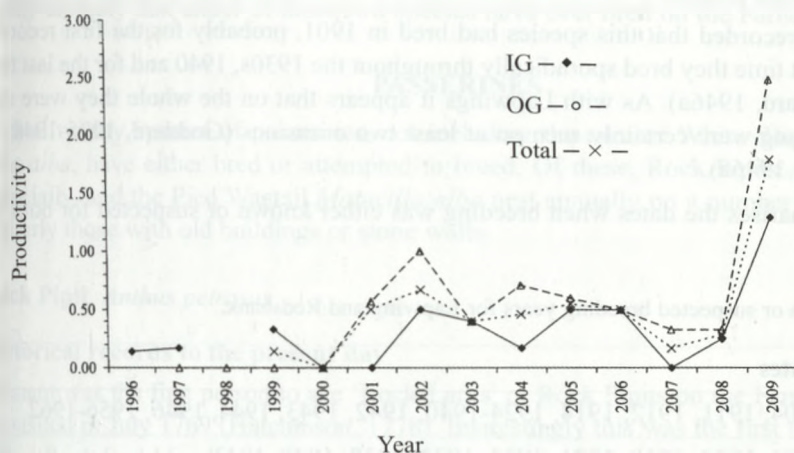
Figure 10 shows Ringed Plover productivity for the inner group, outer group and total productivity from 1996 to 2009. When all the above factors are considered it is not too surprising that productivity is so low and that there have been seasons such as 2000 when no young have fledged. However occasionally there are times for example 2004 on the outer group, when the adults managed to find better nest sites that were either well hidden or above the tide line (Steel, 2005). In 2009 nine chicks managed to fledge, four on Inner Farne and five on Brownsman.

### Ringling to 1986

The first evidence for ringling is from 1949 when four young were ringed in 1949 (Watt, 1949) since then to 1986 a total of 165 birds (usually pulli) have been marked. As Ringed Plovers are both site faithful and, on the east coast of Great Britain, do not, as far as is

known, move a great distance from their breeding grounds (Wernham *et al.*, 2002) it is surprising that there have been no recoveries or sightings. However at the time that ringing was taking place the population was probably greater than today and only very few were marked each year. In 2005 for the first time in nearly 20 years, Eliza Leat, a research assistant on Inner Farne, ringed four chicks.

Figure 10 Ringed Plover productivity on the Farne Islands from 1996-2009.



## Conclusion

It is usually considered that the Ringed Plover population on the Farne Islands is limited by the lack of the shingle and sandy shorelines that is required for breeding. However this is debatable as there are a number of beaches, for example on West Wideopens and Northern Hares that do not appear to be used. The fluctuations in population size are probably due to external conditions rather than directly linked to the Islands. The high level of breeding failure, mainly due to predation, has continued despite the reduction in the large gull population and this may ultimately limit the size of the population on the Farne Islands. This further implies that the future of this species on the Farne Islands is by no means secure though the nine chicks fledged in 2009 is very encouraging.

## Lapwing *Vanellus vanellus*

Though large flocks of Lapwings were seen in the 1880s, Pybus was the first to record them breeding in 1904, when on a visit in May he found two nests, both with eggs on Inner Farne (Pybus, 1905). Miller documents breeding on (most probably) the West Wideopens in 1911, Brownsman in 1912 and on Inner Farne in 1913 (Miller, 1911-1914, 7 June 1911, 15 May 1912, 13 May 1913), though he only saw the young on Brownsman in 1912 (Miller, 1911-1914, 15 May).

Lapwings are thought to have nested every season from 1924 to 1940, although this was usually on Inner Farne. In 1935 there were two pairs on Brownsman and a further pair on Staple Island in addition to the four breeding pairs on Inner Farne (Goddard, 1925-1948, 16 June; Thorp, 1936). This is probably the maximum number of pairs of this species that have ever bred on the islands in a season. Breeding was suspected in three seasons during World War II (Thorp, 1943, 1944 and 1945), but the next definite record is not until 1946 when regular visiting resumed (Goddard, 1946a). There are no further records until the mid 1950s when a pair was thought to have bred in 1956 and 1957, but however nests were never found (Hickling, 1958). The last recorded breeding was in 1962 (Hickling, 1963).



It seems that up to 1958 when three young were ringed (Hickling, 1959) most nests had been successful, but from 1959 to 1962 all attempts failed, either because the eggs were thought to have been stolen as in 1959 (Hickling, 1960) or because of predation of the chicks from the Lesser Black-backed and Herring Gulls whose population at that time was known to be increasing.

#### **Redshank** *Tringa totanus*

Bolam (1912) recorded that this species had bred in 1901, probably for the first recorded time. Since that time they bred sporadically throughout the 1930s, 1940 and for the last time in 1946 (Goddard, 1946a). As with Lapwings it appears that on the whole they were successful and young were certainly seen on at least two occasions (Goddard, 1925-1948, 21 June; Goddard, 1946a).

Table 16 summarises the dates when breeding was either known or suspected for both the above species.

**Table 16** Known or suspected breeding years for Lapwing and Redshank.

Species	Dates
Lapwing	1904, 1911, 1912, 1914, 1924-1940, 1942, 1943, 1944, 1946, 1956-1962.
Redshank	1901, 1924, 1930, 1931, 1932, 1933, 1937, 1940, 1943.

#### **Purple Sandpiper** *Calidris maritima*

P J Selby, a Northumberland naturalist, certainly considered the Purple Sandpiper as a breeding species on the Farne Islands as he claimed to have met 'with young more than once in the month of June' (Bolam, 1912). In 1826 he wrote 'Last season I met with a family, the young were scarce able to fly. I have not yet succeeded in obtaining the eggs which remain undetected' (Selby, 1826). No evidence has ever been found to support this claim.

#### **Turnstone** *Arenaria interpres*

There is a footnote in Volume III of Yarrell regarding eggs taken from the Farne Islands which were attributed to Turnstone, the note continues 'but it is the editor's opinion that it resembles the eggs of the Purple Sandpiper more than that of the Turnstone and Mr Hancock is not cognizant of either of the species having bred there' (Yarrell, 1871-1885). Paynter the Honorary secretary of the Farne Islands Association suspected that a pair might have nested in 1900, though he had not seen any young. Interestingly in the same summer, British Museum collectors had captured two adults on the islands, and they too thought there was a nest nearby. While Bolam (1912) had 'never visited the islands in summer without seeing a few of them in pairs and in summer plumage' he had never seen any behaviour consistent with breeding.

However it must be noted that the Farne Islands are one of the British localities where Turnstone can be found all year including mid-summer and, where at times they can be very approachable (Steel, pers. comm., 2009). Such behaviour may well suggest to any observers that they were near a nest site. These records should therefore be regarded as unsafe and unacceptable.

### **Woodcock** *Scolopax rusticola* and **Snipe** *Gallinago gallinago*

Finally there exists a curious note in Grace Hickling's writing in the Natural History Society archives that states 'Woodcock (*Scolopax rusticola*) and Snipe (*Gallinago gallinago*) have bred on Inner Farne'. While it is feasible that Snipe may have bred in the 19<sup>th</sup>/early 20<sup>th</sup> century, there is no suitable habitat for Woodcock. As this is written on an undated scrap of paper and is the only breeding reference for either of these species it is highly unlikely that either of these two species have ever bred on the Farne Islands.

## **PASSERINES**

In total twenty species of passerines, not including the race of White Wagtails *Motacilla alba alba*, have either bred or attempted to breed. Of these, Rock Pipits *Anthus petrosus* especially, and the Pied Wagtail *Motacilla alba* nest annually on a number of islands, particularly those with old buildings or stone walls.

### **Rock Pipit** *Anthus petrosus*

#### **Historical records to the present day**

Pennant was the first person to see 'Rock Larks' or Rock Pipits on the Farne Islands when he visited in July 1769 (Hutchinson, 1778). Interestingly this was the first time he used the name 'Rock Lark' for this species as in his earlier works he described a similar bird with dark legs as a variety of 'Titlark'. He has been credited with the first description of this species and there is the possibility that the above record is one of the earliest if not the first published use of the name (Gardner-Medwin, 1985). This is the only reference until the 19<sup>th</sup> century.

Of the numerous 19<sup>th</sup> century accounts of the islands, relatively few include Rock Pipit as a breeding species and there is no doubt that among all the seabirds present the species was very much overlooked. Selby (1826) recounts that they are 'met with on all the islands where they are permanent residents' whilst Wolley (Newton, 1864-1907) tells of taking eggs from nests on Brownsman in 1856; the first specific island to be named. Staple Island and Knoxes Reef are noted in 1876 (Philipson, 1880) and 1896 (Tristram, 1899) respectively though no nest was found on either occasion. Though Rock Pipits were seen in flight during autumn over Inner Farne in both 1886 and 1887 (Harvie-Brown *et al.*, 1887; 1889) it is Bolam who provides the first breeding reference for that island in 1898 when he saw a nest with eggs in a wall near the chapel (Bolam, 1901).

In 1906 Temperley found a nest on Longstone (Temperley, 1896-1951, 13 June 1906). While Miller in addition to a number of nests on Brownsman each year lists a nest on Staple Island in 1914 (Miller, 1911-1914 16 June), the first confirmed breeding for this island. From 1914 onwards Inner Farne, Brownsman, Staple Island and Longstone were the only breeding sites mentioned until 1957 when breeding was noted on West Wideopens, North Wamses, South Wamses and on Knoxes Reef (Hickling, 1958). In 1959 breeding was confirmed on Northern Hares - for the only time - and Longstone End (Hickling, 1960) while East Wideopens was added in 1975 (Hawkey and Hickling, 1975) and Big Harcar the last new breeding island in 1982. Since these dates nesting has been sporadic on East Wideopens, Knoxes Reef, Big Harcar and Longstone End whilst Inner Farne, Brownsman, Staple Island, West Wideopens (from 1973) and Longstone (from 1994) have all been in regular use. North Wamses has been utilised eleven further times from 1957 to 2009, South Wamses on twelve occasions to 2004, Big Harcar only a further four times to 2009 and East



Wideopens another eight times to 2005. In the 2009 season Rock Pipits were breeding on Inner Farne, West Wideopens, Staple Island, Brownsman, North Wamses, Big Harcar and Longstone.

#### **Evidence for numbers**

There is no information regarding the total numbers breeding until 1947 when there were approximately twenty-four breeding pairs (Goddard, 1947). Prior to this date all the other accounts particularly from the 19<sup>th</sup> century had only documented specific individuals seen with sometimes a note of the island, though most often all that was said was that they bred on a number of islands. Miller (1918), from 1911 to 1914 considered that there were around twelve pairs each season on Brownsman. Goddard too, only lists the nests that he found on Inner Farne, Staple, Brownsman and Longstone.

Figure 11 shows the number of breeding pairs of Rock Pipits from 1946 to 2009. As with other minority species there are gaps in the record when they are listed at the end of the annual report with only a note that they had bred. Furthermore the figures indicated in Figure 11 are the minimum numbers for the season as particularly prior to 1970 only the main islands were counted in many seasons. It is interesting that there appears to be a decline in the late 1970s followed by a sharp increase to a record figure of fifty-one breeding pairs in 1983. Since that time there has been a further decline. In the present century the population has stabilised with an average of twenty-four breeding pairs per season. Rock Pipits often produce two broods; this may lead to an exaggerated figure of breeding pairs and may account for some of the sudden changes in numbers.

#### **Nest Sites**

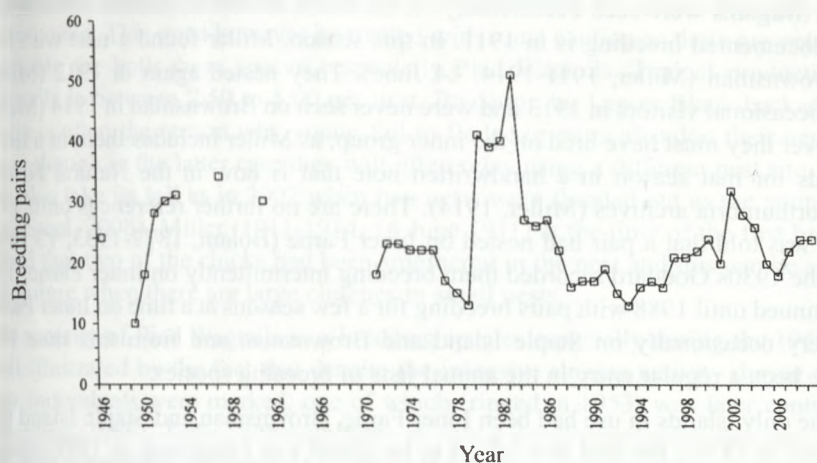
Rock Pipits will usually choose to breed in rock crevices, earth banks and suitable holes in any man made structures. They are also opportunists and will utilise any objects that have been left lying around. Because of this their nests are usually concealed and consequently do not usually suffer from the human persecution and egg collecting that has been a feature on the Farne Islands in the past.

Throughout the 19<sup>th</sup> and 20<sup>th</sup> centuries on the islands they have been reported as breeding 'in grass tussocks and the cracks of rocks' (Pigott, 1888), in the walls of old ruined buildings on Inner Farne (Bolam, 1901) and 'on bare rocks sheltered under large boulders' (Temperley, 1896-1951, 13 June 1906). More recently nests have been also been found 'in some coal sacks within a few feet of workmen' who were repairing the bomb damage on Longstone in 1950 (Watt, 1950), in the 'Fishe House' on Inner Farne (Harvey, 2003) and in the last few seasons, not only in stone walls and the various lighthouse buildings but also using gas bottles provided for the lighthouse on Longstone (Steel, 2005, 2008). Finally in 2009 one pair used a wedged bucket within the Longstone lighthouse compound and were successful (Steel, pers. comm., 2009).

#### **Predation by Lesser Black-backed and Herring Gulls**

There is little information available on this topic because if the nest sites are well concealed then, on the whole, both egg and chick predation is probably not a major problem. The fortunes of the young birds after fledging are however unknown especially as only a small number have been ringed in the past and the juveniles were shown to disperse at the end of July (Hickling, 1955). Nevertheless those pairs that choose inappropriate nest sites can and do suffer predation. (Steel, 2006).

Figure 11 Breeding pairs of Rock Pipits from 1946 to 2009.



Interestingly Pike (1902) describes a pair of Pipits (most probably Rock Pipits) defending their nest from Rabbits on Inner Farne. 'Once one of them flew at a rabbit, settled on its head while it was running and inflicted a few vigorous pecks, after which it gave one or two drives with its little beak into the animals back.... All rabbits which came too near their nest were attacked ...'.

### Productivity

Unfortunately as Rock Pipits are very much a minority species on the Farne Islands there is on the whole only a small amount of data. In the early 1950s pairs were found with four and six young (Watt, 1950, 1951b) and in 1952 there was an average productivity of 4.9 per nest (Watt, 1953). In more recent times productivity has averaged at around two per nest. The main problems are most likely to be nest abandonment due to poor weather and large gull predation at inappropriate nest sites, though in 2002 one nest was destroyed by Puffins (Harvey, 2003).

### Ringing

As far as can be ascertained Rock Pipits were ringed intermittently on the islands from 1949 to 1964 and during this time 195 individuals were marked with eighteen recoveries and one control on Inner Farne of a bird ringed at Seahouses (Hickling, 1958).

In the early 1950s Eric Ennion was responsible for much of this work. He was based at his observatory at Monkhouse just north of Seahouses where many of the ringed Rock Pipits were controlled. Though no colour rings were ever used he discovered that the breeding birds were mainly resident while the juveniles dispersed to the mainland at the end of July or the start of August. These birds are then replaced on the Farnes by a wintering population of juveniles that probably come from further north (Hickling, 1955).

### Conclusion

This typical coastal pipit is one of only two passerine species that breed regularly on the Farne Islands and as such it is a valuable part of the fauna. They appear to be very much at home on the islands and at present have a healthy population, with as far as is known a reasonable productivity. There seems to be no reason why this should not continue.



### **Pied Wagtail** *Motacilla alba*

Though Pied Wagtails were seen occasionally on the Farne Islands in the late 19<sup>th</sup> century, the earliest documented breeding is in 1911. In this season, Miller found a nest with four young on Brownsman (Miller, 1911-1914, 14 June). They nested again in 1912 (Miller, 1918), were occasional visitors in 1913 and were never seen on Brownsman in 1914 (Miller, 1918). However they must have bred on the inner group, as Miller includes them in a list of breeding birds for that season in a handwritten note that is now in the Natural History Society of Northumbria archives (Miller, 1914). There are no further references until 1926 when Bolam was told that a pair had nested on Inner Farne (Bolam, 1877-1933, 13 July). Throughout the 1930s Goddard recorded them breeding intermittently on Inner Farne. This situation continued until 1988 with pairs breeding for a few seasons at a time on Inner Farne, as well as very occasionally on Staple Island and Brownsman and from this time Pied Wagtails have been a regular entry in the annual lists of breeding species.

Until 1988, the only islands in use had been Inner Farne, Brownsman and Staple Island (the latter only once in 1979); the first new island to be added was Longstone in 1991 when a pair of White Wagtails was found nesting there. Then in 1996 a nest was found on West Wideopens and finally in 2003, for the only time, Pied Wagtails bred on North Wamses. In the 2009 season this species was breeding on Inner Farne, Staple Island, Brownsman and Longstone.

It was not until 1988 that numbers started to increase, prior to that there had usually only been one pair with at the most two in the 1931, 1970 and 1979 seasons.

Figure 12 shows the number of breeding pairs of Pied Wagtails from 1931 to 2009. Between 1931 and 1987 inclusive one to two pairs occasionally bred for a few seasons, most usually on Inner Farne, then from 1988 the population started to increase and nesting became regular. From that time there has been an average of five breeding pairs annually with a maximum of nine in 2000. One additional factor that needs to be noted is that Pied Wagtails often fledge second clutches. This is probably not so much of a problem on the Farne Islands with such a small population that monitoring is relatively easy, certainly on Inner Farne and Brownsman.

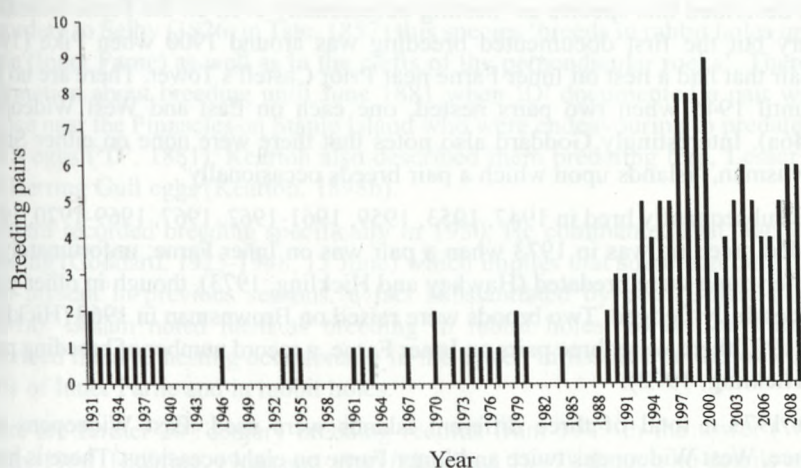
There was a surprise when in 1991 for the first time on the Farne Islands, and for only the fourth and fifth time in England (Brown and Grice, 2005), a pair of White Wagtails *M. alba alba* was found breeding on Longstone Main Rock. The White Wagtail is the continental race of our Pied Wagtail *Motacilla alba yarrellii*. This or another pair was also present in 1992, again on Longstone Main Rock, then in 1994 a mixed pair of British and continental individuals was found on Staple Island. Finally in 2000 there were a further two breeding pairs of mixed birds, this time on Inner Farne and Staple Island. Any pairs of White Wagtails are included in the annual totals that have been used to compile Figure 12.

Pied Wagtails like Rock Pipits will build their nests in a variety of man-made structures and take advantage of any equipment or objects left around. Over the years they have utilised holes in various stonewalls and a variety of buildings such as the 'Fishe-house' on Inner Farne (Hawkey and Hickling, 1972), the Chapel (Steel, 2006; 2007; 2009) as well as the remains of the old light on Staple Island and the old radio tower foundations on Longstone (Steel, 2008). In 2008 a nest was found in a stack of tern nest boxes piled up near the lighthouse on Inner Farne (Steel, 2009) and in 2009 two broods were successfully fledged from an open fronted nest box on Inner Farne (Steel, pers. comm., 2009).

It may be that Pied Wagtails are better at concealing their nest sites than Rock Pipits since when the available information on productivity is studied the former generally have fledged more young. This must however be treated with some caution as there are only limited data available for both these species, especially Pied Wagtails. Typical productivity for Pied Wagtails is between 2.50 to 5.00 per nest. Predation by Lesser Black-backed and Herring Gulls is often the reason why young fail to fledge or pairs abandon their nests at an early stage though in the latter case they will often relay using a different nest site. Poor weather can also take its toll as in 2007 when two nests were flooded out as the young were fledging (Steel, 2008). Miller (1911-1914, 14 June 1911) at the time of the first breeding record found that two of the chicks had been smothered in the nest and this can be a further cause for failure when there are large clutches in small nests.

The scarcity of Pied Wagtails as a breeding species especially during the 1950s to 1960s is well illustrated by the fact that despite the intensive ringing activity during this time only four individuals were marked, one of which (ringed in 1953) was later controlled in 1955 (Hickling, 1956). Today, although there is only a small population, they are regular breeders with reasonable productivity as far as is known.

Figure 12 Breeding pairs of Pied Wagtails from 1931 to 2009.



### Rock Dove/Feral Pigeon *Columba livia*

All modern records refer to feral birds that are now common annual breeding residents on a number of islands. The references from the 18<sup>th</sup> and 19<sup>th</sup> centuries refer to Rock Doves as do those to the 1920s. Pennant was the first to record their presence on the Farne Islands at the time of his visit in July 1769 (Hutchinson, 1778) though, as he had previously failed to distinguish between Rock and Stock Doves *C. oenas*, there must be some doubt regarding his statement (Gardner-Medwin, 1985). In the 19<sup>th</sup> century Smith (1876), Nelson (1887) and Bolam (1912) all indicated they were breeding. Halliday (1909) found them nesting in a cave below the Pinnacles in the early 20<sup>th</sup> century and finally Thorp (1925, 1926 and 1928) saw them on the south-west cliff on Inner Farne in the 1920s.

The first note in the annual reports was in 1988 when there were around forty breeding pairs. The number breeding today is unknown, but in 2000 there were more than 100 breeding pairs (Harvey and Walton, 2001).



### **Swallow** *Hirunda rustica*

This species was first documented by Selby (1826) when he reported them breeding 'in the tower of the old lighthouse (on Brownsman) and in the chimneys attached to the dwellings of the lighthouse keepers (Inner Farne). There are no further breeding references until Pike (1902). He stayed on Inner Farne in around 1900 and noted a pair which had 'taken up residence in a small shed near the tower' and had built a nest. Then in 1984 swallows nested in the roof of the chapel (Hawkey and Hickling, 1984). The chapel was again used in 1990 when a pair fledged four young (Walton and Richardson, 1990). This was the first of a succession of successful seasons until 1998 when one of the 'resident' pair was killed by a Red-backed Shrike *Lanius collurio* which sadly brought this successful and extended breeding period to an end (Walton and Maher, 1999). During the majority of these seasons two broods were usually fledged, but exceptionally in 1996 three clutches were laid and out of a total of fifteen eggs thirteen young fledged (Walton, 1997). In 2009 for the first time in twelve seasons Swallows again bred on Inner Farne and four young were fledged from a nest in one of the lighthouse buildings.

### **Meadow Pipit** *Anthus pratensis*

Bolam (1912) described this species as 'nesting occasionally even on the Farne Islands' in the 19<sup>th</sup> century but the first documented breeding was around 1900 when Pike (1902) referred to a pair that had a nest on Inner Farne near Prior Castell's Tower. There are no further records until 1946 when two pairs nested, one each on East and West Wideopens (Goddard, 1946a). Interestingly Goddard also notes that there were none on either Staple Island or Brownsman, 'islands upon which a pair breeds occasionally'.

Meadow Pipits subsequently bred in 1947, 1953, 1959, 1961-1962, 1967, 1969-1970, 1972. The last recorded breeding was in 1973 when a pair was on Inner Farne; unfortunately on this occasion the young were predated (Hawkey and Hickling, 1973), though in other years young had successfully fledged. Two broods were raised on Brownsman in 1969 (Hickling, 1968) while in 1972 there were three pairs on Inner Farne, a record number of breeding pairs (Hawkey and Hickling, 1972).

From 1946 to 1973 a total of three different islands were used: East Wideopens and Brownsman once, West Wideopens twice and Inner Farne on eight occasions. There is however some doubt regarding the records for 1959 and particularly 1969. Adults were seen carrying food in 1959 but as neither the nest site nor any young were seen, breeding must only be regarded as being probable, whereas there are no details at all for 1969 (Hickling, 1971).

### **Blackbird** *Turdus merula*

William Darling was the first to note the presence of Blackbirds on the Farne Islands when a number were killed against the Longstone lighthouse lantern in September 1829 (Darling, 1805-1860). The first breeding record is probably from the 1880s with a pair reported as breeding amongst Rhubarb stalks on Inner Farne (Kearon, 1898b). There are further records in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries as follows: in 1893/94 (Miller, 1911-1914, 18 May 1912), ca 1900 (Pike, 1902), 1912 (Miller, 1911-1914, 15 May) and 1914 when as well as a pair on Inner Farne breeding may also have occurred on Brownsman as a pair frequented the islands throughout the summer and the male was seen carrying food (Miller, 1911-1914, 20 June). However a nest was never found and Miller himself doubted that the pair had bred (Miller, 1911-1914, 9 August).

There are no further records until 1934 when Thorp, the Honorary Secretary of the Farne Islands Association, reported that a pair was nesting when the Watchers were put onto Inner Farne on the week of 14 May (Thorp, 1935). Then from 1964 to 1974 one pair, or as in 1968 and 1969 three pairs, nested using either Inner Farne or Brownsman. The last recorded breeding was in 1974.

As far as can be ascertained this species has only bred on the two islands already noted. One account however, does describe a Blackbird's nest in a Hemlock plant on the Wideopens (Kearton, 1898b). A nest was also reported in the old beacon tower on Staple Island but it did not appear to have been used (Hickling, 1965).

Nest sites have varied: among those used on Inner Farne have been the 'Fishe-house' and stone walls surrounding the courtyard and garden, in addition to the Rhubarb and vegetation already noted. The beacon lights on both Staple Island and Brownsman have been used, as have the remains of the round tower light on this island. A nest was also discovered in the Elsan lavatory on the same island and in a cave near the flat below the cottage on Brownsman (Hickling, *ca* 1983). Deserted clutches were found on Inner Farne in 1965 and 1974 and in 1968 on Brownsman. In 1973 two broods were reared on the former island.

#### **Jackdaw** *Corvus monedula*

According to Selby (1826; in Tate, 1857) this species 'breeds in rabbit holes upon the greater Farne (Inner Farne) as well as in the clefts of the perpendicular rocks'. There is no further information about breeding until June 1881 when 'D' documented a pair with a nest in a crevice near the Pinnacles on Staple Island who were endeavouring to predate 'unprotected' Auk's eggs ('D', 1881). Kearton also described them predated tern, Lesser Black-backed and Herring Gull eggs (Kearton, 1898b).

Goddard recorded breeding specifically in 1930. He commented that 'far too many' were breeding (Goddard, 1925-1948, 15 June) which implies that some breeding pairs must have been present in previous seasons, a fact substantiated by both Bolam (1912) and Watt (1951a). Bolam noted them as breeding in rabbit holes 'as on the Farnes', and Watt described them as nesting occasionally in the tower, in fissures on the west and south-west cliffs of Inner Farne and in rabbit holes.

There are further 20<sup>th</sup> century breeding records from 1949 in the tower (Watt, 1949) and finally 1965 (Hickling, 1966) and 1966 (Hickling, 1967), though no details are available for either of these last two dates.

#### **Carrion Crow** *C. corone*

Bede tells of a pair breeding on the Farne Islands sometime from 676 to 685 that St Cuthbert discovered removing nesting material from the thatched roof of his guest house (Watt, 1951a). There are no further records until the 19<sup>th</sup> century when Bolam's father recollected seeing a nest around 1850. Bolam also adds that 'at least one other similar instance is on record' though no details are provided (Bolam, 1912).

Though this species was seen regularly especially during the 1880s it was not until 1946 that a nest was discovered on Staple Island (Goddard, 1946a). Since then Carrion Crows have been occasional nesters, with records from the following seasons: 1946-1948, 1951, 1954, 1956, 1958-1960, 1974, 1988, 1993-1994, 1996-1997, 1999, 2002 and 2007. Only five islands have been used: Inner Farne, East Wideopens, West Wideopens, Staple Island and Brownsman, with a maximum number of five breeding pairs in 1948 when two pairs were on Staple Island and three on Brownsman.



Not surprisingly this species is discouraged from breeding because they can and do predate other species' eggs. In 1946 young hatched on Staple Island and the adults destroyed large numbers of eggs before being discovered. The nest and young were subsequently destroyed (Goddard, 1946a). Usually nests are discovered and removed before the eggs have had a chance to hatch. Nest sites used have been on buildings such as the old beacon lights on Staple Island and Brownsman and various cliff ledges, though in 1996 a nest was constructed on the *Children's Friend* on the West Wideopens beach which was subsequently washed away, the second clutch was then predated (Walton, 1997).

The most recent breeding attempt was in 2007, when after the nest structure was removed from the Brownsman Tower the pair made a second attempt on Inner Farne which failed because of the attentions of the local Shag population (Steel, 2008).

### **Starling** *Sturnus vulgaris*

Oliver Pike, who stayed on Inner Farne around 1900, wrote the following concerning this species 'The cliffs have only a few pairs of Starlings on them'. Though not documented it is probable that a few pairs continued to breed at least until the lighthouse keepers left in 1910. Subsequently Miller recorded breeding on Brownsman in each of the four seasons he was present (Miller, 1911-1914: 17 June 1911, 15 May 1912, 9 June 1913 and 16 May 1914). He further stated that 'three or four pairs nested annually on the islands' (Miller, 1918). Whether this was just on the outer group or the total for all the islands is not known.

Again, though only occasionally reported by both the Farne Islands Association and Goddard until 1946, it is likely that breeding continued in most seasons until 1974, then in most years from 1979 to 2000, the last record. From 1971 to 2000 between one and three pairs usually nested, but in the past around ten pairs may have bred (Hickling, *ca* 1983) particularly in 1954 when there were between five and fifteen pairs (Hickling, 1955). Of the four islands on which breeding has been noted, the majority of the records have been from Inner Farne with just a few from Brownsman, Staple Island and East Wideopens. Nest sites include the old beacon lighthouses, Prior Castell's tower, the Brownsman cottage and other buildings, drystone walls and rock crevices. From 1993 to 2000 a pair used a crevice in the east window of St Cuthbert's chapel. This was filled in during repointing that year, since when there have been no further breeding records; a pair was seen prospecting in 2001, but soon vanished (Harvey, 2002).

Starlings can be considerable egg predators and this was particularly evident in the 1960s. In 1963 they were seen breaking open and eating eggs in St Cuthbert's cove on Inner Farne and predated terns' eggs on both Inner Farne and Brownsman in 1964. It was estimated that around 5% of the available eggs were taken on 1 June (Hickling, 1965). Interestingly, in the early 1930s Graham noted Starlings feeding young in a nest near the lighthouse on sandeels snatched from Arctic Terns in St Cuthbert's cove (Graham, pers. comm., 2000).

During the 1950-1960s five individuals were ringed, which may have been young birds that bred on the islands. There have been no recorded recoveries.

### **Other passerines**

Table 17 lists and comments on the other twelve species of passerines that have bred on the Farne Islands.

## NON-PASSERINES

In addition to the breeding seabirds that have already been considered (Wilson and Noble-Rollin, 2006, 2007, 2008 and 2009) a number of other species have also bred on occasions on the Islands.

### **Grey Heron** *Ardea cinerea*

In the spring of 1894 a pair of Herons bred on the east end of the East Wideopens. The nest was about 3ft 6ins in diameter and was constructed of bleached sticks gathered from West Wideopens. Unfortunately, around 22 March, fishermen found the nest and took the four eggs that were present (Paynter, 1894).

### **Kestrel** *Falco tinnunculus*

Henry March who was a Watcher on Brownsman for at least four seasons from 1911 to 1914 with Edward Miller visited Seahouses in August 1916. While there he was told that a Kestrel had 'brought off a nest of young in the old tower on Staple' (March, 1916). On Brownsman in May 1943, Thorp and a companion noted a Kestrel frequenting the tower and thought it had a nest: he recounted 'it came and perched close to us on the edge of the tower, having gone off as we arrived' (Thorp, 1944). While breeding may well have taken place in 1916 and indeed, the record was accepted by Hickling (Hickling, *ca* 1983), the 1943 record must be considered unsafe as no nest was seen and Kestrels can spend long periods on the islands, particularly when there are no inhabitants.

### **Peregrine** *F. peregrinus*

Though Goddard considered it was likely that this species could have bred on the Farne Islands sometime in the past, it was not until 1949 that George Archbold (a long time Watcher on Inner Farne) told Grace Hickling that this had actually occurred on the south-west cliff on Inner Farne. He had taken the young and later released one of them over St Cuthbert's cove where it had been attacked by the terns, forced into the water and drowned. When pressed, he later fixed the probable date as 1925 (Watt, 1951a).

### **Moorhen** *Gallinula chloropus*

Pybus was the first to document breeding when in 1901, a pair nested by the side of one of the ponds on Inner Farne (Miller, 1959). Then in 1947 and 1948 a pair nested on North Wamses: seven young fledged in 1947 and eight eggs were laid in 1948 (Goddard, 1947, 1948).

Finally there are four species of terns and auks that should have been included in Wilson and Noble-Rollin (2006 and 2007).

### **Little Tern** *Sternula albifrons*

Around 1891 Bolam (1891, 1912) and Cordeaux (1892) reported that there had been an unsuccessful attempt to introduce Little Terns as a breeding species by placing their eggs under Arctic or Common Terns. While this is not noted in either the 1891 or 1892 Farne Islands Association reports, Paynter the Honorary Secretary of the Association does state that Common Terns' eggs were unsuccessfully placed under Arctic Terns (Anon, 1893).



**Table 17** Other breeding passerines. Unless listed under 'Additional sources', all data are taken from the relevant Farne Islands Annual Reports.

Species	Year(s)	First breeding record	Max. no. of pairs	Additional sources	Notes
Stock Dove <i>Columba oenas</i>	1928, 1930, 1931, 1946, 1972, 1978, 1979, 1980	24 June 1928	1	Goddard, 1925-1948: 24 June 1928, 14 June 1930, 21 June 1931, 25 May 1946.	No nest found in 1978, but a juvenile with down on its head was seen on Brownsman. A pair was seen regularly on Staple Island and Brownsman in 1980, but a nest was not found.
Cuckoo <i>Cuculus canorus</i>	1883, 1884, 1953	24 July 1883	1	Harvie-Brown <i>et al.</i> , 1884; Harvie-Brown <i>et al.</i> , 1885.	19 <sup>th</sup> century breeding records are very unsatisfactory. An egg was alleged to have been laid in a Rock Pipit's nest in 1953 but was destroyed by a visitor.
Skylark <i>Alauda arvensis</i>	1865, 1883, ca 1900	Early June 1865	1+	Brown, 1866; Harvie-Brown <i>et al.</i> , 1884; Pike, 1902.	Brown reported several pairs breeding. In 1883 young were seen on 25 May, but in the absence of further evidence this is considered to be an unsatisfactory record.
House Martin <i>Delichon urbicum</i>	1950	1950	6		Six pairs attempted to nest on the cottage on Brownsman, but were driven away by the terns and at least two were killed.
Wren <i>Troglodytes troglodytes</i>	Early 1880s, 2008, 2009	2008	1	Bolam, 1912.	Thought to have bred in 19 <sup>th</sup> century. Definite breeding records in 2008 and 2009 with young fledging in both seasons and ringed in 2009.
Robin <i>Erithacus rubecula</i>	19 <sup>th</sup> century 1951	1951	1	Bolam, 1912; Watt, 1951b.	Nesting has occasionally occurred on the Farnes (Bolam, 1912). A pair nested on Brownsman in 1951, fledging five young.

**Table 17** continued.

Stonechat <i>Saxicola torquatus</i>	1946	1946	1	Goddard, 1925-1948, 8-9 June.	Nest in 'swathe of dry seaweed' with three eggs. Goddard only had a poor view of the female and had some doubt regarding this stated identification by one of the Watchers.
Wheatear <i>Oenanthe oenanthe</i>	1931, 1932, 1947, 1950, 1958, 1959	1931	1	Goddard, 1925-1948, 2 May 1931, 9 July 1932.	Bred on Inner Farne. The only nest site noted is in St Cuthbert's gut in 1932. Breeding may also have occurred in 1947 on Inner Farne and 1959 on Brownsman. The five young that fledged in 1958 were ringed.
Dunnock <i>Prunella modularis</i>	1890s			Pybus, 1903.	Pybus states that 'I have myself verified the nesting of (among other species) Hedge Sparrow'. No other evidence is available.
Grey Wagtail <i>Motacilla cinerea</i>	Early 1890s			Miller, 1911-1914, 3 June 1914.	Patterson a former Watcher on Inner Farne told Miller that the species had bred. There may have been confusion with Pied Wagtail.
Tree Pipit <i>Anthus trivialis</i>	ca 1900	ca 1900		Pike, 1902.	Nest of young reported on the 'slope from the landing place'. Probably confused with Rock or Meadow Pipit. In addition the habitat unsuitable for Tree Pipit.
Linnet <i>Carduelis cannabina</i>	Early 1890s		1	Kearton, 1898b.	Nested in an Elderberry tree in the Inner Farne lightkeepers' garden.



There does however remain a very slight possibility that this species did breed on the Farne Islands in the 17<sup>th</sup> century. Ray was told that 'Tern, a small gull, the least of all having a forked tail built on the islands'. As no personal descriptions are included the identity of this tern is in doubt, but the phrase 'least of all' does favour the Little Tern (Gardner-Medwin, 1985).

#### **Lesser-crested Tern** *Sterna bengalensis*

'Elsie' as this Lesser-crested Tern was called, first appeared on Brownsman in August 1984 though she only stayed for a few days (Hawkey and Hickling, 1984). She returned in May 1985 and was noted carrying nesting material at the start of June. At the end of the month an egg identical to that of a Sandwich Tern was seen, but the nest site was subsequently found deserted in the middle of July with no trace of either Elsie or the egg (Hawkey and Hickling, 1985). There may have been further abortive attempts during 1986 (Hawkey, 1987) and 1987 (Hawkey, 1988). Though Elsie reappeared for the next season no breeding attempt was made, then in 1989 for the first time a chick hatched and managed to fledge. Both parents and young were later observed feeding round the Firth of Forth area (Hawkey, 1989). There were no more successful attempts until 1992 when a further chick fledged (Walton, 1993). Fledged young were also present in 1996 and 1997, and in both years the chicks were colour ringed. One of the hybrid chicks from 1997 was seen roosting with Sandwich Terns at La Paracou, near Sables d'Olonne, Vendée on the western coast of France on 23 September in the same year. Elsie was last seen on the Farne Islands on 31 July 1997 and was subsequently seen roosting on the west coast of France in late September (Walton, 1998). Sadly she did not return in 1998 but she was an adult in 1984 and been present every season since then and had managed to fledge four hybrid young. Unfortunately Elsie herself seemed not to be a good parent as some of the chicks did not survive, eggs were lost and attempts seemed to be abandoned.

All the evidence seems to suggest that the pairings were not particularly fertile; out of probably ten breeding attempts only four were successful. It is of great interest however that in 1988 a juvenile Sandwich Tern with an almost entirely orange bill was seen at the end of July and in 1994 there was a Sandwich Tern with more yellow on its beak than usual and very reminiscent of either the 1989 or 1992 hybrid offspring. Furthermore this adult was one of the parents of a hybrid chick present in the colony. The bird fledged at the end of July and left on 7 August. It was assumed that the adult was a returning hybrid from 1989 or 1992 and the chick was a second-generation hybrid. There have been no further sightings of any of the other offspring.

#### **Black Guillemot** *Cephus grille*

Ray's list of Farne Island breeding birds in 1671 includes 'a bird as big as a pigeon' with a black bill and a white spot on each wing in summer (Gardner-Medwin, 1985). Such a description can only refer to this species.

In the next century Pennant saw birds that he called Black Guillemots on the islands in July 1769 (Hutchinson, 1778). However all Pennant's claims for this species in England and Wales were questioned (Rossiter, 1999). Thus while it seems probable that Black Guillemots did breed on the Farne Islands during the 17<sup>th</sup> century, whether they continued to do so during the 18<sup>th</sup> century is less certain. However by the first part of the 19<sup>th</sup> century they no longer used the islands and their breeding range had moved further north as Darling (1805-1860), does not include them in his 'Description of Fern Islands birds nests and eggs'.



### Great Auk *Pinguinus impennis*

Bones discovered during the excavation of a 9<sup>th</sup> and 10<sup>th</sup> century settlement at Greenshiel on Holy Island included those of the Great Auk that were probably taken for food (Kerr, 2001). It is tempting to suggest that these had come from birds breeding on the Farne Islands. Wallis writing in 1769 noted the following concerning this species 'The Penguin [the old name for the Great Auk] was taken alive a few years ago on the island of Farn' (Wallis, 1769). This record has been dated more precisely to between 1763-1767 and as this species was thought to breed on low-lying offshore islands with a gently shelving shoreline (Rossiter, 1999) it is indeed possible that the Great Auk may have been a former breeding seabird on the Farne Islands.

### CONCLUSION

The breeding birds on the Farne Islands, particularly Eiders, have probably the longest documented history of any colony in the world, stretching back to St Cuthbert at the end of the 8<sup>th</sup> century. For around 90% of this period they have been exploited for food, eggs and sport. For most of the time the exploitation was probably sustainable and may not have had too much effect on the bird populations as there is evidence that there were good numbers of breeding birds at least until the end of the 18<sup>th</sup> century (Rossiter, 1999).

The problems during the 19<sup>th</sup> century have already been discussed in detail for individual species. However over at least two separate prolonged periods the egg collecting, coupled with the ever-increasing shooting for both specimens and sport, threatened the survival of the colony and had it not been for the foresight of Archdeacon Charles Thorp and the Farne Islands Association under the leadership of Hugh Barclay, followed by Henry Paynter, it is unlikely that the modern seabird colony seen today would exist.

For the first twenty-five years of the 20<sup>th</sup> century the Farne Islands Association continued to be responsible for the islands. They were then bought by public subscription and given to the National Trust in 1925. Up to 1970 the islands were run and overseen by The Farne Islands Local Committee of the National Trust who appointed Watchers to protect the birds, but only for the breeding season. 1970 saw the appointment of the first permanent Warden/Naturalist together with a number of seasonal wardens who were employed for a much longer period, particularly earlier in the season. Today there is a permanent head warden who is responsible to the property manager for running and administering the islands and he is assisted by at least eight seasonal wardens on varying contracts who live on the islands from mid March to early December.

Around sixty different species have been discussed in the complete account of the breeding birds, of which forty-nine have nested at least once. Over the centuries there have inevitably been changes in the species that have bred regularly. The climate prior to the 13<sup>th</sup> century was warmer than that of today and it is possible that the Farne Islands were more vegetated at the time of St Cuthbert onwards, though pollen analysis indicates that lack of trees is a natural state (Lunn, 2004). This raises the possibility that there may have been a greater range of passerine and wader species with fewer seabirds such as terns until the climate deteriorated from the 13<sup>th</sup> century. Indeed terns are not documented until the time of John Ray's visit in 1671 (Gardner-Medwin, 1985). The 18<sup>th</sup> century saw the loss of the Great Auk by extinction and possibly the Black Guillemot when its range moved further north as the climate warmed. It is interesting that the Mallard and Black-headed Gull *Chroicocephalus ridibundus* bred only at the start of the 19<sup>th</sup> century; they were documented by Darling

(1805-1860) but not Selby writing in 1826 or by any other subsequent authors. Shags too only bred occasionally through out this century.

A significant change for the breeding birds in the 20<sup>th</sup> century occurred when Inner Farne lighthouse became automatic in 1910, and the lighthouse keepers and their families left. In the 19<sup>th</sup> and probably for many centuries previously the inner group breeding population had been concentrated on West Wideopens and Knoxes Reef with only Eiders and some passerines and waders on Inner Farne. A consequence of the lighthouse keepers leaving would be the loss of some habitat for passerines, but the creation of new opportunities for seabirds to colonise the island, especially as protection became more effective and populations increased.

The 20<sup>th</sup> century thus has seen the reestablishment of Mallard, Shag and Black-headed Gull as regular breeding species together with colonisation by Fulmars *Fulmarus glacialis* from 1935. However waders such as Lapwing and Redshank do seem to have been lost. In the 21<sup>st</sup> century the most recent addition is Red-breasted Merganser from 2006 onward.

Figure 13 shows the total population of breeding birds on the Farne Islands from 1971 to 2009. The only figures that are available prior to this are from 1953 when the islands were involved in a British Trust for Ornithology (BTO) survey and there were an estimated 14,000+ breeding pairs. This figure however is very approximate; only the main islands of Inner Farne, Brownsman, Staple Island and the Longstone complex were counted, while the others *i.e.* the Wideopens, the Wamses the Harcars and Megstone were estimated. Though the accuracy of this total is questionable it does provide a rough idea of the numbers of breeding birds at this time. It is interesting that from 1953 to 1971 the population had increased by around 12,000 breeding pairs of which Puffins and gulls including Kittiwakes *Rissa tridactyla* had probably been responsible for much of this. Figure 13 shows that since 1971 the total population increased until 2007, when it reached its maximum of over 100,000 breeding pairs; since then there has been a drop to around 80,000.

The increase is mainly due to the continuing rise in the numbers of auks, particularly Guillemots *Uria aalge*. The sudden rise in 2003 and the drop in 2008 are explained when the figures for Puffins are considered. Because of the fragility of the soil cap and the effort involved, Puffins were not counted annually and the last census was in 1993. While some increase was expected, the actual figure of 60% of the previous total was a surprise. Thus the 34% drop in 2008 when a further census was done was unexpected and may be related to problems of their winter survival.

The loss of Lapwings and Redshanks in the mid 20<sup>th</sup> century was probably a result of predation from the ever increasing numbers of large gulls, and by the time their numbers had been reduced to around 1,000 breeding pairs by 1980 the greater numbers of other species had reduced the habitat space available.

One of the current management problems on the Farne Islands is the control of vegetation; in the last decade it has been difficult to limit its growth during the breeding season. This however could be a further consequence of the rise in the breeding bird population. From 1993 to 2007 the total numbers of breeding birds increased by around 48% and this must have had an effect on the soil chemistry by increasing nutrients such as nitrogen and phosphorus and promoting increased growth.

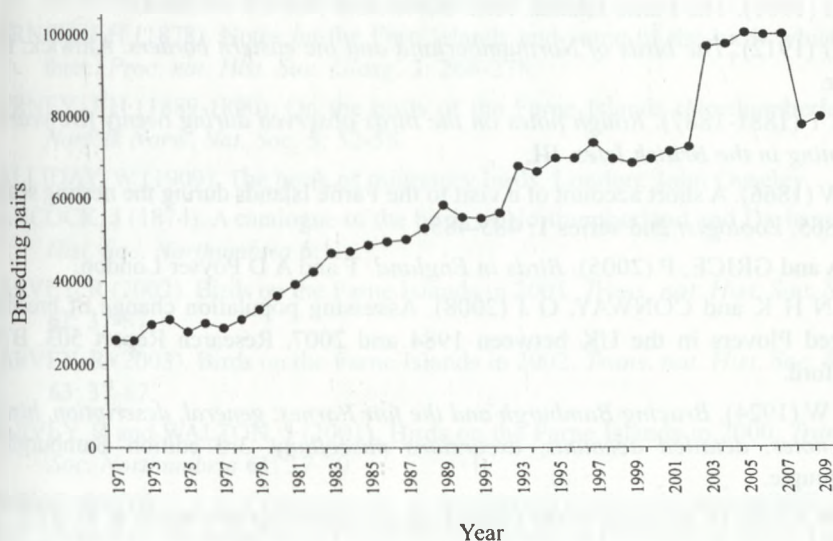
The past one hundred years have seen major changes among the breeding birds on the Farne Islands, with former occasional breeding species re-establishing themselves as regular



breeders and new ones being gained. Inevitably there have been concerns and problems as detailed in the individual species accounts. In recent years the overriding concern has been the changes that global warming and the ongoing atmospheric instability will bring, particularly a rise in sea surface temperature. This may be one of the causes of the current decline in the Kittiwake population and particularly the low productivity seen each season from 2001 to 2008, though 2009 saw a welcome respite. Eiders too seem to be in difficulties at the moment. There is thus a possibility that in the future some of the current breeding species may be lost, but others now breeding further south may be gained.

Over the last five years we have looked in depth at the changes in the population and circumstances of the breeding species on the Farne Islands. The future will bring further changes which will undoubtedly be challenging to the management strategies needed to maintain this unique colony of seabirds.

**Figure 13** The total breeding bird population on the Farne Islands from 1971 to 2009.



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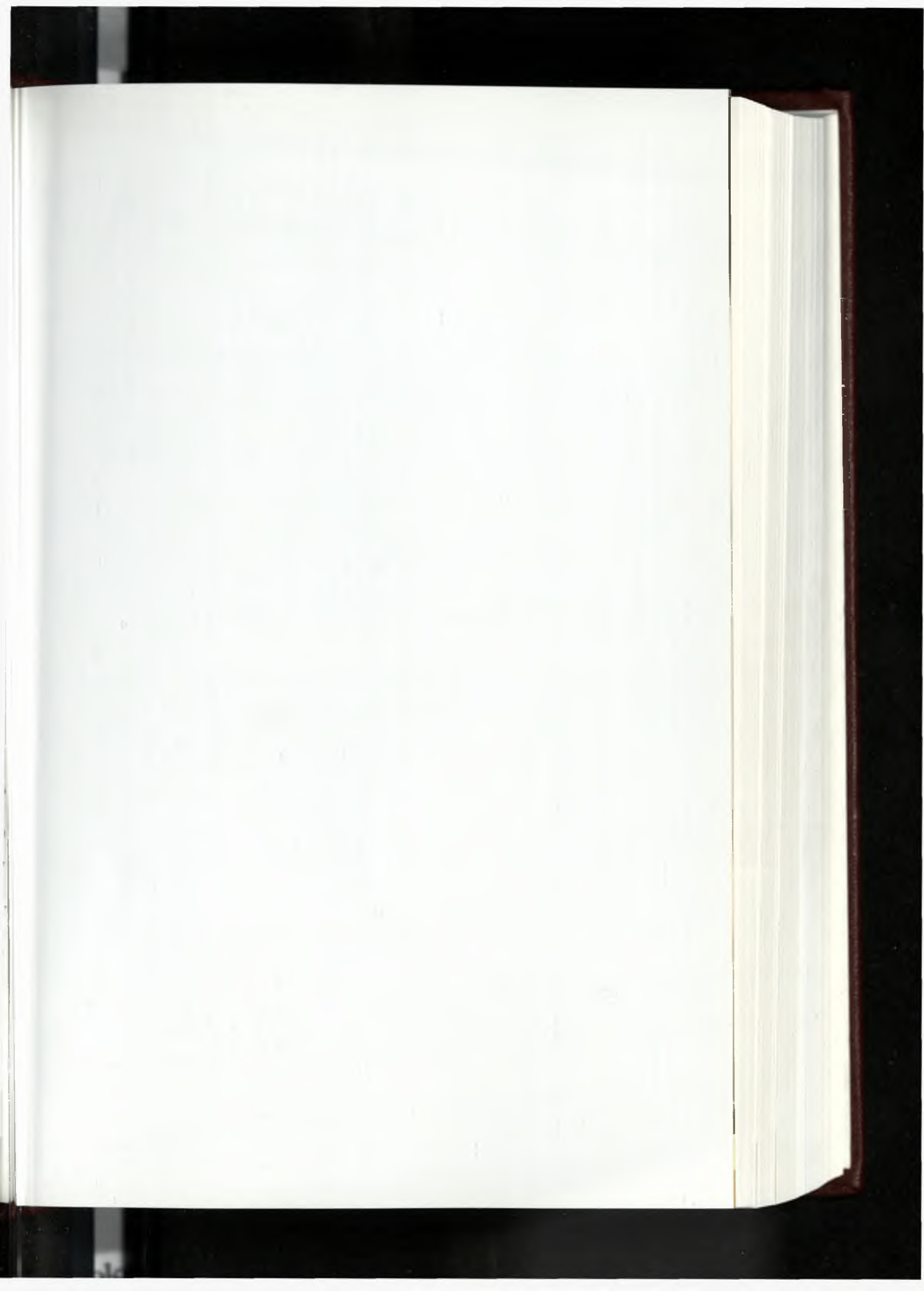
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**Front Cover: Harvest Mouse by Duncan Bilney and Wild Arena**

The Society would like to thank Duncan Bilney for the use of his photograph on the front cover of the *Northumbrian Naturalist*.

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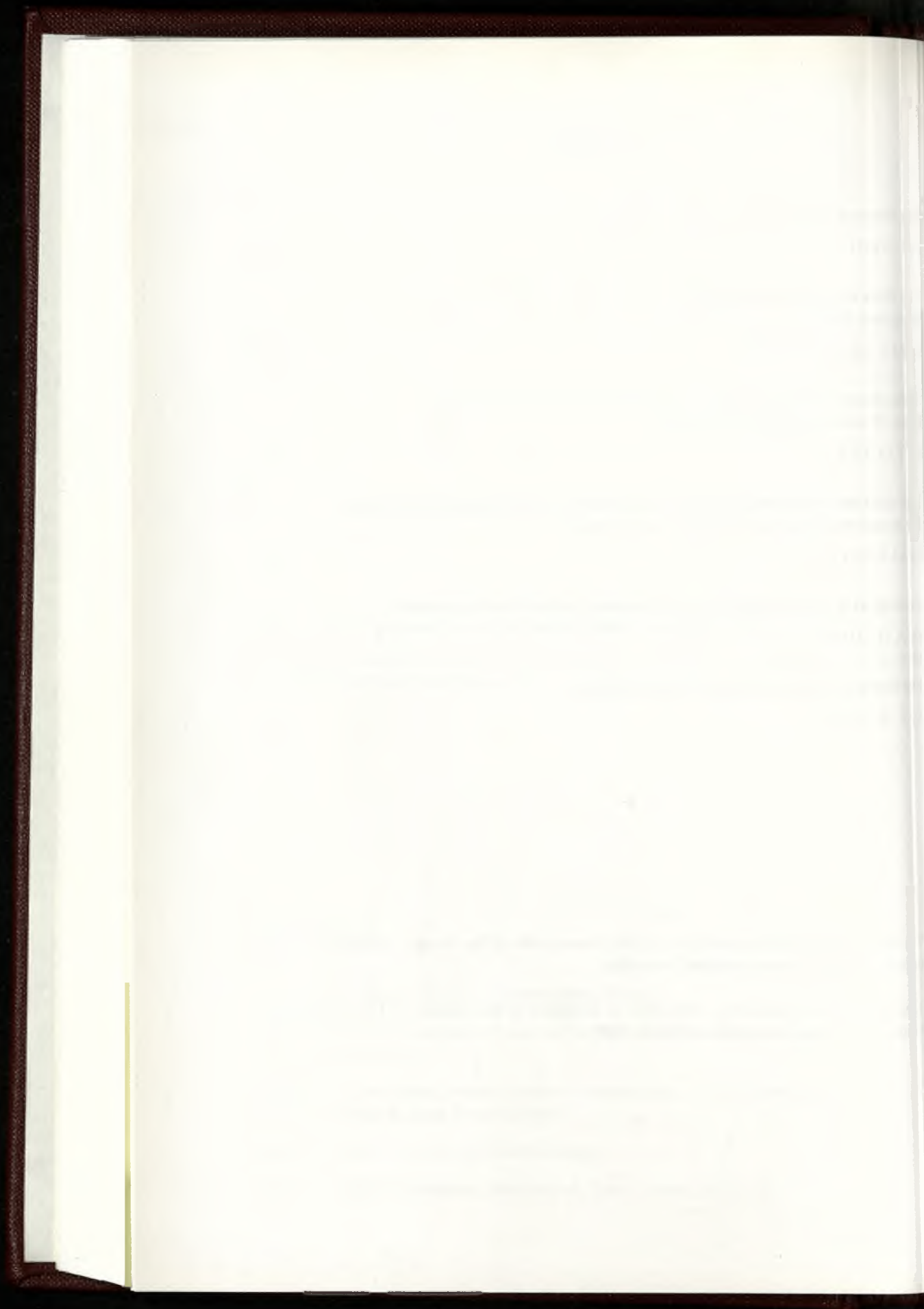
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This issue of '*Northumbrian Naturalist*' is dedicated to the memory of Dr Brian Selman, editor of the *Transactions* from 2000 to 2009.





## THE HARVEST MOUSE IN NORTH EAST ENGLAND

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### SUMMARY

The Harvest Mouse *Micromys minutus* is widely distributed in southern and eastern Britain as far north as central Yorkshire, but its distribution in North East England is poorly known. The aim of this study was to collate recent and historical records of the Harvest Mouse from Northumberland, Durham and the former county of Cleveland, and to document attempted introductions in the region. Until recently the Harvest Mouse had only been recorded from a relatively small number of sites in the North East, and from only two sites, Boulby in Cleveland and Earsden in Northumberland, over a period of years. Although now known to be widely, though apparently patchily distributed through the Tees Lowlands, it is still unclear whether this represents the northern limit of the specie's natural distribution in Britain or the result of a series of accidental introductions. Further north it seems very likely that the small number of widely-dispersed records have resulted from accidental introductions.

### INTRODUCTION

The Harvest Mouse *Micromys minutus* is noted as having a mainly southern and eastern distribution in Britain as far north as central Yorkshire (Trout and Harris, 2008). Indeed, a survey using Longworth traps on three farms in the Vale of York found that Harvest Mice were the most commonly trapped small mammal (Moore *et al.* 2003). North of that, records are extremely patchy and its distribution poorly known. Howes (1985) describes the Harvest Mouse in Yorkshire as being 'widely, though patchily distributed throughout the central plain of York from lowland south Yorkshire to the Vale of Mowbray and the Durham border'. However the distribution map accompanying his article showed only six records nearer to County Durham than Northallerton. This is evidently the historical position as Clarke and Roebuck (1881) considered that the Harvest Mouse in Yorkshire was 'very irregularly and thinly distributed and scarce.' Howes also describes it in Yorkshire as a river-valley and riparian specialist with 62% of sites being below fifty feet above sea level and 82% below 200 feet above sea level (Howes, 2001). Indeed, the most northerly of the records in his account, at Scotch Corner, is almost the highest at only 180m above sea level.

The aim of this article is, as far as possible, to collate all information on Harvest Mice, both recent and historical, throughout the North East of England, *i.e.* the counties of Northumberland, Durham and the former county of Cleveland. It also includes records that are in the north-east fringe of North Yorkshire as these may represent populations of Harvest Mice that are or were contiguous with those that are in the current boroughs of Stockton and Redcar and Cleveland. Harris (1979a) points out that the distribution of Harvest Mouse records has been affected by a number of introduction attempts and that there was a need to document these, particularly on the fringes of its 'natural' distribution. There have been several recorded Harvest Mouse introduction attempts, of apparently varying degrees of success, in the North East in recent years and this article also summarises those.

## METHODS

In collecting Harvest Mouse records, in common with any biological data, there is always the problem of verifying records. In the case of Harvest Mice there is the possibility of



**Fig. 1** Harvest Mouse Nest is one of the easily-observed signs of their presence

confusing sightings of the animal itself with those of young Wood Mice *Apodemus sylvaticus* or voles. It is not always appreciated that Wood Mice are frequently found in arable settings where they tend to be called 'field mice' and that Harvest Mice and 'field mice' are not the same thing. The occupation of elevated tennis balls or 'mouse boxes' has been used as a survey tool (Perrow and Jowitt, 1995). Unfortunately this is not a foolproof sign either, as other small mammals will climb and use these structures (Bond, pers. obs.). The most reliable and also the most easily observed signs of Harvest Mouse presence are their nests woven into grass-like vegetation above ground level (Fig. 1). While it is noted that other small mammals will climb fairly-stable vertical features such as hedges, Harvest Mice are light enough to climb stems of grasses and do so using a prehensile tail, a unique feature amongst British mammals. In collating records I have considered records to be accurate if they relate to nests found elevated off the ground, to mice seen climbing around in grasses and to the few circumstances where a mouse has been examined in the hand, whether dead or alive, by a competent person. In addition the few examples in the North East where Harvest Mouse remains have been found in owl pellets provide conclusive evidence of the species presence in an area though unfortunately they do not pin-point the exact site due to the owls' foraging habits.

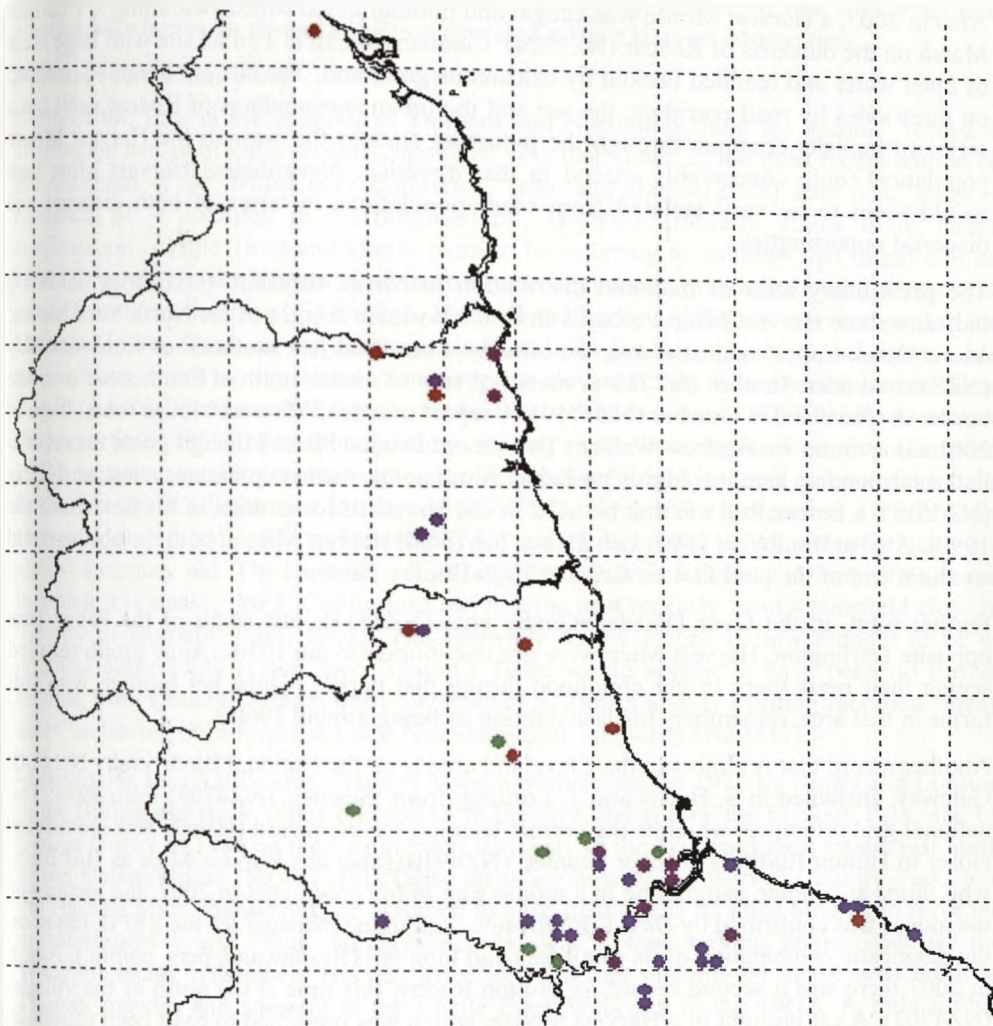
## RESULTS

The distribution of North East Harvest Mouse records is illustrated in Fig. 2.

### Cleveland (Vice County 62)

South of the River Tees in Vice County 62, there have been three recent records of Harvest Mice in the Great Ayton area. In 2003, a member of Great Ayton Natural History Society told me of a Harvest Mouse nest that she had found woven into the living leaves of Montbretia (*Crocsmia* sp.) in her garden, near Ayton Banks (NZ5710), some 1-2 km east of the village. Although gardens are not usually a suitable habitat for Harvest Mice, this one would have been fairly isolated and surrounded by farmland. Also in 2003, a Harvest Mouse





**Fig. 2. Harvest Mouse records in North East England**

Blue – confirmed records; Red – unconfirmed records; Green – pre-1970s records; Purple – introductions.

nest was recorded at an undisclosed location in the Great Ayton area as an incidental record as part of an ecological survey. Finally, in September 2006, Derek Capes was presented with evidence in the form of a dead Harvest Mouse that a neighbour's cat had brought in. While it is not known how far the cat had roamed to catch the mouse, Derek lives in Great Ayton village itself (NZ5511) so it is probably reasonable to assume that there is a population of Harvest Mice not too far distant from the village.

About 4 km north east of Great Ayton, at Pinchinthorpe (NZ5815), a small number of Harvest Mice turned up in a stable in 2003. These were confirmed as Harvest Mice by Kevin Bulmer, though there was some question as to the provenance of the mice. The stable was surrounded by a large area of bare ground and it was thought unlikely that the mice had crossed this to reach the stable; it seemed more likely that the mice had come in with the horse bedding. This had come from Boozebeck, about 8 km further east.

Also in 2003, a Harvest Mouse was caught and photographed whilst swimming at Coatham Marsh on the outskirts of Redcar (NZ5824). Coatham Marsh is a 54 ha site with large areas of open water and reedbed backed by calcareous grassland. The site is effectively isolated on three sides by road corridors, the sea and the urban surroundings of Redcar itself but a series of habitats continue through the industrial sites to the west so the Harvest Mouse population could conceivably extend in that direction. Nevertheless Harvest Mice here would seem to be very isolated from other populations in terms of both distance and dispersal opportunities.

The preliminary atlas of mammal distribution in North Yorkshire (Oxford *et al.* 2007) indicates three Harvest Mouse records from the northern fringes of the North York Moors; one is Derek Capes' record above, the other two are from just southeast of Runswick Bay (NZ81) and from Staithes (NZ71). A matter of tens of metres north of Staithes but over the border in Cleveland is Cowbar (NZ7719). A report of a dead Harvest Mouse found there in 2001 came to me via Andrew Watson. This record is unconfirmed though given the records in the surrounding area it is highly probable. A mile or so further up the east coast, at Boulby (NZ7518), a farmer told me that he used to see Harvest Mouse nests in his fields into the 1990s. Also at Boulby, in 2008, Len Tabner has found Harvest Mice at both the northern and southern end of the land that he farms at High Boulby Farm.

Further west, in the Over Dinsdale/Girsby area (NZ3511), just south of the River Tees opposite Darlington, Harvest Mice were not uncommon in the 1950s. Anne Smith recalled seeing their nests there in her childhood during that period, whilst her brother, who still farms in that area, remembers his last sighting as being around 1960.

Another record that is almost in the Cleveland area is on the National Biodiversity Network Gateway, attributed to S. Harris and T. Lording, from 'Seamer' (NZ4705) from 1974. The national grid reference, which is the correct location for the record (Harris, pers. comm.) is closer to Hutton Rudby. However Seamer, (NZ4910), also has Harvest Mice as Bill Burn, who farms at Seamer, caught one in a mouse trap in his polytunnel in 2007; the identity of the mouse was confirmed by David Braithwaite, Saltholme manager for the RSPB, based on the diagnostic combination of its small ears and long tail (Braithwaite, pers. comm.). Again in 2007 there was a second record for Hutton Rudby, this time at the north of the village, (NZ4707). A cat brought in a Harvest Mouse, which was presumed to have been caught in the paddock next to the house on Hilton Road. Realising that the mouse was unusual the cat's owner put the mouse in the freezer and Kevin Bulmer later confirmed its identity.

Derek Capes has found Harvest Mouse remains in a series of owl pellets taken from owl nest boxes between Nunthorpe and Newton under Roseberry during 2008. Even more recently, in 2009, Kenny Crooks found three Harvest Mouse nests at Eastfield Farm near Nunthorpe, (NZ 556134) in March. The nests were described as being pretty fragile as they had been subjected to poor weather conditions the previous winter. Two were about 10 cm above the ground and the other was at 0.5 m. The highest one was in the long grass, which had remained upright inside a wire-mesh tree guard. The area has a mixture of grasses with some rush; a variety of native broadleaf trees were planted there several years ago and these are well spaced out so that plenty of light reaches the lower vegetation. Although most of the surrounding fields contain sheep at various times of the year, so the grass there never gets very long, one of the adjacent fields is quite damp and has a lot of rush and, from what can be gathered from the landowner, who has researched the history of the farm, used to be very marshy many years ago. Then in August at the other side of the farm (NZ551124), Kenny's



dog took a keen interest in a clump of long grass and thistles in one of the willow plantations, whereupon closer inspection revealed a fresh Harvest Mouse nest.

#### Durham (Vice County 66)

North of the Tees in the counties of Durham and Northumberland the species' recorded distribution has, until fairly recently, appeared very disjointed. In the most recent edition of the *Mammals of the British Isles Handbook*, Trout and Harris (2008) state that, 'there is evidence of 4 colonies in Northumberland, Durham although status there needs confirmation'. While Trout and Harris seem to be referring to colonies that might still be extant, it would seem that historically there have been few other records. In the *Transactions of the Tyneside Naturalists' Field Club*, Mennell and Perkins (1864) note with regard to the Harvest Mouse, 'We have but few recorded localities for this species in our district, but among these, one is worthy of note from its great elevation; Mr. Wm. Backhouse has taken it at St. John's, Weardale, 800 feet above the level of the sea' (ie at NZ069339). At around the same time, 1856-1860, John Gardner writing much later in the *Vasculum* (Gardner, 1921) mentions watching a mouse run out of its nest in *Phragmites* reed on one of the stells below Greatham village near Hartlepool (NZ4927). Coult (1980) mentions a further two Harvest Mouse records, for Durham (NZ2742) and the Browney Valley both of which were almost a century old. The Durham record is from the Victoria County History of Durham, in which it is stated; 'Mr J. Cullingford has had the nest recently from a cornfield close to the city of Durham' (Gill, 1905). The Browney Valley record is now thought to be of doubtful authenticity (Coult, pers. comm.) There would appear to have been no further records from County Durham until 1974 when S. Harris and T. Lording recorded 'many nests' as having been found at Little Newsham near Staindrop (NZ1117).

In the lower Tees Valley area, Harvest Mice were recorded in 1977 by Harris and Lording in the Billingham Beck Valley (NZ4522), in the area that is now the Ecology Park, and by George Crowe in 1986 on the Castle Eden Walkway in the Wynyard Park estate, just north of the Station House (NZ404248). These areas are now well-observed Country Parks and the Harvest Mice populations are assumed to have died out as no mice have been recorded in subsequent years. Frank Mitchinson, who was a long-serving gamekeeper on the Wynyard estate, remembers Harvest Mice as being not uncommon in the area north of Thorpe Thewles and adjacent to the Castle Eden Walkway in the 1960s. A little further north, a retired farm hand informed me that he remembered Harvest Mice nests being present in the arable fields at Morden Carrs (NZ3326) and Butterwick (NZ3928) in the 1960s. Towards the west of the Tees Valley John Harding recalled seeing a small mouse running along the stalk tops in a cereal field in the Brankin Moor area of Darlington (NZ3012) in 1968; this would almost certainly have been a Harvest Mouse.

There appear to be no further records of naturally-occurring Harvest Mice in the Tees Valley area until 2004. In February 2004 I found the remains of a Harvest Mouse nest in small patch of Reed Canary Grass *Phalaris arundinacea* off Barmpton Lane, Darlington (NZ316174). The nest was in very poor condition and had disappeared completely when I went back to take photos a couple of weeks later. I re-visited the same patch of grass in October 2004 and again found a single Harvest Mouse day nest, only this time in good condition and I was able to photograph it.

Also in 2004 Alistair McLee reported the remains of Harvest Mice in the Long-eared Owl pellets that he had been collecting from the Elementis site near Urray Nook (NZ4014). The pellets were analysed by Mr A. Love who runs the national owl pellet scheme. Harvest

Mouse remains were found in some pellets from winter 2002/2003 and again from winter 2003/2004. Batches of pellets had been collected at different times over each winter to see if the composition of the prey varied. Harvest Mice remains were found in each batch in each year, a total of 11 specimens in 2002/2003 and 12 specimens in 2003/2004. They averaged 1.2% of the total number of prey items in both years. A search by Ian Craft and myself, in late 2004, of a stand of approximately one hectare of Reed Canary Grass at a farm just south of Long Newton (NZ3714) found the remains of a single Harvest Mouse nest. This farm is about 2km away from Elementis and so could potentially be the source of the Harvest Mouse remains in the owl pellets. A little further west again, Don Griss found a single Harvest Mouse skull in a Barn Owl pellet from South Burdon Community Forest on the eastern side of Darlington (NZ3414).

In 2005 a live Harvest Mouse was caught in the hand and photographed by Jonathan Pounder at the Bowsefield Nature Reserve, (NZ4416). More recently still, Don Griss was handed a freshly-dead specimen that was picked up on a farm at Sadberge on 13th September 2006 (NZ3516). Interestingly this record was almost exactly equidistant, about 3km in each direction, from the records at Barmpton, South Burdon and Long Newton.

At the other end of the county the only other confirmed record for Vice County 66 is from Lockhaugh Sewage Farm, (NZ1759) by John Durkin from 1985. However Terry Coult was told of two records, from nearby High Spen (NZ 143595 and NZ143592) from 1968 by Mr W. Foster, who farmed in that area.

There are a further three Durham records that are sometimes listed in datasets of Harvest Mice from the North East but which appear to be unconfirmed. Perhaps the most often quoted record is from Hawthorn Dene (NZ4345) from 1975. The record came via Durham Wildlife Trust but nevertheless remains unconfirmed. Another unconfirmed record that came via Durham Wildlife Trust was from Houghall near Durham (NZ2840) in the 1990s (Steve Lowe, pers. comm.) The third record is from Washington (NZ3157) in 1950. It is attributed to Lee Stephenson but although he is aware of this being claimed as a record it is actually from before he was born and the original source appears to have been lost (Stephenson, pers. comm.) I have been told personally of claims of relatively-recent records at Sadberge and Stillington and there is a post-2000 claim of a record from a road verge in Sedgfield (Jim Cokill, pers. comm.) but while these are within the recorded current or former range for the species in the Tees Lowlands, it has not been possible to verify these records.

#### **Northumberland (Vice Counties 67 and 68)**

The earliest record of Harvest Mouse in Northumberland appears to be from Gill (1905). In discussing the above-mentioned Durham records of Mennell and Perkins and of Cullingford, Gill states; 'The Harvest Mouse appears to have been very rarely noticed in the County of Durham and is doubtless scarce; though I have seen it myself a short distance north of the Tyne.' Unfortunately no details are given of exactly where north of the Tyne this was.

There are only three confirmed records of naturally-occurring Harvest Mice in Northumberland since Gill's time. Graeme Smart found a Harvest Mouse nest at Prestwick Carr (NZ185743) in 1988. This site is currently undergoing some conservation management by Northumberland Wildlife Trust and there have been no Harvest Mouse records from there in recent years (Steve Lowe, pers. comm.).



Harris and Lording recorded a Harvest Mouse skull found in a Barn Owl pellet in Ponteland (NZ1772) in 1974 and a single Harvest Mouse nest from a hedge at Earsdon Hill Farm, near Causey Park (NZ192952) in 1976. The hedge was subsequently grubbed out to make way for a road but Ian Douglas and Dave Duffy located a nest nearby on 15 November 1996 at NZ192956. They noted that the nest took 3.5 hours to find! The following year, Bob Wilkin recorded a single Harvest Mouse nest from a different location on the farm, in a hedge by the stream at a location with the approximate reference NZ194957 on 19 November 1997. It is not known whether this population is still extant as a survey by Wendy Fail in 2004 failed to find any mice. It is worth noting that Fred Ryle, who farms at Earsdon East Farm, approximately 1 km south of Earsdon Hill Farm has noted numbers of very small mice living among bales of straw in winter. The bales of straw were kept in an area close to 6 m grassy field margins, which would provide suitable habitat for Harvest Mice.

In addition to the above records there are some unconfirmed records for Northumberland. The most northerly of these and, needless to say given that it is just south of the Scottish border, the most northerly in England if confirmed, is from Ladythorne, just north of Haggerston (NU034456) in 1997. This is also the only claim of a record in VC 68. When helping release Harvest Mice at Pickards Meadow in 2003 I met a couple who claimed to have watched a mouse climbing around the tops of grass stems at Brinkburn Priory (NZ1198) in the early 2000s. If true this would almost certainly have been a Harvest Mouse.

#### Re-introductions

There have been a number of recorded introductions in the region in recent years. Perhaps the earliest was by Howard Ward at Billingham Beck Ecology Park (NZ4522) in the mid-1980s. The release was prompted by the apparent disappearance of Harvest Mice since the survey by Harris and Lording in 1977. A relatively small number of mice, bred by Rob Scaife, were released. There has been no subsequent evidence of Harvest Mice in the Billingham Beck Valley, whether from this release or the original population.

A captive breeding and introduction programme, under the auspices of the countryside section of Stockton Borough Council, carried out four releases in sites in the borough of Stockton from 2002 to 2005. The Harvest Mice for this programme came from four pairs obtained from Chester Zoo in 2001. I led the programme until 2003 and thereafter it has been led by Pam Stewart and Andrea Metcalfe. In 2002, 50 mice were released at Cowpen Bewley Woodland Park (NZ479256) with a further 30 mice released in 2003. At Portrack Marsh (NZ467196), 80 mice were released in 2002 with a further 12 released in 2003. The third release site was Pickard's Meadow (NZ401270) at the Wynyard Woodland Park where, in July 2003, 36 mice were released. The final release site was a reed bed at Brinefield No 4 (NZ5124) on the Tees estuary. This involved the release of 566 mice spread over a number of months in 2005.

Initially, there was very little evidence of success of any of these releases. A small number of Harvest Mouse nests were found at Cowpen Bewley Woodland Park in the autumn after the first release but there were no signs at all from that site for several years after that. Near Brinefield No 4, a Harvest Mouse nest was found by Derek Clayton in November 2005 in the reed bed at Dorman's Pool, approximately 1 km from the release site; however, extensive live trapping from 2005-2007 failed to catch any mice. Surveys for the introduced Harvest Mice at Portrack Marsh have taken the form of nest searches and installing 'mouse' boxes on wooden poles, some 60-100cm off the ground. To date there have been no records that were unequivocally Harvest Mice from Portrack Marsh. Pickard's Meadow provided

the first evidence that any introduced mice had over-wintered and hence, given the short lifespan of individual mice, the first evidence of the establishment of a breeding population. A Harvest Mouse was caught in a Longworth trap, in October 2006, though there have been no subsequent records. In 2008, Ian Forrest, watched a Harvest Mouse climbing around the tops of reed stems at Cowpen Bewley Woodland Park and later found another one dead on a path. A third Harvest Mouse, also dead, was found in a meadow there in July 2008. The persistence of a population at Huntsman was also established in 2008 when a Harvest Mouse was caught in a Longworth Trap in the reed-bed in October.

Another major captive breeding and release scheme was carried out by Wendy Fail and Sam Talbot on Northumberland Wildlife Trust's reserve at East Chevington, near Druridge Bay (NZ269983). A total of 205 mice were released over the summer of 2004. This was a staggered release with around 20 mice being released each week. The mice were collar clipped to identify which week they were released in. In the first year of release there was only a single recapture; some four weeks after release but two years later two nests were found.

Ian Douglas and Dave Duffy released 39 mice at Warkworth Lane Pond near Ellington (NZ270930) in May 1998. It is not known whether a population has become established as a result of this.

At Her Majesty's Prison at Kirkclevington (NZ4311) Russ Bates is organising a small scale, breeding project for Harvest Mice. As part of this, he released 4 Harvest Mice into the prison's biodiversity area in 2007, followed by a further 12 mice in 2008. Small numbers of Harvest Mice have been sporadically released on the Elementis site (NZ4014) since 2004. There is no information on the success of the releases at this site though it is worth noting that they occurred too late to be the source of the remains in the Long eared Owl pellets that Alistair McLee found.

## DISCUSSION

What is clear from the above account is that the Harvest Mouse has only been recorded from a relatively small number of sites in the North East and then only occasionally. In fact there are only two sites, Earsdon and Boulby where the species has been recorded over a period of years. Until 2003 there were only nine confirmed records of Harvest Mice in the North East and these were spread over 150 years. None were more recent than the 1997 record from Earsdon and the premise on which the Stockton Borough Council re-introduction project was based, that there were no recent records of Harvest Mice in Durham or Cleveland, was accurate at that time. Since 2003, twenty-one reliable, new records of Harvest Mice have come to light, all in the Tees Lowlands natural area. Sixteen of these new records are contemporary. The distribution of the new records, especially when added to historical records, shows that Harvest Mice have had a wide, though not necessarily contiguous distribution right across the Tees Lowlands. However, the situation there today could be that of a few remaining isolated pockets of mice in danger of disappearing at one extreme or a species that is still widely distributed but extremely under-recorded at the other.

Where Harvest Mice are common their nests can be found quite readily at certain times of year. A search by Dobson (2001) in suitable habitats in Essex confirmed their presence in 106 new tetrads between October 1998 and March 1999. In fact in the following 1999/2000 survey season he recorded them in 19 new tetrads in 3 hours, 50 minutes! However Harris



(1979a) considered that, 'on the fringes of its range, populations of Harvest Mice are extremely localized and often difficult to find.'

The difficulty in detecting Harvest Mice when they occur in low numbers has been remarked on by several commentators. For example, study by Riordan *et al.* (2007) on the fringes of the species' range in Oxfordshire caught only eight Harvest Mice in 2,730 trap nights using Longworth traps. Nordvig *et al.* (2001) found that, at low to moderate densities, Harvest Mouse presence can be greatly underestimated or entirely missed by traditional ground trapping. Also Trout and Harris (2008) note that remains in owl pellets are unlikely to be recorded in areas where numbers are low.

It is notable that several of the North East records have been from farmers who remember the mouse nests in cereal crops. It is also notable that most of these were decades old. This may be connected with the move towards growing winter-sown wheat which is harvested at the Harvest Mouse's peak breeding period, hence nests in arable fields would be much less common than would formerly have been the case (Harris, 1979a). While Harvest Mice have rarely been recorded by naturalists, it might be that the farming community is or was more familiar with their presence; given concerns about modern agricultural practices contributing to their decline, at least in arable habitats, any such knowledge might reside with the retired farming generation. A farm link newsletter circulated by The Tees Forest to farmers in the Tees Valley in the early 2000s asked for records of Harvest Mice but failed to receive any replies. This could lend weight to the theory that there may just be isolated, relict pockets left in the Tees Lowlands but might just reflect the fact that Harvest Mice are actually more prevalent in alternative habitats (Harris, 1979a).

North and west of the Tees Lowlands the seven confirmed records are very widely spread, almost to the other three corners of the North East at least as far north as Morpeth. It seems very unlikely that these remnants of a species distribution that would at some point have stretched across much of the North East. It is always possible that Harvest Mice are still more widely distributed but just under-recorded. A similar, though not quite as extreme situation existed with water shrew records in the North East until recently, though it should be noted that water shrews are even more cryptic as they do not leave any easily-discernible signs. As quoted above, Mennell and Perkins (1864) mention the St John's Chapel record as one of a few but unfortunately they neglect to mention where the other few were from. Nevertheless the other few records that they refer to would hardly be likely to fill in many gaps.

An alternative hypothesis to that of relict populations is that these more-disparate records are the result of accidental introductions. A number of small mammal species' existence in parts of the British Isles is thought to be due to accidental introductions. This includes not just the obvious commensal species but also unlikely candidates for surviving transportation such as the Lesser White-toothed Shrew on the Isles of Scilly (Churchfield, 1988) and more recently the Greater White-toothed Shrew in Ireland (Tosh *et al.*, 2008). What is more, these latter examples must surely have stemmed from a very small founder stock. Since they were first recognised as a species, Harvest Mice have been noted as being transported with crops or animal bedding (White, 1788). Hancy (1991) notes that they are often transported with straw spread on carrot fields and the record above from Guisborough was thought most likely to be the result of the mice being transported with straw. The handful of records from Scotland are even more isolated and must surely have occurred as a result of introductions, indeed Harris (1979b) notes that there had been recent introductions into Scotland with hay

and straw. In fact the jury is still out on whether Harvest Mice are a native British species or were accidentally introduced with fodder for animals (Yalden, 1999). While the likelihood of any one accidental introduction succeeding might not be high, it seems certain that with favourable circumstances some accidental introductions of small mammals result in established populations.

In the case of the Harvest Mouse in the North East there seems to have been insufficient survey effort over the years to establish the species' true status. While it is possible that new records or newly discovered records might provide further 'jigsaw pieces' the situation as is known at present seems to show their distribution in the North East as a tale of two halves. The species has been, and to some extent still is, widely distributed through the Tees Lowlands. It is possible that this is the northern limit of the species' natural distribution, with the sparse records north and west of there being the result of accidental introductions. Alternatively it might be that the Tees Lowlands were colonised by Harvest Mice from accidental introductions but that the conditions there were more suitable for them there than further north and they were able to disperse more widely. This would accord with Howes (2003) description of the species as a lowland river-valley specialist. As several commentators have noted, the species is established in the Vale of York (Moore *et al.*, 2003), Howes (1985), Harris (1979). If the Tees Lowlands were part of their natural distribution then they should also have been widespread in the Vale of Mowbray, which is the lowland natural area that links the Tees Lowlands and the Vale of York. Although currently there are only a handful of records from the Vale of Mowbray (Oxford *et al.*, 2007), it would be interesting to see if further research can establish whether they are or have been more widespread there. Nevertheless new records would not differentiate between a natural population and a successful 'hitchhiker'. It is likely then that the true status of the species is always going to be unclear on the fringes of its range.

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## THE FLORA OF A NORTHUMBERLAND ESTATE: THIRTY YEARS OF CHANGE AT HAUGHTON CASTLE

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### SUMMARY

The flora of the Haughton Castle estate, which had been surveyed in detail in the years 1970-75, was resurveyed in 2004. The results are reviewed and analysed to illustrate the changes in the composition of the flora over a thirty-year period. They emphasise the importance of the river corridor to the survival of the flora and its role in the dispersal of plants, both native and alien. The Kielder dam was constructed in 1982, between the two surveys, and the effect on the flora of the resulting change in the pattern of river flow is discussed. After allowing for the inevitable incompleteness of the surveys, change was observed in 138 (27%) of the 506 taxa recorded with a net loss of 36 (7%) in terms of field-size localities. However, after allowing for species only present as casuals, the net loss reduces to 1 (0.2%), though with a decline in native species and an increase in naturalised aliens. Comparison is made between change at Haughton and that shown for Britain as a whole in a recently published report from the Botanical Society of the British Isles.

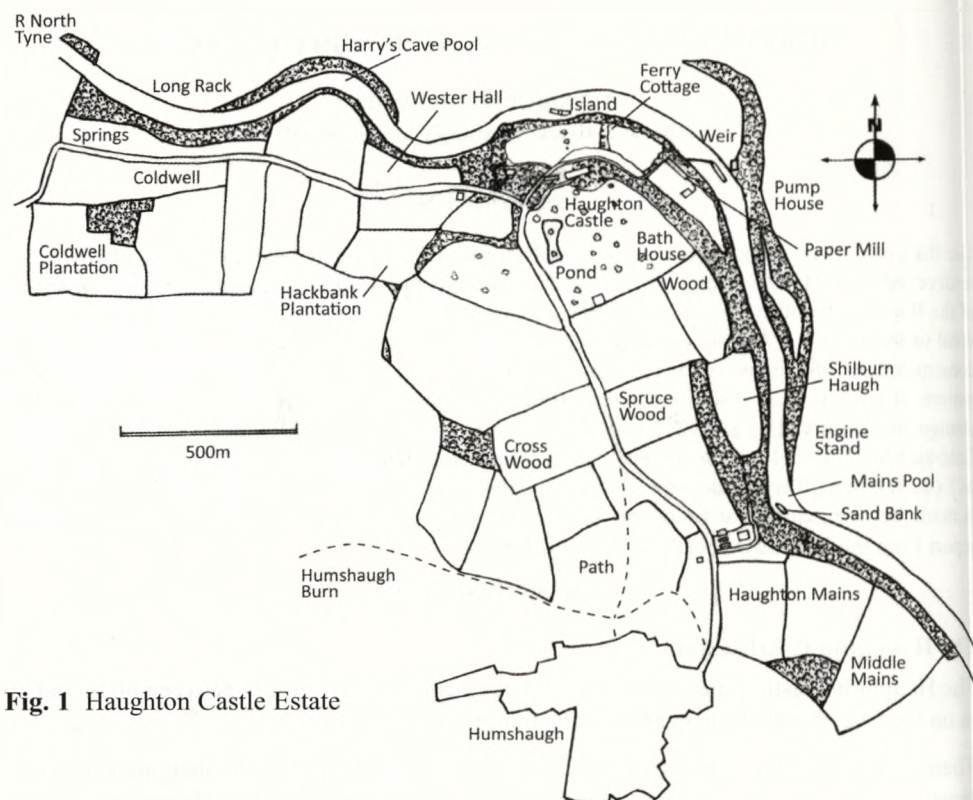
### INTRODUCTION

#### The Haughton Castle estate

The Haughton Castle estate of about 200 hectares lies at an altitude between 60 m and 100 m on the river North Tyne near Humshaugh at NY91729 (Fig. 1).

There is an illusion of timelessness about Haughton which catches the imagination, but it is largely an illusion. The estate and its castle have seen almost constant change over the millennia of man's presence and its vegetation reflects this. While land improvement in the 1700s had probably broadly stabilised the field boundaries by 1800, the present romanticised landscape was created by two generations of W Smiths in the early 1800s and embellished by G Crawshay in the 1860s and W D Cruddas in the 1890s. The castle is now set in lawns and a landscaped park with policies extending to the river. The farms of Coldwell and Haughton Mains, now run as one, are very much a working unit and the natural vegetation has to fit into the remainder which is largely the riverside and the wooded slopes above it.

The immediate riverside is the richest habitat at Haughton, with a mixture of upland plants like Globe-flower *Trollius europaeus*, Northern Bedstraw *Galium boreale*, Wood Crane's-bill *Geranium sylvaticum*, the rare Holy-grass *Hierochloa odorata*, Flat-sedge *Blysmus compressus* and some interesting willows including *Salix caprea* ssp. *spacelata*, *S. myrsinifolia* and *S. myrsinifolia* x *phylicifolia* with more southern plants like Fragrant Agrimony *Agrimonia procera*, Wild Basil *Clinopodium vulgare*, Meadow Crane's-bill *Geranium pratense* and Yellow Loosestrife *Lysimachia vulgaris*. The varied geology with the whin sill, limestones, sandstones and shales has enabled this diversity to develop. Any riverside is but part of the river system as a whole and this has brought change: the Kielder dam has altered the seasonal pattern of floods and low water while the river continues to be the means of introduction of alien plants, often from gardens, as well as casuals. Indian Balsam *Impatiens glandulifera* has now monopolised deposits of silt brought down by floods at the expense of a varied community of opportunists while Few-flowered Garlic *Allium paradoxum* is a recent arrival which is likely to be very invasive.



**Fig. 1** Houghton Castle Estate

The woodlands have as long a history of exploitation as the farmland and the native plant communities are much modified by the pattern of forest work and by the changes in the species grown for timber. The most natural woodland ground flora with much Wild Garlic *Allium ursinum* and Dog's Mercury *Mercurialis perennis* is perhaps in Wester Hall Wood, where the steepness of the slope has limited change, and its planted trees are supplemented by something of the natural mix of Alder *Alnus glutinosa*, Birch *Betula spp.*, Hazel *Corylus avellana*, Oak *Quercus spp.* and Wych Elm *Ulmus glabra*. Elsewhere natural woodland communities survive only as fragments, mostly close to the river. Herb-Paris *Paris quadrifolia* and Yellow Star-of-Bethlehem *Gagea lutea* are found in such fragments at Coldwell Wood. Nevertheless some woodland plants thrive in the planted woodland, and all the woods in the river corridor are of botanical interest, with Great Bellflower *Campanula latifolia* and Bird Cherry *Prunus padus* widely represented.

There is still much old pasture at Houghton including the haughs below the Castle and its Park. However species-rich grassland is but a tiny fragment of this area as almost all of it has been cultivated at some time in the past. Tantalising fragments of past glories are found in just a few places: three field corners with the rare Lady's-mantle *Alchemilla micans* (*A. gracilis*), small parts of haughs with Spiked Sedge *Carex spicata*, Cowslip *Primula veris*, Meadow Saxifrage *Saxifraga granulata* and Betony *Stachys officinalis* and banks at field headlands with Field Scabious *Knautia arvensis*. Adder's-tongue *Ophioglossum vulgatum* is found on the Castle lawn. Tall-herb grassland species are well represented at the riverside.



The arable fields have a typical weed flora though in 2004 the crop was entirely of barley and, as it was very clean, it was quite difficult to compile a representative list, though Common Poppy *Papaver rhoeas* was unexpectedly plentiful in a couple of field corners. The one field of set-aside had lain too long for annual species to be well represented. On the other hand the castle's walled garden has an interesting weed flora with some long-established introductions like Greater Celandine *Chelidonium majus*, Grey Field-speedwell *Veronica polita* and some wall ferns alongside newcomers like Shaggy-soldier *Galinsoga quadriradiata*.

The parkland and other policies are home to some fine trees, the heritage of Victorian plantings, such as Silver-firs *Abies spp.*, Wellingtonia *Sequoiadendron giganteum* and Tulip Tree *Liriodendron tulipifera*, while more recent plantings here and more widely in field corners and hedgerows could give a fascinating insight into changing fashions, such as the reliance on a handbook obtained through the Country Gentlemen's Association when planning the Hackbank Plantation around 1970.

### Islands as habitats for casuals

The North Tyne at Haughton alternates between fast runs over massive boulders and deep turbid pools: there is next to nothing in the way of gravel banks. This leaves two islands in the river showing prominent changes to the flora, particularly of casuals, and as such they demand a full description.

The first, known on the estate as 'The Island', lies below the Castle and is largely man-made. There was formerly a weir and a mill race; when this race was closed off a channel back to the river was opened, leaving a ninety-metre island formed of the massive stone blocks of the weir. In some years there is a spit of sand and gravel below it. There has been scrub on The Island throughout the last thirty years, but it has increased, as the natural succession is no longer kept in check by high winter floods to the extent it once was. However in at least one summer, that of 1978, cattle took to visiting The Island and reduced the vegetation considerably. In spite of this the scrub has spread and reduced the habitat for grassland species and casuals.

The reduced frequency of flooding has limited the deposition of silt high enough on the river banks for it to stabilise for the summer: and it is with the silt that plant material arrives allowing colonisation by a variety of casual species.

The second island is more recent. A sand bank appeared in the Mains Pool below Haughton Mains farmhouse in 1971 and over five years built up to about a metre above normal river level as silt accumulated in decaying vegetation during winter floods. The flora was recorded throughout this period, though this necessitated a swim, and many species came and went as the habitat evolved. By the end of that period the sand bank had come to be dominated by an unexpected alien, Chinese Mugwort *Artemisia verlotiorum*.

### BOTANICAL SURVEY

Nothing is known of botanical recording at Haughton before the present studies. John Wallis of Simonburn, the naturalist and antiquarian, wrote of Haughton Castle in 1769 that it 'is shaded with trees ... It has been a large, as well as a strong, building, most of it now uncovered'. None of his many plant records from the neighbourhood are from Haughton, though to be fair he had found the main Haughton specialities nearer his home. Of the other Northumberland flora writers neither Winch nor Baker and Tate mention Haughton, and G

A Swan is believed just to have made three quick visits, mainly to see the author's finds: in 1973 for Yellow Star-of-Bethlehem, in 1977 in the author's company for Spiked Sedge and in 1978 for *Alchemilla micans* (Swan *et al.*, 1988).

The records are the author's though a number of plants were first noted by his father, including Yellow Star-of-Bethlehem, Toothwort *Lathraea squamaria*, Common Twayblade *Listera ovata*, Early-purple Orchid *Orchis mascula*, Herb-Paris and Globe-flower.

The author's first surveys were made in 1970-75 when visiting Haughton at the weekend. A few further records were added from 1976 to 2003. The locality detail noted for the scarcer species was roughly equivalent to a 100m grid reference. The recording was not systematic, though almost all the estate was visited from time to time. Certain places received disproportionate attention, the riverside in general and most particularly the Island below the Castle and the sand bank in the Mains Pool, both described above.

A new survey was made in 2004. Records were made during a series of visits over the season on 27 March, 3 May, 11 May, 22 May, 25 June, 13 July, 7 August and 4 September. Lists of the more widespread species were made for each wood, special feature or small group of fields supplemented by GPS readings of grid references for the scarcer species with the intention of localising their populations to 100m or better. Nevertheless the coverage was far from complete and the listing of localities for all but the scarcest species was in no way intended to be comprehensive. As the recording was in one season only, the number of riverside casuals must be expected to be less than were recorded in the six years 1970-75, but other factors have been at work to limit the number of casuals. The main reference book was 'Stace' (Stace, 1991). Records were made of many planted and naturalised alien species not considered in 1970-75.

## RESULTS

A check-list of the flora has been prepared from the two surveys, listing the 506 taxa identified with confidence annotated with much locality detail. 506 taxa is a high score for an estate of close to 200 hectares, half the size of a tetrad (2km x 2km grid square). By way of comparison *The Flora and Vegetation of County Durham* (Graham, 1987) was based on a tetrad survey where the highest tetrad score was 405 taxa. A tetrad with the habitat variety of the Haughton Estate might have yielded around 320 taxa in such a survey, so the score of 506 for a part tetrad illustrates the large number of extra taxa to be expected where an intensive survey is made over a period of years and where its scope includes subspecies, hybrids and planted trees which can never be given justice to when time is at a premium.

The Haughton check-list, showing for each species whether, after allowing for the possibility of a locality being overlooked, it has been added to the flora of the estate in the period, has gained localities, has lost some localities but gained others, has lost one or more localities or has been lost from the estate, has been used to prepare Table 1.

Thus 27% of all species have gained or lost localities, with established alien species changing twice as much as native species.

The next step was to postulate reasons for the observed changes species by species. It has usually been possible to identify with some confidence those occurrences which were casual, some 48 of the 138 changes. There is a similar degree of confidence about planted species and such of these as have subsequently self-seeded or established vegetatively, 13 in all. A further class are the 15 species, mainly alien, introduced along the river. Changes



**Table 1** The number of plant species showing change at Haughton between 1970-75 and 2004

Change	Casual	Other	Total
Gains	5	22	27
Increase	-	15	15
Variable	3	15	18
Decline	14	11	25
Losses	26	27	53
<b>Total</b>	<b>48</b>	<b>90</b>	<b>138</b>

in 9 aquatic and 14 arable species have been separated as special considerations apply to them. This leaves 39 changes to be allocated on more subjective grounds. Reasons for a majority of these are fairly certain from the circumstances of the locality or from national trends of colonisation and it is thus only a rather small minority of the 138 changes for which the reasons for change are conjectural.

The same data can be related to plant status, Table 2.

**Table 2** The status of plant species showing change at Haughton between 1970-75 and 2004

Status	Species	Change	% Changed
Arable (mainly archaeophytes)	29	14	48
Planted	52	9	17
Established/naturalised	114	49	43
Native	311	66	21
<b>Total</b>	<b>506</b>	<b>138</b>	<b>27</b>

This exercise suggests the six broad classes of Table 3 as a basis for detailed discussion. This table introduces such a discussion by giving a numerical value to change: species either new to the estate or increasing are given a score of +1, while species lost to the estate or decreasing are scored -1. Species with multiple localities showing both gains and losses are scored 0.

The results are compared with a recent report by the Botanical Society of the British Isles (BSBI), *Change in the British Flora 1987-2004* (Braithwaite *et al*, 2006). In this nationwide report 635 sample tetrads across Britain were surveyed at two dates eighteen years apart and statistics on change were derived species by species. One statistic developed, 'Relative Change', gives an estimate of change for each species in percentage terms relative to an average for all well-recorded native species and these values for Britain as a whole are quoted in parentheses in the discussion below (it is necessary to understand that, in order to make the statistics for losses and gains comparable, a decline from 100 records to 50 is shown as -50% while an increase from 50 records to 100 is shown as +50%, not +100%, as the percentage for gains is related to the records in the second survey).

**Table 3** The habitats of plant species showing change at Haughton between 1970-75 and 2004

Habitat/casual	Total Change	Gains (+1)	Variable (0)	Losses (-1)	Net Gain
Aquatic	9	-	9	-	0
Arable	14	6	3	5	1
Casual	48	5	3	40	-35
Castle policies	18	11	-	7	4
Grassland (grazed)	7	1	-	6	-5
Riverside/woodland	42	19	3	20	-1
<b>Total</b>	<b>138</b>	<b>42</b>	<b>18</b>	<b>78</b>	<b>-36</b>

### **Aquatic plants**

There are two aquatic habitats at Haughton, a 3 km stretch of the river and a 100 m long pond at the Castle fed by an 800m underground culvert from the Humshaugh Burn. The aquatic flora of both habitats is sparse and has proved variable. The river is too fast-flowing and with too unstable a bottom to favour aquatics in the runs and is too deep in the pools. None of the vascular plant aquatic species occupy permanent localities, though two Watermilfoils, *Myriophyllum alternifolium* and *M. spicatum*, two Pondweeds, *Potamogeton crispus* and *P. natans*, and two Water-crowfoots, *Ranunculus aquatilis* and *R. pencillatus*, have been recorded. Canadian Waterweed *Elodea canadensis* (-31%) was quite frequent in 1970-75 and built up a sizable colony around the sand bank in the Mains Pool, but seemed to be absent from the whole of the river at Haughton in 2004. Part of the pond was cleaned with a dredge line in 1972 and this may have led to two surprising colonists: Horned Pondweed *Zannichellia palustris* (-9%) in 1975 and the stonewort *Chara aspera* in 1977. The *Chara aspera* is believed to have arisen from oospores unearthed from the silt and seeds of Horned Pondweed could have been set free in the same way, despite the apparent time delay for the species to build up to observable proportions. Neither species persisted for more than a few years. This variability in the aquatic flora provides a case study to support the amazing variability in such species reported by Braithwaite *et al* (2006). For example, Horned Pondweed was recorded sixteen times in each of two surveys in that study but only three records in the second survey were in tetrads where it had been recorded in the first survey.

### **Arable weeds**

Of the twenty-nine species that are exclusively arable, garden weeds or crops, fourteen species have shown gains or losses but with little net change. This is because a considerable number of these weeds have been so scarce at Haughton throughout the last thirty years that they have only been met with on one or two occasions in a largely random manner. This is probably testimony to a severe decline in the previous thirty years, 1940-69. In the arable fields these scarce species include Scarlet Pimpernel *Anagallis arvensis* (+8%), Wild Radish *Raphanus raphanistrum* (+7%), Charlock *Sinapis arvensis* (-2%), Corn Spurrey *Spergula arvensis* (-5%), Field Penny-cress *Thlaspi arvense* (-1%) and Green Field-speedwell *Veronica agrestis* (+11%), while the walled garden at the Castle adds Cut-leaved Dead-nettle *Lamium hybridum* (+25%), Yellow-juiced Poppy *Papaver dubium* ssp. *lecoqii* and Grey Field-speedwell *Veronica polita* (+14%), three species with a notably southern distribution.



If it is the scarcity rather than the recorded change that is meaningful for these species, other species do show a real increase. Common Poppy *Papaver rhoeas* (+6%), found in sufficient quantity to add colour to the barley in a few field corners, is probably a beneficiary of set-aside. Barren Brome *Anisantha sterilis* (+4%), not recorded in 1970-75, is now frequent: this is consistent with national surveys showing consolidation in the northern part of its range. It is one of several grass species that are proving difficult to control in cereal crops.

The weak evidence of change shown by the Relative Change percentages is consistent with the interpretation of little recent change at Haughton.

### Casual occurrences

Many plant species may occur as casuals, with only one or a few individuals present, usually in an open habitat such as bare soil, mud or shingle. While many species were recorded as casuals in 1970-75, very few casuals were found in 2004. There are several reasons for this and it is not possible to tease out their relative importance with much certainty. Clearly, one must expect more casuals to be recorded in a six-year period than in a single year, but this alone is not enough to explain the observations. A further factor particular to Haughton is the loss in open habitat through vegetation succession on both the Island and the sand bank in the Mains Pool, being the two localities recorded in the greatest detail. Other factors which follow the construction of the Kielder dam are higher summer water levels (explained below under riverside and woodland) reducing the availability of mud, sand and gravel at the water's edge for casuals and the reduced silt deposition after winter floods. Finally there is the recent colonisation of riverside silt beds by a monoculture of Indian Balsam.

Some casuals have nothing to do with the river at all: eleven of them are a miscellany of chance occurrences such as the introduction of Lesser Hawkbit *Leontodon saxatilis* (+2%) with lawn seed at the Castle, two *Cotoneaster* species self-seeding onto walls and the appearance of Goat's-beard *Tragopogon pratensis* (-4%) on a roadside.

Particularly striking among the casuals of the Island and Mains Pool sand bank are the following fifteen species that one might reasonably expect to have been carried from some distance upstream of Haughton in view of the habitats that they favour: Silver Hair-grass *Aira caryophyllea* (-12%), Wood Small-reed *Calamagrostis epizeuxis* (-8%), Heather *Calluna vulgaris* (-7%), Pale Sedge *Carex pallescens* (-8%), Long-stalked Yellow-sedge *Carex viridula* ssp. *brachyrrhyncha* (-21%), Common Yellow-sedge *Carex viridula* ssp. *oedocarpa* (-6%), Marsh Cudweed *Gnaphalium uliginosum* (+16%), Bulbous Rush *Juncus bulbosus* (-4%), Fairy Flax *Linum catharticum* (-7%), Heath Wood-rush *Luzula multiflora* (-3%), Purple Moor-grass *Molinia caerulea* (-2%), Eared Willow *Salix aurita* (-8%), Bog Stitchwort *Stellaria uliginosa* (-5%), Wild Thyme *Thymus polytrichus* (-7%) and Wild Pansy *Viola tricolor* (+10%). Of these only Heather was found in a new locality in 2004, strongly suggesting that the main source of colonisation had been cut off. Thus, if the survey had not been detailed enough to identify these occurrences as probable casuals, it would be easy to draw false conclusions from the fate of these species about a perceived large decline in species-rich habitats at Haughton, particularly as many of these species may have had a more permanent niche in Haughton's flora in the not-so-distant past.

The other riverside casuals at the Island are a very mixed group, from garden species like Garden Lobelia *Lobelia erinus* (+80%) to a bird-sown Wild Cherry *Prunus avium* (+28%). Good-King-Henry *Chenopodium bonus-henricus* (-30%) was an interesting occurrence of a

declining archaeophyte which sometimes forms riverside colonies where there is shingle (as by the Leader Water in Berwickshire), while Traveller's Joy *Clematis vitalba* (-1%) was a very unexpected arrival of a species that is not native in Northumberland. It survived from 1972 to 1979; with nothing much to climb up and despite being wholly cut down by floods each winter. A recent casual which might become established is Garden Lady's-mantle *Alchemilla mollis* (+83%).

While the classification of these changes as casual precludes direct comparison with the Relative Change percentages quoted, there is enough correlation here to spark the imagination as to possible implications for the flora on a wider scale than the Haughton estate.

### Castle policies

The changes within the castle policies have been more predictable. Some new specimen trees and shrubs have been planted and one tree species, False Acacia *Robinia pseudoacacia*, was lost when a specimen fell in a gale and minor works have disturbed a few naturalised species like Fairy Foxglove *Erinus alpinus*.

Greater Celandine (+13%) has long been naturalised around the Castle but it seems to have increased markedly in recent years: it is possible that climate change rather than more tolerant gardening is the cause. Species to have colonised naturally include American Willowherb *Epilobium ciliatum* (+17%) and Shaggy-soldier (+51%): these are both alien species expanding their range nationally, though the latter is still uncommon in the north.

### Grazed grassland

The old pasture at Haughton is not ancient species-rich grassland except for some tiny fragments so it is not surprising that there has been a gradual reduction of what remains with eutrophication rather than direct habitat destruction the likely cause. Three species of neutral to acid grassland that are now less frequent at Haughton are Harebell *Campanula rotundifolia* (-11%), Common Bird's-foot-trefoil *Lotus corniculatus* (+1%) and Tormential *Potentilla erecta* (-9%). There is a similar story for species of calcareous grassland where the species to have declined are Hoary Plantain *Plantago media* (-14%), Betony (-14%) and Salad Burnet *Sanguisorba minor* (-12%). The Hoary Plantain and Salad Burnet have been lost from a fragment where they were associated with the Lady's-mantle *Alchemilla micans* and that too had declined. This field was further disturbed in 2002 by the replacement of a water pipe and it was feared that the *Alchemilla* would finally disappear. Remarkably the reverse has happened: the *Alchemilla* has appeared plentifully along the line of the disturbance, apparently from buried seed germinating in much less eutrophic soil dug up from below.

The Haughton haughs have been in a Stewardship scheme since 1997 and small colonies of Betony and Cowslip have flowered better since then and could increase.

Overall, this case study of grazed grassland at Haughton closely mirrors the national trends reported in Braithwaite *et al* (2006) and serves to reinforce the belief expressed there that the national losses relate in large measure to the degradation of small habitat fragments left behind after much more extensive habitat change many years previously.

### Riverside and woodland

There have been significant changes in the rich riverside flora at Haughton. Especially interesting are apparent increases in Remote Sedge *Carex remota* (+15%), now widespread, and Globe-flower *Trollius europaeus* (-26%), now with twenty-five colonies, as it is felt that



these increases may reflect changes in the river flow following the construction of the Kielder dam. The dam enables the flow to be regulated so that there are frequent 'freshets' during the spring and summer partly released to a pattern that favours salmon fishing. The constant high water favours wetland species of the water's edge such as these two though another likely beneficiary, Marsh Ragwort *Senecio aquaticus* (-16%), known in 1970-75 has not been refound. These high-water conditions may have contributed to the apparent loss of New Zealand Willowherb *Epilobium brunnescens* (+33%), formerly on several rocky islets, and Hybrid Monkeyflower *Mimulus guttatus*  $\times$  *luteus* = *M. x robertsii* (though *M. guttatus* is still present).

Globe-flower could also have benefited by the river's edge being opened up in places from 1992 to improve access for fishermen.

Mossy Sandwort *Arenaria balearica*, a beautiful alien rock plant, was found in 1971 well established on some massive mossy boulders in a shaded place above the river, but has not been seen since 1978. It is not clear what became of it.

The catalogue of arrivals since 1970-75 comprises several alien species well known to be spreading: Few-flowered Garlic (+50%), Japanese Knotweed *Fallopia japonica* (+2%), Dame's Violet *Hesperis matronalis* (-7%), Fringe-cups *Tellima grandiflora* (+70%), Indian Balsam (+17%) and Slender Speedwell *Veronica filiformis* (+2%). The Garlic is a recent arrival to the Island that is expected to prove particularly invasive and the Balsam, first recorded as a single specimen in 1970, is now widespread and very locally abundant on alluvium. Less expected are the increases in Martagon Lily *Lilium martagon* and Crack Willow *Salix fragilis* (+5%), the latter brought down river as detached fragments that root easily.

Three clump-forming aliens of the riverside that one might expect to be permanent, once well-established, have fared quite poorly. Chinese Mugwort is a curiosity because it so late-flowering that it does not flower at Haughton. It has held its own at one station and colonised the sand bank in the Mains Pool but has disappeared at another site upstream of the other two where it had appeared to be firmly established in 1984. Michaelmas-daisies *Aster novi-belgii* agg. (-10%), represented by two unidentified taxa, and a Goldenrod, probably *Solidago gigantea* (+48%), have completely disappeared from the sites at which they were known in 1970-75. It is interesting that the same fate has befallen most Michaelmas-daisies by the river Tweed. These species do not die out in a garden: indeed they may be aggressive and that is partly why they are cast out, so their disappearance is something of a mystery.

Woodland species in decline include woodland-edge plants that have suffered where the canopy has closed over them in young plantations. These are Early-purple Orchid (-22%), Common Twayblade (-21%) and Cowslip (+6%). There may well have been other unidentified factors in the loss of the orchids. If plants can be shaded out, they may thrive again when shade is removed. After spruce had been felled in a wet wood at Coldwell there was much spread not only of Bramble *Rubus fruticosus* agg. (+2%) but also of Lesser Pond-sedge *Carex acutiformis* (-2%), Pendulous Sedge *Carex pendula* (+41%) and naturalised Welsh Poppy *Meconopsis cambrica* (+48%). Here too Hemp-agrimony *Eupatorium cannabinum* (-5%) appeared: presumably it had been present all along but suppressed so much that it was not observed before 2004.

The Island had a community of calcareous grassland plants that were more than mere casuals and some of these have been shaded out by encroaching scrub. Casualties are Common Restharrow *Ononis repens* (-8%), Wild Marjoram *Origanum vulgare* (-1%), Burnet-saxifrage *Pimpinella saxifraga* (-15%) and Rough Hawkbit *Leontodon hispidus* (-14%).

A somewhat similar suite of plants found elsewhere on the riverside have also suffered: Clustered Bellflower *Campanula glomerata* (-23%), Smooth Hawk's-beard *Crepis capillaris* (+2%), Eyebright *Euphrasia officinalis* agg. (-7%), Yellow-rattle *Rhinanthus minor* (-16%), Sheep's Sorrel *Rumex acetosella* (-15%) and Wood Sage *Teucrium scorodonia* (-6%). All of these have been lost from the estate except Yellow-rattle. While these include species of both acid and calcareous habitats they all favour nutrient-poor conditions and eutrophication is likely to have been one of the factors against them, and indeed eutrophication may have facilitated the appropriation of some of their habitats by Indian Balsam.

The riverside acts as a refuge for some wet grassland species whose main habitats have been lost to drainage both at Haughton and along much of the North Tyne valley. Those present at Haughton in 1970-75 happen to have survived well, with no change being observed in such species as Sneezewort *Achillea ptarmica* (-6%), Melancholy Thistle *Cirsium heterophyllum* (-6%) or Great Burnet *Sanguisorba officinalis* (-10%). Nevertheless their populations are small and vulnerable to minor disturbance and as such typify the considerable element of the flora subject to inevitable change in the future.

Throughout the varied habitats of riverside and woodland there is a strong correlation between the Haughton experience and the trends for Britain as a whole shown by the Relative Change percentages. One of the few exceptions is Globe-flower, for the reasons discussed, which are particular to the North Tyne.

#### DISCUSSION

The crude statistic that 27% of all species at Haughton have gained or lost localities in a thirty year period suggests dramatic change in the flora. Analysis shows that this is misleading. Very few of the native species present in any quantity have changed discernibly. Brambles alone of the dominant species are thought to have increased strongly as there is no evidence to support the feeling of a possible modest increase in Rosebay Willowherb *Chamerion angustifolium* or Reed Canary-grass *Phalaris arundinacea*. Neither is there discernible change for the great majority of species that are widespread but scarce at Haughton like, to name but a few, Moschatel *Adoxa moschatellina*, Giant Bellflower, Hedge Bedstraw *Galium mollugo*, Hairy St. John's-wort *Hypericum hirsutum*, Goldenrod *Solidago virgaurea* and Wood Speedwell *Veronica montana*. It is only the species present in small quantity, and there are many of these, that have shown significant observable change and it is demonstrated that much of their change relates to casual occurrences at the riverside.

Similarly it is at first alarming to note that only 61% of the species present are native. However the aliens include planted species, 10%, and archaeophyte arable weeds and crops, 6%, so the established or naturalised aliens are just 23% of the flora. Again the vast majority of these are scarce and many have put in only a transitory appearance at Haughton.

Nevertheless there have been important changes at Haughton and it is believed that these serve as a useful case study of the processes at work on the flora throughout lowland rural Northumberland and indeed much of Britain. A striking correlation is demonstrated between change at Haughton and that for Britain as a whole shown in the recent BSBI report referred to (Braithwaite *et al*, 2006), once the separate elements in the flora have been appropriately defined.



## CONCLUSIONS

The detailed conclusions are summarised at the foot of the main analysis sections above, but a *précis* follows:

The aquatic flora of the North Tyne and of a pond at Haughton is not at all constant from year to year.

A group of arable weeds became so scarce between 1940 and 1969 that they were only met with on a few occasions in the period 1970-2004.

Casuals are now much less frequent than formerly at the riverside, partly in response to changes in the river flow following the construction of the Kielder dam.

The Castle's walled vegetable garden harbours a small group of weeds with southern distributions not found elsewhere at Haughton and the Castle's policies are home to fine specimen trees whose variety has been maintained.

Despite the survival of an unusually large area of old pasture, species-rich grazed grassland is very scarce and what remains has suffered significantly in the last thirty years, mainly through eutrophication.

While the fields at Haughton were drained long before the present study, the riverside provides a refuge for a variety of wet grassland plants.

While the Kielder dam has altered the river flow at Haughton, possibly favouring Globe-flower, the main changes at the riverside have been the ebb and flow of alien species. Particularly significant arrivals have been Few-flowered Garlic and Indian Balsam. However a group of native plants favouring nutrient-poor conditions have suffered, possibly from eutrophication.

Forestry work has led to further change: some species being shaded out as young trees have developed while others have enjoyed a resurgence after felling.

The overall picture is very much an encouraging one. A rich flora still exists at Haughton, mainly at the riverside and in the woodlands of the river corridor though augmented by both native and introduced species in the Castle policies. Nevertheless change continues, as it has for many centuries, and a significant number of the species now present are alien to Northumberland. The incomers seem well adapted to the changes in the environment brought about by eutrophication and climate change and their presence may contribute to the survival of a diverse flora.

## ACKNOWLEDGEMENTS

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## **SOME OBSERVATIONS ON AN OTTER *LUTRA LUTRA* BREEDING SITE ON THE RIVER BROWNEY IN COUNTY DURHAM**

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### **SUMMARY**

There is a paucity of information on the characteristics of breeding sites and natal holts used by river otters *Lutra lutra*, particularly in the north-east of England. Observations over eleven and a half weeks made in early 2008 at a breeding site on the river Browney in County Durham, where a single bitch otter used three holts to raise two cubs, are reported here to record site and holt characteristics including the bedding used, times of emergence, susceptibility to flooding, presence or absence of field signs and accessibility of the holts. These observations are compared to generally-accepted otter holt characteristics described in literature, and conclusions are drawn about the suitability of the river Browney breeding site and its similarity to the "classic" breeding site described in the literature.

### **INTRODUCTION**

Due to the difficulty in finding them, there is a paucity of information on the nature and location of the breeding sites and natal holts (dens) of river-dwelling otters, and the types of riparian habitat in which they occur, particularly so in the North East of England. Breeding sites may have more than one holt including a natal holt. Natal holts are often described as being away from main rivers, in flood-free locations such as woodlands, and/or on tributary streams. Good breeding sites may be used over several years.

Whilst most observers agree on a common suite of characteristics for breeding sites, there is debate over the exact nature and location of successful breeding sites and natal holts and some of those characteristics, particularly:

- whether they are susceptible to flooding; this is given high priority by most authors,
- their proximity to main rivers,
- whether they are free from the risk of predation, including infanticide by dog otters,
- how bedding is used,
- whether there is reduced or increased sprainting at natal and cubbing holts,
- whether pathways or cub play areas are an external feature indicating the presence of cubs,
- whether holt entrances are ever below water.

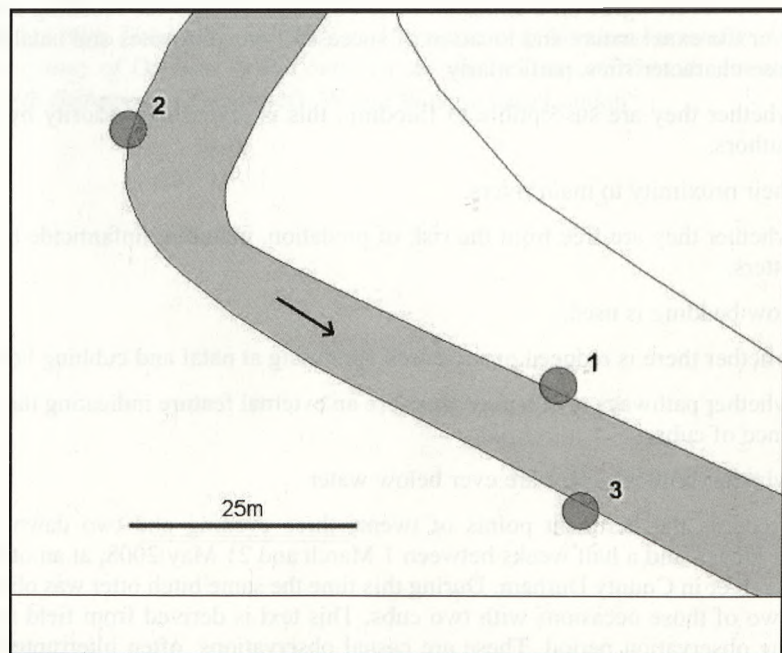
This note records the pertinent points of twenty-three evening and two dawn watches, spread over eleven and a half weeks between 1 March and 21 May 2008, at an otter breeding site on a river in County Durham. During this time the same bitch otter was observed 12 times, on two of those occasions with two cubs. This text is derived from field notebooks covering the observation period. These are casual observations, often interrupted by high water and the lack of time to visit the river; this must be born in mind when considering any interpretation of the observations and in drawing conclusions. Nevertheless, it is believed that the basic sequence of events is accurate and some conclusions and comparisons can safely be drawn. Reference to field notes from previous years is also made.

It is believed that the observations made since 2005 are of the same bitch otter; however this is a subjective opinion based on nothing more than her small size and some aspects of her behaviour. All observations in 2008 were of the same otter.

#### LOCATION

The riparian habitat at the breeding site on the central reaches of the River Browney, County Durham, is deciduous woodland with a well-used public footpath within 20 m of the river. Immediate disturbance to the holts is uncommon but the occasional walker and dog does stray down to the riverbank and walk above the holts. Water depth varies between approximately 1m in the deepest pool, to riffles and rapids over gravel and cobbles; the river width varies around 10m.

Observations were made at three holts in 2008, which are numbered 1 to 3 in the order in which they were first seen to be used by the family of otters. The approximate distance between Holts 2 and 3 was sixty-two metres. The site has been sporadically watched since 2005, with many records of otter signs on this section of the river. Sightings occurred on the 7 March 2005 when a bitch otter and two cubs were seen to emerge from Holt 3 and on the 18 February 2007 when a small otter, presumed to be the same bitch, emerged from Holt 1 at 5.30pm. In 2009 flooding washed away Holt 1 and caused Holt 2 to collapse forwards into the river; whether it remains viable as a holt is unknown. Only Holt 3 appeared to have been unaffected by the floods.



**Fig. 1** Relative position of otter holts



### Holt 1

A natural holt under the root plate of a fallen sycamore (Fig. 2). The water depth in normal flow is about 30 cm immediately adjacent to the holt entrance, rapidly increasing to one metre; the river is slow flowing. Otter access to this holt is under water, the bitch otter approaching the holt from down stream and diving under the root plate, in the angle between the trunk and the plate.



Fig. 2 Holt 1.

### Holt 2

A natural holt created where fast-flowing deep water has eroded a cavity under tree roots on a bend in the river (Fig. 3). This holt is at the foot of a rapid and normal flow is fast with a water depth reaching approximately 750 cm.



Fig. 3 Holt 2



This holt was very difficult to reach but it appeared that there was an extensive cavity behind the tree roots.

### Holt 3

This is an artificial holt with two entrances, diagonally opposite Holt 1 and constructed in 2004 (Fig. 4). It has been used by otters in previous years: a bitch otter and two half-grown cubs were seen to emerge from it in March 2005 and in April 2005 bedding was found in the holt entrances (bitten off shoots of Bluebell *Endymion non-scriptus* and Himalayan Balsam *Impatiens glandulifera*).

Normal water depth here is shallow, about 30 cm, and the flow is slow. It was easy to see that this was an otter holt, vegetation around the entrances was beaten down and there was a visible path between the two entrances. The most obvious feature was the large pile of spraint (Fig. 5) between the two entrances, reminiscent of the pile of scats seen outside Pine Marten cubbing dens.



**Fig. 4** Holt 3, showing both entrance holes; it is possible to discern the worn path, which runs between the two, crossing above the exposed roots to the right of the centre of the picture.

### OBSERVATIONS

Observations are described in chronological order as the bitch otter and cubs moved between the three holts. The sequence of occupancy was Holt 1, 2 and then 3 before the otter moved back to Holt 1. During the period of observation the river completely flooded the holts four times.

### Holt 1

On the evening of the 1 March, at 6.05 pm a bitch otter was observed collecting bedding from the woodland floor, adjacent to the holt, by using her fore-leg claws to rake vegetation





Fig. 5 Spraint pile, Holt 3.

backwards into a ball under her chin, hitching backwards as a badger does. She then picked up the ball of bedding in her mouth, carried it to the river, and swam to the holt holding the bedding above the water in her mouth. She entered the holt by diving, which must have wet the bedding. Vegetation on the woodland floor at this point was mostly the grass Cocksfoot *Dactylis glomerata* with scattered herbs such as Bluebell, Wood Avens *Geum urbanum*, Red Campion *Silene dioica*, Hedge Bedstraw *Gallium mollugo* and Lesser Celandine *Ranunculus ficaria*. A natal holt was suspected.

Between 1 March and 16 March, the bitch was seen to enter this holt three times, by diving, and to exit eight times. It was not possible for an otter to access this holt above water. During the period of occupancy the only external field sign to indicate that an otter was using the river at this point, was one spraint deposited on top of the fallen sycamore and a faintly visible pathway, where the otter scrambled up the bank to collect bedding. It was not possible to recognise the fallen sycamore as a holt from any field sign. No cubs were seen at this holt but were suspected.

On 28 March, the bitch otter entered the pool upstream of Holt 1, swam past it and continued downstream. This prompted the search for a new holt location, Holt 2.

## Holt 2

On 31 March at 8 pm, with water levels receding after a spate on 30 March, the bitch otter was observed hunting in the rapids above this holt. She left the holt and hunted up the rapids for a distance of approximately 20 m, disturbing the gravels and cobbles of the riverbed with her head and fore-feet. On all occasions when she was seen to be hunting she worked by disturbing the gravels with head and feet, apparently trying to displace prey by the process. After each hunt she allowed the flow to carry her back down stream and under the riverbank into the holt. She was seen to do this a few times before the light failed and observation ceased. Visibility was never good enough to see what, if anything, had been caught.

At 8 pm on 3 April, two otter cubs, each approximately 30 cm in length, were seen on the trapped floating log shown in the centre of the photograph of Holt 2 (Fig. 3). Both moved with the unsure gait of very young animals; one entered the water very briefly and with no confidence and the cubs were visible for only a few minutes. At 8.30 pm the bitch otter came up stream and entered the holt. Through binoculars, no spraints were visible on the logs, stumps or riverbank at Holt 2. Again there was no external sign that this was an otter holt.

### Holt 3

Otters could not be found between 3 April and 22 April. During this time the river was in spate twice and both Holts 1 and 2 were flooded. On 13 April a large pile of spraint was found at Holt 3.

On 22 April at 8.50 pm the bitch emerged from the lower entrance closely followed by the two cubs, now half her length. She moved up the path to the exposed roots between the two holes and sprainted on to an existing large pile of spraint indicating long term use of the holt.

All three then moved behind the sycamore on the right of the picture in Fig. 4 and into the river for a short distance emerging on a sand bar about six metres from the holt. Here the bitch raised her tail to the vertical and scent marked one of the cubs. All three then swam up river, one behind the other, and disappeared towards Holt 2, the cubs swimming confidently.

### Return to Holt 1

On 15 May at 9.05 pm the bitch otter emerged from Holt 1 alone; there was no sign of the cubs. On 16 May, a separate observer watched the bitch otter carry a stick into Holt 1. On 17 May at 8.55 pm she left Holt 1 and made four short downstream trips from the holt, collecting bedding as she swam and taking it back into Holt 1, in this case biting off the young stems of Cow Parsley *Anthriscus sylvestris*, which overhung the river at this point. At 9.05 pm she left the holt and headed upstream. On 21 May she left holt one at 8.58 pm this being the last watch at the holts and the last sighting of her. Between 15 May and 21 May no cubs were seen. Whether the cubs remained in the holt or were lost is unknown.

### Emergence times

Date in 2008	Emergence time	Dusk	Time relative to dusk (min)
2 March	17.45	17.44	1
3 March	18.15	17.46	29
7 March	18.08	17.55	13
9 March	18.11	17.59	12
28 March	19.00	18.36	24
22 April	20.50	20.26	24
15 May	21.05	21.10	-5
17 May	20.55	21.14	-19
21 May	20.58	21.21	-23

**Table 1** Emergence times in relation to dusk (official sunset)



Emergence time was not recorded on every watch when the bitch otter was seen, but Table 1 shows those occasions when the emergence time was recorded and the time of emergence in relation to dusk. Between 2 March and 22 April, emergence was always later than dusk, up to a maximum of 29 minutes after dusk. Between 15 May and 21 May, emergence was before dusk, by up to 24 minutes, and this may have been a consequence of shortening nights.

### Bedding

Combining the observations of 2005 and 2008, some information on bedding and how it is collected can be gained. Plant species seen being gathered in 2008 were Cocksfoot and Cow Parsley; bitten-off green shoots of Bluebell and Himalayan Balsam were found in the entrance to Holt 3 in 2005 and were believed to be gathered bedding. Gathering techniques for bedding included scratching and scraping vegetation into a ball on the river bank and then carrying it with the mouth, and biting off stems of cow parsley while swimming below them and then carrying them in the mouth while swimming back to the holt. On all occasions, shoots were green and bedding must have arrived in the holt wet.

### DISCUSSION

The key characteristics of otter breeding sites are still debated. However, the site described here, located on a main river, had many of the characteristics of known otter breeding sites. It is likely that this location is a good breeding site as cubs have been recorded there in 2005 and 2008, and the bitch otter was seen there in 2007. The only major deviation from received wisdom on what makes a good otter breeding site was the high risk of flooding for all three holts. All three holts had some protection against predators. Holt 1, assumed to be the natal holt on the basis of observations of bedding being taken into the holt, could be accessed only from under water, presumably providing security from terrestrial predators but perhaps not from dog otters. Holt 2 would also have been very difficult for terrestrial predators other than dog otters to access.

Obvious signs that otters were using the holts did not occur until the cubs were in Holt 3 some six weeks after the first sighting. During the period of occupation, only one spraint was found at Holt 1 and none was visible on Holt 2; indeed neither of these holts, used when the cubs were very young, showed any external sign that they were being repeatedly used by otters. Obvious visible signs of the presence of otters did not occur until the family of well-grown cubs was in Holt 3, six weeks after the first sighting of the bitch otter at Holt 1, when a pathway between the holt entrances could be seen along with a spraint pile.





**THE RELATIONSHIP BETWEEN SUMMER DRY-PHASE AND LOCAL CLIMATE VARIATIONS FOR TEMPORARY PONDS AT HAUXLEY NATURE RESERVE, DRURIDGE BAY, NORTHUMBERLAND.**

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**SUMMARY**

Ponds are an important habitat throughout the UK, supporting a rich fauna and flora. Northumberland has excellent examples of lowland ponds, including the subsidence ponds of the south-east of the county and coastal dune wetlands. Many of these ponds are temporary, drying out most summers and show marked annual variations in response to local weather. The hydrology of thirty small, temporary ponds dug at Hauxley nature reserve, Druridge Bay, has been monitored since January 1995. The relationship between the length of time the Hauxley ponds dried out each month and the local weather, characterised by data from nearby Boulmer weather station, was examined by building a regression model predicting the length of dry phase using weather data. Variations in rainfall were particularly important for determining the onset and length of dry phase, although the model did not effectively capture the fine detail of variations month to month. Weather records, in particular rainfall, from Boulmer were also compared to variations in the North Atlantic Oscillation (NAO), a major hemispheric influence on the UK's climate. Unexpectedly, it was found during this work that the winter rainfall pattern in the North-East of England does not correlate with the NAO indices in the same way as the rest of England. The rainfall at Boulmer was lower when the NAO winter index was high. Projected climate change scenarios for Northumberland suggest that overall there will be less rainfall but it will be more seasonal and the localised extremes more variable, which would increase the hydrological variation of temporary ponds. We cannot defend ponds against such changes but need to sustain the number and variety of ponds in the landscape so that pond wildlife can move back and forth between ponds as sites vary from year to year.

**INTRODUCTION**

Northumberland is not noted for its ponds, perhaps because they are eclipsed by other international and nationally important habitats and wildlife but perhaps also suffering from a historic tendency to see ponds as trivial ('The study of ponds ... a field particularly suited to the activities of the amateur, whose humble pond-hunting, if carried out systematically and carefully, may well result in valuable contributions to science', Clegg, 1952.) However research over the last twenty years, led in the UK by Pond Conservation (originally Pond Action), has revealed the importance of ponds for freshwater biodiversity. Ponds are important habitats throughout Europe leading to the formation of the European Pond Conservation Network in 2004. Ponds support a disproportionately rich wildlife for their small size, and many rare species. Ponds were added to the UK Habitat Action Plan list in 2007 (Biodiversity Reporting and Information Group, 2007) and were included in Northumberland's original BAP (Beige, 2000). Subsidence ponds are characteristic of the south-east corner of the county on the coastal plain south from Druridge Bay into the outskirts of Newcastle upon Tyne. Northumberland also has many fine ponds along the coast (e.g. Holy Island), river valleys (e.g. Wansbeck west of Morpeth) and extensive bog pool complexes in the uplands.

Many of the eastern coastal plain ponds are temporary ponds, drying out in the summer for several weeks, perhaps months, in most years. This only magnifies the tendency to ignore

them (or perhaps, and just as bad, make them permanent usually by excavation) but temporary ponds are valuable in their own right (Nicolet, 2001). Passengers flying into Newcastle airport will see a number of ponds evident in some months as inundation refills subsidence ponds and flashes (Lunn, 2004). The coastal dune ponds also include many prone to drying. Even ponds that are usually wet and probably of very long standing dry out occasionally. For example between 1990 and 2001 the pond immediately adjacent to the north face of Holy Island Castle heugh retained water throughout eleven of the twelve years but dried out in 1995. In 1998 the pond flooded over, covering the meadow between the castle and the slope up to the Gertrude Jekyll garden (Fig. 1). This occurred after exceptional rainfall over Northumberland during June 1997 (perhaps a 1 in 1,250 year event, Wheeler, 1999) which kept ponds topped up all summer and which was then followed by normal precipitation during the winter of 1997/1998 resulting in the inundation.

The result of such annual variation is that ponds come and go in the landscape from year to year. Rather than represent ponds as static features we would do better to imagine them in a sequence of aerial images over the years, like a flicker book or individual frames in an animation, the ponds' water levels topping up or drying away across the years. Pond wildlife is well adapted to this natural regime of change, many species having strong powers of dispersal or the ability to survive through droughts via aestivation or highly resistant eggs. The threat to Northumberland's temporary pond wildlife is not that ponds dry out but instead arises if natural regimes are changed by human interventions such as drainage or excavation, or larger scale processes such as climate change.

This paper presents data on the inundation and drying out of thirty small temporary ponds at Hauxley Nature Reserve (Druridge Bay) recorded from January 1994 to October 2007. The data are used to describe the ponds' hydrological variation over these years and explore the relationship between this variation and the local climate, based on nearby weather data recorded at Boulmer.

## METHOD

### The Hauxley ponds

In late autumn 1994 thirty small ponds were dug out in a seasonally-flooded field which is part of the Northumberland Wildlife Trust's Hauxley Nature Reserve. The field is on the left of the approach road to the reserve immediately before the left hand turning to the adjacent caravan site. The field was back filled as part of site restoration following the end of coal extraction. The soil is largely clay but with frequent large stones and was found to overlay a plastic sheet at about 40cm depth apparently put in to try and retain some water on site but whose existence was not known about in reserve records. The ponds were one metre square, between 30-40cm deep, their morphology designed to allow comparison with ponds created by removal of anti-tank blocks used in previous studies by the author, (Jeffries, 1994). The primary purpose of the ponds was to study the development of invertebrate and plant communities (*e.g.* Jeffries, 2002).

The array of ponds fanned out from the lowest point in the centre of the field across the shallow inundation gradient. All ponds flooded within twenty-four hours of being dug. The hydrology of each pond was recorded from January 1995 onwards as being in one of three conditions: dry (no standing water), wet (some standing water over substrate) or flooded together (water level higher than pond resulting in links to at least some other ponds). Ponds



Fig. 1 Holy Island Castle pond hydrological fluctuations. The four views were all taken in the first week of June in the four years (a) 1991, (b) 1995, the pond is completely dry, (c) 1998, the pond has flooded over much of the adjacent meadow and (d) 2001.



have been visited regularly, particularly during times when they usually dry down in late spring or refill in autumn. The state of each pond was recorded usually to an accuracy of within three days. The ponds rely on precipitation for water supply. Heavy rain can refill dry ponds in a day. During hot spells ponds can dry from almost full to dry within a week.

The hydrology data were summarised as the mean number of days per month that the thirty ponds were dry (hereafter called the monthly dry phase), or flooded over. For example if all thirty ponds were dry for all thirty-one days of a particular August then the mean dry days for the month equal thirty-one; if ten ponds were dry for thirty-one days, ten for fifteen days and ten for five days then the mean dry days for the month equal seventeen. Because the set of ponds extends across the inundation gradient within the field the length of time individual ponds dried out or flooded together varied with their precise position; some ponds flooded together most years, others were rarely linked by flooding but usually dried out sooner and for longer. Results using the mean monthly data for all thirty ponds were compared to outcomes for individual ponds to test if the averaged data set was an appropriate generalisation for the site. Results for individual ponds selected from across the array gave the same general outcomes as the results using the mean data for all ponds so the subsequent analyses use the overall data for all thirty ponds.

### Weather data

Local weather data were supplied by the Meteorological Office for the three weather stations nearest to Hauxley; Boulmer (Ordnance survey NU 253 142, 11.9 km distant from the Hauxley ponds), Albermarle (NZ 077 695, 38.6 km from the ponds) and Newcastle Weather Centre (NZ 258 648, 37.8 km distant from Hauxley). Only data from Boulmer covered the full study period January 1994 to October 2007. Data were monthly records comprising mean, maximum and minimum temperatures ( $^{\circ}\text{C}$ ), mean wind speed (knots) and sunshine (total hours). Data from all three stations were highly correlated suggesting that they were representative of regional climate. Therefore all further analyses used only the nearest and complete data set from Boulmer.

In addition some comparisons were made to national and hemispheric climate, in particular the North Atlantic Oscillation (NAO). Precipitation in the UK is strongly influenced by the NAO, especially in the winter season defined as December to March inclusive. The NAO is essentially the shifting atmospheric mass between the Arctic and subtropical Atlantic, conventionally measured as differences in atmospheric pressure between weather stations at these opposite ends of the oscillation. The NAO has been described as the most important source of variability for climate in the North Atlantic, driving processes in Europe, eastern North America and across to Asia (Greatbatch, 2000). Temperature, precipitation and wind are all affected and the NAO has been characterised as an effective proxy for many specific climate phenomena which are individually difficult to separate (Ottersen *et al.*, 2001). The winter NAO index is a very important influence on climate throughout Europe, with impacts on processes in many freshwater habitats (George *et al.*, 2000; Straile and Adrian, 2000; George *et al.*, 2004; Svensson and Prudhomme, 2005). The NAO data used in this paper were indices based on the normalised pressure differences between Gibraltar and south-west Iceland taken from [www.cru.uea.ac.uk/~timo/projpages/nao\\_update.htm](http://www.cru.uea.ac.uk/~timo/projpages/nao_update.htm). These indices have been widely used in studies of regional variations of precipitation and river flows in England (*e.g.* Wedgbrow *et al.*, 2002; Svensson and Prudhomme, 2005). Mean monthly rainfall data for England and Wales were taken from the Met Office data sets ([www.metoffice.gov.uk/climate/uk/seriesstatistics](http://www.metoffice.gov.uk/climate/uk/seriesstatistics)).

### Analysing the relationship between local weather and pond hydrology

The relationship between the mean monthly number of days that ponds were dry and monthly weather data from Boulmer was explored for the period January 1995 to October 2007 inclusive.

Preliminary analyses showed that the six weather variables from Boulmer were significantly correlated with at least one of the other five variables. Maximum, minimum and mean monthly temperature were, unsurprisingly, highly correlated (Pearson correlations all  $> 0.975$ ) so only mean temperature was used in subsequent tests. The remaining variables (mean temperature, rainfall, wind speed and sunshine) were subjected to further data reduction using Principal Component Analysis (PCA). Given that the ponds show both rapid responses to the immediate weather, *e.g.* heavy rain, but also annual patterns suggesting some cumulative, seasonal effects (*e.g.* drying out in late spring) PCA was carried out not only for the monthly data but also using two, three, six and twelve month rolling averages of the four Boulmer weather variables.

The relationship between the mean monthly dry phase and the Boulmer weather data was then modelled using regression. The PCA axes 1 and 2 were used as predictor variables. To



identify which time lag (*i.e.* monthly or two, three, six or twelve month rolling average data) were likely to be the most effective predictors, the monthly dry phase was correlated against the PCA axes 1 and 2 created using each of these time lags. The strongest correlations between monthly dry phase and the PCA axes 1 and 2 produced using different time lags were used to select which PCA axes to include as predictors in the final regression model

RESULTS

Condensing the Boulmer weather data

PCA outcomes for the monthly, two, three and six month rolling average data produced generally similar outcomes with a primary axis (PCA axis 1) strongly correlated to warm, sunny versus windy weather and a secondary axis (PCA axis 2) correlated to rainfall. The first two axes capture over 80% of the information content in the data for the monthly or two, three six and twelve month rolling average time lags (Table 1).

**Table 1** Results for the principal components analysis (PCA) data reduction of the weather data from Boulmer. PCA was run for the raw monthly data and also for data compiled as 2, 3, 6 or 12 month rolling averages. The % of variation captured by axis 1 and 2 is shown, along with the cumulative total for these two axes and the nature of the relationship to the original variables; +ve = positive correlation between axis and variable, -ve = negative correlation.

	Climate data time period, monthly or rolling average				
	Monthly	2	3	6	12
PCA axis 1 (%)	57.5	61.3	62.7	62.6	45.8
PCA axis 2 (%)	25.9	26.6	27.0	27.2	25.7
Axis 1 + 2 (%)	83.4	87.9	89.7	89.8	71.5
Correlation of axes with original variables					
Axis 1					
mean temperature	+ve	+ve	+ve	+ve	-ve
sunshine	+ve	+ve	+ve	+ve	+ve
increased windspeed	-ve	-ve	-ve	-ve	
Axis 2 <sup>†</sup>					
rainfall	+ve	+ve	+ve	+ve	+ve

<sup>†</sup> Mean temperature and sunshine showed a negative correlation for the 12 month rolling average.

The correlations between the monthly dry phase and PCA axes 1 and axes 2 scores produced for each of the time lags (except the less effective 12 month lag) are given in Table 2. The length of dry phase was positively correlated with higher PCA axis 1 scores, which were themselves associated with higher temperatures and longer hours of sunshine. The length of dry phase was negatively correlated to PCA axes 2 scores which is sensible given that higher scores on PCA axis 2 were associated with higher rainfall. So the general result for all four pairs of PCA axes was that the length of the monthly dry phase increased with increasing temperature and sunshine (axes 1) but decreased with increasing rainfall (axes 2).

The strongest correlation for dry phase was with PCA axis 1 based on two month rolling average (Pearson correlation 0.536, table 2) and with PCA axis 2 based on six month rolling average (Pearson correlation -0.415, Table 2).

**Table 2** The correlation (Pearson coefficient) of mean monthly length of dry phase with PCA axes 1 and 2 for four different data time lags; the original monthly data and 2, 3 or 6 month rolling averages.

	Time period: monthly or 2, 3 or 6 month rolling average			
	Monthly	2	3	6
PCA axis 1	0.508	0.536	0.512	0.343
PCA axis 2	-0.107	-0.309	-0.349	-0.415

### The relationship between pond dry phase and the Boulmer weather data

The mean monthly dry phase is plotted against the PCA axis 1 for the two month rolling average data (hereafter referred to as PCA1\_2month) in Fig. 2, and against the PCA axis 2 for the six month rolling average data (hereafter PCA2\_6month) in Fig. 3.

The longitudinal pattern of monthly dry phase and PCA1\_2month throughout the ten years of the study are plotted in Fig. 4 and the pattern for the axis shows a general seasonal rhythm, the low scores being colder winter months, the high scores the warm summers. The longitudinal pattern for PCA2\_6month is shown in Fig. 5. The pattern is more varied than that for PCA1\_2month. The highest monthly dry phases tend to occur immediately after the lowest troughs in the PCA axis (e.g. mid 1995, 1996, 2006 and 2007). The period prior to mid 1997 also appears to lack the high peaks in the axis score which are associated with periods when all ponds are wet. These results suggest that variations in rainfall, which are correlated with the PCA2\_6month, drive the annual variations in the dry phase, whilst temperature creates a more consistent seasonal rhythm reflected in the PCA1\_2month on which the detail of rainfall is superimposed.

Figs. 2 and 3 show that the mean monthly dry phase has a curvilinear relationship with both PCA axes, so that the regression model regressed the  $\text{Log}_{10}(\text{mean monthly dry phase})$  against PCA1\_2month and PCA2\_6month, along with their squares. The resulting regression model was  $\text{Log}_{10}(\text{mean monthly dry phase}) = 0.159 + 0.164 (\text{PCA1-2month}) - 0.124 (\text{PCA2-6month}) + 0.0456 (\text{PCA1-2month})^2 + 0.0337 (\text{PCA2-6month})^2$ , with an  $r^2$  value of 0.47, i.e. the predictor variables produce a model which explains 47% of variation in  $\text{Log}_{10}(\text{mean monthly dry-phase})$ .

The predicted monthly dry phases from the regression model are shown alongside the actual dry phases in Fig. 6. The model captured the general annual rhythm of dry phase and re-flooding but is poor at describing the more extreme results, such as the prolonged absence of a dry phase throughout 1997 through to the summer of 1999, or the occasional particularly dry months in subsequent summers.

The overall length of summer dry phases, measured as the sum total of dry days from May to October inclusive, was strongly negatively correlated with the PCA2\_6month rolling average to October of each year (Pearson correlation = -0.685,  $P=0.01$ ,  $N=13$ ). This is as expected since high scores on PCA 2 are associated with wetter weather.



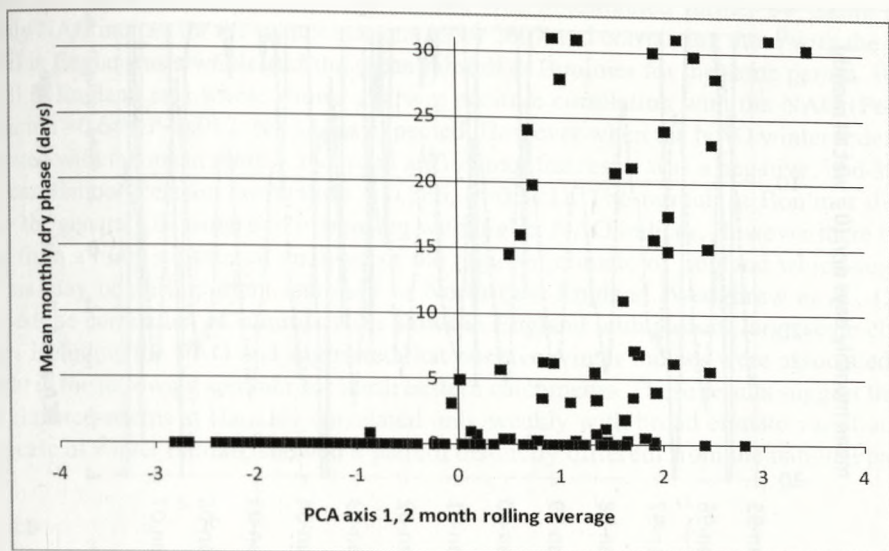


Fig. 2 Mean monthly length of dry phase plotted against PCA axis1 2-month rolling average.

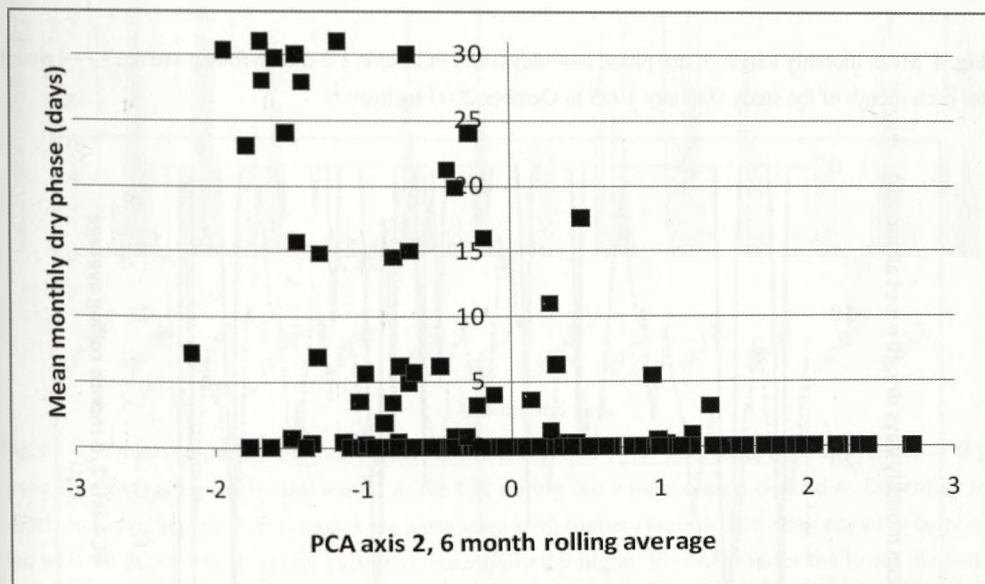
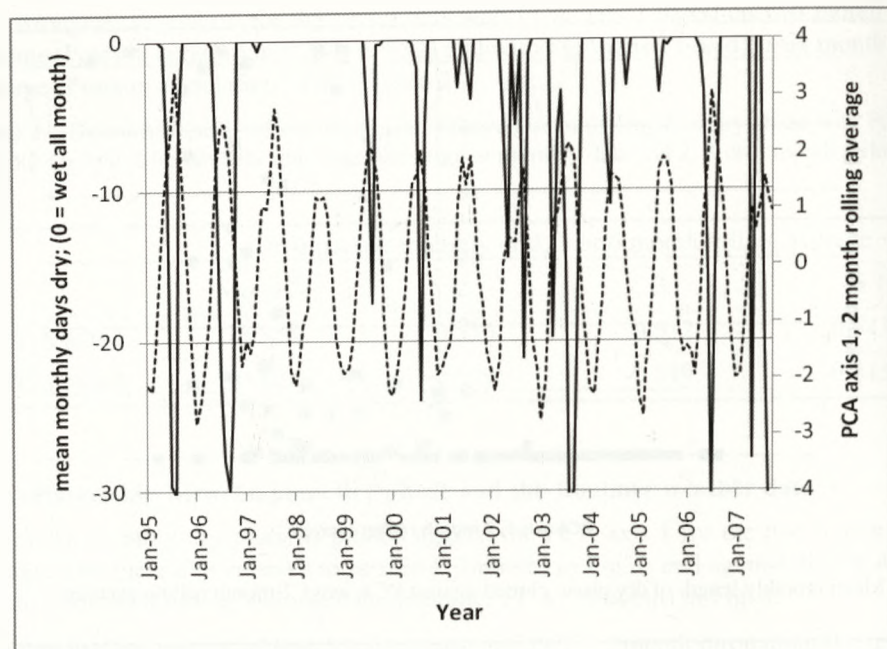


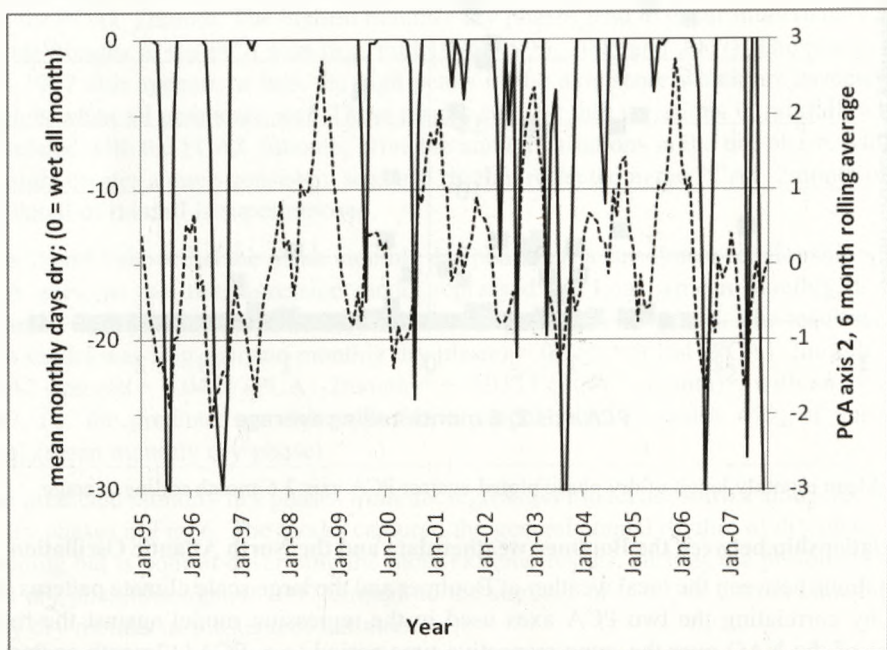
Fig. 3 Mean monthly length of dry phase plotted against PCA axis 2 6-month rolling average

#### The relationship between the Boulmer weather data and the North Atlantic Oscillation

Associations between the local weather at Boulmer and the large scale climate patterns were tested by correlating the two PCA axes used in the regression model against the rolling average of the NAO over the same respective time period (e.g. PCA1\_2month against the two month rolling average of the NAO). For both axes the correlations to the NAO were low, although significant (PCA1\_2month vs NAO 2-month rolling average, Pearson correlation = -0.249,  $P < 0.002$ . PCA2\_6month vs NAO 6-month rolling average, Pearson correlation = -0.219,  $P < 0.001$ ,  $N=152$ ).



**Fig. 4** Mean monthly length of dry phase (— days) and PCA axis 1 2-month rolling average (---) plotted for each month of the study (January 1995 to October 2007 inclusive).



**Fig. 5** Mean monthly length of dry phase (— days) and PCA axis 2 6-month rolling average (----) plotted for each month of the study (January 1995 to October 2007 inclusive).



The relationship between the NAO and rainfall was investigated further by taking mean monthly NAO indices for the winter seasons 1994-2007 and correlating these with the mean rainfall in England as a whole and the mean rainfall at Boulmer for the same period. Winter rainfall in England as a whole shows a strong positive correlation with the NAO (Pearson correlation = 0.649,  $P < 0.012$ ,  $N = 14$ ) as expected. However when the NAO winter index was correlated with the mean rainfall recorded at Boulmer the result was a negative, non-significant correlation (Pearson correlation = -0.286,  $P = 0.321$ ). The rainfall at Boulmer did not follow the general UK pattern of increasing with higher NAO indices. However there is evidence from a more substantial analysis of the regional climate of England which suggests that this may be an important anomaly in North-East England. Wedgbrow *et al.*, (2002) analysed the correlation of summer river flows in England with various large scale climate indices including the NAO and suggested that positive winter indices were associated with drought in the following summer for north eastern catchments. These results suggest that the local climate patterns at Hauxley correlated only weakly with broad climate variation and, in the case of winter rainfall, showed a pattern distinctly different from the national pattern.

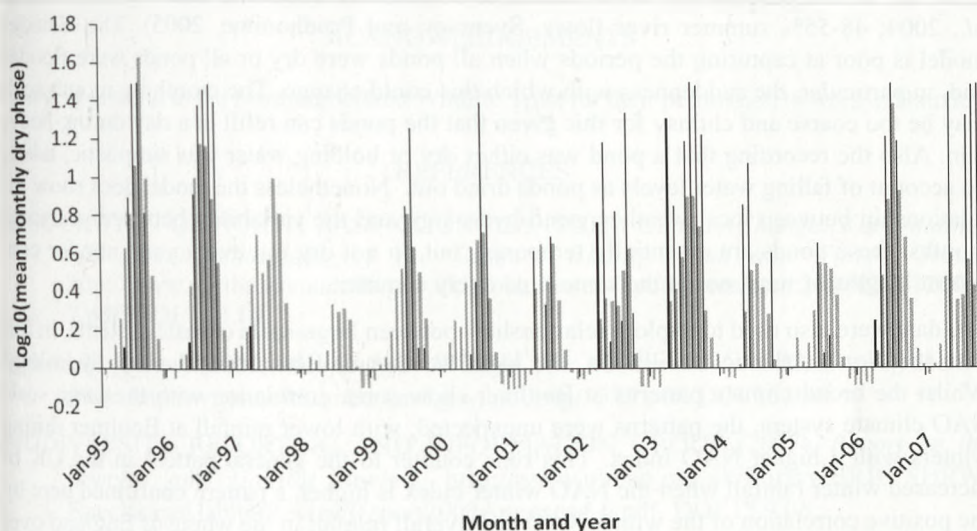


Fig. 6 Observed (—) and regression model prediction (—) of mean monthly length of dry phase. The NAO is especially influential in the UK during the winter season defined as December to March inclusive. Higher NAO indices are associated with higher rainfall. The weak negative correlation with the PCA1 was therefore expected, essentially the higher the NAO index the lower the temperature and sunshine. However the negative correlation with PCA axis 2 was not expected (*i.e.* the higher NAO indices were correlated with lower rainfall at Boulmer).

## DISCUSSION

The temporary ponds at Hauxley have shown considerable hydrological variation over the years 1995-2007. Most years they have dried out in the summer, although the precise length of time they remain dry can vary from days to weeks and the date when they first dry out can vary from late April to August. Sometimes they have not dried out at all (1997 and 1998). Whilst the ponds show a gradual fall in water levels as they dry out, they can be

refilled very quickly, within a day during heavy, sustained rain. These patterns correspond to the variations recorded for many of the larger ponds throughout Northumberland's coastal plain.

The data on the length of the dry-phase for the ponds at Hauxley were used along with climate measures from Boulmer to create a model of the monthly variations in dry phase from January 1995 to October 2007. The Boulmer data included measurements of temperature, rainfall, wind speed and sunshine. Data reduction was used to reduce these often highly correlated variables using principal component analysis. This created two axes: PCA axis 1 which primarily represented annual variations in temperature and showed a generally regular annual cycle (Fig. 4) and PCA axis 2, which was primarily related to rainfall and more variable (Fig. 5). These two axes were used to create a model of the ponds' hydrology which captured 47% of the variation in the length of the monthly dry phase. Given the apparent dependence of the ponds on rainfall as their sole source of water this is a disappointingly low level of prediction, although the level of prediction was broadly similar to that of regression models combining various climatic data for river flows in the UK (15-38% August river flows for twelve catchments, Wilby 2001; 45% for River Thames summer flow, Wilby *et al.*, 2004; 48-55% summer river flows, Svensson and Prudhomme, 2005). The Hauxley model is poor at capturing the periods when all ponds were dry or all ponds were flooded and, in particular, the suddenness with which this could change. The month by month scale may be too coarse and clumsy for this given that the ponds can refill in a day during heavy rain. Also the recording that a pond was either dry or holding water was simplistic, taking no account of falling water levels as ponds dried out. Nonetheless the model does show the relationship between local weather, pond hydrology and the variability between years and months: these ponds are essentially temporary but do not dry out every year, nor for consistent lengths of time, nor at the same time every summer.

The data were also used to explore relationships between large-scale climate systems, in this case the North Atlantic Oscillation, the local weather at Boulmer and pond hydrology. Whilst the broad climate patterns at Boulmer show some correlation with the large scale NAO climate system, the patterns were unexpected, with lower rainfall at Boulmer during winters with a higher NAO index. This runs counter to the general pattern in the UK of increased winter rainfall when the NAO winter index is higher, a pattern confirmed here by the positive correlation of the winter NAO and overall rainfall in the whole of England over the time period of the Hauxley study. However this result is consistent with more detailed studies of rainfall patterns in the UK and their relationship to the NAO. In North-East England there is an important anomaly, a negative correlation between the NAO winter index and winter precipitation (Fowler and Kilsby, 2002, Wedgbrow *et al.*, 2002).

Temporary ponds are very tuned to local variations in climate and so are particularly susceptible to climate change. Projected changes to climate in Northumberland up to the year 2050 include reduced rainfall, perhaps up to 10% less especially along the coast, increased seasonality of rainfall and local variation in extreme rainfall events along with increased temperatures, especially in summer up to 2 °C (North East Climate Change Adaptation Project, 2008). There is evidence of changing climate in the region, perhaps most conspicuously in the colonisation of Northumberland by warmth loving species of butterflies and dragonflies which were rare or absent twenty years ago. For example the Banded Demoiselle damselfly *Calopteryx splendens* (Harris) spread through Northumberland in the late 1990s (Jeffries *et al.*, 2005) and the Speckled Wood butterfly *Pararge aegeria* (L.) has established in Tyneside in the last five years (O'Brien *et al.*, 2007).



The results from Hauxley emphasise the importance of rainfall for driving the variation in length and timing of pond dry phases. The projected changes to rainfall in Northumberland would all exaggerate this variability. Individual ponds would be significantly affected, but we cannot conserve pond biodiversity by concentrating effort on sheltering a few ponds from such impacts. Pondlife should be able to cope so long as the number and varieties of pond habitats throughout the landscape allow wildlife to move about over the years, perhaps retreating to core sites in bad years then recolonising the landscape during easier times, much as it has always done as ponds come and go in the landscape. The North-East's change adaptation study is unique; no other English region has such a detailed analysis of likely trends and has led to a climate change action plan, (Sustaine, 2008), which includes the natural environment as one of ten 'workstreams', although the Association of North East Councils' (2008) recommendations concentrated on economic and social needs. It would be easy to take our ponds and wetlands for granted but sustaining the numbers and types is just as much an example of building adaptive capacity as the work needed on houses, flood defences and energy conservation.

#### ACKNOWLEDGEMENTS

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## ECOLOGICAL ATTRIBUTES OF THE NATIVE VASCULAR FLORA OF NORTHUMBERLAND - AN ANALYSIS<sup>1</sup>

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### SUMMARY

A database of twenty-one attributes for 789 native Northumberland vascular plant species has been compiled from various sources. The distributions of categories or values for most of these attributes are analysed and discussed, where possible by comparison with similar analyses for the broader British, or British and Irish, floras. One finding is that the proportions of nationally rare and nationally scarce species in Northumberland's flora are strikingly less than they are in the overall British flora, for which reasons are suggested. 'Important plants' for Northumberland are identified.

Some of the information presented here was originally prepared for a lecture to the Natural History Society of Northumbria in 1996, following the then recent publication of Professor George Swan's monumental *Flora of Northumberland* (1993), the source of the raw data. A decade later, the publication of Hill *et al.*'s *Plantatt. Attributes of British and Irish plants: status, size, life history, geography and habitats* (2004) not only provided a vast amount of new information on the British and Irish vascular plant flora generally, but also some basis for a numerical comparison of aspects of the ecology and biogeography of Northumberland's flora with that of Britain and Ireland as a whole. Additionally, (i) Preston and Hill (1997) had re-allocated British and Irish vascular plants to geographical elements, (ii) Preston *et al.* (2002), in the *New Atlas of the British and Irish flora*, provided up-to-date assessments of native or otherwise status of species, and (iii) Pearman and Corner (2003) published data on altitudinal limits of species. Also, in 2005, Cheffings and Farrell's new *Vascular plant Red Data List for Great Britain* (following three earlier Red Data Book editions) provided much new information on the conservation status of species. Finally, Braithwaite *et al.* (2006a) have documented change in the British flora between 1987 and 2004. From all of this, and other information, a database has been compiled of twenty-one morphological, phytogeographical and ecological attributes of Northumberland's native vascular flora, and the following analysis is derived from this database and from summary information in *Plantatt* and elsewhere.

By 'Northumberland' is understood the traditional county (vice-counties 67 and 68), that is, the modern administrative county of Northumberland together with the metropolitan districts of Newcastle upon Tyne and North Tyneside. The native vascular plant flora is here taken to number 789 species (between 54% and 56% of the equivalent British and Irish total, depending on definitions of 'native'), and is the number of native species recorded in Swan's *Flora and Supplement* (2001) as certainly or possibly extant, together with two new finds

<sup>1</sup> The paper was submitted in 2006, since when there have been one or two additions to Northumberland's flora, and some name changes. These do not significantly affect the analyses presented. The database informing this article, together with its key, may be found online at [www.nhsn.ncl.ac.uk](http://www.nhsn.ncl.ac.uk) under publications.

(*Hierochloa odorata* (Holy-grass) and *Epipactis sancta* (Lindisfarne Helleborine)), but subtracting species then thought to be native but now regarded as introductions (Preston *et al.*, 2002). [The total differs from the 782 species given in Lunn (2004) mainly because of the inclusion here of the segregates of *Euphrasia* (eyebrights).] The 789 native taxa include subspecies only when a single subspecies occurs in the county (otherwise they are aggregated), and do not include varieties, hybrids, and microspecies of *Taraxacum* (dandelions), *Rubus fruticosus* (brambles) and *Hieracium* (hawkweeds) – each of these is allotted one entry – but, following recent practice, include species of *Alchemilla* (lady's-mantles) and *Euphrasia*. Species native elsewhere in Britain or Ireland, but introduced into Northumberland, are excluded. There is clearly scope for dispute as to whether or not some archaeophytes (naturalized before AD1500) – excluded here – might indeed be native, and *vice-versa*, and whether a rare plant not seen in Northumberland for some years or even decades should still be included, but following discussion with Professor Swan such species, not known to be extinct, have been included. There is also room for dispute on the inclusion, or non-inclusion, in the database of a handful of members of problematic taxa such as *Epipactis*, but for the sort of analysis undertaken here the consequences are not significant. One departure from Preston *et al.* (2002) concerns *Pinus sylvestris* (Scots Pine), regarded by them as introduced in England but here included in the database, because there is a possibility that at least one Northumberland population is native. *Zostera angustifolia* (Narrow-leaved Eelgrass) is retained as a species. *Fumaria purpurea* (Purple Ramping-fumitory), one of whose original parents was an introduced species, is included in the database as a native, although *Spartina anglica* (Common Cord-grass), with a parallel evolutionary history, is not included.

It was considered that to include other than full species in the database (with the exceptions stated) would unduly complicate analysis; this procedure is also largely followed in *Plantatt*.

Nomenclature follows the *New Atlas of the British and Irish flora*, which follows Stace (1997), and the sequence follows Kent (1992 and supplements), with his codes given in the first three columns of the database. English names are given in parentheses at the first mention of a species.

Comparators at British and Irish, or British, level, for many of the attributes analysed here present difficulties, owing partly to varying allocations of taxa to native, doubtful, alien, *etc.* statuses, and partly to available British and Irish, or British, sums being calculated for differing combinations of status. In the following accounts it is made clear what is being compared with what.

### Families

The 789 species are distributed among 104 families, of which twenty-three (22.1%), each containing ten Northumberland species or more, account for 74.5% of the species. Thirty-eight families have only one Northumberland species. The family with the most Northumberland species is Poaceae (grasses, 78), followed in order by Cyperaceae (sedges, 60), Asteraceae (composites, 57), Rosaceae (45), Caryophyllaceae (31) and Fabaceae (legumes, 31).

There are 226 monocots, 28.6% of the native species, and while 212 (26.9%) of the total number of species are associated with wetland, ninety monocots (39.8%) are wetland species as attributed for Northumberland in the next section.



## Habitat

The attribution to habitat in Northumberland is by the author, and does not necessarily accord with the 'Broad habitats' attribute in *Plantatt* (also entered in the database). For example *Equisetum telmateia* (Great Horsetail) is given there as occurring in fen, marsh and swamp, but for Northumberland is entered as a woodland species; in fact it occurs in Northumberland in all of these habitats and was somewhat arbitrarily assigned to woodland. Many other species occur in two or several habitats in Northumberland, and have been arbitrarily assigned to the habitat in which they are considered preponderantly to occur in the county. In other cases species genuinely occupy different habitats in different parts of Britain and Ireland.

In this section **notable** species are those which are either nationally rare (occurring in fifteen or fewer British hectads – 10×10km squares), nationally scarce (occurring in sixteen to a hundred hectads), or listed as Endangered or Vulnerable in the new (2005) *Red Data List for Great Britain*. ('Notable' is not the same as 'important', which is discussed later and includes local criteria.)

124 species (15.7% of the total) occur mainly in **woodland**. This is many more than the fifty species (including rarities) suggested as likely indicators of ancient semi-natural woodland in Northumberland (Lunn, 2004), including as it does the more readily dispersed of woodland plants, likely to find their way to more recent woods. The total, however, is similar to the number of species expected to be found in a diverse, ancient semi-natural woodland of reasonable size (Briarwood Banks, in the lower Allen valley is an example), suggesting that in such woods most species can be expected to be present. Presumably much of the woodland flora was relatively well distributed through the wildwood and most has survived in the larger relicts. The only notable species in our woods are *Pinus sylvestris* (if native), *Ribes spicatum* (Downy Currant) and *Hordelymus europaeus* (Wood Barley). Distinctive types of woodland are therefore not our speciality. [*Goodyera repens* (Creeping Lady's-tresses) is also given as nationally scarce in Stewart *et al.* (1994) but not in *Plantatt*, and there is some doubt as to whether it is native in Northumberland, or was introduced with pine seedlings.]

The Whin Sill, on the other hand, with its droughty, only slightly acidic and relatively nutrient-poor soils, is a speciality, and the eighteen **whin** species include six notable ones: *Dianthus deltoides* (Maiden Pink), *Potentilla neumanniana* (Spring Cinquefoil), *Meum athamanticum* (Spignel), *Polygonatum odoratum* (Angular Solomon's-seal), *Allium schoenoprasum* (Chives) and *A. oleraceum* (Field Garlic). Similarly, **metalliferous** habitats, contaminated with heavy metals, are a speciality with seven species, six of which are notable: *Asplenium septentrionale* (Forked Spleenwort), *Minuartia verna* (Spring Sandwort), *Cochlearia pyrenaica* (Pyrenean Scurvy-grass), *Thlaspi caerulescens* (Alpine Penny-cress), and *Epipactis dunensis* and *E. phyllanthos* (Dune and Green-flowered Helleborines). **Bogs** are another speciality, although considering their extent – about 6% of the county – not collectively species-rich, with only seventeen specialist species. Two of these are notable: *Vaccinium microcarpum* (Small Cranberry) and *Carex magellanica* (Tall Bog-sedge). (*Hammarbya paludosa* (Bog Orchid), which occurs in soakways in blanket bog and in acidic flushes was given as nationally scarce in Stewart *et al.* (1994) but as occurring in more than a hundred hectads in *Plantatt*).

Our **montane** habitats are relatively poor, with only twelve species, mainly in the Cheviot corries. Notable are *Saxifraga hypnoides* (Mossy Saxifrage), *Alchemilla glomerulans*, *Euphrasia frigida* and *Alopecurus borealis* (Alpine Foxtail).

**Coastal** habitats contain eighty-eight specialist species (11.2% of the total), of which eight are in **dune slacks**. The numerous notable species are *Atriplex longipes* and *A. praecox* (Long-stalked and Early Oraches), *Salicornia fragilis* (Yellow Glasswort), *Salsola kali* (Prickly Saltwort), *Pyrola rotundifolia* subsp. *rotundifolia* (Round-leaved Wintergreen), *Astragalus danicus* (Purple Milk-vetch), *Hippophae rhamnoides* (Sea-buckthorn), *Centaureum littorale* (Seaside Centaury), *Zostera angustifolia* and *Z. noltei* (Dwarf Eelgrass), *Carex divisa* and *C. maritima* (Divided and Curved Sedges), *Festuca arenaria* and *Vulpia fasciculata* (Rush-leaved and Dune Fescues), *Parapholis incurva* (Curved Hardgrass), *Epipactis sancta* and *Corallorrhiza trifida* (Coralroot Orchid). Fifty-one species are **aquatic** (including fourteen Potamogeton (pondweed) species), twenty-two mainly in **flushes** and another 114 in a variety of other wetland habitats; this makes (including the bogs and dune slacks) 212 **wetland** species, 26.9% of the total flora – in spite of centuries of drainage of the heavy lowland soils and of moorland. Sixty-five species (8.2%) are **ruderals**, plants characteristic of disturbed soils – in urban areas, arable farmland and some naturally disturbed sites. The **ruderals** include our only Northumberland non-critical or non-problematic full species which is a British and Irish endemic, *Fumaria purpurea*, but it was very rare with us and may be extinct. (The subspecies *babingtonii* of *Fumaria capreolata* (White Ramping-fumitory) which we also have, is endemic, but not the continental subspecies *capreolata*, apparently confined in Britain to the Channel Islands.). Table 1 gives the complete habitat data.

**Table 1 Habitat**

Habitat	Number	%
woodland	124	15.7
grassland (general)	92	11.7
grassland (acidic)	5	0.6
grassland (basic)	24	3.0
meadow	14	1.8
Whin Sill	18	2.3
moorland (general)	48	6.1
bog	17	2.2
montane	12	1.5
rock	20	2.5
limestone	30	3.8
metallophyte	7	0.9
road verge, etc.	15	1.9
general	23	2.9
ruderal	65	8.2
aquatic	51	6.5
streamside, lakeside	56	7.1
swamp, marsh, fen	58	7.4
flush	22	2.8
coastal (general)	80	10.1
dune slack	8	1.0
	<b>789</b>	<b>100.0</b>

Taking only the pteridophyte flora, out of forty-four species eleven are moorland species and thirteen are woodland species.



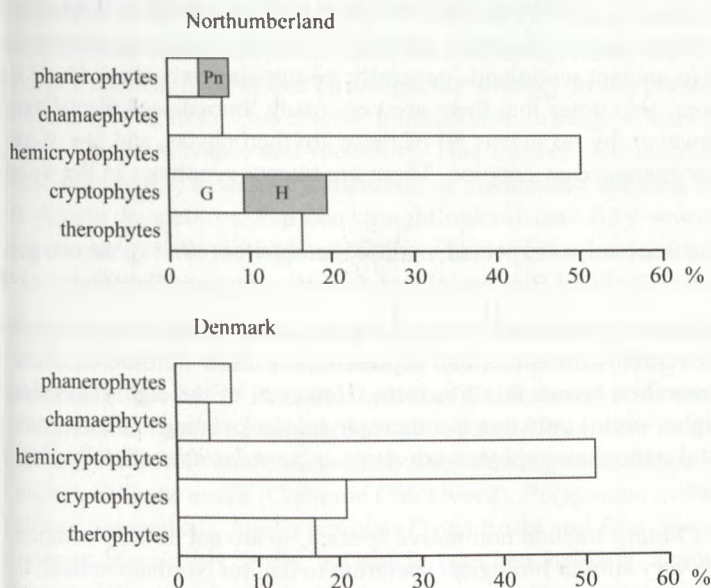
Crawley (2005) has similarly allocated the Berkshire flora to habitats, although he includes archaeophytes, hybrids, apomicts and subspecies in his calculations. Given that Berkshire has no coastline, his figure of about 17% for woodland species is roughly equivalent to Northumberland's, but that for 'water', about 12%, is only half of ours (for 'wetland'). Allowing for possible differences in habitat definition, this will be due, in part, to Berkshire having escaped recent glaciation, a cause of so much poorly-drained land with us. Arable and waste ground species together, however, total about 18% for Berkshire, twice our figure for ruderals.

### Life form

A revised classification by life-form is in *Plantatt* (set out in the key to the present database), although still based on that developed by Raunkiaer (1934). His system was based on the physical size and life-cycle strategy of the plant, and especially the position of perennating, vegetative parts in relation to ground-level during the unfavourable season. The relative proportions of a flora in Raunkiaer's various classes is its 'biological spectrum', with each climatic zone having its characteristic spectrum. Fig. 1 shows the biological spectrum for Northumberland compared with a remarkably similar cool temperate one for Denmark.

**Fig 1 Biological spectra for Northumberland and Denmark**

Source: *Plantatt* (2004); Raunkiaer (1934)



The classification is based on the position of resting buds or persistent stem apices in relation to soil level:-

- phanerophytes*: woody plants with buds > 25cm above the soil
- nanophanerophyte* (Pn): buds < 2m).
- chamaephytes*: woody or herbaceous plants with buds between soil level and 25cm.
- hemicryptophytes*: (mainly) herbs with buds at soil level.
- cryptophytes*: buds below ground or in water.
- geophytes* (G): herbs with buds below the soil surface.
- hydrophytes* (H): water plants.
- therophytes*: land plants which pass the unfavourable season as seeds.

Clearly hemicryptophytes, mainly graminaceous plants plus herbs with buds more or less at soil level, dominate, with just over half of all Northumberland's species (50.2%). Second are therophytes with 16.2%, land-based annuals which survive the unfavourable season, or persist despite repeated disturbance of their habitat, as seeds. Some therophytes are coastal species (see below), and others occur on arable land and in the considerable areas of disturbed ground in urban and industrial areas, including allotments and gardens. Yet others occur on the bare silt of river channel margins.

Out of the eighteen Whin Sill species, eight are therophytes, avoiding the summer drought of the thin soils, but rather surprisingly for such soils there are also three geophytes: *Scilla verna* (Spring Squill), *Allium schoenoprasum* and *A. oleraceum* (Field Garlic). Presumably the underground storage organs are located in crevices in the rock surface. The twelve montane species understandably include no phanerophytes (trees and tall shrubs), geophytes (the need to regrow the photosynthetic apparatus is a disadvantage with a short montane growing season) or, for the same reason and with one exception – *E. frigida* – therophytes. Rather, montane species are hemicryptophytes and a single chamaephyte – *Saxifraga hypnoides*. Out of the 124 woodland species only four are therophytes, denoting the relative lack of disturbance of the habitat; presumably also woodland shade militates against the high relative growth rates characteristic of therophytes. The four are *Moehringia trinervia* (Three-nerved Sandwort – sometimes a short-lived chamaephyte), *Melampyrum pratense* (Common Cow-wheat), *Galium aparine* (Cleavers: clearly this is not confined to woodland) and *Lapsana communis* (Nipplewort). Rackham (2006), while observing that annuals are greatly under-represented in ancient woodlands generally, comprising only about 5% of his ancient woodland indicators, also notes that there are very many 'buried-seed plants' associated with coppicing. However, by no means all of these are therophytes, and few, if any, Northumberland woods are managed as coppice. There are twenty geophytes in the woodland spectrum (16.1%).

The plants in our ruderal habitats are, as expected, mainly therophytes (69.2%); the two geophytes are *Convolvulus arvensis* (Field Bindweed) and *Tussilago farfara* (Coltsfoot).

42.0% of the eighty-eight coastal species are hemicryptophytes and 30.7% therophytes, the latter having twice their overall Northumberland representation here. Foreshores, dunes, shingle beaches and salt-marshes favour this life form. However, of the eight dune slack species (included in the eighty-eight) only one is a therophyte, slacks being a relatively stable habitat. The two coastal nanophanerophytes are *Atriplex portulacoides* (Sea-Purslane) and *Hippophae rhamnoides*.

The totals for life form in *Plantatt* include non-native species, so are not directly comparable. They show, however, a very similar biological spectrum to that for Northumberland, the main differences being a lower value for hemicryptophytes (43.0% *Plantatt*, 50.2% Northumberland) and a higher value for therophytes (22.8% *Plantatt*, 16.2% Northumberland). Many of the non-native species in *Plantatt* are therophytes: plants of waste ground, cropland, etc.

Crawley's (2005) biological spectrum for Berkshire differs from that for Northumberland in having a higher proportion of therophytes – about 25%, and part of the explanation may be again that Crawley's total includes archaeophytes.

Another aspect of life form is size *per se*. This has recently been discussed by Aarssen *et al.* (2006). They point out that for both animals and plants there tend, in both communities and regions, to be many more small- than large-sized species – that is, there is right skewness in



frequency distributions of species size compared to the average – and suggest hypotheses which might explain this dominance of small size in plants. For Northumberland, on the reasonable assumption that phanerophytes and chamaephytes are generally taller, or have greater biomass, than the other life forms, Fig. 1 shows that small species are overwhelmingly dominant in our flora.

### Strategies

Grime *et al.* (1988, 1990) classified plants according to their survival strategies, both at the regenerative and established stages. Considering here only the established stage, dominant plants, **competitors** (C species), are those which in various ways crowd out other species. In order to dominate, they require good growing conditions – adequate nutrients, light, moisture and so on – and also an absence of physical disturbance, by cutting, grazing or natural soil disturbance. Denied optimum conditions they cannot flourish, and are replaced by other species that can tolerate either stress (factors restricting photosynthesis: nutrient-deficiency water-shortage, *etc.*) or disturbance (destruction of plant biomass); such plants are respectively **stress-tolerators** (S species) and **ruderals** (R species). Or it may be some combination of the two, or of all three (CR, C/CR, CSR, R/SR, *etc.*). Stress-tolerators typically have low growth rates but often have physical or biochemical defences against herbivores. Ruderals have short life-cycles (they are often annuals) with abundant seed production – we know many of them as garden or agricultural weeds.

Not all British and Irish species have been so categorised, and of Northumberland's flora only 421 species (53.4%) can be assigned a strategy in the present database. The majority of these, 78.9%, in fact have some intermediate strategy – some combination of competitiveness, stress-tolerance and ruderality. This implies that the majority of our habitats are moderately fertile, moderately disturbed or moderately stressed. However eighteen species are straight competitors, fourteen straight ruderals and fifty-seven straight stress-tolerators. The categories with the highest numbers are stress-tolerators, and CSR species of which there are fifty-three.

Examples of competitors in our flora are *Pteridium aquilinum* (Bracken), *Urtica dioica* (Common Nettle), *Epilobium hirsutum* (Great Willowherb), *Chamaerion angustifolium* (Rosebay Willowherb), *Petasites hybridus* (Butterbur), *Arrhenatherum elatius* (False Oat-grass), *Holcus mollis* (Creeping Soft-grass) and *Phragmites australis* (Common Reed), all species of relatively nutrient-enriched sites. Among ruderals are *Atriplex patula* (Common Orache), *Stellaria media* (Common Chickweed), *Polygonum aviculare* (Knotgrass), *Senecio vulgaris* (Groundsel), *Juncus bufonius* (Toad Rush) and *Poa annua* (Annual Meadow-grass) – species of relatively fertile, but much disturbed, habitats. Among the many stress-tolerators are *Helianthemum nummularium* (Common Rock-rose), *Erica cinerea* (Bell Heather), *Polygala vulgaris* and *P. serpyllifolia* (Common and Heath Milkworts), *Thymus polytrichus* (Wild Thyme), *Campanula rotundifolia* (Harebell), *Galium saxatile* (Heath Bedstraw), *Succisa pratensis* (Devil's-bit Scabious), *Juncus squarrosus* (Heath Rush), *Nardus stricta* (Mat-grass) and *Briza media* (Quaking-grass). These are plants of both wet and dry, but generally unproductive, habitats, some of them calcareous. Further observations are made below under Ellenberg values (soil nitrogen).

Examples of CSR species, with characteristics intermediate between all three extremes, are such common plants as *Plantago lanceolata* (Ribwort Plantain), *Cirsium palustre* (Marsh Thistle) and *Holcus lanatus* (Yorkshire-fog).

### Geographical elements

Preston and Hill (1997) classify the British and Irish flora into geographical elements, based on the distribution of species outside of Britain. Table 2 compares the proportions of the Northumberland flora belonging to the various elements with those for Britain and Ireland as a whole (but note that the Preston and Hill database includes a few species now regarded as introductions and not therefore included in the Northumberland database). The scheme is based on the distribution of species in the main latitudinal climatic belts (the major biomes), and, within these, on eastern distributional limits (in relation to Britain and Ireland) in the Northern Hemisphere – that is, on greater or lesser restriction to western oceanic margins. Species belonging to a category have similar climatic requirements, and, presumably, dispersal histories.

The table shows that Northumberland is under-represented in the *Arctic-montane* element, lacking as we do substantial and varied areas of high enough ground. Examples for this element, however, are *Salix herbacea* (Dwarf Willow), *Sedum rosea* (Roseroot) and *Saxifraga stellaris* (Starry Saxifrage). We are also deficient in *Southern-temperate* and *Mediterranean* species, but of the former we do have, for example, *Ilex aquifolium* (Holly), *Hydrocotyle vulgaris* (Marsh Pennywort), *Oenanthe crocata* (Hemlock Water-dropwort) and *Digitalis purpurea* (Foxglove), and of the latter *Beta vulgaris* (Sea Beet), *Limonium vulgare* (Common Sea-lavender), *Blackstonia perfoliata* (Yellow-wort) and *Calystegia soldanella* (Sea Bindweed), the coastal species presumably favoured by the ameliorating effect of the sea on winter temperatures. On the other hand we are over-represented in species belonging to the *Wide-boreal* element (e.g. *Cystopteris fragilis* (Brittle Bladder-fern), *Caltha palustris* (Marsh-marigold), *Ranunculus acris* (Meadow Buttercup)), *Boreo-temperate* element (e.g. *Menyanthes trifoliata* (Bogbean), *Campanula rotundifolia*, *Galium boreale* (Northern Bedstraw)) and *Wide-temperate* element (e.g. *Prunella vulgaris* (Selfheal), *Plantago major* (Greater Plantain), *Anthoxanthum odoratum* (Sweet Vernal-grass)). These three elements contain species with, or including, northern and/or upland distributions on the Continent. None of this is surprising for a rather northern, rather upland county like Northumberland, lacking mountain extremes.

We are also, as an east-side county, low on all of the *Oceanic* elements, with a total of forty-two species, out of 159 for Britain and Ireland; this is both by far the lowest proportion for Northumberland species of any of the eastern limit categories, and the greatest departure (downwards) from the British and Irish proportion. Amongst the oceanic species which are found in Northumberland are *Hymenophyllum wilsonii* (Wilson's Filmy-fern), *Erica cinerea* (Bell Heather), *Saxifraga hypnoides*, *Ulex europaeus* (Gorse), *Conopodium majus* (Pignut), *Myosotis stolonifera* (Pale Forget-me-not), *Narthecium ossifragum* (Bog Asphodel), *Scilla verna*, *Hyacinthoides non-scripta* (Bluebell) and *Dactylorhiza purpurella* (Northern Marsh-orchid). At the opposite extreme, we have 161 *Circumpolar* species.

Northumberland has three British endemic and two British and Irish endemic taxa. The former (occurring only in Great Britain) are *Gentianella amarella* subsp. *septentrionalis* (Autumn Gentian), *Epipactis dunensis* and *E. sancta*, and the latter *Fumaria capreolata* subsp. *babingtonii* and *F. purpurea*. Only *F. purpurea* and the two *Epipactis* species are counted as endemic in the database, since another subspecies of the gentian and of *F. capreolata* is not endemic. Of course the genus *Epipactis* is taxonomically problematic.

Of the forty-five species reaching their British northern limits in Northumberland (see Lunn, 2004) 22.2% belong to the *Mediterranean* element, as compared with only 3.0% of the total



**Table 2 Geographical elements**

Major biome category = Arctic-montane, etc.; eastern limit category = Oceanic, etc.

Elements are named with the eastern limit category first and the major biome category second, *e.g.* European Temperate. However, for the Mediterranean elements, 91 = Mediterranean-Atlantic; 92 = Submediterranean-Subatlantic; 93 = Mediterranean-montane.

Figures are percentages for Northumberland species, with equivalent British plus Irish data in parentheses. (British and Irish data from Preston & Hill, 1997).

	1 Oceanic	2 Sub-oceanic	3 European	4 Euro-siberian	5 Eurasian	6 Circum-polar	Total
1. Arctic-montane	- (-)	- (-)	0.6 (2.0)	0.1 (0.4)	0.1 (0.2)	0.8 (2.8)	1.6 (5.4)
2. Boreo-arctic montane	- (0.1)	- (-)	0.6 (0.4)	- (0.1)	- (-)	1.7 (1.7)	2.3 (2.3)
3. Wide-boreal	- (-)	- (-)	- (-)	0.1 (0.1)	0.1 (0.1)	1.9 (1.2)	2.1 (1.4)
4. Boreo-montane	0.4 (0.5)	0.4 (0.3)	1.7 (1.9)	0.8 (0.6)	0.5 (0.3)	4.0 (3.4)	7.8 (7.0)
5. Boreo-temperate	0.6 (0.6)	0.6 (0.6)	4.7 (3.2)	6.5 (4.5)	3.7 (2.6)	6.8 (4.3)	22.9 (15.8)
6. Wide-temperate	- (0.1)	- (-)	0.5 (0.2)	1.0 (0.7)	0.5 (0.3)	1.7 (0.9)	3.7 (2.2)
7. Temperate	2.6 (3.2)	2.8 (1.9)	22.0 (20.0)	7.9 (8.1)	2.8 (2.6)	2.6 (1.8)	40.7 (37.6)
8. Southern temperate	0.5 (1.7)	2.8 (3.6)	5.9 (7.2)	4.1 (5.5)	1.3 (1.1)	1.3 (0.9)	15.9 (20.0)
9. Mediterranean	1.3 (4.7)	1.8 (3.2)	- (0.4)				3.1 (8.3)
Total	5.4 (10.9)	8.4 (9.6)	36.0 (35.3)	20.5 (20.0)	9.0 (7.2)	20.8 (17.0)	100.1 (100.0)

Three endemic species and three species for which there is no information are not included in the calculations.



Northumberland flora. In fact 41.7% of Northumberland's twenty-four *Mediterranean* species are at their British northern limit in the county. In contrast, of the four species reaching their southern British limits here – *Diphasiastrum complanatum* (Yellow Cypress Clubmoss), *Vaccinium microcarpum*, *Potamogeton filiformis* (Slender-leaved Pondweed) and *Carex maritima* – the first three are *Circumpolar Boreal-montane* and the sedge *Circumpolar Arctic-montane*.

Taking the forty-four pteridophytes, twenty-four belong to elements with distributions in climatic belts cooler than *Temperate*, and five to elements with distributions in climatic belts warmer than *Temperate*. The five are *Equisetum telmateia*, *Asplenium marinum* (Sea Spleenwort), *A. trichomanes* (Maidenhair Spleenwort), *Ceterach officinarum* (Rustyback) and *Polystichum setiferum* (Soft Shield-fern).

### Distribution within Northumberland

Fig. 2 shows, with a rose diagram, the internal distribution of the 789 species within the county (of course many species are not confined to their main area of distribution: some 'eastern' species occur elsewhere, but more sparingly, and the same is the case for other groups – the classes describe distributional tendencies). Omitting the 337 species (42.7%) which are widely distributed, and the eighty-five largely coastal species (10.8%), there are some interesting patterns.

Nineteen species are largely (some exclusively) south-eastern. They include such old neutral grassland plants as *Primula veris* (Cowslip), *Genista tinctoria* (Dyer's Greenweed), *Silene silaus* (Pepper-saxifrage) and *Senecio erucifolius* (Hoary Ragwort); ruderals such as *Reseda lutea* (Wild Mignonette); wetland plants such as *Ranunculus lingua* (Greater Spearwort) and *Pulicaria dysenterica* (Common Fleabane); and others including *Pimpinella major* (Greater Burnet-saxifrage), *Ligustrum vulgare* (Wild Privet), *Blackstonia perfoliata*, *Symphytum officinale* (Common Comfrey), *Dipsacus fullonum* (Wild Teasel), *Carex pendula* (Pendulous Sedge) and *Ophrys apifera* (Bee Orchid). Their localisation in the south-east is presumably partly climatic: this is the warmest and among the driest parts of Northumberland, and *Reseda lutea*, *Blackstonia perfoliata*, *Pulicaria dysenterica*, *Carex pendula* and *Ophrys apifera* all belong to the southern-temperate or Mediterranean elements of the flora. It is also partly because of the fragmentary survival there of old grassland, spared from intensive agriculture, on awkward corners amidst industry and housing. Some of these south-eastern species reach their northern British limits in the county: *Vicia tetrasperma* (Smooth Tare), *Genista tinctoria*, *Pimpinella major*, *Ligustrum vulgare*, *Blackstonia perfoliata*, *Senecio erucifolius*, *Hydrocharis morsus-ranae* (Frogbit), *Ophrys apifera*.

The forty-six species that are more broadly southern in distribution, many of them presumably also temperature-limited, include other species with British northern limits in the county: *Viola reichenbachiana* (Early Dog-violet), *Primula farinosa* (Bird's-eye Primrose), *Myriophyllum verticillatum* (Whorled Water-milfoil), *Acer campestre* (Field Maple), *Serratula tinctoria* (Saw-wort), *Arum maculatum* (Lords and Ladies), *Brachypodium pinnatum* (Tor-grass), *Narcissus pseudonarcissus* (Daffodil) and *Epipactis phyllanthos*. *Sanguisorba officinalis* (Great Burnet) has a remarkably abrupt, almost linear, boundary to its main Northumberland distribution at the River Coquet. Virtually all southern Northumberland species, however, belong to temperate or more northern geographical elements; many are woodland species, and semi-natural woodland is more abundant in the southern half of the county. Only *Orobancha rapum-genistae* (Greater Broomrape) belongs to the southern-temperate element.



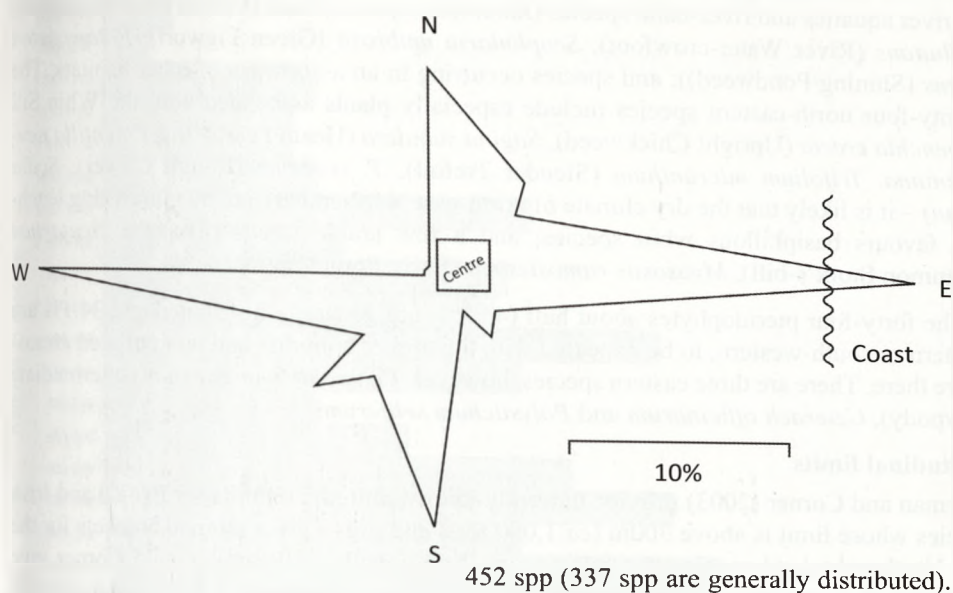


Fig. 2 Preponderant species distribution within Northumberland

There are thirty-six predominantly south-western species. They include metallophytes of the Northern Pennine Orefield (e.g. *Asplenium septentrionale*, *Minuartia verna*, *Cochlearia pyrenaica*, *Thlaspi caerulescens*); Pennine upland limestone species (e.g. *Botrychium lunaria* (Moonwort), *Asplenium viride* (Green Spleenwort), *Persicaria vivipara* (Alpine Bistort), *Sanguisorba minor* (Salad Burnet), *Polygala vulgaris*, *Galium sternerii* (Limestone Bedstraw), *Scabiosa columbaria* (Small Scabious), *Platanthera chlorantha* (Greater Butterfly-orchid)); species of calcareous flushes (e.g. *Pedicularis palustris* (Marsh Lousewort), *Carex dioica* (Dioecious Sedge)); and of meadows (e.g. *Pseudorchis albida* (Small-white Orchid), *Dactylorhiza viridis* (Frog Orchid)). Twenty-three of these south-western species belong to more northern (than temperate) geographical elements; they are mainly upland species in Northumberland.

A main dichotomy is between predominantly western, and eastern, species – respectively ninety-three and eighty-five (11.8% and 10.8% of Northumberland's flora). This reflects the distinction between an upland west and a lowland east, and 73.1% of the western species belong to more northern than temperate elements; only two western species, *Ranunculus hederaceus* (Ivy-leaved Crowfoot) and *Scutellaria minor* (Lesser Skullcap), belong to more southern than temperate elements. In contrast only 16.5% of the eastern species belong to more northern than temperate elements, and 36.5% belong to more southern elements. A vicarious species pair is *Myriophyllum spicatum* (Spiked Water-milfoil: east) and *M. alternifolium* (Alternate Water-milfoil: west). Another such pair is *Ranunculus sceleratus* (Celery-leaved buttercup: east) and *R. hederaceus* (west).

There is only one north-western species (and the shape of Northumberland militates against this sector), *Polemonium caeruleum* (Jacob's-ladder). The fifty northern species include Cheviot montane species (e.g. *Sedum rosea* (Roseroot), *Cornus suecica* (Dwarf Cornel),

*Saussurea alpina* (Alpine Saw-wort), *Alopecurus borealis*)); some Tweed and other northern river aquatics and river-bank species (*Ranunculus penicillatus* (Stream Water-crowfoot), *R. fluitans* (River Water-crowfoot), *Scrophularia umbrosa* (Green Figwort), *Potamogeton lucens* (Shining Pondweed)); and species occurring in an assortment of other habitats. The twenty-four north-eastern species include especially plants associated with the Whin Sill (*Moenchia erecta* (Upright Chickweed), *Sagina subulata* (Heath Pearlwort), *Potentilla neu-manniana*, *Trifolium micranthum* (Slender Trefoil), *T. scabrum* (Rough Clover), *Scilla verna*) – it is likely that the dry climate of north-east Northumberland, by minimising leaching, favours basiphilous whin species; and a few arable weeds (*Erodium cicutarium* (Common Stork's-bill), *Myosotis ramosissima* (Early Forget-me-not)).

Of the forty-four pteridophytes about half (45.5%) are generally distributed and 34.1% are western or south-western, to be expected with the higher humidity and less polluted atmosphere there. There are three eastern species, however: *Polypodium interjectum* (Intermediate Polypody), *Ceterach officinarum* and *Polystichum setiferum*.

#### Altitudinal limits

Pearman and Corner (2003) provide currently-known altitudinal limits for British and Irish species whose limit is above 300m (ca 1,000 feet) and Fig. 3 gives altitude brackets for the 647 Northumberland species in this category. Additionally, as Pearman and Corner give localities, it is possible to list species which reach their British and Irish upper limit in Northumberland. However, the highest point in Northumberland is the summit of The Cheviot, at 815m, and 382 of Northumberland's 789 species actually have highest limits above that altitude, elsewhere in Britain or Ireland. The Northumberland species with the highest British and Irish limits (all reached elsewhere than in Northumberland), all above 1300m, are *Huperzia selago* (Fir Clubmoss), *Salix herbacea*, *Vaccinium myrtillus* (Bilberry), *Saxifraga stellaris*, *Carex bigelowii* (Stiff Sedge) and *Festuca ovina* (Sheep's-fescue).

The nine species or subspecies whose highest British or Irish limits are actually in Northumberland (according to present information) are:

<i>Ranunculus penicillatus</i>	Stream Water-crowfoot
<i>Ceratocarpus claviculata</i>	Climbing Corydalis
<i>Spergularia rubra</i>	Sand Spurrey
<i>Salix pentandra</i>	Bay Willow
<i>S. fragilis</i>	Crack Willow
<i>S. purpurea</i>	Purple Willow
<i>Myrrhis odorata</i>	Sweet Cicely
<i>Euphrasia rostkoviana</i> subsp. <i>montana</i>	an eyebright
<i>Gymnadenia conopsea</i> subsp. <i>conopsea</i>	Fragrant Orchid

Additionally, *Atriplex prostrata* (Spear-leaved Orache), a roadside halophyte, occurs at its highest limit on Carter Bar, but on the Scottish side.

Ecologically this is a miscellaneous collection, and must owe a lot to the vagaries of recording across the country. A point of interest is that 82.0% of Northumberland's plants reach at least 300m somewhere in Britain or Ireland – and 11.2% are specialist coastal species, leaving us with very few British or Irish inland lowland-restricted species indeed. One can speculate (1) that many of the species in more southern elements of the British flora, which if



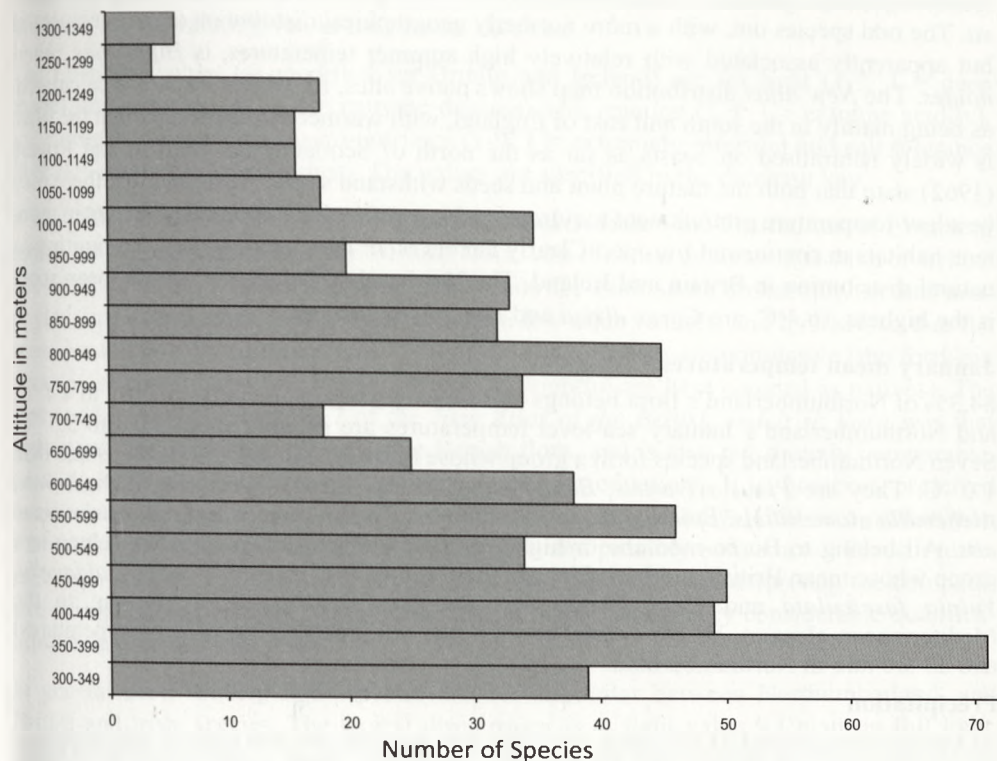


Fig. 3 British Isles altitude brackets for Northumberland species Source: Pearman & Corner (2003)

they were to occur at all would be lowland species, have been filtered out by this far north, (2) that physiologically important climate thresholds occur only at higher altitudes and (3), most important, significant loss of habitat diversity in central Britain only kicks in at altitudes somewhat higher than 300m (e.g. woodland, hedgerows, improved pastures, meadows, settlements).

#### July mean temperatures

Climatic values for the plants in Plantatt were calculated as the mean climate of the hectads in which they occur in Britain or Ireland, averaging over the squares. On this basis 81.6% of Northumberland's flora belongs to a July temperature range of 14.0° to 15.9°C, and Northumberland July sea-level temperatures are suitably about 14.5° to 15.0°C. Eleven Northumberland species form a group whose mean British and Irish July score is less than 11.9°C. All of these, not surprisingly, belong to the Arctic-montane, Boreo-arctic montane or Boreo-montane elements of the flora, and occur in Northumberland only in the uplands, most of them high in the Cheviots. The five which are Arctic-montane – the coldest biome – are *Epilobium anagallidifolium* and *E. alsinifolium* (Alpine and Chickweed Willowherbs), *Euphrasia frigida*, *Saussurea alpina* and *Alopecurus borealis*.

On the other hand, thirteen species have a mean British and Irish July temperature score of over 16°C. Six of these belong to the Mediterranean element, three to the Southern-temperate element, three to the Temperate element and one to the Boreo-temperate element. The six Mediterranean species are *Limonium vulgare*, *Bryonia dioica* (White Bryony), *Daphne*

*laureola* (Spurge-laurel), *Salvia verbeneca* (Wild Clary), *Carex divisa* and *Parapholis incurva*. The odd species out, with a more northerly geographical distribution (Boreo-temperate) but apparently associated with relatively high summer temperatures, is *Hippophae rhamnoides*. The *New Atlas* distribution map shows native sites, for which the data is calculated, as being mainly in the south and east of England, with warmer summers, although the plant is widely naturalised on coasts as far as the north of Scotland, and Pearson and Rogers (1962) state that both the mature plant and seeds withstand severe frosts and that there may be a low-temperature pretreatment requirement for germination. (*Hippophae* occurs in montane habitats in continental Europe.) Clearly factors other than temperature were limiting its natural distribution in Britain and Ireland. The Northumberland species whose mean score is the highest, 16.4°C, are *Carex divisa* and *Parapholis incurva*.

#### January mean temperatures

84.3% of Northumberland's flora belongs to a January temperature range of 3.0 ° to 4.4 °C, and Northumberland's January sea-level temperatures are suitably about 3.0 ° to 3.5 °C. Seven Northumberland species form a group whose mean British and Irish score is less than 1.0 °C. They are *Pinus sylvestris*, *Betula nana* (Dwarf Birch), *Vaccinium microcarpum*, *Alchemilla glomerulans*, *Epilobium anagallidifolium*, *Cornus suecica* and *Alopecurus borealis*. All belong to Boreo-montane or higher latitude elements. Three species belong to a group whose mean British and Irish January score is 4.8 °C or more: *Calystegia soldanella*, *Vulpia fasciculata* and *Catapodium maritimum* (Sea Fern-grass); all belong to the Mediterranean element, all are coastal species (the sea ameliorating winter temperatures) and all are rare in Northumberland.

#### Precipitation

At the extreme dry end of the range of annual precipitation are four species belonging to a group whose mean British and Irish score is less than 700 mm: *Myosurus minimus* (Mousetail), *Hippophae rhamnoides*, *Lactuca virosa* (Great Lettuce) and *Epipactis sancta* (not in *Plantatt*: value interpolated). Correspondingly all occur in eastern lowland Northumberland with less than 700 mm (*Myosurus* being at about that isohyet). At the extreme wet end, with mean British and Irish scores at or above 1900 mm, are *Pinus sylvestris*, *Alchemilla glomerulans*, *Euphrasia frigida* and *Saussurea alpina*. All belong to Boreo-montane or higher latitude geographical elements. Highest precipitation in Northumberland is about 1525 mm on the main North Pennine watershed. These four species each have Ellenberg soil moisture values of 5 or 6 (see below), indicating moist, but not wet, sites. *Pinus sylvestris* will benefit from the significant leaching associated with heavy rainfall, and the three other species, which in Northumberland occur particularly on wet rock ledges, will also benefit from the damp conditions.

#### Ellenberg values

Ellenberg *et al.* (1991) gave indicator values (*Zeigerwerte*) for 7 ecological factors considered substantially to define the realised niches occupied by central European vascular plants. Each plant was assigned a value for, for example, light or soil reaction on numerical scales; the value represented an optimum for the species along the environmental gradient concerned. The scales were arbitrary, described in words and not directly based on measurements. One objective was to be able to measure environmental changes over time, using the Ellenberg values for component species of ecosystems (averaged indicator values for lists of species), and another was to enable at least semi-quantitative comparisons within and between vegetation types. Since indicator values would likely be different for given taxa as between central Europe, and Britain and Ireland, Hill *et al.* (1999) recalibrated five of the



Ellenberg values for Britain and Ireland by a variety of means, including field experience, and these are the values given in the present database.

The Ellenberg values (as modified for Britain and Ireland) are for light (1-9: 1 = deep shade), soil moisture (1-12: 1 = extreme dryness), soil reaction (1-9: 1 = extreme acidity), soil nitrogen, representing macro-nutrients (1-9: 1 = extremely infertile) and salt tolerance (0-9: 0 = absent from saline sites). The values are specified in the database key.

It would be interesting to be able to compare, for each factor, the distribution of Ellenberg scores for the total native Northumberland flora with the total equivalent British or British and Irish flora, but *Plantatt* includes in its totals for each score archaeophytes and neophytes (introduced since 1500), together with a few alien casuals, and hybrids, so that the sums are not directly comparable: 22.8% of the *Plantatt* taxa are non-native (the forty-six taxa whose native status is given in *Plantatt* as doubtful are here counted as natives). The sum used in tables in chapter 7 of the *New Atlas of the British and Irish flora* was that appropriate for assessing change in the British flora, and is also not directly comparable, omitting some native species and including some introductions. It is, however, preferred here to base the following comparisons on the *Atlas* sum of only 1,169 taxa, rather than *Plantatt*'s 1,885 taxa. (*Plantatt* gives 1,455 native and possibly native taxa.) For salt tolerance, however, the *Plantatt* sums are the only ones available. In interpreting the comparative data presented here for Northumberland in Table 3 these very considerable qualifications should be borne in mind.

In general the Ellenberg **light** spectra are not dissimilar between Northumberland, and British and Irish, species. The largest discrepancy is at light value 9 ('plant in full light, found mostly in full sun'), where Northumberland is under-represented. Is this accounted for by the high proportion of our county occupied by cloudy uplands and haar-beset coastlands? However, a high proportion of our light value 8 species are found either in the uplands, or towards the coast, where they experience full daylight.

In contrast, the **moisture** spectra show Northumberland species, in the aggregate, occupy much wetter habitats than is true for Britain and Ireland as a whole. For all of the drier scores, 1 to 4, Northumberland is under-represented, and for all of the wetter, 5 to 12 (except one, 11) it has the same proportion of species as have Britain and Ireland or is over-represented.

It will be remembered that 26.9% of Northumberland's flora is associated with wetland habitats, which in part reflects the presence of extensive uplands and in part recent glaciation (leaving abundant lowland hollows), and perhaps also the abundance of subsidence ponds and other wetlands on the coalfield. Taking only the forty-four pteridophytes, most (81.8%) have Ellenberg moisture scores from 5 to 8 inclusive, indicating a preference for moist to damp soils, but four species associated with walls or rock faces have moisture value 3 (indicating extreme dryness): *Asplenium trichomanes*, *A. ruta-muraria* (Wall-rue), *A. septentrionale* and *Ceterach officinarum*; and one has value 10 (with at least temporary standing water): *Equisetum fluviatile* (Water Horsetail).

With regard to the **reaction** spectra, for all scores more acid than circum-neutral (except 4) and for the circum-neutral score (7: indicative of weakly acidic to weakly basic conditions) Northumberland has a higher proportionate representation of species than Britain and Ireland as a whole. For the alkaline scores (8 and 9) the reverse is true – Northumberland is an acidic county, or more accurately, not an alkaline one. Since Northumberland has about



**Table 3** Ellenberg values Source: Plantatt (2004). For derivation of British and Irish % see text.  
A = Northumberland species; B = Northumberland %; C = British and Irish %

	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Ellenberg Value	Light			Moisture			Nitrogen			Reaction			Salinity		
0													647	82.0	85.1
1	0	0.0	0.0	0	0.0	0.2		26	3.3	5.6	8	1.0	0.8	58	7.4
2	2	0.3	0.3	5	0.6	1.4		127	16.1	19.3	32	4.1	3.7	17	2.2
3	8	1.0	1.2	35	4.4	7.6		126	16.0	16.2	30	3.8	3.6	31	3.9
4	36	4.6	4.9	114	14.4	15.0		124	15.7	13.2	55	7.0	7.9	14	1.8
5	57	7.2	7.0	194	24.6	23.9		143	18.1	18.0	99	12.6	12.1	8	1.0
6	94	11.9	10.1	125	15.8	13.5		129	16.3	15.3	206	26.1	21.5	3	0.4
7	314	39.8	35.4	72	9.1	8.7		92	11.7	9.7	292	37.0	35.4	1	0.1
8	223	28.3	31.5	95	12.0	12.1		18	2.3	2.7	63	8.0	14.0	3	0.4
9	53	6.7	9.7	65	8.2	7.5		2	0.3	0.2	2	0.3	1.0	5	0.6
10				39	4.9	4.4									
11				17	2.2	2.4									
12				26	3.3	3.3									
n.d.	2	0.3		2	0.3			2	0.3		2	0.3		2	0.3
	789	100.1	100.1	789	99.8	100.0		789	100.1	100.2	789	100.2	100.0	789	100.1
															100.0



the same proportion of moorland – a generally acidic environment – as Britain as whole (one-third, Ireland excluded), and moorlands are in any case species-poor, the explanation must lie elsewhere. More likely it reflects the comparatively small areas with calcareous soils, and also the fact that originally calcareous soils in the wetter uplands have been subjected to sustained leaching, reducing their pH values. Thus only 8.3% of Northumberland's flora is indicative of moderately to strongly basic soils (scores 8 and 9), as compared with 15.0% for Britain and Ireland. Our species with Ellenberg score 9 are *Primula farinosa* and *Epipactis dunensis* (although for the Helleborine the score is more likely to apply to coastal than to metallophyte populations). The eight species with Ellenberg score 1 (indicator of extreme acidity) are *Lycopodium clavatum* (Stag's-horn Clubmoss), *Diphasiastrum complanatum*, *Betula nana*, *Andromeda polifolia* (Bog Rosemary), *Vaccinium microcarpum*, *Rubus chamaemorus* (Cloudberry), *Cornus suecica* and *Carex pauciflora* (Few-flowered Sedge) – all moorland (including montane and bog) plants.

**Soil nitrogen** is generally regarded as representing substrate productivity, and indeed phosphate may often be the more important macronutrient. For this factor Northumberland's flora is slightly less well represented than the British and Irish flora at the lower levels (Ellenberg values 1-4), and moderately better represented at most of the higher nitrogen levels. It is difficult to read much significance into this. Perhaps the small area of soils developed on limestone may be a factor contributing to the deficiency at the lower levels, and the high number of wetland species – many found in eutrophic habitats – and of strandline coastal species – growing in organic material – to the excess at the higher. The two species with value 9 (indicator of extremely rich situations) are *Persicaria laxiflora* (Tasteless Water-pepper) and *Rumex obtusifolius* (Broad-leaved Dock), the former very rare in Northumberland. It is generally considered that eutrophication is a major driver of floristic change in the UK (see the final section), favouring competitive nitrophilous species.

Values of 7 or above denote plants often found in richly fertile places, and of the examples of competitors given earlier under **Strategies**, *Epilobium hirsutum*, *Petasites hybridus* and *Arrhenatherum elatius* have value 7, and *Urtica dioica* 8. Conversely, all of the examples of stress-tolerators given have values of 3 or below, indicating more or less infertile sites. *Drosera rotundifolia* and *D. anglica* (Round-leaved and Great Sundews), not assigned strategies in the database, are examples of species with value 1.

For Ellenberg **salt tolerance**, 85.1% of British and Irish species are absent (score 0) from saline sites and 82.0% of Northumberland species, reasonably reflecting Northumberland's long coastline and variety of coastal habitats. Correspondingly, for most of the other tolerance scores Northumberland has slightly higher percentages than Britain and Ireland as a whole. The five Northumberland species which score 9 (extremely saline conditions, often on the lower marsh) are the *Salicornia* (glasswort) species.

As noted earlier, Ellenberg values have been used to measure changes through time, or variations in space, in environmental parameters of a habitat-type (say woodland) as assessed by average Ellenberg values of its constituent plants. Thus, for Northumberland, the present unweighted average soil moisture score for the 124 woodland species is 5.7 and the soil nitrogen score 5.3. For the fifty woodland specialists (indicators of ancient semi-natural woodland in lowland Northumberland: see Lunn (2004)) the soil nitrogen score is also 5.3. Kirby *et al.* (2005) have published histograms of Ellenberg score distributions for 103 woods spread across Britain, including in the uplands. For their specialist woodland species, peak soil nitrogen score is Ellenberg 5, followed by 6, as is also the case for

Northumberland. They found, however, no overall change in mean Ellenberg fertility (nitrogen) score between an original survey in 1971 and their repeat in 2001. But, not surprisingly, individual species that tended to decline in cover with modelled higher atmospheric N deposition had Ellenberg scores of 5 or less, while the increasers had scores of 6 or more. Although it had been hypothesised that there might be shifts in mean Ellenberg scores over the thirty years, reflecting compositional shifts along environmental gradients, it was concluded with respect to nitrogen that since woodland specialists were already towards the middle-to-upper end of Ellenberg scores, changes would be difficult to detect.

In another recent temporal study, Smart *et al.* (2005), using Ellenberg N values and other traits, showed that the most pervasive changes in common plant abundance in Britain reflected increased nutrient availability in less fertile upland and lowland vegetation types: species with lower N values, and which were stress-tolerators, had declined since 1978.

In a spatial application, Willi *et al.* (2005) recorded Ellenberg values along transects from arable and other margins in Cambridgeshire woods to infer consequences of nitrogen fertiliser drift into ancient woodland. They found significant responses along their transects, with, for example, *Galium aparine* (N value 8) benefiting and *Deschampsia caespitosa* (Tufted Hair-grass: N value 4) apparently being suppressed by assumed eutrophication.

#### **Rarity/scarcity**

In the *Plantatt* database rare species are defined as occurring in fifteen or fewer hectads in Britain and the Isle of Man, and scarce species in sixteen to a hundred hectads (in both cases 1987-1999). For Northumberland, on this basis, there are nine national rarities, forty-nine nationally scarce species, 730 commoner species and one (*Hieracium* agg.) for which it is inappropriate to provide an overall status. These figures compare with the respective British figures of 234 (rare) and 254 (scarce), out of the *Plantatt* total (under 'rarity status') of 1,423 native species. The proportions are strikingly different. For rare species they are, for Northumberland, 1.1% of the native flora compared with 16.4% for Britain, and for scarce species, for Northumberland 6.2% compared with 17.8% for Britain. Reasons why Northumberland has such a spectacular deficit in rare and scarce species must include:

1. Lack of high mountains, especially those with calcareous habitats, and lack of northern oceanic basiphilous habitats (Tertiary lavas).
2. Virtual lack of some limestone habitats, *e.g.* pavement, gorges, chalk downland, Magnesian Limestone, the upper Teesdale complex of habitats.
3. Virtual lack of lowland heaths.
4. Lack of significant coastal shingle structures.
5. Lack of some extreme oceanic elements owing to Northumberland's eastern location.
6. Lack of extreme continental habitats, comparable to parts of East Anglia.
7. The county's northern location, excluding many rare and scarce members of more southern geographical elements.

Although we have extensive bogs, some in near-natural condition, this is a species-poor habitat, and supports in the county only two nationally scarce plants (*Vaccinium micro-*



*carpum*, *Carex magellanicum*). Our Whin Sill habitats (grassland, crag, scree), and metal-liferous habitats, on the other hand, are both distinctive and relatively species-rich, and together support eleven nationally scarce species.

Northumberland's nine *Plantatt* 'rare' species are:

<i>Diphysastrum complanatum</i>	Yellow cypress Clubmoss
<i>Salicornia nitens</i>	Shiny Glasswort
<i>Alchemilla acutiloba</i>	a lady's-mantle
<i>A. micans</i>	a lady's-mantle
<i>Polemonium caeruleum</i>	Jacob's-ladder
<i>Crepis mollis</i>	Northern Hawk's-beard
<i>Eleocharis austriaca</i>	Northern Spike-rush
<i>Hierochloe odoratum</i>	Holy-grass
<i>Epipactis sancta</i> (not in <i>Plantatt</i> )	Lindisfarne Helleborine

They are from a diverse range of habitats.

The forty-nine nationally scarce species (occurring in 16-100 hectads), apart from the eleven whin and metalliferous ones, include fifteen coastal species – reflecting Northumberland's long and varied coastline; this twenty-six accounts for over half the total. The others are distributed among a range of habitats. There are only three woodland species (*Pinus sylvestris* – if native, *Ribes spicatum*, *Hordelymus europaeus*), despite Northumberland having 16% woodland and forest cover, one of the highest in England. However the area of ancient, semi-natural woodland is only 0.5%, one of the lowest. At the British scale, the 254 nationally scarce species are assigned in *Plantatt* to broad habitats, and, scoring with fractions when more than one habitat is indicated for a species, their proportional distributions are as follows:

	%
woodland	10.4
boundary and linear features	8.8
arable, built-up, gardens	2.2
grassland (other than calcareous)	9.0
calcareous grassland	11.9
moorland, including bog; heathland	16.6
wetland	16.8
montane	8.7
coastal	15.7
	<b>100.1</b>

Although the classification is rather different from that used for Northumberland's habitats, many nationally scarce species clearly occur in habitats – certain types of woodland, calcareous grassland, montane – in which Northumberland is lacking or deficient.

As regards the distribution of nationally rare and scarce species occurring in Northumberland among families, our six largest families, with 302 species, comprise 38.3% of the flora. They contain nineteen of our fifty-eight nationally rare and scarce species, which is 32.8%. In fact the rare and scarce species are spread reasonably across the systematic range, although the Asteraceae muster only a single species, the nationally rare *Crepis mollis*, and the Fabaceae not even one.

### Conservation status

Nationally rare species as just defined are not the same as, though the lists overlap with, successive British vascular plant *Red Data Book (RDB)* or *Red Data List (RDL)* species (3rd edition *RDB*: Wigginton, 1999; 4th edition *RDL*: Cheffings and Farrell, 2005). This is because (i) inclusion in the *RDB/Ls* is based on different criteria to *Plantatt*'s rarity criterion, (ii) the *RDB/Ls* include subspecies, and in the case of *RDL4* hybrids and archaeophytes, (iii) there have been changes in taxonomic status. There were nine Northumberland taxa qualifying for inclusion in the 3rd edition *RDB* (including Near Threatened taxa):

<i>Diphasiastrum complanatum</i>	yellow cypress clubmoss
<i>Trichomanes speciosum</i>	Killarney fern
<i>Asplenium trichomanes</i> subsp. <i>pachyrachis</i>	lobed maidenhair spleenwort
<i>Alchemilla acutiloba</i>	a lady's-mantle
<i>A. micans</i>	a lady's-mantle
<i>Polemonium caeruleum</i>	Jacob's-ladder
<i>Eleocharis austriaca</i>	northern spike-rush
<i>Hierochloa odorata</i>	holy-grass
<i>Epipactis youngiana</i>	Young's helleborine

Of these, *Trichomanes speciosum* (for which we have the relatively abundant gametophyte only) occurs in more than fifteen British hectads, *Asplenium trichomanes* subsp. *pachyrachis* is a subspecies and *Epipactis youngiana* is now regarded as a variety of *Epipactis helleborine*. Five of the other six *RDB* species are *Plantatt* rarities, and *Epipactis sancta* had not then been recognised although it would qualify as a rarity.

The 4<sup>th</sup> edition *RDL* analyses the entire flora and uses strict International Union for Conservation of Nature (IUCN) selection criteria (rather than primarily rarity). These are: mainly percentage decline since the 1930s according to various measures, extremely restricted distribution with continuing decline, extremely small or restricted populations. The *RDL* includes subspecies, some hybrids and archaeophytes. It classes taxa into Critically Endangered (Northumberland has no such taxa), Endangered, Vulnerable, Near Threatened and (the majority) of Least Concern. Using these 4th edition criteria both Britain and Northumberland have many more, and different, Red species or subspecies (including Near Threatened ones). Northumberland has eight Endangered taxa, twenty-four Vulnerable ones and twenty-seven which are Near Threatened – fifty-nine in total. They are listed in Table 4 and in the database.

Considering only the eight Endangered taxa, all except *Alchemilla micans* and *Epipactis sancta* qualify solely on the percentage decline criterion – *Scleranthus annuus* (annual knawel), *Monotropa hypopitys* (Yellow Bird's-nest), *Astragalus danicus* and *Gnaphalium sylvaticum* (Heath Cudweed) still occur in at least a hundred British hectads. *Alchemilla micans* and *Epipactis sancta* qualify mainly on restricted distribution and/or small or restricted population – the Lady's-mantle occurs in Britain only in Northumberland, and the Helleborine is endemic to Britain and to Northumberland. Similarly, many of the Vulnerable and Near Threatened species qualify on the percentage recent decline criterion.

The fifty-nine Red taxa (in some cases only one subspecies being of conservation concern) comprise 7.5% of Northumberland's native flora. Unfortunately the summary table in the 4th edition *Red List* does not separate native full species and subspecies (listed for



Northumberland in Table 4) from hybrids and archaeophytes (not included in the database), so it is impossible to make a straight comparison. Nevertheless, assuming that the latter groups do not grossly distort the proportions of species and subspecies which are at risk respectively at Northumberland and at British levels, the 7.5% Red Northumberland species can be compared with 25.4% Red taxa at country level. Accepting that rarity is only one of the criteria for inclusion in the 4th edition *RDL*, this marked difference (of three and a half times) again reflects Northumberland's deficit in rare and scarce species.

The only Northumberland species which there is an international obligation to protect (under *Habitats Directive* Annex II (EEC, 1992) is *Trichomanes speciosum*. 'All orchids' are protected under the CITES Convention. However, the UK assumes a special responsibility for those taxa for which it contains more than 25% of the European population. This is a value that is difficult to assess for some taxa, but the 4th edition *RDL* provisionally classes taxa (including many that are of Least Concern in Britain) into more or less certain ('yes'), probable and possible under this criterion, and the fifty-two Northumberland species concerned are listed in Table 5 and entered in the database. Many are extremely common and widespread in Northumberland.

Government, under Section 74 of the 2000 Countryside and Rights of Way Act (DEFRA, 2002), and as part of the UK Biodiversity Plan process, published lists of habitats and species of principal importance for the conservation of biological diversity in England. Northumberland higher plants on the list of *Species of principal importance* are:

<i>Trichomanes speciosum</i>	Killarney fern
<i>Juniperus communis</i>	juniper
<i>Fumaria purpurea</i>	purple ramping-fumitory
<i>Epipactis youngiana</i> (not now regarded as a full species)	

### Rarity within Northumberland

As regards rarity within Northumberland, Swan's *Flora* divides the county into 255 five-by-five kilometre squares. Presence of a plant in thirty to nine squares is arbitrarily taken here as the local criterion of uncommonness, although the fact that most coastal species, owing to geometry, are in the thirty or fewer squares class skews the arithmetic. *Pro-rata* to *Plantatt*'s national criterion for scarcity (those occurring in 16-100 of Britain's approximately 3,500 hectads), presence in 2-8 Northumberland squares is taken as the local criterion of scarcity. Correspondingly, since national rarity is defined as presence in 1-15 hectads, the proportionate value for Northumberland would be presence in one of Swan's squares. The scores are given under 'comm' in the database. Analysing the Northumberland flora in this way, out of the 789 native species, 143 are 'uncommon' (occurring in 30-9 squares), 116 are 'scarce' and fifty-one are 'rare' (occur in a single square) – the 310 account for 39.3% of the flora. At these arbitrary frequency intervals there are somewhat more widespread species than less common ones. Similarly in neighbouring Berwickshire, Braithwaite (2004) found widespread native species (occurring in many tetrads: 2×2 square kilometres) to be rather more numerous than scarce ones, although his sampling strategy omitted many tetrads. In Berkshire, Crawley (2005), based on an analysis of occurrence across all of his hectads, found a clear U-shaped pattern, with the largest number of species being those confined to a single hectad and the next most frequent category being the ubiquitous species (in all hectads), with a smooth U-relationship between. Unfortunately the data is unavailable to analyse Northumberland's flora in this way.

**Table 4 Northumberland's 4th edition Red Data List species** Source: Cheffings and Farrell (2005)

(no Critically Endangered spp.)

<b>Endangered</b>	
<i>Scleranthus annuus</i>	annual knawel
<i>Monotropa hypopitys</i>	yellow bird's-nest
<i>Alchemilla micans</i>	a lady's-mantle
<i>Astragalus danicus</i>	purple milk-vetch
<i>Crepis mollis</i>	northern hawk's-beard
<i>Gnaphalium sylvaticum</i>	heath cudweed
<i>Carex maritima</i>	curved sedge
<i>Epipactis sancta</i>	Lindisfarne helleborine

<b>Vulnerable</b>	
<i>Myosurus minimus</i>	mousetail
<i>Salsola kali</i>	prickly saltwort
<i>Persicaria mitis</i>	tasteless water-pepper
<i>Persicaria minor</i>	small water-pepper
<i>Pyrola media</i>	intermediate wintergreen
<i>Primula farinosa</i>	bird's-eye primrose
<i>Saxifraga hypnoides</i>	moosy saxifrage
<i>Alchemilla acutiloba</i>	an eyebright
<i>Alchemilla glomerulans</i>	a lady's-mantle
<i>Myriophyllum verticillatum</i>	whorled water-milfoil
<i>Oenanthe fistulosa</i>	tubular water-dropwort
<i>Gentianella campestris</i>	field gentian
<i>Clinopodium acinos</i>	basil thyme
<i>Euphrasia rostkoviana</i>	an eyebright
<i>Hydrocharis morsus-ranae</i>	frogbit
<i>Groenlandia densa</i>	opposite-leaved pondweed
<i>Zostera noltei</i>	dwarf eelgrass
<i>Blysmus compressus</i>	flat-sedge
<i>Carex divisa</i>	divided sedge
<i>Allium oleraceum</i>	field garlic
<i>Corallorrhiza trifida</i>	coralroot orchid
<i>Platanthera bifolia</i>	lesser butterfly-orchid
<i>Pseudorchis albida</i>	small-white orchid
<i>Dactylorhiza viridis</i>	frog orchid



Near Threatened	
<i>Diphasiastrum complanatum</i>	yellow cypress clubmoss
<i>Hymenophyllum wilsonii</i>	Wilson's filmy-fern
<i>Asplenium trichomanes</i>	lobed maidenhair spleenwort subsp. <i>pachyrachis</i> only
<i>Asplenium septentrionale</i>	forked spleenwort
<i>Minuartia verna</i>	spring sandwort
<i>Dianthus deltoides</i>	maiden pink
<i>Drosera anglica</i>	great sundew
<i>Viola canina</i>	heath dog-violet subsp. <i>canina</i> only
<i>Viola tricolor</i>	wild pansy subsp. <i>tricolor</i> only
<i>Teesdalia nudicaulis</i>	shepherd's cress
<i>Pyrola rotundifolia</i>	round-leaved wintergreen subsp. <i>rotundifolia</i> only
<i>Anagallis minima</i>	chaffweed
<i>Sedum villosum</i>	hairy stonecrop
<i>Genista anglica</i>	petty whin
<i>Cornus suecica</i>	dwarf cornel
<i>Radiola linoides</i>	allseed
<i>Meum athamanticum</i>	spignel
<i>Cynoglossum officinale</i>	hound's-tongue
<i>Orobanche rapum-genistae</i>	greater broomrape
<i>Filago vulgaris</i>	common cudweed
<i>Baldellia ranunculoides</i>	lesser water-plantain
<i>Potamogeton praelongus</i>	long-stalked pondweed
<i>Zostera marina</i>	eelgrass
<i>Zostera angustifolia</i>	narrow-leaved eelgrass
<i>Carex diandra</i>	lesser tussock-sedge
<i>Neottia nidus-avis</i>	bird's-nest orchid
<i>Platanthera chlorantha</i>	greater butterfly-orchid

The Botanical Society of the British Isles recommends that native and archaeophyte species currently present at three sites or less in a vice-county be included in a register as locally rare, and those in four to ten sites as locally scarce. The information in the database does not lend itself to such an analysis, because it covers two vice-counties and excludes archaeophytes. Additionally there is the problem of the relationship between sites and squares – sites can overlap squares or there can be more than one site in a square – and squares vary in size between county Floras.

**Table 5 Northumberland species of international concern**  
(>25% European population) Source: Cheffings and Farrell (2005)

SPECIES	Common Name	>25% European population
<i>Fumaria muralis</i>	common ramping-fumitory	possibly
<i>Erica tetralix</i>	cross-leaved heath	possibly
<i>Erica cinerea</i>	bell heather	possibly
<i>Alchemilla filicaulis</i>	a lady's-mantle	possibly
<i>Sorbus rupicola</i>	rock whitebeam	possibly
<i>Genista anglica</i>	petty whin	possibly
<i>Ulex gallii</i>	western gorse	possibly
<i>Myosotis secunda</i>	creeping forget-me-not	possibly
<i>Myosotis stolonifera</i>	pale forget-me-not	possibly
<i>Callitriche obtusangula</i>	blunt-fruited water starwort	possibly
<i>Littorella uniflora</i>	shoreweed	possibly
<i>Seriphidium maritimum</i>	sea wormwood	possibly
<i>Potamogeton coloratus</i>	fen pondweed	possibly
<i>Eleocharis multicaulis</i>	many-stalked spike-rush	possibly
<i>Blysmus rufus</i>	saltmarsh flat-sedge	possibly
<i>Carex maritima</i>	curved sedge	possibly
<i>Carex laevigata</i>	smooth-stalked sedge	possibly
<i>Conopodium majus</i>	pignut	probably
<i>Apium inundatum</i>	lesser marshwort	probably
<i>Euphrasia arctica</i>	an eyebright	probably
<i>Baldellia ranunculoides</i>	lesser water-plantain	probably
<i>Carex binervis</i>	green-ribbed sedge	probably
<i>Hymenophyllum tunbridgense</i>	Tunbridge filmy-fern	yes
<i>Hymenophyllum wilsonii</i>	Wilson's filmy-fern	yes
<i>Polypodium interjectum</i>	intermediate polypody	yes
<i>Asplenium marinum</i>	sea spleenwort	yes
<i>Dryopteris oreades</i>	mountain male-fern	yes
<i>Dryopteris affinis</i>	scaly male-fern	yes
<i>Ranunculus hederaceus</i>	ivy-leaved crowfoot	yes
<i>Ranunculus omiophyllus</i>	round-leaved crowfoot	yes
<i>Ceratocapnos claviculata</i>	climbing corydalis	yes
<i>Fumaria capreolata</i> *	white ramping fumitory	yes subsp. <i>babingtonii</i> only
<i>Fumaria purpurea</i> *	purple ramping-fumitory	yes
<i>Atriplex glabriuscula</i>	Babington's orache	yes
<i>Atriplex laciniata</i>	frosted orache	yes



<i>Cerastium diffusum</i>	sea mouse-ear	yes
<i>Polygonum oxyspermum</i>	Ray's knotgrass	yes
<i>Rorippa microphylla</i>	narrow-fruited water-cress	yes
<i>Cochlearia anglica</i>	English scurvygrass	yes
<i>Lepidium heterophyllum</i>	Smith's pepperwort	yes
<i>Saxifraga hypnoides</i>	mossy saxifrage	yes
<i>Gentianella amarella</i> ≠	autumn gentian	yes subsp. septentrionalis only
<i>Euphrasia tetraquetra</i>	an eyebright	yes
<i>Euphrasia confusa</i>	an eyebright	yes
<i>Galium sternerii</i>	limestone bedstraw	yes
<i>Alopecurus borealis</i>	alpine foxtail	yes
<i>Scilla verna</i>	spring squill	yes
<i>Epipactis phyllanthes</i>	green-flowered helleborine	yes
<i>Epipactis dunensis</i> ≠	dune helleborine	yes
<i>Epipactis sancta</i> ≠	Lindisfarne helleborine	yes
<i>Dactylorhiza purpurella</i>	northern marsh-orchid	yes

\* British Isles endemic ≠ British endemic

### Important plants for Northumberland<sup>2</sup>

From (1) the lists of *Plantatt* nationally rare and scarce species, (2) the lists of 4th edition *RDL* plants (Endangered, Vulnerable and Near-threatened species), (3) distribution maps in the *New Atlas* and (4) information on commonness in Northumberland (given under 'comm' in the database), can be assembled a list of nationally important plants which are also well-represented in Northumberland (occurring here in more than eight squares), and of which the county (together with adjacent vice-counties) holds a substantial proportion of their British populations. They are in a sense our botanical specialities. That is, these plants meet **all** of the criteria of *RDB* Endangered, Vulnerable or Near-threatened status, or *Plantatt* rarity or scarcity status, **and** occur here in more than eight squares **and** Northumberland (plus adjacent areas) holds a substantial proportion of their British populations. They are:

<i>Minuartia verna</i>	spring sandwort	metallophyte
<i>Dianthus deltoides</i>	maiden pink	basic rocks, river shingle
<i>Thlaspi caerulescens</i>	alpine pennycress	metallophyte
<i>Ribes spicatum</i>	downy currant	woodland
<i>Sedum villosum</i>	hairy stonecrop	base-rich flushes, whin
<i>Myosotis stolonifera</i>	pale forget-me-not	acidic flushes, rills
<i>Crepis mollis</i>	northern hawk's-beard	meadows, verges
<i>Eleocharis austriaca</i>	northern spike-rush	upland river margins

<sup>2</sup> These important plants are effectively defined by rarity and threat. Another criterion of importance is desirability from a conservation point of view because the species is functionally important, or indicative of a habitat of conservation importance: such species have been termed 'axiophytes' (BSBI News, 2005, no. 99, p. 5), important plants in another sense. There is no attempt to specify them here for Northumberland.

The Eyebright subspecies *Euphrasia rostkoviana* subsp. *montana* can be added, as might *Andromeda polifolia*, although it just fails to meet the nationally scarce criterion. *Eleocharis austriaca*, however, should perhaps be removed, since it appears to have suffered recent decline in Northumberland. The UK possibly contains more than 25% of the European population of *Myosotis stolonifera*.

As can be seen, the plants belong to a variety of habitats. *Myosotis stolonifera* is plentiful by springs and streams in the Cheviots (and at the head of Redesdale) and in the North Pennines, but oddly lacking in the extensive uplands between.

#### **Northumberland species in relation to Change in the British flora 1987-2004**

Braithwaite *et al.*'s (2006a) impressively thorough report compares distributional changes between 1987-88 and 2003-04 by a repeat survey on a sample tetrad scale; 811 tetrads, arranged in a regular grid, represented 1% of Britain. The index of change appropriate to an analysis of species is Relative Change (RC), an abstract value which is proportionate net gain or loss between the two surveys, after adjustment for the likelihood of a species being recorded where present (in effect it is an adjustment for over-recording in the second survey; it measures change relative to an average for species without too many recording problems). RC shows percentage net gain or loss over the period, after making the relative over-recording adjustment, such that a doubling of the number of sample tetrads recording a species gives RC = +50%, and a halving = -50%. Archaeophytes and neophytes were recorded but are not discussed here. RC is entered in the database. The *Change* survey is further discussed by Braithwaite *et al.* (2006b).

Of Northumberland's 789 species, 150 (19.0%) do not appear in the table in *Change in the British flora*, either because they are too scarce to feature in the sample surveys or in some cases because of identification difficulties. Of those recorded, 335 (42.5%) are in national decline (with a negative RC), twenty-four (3%) show no change (with RC = 0), and 280 (35.5%) have a national increase (with a positive RC). Of course, species which are declining or increasing in Britain may or may not show similar trends in Northumberland, for which equivalent data is in any case lacking. These, however, are crude figures, not allowing for significance levels; the comparable Britain-wide figures for 726 species for which the results are considered significant (but including archaeophytes) are: decline 114 (15.7%), no change 480 (66.1%), increase 132 (18.2%).

It is of interest to list the more extreme positive and negative RC values for Northumberland species, while accepting that lesser changes may also be of considerable interest. Table 6 lists the twenty-one species for which the national decline is an arbitrary RC -30% or higher, and the forty species for which the national increase is an arbitrary RC +30% or higher. (To clarify, -30% means that, after the relative over-recording adjustment, there are thirty fewer records in the second survey per hundred records in the first; similarly +30% means thirty net gains out of a hundred records in the repeat survey, that is thirty gains over seventy original records.)

*Change in the British flora* provides a tentative assessment for many species of the likely drivers of change at the national scale, complex though interactions may be. Thus for the twenty-one Northumberland species with British RC -30% or more, seven are not discussed or RC is unreliable owing to small samples or for other reasons. However for eight species the prime driver is suggested as eutrophication, for four it is under- or over-grazing, for one habitat loss and for one agricultural improvement. For the forty Northumberland species



with RC +30% or more, eleven are not discussed or data is unreliable, nine are garden escapes, plantings or are from wildflower mixes, five are roadside halophytes (spreading along verges of winter-salted roads), two are due to eutrophication, one has benefited from set-aside, three are from lawns, gardens or urban sprawl (an increase in disturbed, ruderal habitats) and one has spread on forest roads. The other eight are considered to have benefited from climate change – warmer and/or drier summers or warmer winters.

As examples, *Viola lutea* (Mountain Pansy: -57%, one of the higher declines nationally), a stress-tolerant species, is regarded as suffering nationally from eutrophication and therefore increased competition, as well as from over-grazing. Similarly *Trifolium arvense* (Hare's-foot Clover: -30%), a stress-tolerant ruderal, has suffered from eutrophication but also from herbicide applications. Of the gainers, the roadside halophytes are *Atriplex prostrata* (+31%), *A. littoralis* (Grass-leaved Orache: +68%), *Spergularia marina* (Lesser Sea-spurrey: +61%), *Cochlearia danica* (Danish Scurvygrass: +69%) and *Puccinellia distans* (Reflexed Saltmarsh-grass: +67%). All of these have spread in Northumberland, some from before the *Change* project. *Cochlearia danica*, a winter annual, has probably also benefited from warmer winters. The species well-known to have spread along forest roads, including in Northumberland, is *Spergularia rubra* (+40%), but *Filago vulgaris* (Common Cudweed:

**Table 6** Extremes of Relative Change (RC) Source: Braithwaite et al (2006a)

Decrease		% relative change
<i>Dryopteris expansa</i>	northern buckler-fern	-59
<i>Viola lutea</i>	mountain pansy	-57
<i>Eleocharis uniglumis</i>	slender spike-rush	-53
<i>Clinopodium acinos</i>	basil thyme	-51
<i>Vicia sylvatica</i>	wood vetch	-50
<i>Oenanthe aquatica</i>	fine-leaved water-dropwort	-50
<i>Platanthera bifolia</i>	lesser butterfly-orchid	-49
<i>Arabis hirsuta</i>	hairy rock-cress	-48
<i>Vicia lathyroides</i>	spring vetch	-47
<i>Campanula latifolia</i>	giant bellflower	-45
<i>Melica nutans</i>	mountain melick	-44
<i>Sagina nodosa</i>	knotted pearlwort	-43
<i>Rorippa sylvestris</i>	creeping yellow-cress	-43
<i>Callitriche obtusangula</i>	blunt-fruited water-starwort	-40
<i>Sparganium natans</i>	least bur-reed	-39
<i>Saxifraga granulata</i>	meadow saxifrage	-38
<i>Apium inundatum</i>	lesser marshwort	-37
<i>Dryopteris oreades</i>	mountain male-fern	-34
<i>Hippuris vulgaris</i>	mare's-tail	-34
<i>Trifolium arvense</i>	hare's-foot clover	-30
<i>Gentianella amarella</i>	autumn gentian	-30

Table 6 Cont.

Increase		% relative change
<i>Carex distans</i>	distant sedge	30
<i>Convallaria majalis</i>	lily-of-the-valley	30
<i>Atriplex prostrata</i>	spear-leaved orache	31
<i>Malva moschata</i>	musk mallow	31
<i>Sherardia arvensis</i>	field madder	31
<i>Carex spicata</i>	spiked sedge	31
<i>Myosotis sylvatica</i>	wood forget-me-not	32
<i>Malus sylvestris</i>	crab apple	33
<i>Epilobium parviflorum</i>	hoary willowherb	33
<i>Geranium lucidum</i>	shining crane's-bill	33
<i>Anthriscus caucalis</i>	bur chervil	34
<i>Lathraea squamaria</i>	toothwort	34
<i>Fumaria muralis</i>	common ramping-fumitory	36
<i>Carex extensa</i>	long-bracted sedge	38
<i>Geranium pusillum</i>	small-flowered crane's-bill	39
<i>Sagina apetala</i>	annual pearlwort	40
<i>Spergularia rubra</i>	sand spurrey	40
<i>Trifolium micranthum</i>	slender trefoil	40
<i>Epilobium tetragonum</i>	square-stalked willowherb	41
<i>Carex pendula</i>	pendulous sedge	41
<i>Listera cordata</i>	lesser twayblade	41
<i>Carex muricata</i>	small-fruited prickly-sedge	42
<i>Anacamptis pyramidalis</i>	pyramidal orchid	42
<i>Aquilegia vulgaris</i>	columbine	43
<i>Potamogeton pusillus</i>	lesser pondweed	44
<i>Eriophorum latifolium</i>	broad-leaved cottongrass	45
<i>Tilia cordata</i>	small-leaved lime	47
<i>Geranium sanguineum</i>	bloody crane's-bill	48
<i>Filago vulgaris</i>	common cudweed	48
<i>Ophrys apifera</i>	bee orchid	48
<i>Populus nigra</i>	black poplar	58
<i>Spergularia marina</i>	lesser sea-spurrey	61
<i>Lactuca virosa</i>	great lettuce	62
<i>Torilis nodosa</i>	knotted hedge-parsley	65
<i>Puccinellia distans</i>	reflexed saltmarsh-grass	67
<i>Atriplex littoralis</i>	grass-leaved orache	68
<i>Cochlearia danica</i>	Danish scurvygrass	69
<i>Stellaria pallida</i>	lesser chickweed	80
<i>Dactylorhiza maculata</i>	heath spotted-orchid	86
<i>Symphytum officinale</i>	common comfrey	92



+48%) has also spread in this habitat in Northumberland as well as more widely being a colonist of nutrient-poor ruderal habitats. The garden escapes include *Aquilegia vulgaris* (Columbine: +43%), *Geranium sanguineum* (Bloody Crane's-bill: +48%), *Myosotis sylvatica* (Wood Forget-me-not: +32%), *Carex pendula* (+41%) and *Convallaria majalis* (Lily-of-the-valley: +30%), but there is no information as to recent increases or otherwise of these in Northumberland. *Geranium lucidum* (Small-flowered Crane's-bill: +33%) is also a garden escape here. *Ophrys apifera* (+48%) has recently spread north into Northumberland as part of a more general extension of its range to the north and west, very likely related to climate change; it belongs to the Submediterranean-Subatlantic element. The colonisation of less-sheltered habitats in the north by *Phyllitis scolopendrium* (Hart's-tongue Fern: +21%) might also be a response to climate change (a reduction of frosts?), but, according to Braithwaite *et al.* (2006a), could also be due to a more hardy variety of the plant naturalising from gardens.

The highest reliable British loss among Northumberland species is for *Viola lutea* (-57%), and the highest reliable gain is for *Cochlearia danica* (+69%) – these figures represent more than halving and more than doubling respectively. Overall, *Change in the British flora* con-

**Table 7** Northumberland native species showing the greatest relative decrease in Britain between 1930-69 and 1987-99 Source: Preston, Telfer *et al.* (2002). Arranged in descending order of change index (*i.e.* greatest decrease at the top)

<i>Scleranthus annuus</i>	annual knawel
<i>Gnaphalium sylvaticum</i>	heath cudweed
<i>Platanthera bifolia</i>	lesser butterfly-orchid
<i>Euphrasia</i> agg.	eyebrights
<i>Clinopodium acinos</i>	basil thyme
<i>Viola tricolor</i>	wild pansy
<i>Ranunculus aquatilis</i>	common water-crowfoot
<i>Carex maritima</i>	curved sedge
<i>Dactylorhiza viridis</i>	frog orchid
<i>Mentha arvensis</i>	corn mint
<i>Blasmus compressus</i>	flat-sedge
<i>Pedicularis sylvatica</i>	lousewort
<i>Gentianella campestris</i>	field gentian
<i>Silene vulgaris</i>	bladder campion
<i>Groenlandia densa</i>	opposite-leaved pondweed
<i>Crepis mollis</i>	northern hawk's-beard
<i>Filago vulgaris</i>	common cudweed
<i>Oenanthe fistulosa</i>	tubular water-dropwort
<i>Anagallis minima</i>	chaffweed
<i>Leucanthemum vulgare</i>	oxeye daisy
<i>Sagina nodosa</i>	knotted pearlwort
<i>Polygala vulgaris</i>	common milkwort
<i>Pyrola media</i>	intermediate wintergreen

siders that eutrophication and climate change are the probable main drivers of change, with, for example, species with low Ellenberg nitrogen values – those occurring in less fertile habitats – showing decline.

A broader and earlier, but overlapping, analysis of change in the British flora was by Preston, Telfer *et al.* (2002) in the *New Atlas*. Using all British hectads they derived a change index measuring relative performance (compared with an 'average' species) between 1930-69 and 1987-99. They noted that, in general, frequent and wide-ranging species showed increases. The twenty-three Northumberland natives which showed the greatest relative British decreases are listed in Table 7. An across-Britain analysis indicated that decreasing species tended to be those of Ellenberg open (not shady), or dry, or strongly acidic or basic, or infertile habitats – in some cases, such as *Clinopodium acinos* (Basil Thyme) and *Pedicularis sylvatica* (Lousewort), all of these. The twenty-three Northumberland species generally fit this conclusion, although some remain common enough with us: *Silene vulgaris* (Bladder Campion), *Polygala vulgaris*, *Euphrasia* agg., *Pedicularis sylvatica*, *Leucanthemum vulgare* (Oxeye Daisy). Increasing species tended to be taller, shade-tolerant and nutrient-demanding.

Walker and Preston (2006), for Bedfordshire and Northamptonshire, found that the ecological and phytogeographical traits which best predicted extinction risk were association with nutrient-poor habitats (with low Ellenberg N values) and restricted English range size (rarity).

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#### ACKNOWLEDGMENT

Michael Braithwaite kindly advised on the interpretation of scores in *Change in the British flora*.



SHORT COMMUNICATION

FURTHER PARTS OF THE THRUNTON EAGLE SURVIVE

Les Jessop

Natural History Society of Northumbria, Great North Museum: Hancock, Newcastle upon Tyne NE2 4PT

Occurrences of White-tailed Eagles *Haliaeetus albicilla* L. are sufficiently uncommon in Northumberland for individual records to be noteworthy, and preserved specimens with Northumberland provenances are very rare. In 1991 P A Cottam published an article on a specimen in the collections of the Natural History Society of Northumbria that consists of part of the skeleton of a White-tailed Eagle shot on Thrunton Moor in 1877. This note places on record the survival of the skin of the same bird as a mounted specimen in the collections of Tyne and Wear Archives and Museums (TWAM).

Two White-tailed Eagles were killed in the region in 1877. The first was shot on 7 February near Bedshiel in Greenlaw parish, Berwickshire (Brotherton, 1879; Hardy, 1879; Muirhead, 1889) and was presented to the Berwick Museum.

The second, the Thrunton bird, was killed by the Earl of Ravensworth's gamekeeper (Hardy, 1879; Bolam, 1912). Further details were included in a letter, now in the archives of the Natural History Society of Northumbria (NEWHM: 1996.H67, no. 1257) sent to John Hancock by Lord Ravensworth on 21 March 1877. The bird was shot on Saturday 17 March in a pine wood called Black-Cock Planting [this was on the east side of Coe Hill, O.S. grid reference NU0808]. The bird weighed 9½ pounds (4.3 kilograms) and had a wingspan of 6 feet 7 inches (2 metres). Lord Ravensworth guessed the bird was probably two or three years old. It was notable for the 'large admixture of white feathers with the black brown plumage on the back and breast. The back especially is nearly all white'. The specimen had been sent to the taxidermist Robert Duncan to be set up, and Lord Ravensworth invited John Hancock to examine it.

Many bird specimens from Lord Ravensworth's collection were later given to the Shipley Art Gallery in Gateshead: a donation of 350 birds in 1928 was followed by a further number in 1936. They have been in the care of TWAM since 1974 and are currently stored in Sunderland Museum. One specimen (TWCMS: H15821) agrees with the description quoted above in having an extensive amount of white coloration on the feathers on the back and breast. However, it was formerly misidentified as a Golden Eagle and labelled as such, the old handwritten label being identical in style to many labels on the Shipley Art Gallery's display specimens. The large yellow bill, the unfeathered tarsi, dark tail and the series of large scales on the toes indicate that it is a White-tailed Eagle. The inside of the wooden case housing the specimen is signed by Duncan and dated 1877.

The coincidence of identity (an immature White-tailed Eagle), coloration, taxidermist and date strongly suggest that TWCMS: H15821 is the bird shot on Thrunton Moor on 17 March 1877, and the taxidermy mount complements the skeletal remains of the same bird in the Natural History Society of Northumbria collections.

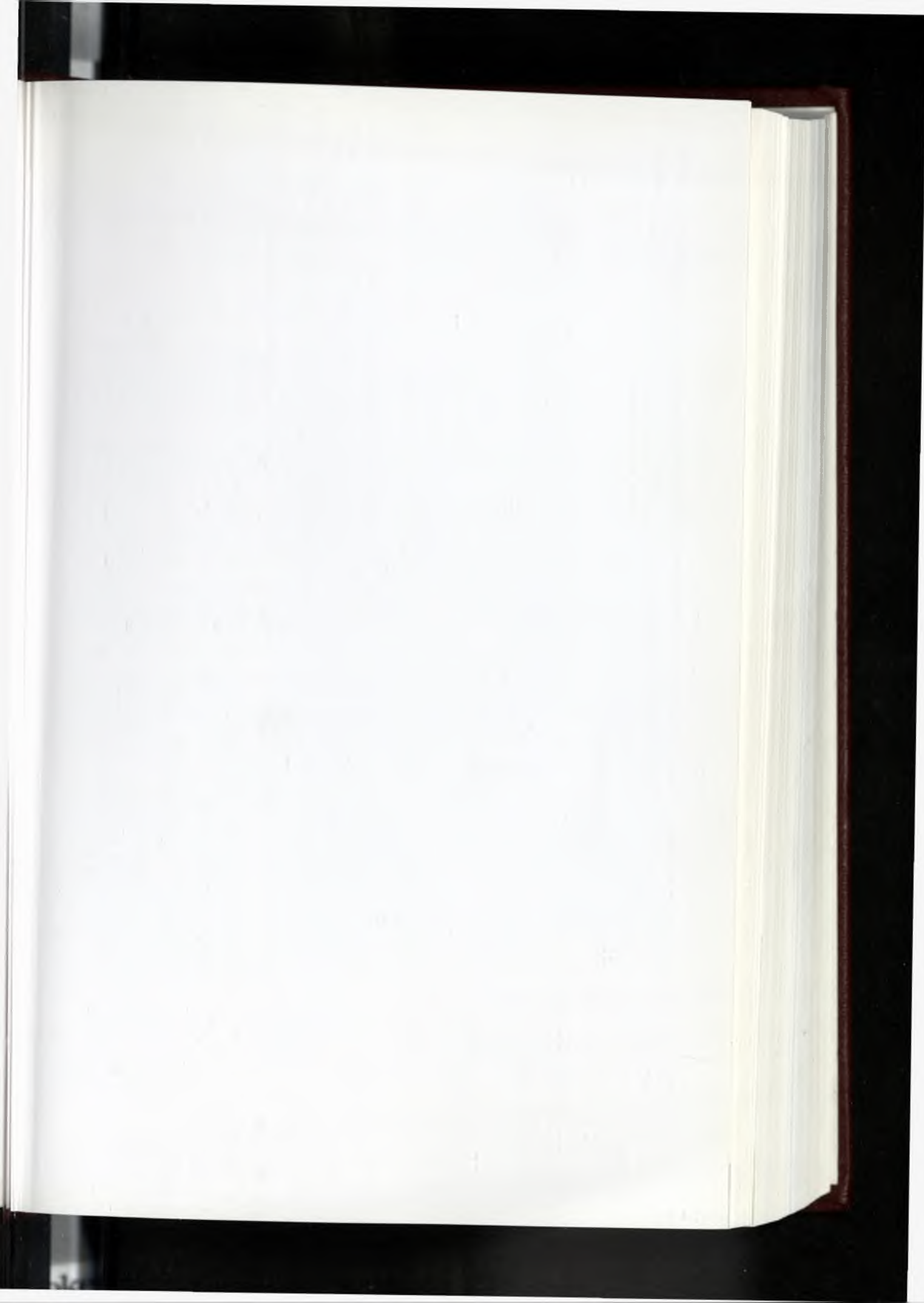
#### ACKNOWLEDGEMENTS

I would like to thank Ann Stephenson and June Holmes, Archivist of the Natural History Society of Northumbria and Daniel Gordon, Keeper of Biology for TWAM, for their help in accessing archives and collections.

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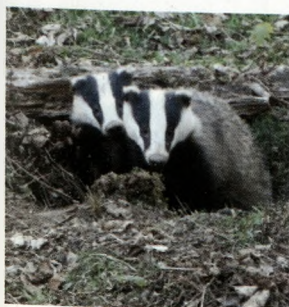


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*Society of*  
Northumbria

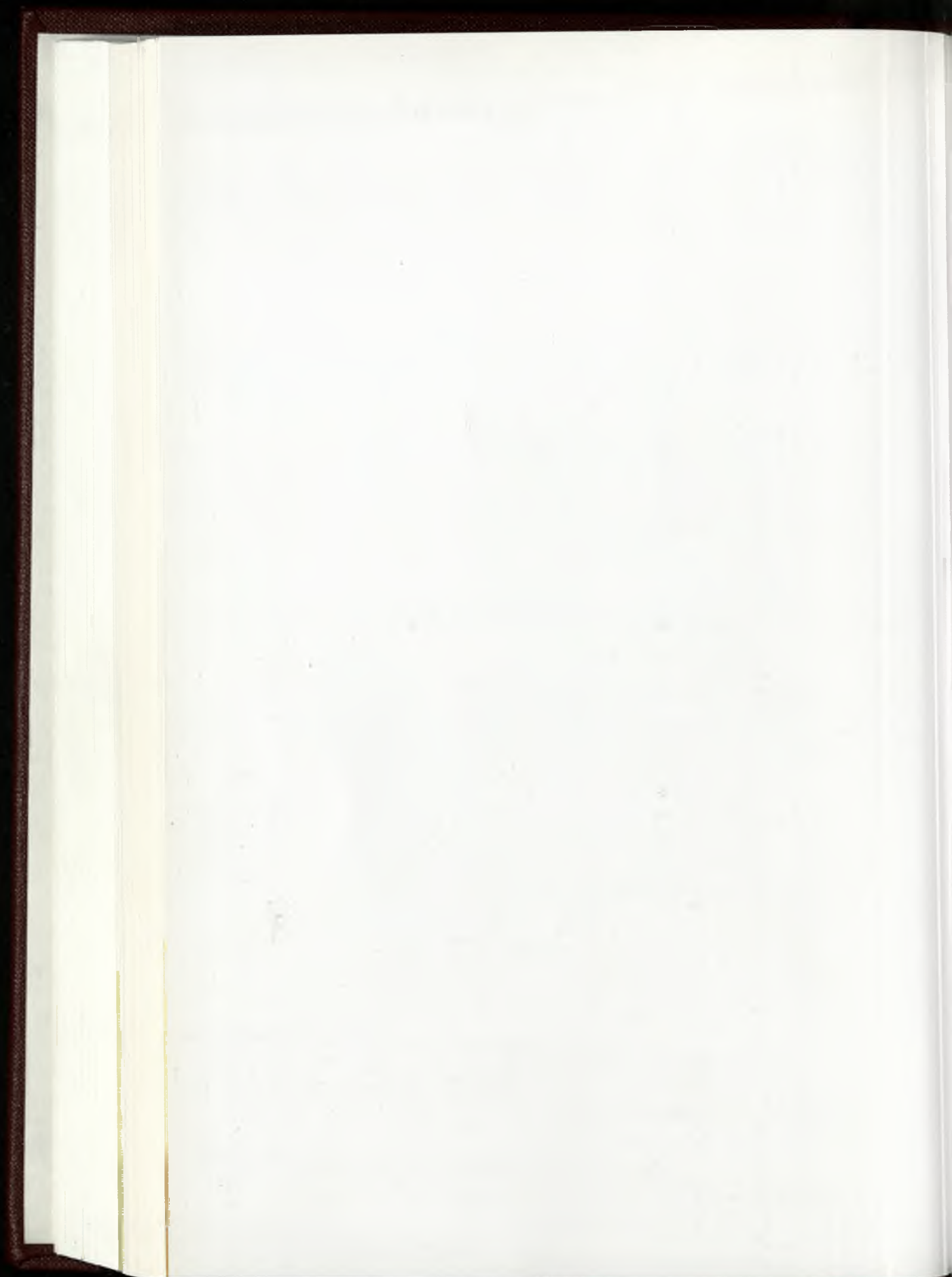
Transactions Volume 70 Part 2 (2010)



# Northumbrian *Naturalist*



Transactions Volume 70 Part 3 (2011)





# Northumbrian Naturalist

TRANSACTIONS  
OF THE  
NATURAL HISTORY SOCIETY  
OF  
NORTHUMBRIA

Volume 70

Part 3

Editor  
C P F Redfern  
Assistant Editor  
David Noble-Rollin



THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA  
GREAT NORTH MUSEUM: HANCOCK  
NEWCASTLE UPON TYNE NE2 4PT

2011

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These papers are published as a part of the *Transactions* of the Society (Volume 70, Part 3) under the banner *Northumbrian Naturalist*.

CHAPTER I

THE HISTORY OF THE  
CITY OF BOSTON

FROM THE FIRST SETTLEMENT  
TO THE PRESENT TIME

BY  
JOHN B. BOWEN

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**ANNUAL REPORT**  
**OF THE**  
**COUNCIL**  
**FOR THE**  
**YEAR ENDED 31 JULY 2010**

## **THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA**

**PRESIDENT** Position vacant

### **COUNCIL**

**Vice Presidents** Mr H H Chambers Mrs S I Chambers Dr A G Lunn  
Mr A M Tynan Mr I D Moorhouse Mr R Wilkin

**Chairman of Council** Professor P S Davis

**Honorary Treasurer** Mr D Johnson

#### **Elected by members**

2007 Professor J Edwardson, Mr A J Hewitt and Mr J Steele

2008 Mr M Turner, Mrs J Angel and Dr L Jessop

2009 No members were elected

**Nominated by sections** Mr H H Chambers (Library), Mrs V Carnell (Mammals),  
Mrs J Holmes<sup>2</sup> (Archives), Dr C P F Redfern (Ornithology and Gosforth Park),  
Dr C P F Redfern (Publications) and Dr J Simkin (Botany)

**University of Newcastle Representatives** Professor P S Davis, Mr A Newman and  
Professor A J Richards

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

**FINANCIAL ADVISORS** Brewin Dolphin Securities, 39 Pilgrim Street, Newcastle upon Tyne

**INDEPENDENT EXAMINER** Mr G J Moore Tait Walker LLP, Bulman House, Gosforth,  
Newcastle upon Tyne

**GENERAL PURPOSES COMMITTEE** Mrs S I Chambers, Professor P S Davis,  
Professor J Edwardson, Dr C P F Redfern, Mr A J Hewitt, Mr D Johnson, Dr A G  
Lunn and Mr I D Moorhouse,

### **SOCIETY REPRESENTATIVES**

**Coquet Island Advisory Management Committee** Dr C P F Redfern and Mr D C Noble-Rollin

**Coquet Island Research Sub-committee** Dr C P F Redfern and Mr D C Noble-Rollin

**Lindisfarne National Nature Reserve Advisory Committee** Mr D G Bell and Mr D C Noble-Rollin

**Wildfowl Panel** Mr D C Noble-Rollin

**Biodiversity Steering Group for Newcastle and North Tyneside** Mr D C Noble-Rollin

**Great North Museum Governing Board** Professor Peter Davis

**GMN: Hancock Society Liason Committee** Professor Peter Davis Dr L Jessop and Mr Ian  
Moorhouse in attendance Mr D C Noble-Rollin

**GMN: Hancock Library Liason Committee** Dr David Gardner-Medwin, Mr and Mrs H H  
Chambers, Mrs June Holmes

**GMN: Hancock Joint Library Committee** Mr H H Chambers and June Holmes

**GMN: Academic and Research Committee** Professor Peter Davis and Dr C P F Redfern

**STAFF** Mr D C Noble-Rollin (Secretary), Mr S Will (Assistant Secretary) Ms J Brown  
(Development & Marketing Manager) and Mrs A Buskin (Administration Assistant)

**GOSFORTH PARK NATURE RESERVE** Mr Paul Drummond (Warden)

**GREAT NORTH MUSEUM: HANCOCK** Mr S McLean (Senior Manager)



## OBJECTIVES OF THE SOCIETY

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 Great North Museum: Hancock and all its collections are maintained and, where appropriate, the collections are extended and made accessible to the general public,
- b) 'maintain and expand the Society's library and archives'
- c) 'publish the Transactions of the Society and other scientific papers'
- d) 'organise lectures, discussions and field meetings'
- e) 'co-operate with other scientific bodies and organisations with similar objects'
- f) 'establish specialist sections within the Society'
- g) 'maintain Gosforth Park Nature Reserve for so long as it holds the lease, and any other reserves the Council may consider appropriate'.

## 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 and the library committee, which elect their chairman and representative on Council. The management of the Hancock Museum was vested until December 2008 in a Museum Management Sub-committee of Newcastle University which included 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. From January 2009 the management of the Museum was vested in the Great North Museum Board. 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.

## INTRODUCTION

It has been a remarkable year for the Society, the undoubted highlight being the official opening of the museum by the Queen and Prince Philip. During their visit the Chairman of Council, Professor Peter Davis, presented the Duke of Edinburgh with a certificate that marked his election as an Honorary Member of the Natural History Society. It was a very special day in the history of the Society, and one that will live in the memories of those Society staff and volunteers who were presented to the Royal party, and indeed all who were there on such a splendid occasion.

Previous to the official opening it had been a year when Society staff and volunteers had overseen the relocation of the Society's Library and Archive from store into the extension of the new museum building. This incredible effort is described in more detail later in this Annual Report. The Museum staff had an equally onerous task, which was the transfer of our research and reserve collections to the newly-equipped Resource Centre based in Newcastle Discovery Museum. Here the collections are stored in excellent environmental conditions, and research rooms and technical facilities are readily available. Although much detailed work remains to be done in the new store, it is rewarding to be able to report that our collections are better organised than ever before.

The move of the library and its greater accessibility in the new museum has put increasing demands on the collections and on the time of our volunteer librarians and archivist. Requests for assistance from students and researchers, as well as Society members, have increased; despite this, the day to day work, including documentation, cataloguing and dealing with new acquisitions, has continued, and this report outlines just some of those activities and some of the exciting additions to the collections.

The Society has been extremely active in many ways, notably through the work of the Strategy Development Group and the launch of Natural History courses for members. The latter - along with our new corporate image - have helped to raise our profile considerably and led to an increase in membership. The sections have also had a busy year, and the variety and quality of lectures and field outings made available to members have been quite extraordinary. Full details of these, along with details of observations of local natural history and geology, are given later in this report.

Gosforth Park Nature Reserve remains a major asset for the Society and it is pleasing to note the increasing presence of some rare plant and animal species. Although we are still awaiting confirmation of a long lease for the reserve, the Society's Council and GPNR Committee continue to draw up ambitious plans for its future. The Constant-effort Ringing Site in the reserve is just one indication of the scientific work carried out by the Society; we are also actively involved on research in other sites in the region, notably on Coquet Island and the Farne Islands. We continue to play an active role in nature conservation, and our Secretary has been an active member of the Coquet Island and Lindisfarne Management Committees.

None of this work could be done without the constant support of members who volunteer their time and expertise for the Society. In the Library, archives and in the activities of sections, this is clearly in evidence. However we should also note the contribution made by those members who are on Council and help to steer the activities of the Society. Council are convinced that in our new facilities we are on the cusp of really exciting times for the Society; the potential to grow our membership and deliver new and exciting projects is enormous. We are, of course, already active in so many ways, which is amply evi-



dent in the following pages; as always the Annual Report captures the diversity of our activities and our commitment to our principal aim of studying all aspects of natural history in our region.

#### MEMBERSHIP

The total membership on 31 July 2010 (with 2009 figures in brackets) was 941(819). This was made up of 8(6) honorary members, 43(43) life members, 560(483) members who receive the *Transactions*, 297(259) members who do not receive *Transactions*, 31(30) associate members and 5(6) complimentary members. (Please note that the reason for the total not adding up to 941 is that the Society has three life members who are also honorary.) There were 21 previous members who pay, by standing orders, various sums that were formerly the subscription rate: these are now considered as donors not members. This year's total of members was a fifteen percent increase on the previous year and this was due to a higher profile created by advertising, a new image, attendance at outside events and the new initiative of running natural history educational classes.

During the year the Society was informed of the deaths of three members: Mr E W Dibblin (1988) and Mrs C Miller (1994) and Dr B Selman(1965).The years in brackets are the dates of their election. There was an obituary for Dr Brian Selman in the previous Annual Report as he played such a leading role in the Society's affairs.

#### ANNUAL MEETING

The Annual Meeting was delayed this year owing to our move back into the Museum in August 2009. This meant that the Annual Report could not be written in time for a December meeting. The date set was 26 February 2010 and the meeting was chaired by Professor Peter Davis and held in the Clore Learning Suite in the new Museum. Professor Davis briefly went through the annual Report and said that he thought it conveyed the extraordinary scope of the Society's activities and that this had been a very challenging year for the Society with the completion of the £26 million investment in the Society's estate and the re-opening of the museum in May 2009. Moving back the library to its new purpose built space, the return of the delicate archives to the new archive store in the library and the eventual return of the Society office in August 2009 to its new home had placed a great strain on both the volunteers and office staff. He thanked particularly Stella and Hugh Chambers and June Holmes for their hard work in achieving the re-housing of our assets. He was also pleased to report that work on the resource centre based at Discovery Museum is almost complete; this facility will give the best storage conditions for our collections since the Hancock Museum was opened in 1884. He went on to explain that the new Museum would be run by a Board that had representatives of both the Natural History Society (NHSN) and The Society of Antiquaries of Newcastle upon Tyne (SANT); the Board would be supported by other committees, namely a Library Liaison Committee, a Societies Liaison Committee and an Academic and Research Committee. The Society is represented on all of these.

Professor Davis then outlined the other major features of the report including the archives, where June Holmes had been involved in taking Sparkie the budgerigar to Berlin to be part of a concert there. He said that at the previous Annual Meeting there had been questions concerning the Geology Section and how it was to continue. He reported that Derek Teasdale and Brian Young had taken on the development of the section and put on a full winter programme and were intending to run a full set of field meetings. Attendances had been very good at the Friday lectures. As far as Gosforth Park Nature reserve was con-

cerned the conservation work on the area had continued throughout the year with regular work parties organized by Geoff Lawrence; the Management Committee had been continuing the efforts to secure a longer lease. Finally he mentioned the work of the Strategy Development Group headed by Professor Jim Edwardson and how they were working towards trying to implement the four main approaches to develop the future of the Society. These were: to increase the interest of young people through a programme of "Nurturing Young Naturalists", increasing use of the Gosforth Park Reserve, increasing research opportunities through cooperation with local Universities; providing Adult Education classes. Professor Davis concluded by saying that none of these activities would be possible without the help of our volunteers who do an enormous amount of work for the Society. Professor Davis then proposed the adoption of the Annual Report and this proposal was seconded by Mr Mervyn Anthony and agreed.

In proposing the adoption of the financial statement Mr Doug Johnson mentioned that we had a deficit this year of £30,000 and although this type of situation was not sustainable it was predicted and the use of the money had been planned to increase the profile of the Society and to utilise the increased opportunities presented by the opening of the GNM: Hancock. He said that it was not all gloom as our portfolio was increasing again with over £50,000 recovered by end of the financial year. The adoption of the financial statement was then proposed by the Honorary Treasurer and seconded by Mr Trevor Hardy and agreed.

The officers of the Society were unanimously re-elected to Council and this year there were no new members proposed for election. However there were two nominations for election of Honorary Members by Council. Professor Davis proposed firstly the election of the Duke of Edinburgh. He said that it had been suggested that at the official opening in November that Honorary Membership should be given the Duke as a gift and he asked the members to agree to this in retrospect. He officially proposed the election and it was seconded by Mrs Sprague and agreed. He then went on to propose that the members elect Mrs Paddy Cottam who had been working on the Society osteology collections for over thirty years, coming into the Museum regularly every week, identifying and cataloguing specimens and answering public inquiries on this part of the collections. He said he was delighted to propose Paddy for this Honour and it was seconded by Margaret Patterson and agreed.

The official formal meeting ended at approximately 6.30pm and was followed by a number of questions concerning the Society. The first concerned the Northumbria Gallery and the disappointment that was felt by many of the members at its quality. Dr David Gardner-Medwin asked how much the Society members had contributed and how much the Gallery had cost. Professor Davis said that Mr McLean had informed him that all the Society contributions (some £40,000) had been used on the Northumbria Gallery and that the overall cost was £435,262. This did not include M&E infrastructure, lighting, building works or the conservation of objects but was the cost of the basic fit out which included cases, models, object mounts, all exhibition structures and flooring, graphics, artwork, ICT hardware and software and physical interactives. He stated that the problems with the Gallery had been brought to the attention of the Museum and that the Societies Liaison Committee would be monitoring the progress on the required changes. Other questions concerned the use of the collections; it was felt that organizing a Society visit to the new store at Discovery Museum was essential so that members knew how to access the collections. Another issue brought up by Mrs Chambers was whether Council meetings should be held



in the evening. This would allow younger members, currently prevented by work commitments, to consider being on Council. Professor Davis said that he would ask Council to consider such a change. This discussion was followed by coffee and biscuits and a presentation by David Noble-Rollin on "Bird watching in Florida".

### **COUNCIL AND GENERAL PURPOSES COMMITTEE**

Council and the General Purposes Committee (GPC) met on four occasions during the year. The running of the Museum and the inevitable problems with a new building and a new structure of management have taken up a lot of Council's time. However, other matters were also becoming more urgent particularly a long term strategy regarding staffing, bearing in mind the need for a sustainable solution that did not prejudice the Society's financial position. This strategy continued to be developed through the year by the Strategy Development group and is described in the following section.

### **STRATEGY DEVELOPMENT GROUP**

One of the long-term aims of the Society's strategy for sustainable development is to encourage enthusiasm for natural history amongst young people and support the acquisition of field-skills. Steps to develop further this strategy were taken in February 2010 when, jointly with Newcastle University, the Society hosted a workshop on the theme of "Nurturing Naturalists". This was attended by over forty invited representatives from regional wildlife organisations, universities, and schools, together with museum staff involved in educational outreach and other experts including the Wildlife Officer for Northumbria Police.

An impressive array of outreach programmes was presented by the participating organisations, illustrating the diversity and strength of work with young people in the North East. These included innovative approaches to monitoring urban wildlife, museum and wildlife reserve-based projects, adventures in marine biology, and gardening as a gateway to enjoying and understanding wildlife. It is clear that the last decade has seen a great expansion of educational outreach to schools in the form of natural history-related events and projects. However, there are significant limitations to this work as a whole: much of it is supply-side driven and fails to take account adequately of the needs of teachers or pupils; the educational expertise – in a school context of the natural history 'experts' is variable; teachers are often involved as spectators and activities may be viewed as an escape from the rigours of numeracy and literacy rather than a gateway to these; there is little coordination of offers across organizations; most projects are temporary and do not have sustainable impact on curriculum development.

Discussions have subsequently taken place with representatives of key organizations to address these challenges and develop a partnership which embeds natural history in the school curriculum. The project will aim to give teachers the knowledge skills and confidence to lead projects in their own schools, supported by experts in natural history. It will involve an 'enquiry based curriculum' which draws on the curiosity of pupils to initiate and drive projects, and where the experts guide chiefly by answering questions. Newcastle University has considerable experience with such approaches in primary schools and the Society is working with members of the Research Centre for Teaching and Learning and other bodies to obtain external funding for the project.

### **PRESS AND PUBLICITY REPORT**

**Summary** Ongoing marketing activities have continued to raise the profile of the Society,

co-ordinated by the Society's Marketing Manager, Jane Brown. The refreshed image has applied across all printed and online materials, receiving positive feedback from various stakeholders. There has been an intensive effort to improve the visibility of the Society inside the museum, amongst GNM: Hancock and our existing external audiences and the wider community. This has led to an organic and manageable growth in membership numbers, which is an excellent position for the future in terms of improving membership numbers and financial health.

**Press Coverage** In November 2009 the Society became a sponsor of ncjMedia's 'Go Green' campaign, which showcases environmental activities in the North East. The main platforms for the campaign are local newspapers, the Journal and Chronicle, which both host a weekly 'Go Green' page or spread, and a quarterly supplement with several pages dedicated to the health of the environment. Both the Journal and Chronicle have online facilities which are also used for the campaign.



Articles from newspapers about the Society

In addition continued support from the Journal's Environmental Editor Tony Henderson has provided additional coverage in the Journal, which has been very much appreciated. Thanks to: Veronica Carnell, Bob Wilkin, Jim Edwardson, Geoff Lawrence, Chris Redfern, Janet Simkin, David Noble-Rollin, Stuart Will, Ian Kerr, Peter Davis.

**Events** The Society was present at several well-attended events this year, all of which have been useful in terms of promotion and getting our name out there. Local events provide an excellent platform to publicise our current activities and membership benefits. The Society's stand showcases our publications, promotional literature, current activities and examples of native species, which are always extremely popular, and draw the crowds.

The Society featured in a variety of full page editorials, smaller articles and advertisements across print and online outlets which showcased our activities. The coverage involved a variety of volunteers who provided images and extensive information about their particular areas of interest.

Editorials covered a wide range of our activities, including recording projects on the Farne Islands, investigating local lichens, how to support and watch urban mammals, discussions about upcoming indoor lectures and the bird box scheme in Gosforth Park Nature Reserve. In addition to this, the Society is often mentioned in local 'What's On' guides both press and online, and had articles featured in Go Green, including the News Post Leader and News Guardian.



The **The Newcastle Green Festival (NGF)** held on 5 and 6 June in Leazes Park, was the most popular event of the Society's calendar, with total attendance over both days estimated at over 20,000 – a record for the festival, this year celebrating its 15<sup>th</sup> anniversary. The NGF originally formed in opposition to building plans for Leazes Park, and evolved into a supersize community festival offering positive solutions to environmental problems. The Society's stand was set up in the Biodiversity tent, opposite the bandstand and in a prime location between the organic food tents and the entertainment platform (home to magicians and fire dancers). Our display focussed on enticing people to find out more about local natural history and the activities of the Society. Several large specimens on the stand, namely an Otter, Badger, Red Squirrel and Hedgehog ensured a constant stream of visitors, from curious children to the seasoned naturalists.

Other events that the Society attended:

Great Wild Spaces, Great North Museum: Hancock, 1 August 2009

Local History Fair, Woodhorn, Bank holiday 31 May 2010

Northumbria University's BioDiversity Poster competition, 8 June 2010

Blyth Heritage Fair, Seaton Sluice, 13 June 2010

Big Green Seaside Event, Tynemouth Station, 31 August 2010

Council would like to thank everyone who helped out with event organizing and supervising: Lynn Brown, Peter Davis, June Holmes, Mr and Mrs Doug Johnson, Geoff Lawrence, Eric Morton, Jo and Sophie Newton, Margaret Patterson, Robert Petrie, Norma Richardson, Rinke Vinkenoog and Brian Wright.

Unfortunately this year, several scheduled events were cancelled due to lack of funding. We hope they will be rescheduled in future years, particularly the South Tyneside Council's Coast and Countryside Festival, which we attended in 2009, which was an excellent day and superb in terms of promoting the Society within a themed event.

**Website project** The plan to revamp the website is still in the development stages, and we hope to have completed by early next year. Six website companies have responded to the tender and we are currently working out which will give us the best website to suit our budget. The current website requires many improvements, and each company was given a brief to work from. The main issues to address are listed as: create a simple Content Management System, accessible by staff and nominated volunteers; a site with a framework suitable for presence in search listings; an easily navigated site with searchable and suitable aesthetics and the ability to attract new members. We have also created a website development group, which will meet to advise on the website's purpose, aims and outcomes, and act as an informal steering committee, throughout the development and launch stages.

**Museum presence** The Society's presence in the museum is indicated on several permanent plaques and signposts, negotiated with Tyne & Wear Archives and Museums in the run up to the museum opening. There are ongoing discussions with TWAM regarding additional signage and a major Society display within the museum to reinforce the Society's presence in the museum and draw more attention to our aims and activities. To supplement existing signs, other strategically-placed rolling initiatives to promote the Society in the museum have included: roller banners, large posters, membership, outdoor swing board, courses and legacy leaflets plus slide sets for the digital screens inside the museum.

**Office Volunteers** Apart from the staff, the Society is indebted to the volunteers who help in the office. Anne Wilson, in addition to general office duties, helps to enter financial information on to computer spreadsheets. Margaret Patterson and Rita Wolland continued to come into the office during the first three months of the year but decided to resign when some of the Vice-Presidents were not invited to the Royal opening of the museum. This was a great loss to the Society; they had both worked as paid staff since the time of Grace Hickling and then when they retired had continued to work as volunteers, coming in weekly to help with a range of office duties. During these years many crises were avoided by their devotion to the Society and long hours of work. The Council would particularly like to thank them for their enormous help. Joan Holding continues to redraw maps and illustrations for the *Transactions* to help to maintain our high standard of production. Margaret Evans, as well as sorting out the binding of journals and the library exchanges with other institutions throughout the world, is always on hand to help with the packing of envelopes when bulletins etc. are ready to be distributed to the members; and is usually ably assisted by her husband Martin. Hayley Brennan comes into the office to help Jane Brown at busy times with mailings and other office duties. We are grateful to them all.

#### DICKINSON MEMORIAL TRUST

There were five applications for this year's fund. They were as follows: **Laptop for the Archives and Library** This is required to allow further work on the archives by volunteers who use Word and Cardbox to transcribe the letters and documents from the Society archives so they can be available to a wider audience. It will also carry the library database to help members using the Library catalogue. The second application was for **Foraging location of Kittiwakes nesting on the Farne Islands** This application to the Dickinson Bequest Fund was to purchase 15 IGotU GPS loggers at a cost of £765 which will be fitted to Kittiwakes in the 2010 breeding season. It is likely that some loggers will be removed by the birds and lost, but a recent study using similar devices on Kittiwakes in North America has shown that most are likely to be retained and to give useful data. Each logger that is recovered will be removed, recharged and fitted to another bird to obtain as much data as possible. Loggers will be fitted to Kittiwakes nesting on Brownsman and nearby Staple Island to determine whether birds nesting in different colonies differ in foraging locations. The third application was for a **Data Projector for Natural History Courses** the current projector is now nearing 6 years old and is used most days. There is no backup if this machine should break down. Advancements in technology are rendering it increasingly obsolete, especially for use delivering high definition images and video which makes for essential naturalist viewing. We recognise the importance of a new projector for helping the Society deliver high quality lectures to its students, and have raised £120 towards a new projector from the generosity of members attending the first indoor meeting of the 2009/10 season. This is not enough to cover the total cost and this application was on behalf of the tutors and volunteers for the necessary extra money to purchase a new projector.

The next application was from the library committee for **Library Boxes** to help protect periodicals until they are bound as the covers of some of the Journals being received are of a quality that immediate binding is not necessary, however the storage of them is becoming a problem. To keep them in good condition we need 'Magazine' files for storage. All of the above projects have now been completed and have been mentioned in the Bulletins.



The Final project was **Bat Research in Gosforth Park Nature Reserve**. Bat use of the reserve is not fully understood and there are no current data on the species of bats present within the reserve. Bat survey work has been undertaken within Gosforth Park on an informal basis over a number of years and *Pipistrelle* species, *Myotis* species and *Noctule* have been recorded foraging in the reserve. Bats are difficult to identify with certainty in flight; even with the most sophisticated bat detectors it is not possible to distinguish the different *Myotis* species with certainty. This project proposes to undertake more formal bat survey within the reserve to try to confirm which bat species are present. The proposal is to catch bats whilst foraging in the reserve and identify which species of bats are present. The project will use a harp trap and mist nets, under licence from Natural England, to catch bats foraging along known flight lines. This project had potential for volunteer involvement and members will be invited to come along to the trapping sessions, although numbers will be limited to prevent undue disturbance to the reserve at night. This project will take place in the spring and early summer of 2011 and be linked to a course open to members to learn more about bats and surveying techniques.

The total required to fulfill all these projects was £2743.00 which was approximately £700.00 more than was available. While discussing the applications with Elisabeth Pestell, the daughter of Tony Dickinson, she generously agreed to pay for the Library Laptop and consequently all the projects could be supported. Council would like to thank her for this generous act

## LIBRARY

The past year has seen a period of settling down, following the turmoil of the past few years during which the collection was removed into storage and then returned and installed into its new home. Now fully functional, the library operates in a space occupied by three collections: ourselves, the Society of Antiquaries' library and the Cowan Collection (the library of Newcastle University's Archaeology Department). A professional librarian (Nicky Clarke) oversees all three libraries. Each collection has its own separate shelving space and catalogue and its own rules regarding use and borrowing of books. There is a Joint Library Committee that meets four times a year to iron out any issues that may arise, but so far there have been no major problems.



Volunteers working with Nicky and June in the Library

Memorial Fund we hope some of these problems have now been addressed.

Ann Stephenson, who had a short break from her research due to the computer problems, has returned to continue sorting, cataloguing and transcribing the vast collection of John Hancock's manuscript correspondence. Ann's dedication to her work is at last bearing fruit. Most of the letters are now transcribed and available to read on CD in the library, where they have already been referred to by numerous grateful researchers.

Volunteer Dr Parameswaran is often to be found in our library tackling the transcription of the early correspondence of the Society. Having completed the years 1829-1859 he has now moved on to the later letters and documents in our collections.

After reading about the donation of James Alder's manuscript Dipper diaries last year in the Bulletin, Dr Megs Rogers has been inspired to begin what looks like a fairly lengthy piece of research on their content.

Michael Kerr has carried on with his transcript of George Townshend Fox's *Synopsis of the Newcastle Museum*.

The assistance of Great North Museum: Hancock librarian Nicky Clarke has been greatly appreciated this year as has that of Society Librarians Hugh and Stella Chambers and volunteers Les Jessop and David Gardner-Medwin. They have all worked with June Holmes over the year assisting with archive enquiries, exhibitions and visits. The archive section is very grateful for all of their support and hard work.

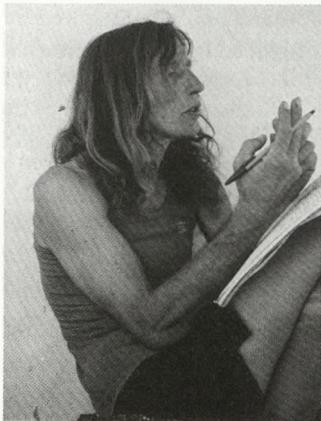
### Accessions

A collection of archival material including manuscript letters, papers, annotated books and photographs has been donated. These include:

Manuscript letters, papers and photographs relating Nicholas Temperley (1844-1923), the father of George Temperley (1875-1967) donated by Mrs Joan Proudlock.

Nicholas Temperley's manuscript essay *Pre-Conquest Architecture in Northumberland and Durham*, submitted in 1906 for the Sessional Certificate in Honours at Cambridge University for which he was awarded the Gilchrist Medal.

A copy of *The Flowering Plants and Ferns of Great Britain* by Anne Pratt, London. 1862 Owned and autographed by Joseph Wright, Keeper of the Museum from 1864-1902, donated by D Gardner-Medwin.



David Green

*Brief Memoir of Mr. Thomas Bewick*. Printed by F Humble of Durham in 1828 and sold by G. Arnett, Collingwood Street and John Sykes, Bookseller, Pilgrim Street, Newcastle presented by D Gardner-Medwin

A collection of the work of artist and naturalist, David Green (1950-2004), including his illustrated notebooks, study notes and copies of publications he contributed too. Presented by Mike and Anne Green, who also gave us a very generous donation towards preserving the collection for which the Society is most grateful.



ACTIVITIES

Adult Education Courses



Students working in the Council Room by Janet Simkin

In October 2009 the Society launched the first series of natural history courses, to fill an important gap in naturalist education in the North East. The majority of courses have been held in the Society’s Council room, and include field visits to relevant sites of interest.

Courses available each term and uptake figures are shown in Table 1 below:

Due to the popularity of the courses, it is hoped they will become a long-term feature of the Society’s activities programme.

Table 1 Courses run during the year with the number of students and new members recruited.

Autumn 2009			
Title	Lecturer	Total no. students	
Our origins: First vertebrate to present day	K. Patterson	12	(inc. 40 new members)
Introduction to lower plants	Dr J. Simkin	34	
Birds of the North East	D. Noble-Rollin	36	
The Quaternary (20 week course)	Dr. G A. Lunn	21 (inc. 10 new members)	
Spring 2010			
Title	Lecturer	Total no. students	
Investigating Geology: Magma	K. Patterson	24 (inc. 3 new members)	
Introduction to lower plants	Dr J. Simkin	13 (inc. 1 new member)	
Birds of the North East	D. Noble-Rollin	35 (inc. 2 new members)	
Summer 2010			
Title	Lecturer	Total no. students	
Investigating Geology: Field	K. Patterson	16 (inc. 2 new members)	
Birds of the North East	D. Noble-Rollin	33 (inc. 2 new members)	
An Introduction to the	S. Speak	10 (inc. 5 new members)	
Quaternary visit to the North West Highlands	Dr G A Lunn	For member of the previous Quaternary course only	

### Special Lectures

On 9 October Steve Mclean, Project Manager for the Great North Museum Project gave a talk on the "The Great North Museum project : From conception to opening" which was the full story of the project which Steve had been part of from the beginning. The talk covered development of the original plans, the evacuation of the building and the storage of over 500,000 specimens in a secret and secure temporary store in Gateshead. The next stage was the new roof and internal reconstruction of the old building and the building of the new extension at the back. The final stage was the creation of the new displays for all the galleries. The project after three years was only two months late an amazing feat of planning and organization. The talk ended with the opening in May 2010.

### Pybus Memorial Lecture.

On 8 January Professor Ian Newton was due to give his talk on "Highlights from a Long-term study of Sparrowhawks". Unfortunately the weather was so extreme that the lecture had to be cancelled. Ian agreed to try again in next year's programme.

### General Field Meeting

On 2 August the "New Members' Day" attracted about twelve to fourteen new and not-so-new members to visit the reserve with the Secretary. It was a quiet morning but the ringing group gave a demonstration of the Constant Effort Site work and how they ring and take biometric measurements of the birds.

On 8 May the Society hosted the ERIC Project "Gosforth Park Exploration Day" this is mentioned later in the report.

### Ornithology Section

Dr Colin Bradshaw gave the members an excellent talk "The Lure of Alaska" about his last visit to Alaska. He described the difficulties of travel in this remote area even with modern communications and showed us a large number of beautiful pictures of the scenery, birds and animals. As there appeared to be a gale blowing most of the time he was there and thick fog the pictures were even more remarkable. His detailed knowledge of the identifications points, particularly on the waders, was particularly interesting.

On 29 January Eliza Leat gave a talk on "Marine pollution and Great Skuas". Eliza is well known to some Society members as a past member of the Ringing Group, and daughter of one of the Group's ringing trainers, David Leat. While doing her first degree at Glasgow University, Eliza spent several summers on the Farne Islands, collecting data for the Ringing Group's tern foraging project and is now doing a PhD at Glasgow University, supervised by Professor Bob Furness, studying the accumulation of persistent organic pollutants in Great Skuas *Stercorarius skua*. As top predators in marine ecosystems, Great Skuas are liable to accumulate high levels of organic pollutants which may affect their breeding biology and survival. In this well-attended lecture, Eliza gave a fascinating account of Great Skua biology, the methods she is using, and her preliminary results using data loggers to track skua wintering areas.

On 12 February Ian Kerr gave a talk on "Pioneers of Northumbrian Ornithology: Hancock to the Present day". He explained how the early pioneers had to work really hard in order to find the birds that they were interested in and often walked great distances to get to particularly good places. He also talked about more modern people who had contributed to our knowledge of the area. This was a well attended lecture attracting members interest-



ed in ornithology and the history of natural history.

On 26 February after the Annual meeting David Noble-Rollin presented his new talk on "Birds of Florida". This was based on his most recent visits and was a talk about the birds and animals of the area followed by a film he had made on his last visit. This had a natural soundtrack but David added a live commentary to the film to preserve the 'live lecture' feel to the evening.

On 12 March the ornithological winter programme came to an end with Keith Clarkson giving a talk "Life on the Edge – the state of our seabird populations". Keith is the North-East area reserves manager for the RSPB and gave a superb talk on the research and monitoring carried out at Bempton Cliffs and how trends and patterns in seabird breeding populations at this site relate to environmental changes taking place in the North Sea. Starting from a historical perspective, he showed how shooting and egg collecting had threatened to decimate the Bempton Cliff colonies in the early 20<sup>th</sup> century which was only averted by ground-breaking legislation to conserve breeding seabirds. He then highlighted the recent dramatic reduction in the numbers of some breeding species, particularly Kittiwakes. The evidence that this is linked to environmental change, particularly sea surface temperatures, is compelling and Keith showed how the displacement of seasonally-productive cold-water plankton by slower-growing and less productive warm water species is likely to affect the North Sea and its fish and seabird populations.

#### Field Meetings

On 11 October, Ian Kerr led the Society autumn visit to Holy Island. The gale-force north-westerly winds made it virtually impossible to look for small migrants; however larger birds were quite visible. Flocks of Golden Plover showed well at the Rocket Field pools and a juvenile Marsh Harrier was chased by crows. Juvenile Gannets fishing close in at the Heugh provided quite a spectacle. It was slightly more sheltered towards Beal Point in the afternoon with wonderful close views in bright sunshine of 400 migrant Barnacle Geese, no doubt en route to the Solway, and a solitary Little Egret.

The first meeting of the summer programme was on 9 May to Holy Island when Ian Kerr took members of the Society around the Island. Regular spring migrants were noticeably absent but from the Heugh 60 Grey Plover in magnificent black and silver breeding plumage flew into the flats and in the afternoon at Beal shore three very late pale-bellied Brent Geese were still present along with the resident Little Egret.

On 20 May David Noble-Rollin led an early morning walk entitled "Introduction to Bird song at Thornley Woods". The weather was perfect for bird song – still and reasonably warm – and the birds performed extremely well with song from many of the warblers and thrushes. It was particularly good for Blackcap and Garden Warbler song with a number of individuals performing for the members, even showing themselves at times. The Red Kites also appeared as the morning warmed up.

On 6 June David Noble-Rollin took twenty members up the College Valley. The weather was overcast and raining most of the time. This rather restricted where the group could go and what was visible. The attempt to climb into the Bizzle had to be abandoned as visibility at the upper end of the valley was very poor and the ascent could therefore have been dangerous. However despite the weather the party saw Green and Great Spotted Woodpeckers and Ravens as well as a close encounter with a very wet young Meadow Pipit.

On 28 July and 29 July Graham Bell and David Noble-Rollin led two boats on the Wednesday and one on the Thursday on the very popular annual Roseate Tern evenings. Although not a year for unusual birds the members once again had the opportunity to get really close to the Roseate Terns on Coquet Island. This allowed for identification from the other two species, Arctic and Common terns, and the young of all three species were in evidence.

### Mammal Section

Steve Lowe gave a talk for the Northumberland Mammal Group hosted by the Society on 23 October entitled "Northumberland Mammals – More or Less." He said that mammals as a group are generally under-recorded in the UK. This is strange as they are engaging, cute and popular with the public. Northumberland Wildlife Trust runs a number of mammal related programmes covering some of those species 'on the edge', such as Dormouse, Water Vole and Red Squirrels, as well as some of those that may be more familiar but overlooked, such as Hedgehog. The lecture was an update of current local priorities and knowledge. In addition, he considered the opportunities for conservation enhancements with mammals in mind, as well as some of the issues facing mammals in the future, such as climate change and urban growth.



Veronica Carnell and Philippa Mitchell before the lecture in the Museum.

On the 13th November Philippa Mitchell gave a talk on "Saving the Red Squirrel – Highlights, Lowlights and the Future" The "Save our Squirrels" project has been running for over three years and has had a number of successes, particularly with raising the profile of the Red Squirrel and keeping the public interest in one of England's most threatened species. However, Philippa said that not all has gone to plan. In her talk, she looked at what had really worked well and the lessons that have been learned. She said the main threat was from the Grey Squirrel and the squirrelpox virus and explained what research was being carried out to try to reduce the threat. She then talked about the direction that

SoS and Red Squirrel conservation will take in the future.

On 15 January, Mike Tetley, research cetologist, gave an illustrated slide and video presentation on his research entitled "Minke Whales: coastal ecology and habitat use within the North Atlantic" into the distribution, foraging techniques and behaviour of the Minke Whale *Balaenoptera acutorostrata*, the results of which contributed to the North Atlantic Cetacean Habitat Mapping Project. He discussed examples of three ways that the whales catch fish, showed habitat modelling maps for foraging area hotspots, and linked them to real maps of prey distribution. He introduced us to some of basics of marine legislation for cetaceans, and discussed how the data are contributing to the strategies to be implemented for the future conservation of this and other rorquals. Questions afterwards revealed even more information about this fascinating species.

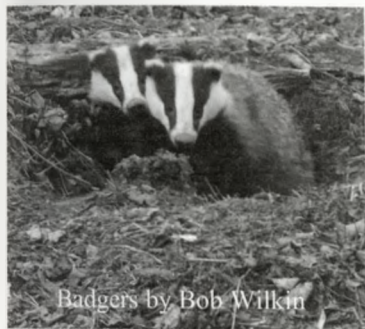
### Field Meetings

Bat walks in Gosforth Park Nature Reserve were led by Tina Wiffen (21 August), and Jonathan Pounder (20 September). Both events were well attended, with up to 12 members present, who enjoyed the short presentations given by each leader. On the first walk,



Common and Soprano Pipistrelles were seen in the woodland with Daubenton's bats identified over the reedbed and lake. On the second walk, Noctules were seen near the member's hut, and Common and Soprano Pipistrelles identified in the woodland.

**Badger watches in April and May** The success of the previous Badger Watches brought in an exceptional demand this year. Unfortunately there were more applicants than badgers. Bob Wilkin started (before the official day) to accommodate several persons from the previous year and over the next few weeks accompanied some 21 members on the watches. The first evening was a great success when a family of five members, including three children, had very close encounters with two three-quarter grown Badger cubs, that spent time foraging a few feet from the hide. The first emergence was at 8.30p.m. Later a fully grown Badger appeared on the scene from another sett some 60 feet from the first sett. During the evening a fox was heard calling and later a vixen came onto the island. Other mammal



Badgers by Bob Wilkin

activity viewed during the evening included two Roe Deer, a Brown Rat and several bats.

On most of the evenings, but not all, Badgers were seen. The views were never as close as the first evening. A vixen with cubs now took central stage with the cubs playing in and around a fallen tree, where she had her den. Foxes normally change dens each year. The den area becomes fouled with scats and the remains of prey species, thus becoming unhealthy for the cubs and also the feathers, fur and bones betray the den site. On the Island, Badgers, at intervals reoccupy these holes, cleaning out the debris acting as "housemaids" to the Foxes.

Due to a variety of factors, Paul Drummond was unable to take up the remaining quota of badger watches. He hopes to pick them up, if conditions allow, in the Autumn.

On 11 July, Jonathan Pounder (Houghall College senior lecturer) and Julie Mason (Teemouth Field Centre warden) led eight members on a visit to the Huntsman Tioxide Hide, Teesside. 38 Common Seals and nine pups were observed, hauled out at low tide on the sandbanks of the Tees estuary. The leaders readily answered members' questions, and also identified birds, flowering plants and insects.

The annual pelagic cruise with Billy Shiels boat 'Glad Tidings V' took place on 26<sup>th</sup> July this year, and was led by Graham Bell. Unfortunately, no cetaceans were seen on this occasion, and the number of seabirds observed was also low compared with previous years.

### Geology Section

On 5 September Trevor Hardy led a walk entitled "Geodiversity in the Landscape – Devonian to Devesian". This first geological outing was a walk in poor weather to the Anglo-Scottish border line. The group followed two of the headwater burns on the north side of the Upper Coquet Valley near Blindburn to examine rocks of the Cheviot Volcanic Formation. This formation is mainly varying outcrops of andersite and less obvious rhyolite lavas the latter becoming slightly more noticeable as higher ground was reached. Lunch was taken at a feature locally known as Randy's Gap where an unusual meltwater

channel was noted.

On 4 October Brian Young led Society members to "The Whin Sill of Upper Teesdale". The landscape of Upper Teesdale, unique amongst the Pennine dales, owes much to the extensive outcrops of the Whin Sill. As the original 'sill' of geological science, this huge intrusion has long been the focus of geological research. The sill's metamorphosed Carboniferous contact rocks are well exposed on Cronkley Fell where the marble, locally known as 'Sugar Limestone' is celebrated for its associated plant communities. The day's rather strenuous traverse of Cronkley Fell gave members the opportunity to see some of the sill's most dramatic expressions in the landscape, but also examined aspects of the sill and its associated rocks that have not hitherto been described. Attention focussed on some of the intensely metamorphosed limestones and shales, especially on the roof of the intrusion, in which extensive skarn-like bodies of magnetite and calc-silicate assemblages have recently been discovered. The origins of these, together with their possible relationships with the widespread mineralisation of the northern Pennine Orefield were discussed as further 'work in progress' on one of the region's most interesting geological features.

On 1st May Dr Mike Browne led a walk to the "Carboniferous and Old Red Sandstone of the Berwickshire coast". As geological science does not recognise international frontiers this day spent north of the Border enabled a small group of members to enjoy some of the geology that lies concealed beneath the rocks exposed further south in Northumberland. Mike took members through some truly spectacular sections of Lower Carboniferous limestones and associated beds on the coast at Barns Ness, near Dunbar. Notable highlights included fine palaeokarst features and some remarkably fossiliferous limestones, including a coral-rich band, known locally as 'Dunbar Marble' and reminiscent of the 'Frosterley Marble' of the Northern Pennines. The day concluded with a visit to one of the world's most famous and iconic geological sites, Siccar Point, east of Cockburnspath. Here, the dramatic unconformable relationship of Old Red Sandstone conglomerates resting on Silurian greywackes, that so influenced James Hutton in his recognition of the true enormity of geological time never fails to impress all who brave the steep descent to the shore to examine it at close quarters. The Society is extremely grateful to Mike for a superb day in the field.

On the 12th June, Brian Turner led a trip to Bowden Doors to examine the Lower Carboniferous Fell Sandstone. The intrepid band who made the long journey to North Northumberland were rewarded with warm weather, stunning views to the Cheviots and a fascinating geological puzzle. The superb sandstone outcrops were well worth the trip, and Brian was warmly thanked by all.

### **Lectures**

On 6 November Roger Searle gave a talk "Making the Ocean Crust: Small volcanoes and giant faults". He discussed that Marine scientists can now map and sample the oceanic crust with modern instruments at resolutions approaching those available on land. Specialist sonars provide images with resolutions down to 3m or better, while remotely operated vehicles provide video imagery and robotic sampling. Roger showed examples of the use of these techniques to study how the oceanic crust is formed and stunning images of the volcanic ridges that represent the volcanic building blocks of the crust, together with high mountains where mantle rocks have been exhumed onto the sea floor.

On 5 February David Millward, who works for the British Geological Survey (BGS) in



Edinburgh gave a lecture on "Resurveying the Carboniferous". Since the earliest days of geological science, the Carboniferous rocks of Northern England have figured prominently in the developing concepts of Carboniferous geology and sedimentary processes. For over a century and a half the Geological Survey has taken a leading role in mapping, understanding and naming these rocks. David's talk reviewed some of the BGS work currently in progress in the region and outlined the results of modern re-interpretations and the need for the introduction of new ways of naming and correlating these varied and fascinating rocks.

The Annual Report for 2009 had a major error in the geological section which was brought to the attention of the Secretary at the Annual Meeting in February 2010. The entire lecture programme for geology was missing and some of the summer field meetings. The following events took place during the financial year 1 August 2008 to 31 July 2009.

#### **Indoor Meetings 2008-2009**

On 31 October Simon Poulton gave a lecture on "A Short History of the Early Earth: Three Billion Years that Led to the Rise of Animal Life". He explained that for more than three billion years of early Earth history, microbial life ruled the world. It is much later, a mere 580 million years ago, that the first large, complex animals punctuate the fossil record. The cause of this evolutionary milestone is intricately linked to a chain of events initiated by the evolution of oxygen producing cyanobacteria more than two billion years earlier. Simon discussed how progressive changes in atmospheric and ocean chemistry led to widescale 'snowball' glaciations, to ultimately create an environment permissive for the evolution of our earliest animal ancestors.

On 6 February Ed Llewellyn, a lecturer in the Department of Earth Sciences at Durham University, gave a lecture "Volcano Fizz-ics: From Bubbles to Bangs!". He explained the background that volcanic eruptions are awe-inspiring and fascinating. Some produce explosions that can blast rock fragments 40km into the air, others produce fountains and rivers of red-hot lava. But these spectacles come at a price: volcanic eruptions killed more than eighty thousand people in the last century and, today, volcanic risk is a daily fact of life for nearly 10% of the planet's population. This was what inspired volcanologists to try to explain why and how volcanoes erupt. The talk discussed observations and experiments to understand why some volcanoes go bang, whilst others merely fizz ...

#### **Outdoor Meeting in 2009 not reported in the previous Annual Report**

On 21 May Angus Lunn led the geology section on a field trip entitled "The Quaternary in the Lake District: Moraines of Borrowdale and Combe Gill". The group met at Rosthwaite and proceeded to examine valley glacier moraines and glacial features which are considered to be some of the best examples in the Lake District.

#### **Botany Section**

The winter lecture programme began in October, when Elizabeth Clark spoke on "Flora in the Cantabrian Mountains". She had visited this botanically-rich area of northern Spain, most recently with the Botanical Society of the British Isles, and described some of the plants of this little known corner of Europe. Habitats included both calcareous and siliceous high mountains, traditionally-cultivated upland plains, and deep, wooded gorges.

In November the title of Professor John Richards' lecture was "Sex and the single plant". He explained that in most flowering plants both gender functions (male = pollen and

female = ovules) occur within the same flower and selfing becomes a possibility. But although some flowers do self-fertilize, plants have evolved a myriad of physical strategies to avoid self-pollination, and also chemical self-incompatibilities to avoid self-fertilisation. Professor Richards explored some of the physical mechanisms that prevent selfing. He went on to explain that in a minority of flowering plants, the flower has only one gender function (male or female), but flowers of both genders can occur on the same plant, often a tree. True dioecy, where individual plants are either male or female, is unusual, but the British flora has many familiar examples, such as holly, nettles, willows, sorrels and champions. Although inefficient reproductively, dioecious plants are often very successful. Gender control is usually associated with sex chromosomes, but gender can be unstable and one parasite can change flower gender to its own purposes.

In February, Clare O'Reilly described the "Charophytes of Britain and North East England". Charophytes, or stoneworts, are a group of aquatic green algae found in fresh and brackish water and the most endangered group of animals or plants for which a Red Data Book has been produced. Stonewort beds are also exceptionally ecologically important – highly sensitive to water pollution, they are the 'canaries' of the freshwater world. Given the severe national shortage of charologists, Clare introduced the biology, identification, ecology and conservation of stoneworts to members of the Society.

The winter lecture programme concluded in March when Dr Colin Scrutton gave us "An introduction to Australian orchids". The continent has a rich and diverse orchid flora, of which the vast majority of species (like so much of the Australian biota) are endemic. Terrestrial orchids dominate in the southwestern part of West Australia, in the southeastern states and in Tasmania, while epiphytes are most abundant in the rain forests of Queensland and New South Wales. Of the former Dr Scrutton described, among others, Spider, Finger, Sun and Donkey orchids, and Greenhoods, and of the latter Cane, Rock, Thumbnail, Pencil and Butterfly Orchids. He also illustrated some of Australia's wide selection of bizarre orchids.

The first summer field meeting, in mid-June, was to two sites, "Newham Fen and Bamburgh Dunes". The Newham Fen visit was led by Andrew Craggs (warden of the Newham Fen National Nature Reserve). The Fen (*alias* Embleton's Bog), in the north of Northumberland, is a calcareous mire, with open fen and carr, and a number of notable plants. We saw, among many other species, Black Bog-rush *Schoenus nigricans*, Marsh Helleborine *Epipactis palustris*, Narrow-leaved Marsh-orchid *Dactylorhiza traunsteineri*, Lesser Butterfly orchid *Plantanthera bifolia* and Herb Paris *Paris quadrifolia* - and many species of *Carex*, including the rarities Lesser Tussock-sedge *C. diandra* and Slender Sedge *C. lasiocarpa*. We were also shown the newly reintroduced Greater Water-parsnip *Sium latifolium*. Natural England's management of this high-quality site is very impressive.

In the afternoon, led by Professor John Richards, we continued to the dunes just south of nearby Bamburgh, where many of the characteristic Northumberland dune species were seen. Notable were Field Mouse-ear *Cerastium arvense*, Brackish Water-crowfoot *Ranunculus baudotii* and Bur Chervil *Anthriscus caucalis*.

In mid-July Dr Angus Lunn led us, through low cloud and drizzle, across the remote blanket bog of Emblehope Moor, above Kielder Forest on the watershed between North Tynedale and Redesdale, to the only known Northumberland colony of Dwarf Birch *Betula nana* – found in the mist only with the help of a GPS. We also saw Cloudberry



*Rubus chamaemorus* in fruit. Acidic soakways near the Dwarf Birch contained Bogbean *Menyanthes trifoliata* and two rare sedges: Mud Sedge *Carex limosa* and Bog Sedge *C. magellanica*.

At the beginning of August Dr Janet Simkin led us to "Beltingham" where, by the South Tyne, we examined a complex of gravel bars that are now vegetated over. Some of these contain lead, zinc and cadmium from mining upstream, and support calaminarian grassland. We looked at two contrasting areas, one managed for conservation and one where nature is being allowed to take its course, and saw such characteristic heavy-metal tolerant species as Spring Sandwort *Minuartia verna*, Alpine Pennycress *Thlaspi caerulescens*, the (probable) hybrid of Mountain Pansy *Viola lutea* and Wild Pansy *V. tricolor*, Thrift *Armeria maritima* and several plants of the very rare Dune Helleborine *Epipactis dunensis*. In Beltingham churchyard we admired three ancient yews, one of which may pre-date the church and be over 900 years old. There has been much speculation about their origin.

#### Midweek Botany Group

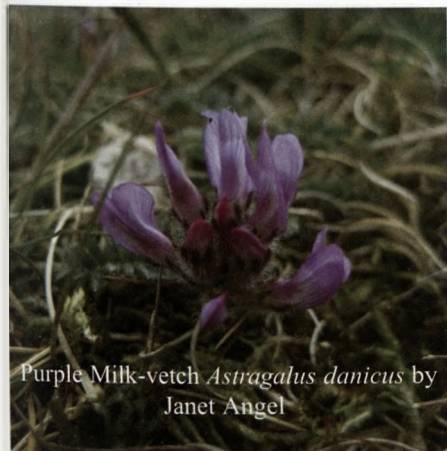
The group has continued to provide a full programme of outings throughout the botanical season. In August 2009 we had widespread and very varied trips to Hedleyhope Fell in Co Durham, Hen Hole in the College Valley and Seaton Sluice salt marsh. All provided much of interest. The season finished with a visit to Shaftoe Crag for a fascinating introduction to lichens.

The first outing of 2010 was to the beautiful Shittlehope Dene in Weardale for woodland spring flowers. Due to the cold spring, not all the expected species were in flower but this was rectified on the following trip to Alston where the woods near the Tyne were full of Wood Anemones *Ranunculus nemorosa* and Primroses *Primula vulgaris*.

At the beginning of May Professor John Richards introduced us to some of the very many species of Dandelion *Taraxacum*. We were amazed to observe the diversity of this genus, and resolved to pay more careful attention to them in the future!

The next two trips were to woodlands at Ryton Willows and Haltwhistle Dene. We were especially pleased to see masses of the uncommon Oak Fern *Gymnocarpium dryopteris* on the cliffs bordering the Haltwhistle Burn.

At the end of May the meadows by the River Coquet at Sharperton were very attractive with large amounts of Meadow Saxifrage *Saxifraga granulata* and the nearby Holystone North Wood was excellent for mosses and lichens.



Purple Milk-vetch *Astragalus danicus* by Janet Angel

June saw two outings to the coast, the first to St Abbs Head and the second to Newton Links. Both of these provided bird-watching activities as well as coastal species of plants. One of the most interesting was Purple Milk-vetch *Astragalus danicus* which was flowering profusely in the short turf, and there were beautiful displays of Burnet Rose *Rosa spinosissima* and Bloody Crane's-bill *Geranium sanguineum*.

We next visited a quarry and meadow near Bowlees in Teesdale, both of which were very species-rich. A trip to Caw Lough on Hadrian's Wall followed, providing a fine selection of Sedges and Marsh Orchids.

On the last day of June we went across to the Lake District and climbed from the Kirkstone Pass up to the crags of Red Screes where we found a most attractive display of mountain plants including Mountain Sorrel *Oxyria digyna* and Roseroot *Sedum rosea*. In the afternoon we visited Elizabeth Clark's lovely garden at Hartsop where we were given a most interesting guided tour of the garden and a delicious tea.

We next visited a farm near Blanchland where we surveyed some botanically-rich wet areas and provided the farmer with a species list to help in his conservation work.

In mid-July 20 members of the group had a short holiday in the Ben Lawers area of Perthshire. Ben Lawers is famed for its mountain plants and it certainly lived up to its reputation. We saw amazing displays of very special plants, including five different Saxifrages. There were lovely patches of Alpine Forget-me-not *Myosotis alpestris*, Cyphel *Minuartia sedoides* and Moss Campion *Silene acaulis* and carpets of Yellow Saxifrage *Saxifraga azoides*.

Back in Northumberland we went to Greenleighton Quarry and Rothley Crag where a good selection of plants was noted. Next was a walk on the outskirts of Gateshead to look at restored hay meadows and other habitats. At the beginning of August we went to the Magnesian Limestone cliffs south of Seaham Harbour. These were very floriferous, with Wild Parsnip *Pastinaca sativa*, Pepper-saxifrage *Silene silaus* and much Common Centaury *Centaureum erythraea* and Yellow-wort *Blackstonia perfoliata* still in flower. Several members of the group have continued to help with the North Pennines AONB Hay Time project, monitoring the restoration of hay meadows.

We meet on Wednesdays throughout the summer season. Any member who has an interest in botany is welcome to join the group and can obtain more details via the Society office.

### Entomology

On Friday 2 October to celebrate our return to the GNM-Hancock after the refurbishment



George McGavin in Borneo

we wanted to start the winter lecture programme with a big name. Dr George McGavin, who has appeared frequently on television (*Land of the Lost* series, *The One Show*) was invited to talk on "To the Ends of the Earth" which was about his experiences as an entomologist involved in making natural history programmes. With splendid irony the event was so popular we had to move to the Curtis Auditorium on the University campus to accommodate over 300 people who requested tickets!

George gave a splendid lecture covering why he became an entomologist, how he got involved in television through advising on some of David Attenborough's productions, and how the *Land of the Lost Volcano*, his most recently-broadcast series, was made. What made a big impact on the audience was



George's urgent and impassioned plea for action now to stop the destruction of rainforest around the world. This meeting was organised in collaboration with Newcastle University and the Royal Entomological Society.

On Friday 26 March Dr Stuart Ball gave the members a talk on "Hoverflies". Stuart works by day for the JNCC (Joint Nature Conservation Committee), but apart from his day job he helps run the Hoverfly Recording Scheme together with his colleague Roger Morris. Both were present at this evening event where Stuart presented a fascinating account of the biology and ecology of the hoverflies. He did not quite talk about all 276 UK species, but he covered a lot of them. Over 40 people attended this lecture.

### Field Meetings

On 19 June the annual *Bug Day Out* was held at Newcastle University's field station at Close House, Wylam on 19 June (which was the start of National Insect Week). The weather was good, and a wide range of insect material was obtained from light traps that had been run through the previous night. We collected other insects using nets, beating trays and pooters, activities much enjoyed by the younger visitors. As usual much of the day was given over to putting a name to insects or groups that people were not familiar with. In addition to the insects Janet Simkin presented some of the botanical research that is being done at Close House. The meeting was organized in conjunction with the School of Biology at the University and the Royal Entomological Society. Twenty five people (of all ages) were there for all or part of the day. If you missed it in 2010 then watch out for the event in June 2011.

On 27 June there was a Joint Field meeting (Entomology and Midweek Botany Group) at "Prudhoe Spetchells". At the end of National Insect Week (see above) we held a joint meeting between the Entomology and Midweek Botany Groups. In 2009 the first of these joint meetings was held at Bishop Middleham Quarry, this year we were closer to home on the Spetchells at Prudhoe. The calcium rich soil supports a wide range of plants and insects and, as over 20 people braved the very hot weather, we found a range of interesting species of both plant and insect. By afternoon the heat (or the world cup semi-final) had drawn some people away, but it was a grand day out.

### GREAT NORTH MUSEUM: HANCOCK





The Great North Museum: Hancock has been open over a year and has been a top attraction in the region throughout this time. The Museum is a partnership between Newcastle University, the City Council, Tyne and Wear Museums, The Society of Antiquaries of Newcastle upon Tyne and the Natural History Society. During the year the system for the governance of the new museum has started to operate and meetings of all the Committees outlined by Professor Davis at our annual meeting have now been held.

Highlights have included exhibitions of bog bodies, Great North Runners, Awards and Royal Visits. Our first full year of operation in the newly refurbished Museum has been an exciting and busy time.

Over the summer the museum provided a temporary home for the most famous bog body in the UK, Lindow Man. It was a great privilege for the museum; only the third time that the British Museum have loaned Lindow Man and the first loan outside of Cheshire where he was originally found. The exhibition offered a range of different perspectives on the life and death of this man who lived 2000 years ago. Visitors were encouraged to investigate the evidence and to decide for themselves why and how Lindow Man died. The exhibition was accompanied by a popular public lecture series with experts in ritual death, bog bodies and forensic archaeology delighting visitors of all ages.

Autumn brought another important visitor from London and on November 6 Her Majesty the Queen, accompanied by His Royal Highness the Duke of Edinburgh, officially opened the Museum. Crowds lined the Museum's plaza to catch a glimpse of the royal couple. Some of the Museum staff and society members who had helped to make the Museum redevelopment such a success were presented to the Royal party.

November also marked the 150<sup>th</sup> anniversary of the publication of '*On the Origin of Species*'. Working with the Society and Newcastle University, the museum hosted a Darwin festival. Highlights included an exhibition led by Prof. Linda Anderson called 'The Secret Life of Barnacles', Poetry readings, school workshops and family fun events. Nicky Clarke, the librarian also put together a small exhibition of works from the library related to the anniversary including the society's First Edition of '*On the Origin of Species*'.

The EYE project went from strength to strength this year and in January evolved into ERIC, the Environmental Record Centre for the North East of England. The volunteer programme has continued, with volunteers, including members of the society, digitising data for the regional database and getting involved in events and training days. New funding from Defra has enabled the Project Team to develop and progress a national demonstration project, capturing local authority planning data and ensuring that it is useful for



everyone. This year also saw a change in staffing for the project with former coordinator Naomi Hewitt leaving to join the National Trust's team at Derwent Water and Katherine Pinnock, former project officer, taking the reins.

Following the snows of Winter, Spring was heralded by the 'Starry Messenger'. Marking the 400th anniversary of the publication *The Starry Messenger*, in which Galileo announced his amazing discoveries of the night skies. Visitors to the museum were able to 'meet' Galileo's friend Filippo Sallviati, with period style experiments and audience participation.

In a year of anniversaries the Museum was also host to the debates marking the 350<sup>th</sup> anniversary of the Royal Society.

The beginning of Summer was marked by the Museum's first large exhibition using the whole of the new 500 square metre special exhibitions space. In the Long Run celebrated the 30<sup>th</sup> anniversary of the world's largest half-marathon. It explored the history and significance of the Race and raised awareness of the Great North Run's role in the region's heritage and cultural identity.

### **The EYE Project**

The Environmental Records Information Centre (ERIC) North East was officially launched in January 2010, building on the work of the EYE (Exploring Your Environment) Project. ERIC North East continues to work with wildlife recorders and recording groups in the region to collate information on species, habitats and sites, and now holds near to 1 million species records.

The EYE Project's series of public events concluded with two family fun days in August 2009, one held at the Great North Museum: Hancock and the other organised by Durham Biodiversity Partnership at Saltwell Park, where children were encouraged to make their own insect homes, helping to increase awareness of the variety of wildlife inhabiting their gardens. These events will hopefully lead to a new generation of invertebrate enthusiasts in the region and potential future recorders!

ERIC North East is maintaining this public engagement programme, and began with a 'Gosforth Park Exploration Day' in conjunction with the Natural History Society in May 2010. As always, this event was extremely popular with 92 visitors to the reserve in total. It is a fantastic opportunity for people to visit such a special reserve normally closed to non-members, and learn about the diversity of wildlife and habitats at the site.

### **GOSFORTH PARK NATURE RESERVE**

Gosforth Park Nature Reserve is of considerable importance as an area of rich wildlife diversity close to a major city. Management of the reserve presents us with some considerable challenges – not only with respect to maintaining important habitats such as the *Phragmites* reedbeds, but also maintaining its hides and other facilities which enable people to enjoy the wildlife with minimal disturbance, and doing what we can to prevent the reserve from becoming an island in a future urban conurbation. During the year, records of birds, mammals, plants and insects have confirmed the importance of the reserve to biodiversity in the North-East. Otters have now become a regular feature and Gosforth Park may well be one of the best places in the area to see this elusive mammal. The re-establishment of Otters has resulted in an unexpected problem and the discovery by Paul

Drummond, the reserve warden, of an Otter on the tern platform this summer suggests that Otters may have been responsible for the breeding failure of our small Common Tern colony in this and the previous two years; redesign of the tern platform to make it Otter-proof as well as being resistant to attack from aerial predators is now a priority for next year. Of other mammal species regularly seen in the reserve, the Red Squirrel population seems to be relatively stable but its future hangs in the balance against the encroachment of Greys.

Gosforth Park Nature Reserve is a Site of Special Scientific Interest on account of the extensive *Phragmites* reedbeds and it is excellent news that Reed Warbler numbers (see Ringing report) are holding up well. It is particularly exciting that the reserve is also a good place to see Bitterns; there were regular sightings of a Bittern or Bitterns throughout the autumn, winter and continuing into summer, suggesting a year-round presence and the possibility of breeding in the future. Breeding species also important in the reserve include Water Rail, Kingfisher, Mute Swan, Common Terns, Grasshopper Warbler and Sedge Warbler. Mute Swans exceeded all expectations this year with 14 young being recorded throughout the summer; although these seemed to be cared for by two adults, observations recorded in the logbook suggested that this large brood may have originated from two families that had come together.

The presence of these reedbed and wetland species highlight the importance of maintaining the wetland habitat of the reserve; healthy *Phragmites* with patches of willow carr, varying water depths and areas of open water provide important habitat diversity. Water quality and the availability of food are also of vital importance. As part of the management plan, we aim to stock the lake with small fish to increase the suitability of the area for Otters and other fish-eaters such as Bitterns and grebes. This year, a thousand Roach were carefully released into the lake at the end of winter, thanks to a generous donation from Bob Wilkin of his fees for working on a BBC programme on urban Otters a couple of years ago.



Paul Drummond and Bob Wilkin putting fish into the Lake photo by Stuart Will



Oak Bush-cricket by Paul Drummond

The vertebrate fauna of Gosforth Park Nature Reserve is relatively well recorded. The insect, and plants are less well known, but are equally important aspects of biodiversity and increased effort on these groups can be rewarding. Two species of insect, the Oak Bush-cricket *Meconema thalassinum*, normally found in the south of England, and the micro-lepidopteran *Mompha locupletella* were recorded by Paul Drummond in the reserve for the first time this year. Unlike last year when a new plant for the reserve was discovered (*Cyperus* Sedge *Carex pseudocyperus*), there were no new additions to the flora of the reserve. However, the status of the



reserve as a nationally-important site for the Coral Root Orchid was given greater weight when a survey by Paul Drummond estimated the size of the colony, already the largest in England, to be double previous estimates with at least 446 flowering stems. Flowering spikes have been found in parts of the woodland away from the main areas and were rediscovered in a location where they have not been seen for over twenty years. Maintaining the habitat for this myco-heterotrophic plant is another challenge: their favoured habitat in the reserve is among the roots of silver birch in wet conditions and we are concerned that the collapse of an underground culvert system has led to conditions that may now be too wet for the silver birch and which also allows *Phragmites* to expand and compete with the orchid for space. The health of the Coral Root Orchid colony thus needs to be carefully monitored and obtaining funding to control drainage in this part of the reserve as part of the management strategy is on our priority list.

Maintaining security of the hides and other facilities for members in the reserve has been rather more of a challenge this year. Some of the hides and the ringing hut were badly damaged by vandals in early autumn. Repairs to the ringing hut began in November and the most vulnerable parts were also reinforced with steel plate as an additional deterrent against vandals. The Jubilee hide was so badly damaged that it has been dismantled and re-erected as an observation screen closer to the lake. At least some of this damage seems to have been caused by children attending a local school, and we clearly need to do more to engage with the local community and gain their support for what is, in effect, their local nature reserve. In a separate attack by vandals, the feeding station was burnt down in the spring and now needs to be replaced. As the feeding station was insured, we will be using the insurance money to rebuild it at a site in the reserve that is more accessible and easier to protect.

The rebuilding and repairs to huts and hides, and the manufacture, erection and monitoring of nest boxes, have kept Management Committee member Geoff Lawrence very busy. This year he has been assisted by volunteer John Gajdus who has helped Geoff with path maintenance and bridge rebuilding, projects that in some cases he has finished for us almost single-handed.

The Society is grateful to the many members and volunteers who contribute to the upkeep and security of the reserve. Geoff Lawrence deserves special mention for his hard work rebuilding hides, erecting nest boxes and maintaining the paths and boardwalks, and we are especially grateful to John Gajdus for his help with some of these tasks. Members of the University Conservation Society and the Ringing Group are thanked for their help in keeping the willow carr under control and maintenance of mist-net rides; especially valuable now that funding from Natural England to help maintain the reedbeds has come to an end (temporarily, we hope). Veronica Carnell and her squirrel team have continued to monitor the Red Squirrel population and their efforts are greatly appreciated. We are indebted to Bob Wilkin for his donations which have enabled regular restocking of the lake with fish, greatly enhancing the attraction of the lake to wildlife in addition to Otters.

We thank the Management Committee for their time and efforts on behalf of the Society, and the staff of Northern Racing PLC for their helpful cooperation in management of the reserve. Finally, Paul Drummond, the reserve Warden, has continued to be vital to security, keeping the human wildlife at bay, and has expanded his role to 'naturalist in residence' by contributing many important records and photographs of the wildlife in the reserve.

## RINGING GROUP

### Coastal research

The coastal research projects are closely integrated with the Society's Ringing Group activities. Ringing studies involve collecting biometric data (body mass and a measure of size or age such as total head and/or wing length) on the adults and chicks of three key species, Arctic Terns, Puffins and Kittiwakes breeding on the Farne Islands and Coquet Island. These data support other studies carried out in collaboration with Newcastle University to address specific questions on breeding biology of these and other seabird species. On Coquet Island, Laura Morris is studying for a PhD, supervised by Richard Bevan and Chris Redfern, on environmental factors affecting the mortality of Common



'Puffin counter' entrance to burrow

Terns *Sterna hirundo* and Arctic Terns *Sterna paradisaea*. After five field seasons, Laura is now analysing and writing up her data which will facilitate modelling studies to predict the likely consequences of climate change and variability of food supply on the breeding success of these tern species. On the Farne Islands, two Masters students, April Eassom and Annalise (Anna) Bayney carried out their research projects studying the effects of visitor disturbance on the provisioning and growth of Puffin *Fratercula arctica* and Arctic Tern

chicks, respectively. For the Puffin study, April used a new method of automatically recording the visits of adults to the burrows; this was done using 'Puffin counters' designed and supplied to specifications by Dominic Goodwin of NatureCounters Ltd (<http://www.naturecounters.com/>), a new company specialising in the supply of nestbox counters and cameras. The novel design consisted of a short length of Perspex tube, wide enough for an adult Puffin, containing sensors, which is inserted into the opening of a Puffin burrow. Four of these units can be connected to a small datalogger which records each entry into the burrow. April's Puffin study showed that although the frequency and timing of visits to the burrows by adult Puffins was significantly affected by high levels of visitor disturbance, this was not detrimental to the breeding success of Puffins in highly-disturbed areas. Conversely, the Puffins in the low-disturbance zones appeared to perform less well, fledging significantly fewer chicks and breeding later in the season compared to highly-disturbed areas. Anna's study on Arctic Terns indicated that disturbance by visitors did not have a significant effect on breeding success. The results of these studies suggest that, with continued good management, visitors to the Farnes can continue to enjoy an excellent wildlife experience without having a detrimental effect on the birds that they have come to see.



Kittiwake with data logger attached by Chris Redfern



Also on the Farne Islands, Richard Bevan continued his GPS logging studies on Puffins and Shags *Phalacrocorax aristotelis*, and was able to recover some Geolocator tags which were fitted to Puffins last year (attached to the BTO ring fitted to a leg) and which have allowed the wintering areas of these individuals to be discovered. This year, GPS logging studies were expanded by the ringing team to include Kittiwakes *Rissa tridactyla*. In this project, funded by a generous grant from the Dickinson Memorial Fund, GPS data loggers were attached to the lower-back feathers of some Kittiwakes from the Brownsman colony for 24 hours. Eleven of these loggers were recovered successfully and the data recovered are yielding a fascinating insight into the foraging behaviour of these birds during the breeding season.

### Ringing Group

#### Low Newton autumn 2009

Ringing totals for the Newton Pool site at Low Newton-by-the-Sea in autumn 2009 were slightly down at 265 for the season compared to 293 the previous year (Table 3). However, this difference was largely accounted for by a reduction in the numbers of Long-tailed Tits *Aegithalos caudatus* ringed in 2009. Since this is a flocking species and figures can be inflated substantially by capture of one more flock than usual, such a year-to-year change may not have



Firecrest by Chris Redfern

any significance in terms of population levels. Although the range and relative numbers of each species ringed was, overall, similar in the two years, even with respect to most of the common migrant species (Table 2), the 2009 autumn was interesting with respect to two species: Firecrest *Regulus ignicapillus* and Chiffchaff *Phylloscopus collybita*. Three Firecrests were ringed on 25 October and this is an exceptional total for the site; the group has previously only ringed one at Low Newton and that was 15 years ago in 1994. On the same day, two Chiffchaffs were caught and ringed and both had characteristics of the Siberian race *tristis*. These captures were representative of observations elsewhere on the North-East coast (including the High Newton site run by Gary Woodburn) and the autumn



Siberian Chiffchaff by Gary Woodburn

was noticeable for the unusual numbers of Firecrests (presumably of continental origin) and paucity of Goldcrests (which usually come from Scandinavia). Two Yellow-browed Warblers *Phylloscopus inornatus* were also ringed during the autumn, but two weeks earlier, making it a good season for unusual migrants. Ringing at Low Newton is carried out with the support of the National Trust and the Society is grateful to John Walton, Property

Manager, for his support, and to his team 'on the ground', Kevin Redgrave and Jane Lancaster, for their friendship, help and encouragement.

#### Gosforth Park to 31 July 2010

In Gosforth Park Nature Reserve, ringing by the Society's team takes place between mid-April and the end of August each year and the site is run as a 'Constant Effort Site' (CES) with standardised net runs and catching effort. For this report, the capture totals (new birds

ringed and new-for-year retraps) are summarised for the 'report year' (1 August to 31 July) in Table 3 and compared to the previous year. Capture totals were up slightly compared to 2009 report year, and this was due mainly to increased numbers of Reed Buntings *Emberiza schoeniclus* and Reed Warblers *Acrocephalus scirpaceus* (Table 3). Reed Warblers, and the closely related Sedge Warbler *Acrocephalus schoenobaenus*, are two of the key species of the site and captures of these two species are summarised separately in Table 4, by year (January-December, 2009 and 2010) and not 'report year' as used for the main table of captures (Table 3). For Sedge Warblers, the capture totals for adult and first-year birds was broadly similar in the two years; for Reed Warblers, however, the number of first-year birds caught in 2010 was more than double the total for the previous year, suggesting that 2010 was a productive year for Reed Warblers in Gosforth Park. The total number of adult Reed Warblers caught was one of the highest ever, only just exceeded by the total of 52 in 2007. Grasshopper Warblers *Locustella naevia* were also a feature of 2010, with the total of 5 being the highest ever. The totals list of Table 2 also includes birds ringed as pulli. These are not part of the CES scheme and, apart from the two broods of Barn Swallows *Hirundo rustica* from the old ringing hut, all the Blue Tit *Cyanistes caeruleus* and Great Tit *Parus major* Pulli were ringed in the woodland nest boxes made and erected by Society member Geoff Lawrence. Surprisingly few of these birds get caught in the Constant-Effort nets and this suggests that these nest boxes will have little effect on the constant-effort data. Manning the Gosforth Park Constant effort site takes a great deal of effort, and early mornings (6 am start!), and the Society is extremely grateful for the many volunteers that take part to ensure the continuity of this important project.

#### *Seabirds 2010*

Seabird ringing totals for 2010 compared to the 2009 season are summarised in Table 5, and show the numbers of new birds ringed as well as recaptures of adults ringed in previous years. Recaptures of adults are valuable because they can be used to provide estimates of adult survival rates and how these vary from year to year. The number of adult Arctic Terns captured (new birds and retraps) was similar to previous years. In addition to allowing survival rate estimates, these captures provide biometric data on variation in adult mass during the breeding season, patterns of recruitment (from retraps of birds ringed at chicks in colonies elsewhere) and the fidelity of adults to specific locations within the colonies. Biometric data were also obtained on samples of Arctic Tern chicks and for adults and chicks of Puffins and Kittiwakes from the Farne Islands and Coquet Island. As last year, Shags (adults and chicks) were fitted with red darvic (PVC) rings, in addition to metal British Trust for Ornithology rings, as part of a project on Shag dispersal organised by Francis Daunt of the Centre for Ecology and Hydrology, Edinburgh. The total number of breeding seabirds ringed in 2010 (2086) was slightly up on the previous year- helped by an increase in the number of Sandwich Terns ringed and by assistance from the Wardens on the Farne Islands. The Senior Warden on Brownsman (Mark Breaks) and Jason Moss held ringing permits and were able to ring seabirds when their other duties allowed, and most of the other wardens were able to help the ringing team on ringing visits. In the course of the ringing studies, the group retrapped an Arctic Tern that had been ringed on Inner Farne in 1980 and this has set a new Longevity record for the species in the UK from BTO ringing. Although not a breeding species on the Farnes, Storm Petrels are regularly seen in the North Sea and can be caught at coastal sites using mist nets and sound lures to study their movements. In three night-time sessions on Inner Farne and Brownsman, 14 Storm Petrels were caught using mist nets and sound lures.



Table 2. Ringing totals at Low Newton in autumn 2008 and autumn 2009

Species	2008	2009
Kestrel	1	0
Redshank	3	0
Wood Pigeon	1	0
Great Spotted Woodpecker	0	1
Kingfisher	1	0
Swallow	0	1
Meadow Pipit	11	0
Rock Pipit	25	8
Pied Wagtail	3	0
Wren	27	27
Dunnock	15	27
Robin	15	19
Redstart	4	1
Stonechat	4	1
Wheatear	1	0
Blackbird	7	11
Song Thrush	6	8
Redwing	0	2
Sedge Warbler	1	6
Reed Warbler	0	2
Lesser Whitethroat	0	1
Whitethroat	2	2
Garden Warbler	2	0
Blackcap	2	2
Yellow-browed Warbler	0	2
Chiffchaff	7	26
Willow Warbler	6	4
Goldcrest	9	1
Firecrest	0	3
Spotted Flycatcher	1	0
Pied Flycatcher	1	0
Long-tailed Tit	60	18
Coal Tit	11	6
Blue Tit	9	14
Great Tit	6	9
Starling	6	9
House Sparrow	8	0
Chaffinch	2	3
Greenfinch	2	1
Goldfinch	9	16
Siskin	0	1
Lesser Redpoll	0	1
Linnet	5	0
Yellowhammer	0	5
Reed Bunting	20	27
<b>Total</b>	<b>293</b>	<b>265</b>

**Table 3.** Captures (new birds and new-for-year retraps) at Gosforth Park Nature Reserve in the last two 'Annual Report' years

	01/08/2008-31/07/2009	01/08/2009-31/07/2010
Kingfisher	0	1
Swift	1	0
Great Spotted Woodpecker	2	2
Swallow	3 [pulli]	6 [pulli]
Wren	44	31
Dunnock	13	18
Robin	21	17
Blackbird	22	27
Song Thrush	2	5
Grasshopper Warbler	1	5
Sedge Warbler	75	76
Reed Warbler	75	125
Lesser Whitethroat	3	0
Whitethroat	12	5
Garden Warbler	2	4
Blackcap	67	80
Chiffchaff	61	48
Willow Warbler	101	79
Goldcrest	5	0
Spotted Flycatcher	0	3
Long-tailed Tit	23	26
Willow Tit	0	1
Coal Tit	13	3
Blue Tit	115 [+142 pulli]	122 [+165 pulli]
Great Tit	55 [+76 pulli]	50 [+109 pulli]
Nuthatch	0	1
Treecreeper	3	1
Chaffinch	3	1
Greenfinch	1	2
Goldfinch	1	6
Linnet	1	4
Bullfinch	14	17
Reed Bunting	31	67
<b>Total</b>	<b>767 [+ 221 pulli]</b>	<b>827 [+280 pulli]</b>

The coastal research and seabird ringing studies on the Farne Islands and Coquet Island are an important part of the Society's activities and we are very grateful to the National Trust (Farne Islands) and the RSPB (Coquet Island) for allowing this work to continue. The Farnes Property Manager, John Walton, and Head Warden David Steel, have been particularly supportive and we are extremely grateful to them for their help and encouragement. On Coquet Island, the camaraderie of Paul Morrison and his wardening team have been a delight, and we are very grateful to Paul, and to the Farnes wardens, for ferrying the team across to the islands on numerous occasions. We would also like to thank Laura Morris for help with the Arctic Terns (and the Common Tern ringing) on Coquet island, and the Wardens on the Farnes, particularly Mark Breaks, Jason Moss, Sarah West,



Table 4. Captures of Reed and Sedge Warblers at Gosforth Park: newly ringed adults and adult birds returning from previous years, and first-year birds.

		2009	2010
Sedge Warbler	Adult	48	43
	First-year	27	31
Reed Warbler	Adult	46	50
	First-year	35	74

Table 5. Ringing totals for breeding seabirds on the Farnes and Coquet Island in 2009 and 2010.

	2009			2010		
Species	Ringed		Retrap/ Control	Ringed		Retrap/ Control
Age	Chicks	Adult	Adult	Chicks	Adult	Adult
Fulmar	72	2		105	3	
Shag	41	34	26	68	17	19
Eider		36	54		15	38
Black-headed Gull	47			94		
Kittiwake	358	65	14	106	63	42
Sandwich Tern	161			572		1
Common Tern	51			52		
Arctic Tern	700	104	65	624	107	97
Puffin	91	133		157	103	
<b>Total</b>	<b>1521</b>	<b>374</b>	<b>159</b>	<b>1778</b>	<b>308</b>	<b>197</b>

Graeme Dunne and Tom Simon, David Andrews, Wez Smith, Michael MacKinnon, Jamie Coleman and Matthew Smith for their help with ringing, getting across to the islands, good company and excellent cooking. Finally, we should also like to thank the Dickinson Bequest Fund for the grant which allowed the Kittiwake GPS logging studies to get under way.

## COQUET ISLAND ADVISORY COMMITTEE

The Committee met twice during the year and the Society has two representatives on the Committee Dr Chris Redfern and David Noble-Rollin. The 2010 season had been a good one with the food for the birds appearing to be plentiful for most of the crucial breeding weeks and the use of pipe fish as an alternative food seems to have been very limited. The bird numbers have also on the whole been pleasing. Although it was a little disappointing that the Roseate Terns were down to 80 pairs from 90 the previous year this was an increase on the 70 recorded in 2008 and Coquet is still the only breeding colony in the UK.

The Common Tern population continues to grow on the 2009 total of 1228 to 1358, an increase of 130. This is in line with the national trend but the Arctic Tern population has fallen this year from 1259 to 1046, a decrease of 213 pairs. This is not great news but the numbers have not fallen as low as they did in 2008, so with some luck and support they should bounce back for the 2011 season. After a shaky start the Sandwich Terns have had a good year. The original plot filled early in the season with 655 nests which was bolstered by a second wave of 414 leaving us with the grand total of 1069, an increase of 22% on last year's number. Fulmar have also increased with 71 pairs, an increase of 20 on last year and the Kittiwake colony continues to grow on the east of the island, and is now 183 pairs strong. The Kittiwakes only began breeding on Coquet in the early 1990s, but since then have increased dramatically. The Black-headed Gulls are difficult to count as they are one of the most numerous species and cover a very large area. The nests are counted individually by a team of wardens and volunteers. The count reached 3316 this year which is a negligible decrease of 69 pairs in a colony of over 3000. The Eider census has taken place in two parts ensuring all late breeders are counted. The combined total of 326 is impressive, a 25% increase on last year's number. The Puffins due to their complex burrows systems, are only counted every five years but counts of visible birds at the end of July showed they were doing well, with plenty of sandeels being brought in for their young.

#### **LINDISFARNE NATIONAL NATURE RESERVE**

**Joint Advisory Panel and Wildfowl Panel** These two committees meet twice a year. The first is to advise Natural England on issues that may affect the site and its internationally important wildlife. The committee is made up with members from all the groups both voluntary and statutory that have an interest in the area around Holy Island. At present the Society has two representatives on the Committee Graham Bell and David Noble-Rollin (as long as he is Chairman of the Wildfowl Panel). The main concern this year was the lack of breeding success of the Little Terns on the Nature reserve. This was most likely due to severe erosion of the breeding site and competition with Arctic Terns. There will be work done to try to ensure that the situation improves for the terns. The other major projects are the creation of saline lagoons that should increase the amount of salt marsh this is being taken forward under the 4Shores project and stage one has been completed.

**The Wildfowl Panel** is concerned with the running of the wildfowling activity on the reserve and deals with the monitoring of the numbers of all the internationally important bird species. They also deal with any issues that may occur concerning things like bird health, health of the *Zostera* grass (the main food of the Light-bellied Brent Geese and Wigeon) and changes in their numbers. The winter this year was particularly stressful for the birds with the saltings being frozen for long periods at a time creating starvation for both waterfowl and waders. During these times all activities that may disturb the birds are suspended to allow feeding to occur throughout the tidal period.

#### **NEWCASTLE AND NORTH TYNESIDE BIODIVERSITY ACTION PLANS (BAPs) STEERING GROUP**

The Committee met twice during the year and the main emphasis was on the updating of the Habitat Action Plans (HAPs) and some of the Species Action Plans (SAPs). Added to this was the idea of merging the Biodiversity Plans for North Tyneside and Newcastle. This is a continuation of the fact that the two committees that use to run the two areas have been amalgamated and the feasibility of having a joint plan was discussed.



**THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA**  
**REPORT OF THE TRUSTEES FOR THE YEAR ENDED 31 JULY 2010**

**CHARITY NUMBER 526770**

**Reference and Administrative Information**

These details are disclosed on page 220 of this Annual report.

**Structure, Governance and Management**

This is described in full on page 221 of the Annual Report.

**Objectives and Activities**

These are detailed on page 221 of the Annual Report.

**Achievements and Performance**

The detailed report of the Society's activities during the year appears on pages 222 to 256 of the Annual Report.

**Risk Management**

The trustees have assessed the major risks to which the charity is exposed, in particular those relating to the operations and finances of the charity, and are satisfied that systems are in place to mitigate exposure to the major risks.

**Reserves Policy**

It is the policy of the charity to maintain unrestricted funds, which are the free reserves of the charity, at a level which equates to approximately six months unrestricted expenditure. This provides sufficient funds to cover management, administration and support costs and to ensure all ongoing projects can continue.

**Investment Policy**

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

**Public Benefit Statement**

The trustees have referred to the guidance in the Charity Commission general guidance on public benefits when reviewing the aims and objectives and in planning future activities. The charitable objectives are also set in order to provide a clear and demonstrable public benefit.

**Financial Review**

	<b>2010</b>	<b>2009</b>
Net Outgoing Resources	<u>£32,610</u>	<u>£30,409</u>

### **Statement of Trustees Responsibilities**

The charity's trustees are responsible for preparing the Trustees Annual Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

The law applicable to charities in England and Wales requires the trustees to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the charity and of the incoming resources and application of resources of the charity for that period. In preparing these financial statements, the trustees are required to:-

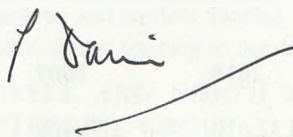
- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the charity will continue in operation.

The trustees are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the charity and enable them to ensure that the financial statements comply with the Charities Act 1993 and the Charity (Accounts and Reports) Regulations 2008. The Trustees 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**

Mr Graham Moore has expressed his willingness to continue in office as independent examiner, and a resolution to reappoint him will be proposed at the Annual Meeting.

### **Signed on behalf of the Trustees**

A handwritten signature in black ink, appearing to read 'P Davis', with a long horizontal line extending to the right.

PETER DAVIS  
Chairman and Trustee



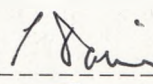
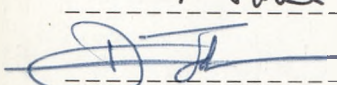
**THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA**  
**STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED 31 JULY 2010**

	Notes	Endowment £	Restricted £	Unrestricted £	2010 Total £	2009 Total £
<b>Income and expenditure</b>						
<b>Incoming resources</b>						
<b>Incoming resources from generated funds:</b>						
Voluntary income	2	723	689	26,774	28,186	30,324
Activities for generating funds	3	-	17	10,341	10,358	10,281
Investment income	4	-	-	20,549	20,549	25,326
Incoming resources from charitable activities:	5	-	-	19,965	19,965	1,755
Other incoming resources	6	-	-	5,297	5,297	654
<b>Total incoming resources</b>		<b>723</b>	<b>706</b>	<b>82,926</b>	<b>84,355</b>	<b>68,340</b>
<b>Resources expended</b>						
Cost of generating funds	8	-	-	25,730	25,730	18,563
Charitable activities	9	-	3,245	80,999	84,244	73,918
Governance costs	10	-	-	6,991	6,991	6,268
<b>Total resources expended</b>		<b>-</b>	<b>3,245</b>	<b>113,720</b>	<b>116,965</b>	<b>98,749</b>
<b>Net (outgoing)/incoming resources before other recognised gains and losses</b>		<b>723</b>	<b>(2,539)</b>	<b>(30,794)</b>	<b>(32,610)</b>	<b>(30,409)</b>
<b>Other recognised gains and losses</b>						
Realised and unrealised gains/(losses) on investments assets		-	-	64,288	64,288	(71,970)
<b>NET MOVEMENT IN FUNDS</b>		<b>723</b>	<b>(2,539)</b>	<b>33,494</b>	<b>31,678</b>	<b>(102,379)</b>
Transfer between funds			1,648	(1,648)	-	-
Funds brought forward		53,609	2,498	496,908	553,015	655,394
<b>FUNDS CARRIED FORWARD</b>						
<b>31 JULY 2010</b>		<b>54,332</b>	<b>1,607</b>	<b>528,754</b>	<b>584,693</b>	<b>553,015</b>

**THE NATURAL HISTORY SOCIETY OF NORTHUMBRIA**  
**BALANCE SHEET AS AT 31 JULY 2010**

	Notes	2010 £	2009 £
<b>FIXED ASSETS</b>			
Tangible assets for use by the society	12	9,217	10,143
Investments	13	544,704	512,705
		<u>553,921</u>	<u>522,848</u>
<b>CURRENT ASSETS</b>			
Debtors	14	4,105	5,680
Cash at bank and in hand		32,014	28,740
		<u>36,119</u>	<u>34,420</u>
<b>CREDITORS:</b>			
Amounts falling due within one year	15	5,347	4,253
		<u>30,772</u>	<u>30,167</u>
<b>NET CURRENT ASSETS</b>			
		<u>584,693</u>	<u>553,015</u>
<b>TOTAL ASSETS LESS CURRENT LIABILITIES</b>			
		<u>584,693</u>	<u>553,015</u>
<b>NET ASSETS</b>			
<b>FUNDS</b>			
General Fund		103,073	74,991
Expendable Endowments:			
TB Short Memorial Fund		230,993	230,993
Grace Hickling Memorial Fund		181,433	181,433
		<u>515,499</u>	<u>487,417</u>
Life Members Fund		1,365	1,543
Designated Capital Funds	16	11,890	7,948
<b>Total unrestricted Funds</b>		<u>528,754</u>	<u>496,908</u>
Restricted Income Funds	17	1,607	2,498
Restricted Endowment Fund	18	54,332	53,609
<b>TOTAL FUNDS</b>		<u>584,693</u>	<u>553,015</u>

Approved by Council on 8th October 2010  
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 2010.**

**1. Accounting Policies**

**1.1 Basis of Accounting**

The financial statements have been prepared under the historical cost convention, as modified by the inclusion of investments at their market value, 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, and in accordance with Financial Reporting Standard for Smaller Entities (effective April 2008).

**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 2010.

**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.

Included within fixed assets as Property is the cost of Lake Lodge, less donations and grants received. The net cost 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 and when 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 which is made up from the capital donated by living relatives to the The Dickinson Memorial Fund. This capital is not to be utilised, but the income generated from it to be allocated to the Dickinson Memorial Designated Income Fund.

#### 1.8 Charitable activities

Costs of charitable activities includes grants made and an apportionment of overhead and support costs as shown in note 9.

#### 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 10.

### 2. Voluntary Income

	Endowment	Restricted	Unrestricted	2010 Total	2009 Total
	£	£	£	£	£
Subscriptions	-	-	23,509	23,509	19,812
Life Membership	-	-	-	-	400
CAF	-	-	150	150	-
In Memory of L Alder	-	-	157	157	-
In Memory of B Selman	-	-	350	350	-
Council Member	-	-	500	500	-
Council Member Archives	-	500	-	500	-
Blackett Hart Pratt	-	-	500	500	-
Dickinson Bursary	723	-	-	723	3,590
English Nature GPNR	-	-	-	-	4,995
The Percy Hedley Foundation	-	-	500	500	500
Samares Investors Ltd	-	-	500	500	500
General public donations	-	189	608	797	527
	723	689	26,774	28,186	30,324

### 3. Activities for Generating Funds

	Endowment	Restricted	Unrestricted	2010 Total	2009 Total
	£	£	£	£	£
Library sales	-	17	-	17	119
Council Room Letting	-	-	179	179	-
Lease payment	-	-	10,162	10,162	10,162
	-	17	10,341	10,358	10,281



#### 4. Investment Income

	2010 Total £	2009 Total £
All investment income is unrestricted:		
UK equity dividends	11,274	13,098
UK fixed interest	4,667	5,568
UK unit trusts	2,352	665
Non UK unit trust	1,340	1,113
Non UK fixed interest	-	2,138
Non UK equities	856	1,092
Bank interest	60	1,652
	<u>20,549</u>	<u>25,326</u>

#### 5. Incoming resources from Charitable Activities

	Endowment £	Restricted £	Unrestricted £	2010 Total £	2009 Total £
Courses	-	-	18,127	18,127	-
Publications	-	-	59	59	92
Field Trips	-	-	426	426	266
Transactions	-	-	688	688	745
GPNR	-	-	432	432	287
Ringing Group	-	-	194	194	365
Orthological Research	-	-	39	39	-
	-	-	<u>19,965</u>	<u>19,965</u>	<u>1,755</u>

#### 6. Other Income

	Endowment £	Restricted £	Unrestricted £	2010 Total £	2009 Total £
Recharges	-	-	767	767	355
On Line Filing	-	-	75	75	175
Profit on sale of assets	-	-	1,455	1,455	124
Profit on disposal of Hide	-	-	3,000	3,000	-
	-	-	<u>5,297</u>	<u>5,297</u>	<u>654</u>

#### 7. Allocation of support costs and overheads

		Cost of Generating Funds £	Direct Charitable £	Governance £	2010 Total £	2009 Total £
<b>Unrestricted</b>	<b>Basis</b>					
Depreciation	Staff time	704	1,686	126	2,516	3,340
General expenses	Staff time	331	791	59	1,181	959
Insurance	Staff time	906	2,168	162	3,236	2,270
Post and telephone	Staff time	1500	3,587	268	5,355	3,360
Printing and stationery	Staff time	1536	3,675	274	5,485	2,733
Staff Recruitment	Staff time	820	1,961	146	2,927	-
		<u>5,797</u>	<u>13,868</u>	<u>1,035</u>	<u>20,700</u>	<u>12,662</u>

## 8. Cost of Generating Funds

	note	2010 £	2009 £
<b>Unrestricted</b>			
Salaries, pension contributions and National Insurance		17,318	13,985
Fundraising and advertising		2,615	1,602
Allocated support costs	7	5,797	2,976
		<u>25,730</u>	<u>18,563</u>

## 9. Charitable Activities

	Endowment	Restricted	Unrestricted	2010 Total £	2009 Total £
	£	£	£		
Note					
Salaries, pension contributions and National Insurance	-	-	44,406	44,406	42,665
Archive costs	-	1,051	-	1,051	700
Coastal Research	-	1,258	-	1,258	1,418
Courses	-	-	10,037	10,037	-
Gosforth Park Nature Reserve	-	801	1,759	2,560	6,070
Dickinson Memorial Fund	-	-	-	-	725
Asset restoration	-	-	-	-	299
Library costs	-	17	2,887	2,904	2,664
Transactions	-	-	5,109	5,109	8,335
Other publications	-	-	675	675	634
Field expenses	-	-	258	258	192
Lectures	-	118	1,617	1,735	1,163
Council Room maintenance	-	-	383	383	-
Allocated support costs	7	-	13,868	13,868	9,053
		<u>0</u>	<u>3,245</u>	<u>84,244</u>	<u>73,918</u>

## 10. Governance Costs

	2010 £	2009 £
<b>Unrestricted</b>		
Salaries, pension contributions and National Insurance	3,179	2,972
Printing and stationery	274	136
Postage and telephone	268	168
Insurance	162	114
General expenses	59	48
Depreciation	126	167
Other Staff costs	146	-
Accountancy and bookkeeping fees	1,867	1,763
Independent review	910	900
	<u>6,991</u>	<u>6,268</u>



## 11. Information regarding Employees and Trustees

	2010	2009
Average number of employees during the year	3	2
Total emoluments	<u>£64,903</u>	<u>£59,622</u>

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 (2009 - seven) trustees in respect of reimbursement of expenses incurred on the charity's behalf totalling £5,706 (2009 - £1,574).

## 12. Tangible Fixed Assets for use by the society

	2010 £	2009 £
Hancock Museum	Not valued	Not valued
Lake Lodge : Cost	3,899	3,899
Electrical Installation	5,300	5,300
	<u>9,199</u>	<u>9,199</u>
Less Depreciation to date	7,874	7,796
Net book value	<u>1,325</u>	<u>1,403</u>
Hides, equipment, office furniture and computers		
Cost	31,092	28,156
Additions	1,817	2,936
Disposals	(1,020)	
	<u>31,889</u>	<u>31,092</u>
Less Depreciation to date	23,997	22,352
Net book value	<u>7,892</u>	<u>8,740</u>
Total net book value	<u>9,217</u>	<u>10,143</u>

There were no capital commitments at 31 July 2010 (2009: £Nil).

During the year "The Feeding Station Hide" was destroyed by fire. The hide was fully insured. The destroyed hide has been disposed of against the insurance proceeds received resulting in a profit on disposal as disclosed in note 6.

## 13. Investments

	2010 £	2009 £
Market value at beginning of year	512,705	581,299
Additions	142,089	116,970
Disposal proceeds	(174,378)	(113,594)
Net investment gains/(losses)	<u>64,288</u>	<u>(71,970)</u>
Market value at end of year	544,704	512,705

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

UK Government 4% Stock	8.11%
Old Mutual Fund Managers	5.02%
HSBC Holdings Ord USD 0.5	5.36%

	2010 £	2009 £
Investments at market value comprised:		
Listed on a recognised stock exchange	544,704	512,705
	<u>544,704</u>	<u>512,705</u>
Historical cost at end of year	493,647	536,082

#### 14. Debtors

	2010 £	2009 £
Trade debtors	106	96
Prepayments and accrued income	3,999	5,584
	<u>4,105</u>	<u>5,680</u>

#### 15. Creditors

	2010 £	2009 £
Trade Creditors	435	23
Deferred income	1,931	1,764
Accruals	2,981	2,466
	<u>5,347</u>	<u>4,253</u>

#### 16. Designated Funds

	2010 £	2009 £
<b>Gosforth Park Nature Reserve Restoration Fund</b>		
Sir James and Lady Steel donation for lake rejuvenation	8,821	6,185
	<u>8,821</u>	<u>6,185</u>



	2009	New Designations	Utilised	Transfer	2010
	£	£	£	£	£
Gosforth Park Nature Reserve	6,185	3,885	(1,504)	255	8,821
James Alder Memorial fund	1,763	-	-	-	1,763
Ornithological Research	-	140	-	-	140
Library Computer Fund	-	-	(119)	552	433
Dickinson Memorial Fund Income	-	2,745	-	(2,012)	733
	<u>7,948</u>	<u>6,770</u>	<u>(1,623)</u>	<u>(1,205)</u>	<u>11,890</u>

#### 17. Restricted Income Funds

	2009	New Designations	Utilised	Transfer	2010
	£	£	£	£	£
Archives	-	554	(1,051)	497	-
Library	-	17	(17)	-	-
Farnes Sandeels Research	1,159	-	(1,258)	694	595
Lecture Projector Fund	-	135	(118)	457	474
GPNR Fish stocking	1,339	-	(801)	-	538
	<u>2,498</u>	<u>706</u>	<u>(3,245)</u>	<u>1,648</u>	<u>1,607</u>

During the year, further designations were made following:

- The receipt of £500 in respect of Archives from a member.
- The library income was the receipt of a book sale.
- The Lecture projector fund received £135 from members towards a new projector.

#### 18. Endowment Funds

	2009	New Designations	Utilised	Transfer	2010
	£	£	£	£	£
Dickinson Memorial Fund					
- capital	53,609	723	-	-	54,332
	<u>53,609</u>	<u>723</u>	<u>-</u>	<u>-</u>	<u>54,332</u>

The Permanent Endowment fund, the Dickinson Memorial Fund, was established in 2007 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.

INDEPENDENT EXAMINERS REPORT TO THE TRUSTEES OF THE NATURAL  
HISTORY SOCIETY OF NORTHUMBRIA YEAR ENDED 31<sup>st</sup> JULY 2010

I report on the financial information of the charity for the year ended 31 July 2010, which are set out on pages 257 to 267.

This report is made solely to the charity's trustees, as a body, in accordance with section 43(3) of the Charities Act 1993 ("the Act"), as amended by section 28 of the Charities Act 2006. My examination has been undertaken so that I might state to the charity's trustees those matters I am required to state to them in an independent examiner's report and for no other purpose. To the fullest extent permitted by law, I do not accept or assume responsibility to anyone other than the charity and the charity's trustees as a body, for my examination, for this report, or for the opinions I have formed.

RESPECTIVE RESPONSIBILITIES OF TRUSTEES AND INDEPENDENT EXAMINER

As described on page 258 the charity's trustees are responsible for the preparation of the financial statements. The charity's trustees consider that an audit is not required for this year (under section 43(2) of the Act as amended) and that an independent examination is needed.

It is my responsibility to:

- examine the financial statements (under section 43(3)(a) of the 1993 Act as amended);
- follow the procedures laid down in the General Directions given by the Charity Commissioners (under section 43(7)(b) of the 1993 Act as amended); and
- state whether particular matters have come to my attention.

BASIS OF INDEPENDENT EXAMINER'S REPORT

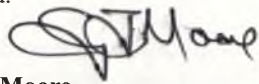
My examination was carried out in accordance with the General Directions given by the Charity Commissioners. An examination includes a review of the accounting records kept by the charity and a comparison of the financial statements presented with those records. It also includes consideration of any unusual items or disclosures in the financial statements, 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 whether the accounts present a "true and fair view" and the report is limited to those matters set out in the statement below.

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 trustees have not met requirements to ensure that:
  - (a) proper accounting records are kept (in accordance with section 41 of the Act); and
  - (b) financial statements are prepared which accord with the accounting records and 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 financial statements to be reached.

BULMAN HOUSE  
REGENT CENTRE  
GOSFORTH  
NEWCASTLE UPON TYNE  
NE3 3LS

  
**G. J. Moore**  
Independent Examiner  
Tait Walker LLP  
Chartered Accountants

Date 4 April 2011



## THE LICHENS OF MOORBANK BOTANICAL GARDEN, NEWCASTLE UPON TYNE

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### SUMMARY

A full lichen survey of Moorbank Botanic Garden was carried out for the first time. Fifty species were recorded including 27 on stone and 23 on bark/wood. Following reductions in atmospheric sulphur dioxide concentrations, the lichen flora of Newcastle upon Tyne has undergone recovery since Gilbert's pioneering studies carried out in and around the city in the 1960s, when only five species were recorded in similar habitats. The current wide diversity of tree and shrub species and hard landscaping provide a range of habitats for lichens. Species composition suggests transition from an earlier period dominated by high sulphur dioxide levels.

### INTRODUCTION

Moorbank, the University of Newcastle botanical garden, spans 1.6 hectares and is part of the Town Moor, which comprises approximately three square kilometres of rough grassland. This lies immediately to the north of the city centre and is surrounded by built-up areas. Plants may have been first grown at Moorbank in about 1923, but the area under cultivation was extended in the 1950s and again in 1981 when material was transferred to the site from the late Randle Cooke's Kilbryde Garden at Corbridge. Outside are formal plantings and collections of *Rhododendron*, *Potentilla*, alpine and medicinal plants, etc. The glasshouse complex (0.1 ha) was erected in 1985 and holds collections of tropical and desert plants and other non-hardy subjects used in teaching and research (<http://www.ncl.ac.uk/biology/about/facilities/moorbank/>). Most plantings, including trees, date from after 1981. However, the garden is surrounded by mature specimens of Sycamore (*Acer pseudoplatanus* L.) and Swedish Whitebeam (*Sorbus intermedia* Blytt) which certainly date from the nineteenth century. Limes (*Tilia x vulgaris* Hayne (pro sp.)) and a magnificent Swedish Whitebeam of this vintage also occur within the garden. Some trees dating from the 1950s, including a Tulip Tree (*Liriodendron tulipifera* L.), a Japanese Cherry (*Prunus serrulata* Franch.) and several Wild Cherry (*Prunus avium* (L.) L.), have now assumed a girth exceeding 1.5 metres.

On three sides, the garden is surrounded by a wall which predates the garden and is made of a coarse-grained sandstone. This is now mostly shaded. Most hard landscaping within the garden used a consignment of Ladycross stone, delivered in 1982. This is a very fine-grained, iron-rich, horizontally-bedded sandstone that originates from Slaley Forest, 10 km south of Hexham.

Oliver Gilbert (Purvis, 2005) carried out his pioneering doctoral study on Biological Indicators of Air Pollution (involving lichens, bryophytes, fungi, terrestrial algae, phanerogams and invertebrates) in and around Newcastle upon Tyne in the 1960s (Gilbert, 1965; Gilbert, 1968; Gilbert, 1969; Gilbert, 1970b; Gilbert, 1970a; Gilbert, 1971). He presented his research 40 years ago at the first (and only) European Congress on the Influence of Air Pollution on Plants and Animals held in Wageningen (Gilbert, 1969; Purvis, 2009). South-east Northumberland has a long history of air pollution. Celia Fiennes writing during the reign of Queen Anne (ca. 1710) observed that 'this county all about is full of this Coale, the sulphur of it taints the aire and it smells strongly to strangers; upon a high hill two miles from Newcastle I could see all about the country which was full of coale pitts'





**Fig. 1.** (a). Aerial Map dated 11 February 2007 (source: Google Earth). Moorbank is situated towards the south of the Town Moor 2 Km NW of Grey's Monument, Newcastle City Centre. (B) View towards Moorbank glasshouses with wooden bench colonised by several lichen species, including the shrubby *Evernia prunastri*, a species sensitive to  $\text{SO}_2$  pollution. (C) *Caloplaca citrina* (yellow) colonising sandstone walls. (D) Cherry with the recent colonist *Punctelia jeckeri*. The pollution-tolerant lichen *Lecanora conizaeoides* was present as small fragments towards its base (arrowed). (E) Close-up of *Punctelia jeckeri* shown in 'D'. (F) Close-up of the pollution-tolerant lichen *Lecanora conizaeoides* (position arrowed in 'D').



Table 1. Lichen species recorded at Moorbank Botanic Garden in 2009.

Acido phyte	Nitro phyte	Species	Abundance	Substrate
	N	<i>Amandinea punctata</i>	rare	on wooden bench, <i>Acer japonica</i> , etc.
		<i>Aspicilia calcarea</i>	rare	saxicolous
		<i>Caloplaca citrina</i> s.lat.	occasional	sandstone, concrete
		<i>Caloplaca crenulatella</i>	rare	saxicolous
		<i>Caloplaca holocarpa</i>	rare	saxicolous
		<i>Candelariella vitellina</i> f. <i>vitellina</i>	frequent	sandstone
A		<i>Cladonia chlorophaea</i> s.lat.	occasional	tree bases, and in double glazing of a glasshouse
A		<i>Cladonia coniocraea</i>	rare	sandstone wall
A		<i>Evernia prunastri</i>	rare	wooden bench, trees
A		<i>Hypogymnia physodes</i>	rare	wooden bench, trees
		<i>Lecania erysibe</i>	rare	sandstone by pond
		<i>Lecanora campestris</i> subsp. <i>campestris</i>	rare	sandstone by pond
		<i>Lecanora conferta</i>	occasional	brick wall by greenhouse entrance
A		<i>Lecanora conizaeoides</i> f. <i>conizaeoides</i>	rare	remnant on cherry, fertile
	N	<i>Lecanora dispersa</i>	rare	sandstone and wall by entrance
		<i>Lecanora expallens</i>	occasional	trees
		<i>Lecanora muralis</i>	occasional	sandstone
		<i>Lecanora polytropa</i>	rare	sandstone
		<i>Lecanora pulicaris</i>	occasional	Trees
		<i>Lecanora saligna</i>	rare	wooden bench
		<i>Lecanora symmicta</i>	occasional	wooden bench
		<i>Lecidella scabra</i>	frequent	sandstone
		<i>Lecidella stigmatea</i>	frequent	sandstone
A		<i>Lepraria incana</i> s. lat.	frequent	sandstone
		<i>Lepraria lobificans</i>	occasional	sandstone by pond
		<i>Melanelixia fuliginosa</i> subsp. <i>glabrata</i>	occasional	wooden bench
		<i>Melanelixia subaurifera</i>	occasional	on cherry
		<i>Micarea prasina</i>		wood
		<i>Parmelia sulcata</i>	occasional	on cherry, Ginkgo, old Liriodendron

	N	<i>Phaeophyscia orbicularis</i>	occasional	trees
	N	<i>Physcia adscendens</i>		trees
		<i>Physcia caesia</i>	rare	sandstone by pond
		<i>Physcia dubia</i>	rare	sandstone by pond
	N	<i>Physcia tenella subsp. tenella</i>	abundant	trees
	N	<i>Physconia grisea</i>		old <i>Liriodendron tulipifera</i>
		<i>Porpidia crustulata</i>	occasional	sandstone by pond
		<i>Porpidia soledizodes</i>	occasional	sandstone by pond
		<i>Porpidia tuberculosa</i>	occasional	sandstone by pond
		<i>Punctelia jeckeri</i>	rare	cherry
		<i>Punctelia sp.</i>	rare	wooden bench
		<i>Ramalina farinacea</i>	rare	old <i>Liriodendron tulipifera</i>
		<i>Rhizocarpon reductum</i>	occasional	sandstone by pond
		<i>Trapelia coarctata</i>	occasional	sandstone by pond
A		<i>Trapeliopsis flexuosa</i>	occasional	wooden bench
		<i>Verrucaria hochstetteri</i>	rare	saxicolous
		<i>Verrucaria muralis</i>	occasional	sandstone
		<i>Verrucaria nigrescens f. nigrescens</i>	frequent	sandstone
		<i>Verrucaria viridula</i>	rare	saxicolous
	N	<i>Xanthoria parietina</i>	frequent	cherry
	N	<i>Xanthoria polycarpa</i>	occasional	cherry
	N	<i>Xanthoria ucrainica</i>	rare	wooden bench

**Table 2.** Lichen species recorded by Oliver Gilbert on trunks of free-standing Ash (*Fraxinus excelsior*) and Sycamore (*Acer pseudoplatanus*), sandstone walls and asbestos cement roofs within 7 km of a 16 km transect downwind of Newcastle. All species were observed to be abundantly fertile apart from *Lecanora conizaeoides* (Gilbert, 1965).

Species	Notes
<i>Candelariella aurella</i>	Abundant on asbestos cement roofs and concrete
<i>Cladonia fimbriata</i>	Fairly common in one sheltered cemetery
<i>Lecanora conizaeoides</i>	Occasional on sandstone, tree bases and wooden palings
<i>Lecanora dispersa f. albescens</i>	Abundant on asbestos cement roofs and concrete
<i>Rinodina demissa</i>	Frequent on asbestos cement roofs



(Morris, 1959; Gilbert, 1965). The greatest impact came later with the industrial revolution which started on Tyneside and was powered by abundant supplies of coal containing 1-2% sulphur. Since about 1850 the area experienced blanket sulphur dioxide (SO<sub>2</sub>) air pollution, the spread of which kept pace with population growth. At the time of Gilbert's study, domestic coal burning with low chimneys was substantial and Newcastle's industry was mostly constructional, particularly ship-building and light engineering. Local pollution was mostly therefore derived from combustion of coal and oil. In the early 1960s standard 24hr volumetric sampling gauges in central Newcastle frequently recorded annual average SO<sub>2</sub> levels in excess of 230 µg m<sup>-3</sup>. During the winter months daily values of over 500 µg m<sup>-3</sup> were of regular occurrence.

Gilbert carried out a large amount of fieldwork 'to determine which species had anomalous distributions around the conurbation and to gather information of an ecological nature which might provide clues to the mechanisms of toxicity'. He related his research to early literature and collections of the internationally renowned botanist and geologist Nathaniel John Winch (1768-1838) and his contemporaries (Winch and Thornhill, 1807). 'In this way a fund of distributional and ecological data was accumulated which later proved invaluable when designing experiments to test various hypotheses' (Gilbert, 1968). His detailed mapping studies of lichens and bryophytes led to the first zone scales as they came under increasing pollution stress. These correlated with SO<sub>2</sub> levels, a product of fuel combustion (Gilbert, 1969; Gilbert, 1970a). Gilbert (and other pioneers) established that shrubby beard-like lichens were most sensitive to SO<sub>2</sub>, and crustose lichens were least sensitive. In 1972, 15,000 schoolchildren across the UK used a simplified version of Gilbert's scale, which involved observing lichens on trees, stone and concrete, to produce a pollution map. They found a link between pollution dominated by SO<sub>2</sub> and the presence or absence of selected species (Mabey, 1974; Gilbert, 1974). The simple scale compared favourably with the more sophisticated scales based on correlations between epiphytic lichen diversity and winter mean average SO<sub>2</sub> concentrations in lowland England and Wales (Hawksworth and Rose, 1970; Purvis, 2009). Gilbert recorded a widespread reduction in lichen biodiversity of all habitats, the pattern of decline being particularly influenced by substrate pH and shelter (Gilbert, 1980).

10 years later Gilbert noted that changing patterns of fuel consumption had resulted in a significant decrease in urban SO<sub>2</sub> levels. During the 1970s he recorded sensitive species as being slow to reinvade in response to falling levels of SO<sub>2</sub> although the 'pollution lichen', *Lecanora conizaeoides* Nyl. ex Cromb., and *L. muralis* (Schreb.) Rabenh. were 'on the move' i.e. increasing. The most notable example of reinvasion was the recent appearance of small thalli of the shrub- or beard-like species, *Evernia prunastri* (L.) Ach., *Pseudevernia furfuracea* (L.) Zopf and *Usnea subfloridana* Stirt. on crack willows (*Salix fragilis* L.) in Gosforth Park Nature Reserve, only 5 km from the centre of Newcastle (Gilbert, 1980). He suggested that further improvement would need to be continued for many decades, however, before lichens other than the crustose, pollution-tolerant species *Lecanora conizaeoides*, *Scoliosporum chlorococcum* (Graewe ex Stenh.) Vězda and more rarely *Lepraria incana* (L.) Ach. could colonise trees or acidic saxicolous habitats within the continuously built up area (Gilbert, 1980).

Gilbert did not carry out research at Moorbank Botanical Garden (Fig. 1). He considered the area extending 5-7 km downwind (i.e. east) of Newcastle to be a 'lichen desert' i.e. devoid of any epiphytic lichen growth apart from the pollution-tolerant lichen *Lecanora conizaeoides* which he recorded as being sterile (Gilbert, 1965). It is now generally found

fertile in this area but after a period of abundance in the 1980-90s has declined over the last six years and is now quite scarce. This is an interesting observation as in London, *L. conizaeoides* was present initially at relatively low cover during high SO<sub>2</sub> levels at Putney Heath when recording of a transect extending 70 km from rural Sussex to Central London was started in 1979 (Bates *et al.*, 2001). It increased to reach high cover values in the mid to late 1980s as levels dropped, before declining progressively and vanishing in the late 1990s as levels declined still further. Similar declines have been observed in Germany (Wirth, 1999; Kirschbaum *et al.*, 2006).

Gilbert recorded three species on the Town Moor: *Cladonia chlorophaea* (Flörke ex Sommerf.) Spreng. on grassland (1966-1968), *Placynthiella* (as *Lecidea*) *uliginosa* (Schrader) Coppins & P. James on decaying vegetation (1967) and *Trapeliopsis* (as *Lecidea*) *granulosa* (Hoffm.) Lumbsch, in Hertel on peaty soil (1966) (Gilbert, 1980). This is not a full list and other species may have been present. No lichen records have been traced for the Town Moor from Winch's time, but his bryophyte herbarium contains species indicating that in those days it was colonised by bryophytes typical of rough acid grassland (Gilbert, 1968).

This is the first full survey of the lichens at Moorbank and is considered in relation to Gilbert's pioneering research and the history and botanical diversity of Moorbank.

#### METHODS

The authors carried out a lichen survey at Moorbank Botanical garden on 27 March 2009 in connection with the Open Air Laboratories (OPAL) project, aimed at getting the public involved with using selected organisms to monitor environmental health (OPAL, 2007). All potential substrates were examined including rocks, trees and building structures, and an assessment of abundance made using the DAFOR scale. Lichens were identified in the field using standard identification methods (Dobson, 2005). Digital photographs (JPEG & RAW) were taken of (i) lichens and (ii) lichen habitats. Nomenclature follows The Lichens of Great Britain and Ireland (Smith *et al.*, 2009).

#### RESULTS AND DISCUSSION

Fifty lichen species were recorded (Table 1), including 27 saxicolous species on sandstone, brick, mortar or concrete and 23 epiphytic species colonising several tree species and a wooden bench. One, *Cladonia chlorophaea* agg, was seen growing between the double-glazed panes of a glasshouse, where it was clearly well-established. This diversity is an order of magnitude higher than recorded by Gilbert in the 1960s, who found just five species within the 'lichen desert' extending 5-7 km downwind of Newcastle City centre along a transect (Table 2).

Saxicolous lichen cover was most conspicuous on sandstone walls, the pavement by the pond, and on mortar. *Lepraria incana* agg was recorded. Amongst the most tolerant species to SO<sub>2</sub> air pollution, Gilbert reported this species as penetrating the centre of Newcastle in damp, sheltered microhabitats where it occurred on trees, rocks and soil (Gilbert, 1980). It is now frequent in such situations throughout both urban and rural areas in the north-east. *Caloplaca citrina* (Hoffm.) Th. Fr., a frequent associate, formed colourful yellow patches on  $\pm$  vertical surfaces (Fig. 1). In the 1960s SO<sub>2</sub> levels were considered to be sufficiently high to prevent it from colonizing asbestos roofs in Central Newcastle (Gilbert, 1980), one of its favoured habitats. At that time, this basic substrate supported a higher lichen diversity than did sandstone walls and Ash (*Fraxinus excelsior* L.) bark along a pollution gradient (Gilbert, 1965).



The wide diversity of tree and shrub species at Moorbank provides a range of habitats for lichens. Epiphytic lichen cover is best developed on exotic trees including Tulip Tree (*Liriodendron tulipifera* L.), Maidenhair Tree (*Ginkgo biloba* L.), and *Viburnum* sp. As discovered previously at Regent's Park in Central London (James *et al.*, 2002), Ornamental Cherry (*Prunus* spp.) was one of the few remaining habitats for the pollution-tolerant lichen *Lecanora conizaeoides*. It was also found at Moorbank on a wooden bench (Fig. 1). The rise and fall of this species in cities and the wider countryside in response to SO<sub>2</sub> levels and substrate acidification is well documented (Bates *et al.*, 2001). At Moorbank it is now growing with abundant lichens, including the recently recognised foliose macrolichen species *Punctelia jeckeri* (Roum.) Kalb (Fig. 1) and shrub-like *Evernia prunastri* (L.) Ach. The closest approach to Newcastle of *Evernia* in the 1960s was a few stunted specimens on Ash at Breckney Hill, Heddon-on-the-Wall, ca 13 km NW of central Newcastle. By 1979 it had advanced to within 5 km of central Newcastle in Gosforth Park Nature Reserve (Gilbert, 1980), and it is now frequent in the city centre parks.

Nine nitrophyte and seven acidophyte species (Van Herk, 2002; DEFRA, 2002) were recorded on bark and wood. Acidophytes avoid a high supply of reactive nitrogen while nitrophytes prefer it (Sutton *et al.*, 2009). The nitrophytes are all species that are common in the north-east, included *Xanthoria ucrainica*, a species that is currently considered nationally scarce but is under-recorded as it was, until recently, considered to be part of the *X. candelaria* complex (Smith *et al.*, 2009). The presence of nitrophytic and acidophytic species co-existing on the same trees and the composition of the saxicolous communities suggests assemblages undergoing transition from an earlier period dominated by high SO<sub>2</sub> levels (e.g. Fig. 1). Over a relatively short time following the reduction in SO<sub>2</sub> emissions from coal burning, changes in atmospheric pollutant concentrations have occurred across Europe. Nitrogen emissions have also changed during the same time period, but these are made up of several compounds produced from a variety of sources whose effects may vary with the compound and its source (Wolseley *et al.*, 2006) so the pollution influences on lichens now are more complex than during the period of Gilbert's work when SO<sub>2</sub> predominated.

The discovery of *Punctelia jeckeri*, a species formerly included within *P. subrudecta* (Nyl.) Krog (Smith *et al.*, 2009), was an interesting record for Newcastle city centre. *P. jeckeri* often grows together with *P. subrudecta*, although it is found further north, well into Scandinavia (Smith *et al.*, 2009). In 2008 it was recorded at two sites in North Northumberland, the first records for the county, but this was the first record for South Northumberland. Another *Punctelia* found on a wooden bench could not be identified to species. Gilbert recognised climate as a factor clearly influencing lichen distribution in Northumberland, with the North Sea and the double hill barrier to the west resulting in a climate that is drier and cooler than might be expected (Gilbert, 1980). He noted that many of the common epiphytic species formally grouped together in the genus *Parmelia* that are widespread in the south of Britain, including *Punctelia subrudecta* were 'curiously rare in the county'. Gilbert attributed this as 'almost certainly due to an aversion for the cool climate'. Recent records support this as the lichens he listed nowadays colonise parks and wayside trees in central London (James *et al.*, 2002; Davies, 2005; Davies *et al.*, 2007; Larsen *et al.*, 2007), where lichens were previously almost wiped out during prevailing high SO<sub>2</sub> levels, but they are still scarce in north-east England. The recently-launched OPAL project, supported by the Big Lottery fund, which is aimed at widespread monitoring of environmental change involving public participation, will shed new light on the cur-

rent distribution of these taxa (OPAL, 2007).

#### Acknowledgments

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**NOTES ON THE CLEARWING MOTHS (FAMILY SESIIDAE)  
OF COUNTY DURHAM**

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**SUMMARY**

There are fourteen recorded species of clearwing moth, family *Sesiidae*, in the UK; all are to a greater or lesser degree wasp mimics and are endophagous within specific host plants. Ancient and modern survey techniques for clearwing moths are described along with the credibility of the species records for County Durham. Eight species of clearwing have been recorded in County Durham since 1846 with three species having a constant recorded presence. Local context for all eight species is provided and the records for all eight are discussed in terms of presence of voucher specimens, literature sources, constancy of presence, accuracy of recording, distribution, UK status and the problems associated with the anomalous status of some records. Verified, post 2000 records are used to give an up to date summary of clearwing presence and a comparison with historical distribution.

**INTRODUCTION**

The clearwing moths of the family *Sesiidae* are all, to a greater or lesser degree, wasp mimics. In the UK there are 14 resident species of clearwing and eight species have been recorded in County Durham at one time or other. Although there is debate over the accuracy of some of the County Durham records, four species are currently known to be resident within the county, three of which have been present since records began. There are few specimens in local collections to support any historical records for the county, other than Lunar Hornet Moth *Sesia bembeciformis*; where it is possible to do so, the credibility of historical records will be discussed under individual species accounts.

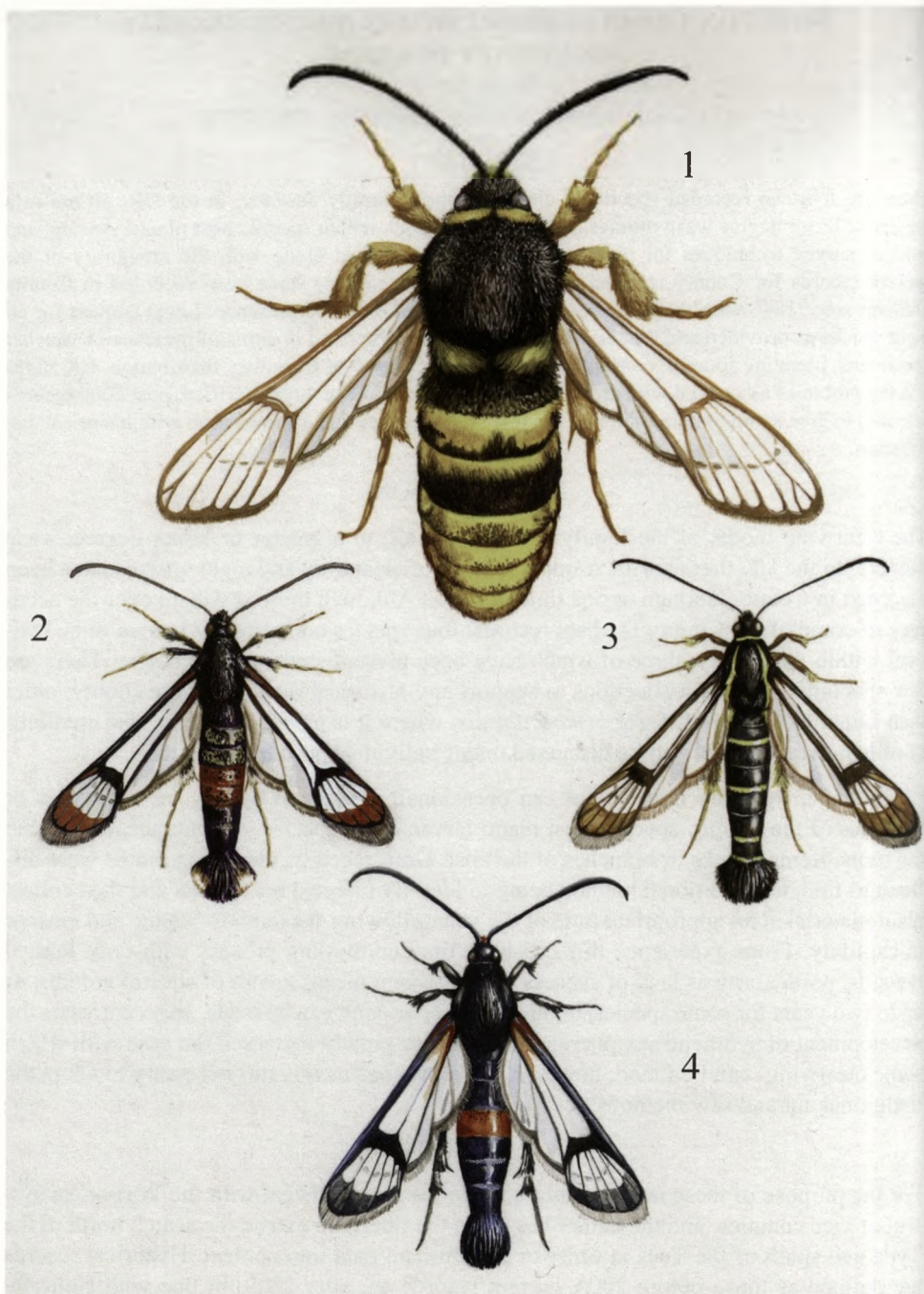
Clearwing imagoes are diurnal and can occasionally be found by day on the leaves or branches of the species-specific host plant; larvae of all species are endophagous within the roots, stems, trunks or branches of the host. Until recently, clearwing moths were difficult to find, the traditional method being to identify infected host plants and then collect plant material at an appropriate time of the year, allowing the moth to pupate and emerge in captivity. From experience this can be a time consuming process with only limited rewards, particularly as lack of success in one season means a wait of several months, or up to two years for some species, before a further attempt can be made. In recent years the development of synthetic sex pheromone lures has greatly increased the ease with which some clearwings can be found; however, for some species it is still necessary to adopt the traditional cut and saw methods.

**METHODS**

For the purpose of these notes county boundaries are consistent with the Watsonian system of vice counties, and the author has taken the liberty to extend the search north of the Tyne and south of the Tees in order to put Durham data into context. Historical records are defined as those before 2000, current records are after 2000, in line with Butterfly Conservation's Moths Count project, which provides the most up to date maps for all macro moth species.

**The records**

Historical records are sourced from a variety of publications, the principal source being the "*Vasculum*" the journal of the erstwhile Northern Naturalists' Union. This publication



Scale x 3

**Fig. 1.** The four clearwing moth species recorded in Co. Durham after 2000. 1, Lunar Hornet Moth *Sesia bembeciformis*; 2, Red-tipped Clearwing *Synanthedon formicaeformis*; 3, Currant Clearwing *Synanthedon tipuliformis*; 4, Large Red-belted Clearwing *Synanthedon culiciformis*.



ran from 1915 to 2005 in a format, which allows a relatively easy search for species records. All copies of the Records of the Proceedings of the Cleveland Naturalists' Field Club have been searched. A few records are from the Recorder database held by the Great

Table 1

		Date of record	Host plant	Reference
Dusky Clearwing	<i>Paranthrene tabaniformis</i>			
Location	Grid Ref			
Birtley	NZ2755	1931	Black poplar	Vasc. 17.No. 4, 157
Six-belted Clearwing	<i>Bembecia ichneumoniformis</i>			
Location	Grid Ref			
Birtley	NZ2755	1946		Vasc. 31. No.3, 21
Red-tipped Clearwing	<i>Synanthedon formicaeformis</i>			
Location	Grid Ref			
Gibside	NZ1758	1899		Robson (1902)
Birtley	NZ2755	1913	<i>S. caprea</i>	Robson (1902)
Derwent Valley		1917	<i>Salix</i>	Vasc.4. No.3&4, 94.
Bywell	NZ0461	1925	<i>S. purpurea</i>	Vasc.11.No.4, 128
Wylam	NZ1164	1939	<i>S. purpurea</i>	Vasc. 26.No.2, 59
Wylam	NZ1164	1944	<i>S. purpurea</i>	Vasc. 29.No3, 19
Horseleyhope Ravine	NZ0549	1944		Ball (1987)
Allansford	NZ2852	1944	<i>S. purpurea</i>	Vasc. 29.No3, 20
Chester le Street	NZ2850	1948	various <i>Salix</i> sp.	Vasc. 34.No.2, 16
Wylam	NZ1164	1948	<i>S. nigricans</i>	Vasc. 34.No.2, 16
Eastgate	NY9538	1953	<i>S. phylicifolia</i>	Vasc. 38.No.2, 15
Kelloe	NZ3436	1953	<i>S. atrocineria</i>	Vasc. 38.No.2, 15
Wylam	NZ1164	1953	<i>S. viminalis</i>	Vasc. 38.No.2, 15
Waldridge fell	NZ2549	1964	<i>S. aurita</i> , <i>S. atrocineria</i>	Vasc. 49. No.1, 6
Waldridge fell	NZ2549	2.7.06		Mapmate database
Waldridge fell	NZ2549	4.7.06		Mapmate database
Brass Castle Pond	NZ2549	4.7.06		Mapmate database
Waldridge fell	NZ2549	21.6.07		Mapmate database
Waldridge fell	NZ2549	9.7.07		Mapmate database
Brass Castle Pond	NZ2549	9.7.07		Mapmate database

		Date of record	Host plant	Reference
<b>Large Red-belted Clearwing</b>	<i>Synanthedon culiciformis</i>			
<b>Location</b>	<b>Grid Ref</b>			
Wilton Wood	NZ5919	1985		Recorder, GNM:Hancock
Wilton Wood	NZ5919	1986		Recorder, GNM:Hancock
Lazenby Bank	NZ5719	1987		Recorder, GNM:Hancock
Eston Moor	NZ5617	2005	Betula pendula	Mapmate database
Love's Wood, Malton	NZ1745	15.5.06	Betula pendula	Mapmate database
Malton Nature Reserve	NZ1845	4.6.06	Betula pendula	Mapmate database
Eston Moor	NZ5617	5.6.06	Betula pendula	Mapmate database
Black Plantation	NZ1344	17.6.07	Betula pendula	Needs confirmation
<b>Currant Clearwing</b>	<i>Synanthedon tipuliformis</i>			
<b>Location</b>	<b>Grid Ref</b>			
Durham	NZ2742	1889	Currant bushes	Robson (1902)
Newcastle	NZ2465	1899	Currant bushes	Robson (1902)
Darlington	NZ2815	1899	Currant bushes	Robson (1902)
Wolsingham	NZ0737	1899	Currant bushes	Robson (1902)
Yarm	NZ4212	1901	Currant bushes	Lofthouse (1905)
Middlesbrough	NZ5018	1901	Currant bushes	Lotfhouse(1905)
Birtley	NZ2755	1945	Currant bushes	Vasc. 30.No.3, 35
Hookergate/High Spen	NZ1459	1973		Dunn and Parrack (1992)
Eaglescliffe	NZ4113	2004	Currant bushes	Mapmate database
Benton, Newcastle	NZ2869	Jun-06	Currant bushes	Mapmate database
Eaglescliffe	NZ4113	2.7.06	Currant bushes	Mapmate database
Durham City	NZ2642	29.6.07	Currant bushes	Mapmate database
Esh Hill Top	NZ2144	5.7.07	Currant bushes	Mapmate database
Eliffs Mill	NZ4014	15.7.07	Currant bushes	Mapmate database
Durham City	NZ2643	4.7.08	Currant bushes	Mapmate database
Durham City	NZ2643	30.6.09	Currant bushes	Mapmate database
<b>Sallow Clearwing</b>	<i>Synanthedon flaviventris</i>			
<b>Location</b>	<b>Grid Ref</b>			
Birtley?	NZ2755	1902	Salix aurita	Heslop Harrison (1928)
Birtley?	NZ2755	1933		Vasc. 19. No.2, 78



Hornet Clearwing	<i>Sesia apiformis</i>			
Location	Grid Ref			
High Force, Teesdale	NY8728	1899		Robson (1902)
Bishop Middleham Quarry	NZ3332	1927	Populus nigra	Ball (1987)
Causey Dene	NZ2055	1962		Vasc. 47. No.2, 12.

North Museum, Hancock. Local catalogues include Dunn and Parrack (1992), Robson (1899-1913) and Wailes (1857). Early species dates are the dates of publication rather than the collection of the specimen. Records are summarised in Table 1, together with additional specific source references not cited in the text.

The moth collections of J. W. Heslop Harrison (Great North Museum, Hancock), Tom Dunn, C.T. Trechman, J.W. Thompson (Sunderland Museum) and F. Elgee (Dorman Museum, Middlesbrough) have been searched for specimens.

Current records, 2000 onwards are held on the county recorder's Mapmate programme and are from individual recorders, all have been verified by either a photograph or specimen.

Many of the historical records are from the pen of the late J.W. Heslop Harrison who was a leading light in the Northern Naturalists' Union, editing the "*Vasculum*" for many years. Unfortunately in recent years some doubt has been cast on the veracity of some of Heslop Harrison's recording, resulting in a regrettable but understandable general mistrust for all. In particular, he alone records three clearwing species in County Durham, which are anomalous, in that they are well outside of the normal distribution of the species. Given the peculiarity of the records and the lack of supporting specimens such records must be viewed with extreme caution.

What is not known about the historical records is whether the imago was recorded or whether the record was made on the strength of the larval borings within host plants. Heslop Harrison made a particular study of the willows (*Salix sp*) of the county and it may be that his records of two clearwing moths the Red-tipped Clearwing *Synanthedon formicaeformis* and the Sallow Clearwing *Synanthedon flaviventris* were based solely on the larval workings within willow twigs. Similarly it is possible that differentiation between Lunar Hornet and Hornet Clearwing *Sesia apiformis* was based on the presence of larval borings in the host tree for each species, rather than the imago; few modern entomologists would be confident in ascribing a specific record under such circumstances.

Modern distribution is in accord with the maps produced for the Moths Count project, which includes the county recorders Mapmate data and is available at: <http://www.mothscount.org/text/8/maps.html>

## SPECIES ACCOUNTS

### Hornet Moth *Sesia apiformis*

There are only two records which can be ascribed specifically to this species, Wailes (1857) records it from High Force in Teesdale, providing no details of a host tree and Ball (1987) records it from Bishop Middleham Quarry in Black Poplar *Populus nigra ssp betulifolia* a rare tree in County Durham. Heslop Harrison (1962) editing the *Vasculum*

provides a third record from Causey Dene in Goat Willow *Salix caprea* using the common name only. The host plants for this species are poplars (*Populus sp*) and within its known distribution it is possible to find poplar trees, which show the distinctive pupal emergence holes around the base of the trunk, this species is not known from any other host tree. Dunn and Parrack (1992) refer to a number of Heslop Harrison, Vasculum records for Hornet Moth which on checking the specific name in the original text are Lunar Hornet moth.

County Durham would be the most northerly extremity of its distribution if the moth were to be re-discovered. Current distribution is south of a line between the Wash and the Humber estuaries. There are no regional specimens of this moth in any north-eastern collection.

There is a pheromone lure for this species, which has to date, proved ineffective at finding the moth within the county. Either this species has become extinct in the county or what seems more likely is that early records have confused the Hornet Moth with the Lunar Hornet Moth a much more common clearwing.

#### **Lunar Hornet Moth *Sesia bembeciformis***

This species is relatively common and widespread across the north-eastern counties, and it has the distinction of being the first clearwing species recorded for the county, Wailes (1857), quoting from Ornsby's Sketches of Durham published in 1846, gives Rennie's Lane on the eastern edge of Durham City as a location for this moth. The imago is rarely seen and most records are based on the pupal emergence holes in the basal trunk of Goat Willow, often accompanied by the distinctive scars where woodpeckers have attempted to extract the larvae. It is possible to find the larval borings present on Goat Willow across Vice Counties 65, 66, 67 & 68.

F. Elgee recorded "*Trochilium crabroniformis*. Hornet clearwing" in July 1904 in Albert Park, Middlesbrough with the description "*Its wood feeding larvae are working havoc among the black poplar trees there*" (Lofthouse, 1905). *Trochilium crabroniformis* is synonymous with *S. bembeciformis* the Lunar Hornet Moth, not the Hornet Moth and it is possible that this is an example of careless use of the common name leading to the confusion of the two species, particularly as the host tree is given as Black Poplar. Robson (1899-1913) relates that Lunar Hornet uses both sallow and poplar as the larval food plant and it is worth noting that Jackie Beedle recorded Lunar Hornet Moth in Whitley Bay in 1988 (Dunn, 1988) emerging from the trunk of a poplar confirming that both poplar and sallow are used by Lunar Hornet in the north-east. Care must therefore be taken when searching literature sources for records of this species and the Hornet Moth, to use the specific name not the common name for identification purposes and where possible, to check the host tree. There is currently, no pheromone lure for this species.

North-eastern specimens of this moth can be found in the collections of C. T. Trechman and J. W. Thompson. There is a series of 10 Lunar Hornet Moths in the Heslop Harrison collection labelled Middlesbrough and 5 Hornet Moths labelled Suffolk, with no further data. It is tempting to speculate that the Lunar Hornets are Elgee's specimens from Middlesbrough.

#### **Dusky Clearwing *Paranthrene tabaniformis***

There is only one record for this moth, again from the pen of J. W. Heslop Harrison (1931), the record reads:



"*Sciapteron tabaniformis* Rott. *Dusky Clearwing*.

*A single example of this extremely rare moth was knocked out of a black poplar two or three miles from Birtley. Hitherto only taken very rarely in the south east of England and then many years ago. J.W.H.H."*

Entomological literature records this moth as extinct in the UK, with only a handful of former locations spread across the south of England, the last recorded specimen being in Tubney Wood, Oxfordshire in 1924. The Heslop Harrison record is therefore well outside of the known species distribution and if correct would be the last record for the moth before extinction in the UK. The reported larval host plant in England was Aspen *Populus tremula* and possibly other poplar species.

This is one of those anomalous records, which without a voucher specimen cannot be accepted. There are no dusky clearwings in the Heslop Harrison collection. There is an effective pheromone lure for this species, which will hopefully prompt efforts to discover the moth where the food plant exists.

#### **Currant Clearwing *Synanthedon tipuliformis***

There is a scatter of records across the north-east between the years of 1857 and 2009, with a recording hiatus between 1973 and 2004 when recording began with a very effective pheromone lure. It is worth noting however, that the lure works extremely well where the moth is present but that searches on what appear to be suitable allotment gardens with currant bushes across the county have failed to find the moth to be at all wide spread, positive results where the lure has been effective occurring in only three locations. Current records in Durham are: two locations in Durham City and one in the village of Esh. There is one current Northumberland record for a garden in Benton, Newcastle upon Tyne and two south of the Tees near Eaglescliffe. It is possible that modern husbandry techniques for currant bushes and the decline in vegetable gardens are contributing to the decline of this moth, which appears to have a fragmented and sparse distribution.

#### **Sallow Clearwing *Synanthedon flaviventris***

Entomological literature first records this moth in the UK in 1926. Heslop Harrison (1933) submitted the following record.

*"Sesia flaviventris* Stgr.

*This clearwing, added only recently to our fauna, seems on the downgrade owing to the constant firing of the sallows & their being cut for "pea sticks"; nevertheless, I found one pupa on April 6<sup>th</sup> - an exceptionally early date. At the same time and place its ally *Sesia formicaeformis* was in the same stage. J. W. H.H.*

There is no location given for the record but the text seems to indicate that he is claiming some understanding of a history of the species in the north-east. Further research uncovered a note, from Heslop Harrison (1928) entitled "*Sesia flaviventris*, Stgr., in North Durham" in which he states regarding the sallow clearwing:

*"I detected it in a thicket of *Salix aurita* here in 1902, and have therefore studied the insect, its galls and their multitudinous tenants for 26 years."*

This would mean that he discovered the moth in County Durham, probably close to his Birtley home, as new to the country, twenty four years before it was first recognised as a British species; it is difficult to understand why such an important discovery would not

have been reported to the entomological community of the time. There are no sawfly clearwings in the Heslop Harrison collection or any other collection searched.

#### **Red-tipped Clearwing *Synanthedon formicaeformis***

Apart from the two earliest records in 1857 and 1917 all other historical records for this species are from Heslop Harrison. His records are well distributed across the county and extend into VC67 southern Northumberland at Wylam and Bywell. It is possible that he recorded this species not from the imago but from the larval workings during his study of willows. The most recent historical record was from Walldridge Fell in 1964 on Eared Willow *Salix aurita* and Grey Willow *Salix cinerea* and the species was rediscovered on the fell in 2006 using the specific pheromone lure, confirming the Heslop Harrison record. Searches with the lure at some of the other historical locations have failed to find the moth. Checks of the twigs and branches of willows on Walldridge Fell during the winters of 2006/07 and 2007/08 found what appear to be the swollen scars from larval workings. Of eight branches collected with scars over the two winters only one produced the pupa and emergent imago, on 30 May 2007, all others on sectioning were found to be empty and the larval borings grown over. The swollen scars of larval workings are quite easy to see during the winter months but it is not possible to determine which are active and which are disused. Some limited searching of similar habitats with willows has failed to find the distinctive swollen scarring anywhere else. There are two specimens of this moth in the Heslop Harrison collection labelled Cambridge; north-eastern specimens are conspicuous by their absence.

#### **Large Red-belted Clearwing *Synanthedon culiciformis*.**

There are no historical records for this moth in VC 66 the nearest records being from the Eston Hills in Cleveland (VC 65) just south of the river Tees in the 1980s. In 2005 the moth was confirmed to be still present on Eston Moor and was recorded from there in 2005 and 2006. The moth was first discovered north of the river Tees in County Durham in 2006 in Loves Wood near Malton. Birch *Betula pendula* stumps were collected in the early spring of 2006 and two moths emerged on 15 May 2006. On 4 June 2006, a female Large Red-belted Clearwing was observed egg laying onto the cut rim and deeper fissures in the bark of the stump of a birch tree on the nearby Durham Wildlife Trust, Malton nature reserve; these are currently the most northerly records in England and a new record for the county. The moth does have a limited, scattered distribution in central and eastern Scotland.

In 2007 a birch stump with the distinctive larval bore holes and frass along with a single old pupal case were found in Black Plantation near Satley, County Durham. As yet, all attempts to find any further life stages in Black Plantation have failed and this location needs confirmation. There is a pheromone lure for this species but all attempts to find the imago using it, even in locations where the moth is known to exist, have failed to date. Either the lure is ineffective or the moth is prone to population fluctuations or shifts, which make its detection difficult.

One possible reason for population fluctuations is the presence of the Ichneumon Wasp *Macrocentrus marginator* (Hymenoptera, Braconidae), this species which is known to parasitize Large Red-belted Clearwing larvae emerged from the stumps collected from both Eston Moor and Loves Wood a few days before the imagoes, in both cases identification was provided by Dr Mark Shaw of the National Museum of Scotland. How severely the ichneumon affects the clearwing moth population is not known.



There are Large Red-belted Clearwing specimens in the J. W. Thompson collection labelled "1925, Dr. Harrison" but no location is given.

#### Six-belted Clearwing *Bembecia ichneumoniformis*

Another anomalous, single record from Heslop Harrison (1946): he recorded the moth from Birtley with the following note:

*"The Six-belted Clearwing in Durham.—When I received the preceding note from Mr. Jefferson, I thought I knew a locality, not a mile from this house, in which there was a reasonable possibility of detecting the Large Skipper. However, the only skipper I found was the Dingy Skipper, in spite of very careful search. Nevertheless my labours were not without reward as I discovered the very rare Six-belted Clearwing (Dipsosphecia scopigera), an insect entirely new to our Durham and Northumberland list. It was flying over a long bank side yellow with the blossom of the Birds Foot Trefoil.—J.W.H.H"*

The "preceeding note from Mr Jefferson" was a new record for the Large Skipper *Ochlodes sylvanus* butterfly recorded on 30 June 1946.

This record is well north of the nearest known distribution in Yorkshire and again without a specimen it is difficult to give it credence. There is a very effective pheromone lure for this species, which has so far failed to confirm the presence of Six-belted Clearwing in Durham. There are Six-belted Clearwing specimens in the Heslop Harrison collection but with no location data.

#### DISCUSSION

Within the last five years only four species of clearwing have been recorded within Durham and Northumberland; Lunar Hornet which is assumed to be ubiquitous across the region almost wherever Goat Willow grows and possibly on poplar, Currant Clearwing which is present in a few locations in Durham and Teeside with a single record in Newcastle upon Tyne, Red-tipped Clearwing with one location in central Durham and Large Red-belted Clearwing with one location in central Durham. With the exception of Lunar Hornet these are the most northerly records in England for each species. There are no current records of Hornet, Six-belted, Sallow or Dusky Clearwing in the north-eastern counties and without specimens it is impossible to verify the written records reporting these species in the past.

Comparing the current list of clearwing species known to be present in Durham against that in Wailes (1857) catalogue the earliest one available, shows a remarkable continuity in core content and assessment of species status. He records Lunar Hornet as common throughout the district, a situation which remains unchanged, Currant Clearwing as "*probably more abundant with us than expected*", giving only Darlington and Newcastle as locations and Red-tipped Clearwing in one location only in the Derwent Valley. His additional species is Hornet Clearwing with only one record from High Force in upper Teesdale, but given the likelihood of species misidentification or confusion of common names this may well be erroneous. At the end of the section on clearwings Wailes (1857) adds the comment that these species "*are all we can expect to add to our list, unless some of the birch or alder feeding species of Trochilium should occur in the wilder parts of the counties where these trees are found indigenous*". A prediction proved true by the discovery of large Red-belted Clearwing in central Durham at Malton. Ignoring the anomalous Heslop Harrison records, it appears that very little has changed in the clearwing communities of County Durham in the last 153 years.

It might be thought that the finding and recording of clearwings would become much more successful after the development of synthetic pheromone lures, to date however, this has not proved to be the case. For Red-tipped and Currant Clearwing the lures work very well and yet searches in suitable habitats across Durham are simply not finding the moth. The specific lure for Large Red-belted has failed to find the moth wherever it has been tried in the county, including the Malton sites and in Black Plantation, begging the question does the lure work or does the moth population fluctuate so much that it can be almost undetectable. What remains true is that the status of clearwing moths in Durham has altered little in the last 153 years and that, with the exception of Lunar Hornet, they are as elusive as ever.

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# Northumbrian *Naturalist*



Birds on the Farne Islands  
2010





# Northumbrian Naturalist

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**Front Cover:** *Fulmar Petrel* by Bas Teunis

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## BIRDS ON THE FARNE ISLANDS IN 2010

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### INTRODUCTION

The systematic list follows the order of the 7<sup>th</sup> 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.

The wardens sailed out on 19 March and manned the islands for a total of 260 days until departing on 4 December. Of the 183 species recorded, twenty-three were breeding species and an estimated 81,142 pairs of seabirds bred on the islands (Table 1).

### SEABIRD OVERVIEW 2010

The breeding season proved as eventful as ever but the overall impression was that it was a good season, particularly for the Auk family. However, as usual, there were one or two issues along the way. The weather was generally settled throughout the summer although the year began with one of the coldest winters in recent memory.

Despite the cold start, a noticeable feature of the year was the very early start to proceedings with nest building and egg laying extremely early for several species. The first Shag eggs were discovered on 28 March (earliest since 1997), Guillemot 11 April (earliest since 1997), Razorbill on 20 April (earliest ever laying date) and Puffin on 18 April (earliest since 1993).

Positive aspects of the breeding season included a record year for Fulmars with the highest number of pairs nesting on the islands since colonisation began back in 1935, whilst the population of Shags continued to increase with monitoring suggesting their best breeding season in over twenty years – huge numbers of young fledging during the late summer.

There was a welcome return to form for Kittiwakes having experienced a decade of decline and poor breeding failure. After the excellent breeding success last season (one of their best seasons in twenty years), the population increased for the first time in over a decade and the breeding season mirrored the previous year, with impressive numbers of young fledging. The large gulls, Lesser Black-backed and Herring, increased in number to just over 1,300 pairs. Eider numbers remained stable whilst Shelduck and Mallard maintained a breeding toe-hold on the islands. The pair of Red-breasted Mergansers was successful once again, for the fifth consecutive year.

The population of Arctic Terns remained very strong although breeding success was somewhat average, whilst the small population of Common Terns showed a slight increase. However on a negative note, the number of Sandwich Terns decreased to just over 1,000 pairs, their lowest breeding figure since 1958 and there were no nesting attempts by Roseate

Terns. Other disappointing news concerned Cormorants – they continued their move from the North Wamses colony to Big Harcar on the outer group but this did nothing to stop the continuing downward spiral of the population with numbers reaching a fifty-five year all-time low.

On the passerine front, Inner Farne lost its pair of Wrens after two successful years although Swallows nested once again, this time on Longstone, whilst Pied Wagtail and Rock Pipit numbers remained stable (and both experienced excellent breeding seasons).

**Table 1** Farne Islands breeding birds 2011.

	Population	+/- to 2009	Productivity	First Egg	First Fledgling
<b>Shelduck</b>	1	Level	-	-	-
<b>Mallard</b>	9	-1	-	20 March	Late summer
<b>Eider</b>	656	-25	2.93	17 April	15 May
<b>Red-b Merganser</b>	1	Level		Mid-June	12 July
<b>Fulmar</b>	271	+13	0.58	13 May	25 August
<b>Cormorant</b>	139	-2	-	15 April	26 June
<b>Shag</b>	925	+87	1.74	28 March	26 June
<b>Oystercatcher</b>	37	-1	-	9 May	13 July
<b>Ringed Plover</b>	9	Level	2.33	15 April	Early July
<b>Kittiwake</b>	4,768	+1,069	1.15	26 April	25 June
<b>Black-headed Gull</b>	367	+107	-	25 April	19 July
<b>Lesser B-b Gull</b>	611	+113	-	2 May	-
<b>Herring Gull</b>	768	+193	-	28 April	-
<b>Great B-b Gull</b>	10	+2	-	6 May	-
<b>Sandwich Tern</b>	1,019	-396	-	4 May	1 July
<b>Roseate Tern</b>	0	-2	-	-	-
<b>Common Tern</b>	112	+14	-	16 May	4 July
<b>Arctic Tern</b>	2,199	+1	0.68	12 May	27 June
<b>Guillemot</b>	46,355*	+1,771	0.96	11 April	6 June
<b>Razorbill</b>	319	-13	0.67	20 April	15 June
<b>Puffin</b>	36,835	-	0.96	18 April	26 June
<b>Swallow</b>	1	Level	-	-	-
<b>Rock Pipit</b>	22	-3	-	26 April	23 May
<b>Pied Wagtail</b>	5	-1	-	3 May	1 June
<b>Wren</b>	0	-1	-	-	-

\* Individuals



## MIGRATION OVERVIEW 2010

It was a quiet spring for migration through the islands, more than compensated for by an autumn that produced some outstanding highlights including some noteworthy rarities. Selected migrant dates are summarised in Table 2. The season produced two 'firsts' for the islands, with a **Black Kite** recorded on 1 June whilst a **Melodious Warbler** on 9 August was also a first for Northumberland. Interestingly the first **White-tailed Eagle** for the Farnes arrived in late August although, as a recent release from the Scottish reintroduction programme, the species will not count 'officially' but it still made fascinating viewing. The two former species bring the current island list to 294.

Other birds of real note included the Farnes second-ever **Thrush Nightingale**, along with the third records of **Stone Curlew** and **Olive-backed Pipit**. In this modern-day birding era, records of rare races have become real discussion points and an interesting '**Yellow Wagtail spp**' in early June may prove to be of an extremely rare race. Photographs and notes have been sent off to various panels for further discussion. Included in the arena of 'races', the islands boasted their first ever record of the Greenland race of **Arctic Redpoll**, whilst also recording their third ever '**White-spotted**' **Bluethroat**. As well as the outstanding rarities, the islands experienced three noteworthy 'falls' of common migrants during the autumn and invasions of both **Lapland Bunting** and **Common Redpoll**.

A total of 183 species was recorded during the year, the highest annual total since 2005 and, for the first time in recent years, both island groups recorded the same number of bird species: 163. Interestingly, the islands failed to record Collared Dove for the first time since 1968 and Little Stint has been absent in the past two years – it was regarded as a regular annual visitor.

### 2010 Highlights:

1 <sup>st</sup> records	<b>Black Kite</b>	1 June
	<b>Melodious Warbler</b>	9 August
	<b>White-tailed Eagle</b>	28 Aug-17 Sept, Staple Island; release program
2 <sup>nd</sup> record	<b>Thrush Nightingale</b>	14 August
3 <sup>rd</sup> records	<b>Stone Curlew</b>	1 December
	<b>Olive-backed Pipit</b>	12-15 October
	<b>Bluethroat</b> 'white-spotted'	31 March-2 April
	<b>Arctic Redpoll</b> race <i>Hornemanni</i>	24 Sept-2 October
6 <sup>th</sup> record	<b>Magpie</b>	21 March
7 <sup>th</sup> record	<b>Woodlark</b>	19-20 November
15 <sup>th</sup> record	<b>Cory's Shearwater</b>	23 September

Other highlights included: Garganey, Gadwall (3), Slavonian Grebe, Great Crested Grebe (first since 2007), Balearic Shearwater (4), Storm Petrel 15 (including fourteen trapped),

Hen Harrier, Marsh Harrier (2), Corncrake (first since 2005), Quail, Wood Sandpiper (3), Grey Phalarope, Long-tailed Skua (2), Mediterranean Gull (several), Iceland Gull (3), Glaucous Gull, Sabine's Gull (3), Turtle Dove (first since 2003), Wryneck (2), Shorelark (4), Richard's Pipit, Bluethroat (2), Waxwing (26), Barred Warbler (4), Icterine Warbler, Pallas's Warbler (2), Yellow-browed Warbler (3), Wood Warbler (3), Great Grey Shrike (3), Red-backed Shrike, Northern Bullfinch (first since 2004), Common Rosefinch (3), Little Bunting and Ortolan Bunting (3)

As well the rare and scarce birds, there were new record day-counts set for a number of species including Black-tailed Godwit, Wood Pigeon, Yellow Wagtail, Black Redstart, Grasshopper Warbler and Chiffchaff. The autumn experienced three major 'falls' of common migrants noticeably between 7-9 September, 27-30 September and 8-11 October.

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Table 2 Selected migrant dates 2010

Migrant	First date recorded 2010	Last date recorded 2010	Mean arrival 1970-2009	Earliest recorded arrival date
Sandwich Tern	24 March	13 October	31 March	21 March 1997
Arctic Tern	24 April	5 October	20 April	2 April 2005
Common Tern	23 April	27 September	26 April	17 April 2003/02/1996
Roseate Tern	14 May	4 August	8 May	17 April 1990
Little Tern	26 April	30 July	6 May	25 April
Swift	5 June	9 September	24 May	16 Apr 1988
Sand Martin	16 April	25 August	24 Apr	30 Mar 1993
Swallow	4 April	16 October	21 Apr	31 Mar 1999
House Martin	18 May	20 September	6 May	8 April 2009
Tree Pipit	25 April	12 October	24 Apr	2 Apr 1972
Yellow Wagtail	27 April	27 September	27 Apr	14 Apr 1995
Redstart	25 April	12 October	24 Apr	4 Apr 1971
Whinchat	24 May	11 October	30 Apr	19 Apr 1987
Wheatear	24 March	10 October	30 Mar	19 Mar 2005
G'hopper Warbler	25 April	12 October	30 Apr	15 Apr 2009
Sedge Warbler	25 April	19 September	6 May	13 Apr 1992
Reed Warbler	8 June	10 October	28 May	23 April 2007
Lesser Whitethroat	25 April	9 October	6 May	18 Apr 2005
Whitethroat	25 April	29 September	2 May	15 April 2003
Garden Warbler	10 August	14 October	11 May	6 Apr 1982
Blackcap	31 March	20 November	22 Apr	31 Mar 2010/04/1994/90
Chiffchaff	24 March	25 November	4 Apr	21 Mar 2005
Willow Warbler	31 March	9 October	14 Apr	27 March 1989
Spotted Flycatcher	6 September	9 October	15 May	4 May 1984
Pied Flycatcher	14 August	1 October	7 May	23 Apr 1975

## SYSTEMATIC LIST

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

### **Mute Swan** *Cygnus olor*

An uncommon visitor.

This Northumberland breeding resident remains uncommon on the islands with the majority of records referring to local movement through Inner Sound. As with the previous year, only two records were produced, including a juvenile which circled the inner group before heading west on 29 April. The only other record involved two adults south through Inner Sound on 15 November before dropping on nearby Monk's House Pool.

### **Whooper Swan** *C. Cygnus*

An uncommon winter and passage visitor.

Traditionally, the majority of Farne records have occurred on autumn passage; however in recent years the north-east coast has been used as a northerly flyway in early spring. That recent trend continued as a herd of twenty-seven moved north on 21 March followed by a total of thirty-eight north on 23 March (two herds of 18 and 20). The final report from this period involved eleven north through Staple Sound on 26 March. The only autumn sighting concerned seven south through Inner Sound on 3 November.

### **Pink-footed Goose** *Anser brachyrhynchus*

A well-represented passage and winter visitor.

After two previous years without spring reports, the year bounced back in style with records on five dates in early spring. Northern-bound skeins in late March included eleven on 23 and thirteen on 27 March. Passage continued into April with one west on 1 April, sixty north on 23 and the final spring record of a huge 290 north over the inner group on 28 April (two skeins of 200 and 90), the second-ever largest spring count. As usual, birds started arriving back into the UK in mid-September, with southerly passage producing a skein of fourteen over Brownsman on 15 September. Thereafter the flood gates opened with 123 west in five skeins on 17 September followed by 4-48 on five further September dates. A second wave of arrivals occurred in mid-October as twenty-four on 20 and fifty-one on 21 October were recorded moving westwards to the mainland. However this was eclipsed by the impressive total of 340 north through Staple Sound on 25 October. Records eventually dwindled with 8-62 on three dates between 27 October-15 November with the last report involving 150 south through Inner Sound on 16 November.



**Greylag Goose** *A. anser*

An uncommon passage and winter visitor.

Only a handful are recorded from the islands each year and although local feral birds are suspected to be involved, there is some evidence to suggest wild birds on passage. It was a poor year for records with only two confirmed sightings, with two north through Inner Sound on 16 April whilst another flew east over the inner group on 23 April. Interestingly, there were no confirmed autumn or outer-group records during the year.

**Greater Canada Goose** *Branta canadensis*

An uncommon passage visitor.

The annual passage of birds to moulting grounds in the Beaully Firth in northern Scotland produces the majority of Farne records, with peak passage occurring in late May and early June. The first of the year involved northern passage through Inner Sound with two on 4 and a single on 19 April. More unusual, four were discovered in a group on the sea at the south end of Inner Farne on 22 April before flying west. As the spring progressed, records continued with two north on 4 and 13 May with a single east over Brownsman on 20 May (still a noticeable bird on the outer group). As usual passage peaked towards the end of May with twenty-six north over the outer group on 22 May, twenty north through Staple Sound on 3 June and six north through Inner Sound on 7 June.

**Barnacle Goose** *B. leucopsis*

A well-represented passage and winter visitor.

The majority of Farne records involve birds returning to winter from northern breeding grounds in Svalbard although the islands have experienced passage during the spring in recent years. An individual was seen landing on the Wamses on 1 May with six east over Brownsman on 23 May. The final spring record involved a single on St Cuthbert's Cove on Inner Farne 25 May before flying west. The origin of these birds is unclear although the flock of six were certainly considered wild origin. Without doubt, the origins of the autumn birds cannot be questioned and a major movement of 289 was logged on 25 September. The movement involved several skeins, all moving north through Inner Sound and was followed by seventy-seven north the following day. The next noticeable movement occurred from 11-14 October with a total of 192 logged during this period. The peak count involved 175 west throughout the day on 11 October with 2-11 noted over the following three days.

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

A well-represented passage visitor.

It was a reasonable year as the spring produced two records including one on Knoxes Reef on 20 March and another over the inner group on 11 April. Autumn passage involves birds moving back to nearby wintering grounds on Lindisfarne with the first report concerning twenty-three in four skeins on 18 September. Late September went on to produce the bulk of the reports with four over Crumstone on 19, whilst Inner Sound produced four north on 25, fifty north on 26 (in three skeins) and ten north on 28 September. The only other autumn reports involved sixteen north through Inner Sound on 7 November and three north through the Kettle on 19 November.

### **Shelduck** *Tadorna tadorna*

A well-represented visitor and occasional breeder (Steel, 2004).

A pair has returned faithfully to the islands since 2002 although breeding is very difficult to confirm due to their elusive nature and difficulties in locating the nesting burrow. They returned on 21 March to the inner group and were seen on several dates during the late March-early April period. From mid-April, one or both adults were recorded daily until mid-June. During their stay, the pair frequented both the inner and outer groups, utilising open water and pools on the islands. Breeding was not confirmed although 'highly suspected' as the female was observed going down burrows in several locations, especially on Inner Farne. For a three week period the female became very elusive from mid-May and was presumably incubating eggs. However it was evident that any breeding attempt had failed as both birds became regular once again on the islands in mid-June and were last seen on Brownsman on 22 June. Away from the breeding attempt, spring passage through Inner Sound produced 1-2 on four dates with peaks of five north on 24 March, five south on 11 April and six north on 23 April. Autumn passage was represented by 1-2 north on three dates with four on 18 September and five north on 8 November. Interestingly two juveniles were seen on Staple Island on 17 August with another juvenile on Brownsman on 29 September-2 October. The final record concerned an individual north through Inner Sound on 13 December.

### **Wigeon** *Anas penelope*

A common passage and winter visitor.

Knoxes Reef on the inner group traditionally holds good numbers of wildfowl during the winter months and an indication of numbers which potentially over-winter (when wardens are not present) involved sixty-six on 15 February. Small numbers were still evident when the wardens returned in mid-March with twelve on Knoxes Reef on 20 March with 3-4 noted on three dates between 27 March-15 April. Late spring passage involved two north through Staple Sound on 3 May and nine north through Inner Sound on 4 May. The first autumn returnee, a female, was discovered in the Kettle on 15 August and records increased after twelve were recorded flying north on 31 August. Passage was represented by one to seventy-five birds on twenty-four dates during the autumn months with three-figure counts shown in Table 3. The majority of passage occurred through Inner Sound with reduced numbers through Staple Sound. As usual, small numbers returned to winter on the islands with 1-3 on Knoxes Reef in mid-October increasing to twenty in late November. On the outer group, up to thirty were utilising the Brownsman pond by late November.

**Table 3** Three-figure counts of northerly Wigeon movement through Inner Sound in 2010

Date	September			November
	25	26	28	7
Count	246	286	685	103

### **Gadwall** *A. strepera*

An uncommon visitor.

It was a noteworthy year as the build up of wildfowl on Knoxes Reef during the late autumn produced three records, possibly all involving the same individual. A single was with the large contingent of Mallards on Knoxes Reef on 31 October before flying off towards the



mainland. After this sighting, a pair was seen on 23 and 26 November, again with Mallards on Knoxes Reef. The species remains a scarce visitor to the islands as birds have been recorded in only fifteen of the previous thirty-one years since the first was discovered on 30 September 1979. Since the turn of the century, only three previous years have boasted records: 2003, 2005 and 2008.

**Teal** *A. crecca*

A common passage and winter visitor.

One of the most widely recorded wildfowl on the islands during the season with small numbers favouring traditional islands with standing water. The early spring period saw small numbers lingering around the inner group with reports of 1-5 on eight dates from 15 February-24 April. During this period a spring peak of six south through Inner Sound was noted on 24 March. Interestingly, the islands produced two mid-summer records with a male on Brownsman pond on 20 June and another on Longstone End on 18 July. The autumn months produce the bulk of Farne records during the year with birds noted on northerly passage as well as wintering in small numbers on several islands. After two north through Staple Sound on 12 August, passage was documented throughout the autumn although numbers were modest with peaks of forty-two north on 3 September, seventy-seven north on 26 September and seventy-four on 21 November. As usual, small numbers wintered on the islands with up to sixty on Knoxes Reef on the inner group whilst the outer group experienced up to forty-five commuting between various islands including Brownsman, Staple Island and North Wamses.

**Mallard** *A. platyrhynchos*

A common winter and passage visitor and well-represented breeder.

It was another eventful breeding season on the islands for the species whilst the autumn months attracted good numbers, especially to Knoxes Reef. An indication of wintering numbers included a count of thirty-one in the Kettle on 15 February, whilst smaller numbers were present when the wardens arrived in mid-March. As with the previous season, the first eggs were found early, in a nest in the usual location in the lighthouse compound on Inner Farne with eleven eggs discovered on 20 March. This early spring period was highly productive as a total of five nests had been located by 31 March, all containing eggs. A total of 9 (10) pairs nested as follows: Inner Farne 5 (4), West Wideopens 1 (1), Staple Island 1 (1) and Brownsman 2 (4). The first chicks started hatching from 20 April when twelve ducklings were discovered on the pond on Inner Farne. Despite the promising start, predation was responsible for the failure of the majority of breeding attempts throughout the season although there was some success as a total of nine chicks fledged from Inner Farne. Other causes of nest failure included abandoned nests and desertion by, presumably, inexperienced breeding females. The autumn months produced the bulk of records with a daily presence on both island groups with the largest concentration again on Knoxes Reef. Numbers at this latter site gradually increased with thirty present in early October increasing to sixty-five on 27 October peaking at eighty on 27 November. During this period small numbers were present on the outer group, favouring Brownsman with a peak of twenty on 28 November.

**Pintail** *A. acuta*

An uncommon passage and winter visitor.

There was a welcome increase in records (the best showing since 2006) as the past three

years have averaged just over one record per year compared with an average of seven per year from 2000-2006. A pair was observed on Brownsman pond on 17 May, remaining for the majority of the morning and was followed by the unusual sight of a male associating with Mallards in the Kettle off Inner Farne on 5 June. Further records included a female north through Staple Sound on 13 August and three north through Inner Sound on 26 September.

**Garganey** *A. querquedula*

A scarce passage visitor.

This stunning summer visitor graced Brownsman pond briefly, as a male in summer plumage was discovered late in the afternoon of 8 May but did not linger. The Farnes boast eighteen previous records with fifteen occurring May alone (the other three records having occurred in April, September and October). However, the inner group dominates island sightings and this was the first on the outer group since another male was on Brownsman pond on 9 May 2001.

**Shoveler** *A. clypeata*

A well-represented passage and winter visitor.

It was a reasonable year with records on twelve dates, the majority recorded during the autumn. The first of the year concerned two pairs seen dropping onto Knoxes Reef on 30 March and was followed by another (or the same) two pairs again on Knoxes Reef on 26 April. After a three month absence, the first autumn passage bird, a female, was noted flying north through Staple Sound on 13 August. In recent years, small numbers have mixed with wintering wildfowl on Knoxes Reef and this appeared to be the case again, as this area claimed several records during the autumn months. A total of eight departed from Knoxes Reef on 22 September and were followed by nineteen (including a flock of seventeen) which flew west towards the mainland, again from Knoxes Reef on 23 September. Thereafter Inner Sound produced northerly passage with twenty on 25, five on 26 September, eleven south on 10 October and twelve south on 11 October. The final handful of records involved birds once again on Knoxes Reef with 1-9 on 16 October, 27 October and 27 November.

**Pochard** *Aythya ferina*

An uncommon passage visitor.

Small numbers are recorded annually although there is a heavy bias to autumn records. An adult female was observed circling the inner group before flying south through Staple Sound on 22 March and four (two pairs) moved north through Inner Sound on 3 May. Interestingly these were the first spring records for the islands since a single in April 1998.

**Tufted Duck** *A. fuligula*

A well-represented visitor.

The season produced records on nine dates, an average showing for this diving duck, with a male north through Inner Sound the first of the year. Mid-May produced the next series of records, with an intriguing report of a pair north (then three south) on 18 May which may have involved the same individuals. Four days later, three males flew north through Staple Sound on 22 May. Autumn passage commenced with two west over the Kettle on 20 July, with a season's peak of five north through Inner Sound on 15 August. Further records included a male north Staple Sound on 24 September, two north Inner Sound on 25 September, one north past the south end of Brownsman on 27 September with the last record involving one north through Staple Sound on 9 November.



**Scaup** *A. marila*

An uncommon passage and winter visitor.

The species has had a chequered run recently, with no records from the islands in 2006 or 2009. However after last seasons blank, a return to form brought nineteen birds on four dates during the autumn. All records referred to sightings in November through Staple Sound as records included eight south on 9, followed by a pair north on 10 with a female north on 16 November. The only record away from Staple Sound involved a flock of eight south through Inner Sound on 19 November.

**Eider** *Somateria mollissima*

An abundant breeding resident.

It was another interesting season as breeding numbers remained below the 1,000 mark for the seventh consecutive year although productivity remained high. As usual, displaying birds were evident in early spring and a male on the top meadow on Inner Farne on 31 March was the first indication of prospecting. Thereafter a pair was seen on the central meadow on the same island on 4 April and numbers of prospecting females increased on both island groups. The first eggs were discovered on nests on both Brownsman and Inner Farne on 17 April. Eleven islands were colonised with a total of 656 (681) pairs nesting as follows: Inner Farne 393 (411), West Wideopens 28 (25), East Wideopens 6 (5), Knoxes Reef 4 (8), Staple Island 40 (30), Brownsman 161 (183), North Wamses 3 (4), South Wamses 9 (5), Big Harcar 5 (4), Northern Hares 1 (0), Longstone Main 0 (4) and Longstone End 6 (2). Eventually large numbers of nesting females colonised the islands and the first chicks were seen from 15 May. The breeding season proved to be as eventful as ever as predation by the usual culprits, the large gulls, was noteworthy. Other causes of nest failure included a small number of abandoned nests due to disturbance by visitors or inexperienced females. The female known as 'Winnie' returned to nest in the courtyard by the Pele Tower door for her tenth season (at least). After the first hatchlings in mid-May, large numbers of young were seen going to sea, the majority heading west towards the mainland, although some remained to successfully raise young around the islands. Throughout June, numbers declined as successful family broods moved off the islands with the last breeding female seen departing on 15 July. 316 nests were monitored with 926 chicks going to sea at a productivity level of 2.93. After the breeding season, small numbers remained around the islands throughout the autumn period, with counts on the inner group ranging from 137-180 during October-November.

**Long-tailed Duck** *Clangula hyemalis*

A well-represented passage and winter visitor.

This spectacular sea duck winters in small numbers around the inner group, favouring the area behind the Bridges and the Wideopens. As usual, small numbers were evident when the wardens arrived in mid-March, with two noted on 23 March peaking at eight on 31 March. The final spring record involved five in the same area on 1 April. The first wintering birds returned on 20 October when a male flew over the outer group before being relocated in a flock of Eiders off the back of West Wideopens (the traditional wintering area) later that day. Over the following few days, three were present until they moved away from the area on 26 October. Thereafter passage was logged with 1-11 north through Inner Sound on ten dates between 30 October-12 November with peaks of thirteen north on 7 and sixteen north on 9 November. The wintering flock returned again to the inner group, as four were present on 27 November with three noted on 11-13 December.

**Common Scoter** *Melanitta nigra*

A common passage and winter visitor.

It was a good year with records spread throughout the year covering eighty-five dates. The early spring period was dominated by a resident flock in Inner Sound with numbers building rapidly from thirty-two on 22 March to eighty-eight on 23 March with 100 present by 24 March. Numbers continued to increase daily and 200 were present from 29 March-7 April with a peak of 380 in the raft on 10 April. Thereafter numbers began to dwindle with 100 on 12-13 April decreasing to sixty by 15-16 April with only ten noted on 24 April. Passage was light throughout the spring and summer with a peak of sixty north through Staple Sound on 26 June. More unusual, a second-year male lingered off Brownsman from 7-10 June. Records continued throughout the late summer and early autumn with eighty on the sea in Inner Sound on 22 July and ninety-one north on 22 September. There was moderate passage during the autumn with a peak of 188 north through Inner Sound on 9 November. As expected, birds returned to winter in Inner Sound with up to eighty present throughout November and early December.

**Velvet Scoter** *M. fusca*

A well-represented passage and winter visitor.

Another quiet year, which almost mirrored the previous season as birds were recorded on one spring and seven autumn dates. For the second consecutive year, an individual was recorded on spring passage as a male was noted flying south with Common Scoters in Inner Sound on 12 April. The first of the autumn occurred on 18 September with a male north through Staple Sound followed by another on 24 September. Although it was a modest year for records, peak counts (all through Inner Sound) included ten north on 25 September and fourteen north on 26 September. Thereafter very few records were received with singles north on 4 and 16 November and nine north on 9 November.

**Goldeneye** *Bucephala clangula*

A common passage and winter visitor.

This handsome northern breeder winters in small numbers around the inner group, mixing with other sea ducks behind West Wideopens. Up to five were recorded on nine dates from 15 February-31 March, with a gradual decline in numbers until the last record of a female on 1 April. The final spring record concerned passage birds through Inner Sound with two north on 15 April. The first autumn returnees arrived early three north through Staple Sound were the earliest autumn birds since 1995. Thereafter all records were confined to November with light passage of 1-15 north on eight dates with a peak of thirty-four north on 7 November. Small numbers of wintering birds had returned to the inner group and three were present when the wardens departed in early December.

**Red-breasted Merganser** *Mergus serrator*

A well-represented passage and winter visitor and rare breeder.

It was another successful season for the breeding pair which has nested annually after their first success in 2006 (Steel, 2007). The female was noted around the inner group on 1 April and as usual disappeared for an extensive period before returning in mid-May. The pair then became resident from 19 May although they switched nest sites, utilising a dock covered area where she originally nested in 2006 (but not since). Despite the switch, the female was still successful and all ten eggs hatched on 12 July. Interestingly, the female remained at the



nest site with all her chicks throughout 12 July (all had hatched by 09.00) before eventually taking the young to sea under the cover of darkness towards 23:00 that evening. Before the breeding season, northerly spring passage was light with two through Inner Sound on 21 March followed by 1-2 on four dates from 12-27 April with a peak of seven on 23 April. Autumn passage after the breeding season was evident with 1-4 recorded on eleven dates from 11 August-9 November. During this period, passage peaked with eight north through Staple Sound on 18 September and nine north through Inner Sound on 25 September.

**Goosander** *M. merganser*

An uncommon passage visitor.

The islands produce a handful of records each year despite the species being regarded as a bird predominately of inland waterways. It was an average year for records with the islands producing seven reports during the season. The first of the season, a male, was noted in the Kettle off Inner Farne before flying west on 20 March whilst the only other spring record concerned an individual north through Inner Sound on 16 April. All other records were confined to the autumn as a party of eight males was seen behind the Wamses on 30 September followed by three males on the flats area of Brownsman which then flew west on 24 October. Another male flew north through Inner Sound on 9 November whilst the final record involved a male on the sea off Brownsman on 18 November, which later flew west over the inner group.

**Quail** *Coturnix coturnix*

Scarce passage visitor.

Another year and another record of this inconspicuous small game bird, the third consecutive season they have been recorded. An individual was flushed from the north hill of Brownsman on 9 June and flew around the cottage before disappearing into the Sandwich Tern colony on the north-east rocks but was not seen again. This represents the twentieth Farnes record since the first on 15 June 1964. The outer group dominates recent sightings as despite having just 65% of all Farne records, twelve of the previous fourteen have occurred on either Staple Island or Brownsman since 1993.

**Red-throated Diver** *Gavia stellata*

A common winter and passage visitor.

It was a return to form after the poor showing last season, as the islands normally produce between 70-80 records annually (only forty-six last year). This season, a total of seventy-five records involved sightings on twenty-four spring and fifty-one autumn dates. Spring passage produced 1-3 (many in summer plumage) from 19 March-13 May with peaks of four north on 3 and 27 April. The final spring sighting involved one south through Inner Sound on 13 May. After a two-month absence, birds were quick to reappear in Farnes waters with one north off Brownsman on 25 August with another north through Staple Sound the following day. Autumn passage involved 1-8 including birds wintering around the islands with occasional records from the Kettle off Inner Farne. Peak passage included thirteen north on 26 September and nine north on 14 November.

**Black-throated Diver** *G. arctica*

An uncommon passage and winter visitor.

The species remains scarce in Farnes waters although the year produced a respectable eight

records (Table 4). A summer-plumage adult flew north through Inner Sound on 4 April, the first spring record in two years. The first autumn returnees all involved full summer plumage individuals with one south through Inner Sound on 4 September, another north over the observers' heads on Brownsman on 26 September and Inner Sound again on 4 October. After an individual south through Staple Sound on 11 November, a bird was noted flying north through the Kettle on 13 November. Interestingly, an immature was found on the sea just north of the Kettle the following day which may have been the same individual. The final record of the year concerned a winter-plumage bird south through Staple Sound on 26 November.

**Table 4** Black-throated Diver records by year, 2000-2010

Year	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Days recorded	8	2	9	11	2	4	4	2	4	7	10

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

A well-represented winter and passage visitor.

This bulky northern diver was recorded in good numbers during the autumn with small numbers wintering around the islands. The first of the year was noted north through Inner Sound on 11 October and thereafter reported on a further twenty-one dates. Generally records referred to 1-2 individuals with peak passage including eight north through Inner Sound on 7 November and three on 16 and 21 November. During this period, summer plumage adults were noted in Staple Sound on 17 October and off Inner Farne on 20 November. Several records referred to lingering individuals including one in Staple Sound for the final two weeks of November with another in the Kettle off Inner Farne on 19 November and 3 December.

#### **Great Crested Grebe** *Podiceps cristatus*

An uncommon visitor.

There was a welcome return to form after two blank years (the last Farnes record was noted on 12 September 2007) as three individuals were recorded. A winter plumage bird was found lingering in Brownsman Haven on 5 September before moving north. Another was discovered feeding in Inner Sound on 23 September which remained for two hours before departing south whilst the final record concerned one north through Staple Sound on 12 November. The islands produce only a handful annually with a Farnes best of six in 1996 with six blank years recorded in the previous thirty years (blank years in 2009, 2008, 2006, 1989, 1981, 1980).

#### **Red-necked Grebe** *Podiceps grisegna*

A well-represented winter and passage visitor.

It has been noted that in recent years the number wintering in Northumberland has decreased significantly. However the islands experienced a reasonable show during the autumn as passage commenced in early September with one on the sea behind West Wideopens on 3, followed by another north through Staple Sound on 11 September. Records continued with two noted on 25 September which included a juvenile in the Kettle and another north through Inner Sound. Other passage birds were seen heading north through Inner Sound on 11 and 17 October and 9 November with two north on 8 November. As the autumn progressed a wintering individual was located off Brownsman, favouring the area near Gun Rock and



was recorded almost daily from 21 November-3 December (when the wardens departed) with a second individual joining it on 29 November.

**Slavonian Grebe** *P. auritus*

An uncommon winter and passage visitor.

The species remains a real scarcity on the islands despite good numbers wintering along the north Northumberland coastline. A winter plumage individual was discovered in a raft of Eiders in Inner Sound on 1 November and represents only the third record in five years.

**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 was 'checked' in 2004 after high winter mortality. Since then, the breeding population has bounced back and this year it reached record levels. As usual good numbers were present on breeding ledges throughout January-February and birds were still present when the wardens arrived in mid-March. Interestingly the 'intermediate-phase' bird on Inner Farne (first discovered in 2003) was again present whilst mating was observed on the early date of 1 April. However after several days of no presence (known locally as their 'honeymoon' period) the first eggs were discovered on 13 May on Brownsman and Inner Farne. The population reached a record high as a total of 271 (258) pairs nested as follows: Inner Farne 18 (29), West Wideopens 15 (9), East Wideopens 9 (12), Knoxes Reef 22 (28), Staple Island 55 (35), Brownsman 75 (67), North Wamses 32 (31), South Wamses 33 (26), Big Harcar 10 (16) and Longstone End 2 (5). The breeding season was typically protracted with the first young discovered on 9 July on Staple Island and by mid-July most nests contained young. The first fledgling took to the wing by 25 August and soon after good numbers fledged. However at least three youngsters almost ready to fledge were predated by a White-tailed Eagle in early September on Staple Island. After the breeding season, sea-watching produced a reasonable number of reports with an intermediate individual north off Brownsman on 23 September. 130 were logged north on 27 September which included eleven 'intermediate' birds and a single 'blue' phase bird, whilst good numbers had returned to breeding ledges by 19 November.

**Cory's Shearwater** *Calonectris diomedea*

A scarce visitor.

This oceanic wanderer was recorded for the second consecutive year as an individual was observed flying north at 16:05 off the south end of Brownsman on 23 September (giving superb views in the process). Although the first Farnes record was as recent as September 1976, the species has only become more regular this decade, with eight records from 2000-2009 and the sighting this year brings the overall total to fifteen.

**Sooty Shearwater** *Puffinus griseus*

A well-represented to common passage visitor

The past ten years have seen record numbers reported from the islands including a Northumberland record set in 2005. The first of the year was seen flying north off Brownsman south end on 22 July and was followed by singles north on 9, 12 and 13 August. Thereafter records increased with 1-16 on twenty-two dates from 14 August-9 November. During this period an easterly weather front pushed good numbers into the North Sea with peak passage in the final week of September as shown in Table 5. The count of 349 north

on 24 September was the fourth highest day count from the islands. As the autumn progressed, numbers dwindled although a late burst in mid-October produced twenty-one north on 20 and thirty-nine north on 23 October. The final record concerned six south on 9 November, with one through Inner Sound and five through Staple Sound.

**Table 5** Daily counts of Sooty Shearwaters (northerly passage) on selected September dates

September date	18	19	24	25	26	27
Count	82	129	349	183	130	103

#### **Manx Shearwater** *P. puffinus*

A common passage visitor.

This distinctive tube-nose is one of the commonest stiff-winged visitors to the islands with reports on seventy-five dates during the year. However despite this, numbers were generally low with only three triple-figure counts (compared with twelve the previous year). The first of the season involved eleven north on 1 May with 1-7 recorded on a further twelve May dates. Numbers remained low during the summer months with 1-38 recorded with the exception of 261 north on 13 July, which proved to be the highest count of the year. As the summer progressed, regular seawatching produced reports of 1-68 with peaks of 218 north on 14 August and 173 north on 30 August. Numbers dwindled during the autumn with the only noteworthy counts being seventy-nine on 19 and seventy-four on 26 September. The final records involved singles north through Staple Sound on 7 and 22 November (the latest island record since 2001).

#### **Balearic Shearwater** *P. mauretanicus*

An uncommon passage visitor.

After the breeding season, this critically-endangered Mediterranean seabird heads north to the Bay of Biscay to moult in late summer and small numbers penetrate the North Sea during this period. After south-easterly winds in late September, four individuals were recorded during a 'purple patch' for seawatching. Three (all seen separately between 11:30-13:30) were noted flying north off the south end of Brownsman on 24 September whilst another was noted flying north in the same area on 26 September. Since 1990, a total of seventy-three have been recorded from the islands with only one blank year during this period, in 1992.

#### **Storm Petrel** *Hydrobates pelagicus*

An uncommon passage visitor.

The fortune of this dainty oceanic specialist has completely changed in recent years with 220 recorded in the previous ten years compared with just eight in the twenty years between 1970-1990! Unlike previous years, there was only one diurnal record as the majority of reports were obtained from night time tape luring operations. Ringing activities produced five on Inner Farne on 24 July with a single caught on 29 July and a further eight trapped overnight on Brownsman on 7 August. The only diurnal sighting involved the bizarre record of a very bedraggled individual being picked up in the vegetable garden on Inner Farne on 13 August after moderate northerly winds. The bird was allowed to recover in a box before being released unharmed and soon after was seen heading off strongly to the north.



### **Gannet** *Morus bassanus*

An abundant passage and non-breeding summer visitor.

This very abundant seabird is seen almost daily throughout the season as large numbers move through on foraging trips from nearby breeding colonies in East Yorkshire and Lothian. Peaks occurred during the spring and autumn with 684 north in one hour on 14 April whilst a period in mid-August produced some impressive numbers with 1,600 north in two hours on 12 August, 1,584 north in two hours on 13 August and 2,281 in 3.5 hours on 14 August. The season's peak count involved 4,410 in four hours on 30 August. Once again, adults were seen on the islands including individuals sitting or roosting on Roddam and Green on 7 June, Staple Island on 27 June and West Wideopens on 22 August. During this period an adult in apparently good health was observed walking along the dock bank path on Inner Farne before strutting past the wardens and taking to the open water from the ladies path on 18 July. Another individual was rescued by the wardening team on Staple Island on 14 October as the bird had entangled itself with fishing line (complete with large hooks and weight). Thankfully the team arrived in time and the bird showed no ill-effect from its entanglement and was in very good health when it was released moments later back out to sea. After the main passage season, numbers dwindled as birds moved south to southern wintering grounds and the species became almost absent from early December.

### **Cormorant** *Phalacrocorax carbo*

A common breeding resident.

The decline of the breeding population continued unabated as numbers dropped to their lowest levels since 1955. As usual birds were present on the breeding colonies when the wardens arrived in mid-March and the first eggs were discovered on 15 April (although were suspected to have been earlier). A total of 139 (141) pairs nested as follows: East Wideopens 66 (80), North Wamses 18 (38) and Big Harcar 55 (23). The decline in the breeding population remains difficult to explain, although it may have more to do with their wintering habits than actually on the islands themselves. The switch in colonies on the outer group continued apace as North Wamses is on the verge of becoming deserted as the colony has gradually switched to Big Harcar in recent years. The first chicks started to appear in mid-May and the first fledgling was confirmed on 26 June on East Wideopens and on Brownsman on 29 June. Although not monitored, the breeding season appeared to be reasonably successful although predation accounted for the loss of eggs from some nests. After the breeding season, birds dispersed from the islands during the late summer and only small numbers remained to winter. Typical autumn reports included ten north through Staple Sound on 1 September, twenty-three north through Inner Sound on 2 September and eleven present on East Wideopens on 29 November.

### **Shag** *P. aristotelis*

An abundant breeding resident.

There was a welcome increase in breeding numbers, after last season's disappointing decline whilst, for the second consecutive year, productivity was excellent. The start of the season mirrored the rapid start of the previous season and nest building activity was observed from 23 March and the first eggs were discovered in three nests on Inner Farne on 28 March; more eggs were discovered over the following few days and a nest containing three eggs was noted on 29 March. Thereafter, a good number of pairs were on eggs by mid-April and a total of 925 (838) pairs nested as follows: Megstone 23 (22), Inner Farne 280

(278), West Wideopens 69 (51), East Wideopens 99 (83), Skeney Scar 34 (32), Staple Island 163 (135), Brownsman 93 (106), North Wamses 34 (23), South Wamses 54 (41), Roddam and Green 9 (3), Big Harcar 53 (48) and Longstone End 14 (16). The first chicks started hatching from 1 May and with a generally trouble-free summer it proved to be an excellent breeding season. The first chicks fledged from nests on 26 June and as usual a protracted season saw the last fledglings leaving a nest on Brownsman in late September. As part of a long term study, a number of young and adults were again fitted with readable plastic 'darvic' rings for the second consecutive year, in conjunction with an Isle of May study. Interesting observations during the summer included up to eleven chicks using the photovoltaic panels on Brownsman as shade in mid July whilst a number of pairs nested again on the cottage cliff on the same island. A leucistic bird (not born on the islands) arrived on the flats on Brownsman before moving to nearby Staple Island on the afternoon of 31 August, the first such sighting of a white individual since one was born on the islands in 2002. Productivity was outstanding for the second consecutive year, and 346 nests produced 603 fledged young, the best seasonal return in over two decades. As usual, large numbers remained throughout the autumn and winter favouring Megstone to loaf and roost on a daily basis.

**Grey Heron** *Ardea cinerea*

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

There was a good presence on the islands, especially during the autumn, with birds becoming 'resident' on the favoured Knoxes Reef and Longstone complex. As is usually the case, the spring produced just a handful of records with 1-2 noted on six dates between February-June. However birds became more frequent from early July with 1-2 recorded on undisturbed islands such as Longstone and Knoxes Reef throughout the autumn period. Although birds were present during the autumn, there were no large numbers reported with a modest peak of three on Longstone on 11 September and three on the outer group on 9 October.

**Black Kite** *Milvus migrans*

An extremely rare visitor – first Farne Islands record.

An outstanding record of this southern-European raptor and a first for the islands: a 'second-calendar year' bird drifted low over Knoxes Reef on 1 June, setting up a frenzy of terns and gulls. It continued westwards, flying low over Inner Farne and the admiring wardens, before being lost to sight as it headed west. There were unconfirmed reports of the bird in the Bamburgh area during the following few days. This represents the first for the Farnes and only the seventh for Northumberland, the most recent of which was seen at Tynemouth in April 1994.

**Marsh Harrier** *Circus aeruginosus*

A scarce visitor.

The large raptor is experiencing a positive revival in the UK including the first documented breeding record for Northumberland. The Farnes boast nineteen previous records after the first in May 1954, although interestingly six have occurred in the past decade including four in the previous two years. The excellent run of form continued as two spring adults were seen on passage on the same day. A female caused mild disturbance to gulls on the Wideopens as it flew high west over the inner group at 10:08 on 25 April. Later that day another female (with a ragged wing) drifted over Inner Sound before eventually heading south at 17:30.



### **Hen Harrier** *C. cyaneus*

A scarce visitor.

The small British population of this spectacular aerial predator is bolstered during the winter months by northern European individuals and these migrants make up the majority of the fourteen previous Farnes records. A 'ringtail' was noted flying in off the sea through Inner Sound on 4 December, having been over the inner group moments earlier. This represents the third consecutive year the species has been recorded and the eighth record this decade. The most recent reports involved 'ringtails' in April 2009 and November 2008.

### **Sparrowhawk** *Accipiter nisus*

An uncommon visitor.

Although the British population is relatively sedentary, the population is augmented in winter by migrants from northern Europe. It was a good year for sightings with two unusual mid-winter records. An individual was mobbed over Inner Farne on 15 February, whilst a female flew high north-east over the islands and away east on 16 February. The latter bird was watched until it became a dot, several miles out into the North Sea and was potentially a migrant heading eastward towards the continent. Spring records remain scarce, although it was evident that a female was utilising the islands as a hunting patch during the early spring as the bird was recorded on nine dates from 19 March-8 April. The final sighting of this female occurred on 17 April when she moved west over the inner group. The first autumn migrant involved a female west over Inner Farne on 28 August and was followed by a minimum of three recorded on Brownsman during a three day period in late September; with a female on 27, a female and immature on 28 and a male on 29 September. Further autumn records included singles reported on six October dates whilst a female was recorded as 'lingering' on the islands on four November dates until last seen on Brownsman on 21 November.

### **Kestrel** *Falco tinnunculus*

A well-represented passage visitor. May have bred in 1916 (March, 1916).

This well-known, small hovering falcon is partially migratory within its range as birds move from the near-continent during the autumn and this produces the bulk of Farnes records. As usual, the spring produced a handful of records with a female west over Inner Farne on 29 March, another west over Staple Island on 23 May and a female heavily mobbed by terns as it moved west over Inner Farne on 4 June. The first autumn arrivals occurred during a 'fall' of common migrants with 1-2 on the islands daily from 3-8 September. A female noted on Brownsman on 21 September was followed by two on 27 September with a minimum of four recorded on 28-29 September. This strong showing involved birds lingering and hunting across the islands, as good numbers of common migrants were present. The strong showing continued in October with 1-2 on fifteen October and four November dates. The final record concerned a male lingering on Inner Farne on 20-26 November.

### **Merlin** *F. columbarius*

A well-represented passage and winter visitor.

This impressive winged-wizard breeds in the uplands of Northumberland and winters on the lowlands including the Farne Islands. The spring period produced just a single report, as a male was observed on a rock on the ladies path on Inner Farne on 26 March. However the autumn witnessed a return to form with 1-2 resident throughout the late autumn period. The first appeared west over Brownsman on the early date of 8 August with another over Inner

Farne on 21 August. After a lean September which produced only two records, individuals on Brownsman on 28 September and Inner Farne on 30 September, records became more regular from early October. After an immature over the outer group on 1 October, birds became 'resident' on the islands, with at least two present throughout the autumn months. The majority of records involved sightings of individual birds although two 'worked together' in hunting down a Meadow Pipit on Brownsman on 20 October. Various prey items included Meadow Pipit, Song Thrush, Blackbird, Redwing and Chaffinch.

**Peregrine** *F. peregrinus*

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

This ultimate aerial predator reigned supreme throughout the spring and autumn as birds took up residence on the islands. During the spring at least two were present daily from when the wardens arrived in mid-March to the end of April with the final records involving singles over the inner group on 1-2 May. More unusual, an individual was seen over Brownsman on 2-3 June and was probably responsible for at least two adult Arctic Tern kills during this period. A recently fledged juvenile was noted with a young Arctic Tern on 3 July and another moved west over Inner Farne on 25 July. Gradually as autumn progressed, birds became resident again, with regular reports from mid-August. At least four different individuals were utilising the islands and were using Inner Farne (lighthouse cliff) and Staple Island as overnight roost sites. Generally, records concerned 1-2 but three (two adults and a juvenile) were seen together on at least three occasions, including sharing food on Knoxes Reef suggesting a family party. More unusual behaviour included aggression by an adult male towards a juvenile on 25 September and 18 October whilst another stole food from a Kestrel on Brownsman on 27 September.

**Water Rail** *Rallus aquaticus*

An uncommon passage visitor.

Although recorded annually, autumn produces the bulk of reports as birds migrate into the UK. However the islands produced their first spring record since 2003 when an adult was observed feeding down Puffin burrows on the north end of Inner Farne on 22 May. The bird showed particularly well in short vegetation and was happy to stroll across open rocks, much to the delight of the admiring wardens. The first of the autumn was discovered on Brownsman where an individual was noted on 8-9 October, and could be seen feeding from the cottage window before showing well on the north rocks. The remains of a bird discovered the following day (taken by a raptor) may have belonged to this individual. The only other record concerned an individual feeding on the north side of West Wideopens on 10 October.

**Corncrake** *Crex crex*

An uncommon passage visitor.

This secretive landrail was discovered on autumn passage, the first on the islands since October 2005. An individual 'exploded' from a nettle patch near Brownsman cottage on 22 September within two feet of an observer before flying to nearby South Wamses but was not seen again. This represents the seventeenth in the previous fifty years, with the majority of recent records having occurred during the autumn (the last spring bird was noted on 22 May 1994).



### Stone Curlew *Burhinus oedicnemis*

An extremely rare visitor.

The discovery of an individual in early December will rank as one of the most outrageous, unimaginable records the islands have ever produced. After two weeks of easterly winds with heavy snowfall across the islands, a bird was flushed from the upper vegetable garden on Brownsman on 1 December. It flew directly onto the shingle bank of the adjacent South Wamses, where it gained shelter amongst breeding Grey Seals. Despite snow fall, the bird remained for the majority of the day on the shingle bank but was not seen subsequently. This represents only the third confirmed report and the first in sixty years since an individual was shot in November 1890 with another found dead against the Longstone light on the evening of 23 March 1950. In a Northumberland context, it still remains an outstanding rarity with the only recent reports involving individuals at Lindisfarne in May 2010 and Boulmer 2005.

### Oystercatcher *Haematopus ostralegus*

A common winter and passage visitor, a well-represented breeder.

Good numbers were reported throughout the season with the islands supporting a reasonably healthy population. Birds were occupying breeding sites when the wardens returned in mid-March and copulation was observed on 28 March with more pairs establishing in early April. The first eggs were discovered on the typical date of 9 May on Brownsman and 13 May on Inner Farne whilst the population remained healthy with a total of 37 (38) pairs nested as follows: Inner Farne 5 (5), West Wideopens 5 (5), East Wideopens 2 (1), Knoxes Reef 3 (3), Staple Island 4 (6), Brownsman 9 (10), North Wamses 1 (2), South Wamses 1 (2), Big Harcar 2 (2), Northern Hares 1 (0), Longstone 1 (2) and Longstone End 3 (0). The first chicks started hatching on 9 June on Inner Farne and 14 June on Brownsman and it appeared to be a mixed season with predation quite high on both island groups. The first chicks started fledging from 13 July and lingered until the end of August. Away from the breeding season, the species remained evident throughout the year with West Wideopens attracting the largest numbers. Interestingly, an adult had to be rescued from the well on Brownsman on 12 April whilst the season produced a peak count of 258 on 8 September as shown in Table 6.

**Table 6** Peak Oystercatcher counts on the inner and outer groups of the Farne Islands

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
Inner Group	118	93	-	22	69	202	258	135	135
Outer Group	-	-	-	68	72	99	44	7	-

### Ringed Plover *Charadrius hiaticula*

A common passage visitor, uncommon as a breeding species.

The islands continue to be home to a small breeding population, although each year various problems restrict breeding success. Displaying birds were noted in late March and a nest scrape was discovered on Inner Farne on 26 March. The first eggs were soon discovered on 15 April and a total of 9 (9) pairs nested as follows: Inner Farne 4 (3), Knoxes Reef 0 (1), Staple Island 1 (1), Brownsman 3 (3) and Longstone 1 (1). The first chicks started hatching on 29 May with fledging noted from 11 July. The species is notorious for being predated at the egg stage and as well as the usual large gull predators, an Oystercatcher was noted taking a clutch on Inner Farne on 18 April. Despite these difficulties (one pair on Inner Farne

made a minimum of seven nesting attempts without success) a total of seven chicks fledged, including six from the outer group. After the breeding season, post-breeding flocks gathered on both island groups with ten on Longstone on 27 July increasing to eleven on 27 September. However the main post-breeding flock occurred on the inner group as numbers increased during the early autumn with twenty-five on 23 September, increasing to forty-two on 29 September with forty-six on 2 October. Thereafter small numbers were reported during the early winter with two on Brownsman during hard weather in early December.

**Golden Plover** *Pluvialis apricaria*

A well-represented passage visitor.

This upland moorland plover is well represented during the late summer as a sizeable post-breeding flock congregates on the Longstone complex. The only spring passage report involved one north over Inner Farne on 24 April. The first summer arrivals were seen on 12 July as sixty-four were discovered on Longstone with a slow and steady build up thereafter. Birds could generally be seen roosting on Longstone with occasional sightings over the inner group or commuting towards the mainland. Numbers increased from 154 on 27 July to 160 present on 14 August with 200 noted on 23 August and 250 on 27 August. Numbers increased rapidly during the first week of September with 400 on 1, increasing to 700 on 3 and 1,077 on 9 with a season's peak of 1,158 on 11 September. As usual, numbers dwindled over the following few weeks and very few records were produced from late September. After a spell of hard weather across the UK during late November, birds returned to the islands with up to thirty-three on the outer group from 26 November-3 December when the wardens departed.

**Grey Plover** *P. squatarola*

A well-represented passage visitor.

It was an excellent season with reports on seventeen dates compared to just six the previous year. Mid-summer attracted the first passage birds as two were noted on Knoxes Reef on 1 June, a single on Brownsman on 3 June, three on Northern Hares on 28 June and another single on the inner group on 13 July. After one north through Staple Sound on 30 August, autumn passage produced 1-2 on nine dates including a lingering juvenile on Inner Farne on 19 September. Late passage birds were seen over the inner group on 7-8 November whilst hard weather on the mainland brought a single to Brownsman 'flats' on 3 December.

**Lapwing** *Vanellus vanellus*

A well-represented passage visitor and sporadic breeder (last attempt in 1962; Wilson and Noble-Rollin, 2010).

Despite good numbers wintering on the nearby mainland and in Seahouses harbour, only a few are recorded annually on passage through the islands. The only spring reports concerned a single west over the inner group on 25 March followed by another lingering on the top meadow on Inner Farne on 31 March. The first autumn passage was logged on 9 August as four moved west over Brownsman on 9 August. Thereafter the autumn witnessed a poor return as one east over both island groups on 9 October was followed by 1-2 on four dates from 8-19 November. During this period, a modest peak for the year concerned eight south over the outer group on 17 November.



**Knot** *Calidris canutus*

A well-represented passage visitor.

This high-arctic breeder is found commonly around the coasts of the UK. In recent years the Farnes have supported a small summering flock and that trend continued this season. Northern-bound birds were recorded on two spring dates with a total of eighty-eight present on West Wideopens on 19 April and another on Knoxes reef on 13 May. The recent trend of birds summering on the islands continued with reports from ten June dates and daily sightings throughout July and early August. Numbers fluctuated as birds moved to and from the islands with up to forty present on the inner group and sixty on the outer group. During this period numbers peaked with ninety-nine on 8 July, 159 on 18 July, 118 on 30 July and 102 on 2 August. Thereafter numbers began to dwindle with 1-56 recorded during August and early September. However it was evident that a second 'wave' of birds arrived as 191 were discovered on Knoxes Reef on 12 September with up to 150 present over the following few days until 15 September. Thereafter numbers declined with only a handful of reports during October and the final record of the year concerning seven north through Inner Sound on 3 November.

**Sanderling** *C. alba*

An uncommon passage visitor.

Unlike recent seasons, it was a disappointing year for this long distant migrant as the year produced only two reports, both involving birds moving north on passage. A flock of five flew north through Inner Sound on 3 May with two north through Staple Sound on 3 September. There were no reports of birds utilising the islands during the season.

**Purple Sandpiper** *C. maritima*

A common passage and winter visitor.

This classic rocky shore wader is commonly found around the islands throughout the year and has an almost complete all-year round presence. Up to 120 were evident in late March and early April when the wardens arrived with sixty on Knoxes Reef on 31 March and ninety present on 1 April plus other islands supporting smaller numbers. Small numbers remained during April with spring peaks occurring in mid-May with 115 counted on 16 May. Thereafter numbers rapidly declined with two on Knoxes Reef on 8-9 June and singles on Megstone on 15 and Longstone on 28 June. Early July heralds the return of northern breeders with three on 7 increasing to four on 8 and thirty-one on 12 July. Numbers continued to increase with fifty-seven present on 18 July with regular counts of up to thirty-seven daily during late July and early August. Good numbers (for the time of year) continued to be reported with 101 counted on 15 August and counts of 40-104 during September-October with a peak of 120 on 20 October. Once again, wintering numbers were good with a peak of 240 on 4 November.

**Dunlin** *C. alpina*

A common passage and winter visitor.

This common passage visitor was recorded in small numbers during spring passage with an unexpected early peak of twenty-five on 20 March on Knoxes Reef. More typical, light spring passage was recorded with 1-4 on ten dates from 24 April-19 May with a peak of five south over Brownsman on 2 May. A single summer plumage individual on Brownsman on 19 June may have involved a late passage bird or an early returnee. However returnees were

not long in coming as, after an individual on the outer group on 28 June-4 July, reports suggested that small numbers of resident birds were present throughout July-September. During this period, numbers gradually increased from early July with six on 5, seven on 7 and twelve on 17 July. Thereafter 1-2 were seen daily with up to ten on occasions with a noticeable peak of fifty-seven north through Inner Sound on 19 September. As autumn progressed, numbers diminished with a peak of fourteen present on 9 October and 1 November. Interestingly, after a three-week absence, birds returned during heavy snowfall elsewhere with up to nine present on the outer group on 3 December.

**Ruff** *Philomachus pugnax*

A well-represented passage visitor.

There was a welcome return to form for this sexually-dimorphic summer visitor as the previous four years have produced a modest total of only ten records. This season, birds were recorded on eight dates, the majority during wader passage in September. The first of the year, a single, flew west over Staple Island on 7 September and was followed by four flying west together over the outer group the following day. The 'purple patch' for the species this September continued as one was discovered on West Wideopens on 9 September with additional singles over Inner Farne on 11 and Brownsman on 13 September. Further reports involved singles on Knoxes Reef on 23 and north over Brownsman on 25 September with the final record involving one west over Inner Farne on the late date of 25 October.

**Jack Snipe** *Lymnocyrtus minimus*

A well-represented passage visitor.

It was a bumper year for this distinctive but secretive passage and winter visitor, and a reasonable number were recorded during the autumn. The first passage bird was flushed off Staple Island on 25 September and was followed by an impressive three on the same island on 28 September. Birds continued to move during this late September period as two were discovered on Inner Farne on 29 September with one still present the following day. October-November produced reports of 1-2 on eleven dates with a peak of four on 9 October including two on both Inner Farne and Staple Island. The final record, involved an individual on Brownsman on 2 December, presumably due to the hard weather the mainland was experiencing during this period.

**Snipe** *Gallinago gallinago*

A well-represented passage visitor.

Generally well represented on spring and autumn passage with 1-3 recorded on seven dates between 19-30 March with a peak of four on the inner group on 20 March. The final spring record concerned an individual on Brownsman on 13 April. Autumn passage commenced with one west over Brownsman on 7 August followed by singles on Inner Farne on 25 and 27 August. Thereafter, passage increased with 1-4 recorded on thirty dates between 1 September and 3 December. During this period, peak passage involved ten west on 8 September whilst hard weather movements brought nine to the inner group on 27 November. The final record concerned one on Staple Island on 3 December.

**Woodcock** *Scolopax rusticola*

A well-represented passage visitor.

This cryptic woodland breeder moves through the Farnes on passage especially during the autumn as birds move from the near-continent to winter in the UK. As usual, spring passage



was very light with just a single flushed from near the lighthouse on Inner Farne on 22 March. The first autumn record concerned one flushed off the south end of Brownsman on 9 October followed by 1-2 on 21 and 23 October. Autumn passage was reasonably quiet with seven scattered across the islands on 26 October, with six on 8 November and seven the following day. Thereafter, small numbers of 1-3 were recorded on seven dates with a peak of nine on 17 November. More unusually for the islands, early December produced a handful of reports due to heavy snow fall with three present on 3 December.

**Black-tailed Godwit** *Limosa limosa*

An uncommon passage visitor.

This elegant wader is recorded annually on passage although generally in small numbers during peak wader passage in mid-summer. This year, all reports were concentrated around a four day period in mid-July although unlike recent years, there were no records of birds actually landing on the Farnes. The first record concerned an impressive eighty-eight west over Brownsman and towards the mainland on 10 July, representing a new Farnes day record eclipsing the previous of forty-two on 21 April 2006. This mid-July period brought further reports of twenty-eight west over both the inner and outer group on 12 July with two south through Inner Sound on 13 July.

**Bar-tailed Godwit** *L. lapponica*

A well-represented passage visitor.

Another good season for this long distant migrant as good numbers were reported throughout the year especially during the autumn months. As usual, the majority of reports concerned sightings on the inner group (making up 85% of all records) as the species remains scarce on the outer group of islands. The spring period produced small numbers of 1-8 on six dates from 21 March-21 April, all on Knoxes Reef with a peak of thirty south over West Wideopens on 19 April. As usual, summer records were scarce with fourteen on Knoxes Reef on 13 May and four summer-plumage adults on the ladies path on 2 June. After a single on Knoxes Reef on 8 July reports became more regular with records on thirty-four dates from 13 July-29 September. During this period numbers generally consisted of 1-25 with peaks of sixty-seven on Brownsman on 7 August, whilst Knoxes Reef produced good counts in September with seventy on 2, fifty on 4, fifty-two on 8 and sixty on 17 September. Thereafter numbers dwindled with reports of 1-15 on three October and three November dates, all on Knoxes Reef. The final record was unexpected when eight were discovered on Longstone Main on 3 December.

**Whimbrel** *Numenius phaeopus*

A well-represented passage visitor.

It was a reasonable season for this evocative summer visitor as the first returnee was discovered on the ladies path on Inner Farne on 24 April and was possibly the same bird seen a few days later on 28 April. Spring passage remained light with reports on three May dates with 1-2 noted on Brownsman, Staple Island, and Knoxes Reef with a peak of six north over Brownsman on 9 May. The first autumn birds arrived on Knoxes Reef on 6 July with reports of 1-5 on thirty-seven dates from 7 July-12 September. During this period, individuals lingered for several days on some islands, especially Brownsman whilst peak passage involved twenty-three west over Inner Farne on 14 August. The final record concerned two calling over Knoxes Reef on 12 September.

### Curlew *N. arquata*

A common passage and winter visitor.

This upland breeder is recorded throughout the year with large numbers concentrating on Knoxes Reef on the inner group. Numbers generally peak during the late summer when post-breeding birds gather at high tide roost although it was evident that numbers were lower than recent years when 400+ have been recorded. The season's peak count occurred on 22 March with 244 present on Knoxes Reef (Table 7). Elsewhere smaller numbers utilise several other islands throughout the year including Longstone, Brownsman and Staple Island although numbers remained low on these outer group of islands, with a peak of forty-nine on Longstone on 23 August.

**Table 7** Peak Curlew count on inner and outer groups, Farne Islands 2010

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct
<b>Knoxes Reef</b>	244	32	22	18	87	75	127	210
<b>Outer Group</b>	4	6	12	2	25	49	20	6

### Redshank *Tringa totanus*

A common passage and winter visitor. Bred in nine years 1901-1943 (Wilson and Noble-Rollin, 2010).

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 being away on breeding grounds. Generally small numbers were reported throughout March-April with a noticeable peak of forty on Staple Island on 20 April followed by sixty-three on Knoxes Reef on 24 April (Table 8). Thereafter records became scarce although it appeared one was summering on the outer group with an individual recorded on fifteen dates between 11 May-19 June. The only inner group record during this period involved a single on Inner Farne on 9 June. Gradually, birds filtered back to the islands after the breeding season from late June with daily sightings until the wardens departed in early December. Peak passage occurred in July-August with peaks of sixty across the islands on 16 July and twenty-four on 2 August.

**Table 8** Peak Redshank count on inner and outer groups, Farne Islands

Month	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
<b>Inner Group</b>	63	0	1	48	15	9	25	21
<b>Outer Group</b>	40	1	2	15	24	21	11	7

### Greenshank *T. nebularia*

A well-represented passage visitor.

This familiar and distinctive passage wader had another excellent season as wader passage produced reports on nineteen dates during August-September. The first of the year was noted on the ladies path on Inner Farne on 7 August with another south over Brownsman on 9 August. Thereafter singles were recorded on five August and thirteen September dates



including a lingering bird on Brownsman from 2-14 September. The only multiple sighting of the season involved two vocal birds together on Brownsman flats throughout 3 September.

**Green Sandpiper** *T. ochropus*

An uncommon passage visitor.

The eye-catching white rump and distinctive call help locate and identify this elegant wader and the first of the year was discovered on Brownsman pond on 7 June. August produced the majority of records with one west over Brownsman on 7 followed by two over the same island on 10 August. Due to the main pond on Brownsman being dry during this period, birds rarely settled and another over Brownsman on 23 August may have been one of three seen together along the shoreline of Inner Farne that evening. The final reports involved one roosting at the Churn pool on Inner Farne on 25 August and another on Staple Island on 14 September.

**Wood Sandpiper** *T. glareola*

An uncommon passage visitor

It has been a good decade for this striking sandpiper as the species has been recorded in all but one year since 2001 (not recorded in 2004). In comparison, the 1990's produced records in five years, the 1980's six years and the 1970's in only two years. The wader passage this year produced two on the same day, as a juvenile lingered on Brownsman pond all day on 22 July and earlier that day (at 08:10) another flew calling over Inner Farne. The third of the year was seen and heard as it flew south over Brownsman at dusk on 9 September, interestingly only the second ever September record on the Farnes (the other being on 4 September 1956).

**Common Sandpiper** *Actitis hypoleucos*

A well-represented passage visitor.

Well represented during both spring and autumn passage. The first of the year arrived on the north rocks of Inner Farne on 25 April and was followed by another on the east rocks of Brownsman on 28 April. May produced singles on four dates from 6-22 May with a peak of four near the jetty on Inner Farne on 13 May. After a six-week's absence the first birds of the autumn started arriving from 3 July with a single lingering on the outer group on 3-8 July. Thereafter passage increased with reports of 1-3 on twenty-six dates until last seen in late September. During this period peak passage involved eight on 8 September with three on Staple Island, three on Inner Farne and two on Brownsman. The final records of the year concerned a single on Brownsman on 20-21 September and Inner Farne north rocks on 28 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 filter back into Britain from high-arctic breeding grounds. The spring period produced regular reports of up to seventy present throughout March-April from several islands. Although present throughout the summer months, numbers remained low with thirty-four present on 9 June a typical count for this mid-summer period. Post breeding flocks started to gather from early July with 177 present on 18 July and 120 noted on 27 July. Numbers remained high throughout August and early September (as shown in Table 9). As usual the islands

supported a good wintering population with *ca* 200-300 present throughout October-December as indicated by a count of 260 on the outer group on 4 November.

**Table 9** Peak Turnstone counts during the year on the Farne Islands.

Date	July		August		September	November
	18	29	15	23	8	4
Count	177	243	249	217	250	260

**Grey Phalarope** *Phalaropus fulicarius*

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

It was a disappointing year for what has become an expected annual on the islands during the later autumn. An individual was seen in Staple Sound, landing twice on the sea before being lost in the wave troughs on 27 October, representing the twelfth consecutive year the islands have produced records.

**Pomarine Skua** *Stercorarius pomarinus*

A well-represented passage visitor, common in some years.

This powerhouse of a skua had another modest season although it could have been so much better. The first of the year, an adult with 'full spoons', flew south past Crumstone on 2 September. After a spell of northerly winds, fourteen (including two adults) flew north through Staple Sound on 16 October between 17:20-18:30. Unfortunately due to work commitments the team could not 'seawatch' any earlier that day as even greater numbers were reported from other Northumberland headlands. Other records included an immature south past Brownsman on 15 October and another immature south through Staple Sound on 21 November.

**Arctic Skua** *S. parasiticus*

A common passage visitor.

It was a peculiar year for this aerial sea pirate with just a single spring report and a below-par showing during the autumn. The spring produced just a single record, a dark phase adult north through Staple Sound on 8 May. The first autumn birds appeared in late June as one was noted attacking terns to the north of Inner Farne on 29 June and thereafter reports became more regular. Records involved 1-5 on eighteen July and fifteen August dates with the majority of reports referring to birds lingering and foraging from the local seabirds especially the terns. As the autumn progressed passage started to increase with seven north through Staple Sound on 26 August followed by ten south on 9 September. Peak passage was reached in late September with a modest peak of eleven north on 19 September, sixteen north on 23 September and ten north on 24 September. Gradually numbers decreased with two October records, with three north on 16 October and a single north on 20 October. The final record concerned a single north through Inner Sound on 9 November.

**Long-tailed Skua** *S. longicaudus*

An uncommon passage visitor.

It was a typical season for this prized jewel as the previous ten years have averaged two per



year. Autumn seawatching produced a juvenile north past the south end of Brownsman on 23 September with another juvenile north through Inner Sound on 8 November. The latter bird was the latest ever recorded from the Farnes.

**Great Skua** *S. skua*

A common passage visitor.

This bruiser of a skua experienced a quiet spring period with the first reports of the year concerning singles north past the south end of Brownsman on 9 June, through Staple Sound on 10 June and another lingering with intent on the inner group on 12 June. Thereafter all records referred to autumn passage which commenced with singles north on 22, 23 and 24 July. After one north over Longstone on 30 July, passage gradually increased with 1-7 noted on eighteen August dates with a peak of fourteen north on 14 and sixteen north on 30 August. September followed in similar vein with 1-10 noted on seventeen dates with a peak of fourteen north and four south on 24 September. Gradually numbers dwindled with October producing 1-2 on 9, 11 and 15 October. The final records involved four north through Staple Sound on 9 November and singles south on 19 and 21 November.

**Mediterranean Gull** *Larus melanocephalus*

An uncommon passage and winter visitor.

Following the national trend, the number of records has increased considerably in the past decade and the first confirmed breeding in Northumberland occurred the previous year. It is surely only a matter of time before the species breeds on the islands as more and more are attracted on spring passage. A first-summer individual was noted in the evening gull roost on Knoxes Reef on 5-6 April whilst a vocal second-summer bird was discovered on the top meadow in the Black-headed Gull colony on Inner Farne on 9 April and was seen daily until 17 April. During its nine-day stay, the bird was seen on several occasions in the breeding colony on Inner Farne and was observed displaying. Throughout this period, immature birds were recorded at the evening roosts, with two on 10-11, three on 12 and a single on 15 April. The evening count of four (including the lingering second-summer) on 12 April was a new Farnes day-count record.

**Little Gull** *L. minutus*

A well-represented passage and winter visitor.

It was a desperately disappointing year with reports on only eleven dates, mirroring the below-par showing of the past two years. The first of the year, a first-summer, was noted on the ladies path on Inner Farne on 19-20 May, with another on Brownsman on 5-7 June. Further records included a second-summer bird on Inner Farne on 14 June and a smart adult discovered near Crumstone on 24 July and roosting on Longstone on 31 July. The final few records concerned singles north past the islands on 17 and 26 September and 8 October with the last involving a late individual north through Inner Sound on 9 November.

**Sabine's Gull** *L. sabini*

An uncommon passage visitor.

This rare Nearctic wanderer was only recorded for the first time on the Farnes as recently as 1991, but a further twenty-one since then has changed the species' status on the islands, including five in both 1997 and 2005, with four in 2007. This season added three more to the tally as an adult was observed flying north through Staple Sound early on the morning of 14 August, another summer plumage adult was noted flying south through Staple Sound

on 24 September whilst a juvenile was discovered later that day on the inner group. The bird was discovered feeding with a small group of Black-headed Gulls off Knoxes Reef at 16:15 and showed well until the light faded three hours later.

**Black-headed Gull *L. ridibundus***

A well-represented breeding species and common visitor.

As expected, good numbers were present (and vocal) when the wardens arrived in mid-March with numbers increasing daily in the pre-breeding roost on Knoxes Reef. Numbers increased from 193 on 22 March to 253 on 28 March with 500 present on 5 April. During this period, displaying birds were present in the main colony on Inner Farne and checking out potential nest sites by 4 April. Interestingly, there was an abandonment of the colony on cemetery bank on Inner Farne as the majority of nesting birds established on the central meadow. Mating was observed from 11 April and eventually breeding birds settled by mid-April. The nightly roost on Knoxes Reef had diminished by this period although it had attracted a leucistic individual on the evening of 23 April. The first eggs were discovered on 25 April and a total of 367 (260) pairs nested as follows: Inner Farne 341 (247), Staple Island 0 (1) and Brownsman 26 (12). The first chicks hatched on 27 May and the first fledglings started taking to the wing from 25 June. On Brownsman a much smaller colony was present and breeding commenced later than the substantial colony of Inner Farne. The chicks appeared on 19 June and the first fledglings were noted on 19 July. Predation by large gulls took its toll (as usual) but despite this, a reasonable number of young fledged across the islands. As late summer progressed, the breeding population dispersed with only small numbers lingering during the autumn months with up to sixty present on Knoxes Reef in late October.

**Common Gull *L. canus***

A common visitor. Bred in four years 1910-14 (Booth, 1911, 1912; Miller, 1911-1914; Paynter, 1914) and probably in 1916 (March, 1916). Attempted breeding in 1974 (Hawkey and Hickling, 1974).

The majority of Farnes records occur in spring as birds move east to breeding grounds in Scandinavia, with a distinct build-up on Knoxes Reef on the inner group during the early spring. It was a disappointing showing at the evening roost as numbers were slow to build up with seven on 27 March increasing to fifteen on 31 March with further increases in early April peaking at fifty-eight on 15 April. Thereafter numbers gradually dwindled with later stragglers noted on 24 April. However during this period easterly passage was logged during the day with counts of forty-two east on 12 April, fifty-one east on 15 April and thirty-five east on 16 April. Late spring passage involved six east over the outer group on 9 May. Thereafter the species became scarce on the islands during the summer months with just a handful of records including a first-summer in the Kettle on 19 May, and another off Staple Island on 3 July. Gradually birds filtered back through the Farnes from early August with eight on Knoxes Reef on 7 August and there was a daily presence from early September to the season's end, with up to thirty present throughout the late autumn.

**Lesser-black Backed Gull *L. fuscus***

A common breeding species and passage visitor.

The Farnes population is completely migratory as birds move south for the winter. The first birds started arriving in mid-March with thirty-eight counted on the inner group on 20 March. However numbers increased rapidly thereafter with good numbers present by the



first week of April and territorial disputes were noted from 15 April. Nest building commenced soon after and the first eggs were discovered on 2 May. The population continued to remain at a healthy level with 611 (498) breeding pairs nesting as follows: Inner Farne 20 (16), West Wideopens 144 (150), East Wideopens 82 (70), Knoxes Reef 5 (5), Staple Island 74 (35), Brownsman 6 (6), North Wamses 76 (55), South Wamses 130 (86), Roddam and Green 5 (15) and Big Harcar 69 (60). Once again, the species was responsible for predation amongst other nesting seabirds especially Black-headed Gulls and Arctic Terns on Inner Farne. The first chicks appeared in early June with a reasonable number of young fledged from nests as the summer progressed. As usual, birds started departing from the breeding grounds for southern Britain during September with no confirmed records after early October.

#### **Herring Gull** *L. argentatus*

A common breeding species, abundant in winter.

This very-abundant resident nests in good numbers across all the islands and large numbers were evident when the wardens arrived in mid-March. Mating was observed on 28 March and nest building commenced soon after on 12 April. The first eggs were discovered on 28 April and a total of 768 (575) pairs nested as follows: Inner Farne 17 (3), West Wideopens 89 (65), East Wideopens 72 (55), Knoxes Reef 78 (52), Skeney Scar 22 (20), Staple Island 54 (20), Brownsman 6 (7), North Wamses 121 (118), South Wamses 102 (54), Roddam and Green 19 (23), Big Harcar 91 (82), Longstone Main 0 (4), Longstone End 50 (31) and Northern Hares 47 (41). This species was responsible for the majority of predation recorded on the islands during the season, as attacks on several nesting species were very evident. The first chicks started hatching from early June and good numbers of young fledged. After the breeding season, good numbers remain to winter around the islands with influxes of northern European birds during the late autumn. The autumn months also see some huge nightly roosts although, due to access difficulties, these roosts go uncounted, but are considered to be in the region of 10,000 individuals.

#### **Iceland Gull** *L. glaucooides*

An uncommon winter and passage visitor.

The Farnes appear to attract birds on northerly passage during April as twenty-one of the twenty-nine island records have occurred during this month. It was a very unusual year because three very different records were produced and was the first occasion since 1995 that three have been recorded in a single year. An immature was seen flying in to roost on West Wideopens on 27 March but was not seen subsequently. A very unusual mid-summer record concerned an immature north over Brownsman on 5 June, the first ever June sighting on the islands and the first outer group record since 1998. The final record concerned another immature north over Knoxes Reef on 27 October, the first autumn record in thirteen years.

#### **Glaucous Gull** *L. hyperboreus*

An uncommon winter and passage visitor.

It was a disappointing season for this large pale, northern gull with just one confirmed record: an immature flew north through Inner Sound on 9 November, the sixth consecutive year the species has been recorded.

### Great Black-backed Gull *L. marinus*

An uncommon breeder, common winter and passage visitor.

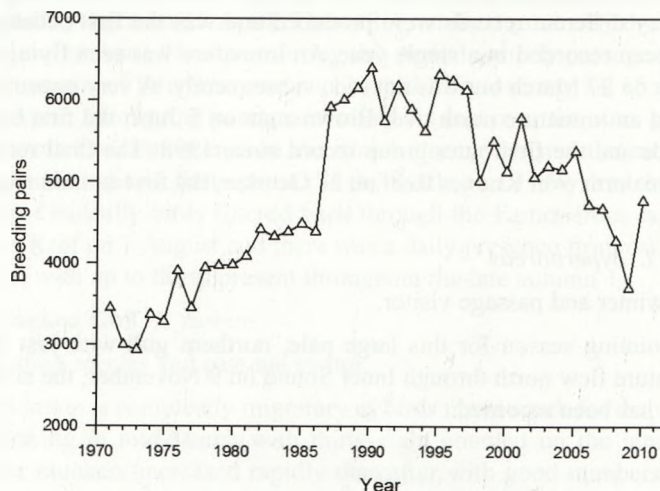
This monster gull maintains a toe-hold on the islands as the small population continues to increase. Small numbers were present in mid-March when the wardens arrived and territorial disputes were noted in early April. The first eggs were discovered on 6 May on West Wideopens and a total of 10 (8) pairs nested as follows: West Wideopens 2 (0), East Wideopens 2 (3), Knoxes Reef 1 (0), Staple Island 1 (0), Brownsman 2 (1), North Wamses 0 (2), South Wamses 2 (1) and Big Harcar 0 (1). The brutal nature of having such a top predator on the island was noted on the inner group as one pair specialised in Puffins whilst other prey items included Guillemot and Feral Pigeon. The first fledglings started flying from early July and after the breeding season reasonable numbers were recorded during the autumn months. Counts included 137 on Knoxes Reef on 24 September, 287 on the Wamses on 20 October and 617 counted across the islands on 8 November.

### Kittiwake *Rissa tridactyla*

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

After last season's success story (best productivity in thirteen years) this year went even one better, with an increase in the breeding population coupled with overall good productivity. As with the majority of seabirds, it was a quick start to the breeding season as nest building was noted on the very early date of 23 March. This activity continued throughout late March into early April, with copulation observed on 4 April. As activity intensified it was not long before the first eggs were discovered, on Inner Farne at the lighthouse cliff on 26 April and Staple Island on 2 May. This represents the earliest egg-laying date since 1974, and thereafter good numbers of eggs were discovered across all the colonies. There was a very encouraging increase in the population, the first such increase since 2005 (Fig. 1) with 4,768 (3,699) pairs nesting as follows: Megstone 7 (9), Inner Farne 1,278 (1,223), West Wideopens 190 (165), East Wideopens 233 (220), Skeney Scar 138 (118), Staple Island 1,022 (883), Brownsman 1,767 (974), North Wamses 35 (42), South Wamses 24 (17), Roddam and Green 19 (4) and Big Harcar 55 (44). The first chicks hatched on Staple Island on 22 May followed by Inner Farne on 28 May. As usual, the season did not go by without issues (although fair-

Fig. 1 The Kittiwake population on the Farne Islands from 1971-2010





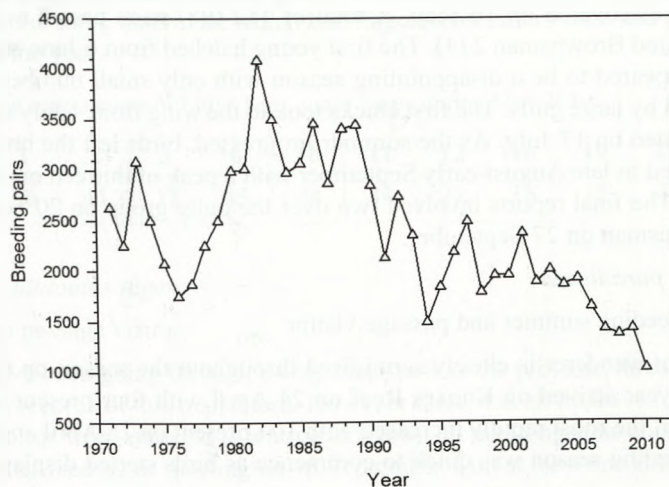
ly minor compared with some years) as small numbers of nests were lost on the north-facing cliff ledges during stormy weather on 30 May and 19 June. Despite this, the first fledglings started flying on 25 June with good numbers noted around the islands from early July. Breeding-seabird monitoring revealed the extent of the success, as 560 monitored nests produced 644 fledged chicks with an overall productivity of 1.15. After the breeding season, the cliffs were almost bare by late August and passage was logged on several dates with a peak of 3,161 north in one hour on 16 October. Small numbers lingered throughout the late autumn with eighty noted on 9 November being typical of the time of year.

#### Sandwich Tern *Sterna sandvicensis*

An abundant breeding summer and passage visitor.

The largest and most vocal of all the breeding terns returned to Farnes waters in late March, as four arrived at the traditional evening roost site on Knoxes Reef on the early date of 24 March (earliest 21 March 1997). Thereafter, 1-3 were present until 2 April when the roost started to increase nightly (Table 10). During this period, loud vocal displays occurred over the traditional nesting site on Inner Farne and birds settled earlier than expected with up to sixty present in the main colony on Inner Farne from 17 April. The first eggs were discovered on Inner Farne on 4 May (the earliest egg laying date since 1990) and a total of 1,019 (1,415) pairs nested as follows: Inner Farne 761 (1,311) and Brownsman 258 (104). The overall population suffered its lowest breeding numbers since 1958 although the reason for the decline is unclear as numbers have been decreasing over the previous ten years since 2,364 pairs nested in 2001 (Fig. 2). Despite the disappointment, there was encouraging news on the outer group where the colony established earlier in the year with the first eggs noted on 18 May and the population peaking at its highest since 1999. Both colonies appeared to thrive with the first chicks noted on Inner Farne on 2 June and Brownsman on 14 June and the first fledglings seen on 1 July. As the summer progressed, both colonies dispersed and it was noteworthy that adults and fledged juveniles departed the islands from early August. Thereafter only small numbers 1-10 were reported throughout September with the final reports of the year concerning two south through Inner Sound on 12 October and another south the following day.

Fig. 2 The Sandwich Tern population on the Farne Islands from 1971-2010.



**Table 10** Evening roost counts of Sandwich Tern, Knoxes Reef 2010.

Date	March	April											May
	24	3	4	5	6	10	13	14	19	23	24	26	1
Count	4	6	26	37	75	94	128	131	140	380	600	900	1,200

**Roseate Tern** *S. dougallii*

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

The trials and tribulations of the species took yet another turn and after the two breeding attempts the previous year there was no repeat this season. The first bird was discovered on the ladies path on Inner Farne on 14 May followed by another individual over the outer group and on Brownsman on 16-17 May. Thereafter, a small number of one to two infiltrated the colonies with three present on four dates in June. Despite being noted in the Sandwich Tern colony on Brownsman, where the two pairs nested the previous season, and displaying being observed (food carrying), there was no nesting attempt during the summer. Nevertheless, there was encouragement for the future as birds continued to summer and it is hoped that the islands will maintain a sustaining population in the years to come. As usual, successful family-party groups moved through the islands in late July (breeding birds from nearby Coquet Island) with the first to arrive on 21 July involving two adults and two juveniles. More family parties arrived during the final week of July (up to four daily), favouring Inner Farne, and this is arguably now the best time to see the species on the islands. Eventually, numbers decreased with one to two on 2-3 August with the final report of the year involving a single adult on Inner Farne on 4 August.

**Common Tern** *S. hirundo*

A common breeding summer and passage visitor.

Small numbers nest on the islands and the first returning birds were seen in the evening roost on Knoxes Reef with a single on the evening of 23 April. Numbers rapidly increased with twelve present on 24, twenty-two on 25 and 108 on 26 April. Soon after the first birds were seen on the ground inspecting traditional breeding areas of Inner Farne on 3 May and the first eggs were discovered on 16 May. A total of 112 (98) pairs nested as follows: Inner Farne 110 (94) and Brownsman 2 (4). The first young hatched from 6 June and although not monitored it appeared to be a disappointing season with only small numbers of fledglings due to predation by large gulls. The first chicks took to the wing from 4 July and eight fledglings were counted on 17 July. As the summer progressed, birds left the breeding grounds with 1-6 recorded in late August-early September with a peak of thirteen on Brownsman on 11 September. The final reports involved two over the outer group on 20 September and a single on Brownsman on 27 September.

**Arctic Tern** *S. paradisaea*

An abundant breeding summer and passage visitor.

This long distant wanderer is closely scrutinised throughout the season on the islands and the first of the year arrived on Knoxes Reef on 24 April with four present in the evening roost. Thereafter, the roost rapidly increased with 104 present on 26 April and 800 noted on 1 May. The breeding season was quick to commence as birds started displaying on 2 May



and by 4 May large numbers were on the ground, checking out traditional nest sites. Mating was observed over the following few days and the first eggs were discovered on both Brownsman and Inner Farne on 12 May. The population continues to remain very healthy and a total of 2,199 (2,198) pairs nested as follows: Inner Farne 1,110 (1,092), Brownsman 1,079 (1,066) and Staple Island 10 (40). After the first eggs, the majority of the breeding population were nesting over the following few days and the first chicks hatched on 4 June. The breeding season proved to be above average although never reached the excellent standards of the previous year. 494 nests were monitored producing 335 fledged chicks with productivity at 0.68. The first young started fledging from 27 June and thereafter good numbers were seen roosting on the islands in early July with a very late straggler eventually leaving Inner Farne on 9 August. During the summer months, first-summer birds returned to the colonies with peaks of twenty-three on 22 June on Inner Farne and nine on Brownsman on 2 July. Thereafter very few were reported in August as the breeding population dispersed with the final reports involving two on Longstone on 5 October.

#### **Little Tern *S. albigrons***

A well-represented passage visitor.

Although birds do not breed on the islands, a pre-breeding evening roost on St Cuthbert's Cove, Inner Farne, throughout May has attracted some impressive numbers in recent years. Interestingly, for the third consecutive year numbers remained low and this may reflect the state of the local breeding population. The first bird of the year was discovered roosting on the ladies path on 26 April and thereafter the evening roost returned to St Cuthbert's Cove (as shown in Table 11) with a modest peak of forty-six on 11 May. The roost rapidly decreased as birds moved to nearby Northumberland breeding grounds with just three present on 31 May. However, it is interesting to note that three pairs lingered during the day on the beach and were seen on three dates between 11-18 May. Mid-summer reports produced an individual fishing in Inner Sound on 26 June whilst post-breeding dispersal produced five on St Cuthbert's Cove on 24 July. One of the most unusual records ever produced by the islands concerned an individual which lingered on Inner Farne daily from 23-28 July. The bird closely associated with an Arctic Tern and both would head off on fishing trips or linger around the island together. During its stay it was often observed sitting on the Visitor Centre roof or the lighthouse wall throughout the day, despite the attention from visitors. The species is very rarely seen on the outer group, but an adult noted over Longstone on 30 July may have been the same individual which had lingered on Inner Farne and proved to be the final record of the year.

**Table 11** Evening roost counts of Little Tern, Inner Farne during May 2010

Date	1	2	3	6	10	11	12	16	19	23	26	31
Count	36	41	37	45	44	46	27	18	12	8	5	3

#### **Black Tern *Chlidonias niger***

An uncommon passage visitor.

The islands have been going through a very lean spell as the previous three years have produced just two records of this marsh tern. However there was an improved showing in mid-September as birds were attracted to a large tern roost on the Longstone complex. Four were discovered either feeding or roosting on 13 September with at least one still present the fol-

lowing day. The only other record concerned one north off Brownsman south end on 19 September. All records referred to either juveniles or adult winter-plumage individuals.

#### **Guillemot** *Uria aalge*

An abundant breeding resident and passage visitor.

As with a lot of the early nesting seabirds, it was a quick-fire start to the season as birds were seen copulating by 3 April followed by an increase in displaying over the following week. The first eggs were discovered on 11 April on Inner Farne, followed by Brownsman on 12 April, the earliest egg laying dates since 1997. Thereafter the colonies settled and large numbers of eggs were discovered across all islands. Once again, predation by large gulls proved problematic but generally the season went well. The population remained very healthy (and at times difficult to count) as 46,355 (48,126) individuals were counted as follows: Megstone 220 (290), Inner Farne 6,834 (3,770), West Wideopens 2,420 (2,315), East Wideopens 3,209 (6,830), Skeney Scar 2,250 (2,180), Staple Island 20,309 (20,948), Brownsman 8,267 (8,908), North Wamses 1,825 (1,787), South Wamses 618 (588), Roddam and Green 130 (100) and Big Harcar 273 (410). The first chicks started hatching from 15 May on Staple Island followed by Inner Farne on 21 May. A large swell from stormy seas resulted in the loss of small numbers of chicks in late May but otherwise it appeared to be a good breeding season. Due to the rapid start to the year, the population was quick to leave (even quicker than normal) and the first 'jumplings' started to take to the open sea from 6 June and thereafter good numbers were witnessed jumping. Impressively, by late June, almost 90% of the breeding population had departed for the open sea, leaving the cliff ledges bare once again. Late fledgers were noted on a few scattered islands including Brownsman in late July. As usual, birds became very scarce after the breeding season, although small numbers returned from 30 August with a peak of 432 north in two hours on 16 October. Productivity revealed a good season as ninety-two chicks fledged from ninety-six monitored nests with a productivity rate of 0.96, compared to 0.92 the previous year.

#### **Razorbill** *Alca torda*

A common breeding resident and passage visitor.

Although vastly outnumbered by its common relative, it has been a real success story of the islands. As with the Guillemots, it was a quick start to the season as mating was noted on 29 March and the first eggs were discovered on 20 April, the earliest ever egg laying date, eclipsing the previous record of 24 April 2008. A total of 319 (332) pairs nested as follows: Inner Farne 128 (148), West Wideopens 61 (62), East Wideopens 17 (17), Skeney Scar 8 (8), Staple Island 34 (36), Brownsman 10 (8), North Wamses 13 (10), South Wamses 22 (23), Roddam and Green 3 (2) and Big Harcar 23 (18). The first chicks were discovered at the lighthouse cliff on Inner Farne on 23 May and were jumping by 15 June. Thereafter good numbers of youngsters fledged and by 1 July almost 50% of the breeding population had gone successfully. Late stragglers were noted in late July and the final successful jumpling departed from the islands on 2 August. Productivity was at it lowest in three years although twenty chicks fledged from thirty nests with an overall productivity rate of 0.67. The species became scarce over the following month with birds returning to Farnes waters from late August, as small numbers were recorded during the autumn.



### **Black Guillemot** *Cepphus grylle*

A well-represented winter and passage visitor. Breeding 17<sup>th</sup> and possibly 18<sup>th</sup> centuries (Gardner-Medwin, 1985).

Small numbers continue to winter around the Farnes, the only north-east location boasting a wintering population (the nearest breeding population is north-east Scotland). The area around Gun Rock off Staple Island remains one of the most consistent areas to observe birds and a winter-plumage adult was discovered here on 6 March. Thereafter all reports were confined to the late autumn, as one north through Staple Sound on 9 November was followed by another in the same area the following day. The Gun Rock area produced a lingering winter-plumage adult daily from 21 November-2 December (when the wardens departed) and the only multiple sighting involved two in Staple Sound on 19 November.

### **Puffin** *Fratercula arctica*

An abundant breeding summer and passage visitor.

It was a typical start to a season as birds arrived in mid-March but were elusive on occasions due to poor weather. However, birds gradually settled and mating was observed at sea on 4 April followed by spring cleaning of burrows soon after. The first eggs were found on 18 April, the earliest egg laying date since 1993. Although there were no official census counts of the population (the next is scheduled for 2013) two 20 m<sup>2</sup> transect plots on Brownsman and Inner Farne appeared to indicate a slight increase in the population. The first chicks started hatching from 28 May whilst minor flooding of burrows was noted on Brownsman on 30 May after some heavy rainfall. Despite this, the breeding season proved to be excellent as fifty-six chicks fledged from sixty monitored nests on Inner Farne and overall the colonies produced large numbers of young. The first fledgling was seen to leave on 26 June and by 15 July large numbers of young had departed for the open sea. Gradually the adult population dwindled as birds moved off in early August, although despite the rapid start to the breeding season, adult birds appeared to linger longer, and 'good numbers' were still present on the outer group into mid-August. A very late breeding bird was attending a nest on Brownsman on 4 September. The autumn months produced a scattered of records as birds moved back into Farnes waters with ten noted on 26 September and six on 16 October with 1-2 on several dates in October-November.

### **Little Auk** *Alle alle*

A well-represented winter and passage visitor.

Large numbers can occur after northerly gales and the islands boast the all-time British record, set in 2007 when 28,803 moved north on 11 November. However since then the islands have experienced two quiet years and therefore it was a welcome return to form as the autumn produced some reasonable numbers. The first record of the year involved two north past the south end of Brownsman on 16 October followed by 118 north on 23 and 142 north on 24 October. This was just the start of a very good run which went on to produce a season's peak of 1,788 south on 9 November (Table 12). Throughout November-December birds were recorded daily around the islands, as it was evident that small numbers were wintering. Typical counts involved up to thirty daily, favouring Staple Sound with influxes of ninety on 8 November. Great views were often given from the Zodiac boats as birds appeared unconcerned about the presence of boats and were seen in a variety of areas including the Kettle off Inner Farne. Records continued in early December when the wardens departed and a visit on 13 December still produced thirty lingering individuals.

**Table 12** Little Auk movements on selected days.

	23 Oct	24 Oct	27 Oct	9 Nov	12 Nov	17 Nov
<b>Staple Sound</b>		113	185	804	215	305
<b>South end</b>	118	29				
<b>Inner Sound</b>				984		
<b>Direction</b>	N	N	N	S	N	S
<b>Day Total</b>	<b>118</b>	<b>142</b>	<b>185</b>	<b>1,788</b>	<b>215</b>	<b>305</b>

**Feral Pigeon** *Columba livia*

A common breeding resident.

The species was abundant throughout the year with breeding occurring on several islands. The autumn produced the bulk of records as large flocks (of several hundred) gathered on Inner Farne and Brownsman from mid-September, which did not go unnoticed by the resident Peregrines or Greater Black-backed Gulls.

**Wood Pigeon** *C. palumbus*

An uncommon passage visitor.

It was a reasonable showing with records from eight spring and six autumn days which included a new Farnes day record. The inner group dominated spring sightings with the first of the year on Inner Farne on 31 March lingering near the lighthouse whilst another lingered on the same island on 2 April. Light spring passage continued during April with two west on 4 and singles on 7, 22 and 23 April. The only spring passage bird noted on the outer group was found roosting on the cellar window of Brownsman cottage on 29 April. The final spring report concerned a single over Inner Farne on 11 May. The first autumn record involved a flock of eleven west over Brownsman and then Inner Farne on 27 September, with two resident on Brownsman the same day. The total of thirteen that day eclipses the previous highest Farnes day count of six in 2001 and 2006. Thereafter, singles were recorded daily on 28-30 September and 9 October. The final records of the year saw two over Brownsman and one on Inner Farne on 10 October.

**Turtle Dove** *Streptopelia turtur*

Uncommon passage visitor.

Nationally the species is in serious decline with a drop of over 50% in the British breeding population in recent years. The worrying national decline has mirrored numbers seen on the Farnes as the species was recorded in every season from 1970-2000 apart from four years (1981, 1988, 1990 and 1999). In stark contrast, there have only been two records since, with singles in May and September 2003. However the seven year wait was finally over as an adult flew low over Brownsman on 23 August and continued north before being lost to view.

**Long-eared Owl** *Asio otus*

An uncommon passage visitor.

This nocturnal migrant is predominately recorded during the autumn as birds move across the North Sea from Scandinavia where they escape the harsh winter months to spend time in the British Isles. However it still remains a noteworthy passage migrant during the spring



and an individual was observed flying west over Staple Island, then Inner Farne before continuing westwards towards the mainland on 12 May. This represents only the ninth ever spring record after 1-2 recorded in 2009, 2006, 1998, 1997, 1992, 1987, 1976 and 1886. There has been a noticeable reduction in records during autumn passage in recent years, and this trend continued with only a single record: a bird was discovered on Inner Farne on 20 November, which showed well including sitting on a boundary post.

**Short-eared Owl** *A. flammeus*

An uncommon passage visitor.

It was another disappointing season, continuing the trend of recent years, with no spring records and birds recorded on only seven autumn dates. The first passage birds moved through the islands in late September with two seen over the outer group on 25 followed by another on Inner Farne on 26 September. Passage continued with one west over Brownsman on 27 September which flew over the inner group with another on Inner Farne later that day. Further records involved singles flushed off Brownsman on 29 September, Inner Farne on 11 October and Brownsman on 20 October. The final record concerned one off Brownsman which landed on nearby Staple Island on 19 November.

**Swift** *Apus apus*

A well-represented summer and passage visitor.

It was a disappointing summer for this aerial master, as the first was not recorded until three flew north over Inner Farne on the evening of 5 June. Records continued to struggle until the end of the month with four west over Staple Island on 24 followed by six west on 26 June and 1-4 daily until the end of the month. July witnessed an increase in records with reports of 1-5 on twelve dates with a peak of seven east over Brownsman on 26 July. Thereafter, numbers dwindled as birds rapidly moved south to wintering grounds in the southern hemisphere. Singles were seen over Brownsman on 2 August, Inner Farne on 4 August, and west over the outer group on 7 September. The final record involved one hawking over Inner Farne on 9 September.

**Wryneck** *Jynx torquilla*

An uncommon passage visitor.

The Farnes is arguably one of the best east coast sites for this cryptic drift migrant, as the islands have boasted a minimum of 101 including some impressive numbers in recent seasons (eight in 2004, seven in 2006 and five in 2008). The autumn produced three records with the first arriving during the impressive 'fall' of common migrants in early September. A single arrived on Brownsman on 6 September and lingered until 8 September. The bird was flighty at times and even visited nearby Staple Island on one occasion, but eventually settled and showed well during its stay. Another arrival of common migrants later in the month produced one, possibly two individuals. A bird was seen briefly on Brownsman in the early morning of 28 September although it soon moved on. It or another was discovered on Inner Farne later that morning, but like its counterpart, soon departed.

**Woodlark** *Lullula arborea*

A rare visitor.

This heathland songster was an outstanding late highlight to the year as a bedraggled individual was discovered on Inner Farne on 19-20 November. The bird showed well throughout its stay, as its approachable nature allowed some good views. During the second day of

its stay, it was 'twitched' by keen local Northumberland birders and at this stage, the bird reacted to camera shutters and approached to within three metres, before deciding to sing (in sub-song). This incredible visitor was the seventh Farnes record, with six having occurred since 2000. Interestingly, the Farnes has an almost entire Northumberland monopoly in modern history, as the County supports eight previous records away from the islands, but only three have occurred since 1966.

**Skylark** *Alauda arvensis*

A common passage visitor. May have bred in 1865 and *ca* 1900 (Brown, 1866; Pike, 1902).

This declining farmland vocalist was recorded throughout the spring and autumn with typical peak passage during October. When the wardens arrived in mid-March, two were present on the central meadow on Inner Farne on 19-21 March. Thereafter 1-2 were recorded on eight dates until the last was noted on 10 April. During this period, the peak count was a modest four, which moved north over Inner Farne on 1 April. The final spring sightings concerned singles over Brownsman on the late dates of 5 and 15 May. The first Skylarks of autumn started moving through the islands from mid-August with a single on 22 and two on 24 August. Records continued to be sparse with singles over the outer group on 9, 10 and 18 September but thereafter were recorded almost daily throughout the autumn. Passage generally involved 1-7 on or over the islands with peak counts occurring in early October with eight on 8, twenty-one on 9, thirteen on 10 and peaking at fifty-four on 12 October which included a flock of thirty-two on Brownsman. Thereafter 1-8 were recorded although numbers declined towards mid-November. After heavy snow and cold overnight temperatures in late November, the islands experienced some hard weather movements with six on the inner group on 26 November followed by thirty-six over the islands the following day. As more snow combined with freezing temperatures hit the mainland hard, more birds arrived and a resident flock on Brownsman increased from four on 29-30 November to twenty-five by the 2 December, peaking at fifty on 4 December (when the wardens departed the islands).

**Shorelark** *Eremophila alpestris*

An uncommon passage and winter visitor.

This stunning northern lark has been going through a real lean spell in recent years, with only four records since the turn of the century. Records during this period involved singles on 26 October 2001, 9-25 October 2002, 14 October 2003 and 24 October 2007. Therefore this season brought a much welcome return to form as four were recorded on autumn migration. The first was seen and heard flying in from the north before landing on Brownsman where it remained for two days over 9-10 October. During this same period another individual arrived on Inner Farne and favoured the north rocks from 9-14 October and was also seen commuting to the nearby West Wideopens on at least one occasion. The third individual of the year was seen flying north over Brownsman with Skylarks on 12 October with the final record involving one west over Brownsman and Staple Island on 22 October.

**Sand Martin** *Riparia riparia*

A well-represented summer and passage visitor.

This summer hawker was seen on eight dates, a typical annual total for this passage visitor. The first of the year involved a single north over Inner Farne on 16 April, the earliest in four years and it was followed by a noteworthy ten north on 23 April, the highest day count since eleven were recorded in April 2002. Despite the large count, it was still generally a quiet



spring as the only other records involved two north on 24 April, with the final spring sighting of a single north over Inner Farne on 18 May. Autumn birds were noted during August with two south on 3, four west on 17 and the only outer group record of the year (a dismal showing) being one west over Brownsman on 24 August. The final record concerned two west over Inner Farne on 25 August.

**Swallow** *Hirundo rustica*

A common summer and passage visitor. Scarce breeder (Steel, 2010).

It was another noteworthy year for this attractive summer visitor as the islands witnessed another successful breeding record for the second consecutive year. Passage birds use the islands as a north-south fly-highway and the first record of the year was on 4 April with two north over Inner Farne. Thereafter 1-13 were recorded on thirty-seven spring dates, the majority on northerly passage, with peaks of twenty-five on 23 April, thirty-one on 26 April and forty-three on 18 May. During this period a pair was discovered on Longstone and nested in the shelter of the lighthouse buildings. Although the nest was not examined due to its locality, a total of five chicks fledged successfully in late July and remained around the Longstone complex throughout August. Impressively, the pair raised a second brood and despite losing three large chicks to poor weather, successfully fledged two more young in mid-September. Thereafter southerly passage commenced with records of 1-16 on fifty-four dates with a modest peak of twenty-five south on 31 August. Late records included three over Brownsman on 15 October with the last record involving a single south over Inner Farne on 16 October, the latest since 2006.

**House Martin** *Delichon urbica*

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

After the bumper crop of records last season, it was a very disappointing year with only eleven records: seven in spring and four in the autumn. The first of the year was seen flying over Inner Farne on the very late arrival date of 18 May and was followed by one to three birds on six dates between 3-11 June. Three lingered and roosted on Brownsman throughout 6-7 June. Autumn birds were logged from mid-August with two west over Inner Farne on 21 August and a single noted on Brownsman on 8-9 September. The final record to round off a disappointing season, concerned one south over Inner Farne on 20 September, the latest since 2007.

**Richard's Pipit** *Anthus novaeseelandiae*

A scarce visitor.

The 'purple patch' for this large Siberian Pipit on the Farnes continues, as the species was recorded for the sixth consecutive year. The islands' first ever record was as recent as September 1993 and since then twenty have been recorded including an impressive ten in the past five years. The prime time for this species was early October when an individual was flushed and calling, on Brownsman on 2 October before moving to nearby Staple Island. Unlike the previous year, which involved two long staying birds for over three weeks, this individual was not seen again.

**Olive-backed Pipit** *A. hodgsoni*

An extremely rare visitor.

A stunning highlight of the autumn, as a skulking individual was discovered on Brownsman

on the morning of 12 October. Although vocal in nature, the bird would remain deep in vegetation before exploding from cover and moving short distances, making it difficult to observe. However the bird remained loyal to Brownsman for a further three days and eventually showed well before being last seen on the afternoon of 15 October. This represents only the third Farnes record after individuals on 28-29 September 2001 and 14-15 October 2001, both on Brownsman.

**Tree Pipit** *A. trivialis*

A common passage visitor.

It was a mixed season for this woodland breeder as spring passage produced just a disappointing single record but was improved by good numbers during the autumn. The only spring sighting involved a bird calling while flying west over the Quarry area of Inner Farne on 25 April. Return autumn passage commenced with one on Inner Farne on 21-22 August with another lingering on Brownsman from 22-29 August. September produced good numbers, with records of 1-5 on thirteen dates. Peak passage produced thirteen across the islands on 7 September increasing to seventeen the following day. This peak included eight on Brownsman, seven on Inner Farne and two on Staple Island, all of which lingered and were very vocal during their stay. Thereafter, numbers dwindled with a further influx later in the month peaking at seven on 27 September. As expected, October produced three late stragglers, with two on Brownsman on 8 October and the final record of the year involving one on the same island on 12 October, the latest in four years.

**Meadow Pipit** *A. pratensis*

A common passage visitor. Bred *ca* 1901 and in eleven years 1946-1973 (Pike, 1902; Wilson and Noble-Rollin, 2010).

One of the most numerous passage migrants on the islands during the spring and autumn. Northerly spring passage brought 1-21 daily from 20 March-25 April with the final spring report of a single on Staple Island on 6 May. During this period, passage peaked with sixty-nine west on 27 March and thirty-three west on 9 April. After a two months' absence, autumn birds started moving through the islands from 23 August as sixteen arrived across the islands including seven on Brownsman. Thereafter, records of 1-40 became regular with some noticeable influxes during September including eighty-nine on 3, 183 on 9, and sixty-seven on 21 September. As the autumn progressed, numbers declined with the final autumn records involving twelve west over Inner Farne on 1 November and an individual on Brownsman on 8 November. In a normal year, these would represent the final records of the year but heavy snowfall across the UK in late November forced birds back onto the islands. A single arrived on Inner Farne on 19 November and thereafter 1-6 were present until the wardens departed on 4 December with a peak of ten on 26 November.

**Rock Pipit** *A. spinoletta*

A common resident well represented as a breeding species.

This quintessential coastal pipit breeds in good numbers across the rocky islands of the Farnes. Birds were singing on Inner Farne by 23 March with territorial disputes noted on several islands by mid-April. Nest building was observed soon after and the first eggs were discovered in nests at the lighthouse compound on Inner Farne on 26 April and central gully on Staple Island on 6 May. A total of 22 (25) pairs nested as follows: Inner Farne 5 (4), West Wideopens 2 (2), East Wideopens 1 (0), Staple Island 3 (5), Brownsman 9 (10), North Wamses 0 (1), Big Harcar 0 (1), Longstone Main 1 (1) and Longstone End 1 (1). The first





Arctic Redpoll (Mark Breaks)



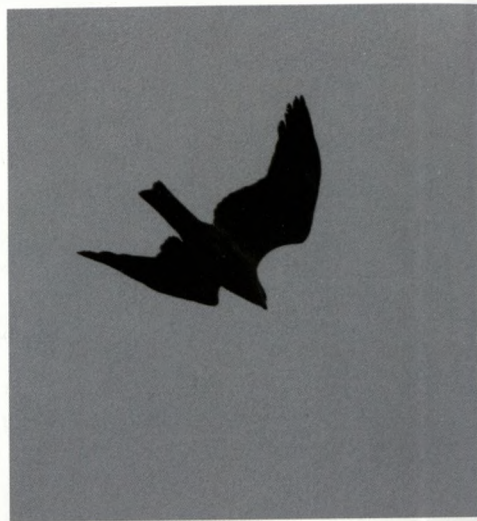
Woodlark (Ian Fisher)



**White-tailed Eagle (Mark Breaks)**



**Black Kite (Mark Breaks)**



**Thrush Nightingale (Mark Breaks)**



**Southern Yellow Wagtail (Mark Breaks)**



**Water Rail (Graeme Duncan)**



**Leucistic Shag (Mark Breaks)**



**Melodious Warbler (Mark Breaks)**



**Lapland Bunting (Mark Breaks)**



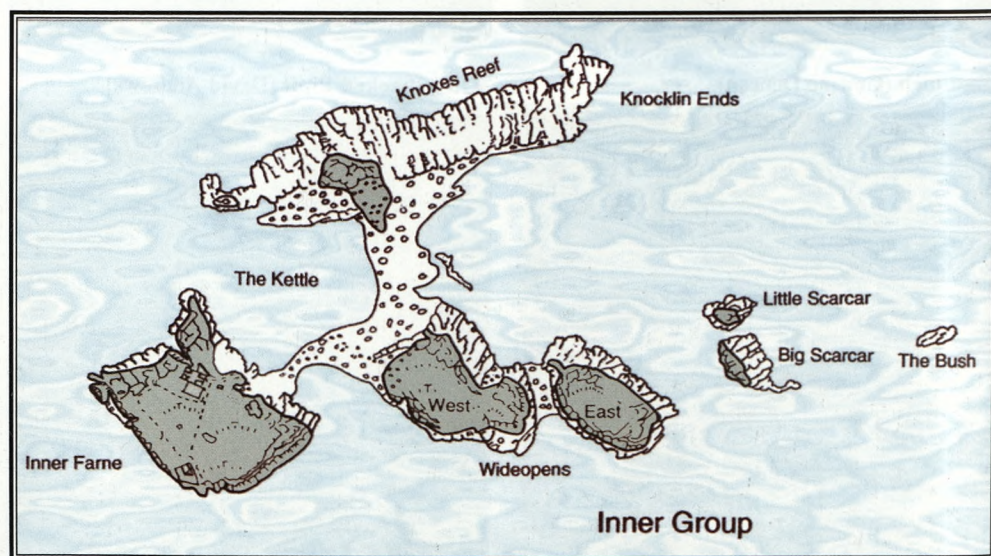
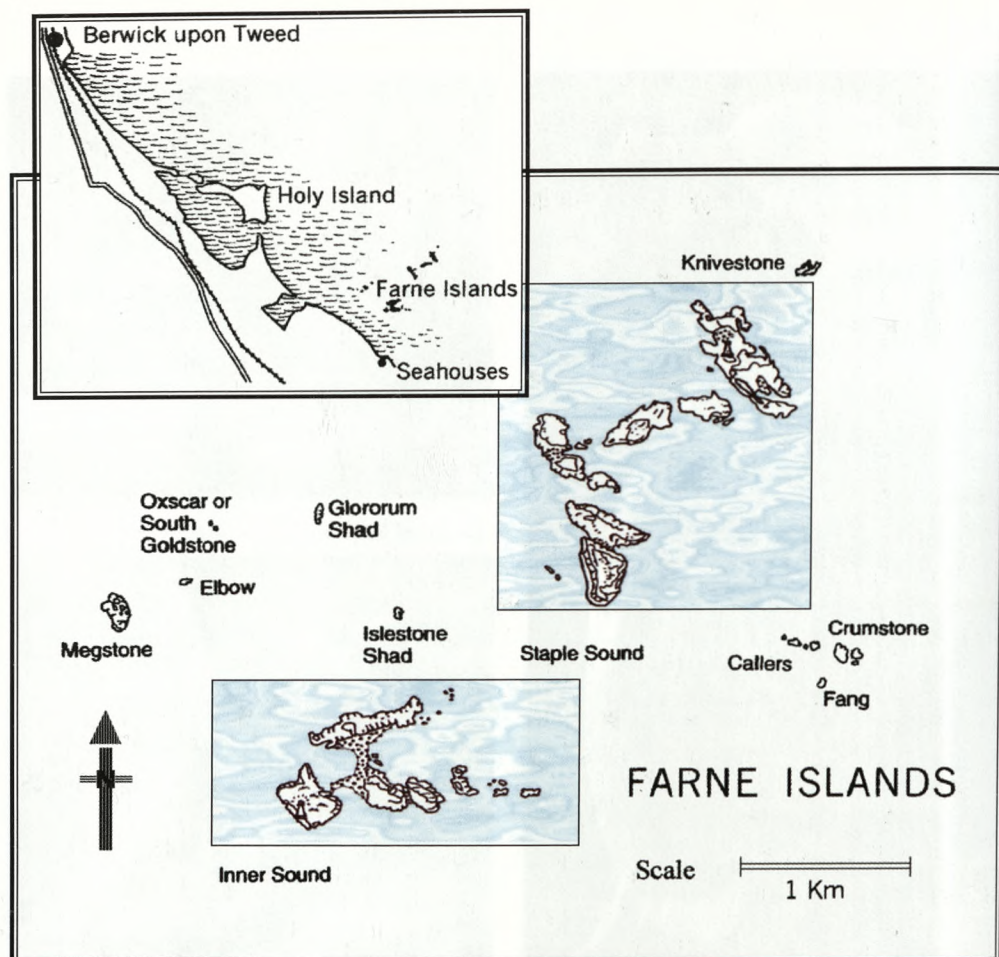
**Bullfinch (Graeme Duncan)**



**Olive-backed Pipit (David Andrews)**











young were discovered on Brownsman on 15 May and Inner Farne on 19 May with the first fledglings noted taking wing on Brownsman on 23 May. Thereafter, good numbers of young fledged across the islands and as usual, second broods were found in early July. A very interesting observation involved an adult carrying food on 27 August suggesting a third brood of chicks late on. After the breeding season, small numbers lingered on the islands and these were swelled in the autumn by northern breeding birds with up to twenty resident on the outer group during the autumn.

For the second consecutive year, birds belonging to the Scandinavian race *A. s. littoralis* were discovered on spring passage two individuals in summer-plumage graced Inner Farne on 31 March -1 April, favouring the top meadow.

#### **Yellow Wagtail** *Motacilla flava flavissima*

An uncommon passage visitor.

The species has had some poor years recently with no records at all during 2007. However in complete contrast, good numbers were recorded this year especially during autumn passage. Spring produced two records as individual males were seen and heard over Inner Farne on 27-28 April but may have involved the same bird. After an easterly weather front some impressive numbers started moving back through the islands (including a record day count) in early September when a juvenile on Brownsman on 6 September paved the way for multiple records over the following few days. A vocal flock of seven was present on Inner Farne all day on 7 September including an impressive-looking leucistic bird, whilst five graced Brownsman with at least three lingering. Passage continued the following day with eleven different individuals (including the leucistic individual) on Inner Farne with a further six on Brownsman. Although there may be some overlap of records between the two islands, at least ten and twelve different individuals were recorded over the two days. The origins of these passage birds can only be speculated, but a possible 'Grey-headed' was present in the flock on Brownsman on 8 September. Thereafter numbers dwindled with seven present on 9, five on 10 and singles on 11-15 September, the majority of which were on the outer group. The final record of an impressive autumn showing involved one west over Brownsman on 27 September, the latest since 2000.

One of the biggest discussion points of the year involved the discovery of an adult male '**Southern Wagtail**' on Brownsman on 6 May. The bird showed well and was extensively photographed before moving to nearby Staple Island where it remained for the remainder of the day. The complex nature of the geographical variation in Yellow Wagtails means further research is required on this individual (from the BBRC) to help unravel the bird's identification. Interestingly, some observers consider this individual as belonging to the 'Spanish Wagtail' *M. flava iberiae* subspecies, which would be a first for the UK.

#### **Grey Wagtail** *M. cinerea*

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

The population in Scotland and northern England are partial migrants as birds move to southern Britain for the winter. They remain a noteworthy passage bird in the spring and a single was noted near St Cuthbert's Gut on Inner Farne on 31 March. Thereafter all records were confined to the autumn with a single west over Brownsman on 3 September, west over Inner Farne on 15 September and one lingering on the latter island on 23 September. A second wave of autumn records occurred in early October, as two birds moved west over Brownsman on 9 October with possibly one of these seen later that day on Inner Farne.



Other records included one west over Brownsman on 10 October and an individual on South Wamses on 25 October. The final record involved a vocal individual west over Brownsman on 24 November, the latest ever recorded on the islands.

**Pied Wagtail** *M. alba*

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

When the wardens arrived in mid-March at least two pairs were establishing territories on Inner Farne with singing males also noted on other traditional breeding islands including Staple Island and Brownsman. Light spring passage was documented on several dates with 1-4 moving north with a peak of ten on 27 March. As spring progressed so did nesting activity and nest building was noted from 15 April with the first eggs found on 3 May. The population maintained itself with 5 (6) pairs nesting as follows: Inner Farne 2 (2), Brownsman 1 (2), Staple Island 1 (1) and Longstone Main 1 (1). The first young hatched in mid-May but a nest on Brownsman was predated whilst weather accounted for three small young in another. Despite this, the season was successful as fledglings started to appear on Brownsman on 1 June and Inner Farne on 6 June. Once again the open-fronted nest box at the lighthouse on Inner Farne was utilised although the hole above the window in St Cuthbert's Chapel was not used this year. After the breeding season, the now-traditional evening roost on the dock bank on Inner Farne attracted good numbers throughout the late summer with a peak of twenty-seven on 9 August, whilst a roost was discovered on Brownsman with a peak of ten on 10 September. Numbers gradually dwindled during September and the species became very scarce once again during the autumn months with the only record involving one west on 26 October.

The continental sub-species '**White Wagtail**' *M. alba alba* is recorded annually on the islands with the majority of records occurring on spring passage. All records were confined to May, with an adult male noted on Brownsman on 1, a female on Staple Island on 7 and further males on Inner Farne on 13 and 22 and Brownsman on 26 May.

**Waxwing** *Bombycilla garrulous*

An uncommon winter and passage visitor.

In recent years there have been some earlier-than-expected irruptions into the UK during late October-November and this year brought one of the biggest in modern day recording. During this impressive invasion, the Farnes produced a total of twenty-six on four dates – a good showing by island standards. The first indication of the irruption involved a bird which circled the Wamses on three occasions before moving west on 25 October. The following day produced a total of nineteen west (mostly involving one or two birds at a time) with further records of five west on 31 October and one over South Wamses on 15 November. Most birds were recorded as flying over although one or two individuals landed briefly, including individuals on St Cuthbert's Chapel and the vegetable garden on Inner Farne. The species has been recorded in fourteen years since the first report in 1949, with noticeable invasions in 2004 and 2008.

**Wren** *Troglodytes troglodytes*

A common visitor and passage migrant. A rare breeder (Steel, 2009).

Small numbers over-winter on the islands and these birds were evident during mid-winter visits with up to four noted on several dates on Inner Farne during February-March, with a peak of six on 22 March. Thereafter numbers dwindled with records of 1-2 on six April dates with the final spring record involving one on Inner Farne on 25 April. Disappointingly,

the breeding pair (the first definite breeding record in Farnes history which nested successfully during 2008-09) failed to establish, possibly due to poor adult survival after a very harsh winter. A very unusual mid-summer record concerned a juvenile on Longstone on 30 July, as the first autumn birds did not arrive until late September. The first individual arrived on Inner Farne on 22 September followed by a small influx of four on the outer group and two on the inner group on 27-28 September. Thereafter up to six became resident on Inner Farne throughout the autumn and early winter whilst the outer group produced 1-4 during October-November. During this period a peak of fifteen occurred on 10 October including five on Longstone. Once again a small number appeared to be wintering on the islands with four on Inner Farne and singles on Staple Island and Brownsman.

#### **Dunnock** *Prunella modularis*

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

The Farnes account for small numbers of the migratory nominate race *P. m. modularis* which migrate from the breeding grounds in Fennoscandia to wintering grounds in southern Iberia and return in the spring (the UK population is generally sedentary). After an over-wintering record of a single on Inner Farne on 16 February and 22 March, passage increased after an easterly airflow in late March with eight on 31 March peaking at ten on 1 April. Numbers started to decline on a daily basis with eight on 2, four on 3 and 1-3 over the following few days. Thereafter 1-2 were noted on eleven April dates with the final spring record concerning one on Inner Farne on 28 April. The first autumn bird arrived on Brownsman on 26 September and the following week brought a surge of records during a 'fall' of common migrants (Table 13). A second wave of migrants arrived with a season's peak of twenty-five on 14 October although numbers dwindled rapidly after this influx. The final outer group record concerned a single on Brownsman on 9 November whilst at least one appeared to be over-wintering again on Inner Farne.

**Table 13** Day totals of Dunnocks.

Date	September				October			
	27	28	29	30	1	2	3	4
Inner group	4	8	8	5	8	8	8	5
Outer group	13	10	14	15	11	16	9	4
Day total	17	18	22	20	19	24	17	9

#### **Robin** *Erithacus rubecula*

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

Small numbers over-winter on the islands, especially on the largest island of Inner Farne and 1-2 were evident during visits in mid-February. When the wardens arrived in mid-March, 2-3 were present daily on Inner Farne with a noticeable spring influx in late March as the winds turned to the east. Numbers increased from sixteen on 30 March, to a peak of twenty-two on 31 March with fifteen still present on 1 April. Thereafter numbers dwindled as spring progressed with the final records involving singles on Inner Farne on 10 April and Brownsman on 13 and 24 April. The first autumn birds appeared in late August with singles



on the outer group on 17 and 24-25 August. Records continued to be sporadic until birds eventually settled on Inner Farne from 13 September. The autumn produced two major 'falls' as shown in Table 14, the highest numbers reported on the islands since 2001. Thereafter up to four appeared to be over-wintering with two on both Brownsman and Inner Farne until the wardens departed in early December.

**Table 14** Day totals of Robins on selected dates

Date	September				October				
	27	28	29	30	8	9	10	11	12
Inner group	50	40	30	15	10	61	43	48	23
Outer group	55	50	47	30	42	59	79	45	32
Day total	105	90	77	45	52	120	122	93	55

#### **Thrush Nightingale** *Luscinia luscinia*

An extremely rare visitor.

This rare migrant from Eastern Europe and Scandinavia was discovered on Longstone on the evening of 14 August. The bird, an adult, showed well to the admiring wardens and represents only the second Farnes record, after an individual on Brownsman on 8 May 2002. This remains a real Northumberland rarity as it represents only the eighth county record with the last mainland bird seen at Hauxley in May 1985.

#### **Bluethroat** *Luscinia svecica*

An uncommon passage visitor, well represented in some years.

The Farnes remain part of a handful of exclusive UK localities which can still boast annual records, despite numbers on passage decreasing considerably. In forty years of recording, the species has been recorded annually in every year apart from five seasons (1979, 1982, 1983, 1999, 2005). The majority of records involve spring sightings with only eighteen documented autumn reports. However recent years have seen a shift towards an autumn bias and this year proved no different as the islands produced two records (the fourth consecutive year that the islands have produced autumn records). The first, a first-winter/female was present on the dock bank area of Inner Farne on 10-11 September although it proved very flighty and elusive. However a more confiding individual (a first-winter) was present in the same area on Inner Farne on 27-28 September and showed well on occasions.

The '**White-spotted**' Bluethroat (continental form *L.s. cyanecula*) was recorded for only the third ever occasion on the islands. A female/first-winter male, was discovered on the dock bank of Inner Farne on 31 March and seen again on 2 April. During its three day stay, it proved to be an extremely difficult individual to track down (despite the lack of vegetation), as the bird's flighty nature and elusive manner made viewing difficult. To put the difficulties into context, the bird was not aged and was not seen at all on 1 April! This represents the third record of this form after singles in 1988 and 2001.

#### **Black Redstart** *Phoenicurus ochruros*

A well-represented passage visitor.

The Farnes remains one of the best north-east localities for this passage visitor and the year produced a record haul. A female was discovered sheltering behind the lighthouse on Inner

Farne on 25-29 March and was joined by a second bird on 30 March. However as the winds switched to the east, an impressive nine found on Inner Farne on 31 March, a record count for the islands. Sadly due to the poor weather and sea state, other islands, most noticeably Brownsman and Staple Island, could not be checked and therefore the number was probably far greater. After the influx seven lingered on Inner Farne on 1-2 April before gradually decreasing with six on 3, three on 4 and two on 5-7 April. Interestingly a first-year male was heard singing from the cemetery on 4 April. Other spring records included individual females on Brownsman on 26 April and Inner Farne on 19 and 23 May. Every so often the islands produce an unexpected mid-summer record and a striking adult male was seen on Longstone on 8 June. In contrast to the spring, autumn was quiet with two (including an adult male) discovered on Inner Farne on 10 October with one lingering until the next day.

**Redstart** *P. phoenicurus*

A common passage visitor.

Although it was a quiet spring (the islands produced records on only three dates), the autumn was noteworthy with some impressive counts including the highest day count since 1999. The first of the year, an adult female, arrived on Inner Farne on 25 April followed by a pair on Brownsman, on 28 April. The only other spring report involved a female on Brownsman on 12 May. The first autumn birds appeared on Brownsman and Staple Island on 5 September and the following five days brought some noticeable numbers as an easterly weather front dropped good numbers of common migrants. Thereafter 1-4 were noted on seven dates from 12-25 September before a second 'fall' produced more (Table 15). Thereafter 1-4 were recorded daily from 1-10 October with a peak of eight on 8-9 and the final record involving a single on Brownsman on 12 October.

**Table 15** Day totals of Redstart on selected dates in September 2010.

September	6	7	8	9	10	11	27	28	29	30
Inner group	4	24	15	10	8	2	12	15	10	10
Outer group	3	5	10	7	3	-	16	18	13	4
Day total	7	29	25	19	11	2	28	33	23	14

**Whinchat** *Saxicola rubetra*

A common passage visitor.

Recent years have seen fluctuating numbers recorded on passage on the islands, and despite a very disappointing spring showing the autumn produced a plethora of records. The first and only spring record concerned a female discovered on Staple Island on 24 May. The first autumn returnees arrived in mid-August with a single on Brownsman on 16, followed by 1-2 on the outer group daily from 23-26 August. September brought 1-7 on seventeen dates including peak passage of fifteen on 7 with fourteen lingering on 8-9 September (the highest Farnes day count since 2006). Interestingly the final records of the year concerned two which associated together for an impressive fourteen days on Inner Farne from 28 September-11 October (the latest since 2001).

**Stonechat** *S. torquata*

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

Since the turn of the century, records have increased markedly on the islands although after



a very hard winter the local Northumberland population has plummeted. As a consequence, in the worst showing since 1998 only a single was recorded: a female which favoured the pond area on Inner Farne on 31 March-1 April.

**Wheatear** *Oenanthe oenanthe*

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

The sentinel of the uplands was (as usual) very evident on passage through the islands and the first birds of the year, three males, were discovered on Inner Farne on 24 March, with a female present the following day and two noted on 26 March. Thereafter, spring produced records of 1-17 on thirty-one dates until last recorded on 29 May, with peaks of twenty-five on 28 and twenty-seven on 29 April. The first autumn passage birds arrived on Brownsman on 4 August and thereafter 1-27 were recorded on fifty-one dates until mid-October. During this autumn period, influxes occurred with thirty-four counted across the islands on 23 August followed by some noticeable numbers in early September (Table 16). Thereafter numbers started to dwindle with the final records involving eight on Inner Farne on 10 October with three present the following day.

**Table 16** Day totals of Wheatear in early September 2010.

September	6	7	8	9	10
Inner group	25	22	20	15	10
Outer group	12	20	25	12	13
Day total	37	42	45	27	26

**Ring Ouzel** *Turdus torquatus*

An uncommon passage visitor.

This 'upland Blackbird' had a good season with three spring records (best spring showing since 2005) followed by an influx in late September and early October. The inner group dominated spring sightings as males were seen on Inner Farne on 30 March (the earliest since 2005), briefly near the lighthouse compound on 17 April and in the vegetable garden on 28 April. A noticeable influx in late September brought an impressive five on 27 September including four on Inner Farne and a single on Brownsman. Although most had cleared out overnight, a single lingered on Inner Farne on 28-29 September with another new bird arriving on Brownsman on the latter date. The 'purple patch' continued during the third fall of the autumn, with singles on Inner Farne, Brownsman and Longstone on 8 October. 9 October produced a total of five on the outer group including four (male, immature female and two immature males) on Brownsman with a single first-winter male on Longstone. The final record involved a lingering first-winter male on Brownsman on 10 October.

**Blackbird** *T. merula*

An abundant passage visitor. Bred in the 1880s then four years 1893-1914, 1934, 1962 then annually 1964-74 (Kearton, 1898; Miller, 1911-1914; Pike, 1902; Thorp, 1935; Hawkey, 1991).

Small numbers over-winter on the islands with light passage recorded in spring, whilst autumn traditionally witnesses the largest movements. Three resident birds on Inner Farne

on 15-16 February reflected over-wintering with small numbers moving through the islands in March with 1-4 noted on nine dates peaking at five on 20 March. Thereafter numbers dwindled with 1-3 on fifteen April dates and the final record of the spring involved a late male on Staple Island on 24 May. Autumn passage commenced with the appearance of two on Brownsman on 26 September followed by a small influx of twenty-eight across the islands the next day. Thereafter, reports were daily with Inner Farne and Brownsman providing the bulk of records with 1-20 recorded on most dates with modest peaks of seventy on 9 October and sixty-five on 9 November. As usual, the islands appeared to be supporting an over-wintering population as up to eight were present on the warden's departure in early December.

**Fieldfare** *T. pilaris*

A common passage visitor.

This large northern thrush is recorded on spring and autumn passage and, if winds are favourable, some impressive numbers can be recorded. As usual, spring passage was very light with a single on Inner Farne on 19-20 March followed by a small influx of five on 22 and ten on 25 March. Numbers dwindled over the following week with two still present on 30 March and April produced just a single on 1 and two on 24 April. An early returning migrant arrived on Brownsman on 7 September with three present the following day. However records remained thin on the ground as one over Brownsman on 24 September was the only other record until 9 October. As with recent autumns, it was another disappointing showing with no real influxes and the autumn peak was a modest 154 west on 26 October. Small numbers were recorded throughout November with the final record involving one on Brownsman on 30 November.

**Song Thrush** *T. philomelos*

A common passage visitor.

As thrushes move over the islands, the species is often overlooked as a migrant, as small numbers of northern breeders move through the islands during spring and autumn migration. Spring passage was light with 1-2 recorded on nine dates between 22 March and 26 April with a peak of seven on Inner Farne on 31 March. The final spring report involved one on Staple Island on 8 May. Autumn produces the bulk of records during the year and the first returnee arrived on Brownsman on 6 September, with five across the islands the following day. Passage brought 1-68 during the autumn with peaks shown in Table 17. Small numbers continued to be recorded throughout November and at least three were still present when the wardens departed in early December.

**Redwing** *T. iliacus*

An abundant passage visitor.

Although small numbers of northern-bound migrants move through the islands on spring passage, the autumn months are the time to witness heavy passage, especially if weather conditions prevail from the east in October. As expected, spring was light with 1-5 recorded on seven dates from 19 March-24 April with a peak of six on 22 March. The first autumn arrival appeared on Brownsman on 21 September and was followed by three on 25 and four on 26 September before numbers on passage increased (Table 17) with a noticeable peak on 8-9 October. Thereafter small numbers were recorded daily throughout the autumn, with up to five still present in early December.



### Mistle Thrush *T. viscivorus*

Once again it proved to be the rarest *Turdus* to be reported during the year, as the islands produce only a handful of records each season. All reports were confined to a two day period in early October when one lingered on Inner Farne before moving west on 8 October with a different individual seen briefly on Brownsman later that day. It or another was present on Inner Farne on 9 October before moving west with other thrushes.

Table 17 Passage of Thrushes over the Farnes on selected dates.

Date	September				October	
	27	28	29	30	8	9
Song Thrush	181	145	340	127	265	213
Redwing	83	76	71	9	1,065	3,900

### Grasshopper Warbler *Locustella naevia*

A well-represented passage visitor.

Over the previous decade, this streaky *Locustella* warbler has had a mixed showing from as few as three in 2002 to last season's minimum of ten individuals. However this year went one better, with some impressive numbers and a record-breaking day count. The first reports involved two, with singles simultaneously on Inner Farne (in the cemetery) and a very confiding bird on Brownsman on 25 April. The only other spring record concerned one on Brownsman on 10-11 June. The autumn period produced some noticeable numbers especially during 'fall' conditions in September. An easterly weather front in the second week of September brought five to Brownsman on 7 with another on Inner Farne that day. Numbers increased the following day on 8 September with no fewer than ten present across the islands, with six on Brownsman, three on Staple Island and a single on Inner Farne. The day total of ten represented a new day record for the Farne Islands. Thereafter small numbers remained with four on 9, two on 10 and a single still present on 11 September. Further autumn arrivals included a single on Brownsman on 25-29 September, Inner Farne on 29-30 September and a very confiding individual on West Wideopens on 3 October (the bird was almost trodden on, on several occasions!). A superb year for the species was concluded with the final record noted on the east rocks of Brownsman on 12 October, the latest in five years.

### Sedge Warbler *Acrocephalus schoenobaenus*

A well-represented passage visitor.

This trans-Saharan migrant is only recorded in small numbers annually on the islands and this year was no different with 1-2 noted on fifteen dates. Spring passage commenced with one in docks near the lighthouse on Inner Farne on 25 April (the earliest since 1998) and was followed by individuals on Inner Farne and one in sub-song on Brownsman on 29 April. Further spring records included singles on Brownsman on 6-7 May and 16 May. Autumn passage commenced with a single discovered on Brownsman on 15-16 August. After an individual on Inner Farne on 4-5 September, the fall of common migrants on 7 September produced the season's peak of four; two on both Inner Farne and Brownsman. The final records concerned singles on Brownsman on 10, Inner Farne on 11 and Brownsman again on 19 September.

### **Reed Warbler** *A. scirpaceus*

A well-represented passage visitor.

This reedbed specialist is recorded in small numbers annually, unlike other areas of north Northumberland, especially Lindisfarne, where it is classified as a scarce visitor. It was an excellent year with some noteworthy numbers reported during autumn migration. The sole spring record concerned an individual on Staple Island on 8-9 June, representing only the tenth individual to be recorded during spring passage in the past decade. Autumn returnees started filtering through the islands from 14 August, with an individual discovered on Inner Farne and another on Brownsman on 1 September. An easterly weather front in the second week of September dumped some impressive numbers onto the islands, with a peak of fifteen on 8 September (Table 18), representing the second highest-ever day count, but still short of the all-time record of twenty-five on 1 October 1993. Thereafter 1-3 were recorded daily from 27 September-1 October with late stragglers including singles on Inner Farne on 8-9 October, Longstone End on 8 October and the final record of the year on Longstone Main on 10 October.

**Table 18** Day totals of Reed Warblers in early September

September	7	8	9	10	11	12
Inner Farne	2	3	4	3	3	1
Brownsman	7	9	5	-	-	-
Staple	-	3	-	-	-	-
Day total	9	15	9	3	3	1

### **Icterine Warbler** *Hippolais icterina*

An uncommon passage visitor

This classic east-coast drift migrant appeared on the islands for the fifth consecutive year as a single was discovered late in the afternoon of 23 August on Brownsman. The bird showed well until dusk, favouring the vegetable garden area on the islands but was not seen subsequently. This brought the islands' total to sixty-eight since the first on 3 September 1963.

### **Melodious Warbler** *H. polyglotta*

An extremely rare visitor – first Farne Islands record.

One of the major highlights of the year involved the discovery of one of these rare southern European vagrants on Brownsman on 9 August. The bird remained for the day, showing well and favouring the artificial tree near the cottage, but was not present the following day. Despite annual records from the south coast of the UK, it remains a major rarity on the east coast and this represents the first for the Farnes and Northumberland. Interestingly there has been only one other record in the north-east of England, at Whitburn (Durham) in 2003.



### **Barred Warbler** *Sylvia nisoria*

An uncommon passage visitor.

There is no getting away from it, the islands have become one of the best English localities for this chunky *Sylvia* warbler in recent times as forty-four have been recorded in the past ten years alone. That trend continued with another impressive haul of four, all first-winter birds, although the outer group dominated with all four records. The first of the year arrived on Brownsman late in the afternoon of 15 August and lingered around the cottage but was not seen the following day. Another arrived on the same island from 18-21 August and would often show well within vegetation during its stay. The outer group dominance continued as a third bird arrived on 27-29 August but was more elusive in nature compared with the previous two arrivals. The fourth and final bird of the year, once again on Brownsman, spent the majority of 26 September around the artificial tree.

### **Lesser Whitethroat** *S. curruca*

A common passage visitor.

Predominately a spring migrant through the Farnes, it proved to be a very poor year with reports on only two spring and eight autumn dates, the worst showing since 2005. The only spring records involved singles on Inner Farne (first discovered in the gents' toilets) and later in the vegetable garden on 25 April with another on Brownsman (first found in the gas cage) the same day. The next sighting was not until 6-10 September when one took up residence on Inner Farne. Other autumn records included a single on Brownsman on 26 increasing to three the following day with two still present on 28 September. During this period, an individual was also noted on Inner Farne on 28 September and the final record concerned two on Brownsman on 9 October.

### **Whitethroat** *S. communis*

A common passage visitor.

As with the majority of summer migrants, it proved to be a quiet spring and the majority of the year's sightings were recorded during the autumn months. The first of the year arrived on 25 April when three were discovered on the islands with singles on Brownsman, Staple Island and Inner Farne, with the latter island producing two the following day. More spring passage birds arrived over the following few weeks with 1-2 noted on seven dates from 28 April-30 May. The final spring record involved a female-type on the dock bank on Inner Farne on 5 June. The first autumn birds were noted from 14 August with a single on Longstone Main and further records of 1-2 on nine August dates and twelve September dates. Peak counts during this period included four on 23 August and 28 September and the final record concerned a single on Brownsman on 29 September.

### **Garden Warbler** *S. borin*

A common passage visitor.

It was a disappointing spring with no records, the first such occurrence since 2002. However this was made up by the good numbers recorded on autumn passage. The first autumn bird was noted on 10-11 August with a single lingering on Inner Farne with 1-2 noted on 16 and 18 August. September brought the most noticeable numbers to the islands and birds were recorded on fourteen dates including a peak of forty during the 'fall' in early September (Table 19). Thereafter numbers declined in early October as 1-3 were noted on 1 and 8 with

four on 9 October with two of these lingering until 11 October on Inner Farne. The final record was a dead individual discovered on Brownsman on 14 October.

**Table 19** Day totals of Garden Warbler in early September.

September	7	8	9	10	11
Inner Farne	28	14	5	2	2
Brownsman	12	16	10	6	4
Day total	40	30	15	8	6

### **Blackcap** *S. atricapilla*

A common passage visitor.

This distinctive summer visitor usually arrives on the islands in mid-April as small numbers move from the nearby continent to summer in Britain. However the first of the year, a male, arrived on the early date of 31 March onto Inner Farne, representing the joint earliest Farnes record, matching the previous records set in both 1994 and 2004. The only other record during this early period involved another male on Inner Farne on 3 April. Thereafter small numbers filtered through the islands in late April with two on 23-24 increasing to three on 25 April. Further records included 1-2 on ten dates from 28 April-14 May with a very late passage male observed on Brownsman on 10-11 June. The first autumn bird arrived on Brownsman on 5 September and after onshore winds, good numbers were recorded over the following week (Table 20). Throughout the autumn period, smaller numbers of 1-5 were present until mid-October when records decreased. Late passage birds involved a male on Brownsman on 23 October and a female on Brownsman on the late date of 20 November

**Table 20** Peak totals of Blackcap on selected dates in 2010.

Date	September						October
	7	8	9	27	28	29	9
Inner group	5	5	5	15	10	8	13
Outer group	6	15	8	18	8	9	15
Day total	11	20	13	33	18	17	28

### **Yellow-browed Warbler** *Phylloscopus inornatus*

An uncommon passage visitor.

Records of this Siberian sprite continue to increase annually, a statistic mirrored nationally, and the Farnes have now boasted fifty-seven in the previous ten years compared with thirty-eight in the 1990s and twenty-four in 1980s. This year produced three records, all typically found during the late September-early October period. The first of the year was discovered on Inner Farne on 27-30 September and despite its vocal tendencies, could be elusive for long periods. A more obliging bird showed intermittently on the artificial tree on Brownsman on 8 October and the final record concerned another on Inner Farne by the ponds on 11 October.



### **Pallas's Warbler *P. proregulus***

A scarce passage visitor.

Discovering one of these stripy Siberian waifs can brighten up the coldest of any autumn day. The islands boasted two during the autumn, after influxes into the north-east of England. A stunning individual was discovered on Inner Farne on 8-11 October (the first autumn record in the UK) and showed well throughout its stay, favouring the area to the north of the Pele Tower. A second individual arrived during another east coast influx, with a single again on Inner Farne on 9 November, favouring the dock bank. These represent the sixteenth-seventeenth Farnes records after the first on 19 October 1975, although noticeably the first records since October 2005.

### **Wood Warbler *P. sibilatrix***

An uncommon passage visitor.

This striking summer visitor remains scarce on the Farnes with reports of passage individuals in thirty-five years since the first was recorded in May 1951. The season produced three records (the first since 2008) with individuals on Brownsman on 6-7 August (favouring the artificial tree) and 14-15 August (favouring the vegetable garden). The third record of the autumn concerned one lingering on the central meadow on Inner Farne on 7 September.

### **Chiffchaff *P. collybita***

A common passage visitor.

This early-returning summer migrant is one of the first to appear on the islands and this year proved no exception when an individual was discovered on the dock bank on Inner Farne on 24 March with three present the following day. There was an almost daily appearance of 1-3 from 26 March-11 May (including occasional singing individuals) with a modest peak of five on 30-31 March. The final spring sightings included individuals on Staple Island on 23-24 May and Brownsman on 7, 10-11 June. After a two month absence the first autumn birds were recorded on 9 September and after easterly weather fronts some impressive numbers were recorded as shown in Table 21. The overall island count of 147 on 10 October involved island totals of seventy on Inner Farne, sixty-three on Brownsman, six on West Wideopens, five on North Wamses and three on Longstone; this is a new Farne count which easily surpasses the previous record of sixty in October 1995. After these unprecedented numbers, 1-3 were recorded into early November. Late individuals included singles on Inner Farne on 18-20 November and two on Brownsman from 21-25 November. One of the latter birds was partially leucistic as the bird showed a white collar and pale legs.

**Table 21** Day counts of Chiffchaff on selected dates

Date	September				October			
	27	28	29	30	8	9	10	11
Inner Group	15	20	15	10	30	39	76	45
Outer Group	33	44	24	15	21	23	71	38
Day total	48	64	39	25	51	62	147	83

### **Willow Warbler** *P. trochilus*

A common passage visitor.

It was a good year with the earliest ever report followed by good numbers recorded during the spring and autumn. The early spring produced one of the earliest ever Farnes records as an easterly weather front brought two to Inner Farne on 31 March. Thereafter, the spring produced records of 1-12 on twenty-nine dates from 1 April-6 June with a peak of twenty-five scattered across the islands on 23 April including nine on Inner Farne, six on Brownsman, five on Staple Island, three on Longstone Main, and two on Longstone End. The following few days produced counts of fifteen across the islands on 24 and thirteen on 25 April. The final spring record concerned an individual lingering on Brownsman on 8-9 June. The first autumn birds started filtering through the islands from mid-July with singles on Brownsman on 20 and Inner Farne on 22 July. As the summer progressed, autumn passage gathered momentum with reports of 1-17 noted on seventy dates until last recorded in mid-October. The large 'fall' of common migrants in early September produced the bulk of records (Table 22). The last record of the year concerned singles on Inner Farne and Brownsman on 9 October.

**Table 22** Peak counts of Willow Warblers in early September 2010.

September date	7	8	9	10	11
Inner Group	25	20	12	15	7
Outer Group	10	10	16	7	4
Day total	35	30	28	22	11

### **Goldcrest** *Regulus regulus*

A common passage visitor.

The presence of this diminutive sprite is often given away by its distinctive high-pitched call and, in complete contrast to the previous season, huge numbers were seen during the autumn. Spring passage was very quiet with just three confirmed sightings, with two on Inner Farne on 25 and 30 March and a single on 6 April. However the autumn made amends with a huge intake after a 'fall' of common migrants. The first of the autumn arrived on 9 September with five across the islands followed by four on 11 and singles on four dates until 26 September. After a spell of easterly winds, two major influxes occurred in late September and early October as shown in Table 23. The peak count of 246 across the islands (including 180 on Inner Farne alone) on 10 October was the third-highest ever recorded Farnes count, although well short of the 1,000 present on the islands on 11 October 1982. After the huge influx, numbers dwindled soon after and the final records concerned seven on 18 October including five on Inner Farne and two on Brownsman.



Table 23 Peak counts of Goldcrest on selected September and October dates.

Date	September				October			
	27	28	29	30	9	10	11	12
Inner Group	30	25	20	15	61	205	68	13
Outer Group	21	17	9	5	26	41	20	8
Day total	51	42	29	20	87	246	88	21

#### Spotted Flycatcher *Muscicapa striata*

A well-represented passage visitor.

The pattern of records followed the previous season and there were no spring records. With the onset of an easterly weather front in early September, the islands produced their first records of the year and went on to claim good numbers over the following week. The first of the year arrived on Brownsman with two present on 6, followed by singles on Inner Farne and Brownsman the following day. 8 September brought a major influx with twelve across the islands including eight on Inner Farne, which represented the second highest-ever day count on the islands. Good numbers remained with nine present on 9 and four on 10-11, dwindling to 1-2 on 12-13 September. Thereafter the final records two birds to Brownsman on 27 September with singles on 1 October and 9 October (the latter was the latest since 1994).

#### Pied Flycatcher *F. hypoleuca*

An uncommon passage visitor.

This majestic black and white flycatcher is becoming a scarcity on spring passage as the islands produced no records (it has only been recorded once in spring in the past five years). The first records of the year involved autumn passage birds with singles present on Brownsman on 14 and 16 August. September brought the majority of the year's records as three arrived on Brownsman on 5, followed by three across the islands the following day. Numbers increased with five on 7 peaking at a season best of six on 8 September. Numbers dwindled thereafter with three on 9 and singles present on 10-11 September. Small numbers continued to move through in September, favouring the outer group with 1-2 noted on four dates between 20-23 September. However a second 'fall' of common migrants during late September brought another influx with 1-4 present daily between 26-30 September with a peak of five on 27 and 29 September during this period. The final record concerned one on Brownsman on 1 October.

#### Red-backed Shrike *Lanius collurio*

An uncommon passage visitor.

This migratory predator was recorded on the islands for the third consecutive year bringing the islands total to an impressive eighty-seven in forty years. An adult female arrived on Brownsman on 9-10 June and during its stay was seen to predate a recently fledged Rock Pipit. The bird favoured the solar panel framework as its main perch and despite the presence of the breeding Arctic Terns, remained for two days before moving on.

**Great Grey Shrike** *L. excubitor*

A scarce passage visitor.

Despite regular appearances in the 1970s and 1980s, after a first-winter in October 1991, there was a surprising fourteen year wait for the next. The jinx finally ended on 28 March 2005 and the islands have produced two more since, with individuals in October 2006 and November 2008. However this season went one better, as the outer group produced an unprecedented three records including two together. During an easterly weather front in late September, a bird arrived on Brownsman at 10:35 on 27 September and was seen to predate both Blackcap and Robin during its stay. Incredibly, a second bird arrived in mid-afternoon on the same island and at one stage both birds were seen together on the artificial tree. However soon after, one departed west and was presumably the same individual which arrived on the nearby mainland at Bamburgh later that day. The other individual remained on Brownsman until the following morning before departing at 07:30. To complete a great autumn, a third bird was found on Longstone on 9 October favouring the buildings around the lighthouse. The bird, a very confiding individual, showed well and was seen to take a Chaffinch in the presence of the wardens. On inspection of its cache, the bird had also predated Goldcrest, Wren and Robin during its short stay.

**Magpie** *Pica pica*

A rare visitor.

This almost-mythical Farnes rarity appeared on Inner Farne when an individual was discovered in the vegetable garden before moving up to the lighthouse area on 21 March. The bird remained for the day before eventually flying west in late afternoon. This represents only the sixth Farnes record after two sightings in 1983 and individuals in September 1993, April 1997 and April 2007.

**Jackdaw** *Corvus monedula*

A well-represented visitor. Former breeder, last in 1966 (Wilson and Noble-Rollin, 2010).

The species is still a scarce visitor with the majority of reports involving birds passing overhead during the early spring period. It was a quiet year with all spring sightings confined to the inner group with records including five south on 23 March followed by two west on 7 April and three east on 12 April. Eventually the outer group produced its first records during the autumn as three moved west over Brownsman on 23 September. An individual west over the outer group on 4 October was later seen over the inner group whilst the final record concerned two on Brownsman on 10 October.

**Rook** *C. frugilegus*

A well-represented visitor.

This town and country *corvid* wanders to the islands in small numbers in spring and autumn although rarely landing and often returning west after brief forays. The inner group dominated spring sightings and after two east over Inner Farne on 22 March, 1-3 were seen over the inner group on seven dates between 3-26 April. As usual, the autumn period was very quiet, with three records, all from the outer group. After six over Brownsman on 20 September, two were seen on 23 September with a single on 4 October to complete a generally quiet year.



### **Carrion Crow** *C. corone*

A well-represented visitor and rare breeding species.

As usual, the species was well reported throughout the spring and autumn period with large numbers noted. The inner group produced almost daily sightings from mid-March (when the wardens arrived) until 4 May, whilst records on the outer group were more infrequent during this period. Generally small numbers were seen foraging on the islands although large spring movements included fifteen south on 23 March, twenty-two on 9 April, a spring peak of thirty north on 16 April, eighteen east on 17 April and seventeen east on 24 April. Interestingly as the summer progressed, reports virtually stopped although a lone individual was seen on Brownsman on thirteen June dates. After a single on 2 July on Staple Island, there was a complete absence of records until 11 September when two flew over Inner Farne. It was a quiet autumn with a modest peak of ten west on 6 October and the majority of sightings were made from the inner group with almost daily sightings of 1-2 birds. Interestingly, the species remained scarce on the outer group with sightings on only thirteen dates during the September-December period.

### **Starling** *Sturnus 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 European during the autumn months. As usual, small numbers were present in early spring with 1-6 noted on eleven dates from mid-March until early May. Family parties started to utilise the islands from 14 June and thereafter there was a continued presence until the wardens departed in early December. Numbers were generally low with a peak of 100 on 27 July comprising of birds from local populations whilst continental influxes brought small numbers on westerly passage during the autumn with a peak of eighty on 1 September.

### **Chaffinch** *Fringilla coelebs*

A common passage visitor.

It was a much improved year compared with the ten records from the previous season. Spring passage commenced with two on Inner Farne on 28 and 30 March with an influx of thirteen on 31 March. Thereafter 1-3 were reported on four dates in early April with the last spring record involving a single on Inner Farne on 17 April. A total of five graced Brownsman on 20 September, indicating the start of autumn passage; after a quiet spell which produced 1-5 over the following week, good numbers arrived during a period of easterly weather. However these numbers were eclipsed by a second huge wave of birds in early

**Table 24** Chaffinch influx in September and October.

Date	September			October					
	28	29	30	1	8	9	10	11	12
Inner Group	15	40	15	15	20	50	25	10	12
Outer Group	49	49	30	30	12	123	50	35	37
Day total	64	89	45	45	32	173	75	45	49

October (as shown in Table 24) which included a Farnes record count of 173, eclipsing the 160 seen in September 2000. Numbers gradually declined after the influx and 1-3 were seen until 21 October. The final record involved a late individual on Brownsman on 17 November.

**Brambling** *F. montifringilla*

A common passage visitor.

This handsome northern finch was noted on both spring and autumn passage and, as with the chaffinches, was well reported during autumn migration. Spring produced just two records as one arrived on Inner Farne on 25 March whilst an almost summer-plumage male was seen on the same island on 6 April. The first autumn birds started filtering through the islands on 20 September with two present on Brownsman and an individual on Inner Farne. After nine on 21 September, small numbers were seen daily from 22-26 September followed by the first major influx of the autumn. Even-greater numbers were recorded after yet another easterly weather front in early October (Table 25). During the heaviest passage, birds were lingering on both island groups (150 on Inner Farne and twenty-five on Brownsman on 9 October) with a westerly passage also being logged. However these totals were still short of the all-time record of 750 in October 1987. After the major influxes, numbers dropped with very light passage of 1-2 recorded over the following week. Late individuals were seen on Inner Farne on 3-7 November, Brownsman on 9 November and the last of the year on Inner Farne on 12 November.

**Table 25** Brambling passage in late September and early October.

Date	September				October			
	27	28	29	30	8	9	10	11
<b>Inner Group</b>	45	50	60	10	111	150	30	15
<b>Outer Group</b>	74	37	45	11	88	49	46	15
<b>Day total</b>	119	87	105	21	199	199	76	30

**Greenfinch** *Carduelis chloris*

A well-represented passage visitor.

It was a dismal season (even worse than last year) for this large seed-eater and it has now been four years since large numbers congregated on the islands during the late autumn. The year provided just two records, both from the inner group when individuals flew west over Inner Farne on 21 March and 17 October.

**Goldfinch** *C. carduelis*

A well-represented passage visitor.

Predominately a spring bird on the islands, reports were received from six spring and two autumn dates. The first of the year was noted flying west over Inner Farne on 23 March and was followed by 1-2 on five dates from 3-24 April. Autumn, as usual, was quiet with two confirmed records: singles on Brownsman on 30 September and 25 October.

**Siskin** *C. spinus*

A common passage visitor.



It was a reasonable year for passage with small numbers recorded on spring passage with a noticeable influx during the autumn. The first of the year involved two west over Inner Farne on 21 March followed by individuals on 24 and 28 March. The only other spring reports concerned three north over the inner group on 8 April and a female roosted in the courtyard wall of Inner Farne on 11 April. A very unusual mid-summer record involved a male on Longstone on 8 June. Autumn passage commenced on 8 September with nine west over Brownsman which became part of a larger flock which had gathered on Inner Farne, peaking at twenty-three by dusk. The flock remained throughout the following day increasing to twenty-six before all departed before dusk. Thereafter 1-4 were recorded on four dates until a noticeable influx occurred from 28 September (Table 26). Birds were recorded daily throughout this period and into early October before gradually declining in number. The final records involved fourteen west over Inner Farne on 10 November with two associating with Linnets on the same island on 12 November.

**Table 26** Siskin passage over the Farne Islands in late September and early October.

Date	September			October				
	28	29	30	1	2	9	10	11
<b>Inner Group</b>	42	15	10	10	9	14	29	15
<b>Outer Group</b>	29	35	32	32	25	23	25	35
<b>Day total</b>	71	50	42	42	34	37	54	50

#### **Linnet** *C. cannabina*

A common passage and winter visitor. Bred in the 1890s (Kearton, 1898).

Numerous throughout the year with good numbers lingering alongside passage birds moving through the islands. There was a daily presence of 1-5 from March to early May involving lingering individuals and birds on westerly passage with a peak count of six on 8 and 16 April. The final spring sightings involved an individual west over Inner Farne on 18 May and one lingering on Staple Island on 18-22 May. Autumn passage commenced with the arrival of two on Inner Farne on 18 September. Thereafter good numbers were recorded daily as birds took advantage of various seeds on Inner Farne with a resident flock of up to thirty throughout October. Numbers continued to build with a peak of seventy-nine on 1 November whilst up to sixty were noted on several dates until the wardens departed in early December.

#### **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, predominantly during the autumn months (the last Farnes spring record occurred in 2003). This season was in complete contrast to the previous year as only small numbers were reported with records on just five dates. The first of the year were discovered amongst Linnets on Inner Farne on 12 October with three noted: two were

also present on 17 October. Further records included a single on Inner Farne on 13 November with two on Brownsman on 14 November. During a hard-weather spell in early December, four were seen flying over Northern Hares before being rediscovered feeding on Staple Island and then Brownsman on 3 December. The following morning, as the wardens were leaving the islands for the winter, at least six graced Brownsman.

**Lesser Redpoll** *C. cabaret*

An uncommon passage visitor.

It was a quiet season for this small distinctive visitor and as the spring produced only handful of records with the first of the year lingering on Inner Farne on 24 March, followed by singles on 3 April and 18 April. The first autumn bird was discovered on Brownsman on 8 September and during a quiet autumn, 1-2 were recorded on eight dates from 28 September-11 October. Late autumn passage birds, part of a larger *Redpoll* spp influx, were seen with individuals on Brownsman on 8-10 November and Inner Farne on 13 November.

**Common Redpoll** *C. flammea*

An uncommon passage visitor.

It was an impressive season with two spring records and an influx during the late autumn. An individual was discovered near the lighthouse on Inner Farne on 30-31 March and showed well during its stay whilst a second individual lingered on Brownsman on 24 April. These represented the first spring records since March 2006 and only the seventh and eighth spring sightings ever. After an individual on Inner Farne on 27 September, mid-October brought a single to Longstone on 8, with both island groups producing three on 10, six on 11, two on 12 and a single on 16 October. The most noticeable influx occurred during November after a series of north-easterly winds which brought one to Inner Farne on 9 November followed by 1-4 recorded daily from 15 November-2 December, peaking at eight on Brownsman on 22 November. This is the best showing on the islands since 2005.

**Arctic Redpoll** *C. hornemanni*

An extremely rare visitor.

This was one of the outstanding records of the year as a stunning individual graced Brownsman from 24 September-2 October. The bird was identified as belonging to the Nearctic race *Hornemanni*, which has a breeding range restricted to Ellesmere and Baffin Island to northern Greenland. The bird's appearance, described as a 'white snowball', put the bird into context and it showed well throughout its stay. Although the Farnes boast two previous records of Arctic Redpolls with a single on 3 October 1989 and up to four in December 1995, this was the first confirmed record of this race on the islands and Northumberland.

**Common Rosefinch** *Carpodacus erythrinus*

An uncommon passage visitor.

The Farnes continues to have the monopoly of records of this relatively frequent annual east-coast drift migrant in Northumberland, as it remains very scarce elsewhere in the County. Three were discovered during the year, all on the outer group when a female graced Brownsman on 9 June during a late flurry of spring passage. Further records included a brief-staying individual on Brownsman on 28 August but a more-obliging individual lingered on the same island from 23-27 September. This brought the Farnes total to sixty-four records since the first in May 1972 and was the twelfth consecutive year of Rosefinch records on the islands.



### **Bullfinch** *Pyrrhula pyrrhula*

An uncommon passage visitor.

Small numbers of the northern race *P. p. pyrrhula* infiltrated the east coast in mid-October and a stunning male was discovered on Brownsman on 9-11 October. The bird lingered for three days and showed well during its short stay, as its large size and bright colours made it an obvious feature of the island. This represented the first record since the unprecedented invasion of 2004 which brought a minimum of fifteen birds to the islands from 6 October-2 November. Prior to this record breaking year, the Farnes boasted fifteen individuals seen in nine years after the first in September 1829.

### **Lapland Bunting** *Calcarius lapponicus*

An uncommon passage visitor.

This was an extraordinary year marked by unprecedented numbers moving through the islands during the autumn. It appeared that an irruption of birds from West and East Greenland were moving through north-west Scotland in early September and birds started filtering down the east coast soon after. The first of this influx was noted on Brownsman on 3 September and increased to three the following day (all were confiding individuals). All three lingered until 11 September although there was evidently a 'turn-over' of birds as singles were recorded over the inner group on three occasions during this period. Thereafter 1-2 were recorded either flying over or landing on the islands on a further twelve dates between 14 September-5 October. As the autumn progressed, the number of records decreased although six west over Brownsman on 12 October represented the second-highest ever Farnes count. The final records of the year involved a single on Brownsman on 19-20 November with another on the dock bank of Inner Farne on 27 November. To place this into a Farnes context, the previous ten years have produced an average of four birds per year whilst this influx produced a minimum of twenty-six individuals on twenty-four recording dates.

### **Snow Bunting** *Plectrophenax nivalis*

A well-represented passage visitor.

This charismatic visitor had an average year with reports from both the spring and autumn. Spring was marked by three sightings as individuals were seen flying north over Inner Farne on 27 March, 2 April and 13 April, the latter sighting involving an adult male. An individual on Brownsman flats on 21 September heralded the start of autumn passage and thereafter small numbers were recorded on twenty-nine dates until the wardens departed in early December. There appeared to be no over-wintering flocks although small numbers of 1-6 moved through on a regular basis often utilising the islands for food and shelter. Peak counts included seven west over Inner Farne on 13 November whilst a very confiding juvenile (down to one metre at times) was discovered on Brownsman in mid-November.

### **Yellowhammer** *Emberiza citrinella*

An uncommon passage visitor.

It has been a poor few years on record as 2008 produced a 'no show' and last year just one individual was recorded. Unfortunately the trend continued with just a single report of a first-winter which lingered on Inner Farne, favouring the top meadow from 8-10 October before departing westwards towards the mainland.

**Ortolan Bunting** *E. hortulana*

An uncommon passage visitor.

The species has become nationally scarce in recent years; however, after individuals in 2007 and 2009, records are on the up for the islands. During a large 'fall' of common migrants on 8 September, two confiding first-winters were discovered near the lighthouse on Inner Farne. The birds showed well and were often heard calling as they moved to different feeding areas of the island. Both were present throughout the following day and suspicions were starting to grow about the possibility of three birds being involved. These suspicions were confirmed on 9 September and all three were observed together on the north rocks. At least two remained until 11 September but became more elusive during their stay. Although the Farnes boast thirty-eight previous records, this was the first occasion that three have been seen together.

**Little Bunting** *E. pusilla*

An uncommon passage visitor.

The Farnes can claim thirty-nine previous records of this demure bunting, after the first in 1977 and it is almost an exclusive to the islands within Northumberland, where it remains a very rare bird. An individual was discovered near the cottage on Brownsman on the evening of 29 September but was not present the following day. This represents the first record since autumn 2007.

**Reed Bunting** *E. schoeniclus*

A well-represented passage visitor.

There was a reasonable showing during the year, especially on autumn passage. A scruffy-looking male was heard singing from the elders on Inner Farne on five dates from 21 March-11 April, raising the potential that it could have been the same individual which carried out similar behaviour at the same time of year the previous season. Away from this, a female arrived on Inner Farne on 31 March-1 April with a different male seen on the ladies path on 26 April. The first autumn returnees involved a pair on Brownsman on 7 September followed by 1-5 on nine dates until 7 October. After a switch in wind direction to one with a more easterly feel, the islands had a noticeable influx over the following few days. Nineteen were recorded on 8 with thirty-one on 9 October (seventeen on the inner group, fourteen on the outer group). Thereafter numbers rapidly declined with eight on 11 and what proved to be the final records of the year involving three on 12-14 October.

**Exotica**

**White-tailed Eagle** *Haliaeetus albicilla*

An extremely rare visitor – but release birds seen only.

This was probably one of the most controversial and talked-about avian visitors of all time! An immature was discovered flying off Crumstone before settling on Staple Island on the afternoon of 28 August. The bird, sporting large yellow wing tags with the letter 'V', had been released ten days previously, as part of the release program in Fife, East Scotland. The bird remained for eighteen days and during that period preyed upon a number of almost-ready-to-fledge Fulmar young as well as two Shags. The bird remained loyal to Staple Island throughout its stay and could often be seen sitting on the old lighthouse beacon on the island. It was a very unwelcome guest as the local bird population did not take to it kindly and even a local Peregrine was observed mobbing it on one occasion. Due to its recent-



ly-released background, the bird cannot be 'counted' on official lists but the sight of such a huge formidable predator will live long in the memory. The bird finally departed on 14 September in strong north-westerly winds and appeared to make landfall near the High Newton area of north Northumberland.

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## FARNES RINGING AND RESEARCH REPORT FOR 2010

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### RESEARCH PROJECTS

The core seabird research themes on the Farne Islands are monitoring the population dynamics of breeding and survival of Arctic Terns, Puffins, Kittiwakes and Shags, and identifying the foraging strategies of these species in relation to local food resources. Both themes are heavily underpinned by the use of ringing as a research tool, but incorporate other techniques and technologies to increase the value of the data. For the first time in 2010, Global Positioning System (GPS) dataloggers were temporarily attached to the back feathers of Kittiwakes nesting on Brownsman (Fig. 1). These small dataloggers weigh about 15 g and were set to record position in latitude and longitude at 30-second intervals. They were attached so that they would fall off naturally in a few days if it was not possible to recapture the bird after twenty-four hours to download the data. Fourteen of twenty-two dataloggers attached were successfully recovered and of these, eleven were undamaged and had functioned correctly. The data obtained now offer a fascinating insight into the foraging strategies, behaviour and locations of these seabirds (Fig. 2). Detailed studies carried out by Richard Bevan into the foraging strategies of Shags and Puffins also continued, and with the accumulation of radiotracking, time-depth recorder data and GPS foraging-position data for these two species over several years, Richard now has a detailed insight into the foraging behaviour of individuals in relation to the local environment and food resources around the Farnes.

Studies of the effect of human disturbance on the breeding biology of Farnes seabirds was expanded with two new projects, carried out by Masters students April Eassom and Annalise Bailey, designed to investigate the effects of disturbance on Puffin (April) and Arctic Tern (Anna) breeding success. These projects produced interesting results: the Puffin study suggested that breeding success was actually higher in areas of high visitor disturbance. For the Arctic Terns, the results were less clear cut, but if there was a negative impact of visitor disturbance on overall productivity or chick 'quality', this was too small to be measured with any degree of confidence.

The long-term monitoring of Arctic Terns, Kittiwakes and Puffins with respect to the biometrics (mass and structural measures of size such as wing length and total head length) of adults and chicks continued and had a successful year. There was a good sample of adults for biometric analysis for all three species, particularly Arctic Terns (see Ringing totals section). Measurements of size-corrected chick body mass suggested that feeding conditions during the season were relatively good, although there was, nevertheless, a relatively high mortality of the second-hatched chicks ('b' chicks) of Arctic Terns. Retrapping the adults of a range of seabird species is particularly valuable. With respect to the Arctic Terns, we can now begin to estimate the degree of interchange of birds raised on the Farnes with other colonies, and can compare, for example, recruitment into the Inner Farne colony of birds from Brownsman, the Long Nanny (a mainland colony) and colonies further away such as Coquet Island 30 km to the south, and vice versa.

To help us understand the year-to-year movement of birds between different nesting areas on Inner Farne in relation to visitor disturbance, we now record the nest site of individual adult Arctic Terns on a detailed gridded map of key nesting areas on islands to within a couple of metres. This should allow us to say whether or not these birds prefer to nest in areas of high visitor disturbance where they may gain protection from predation.

## RINGING TOTALS AND ACTIVITY IN 2010

Ringling and capture seabird totals for 2009 are summarised in Tables 1-3. Overall, it was a successful season and the capture total (retraps and new birds) was 1,917 birds, up from 1,565 the previous year. The ringing total has benefited enormously from the efforts of the Wardening team, in particular Mark Breaks and Jason Moss who had ringing permits and ringed seabirds in their spare time. Mark and Jason also increased the range of species ringed in recent years by adding Oystercatcher, Ringed Plover, Herring Gull and Lesser Black-backed Gull to the list. The main increase in totals ringed was in the number of Sandwich Tern chicks which increased by over 400 ringed compared to 2009. The number of adult Eider and Shags ringed and retrapped was somewhat lower than the previous years, but these totals can vary substantially due to logistics of the ringing team, the number of birds that have returned to breed in a particular year and concern to minimise disturbance wherever possible. The increase in the number of adult Arctic Terns ringed and retrapped to 170 is an excellent return on the effort and will be a substantial addition to the biometric database and our understanding of the breeding biology of this species. When the Farnes totals for Arctic Terns are combined with the totals for Coquet Island, in 2009 the team was responsible for over 75% of the UK total for adult Arctic Terns ringed.

## RINGING RECOVERIES

As in previous years, most of the recoveries received related to Sandwich Terns and Shags. The number of Sandwich Tern recoveries has been increased substantially this year as a result of a project being carried out by the Grampian Ringing Group (GRG) on the Ythan Estuary, adjacent to the Sands of Forvie Nature Reserve which contains a Sandwich Tern breeding colony of some 1500 pairs. The aim of their project was to identify the origins and subsequent dispersal of Sandwich Terns using the Ythan in the autumn. Between 27 July and 18 September the Grampian Ringing Group caught 416 Sandwich Terns and amongst these were ten adult and fourteen juvenile Sandwich Terns from the Farnes. This is excellent confirmation that many of our Sandwich Terns travel north after breeding, in this case a distance of over 190 km, before migrating to African waters for the winter. Of the adult Sandwich Terns caught there, one was an old bird from 1986 (twenty-four years old when caught) while the others were ringed on Inner Farne or Brownsman in the years between 1996 and 2006 inclusive. Many of the Sandwich Terns caught by the Grampian Ringing Group were fitted with white, individually-lettered (in black) darvic rings on the left leg (Fig. 3), so these will be birds to look out for on the Farnes in 2011 and beyond. Some of these birds have already been resighted by GRG members since the darvic rings were fitted: EHD (Fig. 3), originally ringed on Brownsman in 1998, was caught on the Ythan on 25 August and resighted almost a month later still in the area at Burghead, Moray, on 20 September. EPH, a chick ringed on Inner Farne in 2010 was caught on the Ythan on 30 August and resighted at Girdleness, Aberdeenshire, on 11 September. Clearly, 'our' Sandwich Terns may remain there for some time before heading back south for the winter and the Ythan may be an important post-breeding staging area for Sandwich Terns from Northumberland and elsewhere in the UK.

Elsewhere in the UK, one of the juvenile Sandwich Terns from Inner Farne in 2010 was caught at Seal Sands, Teesmouth, on 4 September. Four Sandwich Terns were found dead, two were found locally in Northumberland (ringed in 1998 and 2002), a juvenile from 2010 was found dead on the River Tweed, 14 km from Berwick-upon-Tweed, and the predated remains of an adult, ringed as a chick on Inner Farne in 2008, was found at Montrose in July 2009.



There were eight recoveries of Sandwich Terns reported from outside of the UK. Four of these were of birds in breeding colonies elsewhere in Europe. Three birds, ringed in 1996 (Inner Farne), 1998 (Brownsman) and 2006 (Inner Farne), were in the Hirsholm colony in northern Denmark in June 2010 where their rings were read in the field by ringer Kjeld Johnny Petersen. A different bird ringed as a chick on Brownsman in 1998 was seen at the North Frisian Islands, Germany, on 5 and 24 June 2010 where it was also, presumably, breeding. The other four recoveries were all winter recoveries (October 2009 to February 2010) of birds in Africa; two, birds ringed as chicks on Brownsman and Inner Farne in 1998 and 2001, respectively, were controlled in February 2010 by ringers at Swakopmund, Namibia (over 8,800 km south of the Farnes), one (ringed as a chick on Inner Farne in 2008) was controlled by ringers in at Port Alfred, South Africa (over 10,200 km south of the Farnes), and a chick ringed on Inner Farne in 2006 failed to survive an interaction with the mouth of a dog at Tlemcen, Algeria in December 2009. This recovery location in Algeria is some 50 km from the Mediterranean coast but close to an inland water body. It is, nevertheless, great to see that very few of our long-distance recoveries relate to deaths and most tend to be recaptures by ringers.

Very few adult Sandwich Terns are ringed on the Farnes but a chance capture of a ringed bird that strayed too close to the team ringing Sandwich Tern chicks shows that birds are also recruited into the Farnes colony from elsewhere. This adult Sandwich Tern was originally ringed as a chick in a colony of around 1,200 pairs at Lady Island Lake, County Wexford, the south-east tip of Ireland, in 1992.

Now that substantial numbers of Shags on the Farnes have been fitted with bright-red, individually-lettered colour rings in the last two breeding seasons, these are generating a lot of sightings. Fourteen birds (first-year birds and adults) were seen along the coast last winter from Bamburgh north to Fife and Grampian region (Peterhead, Portknockie, Dunnottar, Cruden Bay), mainly recorded by one observer. In addition to these sightings of live birds, dead recoveries were reported from Eyemouth (juvenile from 2009), Cramond (Edinburgh; ringed as a chick in 2003), Gullane (Lothian; juvenile from 2009) and Elie (Fife; juvenile from 2009). In contrast to these northerly recoveries, a chick from the 2010 breeding season was found dead after stormy weather at Norwich, Norfolk at the end of September 2010. This pattern of movement, heavily biased towards a northerly movement of birds from the Farnes, fits in with the patterns of previous ringing recoveries. Two further recoveries, however, are relatively unusual: two juveniles ringed in 2009 were recovered dead during the following winter, 60 km apart, in the north Netherlands. As one was reported freshly dead on a pier and the other reported as found sick, they clearly got there under their own steam. A Shag ringed as an adult on Inner Farne in July 1997 was found dead at Bamburgh in June 2010. Although the longevity record for a Shag in the UK is nearly thirty years, a life-span of around twelve years is more typical so this bird (which was at least two years old when ringed) has done well.

Although the number of Arctic Tern recoveries is unlikely to compete numerically with those for Sandwich Terns, the few Arctic Tern recoveries have proved interesting this year. The highlight was undoubtedly CE60645, originally ringed as a chick on Inner Farne by Property Manager John Walton on 28 June 1980 and retrapped as a breeding adult on Inner Farne on 24 June 2010. At a whisker under thirty years since ringing, this was a UK longevity record for the species from BTO ringing (and just a year short of the European record). We will be on the lookout for it next year! Three Arctic Terns that have fared less well in the longevity stakes were recovered dead on Inner Farne, their natal island, this year; two

Fig 1 Datalogger being attached to a Kittiwake. Photograph by Stuart Will.



Fig 2 Path of a foraging Kittiwake, nesting on Brownsman.

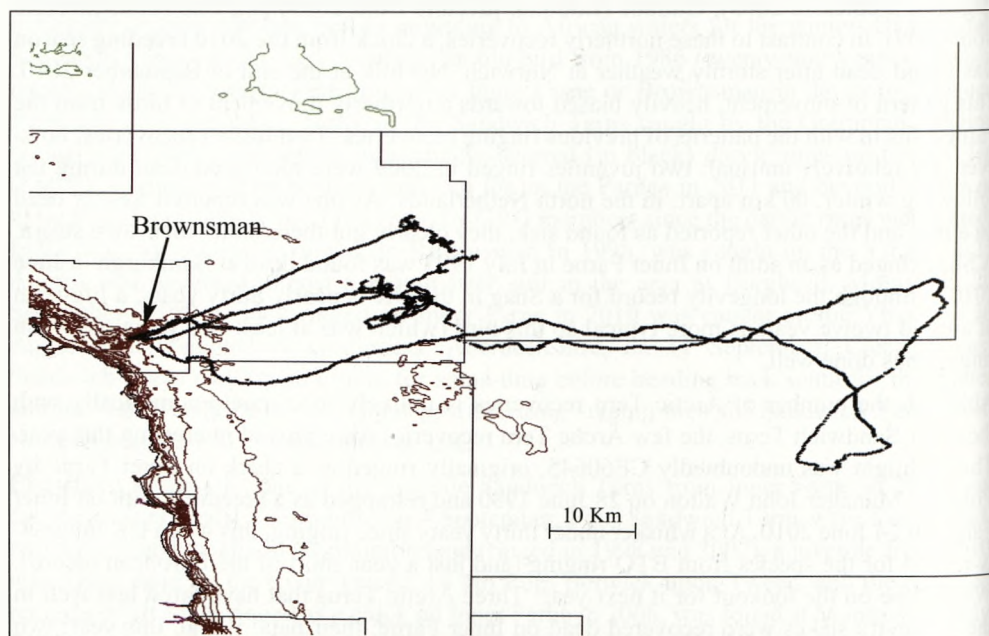




Table 1: Adult seabirds retrapped or 'controlled' in 2010 compared to 2009.

Species	2009	2010
Storm Petrel	1	2
Shag	26*	20
Eider	54	38
Puffin	0	15
Kittiwake	12	39
Arctic Tern	67	81
<b>Total</b>	159	196

\* includes sight records of birds by Emily Barlow.

Table 2: New adult seabirds ringed in 2010 compared to 2009.

Species	2009	2010
Storm Petrel	5	12
Fulmar	0	2
Shag	34	17
Eider	36	15
Puffin	128	90
Kittiwake	53	54
Arctic Tern	68	89
Common Tern	0	0
<b>Total</b>	324	279

(one ringed as a chick in 1986 and one ringed as an adult in 2006) were natural deaths while the third met a more violent end and was squashed when a visitor fell off the boardwalk onto the sitting bird. On a happier note, two of the breeding adults that were trapped this year were birds recruited to Inner Farnes from the Long Nanny tern colony (ringed as chicks in 1997 and 2000) and another had been ringed in July 1989 as a chick in a colony on the Skerries, Anglesey, north Wales. The only long-distance movement of a Farnes-ringed Arctic Tern reported this year was a bird ringed on Brownsman as a chick in July 2009 which was found dying near Freetown, Sierra Leone, on 30 May 2010. This is an interesting recovery: most Arctic Terns do not return north to breed until their third calendar year and, while a recent study using geolocators fitted to adults has shown us something of the migration routes of breeding birds, finding out where the young birds spend their first full summer is going to be much more difficult, so recoveries such as these are important.

The Common Tern is not one of our usual target species on the Farnes, but ten chicks were ringed by the wardens. Two birds, with consecutive ring numbers and both ringed on 30 June 2010, were recovered the same year, but had very different fates. One was found dead near Bamburgh within a month of ringing, while the other had clearly fledged successfully and was caught by a ringing team at Seal Sands, Teesmouth, on 18 August.

**Table 3:** Chicks ringed in 2010 compared to 2009.

Species	2009	2010
Fulmar	47	64
Shag	41	68
Puffin	80	126
Kittiwake	237	76
Black-headed Gull	4	24
Herring Gull	0	1
Lesser Black-backed Gull	0	4
Sandwich Tern	161	571
Common Tern	0	10
Arctic Tern	512	486
Oystercatcher	0	7
Ringed Plover	0	5
<b>Total</b>	<b>1082</b>	<b>1442</b>

Two Kittiwakes were reported this year; both were sight records where the rings were read in the field and both birds, ringed as chicks and from adjacent nests on Brownsman in July 2006, were seen at the same site, Bulbjerg Klint, Hantsholm, northern Denmark (680 km north-east of the Farnes), one on 19 and 21 May 2010 and the other also on 19 May 2010. Bulbjerg Klint has a colony of some 300 pairs of Kittiwakes and is the most important nesting site for Kittiwakes in Denmark (Kittiwake population 450-500 pairs); given that the date of the observations is well within the breeding season, it is likely that these Farnes-bred

chicks have been recruited into the Bulbjerg Klint colony. It is also interesting to note that these Kittiwake sightings were from Johnny L Pedersen- father to Kjeld Johnny Pedersen, the ringer who has been reading Sandwich Tern rings in Hirsholm, just the other side of the Jutland Peninsular.

Black-headed Gulls do not feature heavily on the list of species ringed, but twenty-four chicks were ringed this year and one of those was spotted, independently



**Fig. 3** Sandwich Tern DB35720, ringed on Brownsman in June 1998, recaptured on the Ythan Estuary, Aberdeenshire, fitted with white darvic colour ring lettered EHD in Autumn 2010 and photographed at Burghead in Highland on 20 September. Photo by Dave Pullan.



by two people on 7 and 12 December 2010, at Loch Ryan, Stranraer, Dumfries and Galloway. This is quite a nice record; the team ring rather more Black-headed Gulls on Coquet Island each year and it is unusual to get a sighting or recovery away from the area.

Storm Petrels have been caught on the Farnes using sound lures in the last couple of years. This charismatic seabird only comes to land at night in the breeding season, and does not breed, as far as we know, along the north-east coast. Young birds breed after an age of four years and until they reach maturity they range widely over the North Sea and Atlantic oceans but can be attracted to beaches and headlands by playing the 'song' through loudspeakers. Of the fourteen Storm Petrels trapped in 2010, two were 'controls' of birds ringed elsewhere: one had been ringed on 27 August the previous year at Portacloy, Co. Mayo, Ireland- nearly 540 km east-north-east as the crow flies but a considerably greater distance via a coastal route. The other had been ringed on 3 August 2008 on the Isle of May. In addition, one of 'our' Storm Petrels ringed on Inner Farne on 8 August 2009 was controlled on 23 August 2010 on the Isle of May and one ringed on 24 July 2010 was controlled four days later 400 km north at Birsay, Orkney.

There were four reports of Farnes-ringed Eiders found away from the islands: three were found dead, two locally and one 43 km further north at Eyemouth, and one was a sight record where the ring on a female looking after a crèche of ducklings in Seahouses harbour was read by a visitor from Kent.

Finally, a ringed Oystercatcher found dead on Inner Farne on 5 June 2010 had been ringed as a chick on the Isle of May on 22 July 1994, making it just short of its sixteenth birthday.

#### Acknowledgements

The seabird colonies on the Farne Islands represent a tremendous resource for public enjoyment and conservation research. Facilitating these different uses so successfully, particularly in view of the additional burden that researchers place on the wardening team, takes a special skill and we are indebted to Property Manager John Walton and Head Warden David Steel for their enthusiastic support of our research and ringing studies. We are also extremely grateful to the Local Management Committee, chaired by Charles Baker-Cresswell, for their support and encouragement. The wardens Graeme Duncan, Tom Simon, Jason Moss, Mark Breaks, David Andrews, Wez Smith, Sarah West, Michael MacKinnon, Jamie Coleman and Matthew Smith frequently gave up their time to help get the team across to the islands and we greatly enjoyed their company and help with the ringing when their work allowed. The wardens generously shared their accommodation and facilities with us for short periods, and their culinary expertise was, as always, of an excellent standard! We are grateful for the opportunity to add the darvic rings to Farnes Shags and thank Emily, and Francis Daunt of CEH, for providing the rings. Stuart Will helped with the ringing studies and his assistance with recapturing Kittiwakes for recovering dataloggers was vital to the success of this project. We thank William Shiel and his crews on the *Glad Tidings* boats for lifts back to Seahouses when necessary. We continue to be indebted to the Sir James Knott Trust for their support of the seabird foraging project and thank the Dickinson Bequest fund of the Natural History Society of Northumbria for the grant which enabled us to purchase the GPS dataloggers for the Kittiwake project. We would also like to thank the Natural History Society of Northumbria for providing the rings, essential equipment and backup, and the ringing team for their time, expertise and enthusiasm.

CETACEAN REPORT 2010

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INTRODUCTION

The recording of cetaceans in the seas around the Farnes continued again in 2010, both by systematic surveying and the recording of casual sightings. This year continued a downward trend for records with only three confirmed species sighted and a total of forty-two sightings in the entire period from mid-March through to the end of November (Table 1). For the second time in two years there were no confirmed sightings of White-beaked Dolphins; 2009 was the first time on record that this species has not been recorded.

Table 1 Farne Islands cetacean sightings by month for 2010

Species	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Total
Harbour Porpoise	6	1	2	5	9	7	7		37
Minke Whale						2			2
Bottle-nosed Dolphin				1					1
Dolphin sp.				2					2
Total	6	1	2	8	9	9	7	0	42

SYSTEMATIC LIST

**Minke Whale** *Balaenoptera borealis*

Minke Whales were only recorded on one date in 2010, with two sightings on 19 September. This is the lowest number of recordings since 2006 and shows a marked drop as between 2003 and 2009 Minke Whales were recorded on an average of eight dates. The first 2010 individual was seen in the early morning, surfacing twice as it headed south from the Longstone. Later that evening, three were seen feeding in the same area as the wardens enjoyed a barbeque on the south end of Brownsman.

**Bottle-nosed Dolphin** *Tursiops truncatus*

There was only a single sighting of what is one of the most readily-identifiable dolphins in UK waters. On 21 July, seen from the warden's Zodiac boat in Inner Sound, two animals moved slowly north close to the Shorestone Buoy.

**Common or Harbour Porpoise** *Phocoena phocoena*

The last two years have seen a reported decline both in the number of sightings and the group size of Harbour Porpoises around the Farne Islands (Still, 2009). In 2009, a survey was set up to record systematically the presence or absence of porpoises from May through to August and this was continued in 2010.

The timed sea-watches produced three sightings of porpoises in a total of twenty-eight hours of recording (an average of one sighting every 9.3 hours). Whilst a slight improvement on 2009 (avg. 10.5hrs) this is too early in the study to draw conclusions. The number of casu-



al sightings showed a significant improvement on the last two years; however, totals were still appreciably down from the 2003-2007 period (Table 2). The increase in casual sightings this year was helped by the formal recording being undertaken by *Serenity II* during its journeys around the islands.

Overall, there were thirty-seven sightings on twenty-nine different dates in 2010 with groups of four or more seen on a number of occasions, particularly in September and October. The largest group was a pod of seventeen seen feeding for several hours through Inner Sound on 23 September. This is favourable when compared with the maximum group sizes in 2008 (max. 6) and 2009 (max. 4). The first calf was seen with two adults on 29 July and young animals were also seen on 6 August and in the bigger groups moving through in the autumn.

One possible explanation for the reduced number of sightings in recent years is a correlation with increased visitor numbers to the Farnes over this period and the increase in boat traffic that this brings about. Casual sightings of porpoises have been regularly noted further along the coast and these could be displaced animals from the Farnes. Sightings in 2010 were noticeably higher in September and October which has much lower visitor-boat traffic, particularly so in 2010 due to the adverse weather. At present, this is only a theory and a continuation of the timed watches and recording of boat presence through to October is needed to gather more data.

**Table 2** Farne Islands Cetacean sightings by year 2003-2010.

Species	2010	2009	2008	2007	2006	2005	2004	2003	Total
Harbour Porpoise	37	24	26	49	42	59	50	47	334
Minke Whale	2	5	6	7	1	14	8	7	50
Bottle-nosed Dolphin	1	7	3	5	3	10	8	1	38
White-beaked Dolphin			2	2	2	1	1	7	15
Risso's Dolphin		1		1	1				3
Humpback Whale		1							1
Basking Shark				5					5
Dolphin sp.	2								2
Grand Total	42	38	37	69	49	84	67	62	448

#### Unidentified Dolphin Records

On 30 July a group of eight large unidentified dolphins was seen in Staple Sound. The group moved north beyond North Wamses where they were viewed at long distance by wardens from Inner Farne. A tentative identification of White-beaked Dolphin was made but a visitor boat disturbed the group before the identification could be confirmed.

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## GREY SEAL REPORT 2010

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### INTRODUCTION

This was an interesting season with Grey Seal *Halichoerus grypus* pup numbers at their highest level for thirty-six years. The Farnes have now regained the lead from the Lincolnshire colony of Donna Nook as the largest Grey Seal colony in England (Table 1). The first pup in 2010 was discovered on the outer group on 18 September on the traditional first-pupping island of South Wamses. As usual, pupping was slow with fifteen born by 17 October but thereafter numbers increased rapidly, peaking on 14-15 November. In total, ten islands were colonised, including two inner group islands, and South Wamses remained the number one colony (Table 2).

### 2010 SUMMARY

Pups born: **1,499**

Largest three colonies:

South Wamses	<b>418</b>
Brownsman	<b>358</b>
Staple Island	<b>343</b>

Successful:	806
Unsprayed dead:	56
Sprayed Dead:	54
'Missing'	583

Mortality rate: 48.2% missing or dead from 1,499 pups

### Brownsman and Staple Island

Over recent years, despite the presence of wardens on Brownsman, the population of seals on that island is growing at a tremendous rate – as they are on Staple Island. As the new millennium was being celebrated, ten pups were born on these two islands. Now, over 700 are born, almost 50% of the entire pup production (Table 3).

**Table 1** Comparison of Grey Seal pup numbers on the Farnes and Donna Nook.

Year	Farne Islands (Northumberland)	Donna Nook (Lincolnshire)	Largest English Colony
2002	1,247	634	FI
2003	1,200	709	FI
2004	1,266	792	FI
2005	1,133	1,078	FI
2006	1,138	1,276	DN
2007	1,254	1,437	DN
2008	1,318	1,318	Level
2009	1,346	1,371	DN
2010	1,499	1,417	FI



Table 2 Grey Seal pups born by Island: 2010 data.

	North Wamses	South Wamses	North Hares	L'tone Main	West Wides	Big Harcar	B'man	Staple	Knoxes
Sept		1							
13 Oct	9	4							
17 Oct							1		
22 Oct	55	30					5	4	
25 Oct	30	39					9	20	
29 Oct	50	51					28	20	
4-5 Nov	56	110	16			1	53	63	
10-11 Nov							80		
14-15 Nov	49	119	15	1		2		142	
16 Nov							80	58	
21 Nov							40		
23-24 Nov	20	35						20	
27 Nov					1				9
30 Nov							33	9	
3 Dec	24	26	23	2		8	8	2	
13 Dec		3			5		21	5	2
Total	293	418	54	3	6	11	358	343	12

Table 3 Grey Seal pups born on Brownsman and Staple Island 2001-2010.

Island	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Staple Island	343	367	380	305	294	145	119	64	25	6	0
Brownsman	358	170	219	134	141	171	39	39	37	19	10

## BUTTERFLIES 2010

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### INTRODUCTION

It was generally a good season for butterflies, with a total of twelve species recorded. Transects and records were taken on a total of ninety-three days on Inner Farne, thirty-seven days on Brownsman and eight on Staple Island, yielding a total of 1,697 sightings of various species (1,281 Inner Farne, 387 Brownsman and twenty-nine Staple; Table 1).

In order to achieve accurate counts throughout the islands, transects were established on Brownsman and Inner Farne. These transects were walked once daily, where possible, throughout the season by members of the wardening team, especially during periods of high butterfly numbers. The aim was to reduce human error through over-counting of individuals moving between areas throughout the day. As well as these transects, casual sightings of additional butterflies were added. In combination, these methods provided a relatively accurate measure and the use of transects, and 'casual' recording, should be continued and refined in future years.

### BUTTERFLY HIGHLIGHTS 2010

#### **Small Copper** *Lycaena phlaeas*

It was an extraordinary year for this species. With the exception of 1999, when 1-2 were recorded on twenty-nine occasions, this is a relatively rare species with less than five records annually. 2010 witnessed an unprecedented number of sightings with a total of 39 records. The first sighting was on 5 June (Inner Farne, Quarry); the earliest sighting for this species since before 1994. Subsequently, up to five were recorded on eighteen different occasions, including one sighting in Brownsman vegetable garden on 4 August. Although the majority of records were in late August, the last was noted on 20 September.

#### **Painted Lady** *Vanessa cardui*

The first of the year was found in the attic on Inner Farne tower, drowning in the water tanks – an ignominious end to a long flight! The next record was not until both the inner and outer group got their fair share from 7 June-10 September, with a peak of two seen on 27 June.

#### **Dark Green Fritillary** *Mesoacidalia aglaja*

The only record came from Brownsman on 5 July. Found on the east rocks, it flew off west. This was just the seventh record for the islands since 2000.

#### **Wall** *Lasiommata megera*

This species is a rare visitor to the islands which is on the increase – the species only being recorded once prior to 2005. This was a record year with the majority on Inner Farne and two on Brownsman on 19 August. One was on Inner Farne on 21 May – the earliest ever – with all other records between 19-31 August.

#### **Peacock** *Inachis io*

This species, a regular inhabitant of the islands both in caterpillar and butterfly form, was seen on the islands from as early as 10 April (Inner Farne) through to 22 September (Inner Farne). Although not seen as regularly as many of the other Farnes species, individuals were recorded on all three of the main islands regularly throughout the early and later months.



***Comma Polygonia c-album***

Only the second confirmed record for the Farne Islands, the other being in September 2008. This year's individual was found on 2 August on Cemetery Bank on Inner Farne and was resident until 4 August.

***Ringlet Erebia medusa***

Only recorded for the first time in 2000 but has been recorded in six seasons since. The sole record for the year was an individual on Inner Farne on 21 July.

**Table 1** Butterfly counts on Inner Farne, Brownsman and Staple Island.

Species	Inner Farne	Brownsman	Staple	Total
Red Admiral	256	55	12	323
Small Tortishell	299	10	3	312
Large White	169	16	0	185
Small White	398	261	10	669
Green veined White	50	21	2	73
Peacock	33	10	2	45
Painted Lady	13	7	0	20
Small Copper	39	1	0	40
Comma	2	0	0	2
Wall	15	2	0	17
White Spp.	6	3	0	9
Ringlet	1	0	0	1
Dark Green Fritillary	0	1	0	1

## MOTH REPORT 2010

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### INTRODUCTION

The year was an extremely good season for moth recording on the Farne Islands, breaking the previous highest number of species recorded since moth trapping began back in 1991, with a total of seventy-three moth species trapped or recorded (Table 1). Trapping took place on both Inner Farne and Brownsman between May and September (Table 2) with three methods employed: a skinner light trap, sweep netting and casual observations across the islands. A total of 2,037 moths were recorded during the year.

The Skinner trap was placed in many different locations, especially on Inner Farne, although two main sites were heavily used: the lighthouse and the dock bank area of the island. Other sites included the top and central meadow, the courtyard and St Cuthbert's gut. However on Brownsman, the number of locations was more limited due to the potential for higher disturbance to the breeding seabirds. The main Brownsman site was on the observatory roof but the flats area was also used.

Table 1. Maximum number of species recorded since 1991, ordered by species count.

Year	2010	1992	1995	2006	1991
No. of Species	73	72	68	65	58

Table 2. Monthly breakdown of moth trapping.

	May	June	July	August	September	Total
Total trapping days	3	4	10	8	8	33
Total moths trapped	19	246	725	440	607	2037
Total moth species	4	22	52	21	24	73

### MOTH HIGHLIGHTS 2010

#### First records for Farne Islands

##### Small Autumnal Moth *Epirrita filigrammaria*

This species, which is apparently an endemic to Britain, is a first for the Farne Islands. It was trapped on 10 September at the lighthouse on Inner Farne.

##### Foxglove Pug *Eupithecia pulchellata*

This colourful pug was found in Brownsman cottage on 23 June, along with two other pug species that evening.



**Golden-rod Pug** *Eupithecia virgaureata*

This species was found in Brownsman cottage on 10 July along with four other species. Identification was difficult but eventually confirmed by comparison with other photos taken of the species.

**Double-striped Pug** *Gymnoscelis rufifasciata*

It was a remarkable year as the first ever record for the Farne Islands was crowned by a further seven records. The peak count was three on 10 July on Brownsman with two on 11 July and a single caught with a net in Brownsman vegetable garden soon after. The only other records involved two on the Inner Farne dock bank on 23 July.

**Shuttle-shaped Dart** *Agrotis puta*

This was another first for the Farne Islands that was recorded more than once during the season. Both records were single individuals caught on Inner Farne with the first trapped on 24 August on the boardwalk just outside the courtyard and a second caught at the lighthouse on 10 September.

**Straw Underwing** *Thalpophila matura*

This first for the Farnes was found in the trap on 18 July at the lighthouse on Inner Farne.

**Tawny Marbled Minor** *Oligia latruncula*

An individual was caught on 23 June along with two other species of minor (Middle-barred and Marbled) on Brownsman.

**Straw Dot** *Rivula sericealis*

This small plain *macro* moth was a first for the Farne Islands but may have been overlooked in the past. A single was trapped on Inner Farne on 18 July.

**Other noticeable highlights of the year**

**Narrow bordered five-spot Burnet** *Zygaena lonicerae*

With only one previous record of this red-data species back in 1995, the second for the islands was discovered on Staple Island during visitor work on 9 July.

**Purple Bar** *Cosmorhoe ocellata*

The second record for the islands involved a single trapped on the dock bank on Inner Farne on 2 July.

**Common Marbled Carpet** *Chloroclysta truncate*

Prior to this year, the species had only been recorded twice on the islands both of which were on Inner Farne, in 1994 and 1998. This season produced two individuals recorded on Inner Farne on 31 August and 10 September.

**Green Carpet** *Colostygia pectinataria*

A single was trapped on Inner Farne at the lighthouse on 18 July and represents the third record for the islands and first since 2001.

**Bordered White** *Bupalus piniaria*

Three individuals were trapped during the season, all on Brownsman with a single on 29 June and two on 4 July, the second-fourth island records (the first was caught in 2006).

**Poplar Hawkmoth** *Laothoe populi*

This impressive moth was attracted to the light of the trap on the dock bank on Inner Farne on 17 July but was discovered next to the trap underneath a dock leaf. This is the fourth record for the Farnes with singles in 1994, 2006 and 2007.

**Hummingbird Hawkmoth** *Macroglossum stellatarum*

On 21 July, an individual was seen aboard a visitor boat just south of Inner Farne and within one hour of the sighting, an individual was seen near the jetty on Inner Farne.

**Flame Shoulder** *Ochropleura plecta*

A single was trapped on Brownsman on 4 July, representing the first record since 1991 when several individuals were recorded during the season. Although it is not rare on the mainland, it is a very good record for the Farne Islands.

**Double Square-Spot** *Xestia triangulum*

This species has only been recorded in two previous seasons with records including a single in 1994 and several recorded in 1992. The only report of the year concerned a single trapped on Inner Farne on 18 July.

**Brick** *Agrochola circellaris*

The season produced only the second record of this attractive moth on the Farne Islands with the previous record concerning two on Brownsman on 28 September 1992. This season, another two were recorded again on Brownsman on 23 September.

**Marbled Minor** *Oligia strigilis*

An individual was caught on 23 June along with two other species of minor (Middle-barred and Tawny Marbled) on Brownsman. With only two previous records in 1992 and 1999, this is the third record for the Farne Islands.

**Small Wainscot** *Chortodes pygmina*

Having only been recorded twice since moth trapping began back in 1991 (in 1995 and again in 1999), the two individuals trapped this season on Inner Farne on 23 July and 24 August are the third and fourth records for the Farne Islands, respectively.





## Northumbrian *Naturalist*

### **BIRDS ON THE FARNE ISLANDS 2010**

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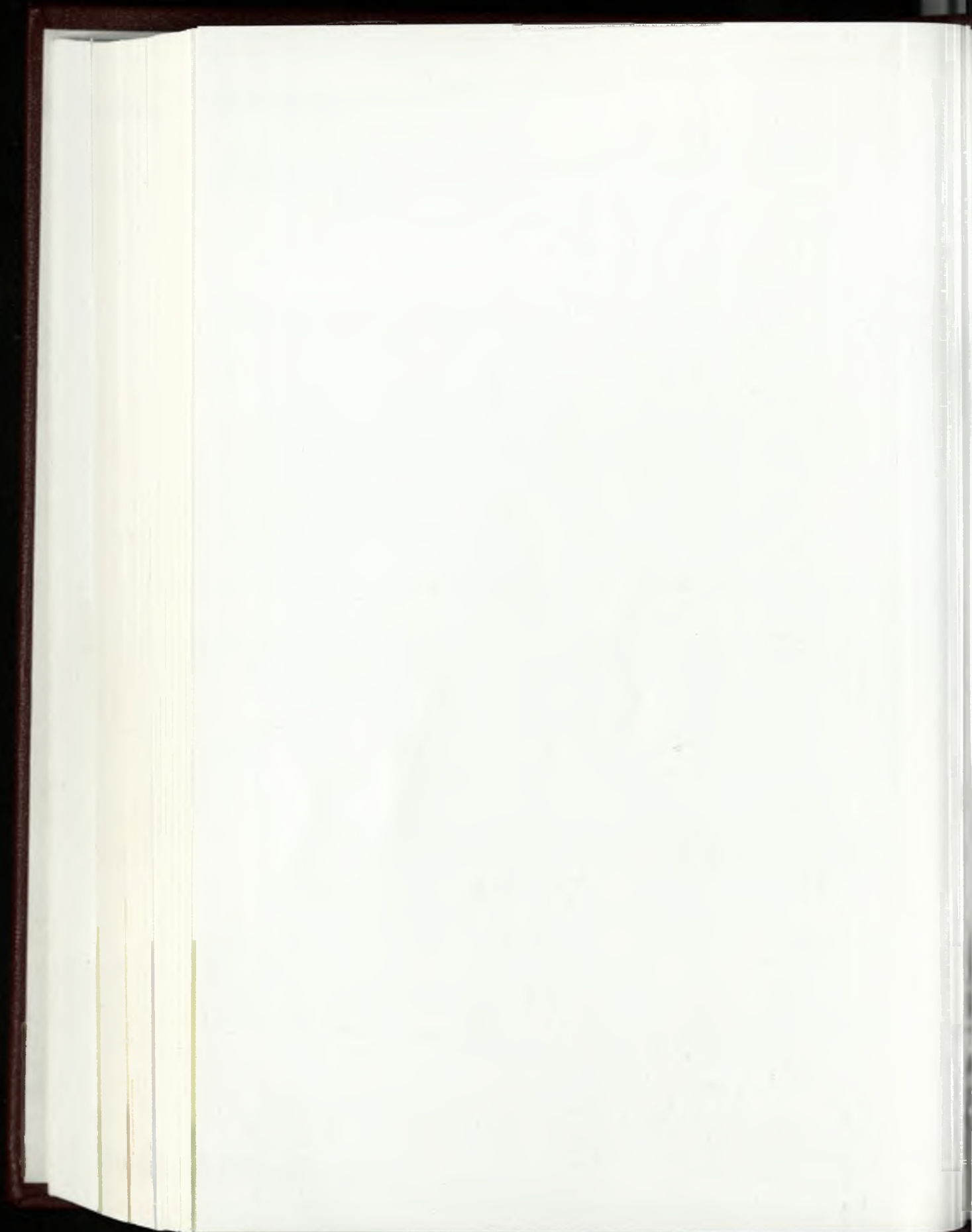


# Northumbrian *Naturalist*



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# THE BIG WATERS TREE SPARROW *PASSER MONTANUS* COLONY 1996 – 2009

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## SUMMARY

A Tree Sparrow *Passer montanus* colony has now been in existence at Big Waters Nature Reserve for over fourteen years. The colony, located in a typical rural wetland habitat, became established in nest boxes originally provided for titmice and has since expanded to over thirty pairs. This account describes the development of the colony, and an analysis of data derived from monitoring breeding behaviour, productivity and the patterns of dispersal of juvenile and adult birds. The development of the colony over a fourteen-year period reverses an earlier trend for the Tree Sparrow as a declining species in the county and the colony may have formed the nucleus for the recent expansion of the Tree Sparrow in south-east Northumberland.

## INTRODUCTION

### Big Waters Nature Reserve

Big Waters Nature Reserve lies to the north-west of Newcastle on the edge of the Tyneside conurbation. It consists of a large mining subsidence lake with a landscaped open area bordering its eastern edge, maintained by Newcastle City Council, and along its southern and western sides a nature reserve managed by the Northumberland Wildlife Trust (NWT). This nature reserve, the first to be managed by NWT in 1964, comprises a damp open area of mature alder, willow and birch, much of which is prone to temporary shallow flooding in wetter years, with a small wood of mixed deciduous trees and reasonably dense undergrowth on the southern perimeter. The southern, western and northern edges of the lake support extensive beds of Reedmace *Typha latifolia*, rush, sedge and Canary Reed-grass *Phalaris arundinacea*. Two fields immediately adjacent to the reserve are maintained as wild meadows from which hay is sometimes cut and crops in the other fields are managed on a rotational basis with oilseed rape, a cereal or root crop and livestock grazing. In a wider context, Big Waters is some 12km from the sea in the Northumbrian coastal plain and although the Newcastle suburbs are to the south-east, the land in the other three quadrants is essentially devoted to mixed agriculture. Most fields retain native hedgerows with small coppices although there has been some reconstitution of former open-cast coal working sites where small conifer plantations have been introduced. To the north-west there is also a large expanse of wooded wetland and marsh at Prestwick Carr, some 4km away.

Despite recurrent acts of vandalism at Big Waters, NWT has built bird hides, a dipping pond and a substantial boardwalk, all on the south side of the reserve. With local volunteers, NWT maintains an all-the-year-round bird feeding area and has instituted a nest box scheme. In 1986, the site was registered with the British Trust for Ornithology (BTO) as a participant in the national Constant Effort Site (CES) scheme which involves regular bird ringing between May

and September each year to collect and analyse data on changes in abundance and productivity of common breeding song birds. At the time of writing the CES programme at Big Waters is in its twenty-fourth season of operation.

#### **The history of Tree Sparrow *Passer montanus* in the Big Waters area**

Between 1935 and 1947, in the annual ornithological reports for Northumberland there were only references to wintering Tree Sparrow flocks numbering as many as fifty birds in 1935, and more specifically in 1941 a wintering flock was recorded in the Brandling Park area of Newcastle some 7km from Big Waters. From 1948 the annual reports contain more detail and breeding colonies (numbers of pairs unspecified) were reported from Blagdon, Ponteland and Prestwick Carr, all within 6km of Big Waters. However, from 1951 to 1962 Tree Sparrows were either not noted or simply dismissed as 'occurring', with most specific reports being made to coastal passage and occurrence on the Farne Islands. An exceptional entry in 1959 noted a wintering flock of forty birds at Berwick Hill, some 6km north-west of Big Waters. From the mid-1960s and throughout the 1970s as the number of birdwatchers increased, so too did records for Tree Sparrows, particularly of wintering flocks in excess of fifty birds, but again mostly in coastal locations. For the Big Waters area, winter flocks were noted at Prestwick Carr in 1973 (4 km); a flock of fifty birds was at Seaton Burn (synonymous with Big Waters) in 1978, with 183 there in 1983; sixty in both 1984 and 1985; a hundred in January 1986 and 215 in January 1987. Breeding records were much sparser for the county and only a few pairs were noted at nearby Blagdon (4 km) and Brenkley (2 km) in the mid-1970s. Although the annual reports continued to classify the species as a common resident breeding bird in the late 1970s and early 1980s, the few references are vague and only become more specific in the 1990s as a number of successful breeding sites were noted with the Big Waters colony being the largest and best recorded site in Northumberland and Tyne and Wear. Nevertheless, the species was given a Priority One rating in the Red Data Book for Northumberland (Kerslake, 1998) where it was described as being a declining breeding species. After the colonisation of a few nest boxes by Tree Sparrows at Big Waters in 1994, the colony has been studied on an annual basis and this paper describes the results of regular monitoring up to 2009.

### **METHODS**

#### **The Big Waters Colony**

In 1987, the number of nest boxes for titmice at Big Waters was increased. The compact nature of the site meant that a 'colonial' pattern of nest boxes ensued and in 1994 four of the boxes were used by Tree Sparrows. The presence of this nationally endangered species encouraged the authors to add more nest boxes and by 2000 there were seventy-three in position. Replacement of old and vandalised boxes and the addition of new ones increased the total to a hundred by 2009. All nest boxes were positioned within a 500 metre radius of the centre of the coppice on the south side of the lake. To complement the growth in Tree Sparrow numbers bird-feeding activities were extended by providing grain as well as nuts throughout the year.

The nest boxes were located between 2.5 and 3.5 metres from the ground in close proximity to each other with one deliberate attempt at creating a 'tower-block', another with adjacent boxes, as well as grouping five or six boxes together in a number of areas to form sub-colonies. Boxes were placed on whichever side of the tree was most convenient. This random positioning and the attempts at communal boxes did not seem to make any difference as to whether Tree Sparrows occupied boxes or not.



Data collection for the Tree Sparrow colony at Big Waters was undertaken systematically in parallel with the running of the CES programme. Each season the boxes were checked in the third or fourth week of April to verify occupancy and record the state of nest building or the presence of eggs and in most years nest boxes were checked through to the end of August. At an early stage in the project, a conscious decision not to visit the boxes too frequently was taken to minimise unnecessary disturbance; therefore, details on the precise dates of egg laying and fledging do not exist for many boxes. No attempts were made to capture adult birds in the boxes. From 2000 to 2005, a single colour ring was fitted to nestlings and mist-netted Tree Sparrows, using a different colour for each season, to help determine fidelity to the site during the winter months, to trace the location of winter feeding parties in the immediate vicinity, and to estimate longevity. There are now sufficient data to enable many aspects of Tree Sparrow behaviour at Big Waters to be compared with that recorded for other colonies (Summers-Smith, 1995). The study is still ongoing but this analysis covers the years 1996 to 2009. Within this period, data on first clutches and broods are incomplete for 2001 due to access restrictions during the Foot and Mouth disease outbreak, and in the previous two years the colony suffered some disturbance from local egg collectors.

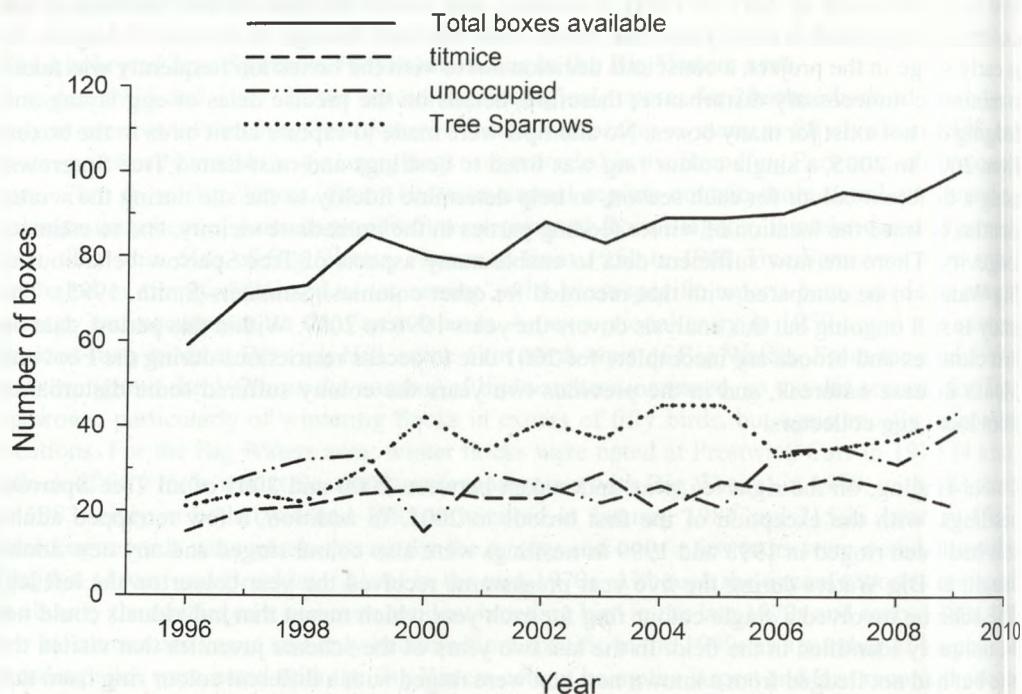
Colour-ringing, on the right leg, was undertaken between 2000 and 2005 of all Tree Sparrow nestlings, with the exception of the first broods in 2001. In addition, a few retrapped adults that had been ringed in 1998 and 1999 as nestlings were also colour ringed and any new adults caught at Big Waters during the five year programme received the year colour on the left leg. The scheme involved a single colour ring for each year which meant that individuals could not be uniquely identified in the field. In the last two years of the scheme juveniles that visited the site but had not fledged from a known nest box were ringed with a different colour ring from that used for the nest box nestlings in that season.

## RESULTS AND DISCUSSION

### Tree Sparrows in nest boxes

The earliest record of successful breeding by a Tree Sparrow at Big Waters was in 1988 and again the following year when the same natural nest site was used, albeit on the periphery of the later colony. The next record was in 1990 when a pair using a nest box reared three young in one of the few boxes erected for titmice in the early 1980s.

It is impossible to state with any accuracy how many pairs bred each year as Tree Sparrows may have two, three or even four clutches annually and do not necessarily retain the same partner during the season. Furthermore they may not restrict their activities to one nest box, and 'pairs' could use a number of boxes during the breeding period, which extends from mid-April to early August. It is therefore difficult to calculate the size of the colony unless every adult bird has been ringed and is captured regularly during the season. Nevertheless some estimates have been attempted. The number of active pairs each year at Big Waters seemed to vary between twenty-six in 1999 and forty-three in 2004. The average for the formative years of 1996 to 1998 was nineteen pairs but once the colony was well established, from 1999, the average increased to thirty-two pairs annually. This rough calculation is based on the number of first clutches, the occasional overlapping early second clutch and the number of boxes during the first laying period when Tree Sparrow nests were partially built in boxes but never used. Indeed it was not uncommon for such incomplete or even complete nests to remain unused until the third laying period. A more accurate indication of the well-being of the colony, on which this account is based, was therefore obtained by analysis of the number of nest boxes occupied each season and the annual number of successful clutches and broods.



**Fig. 1** Nest box occupancy at Big Waters; data for 2001 are incomplete due to Foot and Mouth disease.

1996 was the first season that Tree Sparrows occupied the nest boxes in a concerted way with twenty-one out of a possible fifty-nine boxes being used. In 1994 Tree Sparrows had only been recorded using four boxes and a natural site, and in 1995 two boxes and a natural site. From 1998 as the number of boxes was gradually increased Tree Sparrows occupied on average thirty-five boxes each season (Fig. 1). The maximum was forty-five in 2004 and 2005, the lowest being twenty-one in 1996, the first year of the survey. Titmice occupied between twenty and twenty-eight boxes annually over the study period, and as that still left about a third of the boxes empty each year there appeared to be minimal conflict between Tree Sparrows and titmice for breeding sites. (See Appendix 1 for full annual statistics.)

#### Clutch size

In each season, eggs were present in some boxes and the date of the laying of the first egg was estimated to be between 15 and 22 April in nine of the years; the earliest laying date was 4 April in 1999 and 10 April in 2004. Second clutches, ignoring some which were replacement clutches, tended to be laid in the third (in six years) or the final week (five years) of May, with the second-clutch period ending by the third week in June. In all years of this survey third clutches were produced, with commencement dates ranging from the earliest date of 13 June in 1999 to 7 August in 1996 and 2001. More usual for the third clutch were dates between 20 June and 5 July. In only three of the years between 1996 and 2009 were fourth clutches produced. These were in 1999 (2), 2006 (1) and 2007 (1), although in those years there were also twelve other boxes with eggs during the fourth laying period, but all appeared to be replacement clutches rather than a fourth sequential clutch.



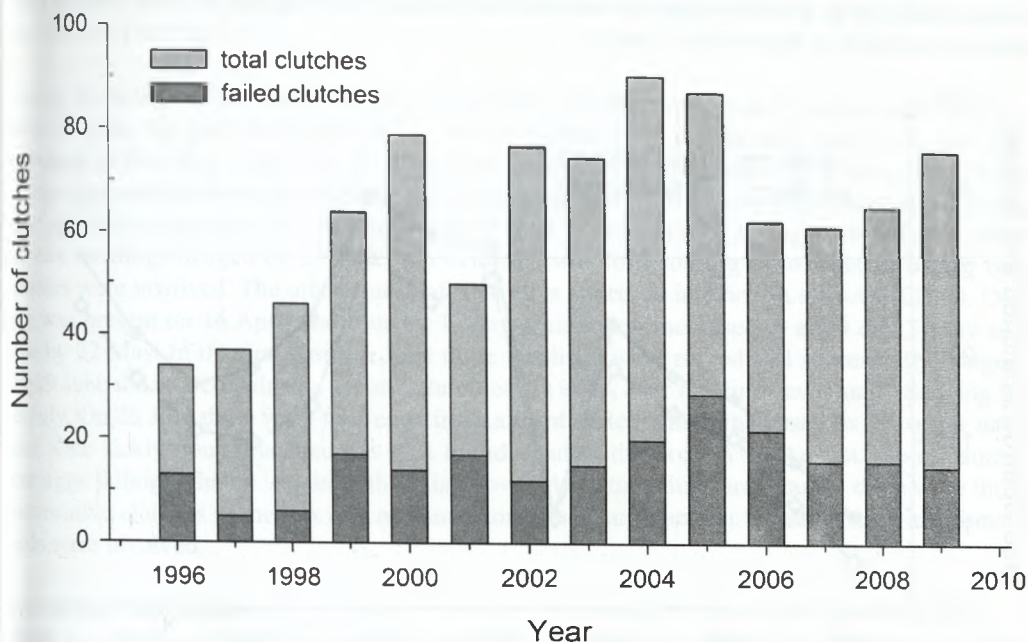


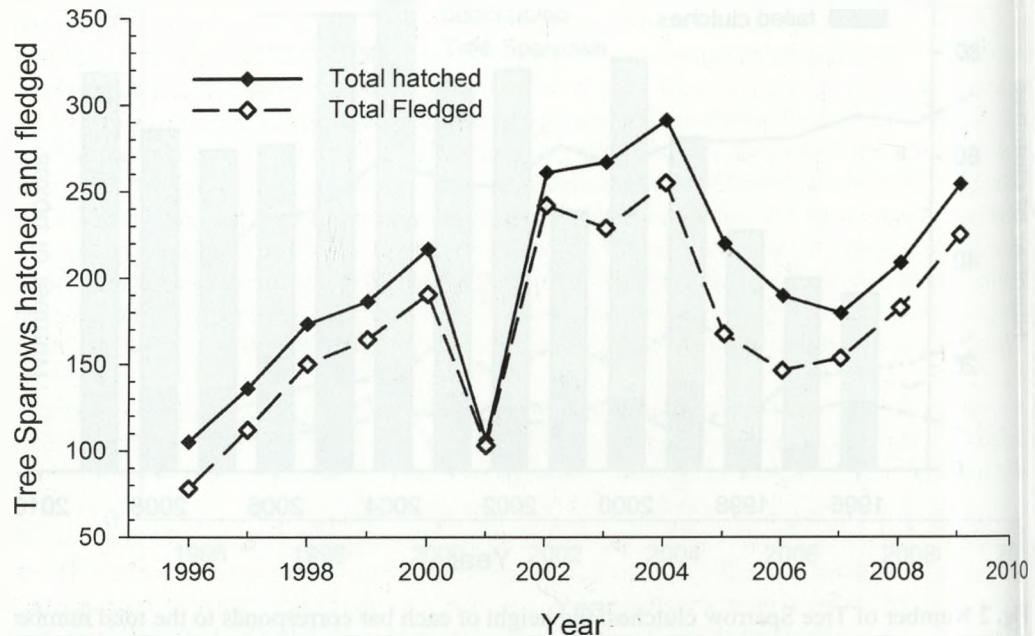
Fig. 2 Number of Tree Sparrow clutches: the height of each bar corresponds to the total number of clutches and the number of failed clutches is shown by the darker shading within each bar. Data for 2001 are incomplete due to Foot and Mouth disease

Fig. 2 shows the total annual number of clutches between 1996 and 2009. The number of clutches increased between 1996 and 2000, thereafter fluctuating around an average of seventy-five (excluding the data for the Foot and Mouth year 2001). In each year there were more first clutches than second and more second than third (Appendix 2). The laying pattern of the Big Waters colony as a whole confirms Summers-Smith's (1995) finding that, although overall the greatest number of eggs are laid in the first laying period (as there are more clutches: Appendix 3), the average size of the clutch in the second and often the third laying period is greater than that of the first period. For the Big Waters colony in the period 1996-2009, the mean clutch size was 4.46 for the first clutch, 5.06 for the second, and 4.96 for the third (Appendix 4). The mean clutch size for the fourth laying period was 5.0 eggs but is only based on three clutches.

#### Hatching and fledging success

Once eggs are hatched, vagaries of the weather and the availability of suitable food becomes much more significant for both the parents and young. During the egg laying stage, particularly for the first laying period, if there was a period of bad weather there was often a delay of two or more days between the laying of consecutive eggs. Newly-hatched young, however, need a constant supply of food and in some years wet weather and its probable impact on the food source resulted in the failure of some broods. The number of young hatched over the fourteen year period was 2,846 and ranged from an annual total of 105 in 1996 to 290 in 2004, with hatching totals exceeding 200 in seven of the years. The average number of nestlings hatched per clutch was 3.16 over the whole study period. Fledging numbers directly reflected the hatching

figures, ranging from a maximum of 3.26 fledged per clutch in 1998 to a minimum of 1.89 in 2005. Overall, 2,392 nestlings fledged during the fourteen years of the study with an average of 2.9 per clutch. Fig. 3 summarises the relationship between hatching and fledging success (full data are tabulated in Appendices 5 and 6).



**Fig. 3** Tree Sparrow hatching and fledging success. Data for 2001 are incomplete due to Foot and Mouth disease.

The impact of inclement weather on breeding success was apparent on specific laying periods rather than a season as a whole. The first clutches in 2000, 2004 and 2009 were affected by wet or cold weather with average clutch sizes in those years of 4.3, 4.5 and 4.5, only producing 2.4, 2.9 and 2.8 young, with an even lower fledging rate. Second clutches in 2006 and 2007, and in the continued wet weather in 2000 and 2004, also had low fledging rates. The same pattern was evident in 1997, 2000, 2005 and 2007 with low fledging results from the third period, as well as low fledging success in 2006 due to a lengthy spell of unusually warm weather. On average, 23% of first clutches, 22% of second, 30% of third and 75% (three out of four) of fourth clutches failed.

Nevertheless, for the entire clutch laying periods throughout the study, the clutch sizes and the numbers of hatched and fledged young from successful boxes remained very consistent (See Appendices 4, 5 and 6). The first laying period had a lower success rate of young hatched at 3.01 than the second clutch which averaged 3.44, as well as a slightly higher nest failure rate. Whilst the first laying period always had the greatest number of clutches, the higher failure rate was probably due to either inexperienced birds breeding for the first time or, in some cases, birds selecting less suitable nest boxes. As no attempt was made to capture adult birds at the nest boxes it was impossible to ascertain whether pairs remained faithful, or if there was a fatality rate amongst adult birds. Not all failures were the result of poor weather conditions. Each year some clutches suffered natural predation by small mammals or Great Spotted Woodpeckers



*Dendrocopus major*, with on average eight clutches being lost in this way each year, as opposed to nearly twice that number to unsuitable weather conditions. Unfortunately during the years 1999 to 2001 thefts of eggs and whole nests by collectors accounted for a total of at least thirty lost clutches (see Fig. 2).

During the course of the study two large clutches were recorded, one of eleven eggs and the other of nine. The first three eggs in the box of eleven were laid by late April 2002 and had increased to five by 11 May. On 26 May there were eleven eggs although a week later three of the eggs were broken and stuck to the nesting material. On 6 June there were eight warm eggs and eleven days later two nestlings were ringed. The remaining six eggs never hatched but the two nestlings fledged by 23 June. No evidence was forthcoming as to whether one or two females were involved. The other clutch of nine eggs appeared in a box in mid-April 2004. One egg was present on 16 April and four by 1 May which then increased to eight on 15 May and nine by 22 May. In the first week in June three nestlings were ringed and successfully fledged. On 19 June the box contained a second clutch of six eggs, four nestlings eventually fledging by 16 July. On 25 July there were four eggs from a third clutch which increased to five a few days later. One sickly young hatched but was found dead in the box on 17 August, the remaining four eggs failing to hatch. Again nothing is known about the adult birds, but as there were three consecutive clutches in the box it is not unreasonable to surmise that the same male and female birds were involved.

#### Interaction with titmice

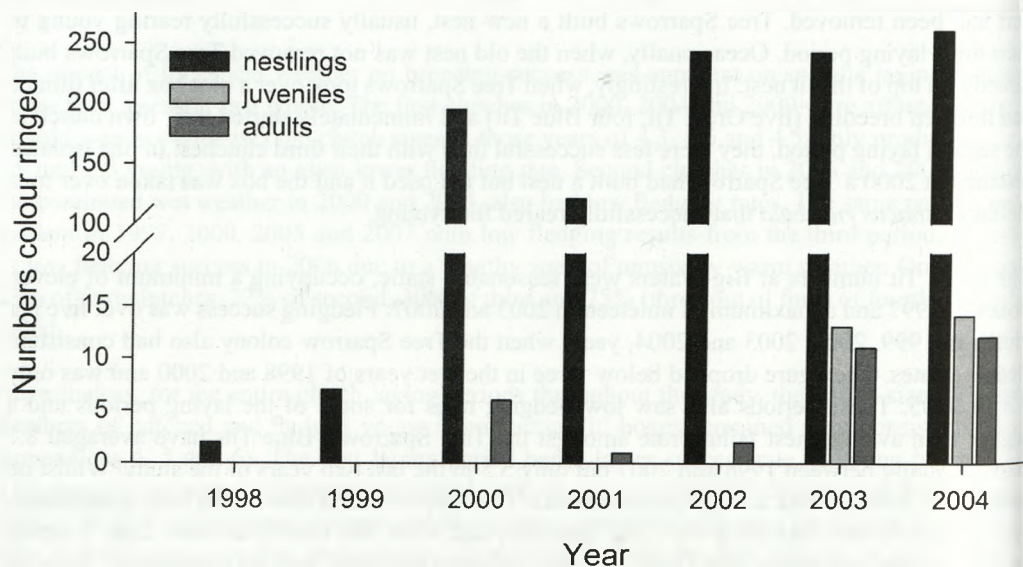
There was no necessity for conflict between Tree Sparrows and titmice for nest boxes as often a third of the boxes were unoccupied. Nevertheless, in most seasons some boxes were occupied successively by titmice and then Tree Sparrows. Usually, Great Tits *Parus major* (eighteen occasions) or sometimes Blue Tits *Cyanistes caeruleus* (six occasions) occupied a box and successfully fledged a brood during the Tree Sparrows' first laying period. Once the old tit nest had been removed, Tree Sparrows built a new nest, usually successfully rearing young in their third laying period. Occasionally, when the old nest was not removed Tree Sparrows built directly on top of the tit nest. Interestingly, when Tree Sparrows took over a nest box after titmice had finished breeding (five Great Tit, four Blue Tit) and immediately started their own clutch in the second laying period, they were less successful than with their third clutches. In one isolated instance in 2000 a Tree Sparrow had built a nest but not used it and the box was taken over by a Robin *Erithacus rubecula* that successfully reared four young.

The Great Tit numbers at Big Waters were reasonably static, occupying a minimum of eleven boxes in 1997 and a maximum of nineteen in 2003 and 2007. Fledging success was over five per clutch in 1999, 2002, 2003 and 2004, years when the Tree Sparrow colony also had consistent fledging rates. The figure dropped below three in the wet years of 1998 and 2000 and was only 3.3 in 2005. These periods also saw low fledging rates for some of the laying periods and a higher than average nest failure rate amongst the Tree Sparrows. Blue Tits have averaged 8.7 nests annually between 1996 and 2007 but only 5.5 in the last two years of the study. Whilst no analysis of food sources at Big Waters between Tree Sparrows and titmice has been undertaken, regular observation indicated that Tree Sparrows and Blue Tits spend far more time foraging in the lakeside vegetation than Great Tits; this suggests that there may be competition between Tree Sparrows and Blue Tits for food to feed their nestlings. Data on the diet of Tree Sparrow nestlings were obtained from faecal samples in 2002, collected and analysed as part of a national study which showed that Tree Sparrows feed nestlings on a wide selection of invertebrates (Field *et al.* 2008). Therefore, access to a range of habitats such as woodland, wetland vegetation and

farmland increases the variety of food sources available. This national study found that the diet of nestling Tree Sparrows was dominated by beetles, spiders, flies and caterpillars and that the quantity of aquatic invertebrates was similar for the first, second and third broods. The diet of the three broods sampled at Big Waters was quite varied as the three habitats noted above are all within the immediate area of the breeding colony, but was particularly notable for the presence of relatively large numbers of harvestmen (*Opiliones*) and froghoppers (*Hemiptera*).

#### Colour ringing

To provide evidence of fidelity to the natal area and data on distribution in the autumn and winter months, 1,070 nestlings were ringed with single year-specific colour rings and uniquely-numbered BTO metal rings in the five years from 2000 to 2004. In addition, twenty-seven juveniles and thirty-two adults, caught in the CES mist nets located nearby, were also colour-ringed (Fig. 4). Birds were retrapped in CES nets and in occasional winter ringing sessions, outside the CES months, which took place adjacent to the feeding area. In total there were 158 Tree Sparrow retraps involving 118 birds. An analysis of the data suggests that birds of the year, once fledged, did not normally stay in the natal area: of 195 nestlings ringed in 2000 only four were retrapped in the same breeding season and in 2001 none of the 121 ringed was caught. The pattern was similar in 2002 and 2004 with only two of the 243 nestlings from 2002 and four of the 260 nestlings from 2004 caught in the CES nets. The exception was 2003 when forty-two nestlings were retrapped between May and the end of August from the season's total of 242 nestlings, and three birds were retrapped on more than one occasion. As concluded by Summers-Smith (1995), this suggests that as each brood fledges the nestlings leave their natal area and spread out into the adjacent fields and hedgerows. There were four records of colour-ringed nestlings appearing at sites up to 6.5km away from Big Waters in the same season that they were fledged. Distribution to the neighbouring fields was also confirmed by over 1,690 sightings of colour ringed birds between May 2000 and April 2009.



**Fig. 4** Summary of colour-ringing: nestlings were ringed in the four years from 2000; small numbers of adults and some juveniles were also colour-ringed in those years. The small number of nestlings from 1998 and 1999 were not colour-ringed in the nest but when recaptured as adults between 2000 and 2005.



Whilst juvenile Tree Sparrows did not make much use of the summer feeding station, regular counts and retraps of colour-ringed adults during the CES sessions indicated that the older birds made use of the food supplied throughout the nesting period. In 1999 for example only thirteen juveniles were retrapped between 1 May and 30 August whilst fourteen adults were retrapped and ten new adults ringed. The difference was more marked in 2000 when only four nestlings were retrapped but seven colour-ringed adults were retrapped and five new ones ringed. In 2003 and 2004, five juvenile birds that had not been ringed as nestlings at Big Waters were trapped during the Constant Effort sessions. It is not known where they originated from as the authors are not aware of any natural nest sites on the reserve although other data suggest successful breeding at a site 2km away.

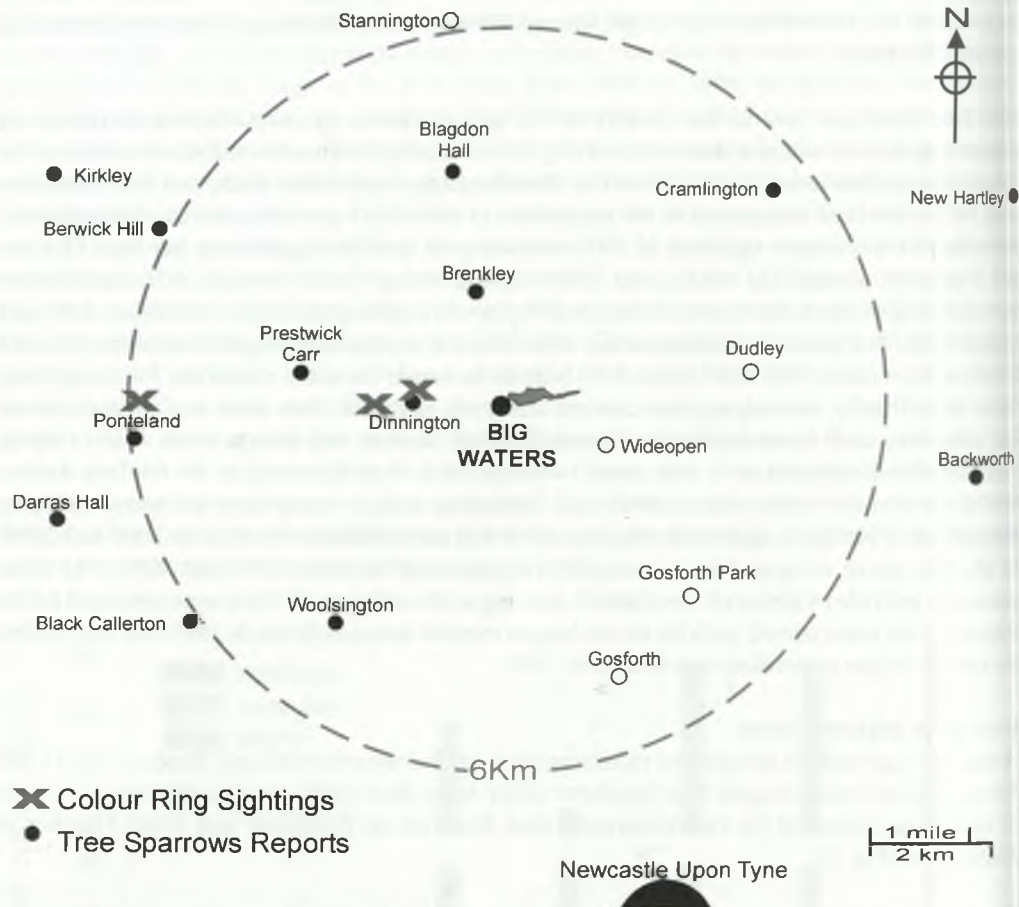
That Tree Sparrows stay in the vicinity of the area is shown by many field observations of colour-ringed birds within a 1km radius of Big Waters during the autumn and winter months. The colour-ring system in use did not allow the identification of individual birds, and thus cannot be used for a numerical assessment of the population or individual-specific patterns of distribution. Nevertheless there were sightings in 2000 of twenty-six yellow-ringed birds between October and December around Big Waters, and thirty-eight in January and February 2001. Similarly in the following autumn and winter there were fifty-seven sightings between September 2001 and March 2002. The pattern was repeated for 2002 where sixty-six blue-ringed birds were recorded between September 2002 and March 2003 with forty-one in the same period the following year. More significantly, the ringing data confirm that birds return to their natal area in late autumn and often stay until the next breeding season. Between January and March, when winter ringing was sometimes undertaken, it was usual to retrap some Tree Sparrows at the feeding station. Whilst the number varied from year to year depending on how many days the nets were open, the number of retraps ranged from fifteen in 2005 and ten in 2000 to five in both 2006 and 2009. In all, fifty-seven retrapped Tree Sparrows were recorded between 1995 and 2009. The same years also provide evidence of 'new blood' arriving at the colony with forty-nine unringed adults trapped in the same period, with by far the largest number being eighteen in 1995, the year before the colony began to develop, and twelve in 2000.

#### **Data from adjacent areas**

A request was made to the general membership of the Northumberland and Tyneside Bird Club for records of colour-ringed Tree Sparrows away from their natal area. In response, a wealth of data was submitted by two observers: Neil Renwick at Ponteland and Peter Fletcher at Dinnington (Fig. 5).

The first batch of records was from a suburban garden in Ponteland approximately 6.5km west of Big Waters. Sightings began in December 2001 and continued spasmodically until early June 2004. Adult birds were seen regularly in the winter months up to the first week in April. There were sixteen sightings of birds with yellow colour rings (2000 season) between December 2001 and early April 2002; forty-one records of birds of the year with blue rings between November 2002 and April 2003, and again over fifty sightings of blue-ringed birds from September 2003 to April 2004. The pattern was similar between December 2003 and March 2004 when seventeen white-ringed birds were recorded. Note that as it was not possible to identify specific individuals, these figures could relate to single individuals with each colour ring, except that on 23 and 24 December 2002 two blue-ringed Tree Sparrows were seen together. This site was also visited by Tree Sparrows in the breeding season and there were eleven records of yellow-ringed adult birds between late April and July 2002 and fourteen records of adult blue-ringed birds during the same period in 2003. In that year, a white-ringed juvenile from Big Waters appeared at

the Ponteland site in late July. Colour-ringed birds were not seen in isolation and there were frequently, throughout autumn and winter, between four and seven unringed Tree Sparrows present at the same time; furthermore, in the hard winter months at the beginning of 2004 there were eighteen on 27 January and twenty-nine two days later. The presence of an unringed adult bird feeding a fledgling at the site in June 2004 may also imply breeding in the area and therefore a possible source for some of the unringed juveniles later trapped in the CES nets at Big Waters between 2003 and 2007.



**Fig. 5** Map showing location of Tree Sparrow sightings in the vicinity of Big Waters, mainly between 1990 and 2009. Local place names are marked with filled (Tree Sparrows reported) and open symbols.

The second site where colour-ringed Tree Sparrows were regularly seen was in a more rural setting on the outskirts of the village of Dinnington. Much closer to the reserve at Big Waters, this site lies approximately 2 km in the same westerly direction as Ponteland. With the exception of three records, the sightings cover the period, with some thoroughness, from 31 August 2003 to 25 September 2004. In the first series of autumn and winter records from August 2003 to 31 March 2004 there were 230 sightings of colour-ringed birds, involving seventy-one blue-ringed birds from the 2002 season and 124 sightings of white-ringed nestlings from 2003. In both years this represented a substantial movement away from the natal area. Although winter records were



only made for the month of September in 2004, there were seventeen sightings of black-ringed nestlings of that year from the Big Waters colony. Perhaps the most interesting data from this series of records relate to the breeding season April to August 2004. During that period there were sightings for thirty-nine blue-ringed birds from 2002, sixty white from 2003 and forty-three black from the current year. The appearance of the black-ringed nestlings from 2004 can be readily explained as normal movement of young birds away from their natal area shortly after fledging. The presence of the blue- and white-ringed adult birds is less easily explained. The sightings may relate to single birds seen on consecutive days, but over the whole recording period it was possible to identify at least six individual birds and during the winter months two or three white-ringed birds were often seen at the same time. In the 2004 breeding season, a minimum of four different colour-ringed birds were recorded regularly. Furthermore, the observer noted colour-ringed adults at the site feeding unringed juveniles on a number of occasions and recorded up to eight juveniles daily between May and July. It would seem likely that some adult colour-ringed birds were breeding away from their natal colony as a nest with four eggs, occupied by a blue-ringed individual, was located in a hedgerow at Dinnington in May 2004 and a white-ringed adult was later found nesting nearby in July 2004. It is possible, like the Ponteland birds, that some of the unringed juveniles caught in the CES nets each summer at Big Waters could have come from this source. Another similarity with the Ponteland Tree Sparrows is that the colour ringed birds at Dinnington were not seen in isolation. Particularly during the autumn and winter months there were regularly up to ten or more unringed birds. A final note on the Dinnington site relates to the photographing of a male Tree Sparrow copulating with a House Sparrow *Passer domesticus* in May 2004. Nothing, however, is known about the outcome.

Three other sightings of Tree Sparrows ringed at Big Waters are on record. A pair of nestlings that bred in a box at another site at Dinnington (1.3 km) was subsequently seen in the feeding station at Big Waters in both February 2001 and the same month in 2002. Another colour-ringed bird (July 2004) was found dead near the site of a small Tree Sparrow colony at Weldon Bridge in March 2005, some twenty-eight kilometres north-north west of its natal site. The most unusual record was of a nestling ringed in August 2002 being retrapped at Flamborough Head the following spring, 145km south east of Big Waters.

### **Longevity of Tree Sparrows**

Colour-ringing at Big Waters has enabled the authors to gain an insight into the longevity of Tree Sparrows from the colony. Based on data from retrapped birds and field observations of uniquely-ringed Tree Sparrows, a number of long-lived individuals have been identified. For all the different colour-ring cohorts, birds aged in excess of three years have been identified. Tree Sparrows more than four years old with blue, white or black rings were caught in mist nets but in all three instances birds with the same coloured rings were still being seen in the field many months later e.g. blue-ringed nestling from June 2002, retrapped August 2006; two blue-ringed birds were seen in January and March 2008; a black-ringed adult from October 2004, was retrapped May 2008; two black-ringed birds were seen in the field in January and April 2009. The two oldest birds were ringed in 1998 and 1999. The 1999 nestling was one of three that fledged in early May and was subsequently reported in the Big Waters feeding station in March, April and May 2005 at the age of six. The 1998 bird, also ringed as a nestling, was retrapped in February 2000 and seen at the feeding station on twenty-six occasions up to March 2004. It visited the Dinnington site three times in the spring of that year before again being retrapped at Big Waters. It was then present around the feeding area until its last sighting in November 2004 at which time it was six years and six months old.

### Future of the colony at Big Waters

In his monograph Summers-Smith (1995) discussed the various ways of measuring the breeding success of Tree Sparrow colonies to determine their likelihood for survival and even expansion. If his method of calculation is applied to the Big Waters colony there is a clear indication that it is flourishing as the successful fledging rate has been consistently high. Three specific measures are calculated: the percentage of fledged young from the eggs laid; the percentage of eggs that hatch; and the percentage of hatched young that survive to fledge. Detailed annual figures are given in Appendix 8, but it should be noted in the analysis below, that data for the Foot and Mouth year 2001 are not included.

The average percentage of young birds fledged from the total number of eggs laid was 55.9%. In six of the years, the percentage was above 56%, the lowest being the weather-affected years of 2005 (38%) and 2006 (48%). Summers-Smith's second measure, the percentage of eggs laid that hatched, was more consistent. The average percentage was 65.79% with a maximum in 1997 of 78.6% and a minimum of 50.57% in 2005. The most impressive figures are the percentages of hatched young that survived to fledge. Overall 84.64% of hatched young fledged. That figure was exceeded in nine of the years, and even in the low years of 1996 (74%), 2005 (76%) and 2006 (77%) was reasonably high. In essence, the figures show that the colony is not contracting or declining but appears to be slowly expanding. Although outside the range of years covered by this account, it is worth noting that in 2010 the colony experienced its best year to date with more boxes occupied, more eggs laid and more young fledged than in any of the surveyed years between 1996 and 2009.

In 1996 the Big Waters colony was the only known one of significance in Northumberland and Tyne and Wear. However, data in the annual county bird reports, *Birds in Northumbria*, for the period 2002 to 2009, show a distinct increase in distribution and numbers of Tree Sparrows within a 6km radius of the Big Waters colony (Bowman and Holliday, 2002; Frankis *et al.*, 2003, 2004; Fisher and Holliday, 2005, 2006, 2007, 2008; Richardson, 2009). As well as wintering birds at Dinnington and Ponteland, small flocks were recorded at Berwick Hill, Prestwick Carr, Kirkley Mill, Woosington and Black Callerton, with breeding or post-breeding flocks reported from Darras Hall, Blagdon, west Newcastle, and slightly further afield at Holywell, Backworth and New Hartley.

### CONCLUSION

The site at Big Waters is typical of the model Tree Sparrow colony described by Summers-Smith (1995). It is of average size, in a typical rural wetland habitat, with laying, hatching and fledging figures comparable to other colonies (Field *et al.*, 2008). The lifecycle throughout the year is similar to the pattern observed in other colonies with a life expectancy comparable to that described for other Tree Sparrow colonies (Summers-Smith, 1995). The data for Big Waters contradict the view of Alexander and Lack (1944) that Tree Sparrow colonies are local and fluctuate for unknown reasons, and reverses the trend for the Tree Sparrow as a declining species in Northumberland (Kerslake, 1998) as the colony has shown sustained growth and development over the study period and continues to flourish. Indeed, the Tree Sparrow population in the whole county, including numbers of wintering birds in coastal locations, is much healthier now than it was a decade ago. It is pleasing to think that the Big Waters colony has probably formed the nucleus of the Tree Sparrow recovery and expansion in south-east Northumberland over the last five years and that it is still having a considerable impact on the survival of an endangered species.



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# APPENDICES FOR BIG WATERS TREE SPARROW COLONY

## Appendix 1 Nest box occupancy at Big Waters 1996-2009

Year	Number of suitable boxes	Number used by Tree Sparrows	Number used by Great Tits	Number used by Blue Tits	Number of unused boxes
1996	59	21	8	7	23
1997	71	24	11 (1)	9	28
1998	73	22	12 (1)	9 (1)	32
1999	85	30	13 (1)	11# (1)	33
2000	80	42	14 (1)	11# (1)	15
2001	78	34	8+ (2)	10+ (1)	29
2002	88	41	15 (2)	8	26
2003	83	37	19 (4)	10 (1)	22
2004	89	45	15 (2)	5	26
2005	89	45	16 (3)	11 (1)	21
2006	90	33	15 (1)	10 (1)	34
2007	95	35	19 (2)	9 (1)	35
2008	93	37	18	7	31
2009	100	43	17 (2)	4 (1)	39

( ) numbers in brackets are boxes used by both Tree Sparrows and titmice # includes Coal Tit

## Appendix 2 Number of Tree Sparrow clutches 1996-2009

Year	Number of first clutches	Number of second clutches	Number of third clutches	Number of fourth clutches	Total number of clutches
1996	16	11	7		34
1997	16	10	11		37
1998	17	15	14		46
1999	23	19	20	2	64
2000	34	25	20		79
2001*	No data	29	21		50
2002	34	27	16		77
2003	30	27	18		75
2004	30	30	22		91
2005	35	32	21		88
2006	23	21	18	1	63
2007	29	16	16	1	62
2008	29	21	16		66
2009	29	26	22		77

\* Foot and Mouth Year – data incomplete



**Appendix 3 Total number of eggs in laying periods 1996-2009**

Year	Eggs laid First period	Eggs laid Second period	Eggs laid Third period	Eggs laid Fourth period	Total number of eggs laid
1996	66	60	33		159
1997	62	55	56		173
1998	80	75	74		229
1999	98	95	98	12	303
2000	146	127	102		375
2001*	No data	132	109		241
2002	167	138	74		379
2003	146	142	91		379
2004	176	159	122		457
2005	167	165	101		433
2006	105	107	87	3	302
2007	126	79	78	6	289
2008	125	101	78		304
2009	130	117	102		349

\* Foot and Mouth Year – data incomplete

**Appendix 4 Average clutch size for each laying period 1996-2009**

Year	Average clutch size: First period	Average clutch size: Second period	Average clutch size: Third period	Average clutch size: Fourth period	Overall average clutch size for year
1996	4.1	5.5	4.7		4.67
1997	3.9	5.5	5.1		4.67
1998	4.7	5.0	5.3		4.97
1999	4.3	5.0	4.9	6.0	4.73
2000	4.3	5.1	5.1		4.74
2001*	No data	4.6	5.2		4.82
2002	4.9	5.1	4.6		4.92
2003	4.9	5.3	5.1		5.05
2004	4.5	5.3	5.5		5.02
2005	4.8	5.2	4.8		4.92
2006	4.6	5.1	4.8	3.0	4.79
2007	4.3	4.9	4.9	6.0	4.66
2008	4.3	4.8	4.9		4.60
2009	4.5	4.5	4.6		4.53
Average	4.46	5.06	4.96		

\* Foot and Mouth Year – data incomplete

**Appendix 5 Number of young Tree Sparrow hatched 1996-2009**

Year	First clutch	Second clutch	Third clutch	Fourth clutch	Annual total	Average young per clutch	Total number of young that fledged
1996	50	23	32		105	3.08	78
1997	45	50	41		136	3.67	112
1998	66	62	45		173	3.76	150
1999	56	51	71	8	186	2.90	164
2000	76	91	49		216	2.73	190
2001*	No data	119	47		166	3.32	103
2002	116	96	48		260	3.37	241
2003	110	99	57		266	3.54	228
2004	114	107	69		290	3.18	254
2005	88	76	55		219	2.48	167
2006	75	63	51	0	189	3.00	146
2007	87	47	42	3	179	2.88	153
2008	90	71	47		208	3.15	182
2009	84	107	62		253	3.28	224
Average						3.16	

\* Foot and Mouth Year – data incomplete

**Appendix 6 Number of Tree Sparrow successfully fledging 1996-2009**

Year	First clutch	Second clutch	Third clutch	Fourth clutch	Annual total	Average fledging per clutch	Total number of young born
1996	42	15	21		78	2.29	105
1997	37	36	39		112	3.02	136
1998	55	60	35		150	3.26	173
1999	52	47	59	6	164	2.56	186
2000	62	87	41		190	2.40	216
2001*	No data	80	23		103	2.06	166
2002	111	89	41		241	3.12	260
2003	105	84	39		228	3.04	266
2004	100	93	61		254	2.79	290
2005	82	60	25		167	1.89	219
2006	61	46	39	0	146	2.31	189
2007	82	39	32	0	153	2.46	179
2008	76	71	35		182	2.75	208
2009	74	93	57		224	2.90	253
Average						2.63	

\*Foot and Mouth Year – data incomplete



**Appendix 7 Analysis of successful fledging per clutch 1996-2009**

Year	First clutch: av. per clutch	Second clutch: av. per clutch	Third clutch: av. per clutch	Fourth clutch: av. per clutch	Annual average	Total number of pulli fledged
1996	2.62	1.36	3.00		2.29	78
1997	2.31	3.60	3.54		3.02	112
1998	3.23	4.00	2.50		3.26	150
1999	2.26	2.47	2.95	3.00	2.56	164
2000	1.82	3.48	2.05		2.40	190
2001*	No data	2.75	1.09		2.06	103
2002	3.26	3.29	2.56		3.12	241
2003	3.50	3.11	2.16		3.04	228
2004	2.56	3.10	2.77		2.79	254
2005	2.34	1.87	1.19		1.89	167
2006	2.65	2.19	2.16	0	2.31	146
2007	2.82	2.43	2.00	0	2.46	153
2008	2.62	3.38	2.18		2.75	182
2009	2.55	3.57	2.59		2.90	224
Average	2.65	2.90	2.33		2.63	

\*Foot and Mouth Year – data incomplete

**Appendix 8 Colony analysis 1996-2009 using Summers-Smith (1995) calculation method**

Year	% fledged young from eggs laid	% eggs laid that hatched	% hatched young that fledged
1996	49.05	66.03	74.28
1997	64.73	78.61	82.35
1998	65.50	75.54	86.70
1999	54.12	61.38	88.17
2000	50.66	57.60	87.96
2001	Incomplete data	Foot & Mouth	epidemic
2002	63.58	66.60	92.69
2003	60.15	70.18	85.71
2004	55.57	63.45	87.58
2005	38.56	50.57	76.25
2006	48.34	62.58	77.24
2007	52.94	61.93	85.47
2008	59.86	68.42	87.50
2009	64.18	72.49	88.53
Average	55.94	65.79	84.64

Appendix 3. Analysis of individual birding for 1995-2005. A list of birds and their counts for each year.

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
1995	1	1	1	1	1	1	1	1	1	1	1	12
1996	1	1	1	1	1	1	1	1	1	1	1	12
1997	1	1	1	1	1	1	1	1	1	1	1	12
1998	1	1	1	1	1	1	1	1	1	1	1	12
1999	1	1	1	1	1	1	1	1	1	1	1	12
2000	1	1	1	1	1	1	1	1	1	1	1	12
2001	1	1	1	1	1	1	1	1	1	1	1	12
2002	1	1	1	1	1	1	1	1	1	1	1	12
2003	1	1	1	1	1	1	1	1	1	1	1	12
2004	1	1	1	1	1	1	1	1	1	1	1	12
2005	1	1	1	1	1	1	1	1	1	1	1	12
Total	12	12	12	12	12	12	12	12	12	12	12	144

Appendix 4. Analysis of individual birding for 1995-2005. A list of birds and their counts for each year.

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
1995	1	1	1	1	1	1	1	1	1	1	1	12
1996	1	1	1	1	1	1	1	1	1	1	1	12
1997	1	1	1	1	1	1	1	1	1	1	1	12
1998	1	1	1	1	1	1	1	1	1	1	1	12
1999	1	1	1	1	1	1	1	1	1	1	1	12
2000	1	1	1	1	1	1	1	1	1	1	1	12
2001	1	1	1	1	1	1	1	1	1	1	1	12
2002	1	1	1	1	1	1	1	1	1	1	1	12
2003	1	1	1	1	1	1	1	1	1	1	1	12
2004	1	1	1	1	1	1	1	1	1	1	1	12
2005	1	1	1	1	1	1	1	1	1	1	1	12
Total	12	12	12	12	12	12	12	12	12	12	12	144



SHORT COMMUNICATION: A NORTHUMBRIAN NATURALIST ABROAD

CLOACA-PECKING IN SEYCHELLES SUNBIRD *NECTARINIA DUSSUMIERI*

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In December 2010, on the island of Curieuse in the Seychelles Archipelago, the process of nest building by a female Seychelles Sunbird *Nectarinia dussumieri* had been intermittently observed over a period of two weeks before any sign of egg-laying. A noisy display with male and female then occurred and a photograph (Fig. 1) recorded the male's beak penetrating the female cloaca. Although this activity, referred to as 'cloaca pecking', is not described in local field guides, it has been observed in the other Seychelles endemic sunbird *Nectarinia sovimanga* (Prys-Jones R., *personal communication*), but is not confined to these islands or indeed this Family (Skerrett *et al.*, 2001; Bowler, 2006). Definitive observations have been made on the Dunnock *Prunella modularis* where Davies (1992) has noted that observations of such behaviour date from 1933. In 1983, he reported that such action in display prior to copulation stimulates the female to eject sperm of a previous male and the intensity of the display correlates with closeness to the act of insemination by the earlier male (Davies, 1983). These evolutionary mechanisms to protect and preserve paternity in polyandrous species are most developed in insects and include mate guarding, mating plugs and physical removal of a rival's sperm.

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**Fig. 1** The beak of the male Seychelles Sunbird penetrating the cloaca of a female.



## MILLERITE FROM COLDBERRY GUTTER AND GREAT EGGLESHOPE, TEESDALE, COUNTY DURHAM

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### SUMMARY

Millerite (NiS) has been reported from only a handful of localities within the Northern Pennine Orefield and the adjoining structurally contiguous Northumberland and Durham Coalfield. In all of these occurrences, millerite appears to comprise a very minor component of vein or related deposits typical of the Northern Pennine suite of Mississippi Valley-style hydrothermal deposits, or within veinlets or joint fillings of unknown affinities cutting Coal Measures rocks. Described here is an occurrence of millerite, of authigenic origin, in clay-ironstone nodules within shales of the Namurian Stainmore Group at Coldberry Gutter near Middleton in Teesdale, and from the nearby Wiregill Low Level in Great Egglestone.

### INTRODUCTION

In Britain, millerite (NiS) has been reported as a minor constituent of a variety of types of hydrothermal veins (Tindle, 2008). The mineral is also well known as sprays of delicate acicular crystals, locally accompanied by siegenite, galena, sphalerite, pyrite, etc, all of authigenic origin, within clay-ironstone nodules at numerous localities within the Coal Measures of the South Wales Coalfield (Bevins, 1994; Tindle, 2008). Similar occurrences of authigenic millerite have been reported from central Scotland (Hedde, 1901), from the Warwickshire (Walker, 1988) and West Cumbrian (Young and Nancarrow, 1988) coalfields.

#### **Previous records of millerite from North East England**

In the Northern Pennine Orefield, millerite has been recorded from Boltsburn Mine, Rookhope, Weardale [NY937 428], Cowgreen Mine, Teesdale [NY 810 306], (Dearman and Jones, 1967; Dunham, 1990) and from Brownley Hill Mine, Nenthead [NY776 446] (Green and McCallum, 1993). At these localities it is present as tuft-like clusters of small capillary crystals within cavities in fluorite, baryte, calcite or ankerite-rich veinstone; associated sulphide minerals include galena, sphalerite or pyrite, though other primary nickel minerals have not been observed. The author is aware of several anecdotal reports of acicular millerite crystals, said to have been collected from cavities in the Greencleugh Vein at Frazer's Hush Mine, Rookhope, Weardale [NY890 443], though neither specimens nor written records of these supposed finds have been traced. At Scordale Mines, near Appleby [NY764 228], Bridges (1978) reported acicular millerite in association with niccolite and gersdorffite in fluorite and baryte-rich veinstone. Ixer (1986) found small amounts of millerite in the unusual niccolite-ullmanite-galena-sphalerite ore collected and described by Russell (1927) from Settlingstones Mine [NY849 688], near Haydon Bridge. In all of these instances, the mineral is clearly a minor constituent of the sulphide assemblage within veins, or associated metasomatic replacement bodies, typical of the Northern Pennine suite of Mississippi Valley-type hydrothermal mineralisation.

Within the adjoining coalfield, millerite has been described from a borehole at Green's Farm, near Whickham [NZ 228 602] (Anderson and Smythe, 1942), from Walker Colliery [NZ 295 640] and Boldon Colliery [NZ3623 6048] (Dearman and Jones, 1967) and from Blackhall Colliery [NZ 4979 4104] (Young *et al.*, 1985). Here too, the mineral was found as delicate acicular crystals within veinlets or coating joints within Coal Measures rocks in situations entirely consistent with an epigenetic hydrothermal origin.

### **The geology of Coldberry Gutter and Great Egglesthope**

Coldberry Gutter is perhaps the largest and most conspicuous opencast working on a lead-bearing vein within this part of the Northern Pennines. It forms an extremely prominent landscape feature which breaches the watershed between the Bow Lee and Hudeshope valleys on the north side of Teesdale [NY 9285 2895 - NY 9355 2900]. Although commonly described as a hush, the 'gutter' is more appropriately considered as an extremely large opencast working excavated along the line of the Lodgesike-Manorgill Vein, one of the most prominent mineralised structures in this part of the orefield. The steep northern sides of the excavation expose beds from the Firestone up to the Low Grit Sill (Dunham 1990, 247). Beds up to the supposed equivalent of the Grindstone Sill, including a thin bed of limestone which may be correlated with the Upper Felltop Limestone, are exposed on the south side. The 'gutter' also exposes sections of the Palaeogene Cleveland Dyke, which here lies adjacent to the vein system.

Near its eastern extremity, the north wall of the 'gutter' exposes the base of the Low Grit Sills sandstone [NY9300 2896]. This is here underlain by approximately six metres of dark grey silty shales in which occur numerous rather evenly-spaced beds of rounded clay-ironstone nodules up to around 30 cm in diameter. Millerite has been collected from some of these nodules, both from at least one bed exposed *in situ* and from weathered-out nodules on the talus slopes beneath the exposure.

Great Egglesthope is a prominent valley excavated in sandstones and mudstones of the Stainmore Group which are here cut by several major mineral veins, including the eastwards extension of the Lodgesike-Manorgill vein system formerly worked at Coldberry Gutter. Wiregill Low Level [NY9744 3024], approximately 4 km east of Coldberry Gutter, is one of several underground workings that were driven into this mineralised structure, through beds which include, on the north side of the vein, those immediately beneath the Low Grit Sill, seen at Coldberry Gutter.

### **MILLERITE SPECIMENS**

#### **Coldberry Gutter**

Many of the clay ironstone nodules at Coldberry Gutter exhibit conspicuous septarian structure, with the septa composed of calcite, quartz and locally-abundant kaolinite. Cavities, up to 15 mm wide, within these septa are lined with colourless pyramidal quartz crystals around 1 mm across. Within some of these cavities millerite is locally conspicuous. The identity of the millerite was confirmed by X-ray diffraction analysis at the Natural History Museum, London (Natural History Museum X-ray reference G2158). It occurs both as single isolated brassy capillary crystals up to about 1.5 mm long resting on quartz, or more commonly as extremely delicate capillary crystals up to about 3 mm long forming confused masses up to 7 mm across. Very rarely, when breaking open nodules, millerite has been found as detached radiating sprays of straight delicate acicular crystals up to 12 mm long. One specimen of this sort was found to exhibit a faint yellowish green surface coating, similar in appearance to green coatings on millerite from Brownley Hill Mine, Nenthead which were shown to be composed of gypsum in which a small amount of nickel may be substituting for calcium (Green and McCallum, 1993). Insufficient green material was found on the Coldberry specimen to allow its determination.



### Wiregill Low Level

A single septarian clay ironstone nodule, collected from the spoil heaps of Great Egglesthorpe [NY9744 3024], was also found to contain millerite. In this single sample, the millerite occurs as isolated straight acicular crystals up to 3 mm long resting on small quartz crystals. The specimen is identical in appearance to those recovered from Coldberry Gutter. Whereas it is, of course, impossible to determine the precise provenance of this sample from within the ground worked at Wiregill Low Level, it is known that the beds beneath the Low Grit Sill were cut in parts of these workings. It is thus possible that the single millerite specimen, obtained here, may have originated from the same stratigraphical horizon as those at Coldberry Gutter.

### CONCLUSIONS

The millerite specimens from both Coldberry Gutter and Wiregill Low Level resemble very closely specimens from clay ironstone nodules in the South Wales coalfield (Bevins, 1994) and the Cumbrian coalfield (Young and Nancarrow, 1988). In all of these occurrences the millerite appears to be of authigenic origin, and unconnected with the hydrothermal mineralisation of the Northern Pennine Orefield. As with authigenic millerite elsewhere, the source of the nickel is not clear.

### ACKNOWLEDGEMENTS

Peter Tandy of the Department of Mineralogy, the Natural History Museum, London is thanked for the confirmation of the identity of the millerite by X-ray diffraction.

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## BEETLES (COLEOPTERA) RECORDED FROM GOSFORTH PARK NATURE RESERVE

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### SUMMARY

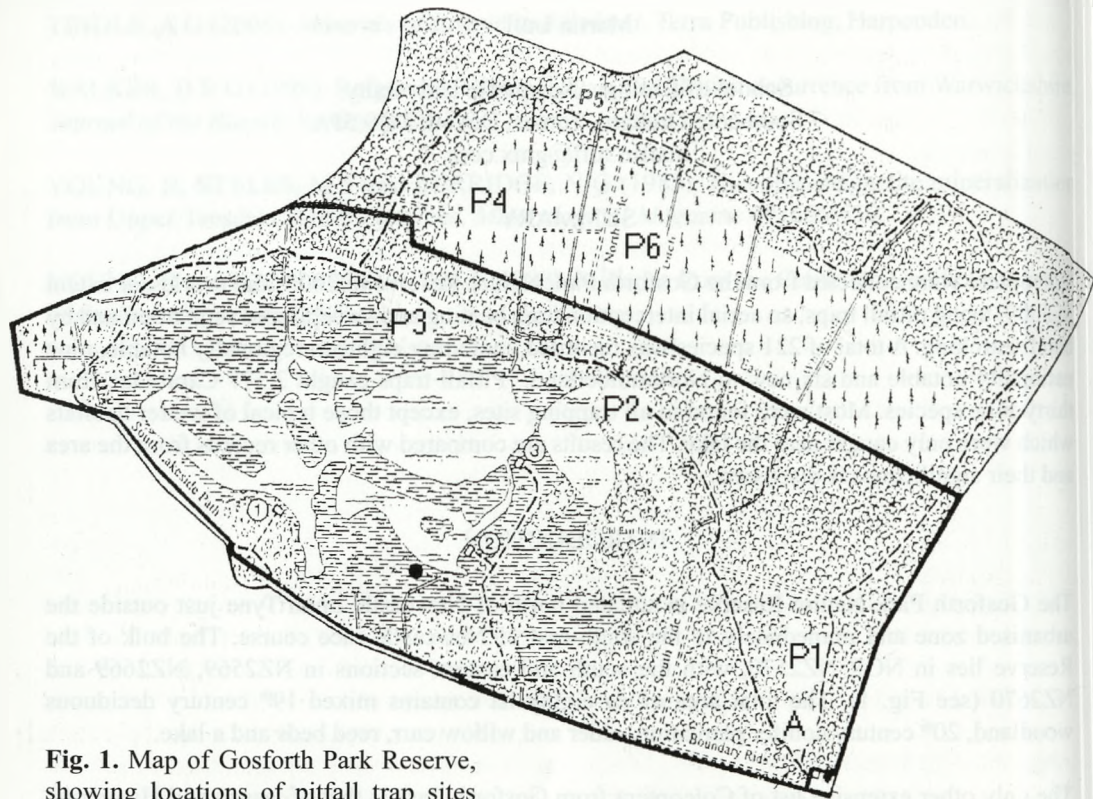
Coleoptera were collected from the Gosforth Park Nature Reserve in 2008, and to a lesser extent in 2009, using pitfall traps, an aerial interception trap, beating and sweeping of vegetation and by hand searching. A total of 221 species was recorded, including eighteen regionally notable, nine nationally notable and six new to Northumberland. Pitfall traps caught 2,577 Carabidae from thirty-nine species. Most were found in all trapping sites, except those typical of wetter habitats which were only caught near the lake. The results are compared with other records from the area and their significance is discussed.

### INTRODUCTION

The Gosforth Park Nature Reserve is situated north of Newcastle upon Tyne just outside the urbanised zone and immediately to the south-east of Newcastle race course. The bulk of the Reserve lies in NGR NZ2570, with the south and eastern sections in NZ2569, NZ2669 and NZ2670 (see Fig. 1). The total area of *ca* eighty ha contains mixed 19<sup>th</sup> century deciduous woodland, 20<sup>th</sup> century conifer plantation, alder and willow carr, reed beds and a lake.

The only other extensive list of Coleoptera from Gosforth Park is that of Jessop and Hammond (1993). They found ninety-four species using a large flight interception trap. The catch and diversity was, however, less than that from Lockhaugh Bank Wood in the lower Derwent valley, Co. Durham. A list of Coleoptera from Castle Eden Dene, Co. Durham (Luff *et al.*, 1974; Luff and Sheppard, 1980) contained 450 species, but that included coastal cliffs and grassland as well as woodland. The Endangered (RDB1) fungus beetle *Triplax scutellaris* Carpentier, first recorded from Gibside by R S Bagnall in 1905, was found in Gosforth Park in 1979 (Luff and Walker, 1981). The Invertebrate Site Register (ISR) data (Ball, 1986; 1987) now on the National Biodiversity Network (NBN), (<http://data.nbn.org.uk/>), lists twenty-three beetle species from Gosforth Park, including *T. scutellaris*. There are also records of aquatic Coleoptera from Gosforth Park in the local atlas by Eyre *et al.* (1985).

The present study aims to build on the earlier work of Jessop and Hammond (1993) towards a more complete inventory of the terrestrial beetles of the Reserve.



**Fig. 1.** Map of Gosforth Park Reserve, showing locations of pitfall trap sites 'P1-P6' and interception trap, 'A'.

## METHODS

The Reserve was visited approximately weekly from 8 April to 2 October 2008 and once (29 May) in 2009.

On 22 April 2008, sets of five pitfall traps, each comprising a plastic cup, 8.5 cm diameter and 10 cm deep, part filled with saturated salt solution, were installed at six sites, P1-P6 (see Fig. 1):

- P1: in oak wood near entrance
- P2: at edge of reed litter south of lakeside path
- P3: among nettles in carr north of lake
- P4: in conifer plantation
- P5: in beech woodland near golf course
- P6: in grassy clearing with young birch trees among conifers.

The traps were emptied at 2-3 week intervals. Sites P2-P4 were all very damp; because of the



very wet conditions in 2008, especially in the latter part of the summer, the traps at P2 were mostly flooded out by 20 August and were abandoned by the end of the season.

On 9 June, an aerial interception trap was installed at a height of about 7 m in an old oak tree near to Lake Lodge (A on Fig. 1). The trap comprised two interlocking clear Perspex sheets, 60 cm tall and 40 cm wide, above a square metal funnel leading to a collecting bottle containing saturated salt solution. This was emptied weekly until 10 September.

On occasions when the traps were not being serviced, general collecting was carried out by sweeping herbaceous vegetation, beating the lower branches of trees, sieving leaf and reed litter, searching under bark, in fungal fruiting bodies and in rotting wood.

Species statuses are taken from the *Review of Scarce and Threatened Coleoptera* by Hyman and Parsons (1992; 1994) (Nationally Notable Species) and the *Red Data Book for Northumberland* (NRDB) Kerslake (1998) (Regionally Notable species). Nomenclature and the taxonomic order in the list follow Duff (2008).

## RESULTS

A total of 221 species was recorded. The breakdown of species statuses is as follows (including a few statuses unknown but ascribed by the author): Common 168; Local 44; Nationally Notable 9. Eighteen species are Regionally Notable, of which six are new to Northumberland and three new to north-east England.

Thus 27/221 (12.2% of the total species) are either Regionally or Nationally Notable. The full list is appended, but this section provides further information on the ground beetles and details of all those species that are either Nationally Notable, or Regionally Notable (NR) as listed in the *Red Data Book for Northumberland*. Species new to the region or to the county, which need to be added to the NR list, are listed as 'NR+'.

### Carabidae (ground beetles)

Of the thirty-nine species recorded all but three were trapped in pitfall traps. Table 1 gives the numbers of each species caught at each site, ranked according to total catch and omitting species of which fewer than five individuals were trapped.

The four most abundant species, *Pterostichus madidus*, *Nebria brevicollis*, *P. cristatus* and *P. nigrita* each had their maximum catch in a different pitfall set, but all occurred at least singly in all sets of traps. Only *P. nigrita*, a known inhabitant of wet habitats, was almost restricted to the wettest sites P3 and P2. Other species that tended to favour the wetter sites, such as *Loricera pilicornis*, *Clivina fossor* and *Bembidion mannerheimi* were caught in relatively low numbers. *Pterostichus melanarius*, a species more typical of open grassland and arable fields, was found in all pitfall sites except, surprisingly, P5 adjacent to the race course. This species may be an immigrant from nearby arable fields.

**Table 1**

Numbers of Carabidae caught in pitfall traps at each site, ranked in order of total catch. Species with fewer than five individuals are omitted. The highest catch of each species is emboldened.

Species	Pitfall trap Site						Total
	1	2	3	4	5	6	
<i>Pterostichus madidus</i>	60	30	87	70	<b>342</b>	109	698
<i>Nebria brevicollis</i>	33	3	<b>343</b>	210	27	64	680
<i>Pterostichus cristatus</i>	<b>184</b>	8	136	49	57	31	465
<i>Pterostichus nigrita</i>	1	18	<b>111</b>	3	1	1	135
<i>Patrobus atrorufus</i>	0	0	<b>109</b>	21	0	0	130
<i>Platynus assimilis</i>	0	1	<b>84</b>	27	0	0	112
<i>Pterostichus niger</i>	<b>50</b>	4	15	3	3	13	88
<i>Pterostichus melanarius</i>	9	4	4	<b>16</b>	0	14	47
<i>Loricera pilicornis</i>	1	5	14	<b>15</b>	2	8	45
<i>Pterostichus strenuus</i>	<b>24</b>	1	5	3	2	7	42
<i>Carabus violaceus</i>	0	1	4	2	9	<b>18</b>	34
<i>Calathus rotundicollis</i>	<b>13</b>	0	1	3	2	1	20
<i>Notiophilus biguttatus</i>	5	0	2	<b>8</b>	1	3	19
<i>Cychrus caraboides</i>	1	0	1	2	<b>5</b>	1	10
<i>Clivina fossor</i>	0	0	1	7	0	0	8
<i>Bembidion mannerheimi</i>	0	0	3	<b>4</b>	1	0	8
<i>Trechus secalis</i>	0	0	0	<b>5</b>	0	1	6
<i>Agonum fuliginosum</i>	0	<b>5</b>	0	0	0	0	5
<i>Leistus terminatus</i>	0	2	<b>3</b>	0	0	0	5
<b>Total</b>	381	82	923	448	452	271	2557

### Notable species

Details of the Nationally or Regionally Notable species are given below. All dates are in 2008 unless stated otherwise.

#### Carabidae

*Leistus rufomarginatus* (Duftschmid, 1812) (Fig. 2) **NR, Local, naturalised**

One larva in P5, 20 May, one adult in P4, 25 July. Larva and adult in oak litter, 29 May 2009. A relatively recent immigrant to Britain, originally in the south-east, now found in woodlands as far north as central Scotland (Luff, 1998).

*Leistus spinibarbis* (F., 1775) (Fig. 3) **NR, Local**

One found under bark of fallen beech, 12 August. A woodland species near its northern limit with few Northumberland records (Luff *et al.*, 1996).

*Pterostichus cristatus* (Dufour, 1820) (Fig. 4) **Notable**

Many in all pitfalls throughout the season. This species is almost restricted to Cumbria, Durham, Northumberland and southern Scotland. Possibly accidentally introduced via docks on the Tyne in the 19<sup>th</sup> century, the distribution is still centred on the River Tyne (Luff, 1998).



*Agonum thoreyi* Dejean, 1828 (Fig. 5) **NR, Local**

Found occasionally in P3 and in reed litter. This marsh species is widespread and common in the south but more local further north, occurring as far north as southern Scotland. Recorded from Gosforth Park in the ISR.

*Ophonus rufibarbis* F., 1792 (Fig. 6) **NR, Common**

One in P5, 25 July. This phytophagous species is common in southern England north to Yorkshire, but much more local further north.

Hydraenidae

*Hydraena britteni* Joy, 1907 (Fig. 7) **NR, Common**

One in litter, 30 July. A water beetle associated with decomposing plant material in slowly running water. Two recent records in NRDB but not recorded from Gosforth Park in the national water beetle recording scheme.

Ptiliidae

*Ptinella cavelli* (Broun, 1893) **NR, Naturalised**

Few found under bark of fallen beech, 10 September. A tiny woodland species, introduced from New Zealand and first recorded in Britain in 1975.

Leiodidae

*Agathidium varians* Beck, 1817 (Fig. 8) **NR, Local**

One in aerial trap, 17 July. Common over most of England, becoming more local northwards.

*Catops coracinus* Kellner, 1846 (Fig. 9) **NR, Local**

One in pitfalls P5, 25 July. A local beetle found in decaying fungus and carrion.

Silphidae

*Dendroxena quadrimaculata* (Scopoli, 1772) (Fig. 10) **Notable**

One larva was found in P1 on 3 July, but adults were not found despite extensive searching. This conspicuous species is an active predator of geometrid caterpillars in oak foliage. Restricted to old woodland. Very local in northern England with only one other recent Northumberland record from Hyon's Wood, 1994 (Luff *et al.*, 1996). There is an old record from Gibside, Co. Durham (Bold, 1872).

Staphylinidae

*Phloeonomus pusillus* (Gravenhorst, 1806) (Fig. 11) **NR, Local**

One in *Polyporus* on birch. A local species usually found under conifer bark.

*Aleochara ruficornis* Gravenhorst, 1802 **Notable**

One in pitfalls P6, 20 August. A local species, possibly associated with moles' runs and nests, which is distributed widely in the north-east (Luff *et al.*, 1996).

*Leptusa norvegica* Strand, 1941 **Notable**

One under bark of fallen beech logs, 20<sup>th</sup> August. A sub-cortical species previously confused with *L. fumida* (Erichson) (Fig. 12). Probably the first record for north-east England.

*Gyrophana strictula* Erichson, 1839 **Notable**

Several on fungal fruiting bodies on fallen logs, 12 August. Another minute but fungivorous species, associated with Oak Mazegill *Daedalea quercina* (L.). Recorded from Lockhaugh Bank Wood by Jessop and Hammond (1993), but not from Gosforth Park.

*Oligota apicata* Erichson, 1837 **Notable**

Several in *Polyporus* on birch logs on 9 June and 30 July. This minute fungus-living species is

probably predatory on Ciidae eggs and larvae. First recorded from the north-east by Jessop and Hammond (1993) from Lockhaugh Bank Wood, but not from Gosforth Park, so this is a new record for Northumberland.

*Bisnius subuliformis* (Gravenhorst, 1802) (Fig. 13) **NR+, Local**

(Formerly known as *Philonthus fuscus*). One in aerial trap in oak tree 24 July. This small rove beetle is found in litter in birds' nests. Possibly predatory on fly or flea larvae. Mainly in southern England becoming rarer northwards. First record for north-east England.

#### Endomychidae

*Endomychus coccineus* (L., 1758) (Fig. 14) **NR Local**

One under bark of fallen beech tree, 20 August. A brightly-coloured 'false-ladybird' beetle. The only other recent Northumberland record is from Morralee Wood, 1986 (National Biodiversity Network).

#### Coccinellidae

*Halyzia sedecimguttata* (L., 1758) (Fig. 15) **NR Local** The Orange Ladybird

One by beating oaks, 20 May. This ladybird has recently extended its range throughout northern England.

#### Latridiidae

*Dienerella elongata* (Curtis, 1830) (Fig. 16) **NR+ Local**

Several in *Polyporus* on birch stump, 20 August. A minute, elongated beetle found on moulds and fungi. Apparently the first published record for Northumberland, although the author also has two examples from Heddon-on-the-Wall collected in 1991. This species was previously confused with *D. clathrata* (Mannerheim) (Krell *et al.*, 2005); the map given for *D. elongata* by these authors shows no confirmed records between Yorkshire and northern Scotland.

#### Tetratomidae

*Tetratoma fungorum* F., 1790 (Fig. 17) **NR Local**

In *Polyporus* on birch logs, 20 August. A fungus beetle with few recent records from Northumberland, where it is near the northern limit of its range.

#### Salpingidae

*Vincenzellus ruficollis* (Panzer, 1794) (Fig. 18) **NR Local**

Two under bark of fallen beech, 20 August. Local in Northumberland.

#### Cerambycidae

*Pachytodes cerambyciformis* (Schrank, 1761) (Fig. 19) **NR Local**

On umbelliferae in warden's garden, 3 July. The larvae of this species breed underground in decaying stumps. There are six previous Northumberland records.

*Phymatodes testaceus* (L., 1758) (Fig. 20) **NR+ Local** The Tanbark Beetle

One found flying in warden's garden, 29 July. This brown or brown/metallic species breeds in oaks. There is a single pre-1970 record from Co. Durham (Twinn and Harding, 1999), and the present record is not only a new record for Northumberland but also the furthest north that the species has been found in Britain.



#### Chrysomelidae

*Chrysomela aenea* L., 1758 (Fig. 21) **NR Local** The Alder Leaf Beetle

Several on alders east of the lake, 24 June. This species has been recorded from scattered Northumberland sites.

*Pyrrhalta viburni* (Paykull, 1799) (Fig. 22) **NR+ Local** The Guilder Rose Beetle.

Several larvae on *Viburnum* in warden's garden, 9 June; adults reared from captured larvae, 15 July. Sometimes abundant on the same plants in other years (P Drummond, *pers. comm.*). A known pest of *Viburnum* in gardens in southern England, but with only two Northumberland localities (Cox, 2007).

#### Attelabidae

*Attelabus nitens* (Scopoli, 1763) (Fig. 23) **Notable**

Several beaten from oaks, 29 May 2009. A leaf-rolling weevil of oaks, only known in the county from Gosforth Park (ISR).

#### Erirhinidae

*Grypus equiseti* (F., 1775) (Fig. 24) **Notable**

One in pitfalls P2, 9 June. A weevil associated with *Equisetum*; it is widespread in the region (Luff *et al.*, 1966) and does not merit its Notable status.

#### Curculionidae

*Curculio villosus* F., 1781 (Fig. 25) **Notable**

One in oak leaf litter, 29 April, one by beating young oak by south path, 20 May. A nut weevil found in galls on *Quercus*. One previous recent Northumberland record from Ned's Whin, 1995 (NRDB).

### DISCUSSION

It is clear even from this partial survey, mostly in a single, very wet year, that the Reserve has an extensive beetle fauna with several species of local note. The beetle fauna of the site found in the present work still represent a very incomplete picture of its total beetle diversity. A further species, *Sinodendron cylindricum* (L.) (Lucanidae) was reported to the author by the warden; there is also a photograph of *Leptura quadrifasciata* L. (Cerambycidae) in the members' hut. Jessop and Hammond (1993) listed ninety-three species of beetle from Gosforth Park, but only thirty-five of these were found in the present work. Luff and Walker (1981) recorded two further species of *Triplax* (Erotylidae). The national water beetle recording scheme list from the Park (G N Foster, *pers. comm.*) includes twenty-two species, of which only seven were recorded in this work. The resulting recorded beetle fauna of the Park is outlined in Table 2; the total of more than 310 species is probably the most extensive list from any locality in Northumberland. However there are still many gaps in our knowledge of the Reserve's beetle fauna. The list of ground-active Carabidae and Staphylinidae is probably fairly complete, due to the extensive pitfall trap sampling in the present work. But there may still be many species of plant-living beetles unrecorded, as evidenced by the fact that the single site visit made in 2009, collecting mainly by beating oak and other trees, added three extra species among the fourteen found. The widespread two-spot ladybird *Adalia bipunctata* (L.) (Coccinellidae) has not yet been formally recorded, and it is likely that the immigrant harlequin ladybird, *Harmonia axyridis* (Pallas) may be found there in the not too distant future as it has been recorded in Northumberland and southern Scotland since 2008 (see <http://www.harlequin-survey.org>).

The Gosforth Park beetle list still contains fewer species than the 450 from Castle Eden Dene (Luff *et al.*, 1974; Luff and Sheppard, 1980) or the 447 from Gibside (Jessop and Eyre, 1992). Also in County Durham, flight interception trapping recorded 204 species from Lockhaugh Bank Wood (Jessop and Hammond, 1993) and 243 from *Phragmites* reed beds near Billingham (Jessop and Hammond, 1997). It is hoped that further recording by other coleopterists may add further to our knowledge of the undoubted extensive beetle fauna of Gosforth Park.

**Table 2**

Numbers of species of beetle recorded from Gosforth Park.

Source of data	Number of species		
	Total	Additional	Cumulative
This paper	221	221	221
Other records (see text)	2	2	223
Luff and Walker (1981)	2	2	225
Ball (1986; 1987)	23	15	240
Hammond and Jessop (1993)	93	58	298
National water beetle recording scheme	22	14	312

#### ACKNOWLEDGMENTS

I am indebted to the Natural History Society of Northumbria and to Natural England for this opportunity to collect in the Reserve and SSSI. In particular thanks are due to the warden, Paul Drummond, for his help, enthusiasm and for tree climbing to install the interception trap. I am also grateful to Mr Colin Johnson and Dr Colin Welch for identification of Ptiliidae + some Cryptophagidae and some Staphylinidae respectively. Data from the national water beetle recording scheme were kindly made available by Professor Garth Foster. For permission to use colour pictures of selected notable species I must thank Dr Ortwin Bleich, Germany (Figs. 2-4) and Professor Lech Borowiec, Poland (Figs. 5-25).

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## APPENDIX

### Complete species list

Those species treated in more detail above are indicated by \*\*.

#### Dytiscidae Carnivorous water beetles

*Hydroporus memnonius* Nicolai, 1822

*Ilybius fuliginosus* (F., 1792)

#### Carabidae Ground beetles

*Cychrus caraboides* (L., 1758)

*Carabus violaceus* L., 1758

*Leistus fulvibarbis* Dejean, 1826

*Leistus rufescens* (F., 1775)

\**Leistus rufomarginatus* (Duftschmid, 1812)

NR

\**Leistus spinibarbis* (F., 1775) NR

*Nebria brevicollis* (F., 1792)

*Notiophilus biguttatus* (F., 1779)

*Loricera pilicornis* (F., 1775)

*Clivina fossor* (L., 1758)

*Patrobis atrorufus* (Stroem, 1768)

*Trechus secalis* (Paykull, 1790)

*Asaphidion curtum* (Heyden, 1870)

*Ocys harpaloides* Serville, 1821.

*Bembidion lampros* (Herbst, 1784)

*Bembidion biguttatum* (F., 1779)

*Bembidion mannerheimii* Sahlberg, 1827

\**Pterostichus cristatus* (Dufour, 1820) Notable

*Pterostichus madidus* (F., 1775)

*Pterostichus melanarius* (Illiger, 1798)

*Pterostichus niger* (Schaller, 1783)

*Pterostichus nigrita* agg. (comprises *P. nigrita*

(Paykull, 1790) and *P. rhaeticus* Heer, 1837/8)

*Pterostichus strenuus* (Panzer, 1796)

*Calathus fuscipes* (Goeze, 1777)

*Calathus rotundicollis* Dejean, 1828

*Platynus assimilis* (Paykull, 1790)

*Agonum fuliginosum* (Panzer, 1809)

\**Agonum thoreyi* Dejean, 1828 NR

*Curtonotus aulicus* (Panzer, 1796)

*Amara communis* (Panzer, 1797)

*Amara familiaris* (Duftschmid, 1812)

*Amara plebeja* (Gyllenhal, 1810)

*Harpalus rufipes* (Degeer, 1774)

\**Ophonus rufibarbis* (F., 1792) NR

*Trichocellus placidus* (Gyllenhal, 1827)

*Bradycellus verbasci* (Duftschmid, 1812)

*Badister bullatus* (Schränk, 1798)

*Paradromius linearis* (Olivier, 1795)

*Dromius quadrimaculatus* (L., 1758)

#### Helophoridae

*Helophorus flavipes* (F., 1792)

*Helophorus grandis* Illiger, 1798

#### Hydrophilidae Water scavenger beetles

*Cercyon melanocephalus* (L., 1758)

*Megasternum concinnum* (Marsham, 1802)

*Anacaena globulus* (Paykull, 1798)

#### Histeridae Predaceous pill beetles

*Margarinotus striola* (Sahlberg, 1819)

#### Hydraenidae

\**Hydraena britteni* Joy, 1907 NR

#### Ptiliidae Feather wing beetles.

\**Ptinella cavelli* (Broun, 1893)

*Acrotrichis intermedia* (Gillmeister, 1845)

#### Leiodidae

\**Agathidium varians* Beck, 1817 NR

*Nargus velox* (Spence, 1813)

*Nargus wilkinii* (Spence, 1813)

\**Catops coracinus* Kellner, 1846 NR

*Catops nigricans* (Spence, 1813)

*Catops tristis* (Panzer, 1793)

#### Silphidae Carrion and burying beetles.

*Nicrophorus vespilloides* Herbst, 1783

\**Dendroxena quadrimaculata* (Scopoli, 1772)

Notable

*Silpha atrata* L., 1758

#### Staphylinidae Rove beetles.

*Anthobium unicolor* (Marsham, 1802)

*Olophrum piceum* (Gyllenhal, 1810)

*Lesteva longoelytrata* (Goeze, 1777)

*Omalium italicum* Bernhauer, 1902

*Omalium rivulare* (Paykull, 1789)

\**Phloeonomus pusillus* (Gravenhorst, 1806)

NR

*Megarathrus bellevoyei* (Saulcy, 1862)

*Megarathrus depressus* (Paykull, 1789)

*Proteinus brachypterus* (F., 1792)

*Lordithon thoracicus* (F., 1777)

*Tachyporus chrysomelinus* (L., 1758)



*Tachyporus hypnorum* (F., 1775)  
*Tachinus humeralis* Gravenhorst, 1802  
*Tachinus laticollis* Gravenhorst, 1802  
*Tachinus marginellus* (F., 1781)  
*Tachinus pallipes* (Gravenhorst, 1806)  
*Tachinus proximus* Kraatz, 1855  
*Tachinus rufipes* (Linnaeus, 1758)  
*\*Aleochara ruficornis* Gravenhorst, 1802  
 Notable  
*Autalia longicornis* Scheerpeltz, 1947  
*Amischa analis* (Gravenhorst, 1802)  
*Geostiba circellaris* (Gravenhorst, 1806)  
*Mocyta fungi* (Gravenhorst, 1806)  
*Philhygra melanocera* (Thomson, 1856)  
*Atheta castanoptera* (Mannerheim, 1830)  
*Atheta setigera* (Sharp, 1869)  
*\*Leptusa norvegica* Strand, 1941 Notable  
*\*Gyrophæna strictula* Erichson, 1839 Notable  
*\*Oligota apicata* (Erichson, 1837) Notable  
*Oxypoda procerula* Mannerheim, 1830  
*Stenus bimaculatus* Gyllenhal, 1810  
*Stenus fulvicornis* Stephens, 1833  
*Stenus impressus* Germar, 1824  
*Stenus junco* (Paykull, 1789)  
*Stenus picipes* Stephens, 1830  
*Stenus pusillus* Stephens, 1833  
*Lathrobium brunnipes* (F., 1792)  
*Lathrobium fulvipenne* (Gravenhorst, 1806)  
*Othius subuliformis* (Stephens, 1833)  
*Othius punctulatus* (Goeze, 1777)  
*Bisnius fimetarius* (Gravenhorst, 1802)  
*\*Bisnius subuliformis* (Gravenhorst, 1802)  
 (formerly *Philonthus fuscus*). NR+  
*Gabrius splendidulus* (Gravenhorst, 1802)  
*Philonthus carbonarius* (Gravenhorst, 1802)  
*Philonthus cognatus* Stephens, 1832  
*Philonthus decorus* (Gravenhorst, 1802)  
*Philonthus marginatus* (Müller, 1764)  
*Quedius curtipennis* Bernhauer, 1908  
*Quedius fuliginosus* (Gravenhorst, 1802)  
*Quedius fumatus* (Stephens, 1833)  
*Quedius lateralis* (Gravenhorst, 1802)  
*Quedius maurorufus* (Gravenhorst, 1806)  
*Quedius molochinus* (Gravenhorst, 1806)  
*Quedius scintillans* (Gravenhorst, 1806)  
*Ocypus brunnipes* (F., 1781)  
*Ocypus olens* (Mueller, 1764) The Devil's coach horse  
*Tasgius melanarius* (Heer, 1839)  
*Ontholestes tessellatus* (Geoffroy, 1785)

## Scarabaeidae Dung beetles and chafers.

*Aphodius contaminatus* (Herbst, 1783)

*Aphodius rufipes* (L., 1758)

## Clambidae

*Clambus punctulum* (Beck, 1817)

## Scirtidae

*Microcara testacea* (L., 1767)

*Cyphon coarctatus* Paykull, 1799

*Cyphon ochraceus* Stephens, 1830

## Elateridae Click beetles.

*Hypnoidus riparius* (F., 1792)

*Denticollis linearis* (L., 1758)

*Athous haemorrhoidalis* (F., 1801)

*Agriotes pallidulus* (Illiger, 1807)

*Dalopius marginatus* (L., 1758)

*Melanotus villosus* (Geoffroy in Fourcroy, 1785)

## Cantharidae Soldier beetles.

*Podabrus alpinus* (Paykull, 1798)

*Cantharis cryptica* Ashe, 1947

*Cantharis nigricans* (Müller, 1776)

*Cantharis pellucida* F., 1792

*Rhagonycha fulva* (Scopoli, 1763)

*Rhagonycha lignosa* (Müller, 1764)

*Rhagonycha limbata* Thomson, 1864

*Rhagonycha testacea* (L., 1758)

*Malthinus flaveolus* (Herbst, 1786)

*Malthodes marginatus* (Latreille, 1806)

## Dermestidae Hide beetles.

*Anthrenus fuscus* Olivier, 1789

## Anobiidae Wood borers.

*Ptilinus pectinicornis* (L., 1758)

## Kateretidae

*Brachypterus glaber* (Newman, 1834)

*Kateretes rufilabris* (Latreille, 1807)

## Nitidulidae Pollen and sap beetles.

*Meligethes aeneus* (F., 1775)

*Epuraea aestiva* (L., 1758)

*Epuraea melanocephala* (Marsham, 1802)

*Epuraea pallescens* (Stephens, 1835)

**Monotomidae**

*Rhizophagus dispar* (Paykull, 1800)

**Cryptophagidae** Silken fungus beetles.

*Telmatophilus typhae* (Fallen, 1802)  
*Cryptophagus dentatus* (Herbst, 1793)  
*Cryptophagus denticulatus* Heer, 1841  
*Cryptophagus scanicus* (L., 1758)  
*Atomaria mesomela* (Herbst, 1792)  
*Atomaria nitidula* (Marsham, 1802)  
*Atomaria rubella* Heer, 1841

**Byturidae** Raspberry beetles.

*Byturus tomentosus* (Degeer, 1774)

**Cerylonidae**

*Cerylon ferrugineum* Stephens, 1830

**Endomychidae**

\**Endomychus coccineus* (L., 1758) NR

**Coccinellidae** Ladybird beetles.

*Scymnus nigrinus* Kugelann, 1794  
*Exochomus quadripustulatus* (L., 1758)  
*Anisosticta novemdecimpunctata* (L., 1758)  
*Propylea quattuordecimpunctata* (L., 1758)  
\**Halysia sedecimguttata* (L., 1758) NR  
*Anatis ocellata* (L., 1758)  
*Adalia decempunctata* (L., 1758)

**Latridiidae** Mould beetles.

*Cartodere bifasciata* (Reitter, 1877)  
*Cartodere nodifer* (Westwood, 1839)  
*Enicmus transversus* (Olivier, 1790)  
\**Dienerella elongata* (Curtis, 1830) NR+  
*Corticara gibbosa* (Herbst, 1793)

**Cisidae** Fungus beetles.

*Cis bidentatus* (Olivier, 1790)  
*Cis bilamellatus* Wood, 1884  
*Cis fagi* Walth, 1839  
*Cis nitidus* (F., 1792)

**Tetratomidae**

\**Tetratoma fungorum* F., 1790 NR

**Salpingidae**

\**Vincenzellus ruficollis* (Panzer, 1794) NR  
*Salpingus planirostris* (F., 1787)  
*Salpingus ruficollis* (L., 1761)

**Scraptiidae** Tumbling flower beetles.

*Anaspis maculata* (Geoffroy in Fourcroy, 1785)  
*Anaspis regimbarti* Schilsky, 1895  
*Anaspis rufilabris* (Gyllenhal, 1827)

**Cerambycidae** Longhorn beetles.

*Grammoptera ruficornis* (F., 1781)  
\**Pachytodes cerambyciformis* (Schrank, 1761) NR  
\**Phymatodes testaceus* (L., 1758) NR+

**Chrysomelidae** Leaf beetles.

*Cryptocephalus labiatus* (Linnaeus, 1761)  
\**Chrysomela aenea* L., 1758 NR  
*Galerucella lineola* (F., 1781)  
\**Pyrrhalta viburni* (Paykull, 1799) NR+  
*Phyllotreta flexuosa* (Illiger, 1794)  
*Aphthona euphorbiae* (Schrank, 1781)  
*Crepidodera fulvicornis* (F., 1792)  
*Psylliodes affinis* (Paykull, 1799)

**Rhynchitidae**

*Deporaus betulae* (L., 1758)

**Attelabidae**

\**Attelabus nitens* (Scopoli, 1763) Notable

**Erirhinidae**

\**Grypus equiseti* (F., 1775) Notable  
*Notaris acridulus* (L., 1758)

**Curculionidae** Weevils

*Archarius pyrrhoceras* Marsham, 1802  
\**Curculio villosus* F., (1781) Notable  
*Anthonomus pedicularius* (L., 1758)  
*Orchestes fagi* (L., 1758)  
*Orchestes quercus* (L., 1758)  
*Nedus quadrimaculatus* (L., 1758)  
*Parethelcus pollinarius* (Forster, 1771)  
*Euophryum confine* (Broun, 1881)  
*Strophosoma melanogrammmum* (Forster, 1771)  
*Barynotus obscurus* (F., 1775)  
*Otiiorhynchus singularis* (L., 1767)  
*Phyllobius argentatus* (L., 1758)  
*Barypeithes pellucidus* (Boheman, 1834)  
*Sciaphilus asperatus* (Bonsdorff, 1785)  
*Anoplus plantaris* (Naezen, 1794)





Fig. 2. *Leistus rufomarginatus* (Duftschmid) Length 9mm



Fig. 3. *Leistus spinibarbis* (F.) Length 9.5mm



Fig. 4. *Pterostichus cristatus* (Dufour) Length 16mm



Fig. 5. *Agonum thoreyi* Dejean 7mm



Fig. 6. *Ophonus rufibarbis* (F.) Length 8mm



Fig. 7. *Hydraena britteni* Joy Length 2mm





Fig. 8. *Agathidium varians* Beck Length 2.5mm



Fig. 9. *Catops coracinus* Kellner Length 3mm



Fig. 10. *Dendroxena quadrimaculata* (Scopoli) Length 12mm



Fig. 11. *Phloeonomus pusillus* (Gravenhorst) Length 1.8mm



Fig. 12. *Leptusa fumida* (Erichson) Length 2.3mm



Fig. 13. *Bisnius subuliformis* (Gravenhorst) Length 6mm





Fig. 14. *Endomychus coccineus* (L.) Length 4.6mm



Fig. 15. *Halysia sedecimguttata* (L.) Length 6mm



Fig. 16. *Dienerella elongata* (Curtis) Length 1.5mm



Fig. 17. *Tetratoma fungorum* F. Length 4mm



Fig. 18. *Vincenzellus ruficollis* (Panzer) Length 4mm



Fig. 19. *Pachytodes cerambyciformis* (Schrank) Length 10mm



Fig. 20. *Phymatodes testaceus* (L.) Length 12mm



Fig. 21. *Chrysomela aenea* L. Length 7mm



Fig. 22. *Pyrrhalta viburni* (Paykull) Length 6mm



Fig. 23. *Attelabus nitens* (Scopoli) Length 5mm



Fig. 24. *Grypus equiseti* (F.) Length 7mm



Fig. 25. *Curculio villosus* F. Length 4mm



## WILLIAM CHAPMAN HEWITSON'S JOURNAL OF A VISIT TO SHETLAND IN THE SUMMER OF 1832

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### SUMMARY

A previously unpublished manuscript journal by W C Hewitson, here transcribed in full, describes a journey with two companions to Shetland in 1832. They visited Lerwick, Noss, Unst, Ronas Hill, and Papa Stour, and Hewitson alone also went to Sumburgh Head and most importantly to Foula, giving an historically important account of the state of the islands and the islanders. His principal purpose was to collect birds' eggs for his pioneering book *British Oology*, and also birds and insects for his own collection and for the Newcastle Museum. His observations of breeding birds are of interest. In later years Hewitson became a leading lepidopterist and his friendship with John Hancock led to his making major bequests to the Natural History Society, both of fine books for the library and of money which provided the initial stimulus for the building of the Hancock Museum.

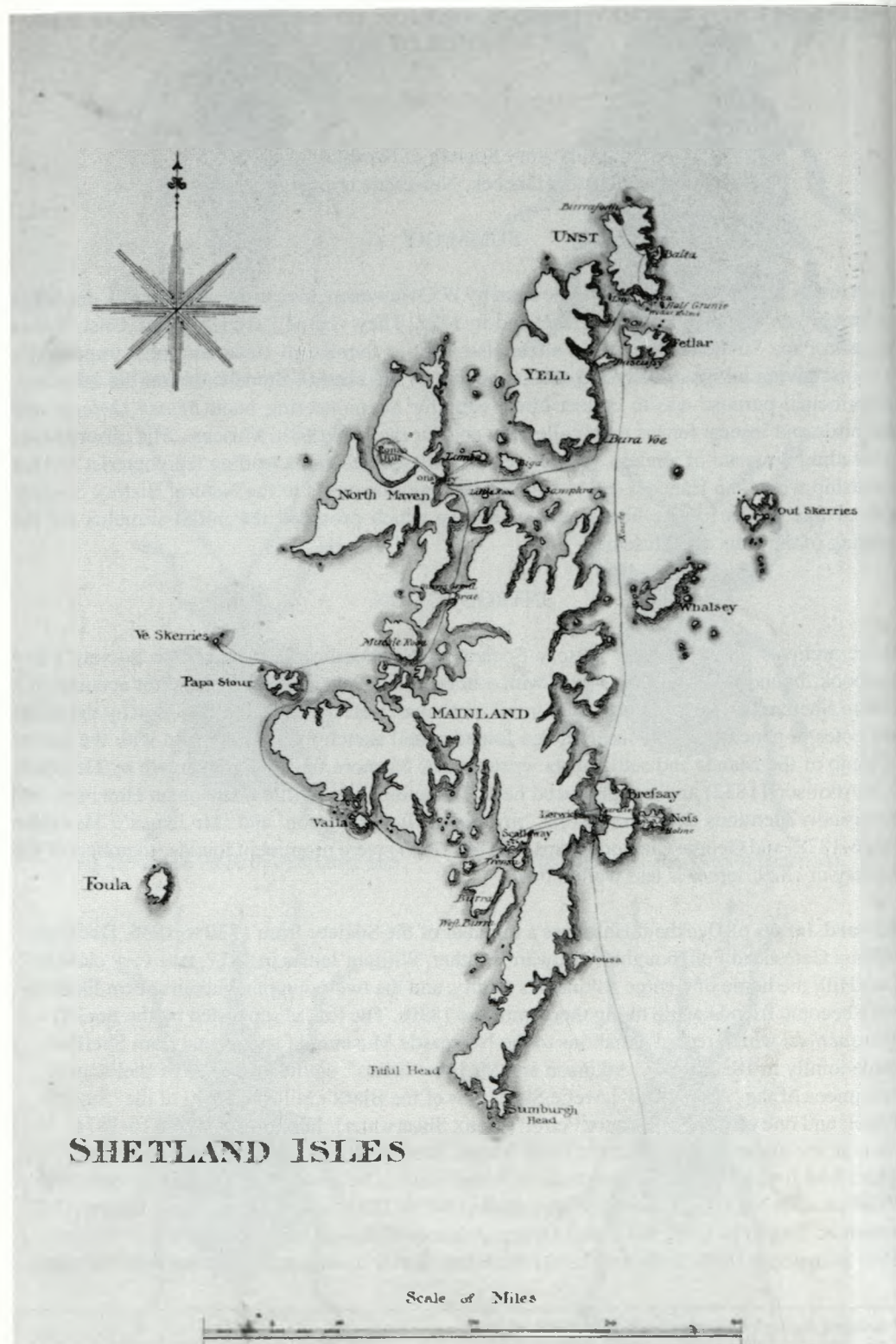
### INTRODUCTION

In the archives of the Natural History Society of Northumbria (hereafter 'the Society') is a notebook, bound in red leather skiver with a brass clasp, containing a manuscript account of a visit to Shetland in 1832.<sup>1</sup> It is written in ink in a small neat hand, with a few sketchy drawings and notes in pencil. Loosely inserted is a folded pencil sketch map of Shetland with the names of some of the islands and settlements written in. A far more finished map drawn by Hewitson is in Atkinson (1832) and is reproduced here. The author was William Chapman Hewitson and he casually mentions two companions, 'my friend Geo: Atkinson' and 'Mr James'.<sup>2</sup> Hewitson (1806-1878) and George Clayton Atkinson (1808-1877) were prominent founder members of the Society in 1829; James is less well known.

**Edward James** of Deckham Hall, was a member of the Society from 1830 to 1836. Deckham Hall on Gateshead Fell, bought by Edward's father, William James in 1817, was very close to Carr Hill, the home of George Atkinson's family, and the two young neighbours seem likely to have become friends while living there until the 1830s. The link is supported by the Society's *Transactions* which record donations to the Newcastle Museum of specimens from Shetland, made jointly in 1832 by 'GC Atkinson and Mr Edw. James': eighteen species of shells, two specimens of the 'Arctic Gull' [Arctic Skua] two of the Black Guillemot, two of the 'Stormy Petrel' and one of the 'Sheerwater Petrel' [Manx Shearwater]. Edward James (1810-1874) became the owner of the Ouseburn Lead Works, from the 1830s to 1870s, manufacturing white lead for paint. After his marriage to Annie Findlay, he lived at Wylam (where their four children were born), first leasing Wylam Hall (1847 to 1853) and then moving to Holeyn Hall which he bought in 1855. His friend George Atkinson followed him as the tenant of Wylam Hall from about 1854. In the late 1860s the James family moved again, to Swarland Park near

<sup>1</sup> Archive accession number NEWHM:1998.H128.

<sup>2</sup> Identified as Edward James in Atkinson (1832).





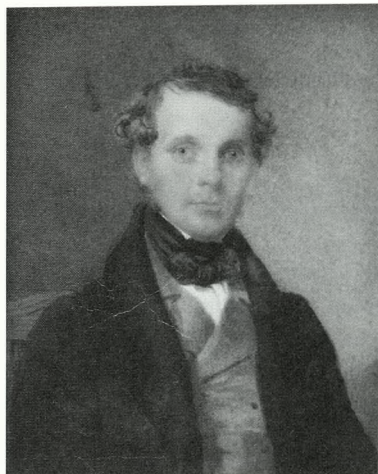
Alnwick and the Atkinsons to Newcastle. James subscribed to Hewitson's *British Oology*, but Atkinson (1832) described him as 'no naturalist – at least not fierce'. He seems to have left no trace of any long-term interest in natural history, and indeed appears in the Shetland journal only in relation to shooting and angling.<sup>3</sup>

**George Clayton Atkinson** on the other hand took a lifelong active interest in natural history, supported by his income from his directorship of Lemington Iron Works. At the age of twenty-two he presented to the Society the first of several papers, his 'Sketch of the life and works of the late Thomas Bewick', based on his frequent and inspiring visits in his teens to the ageing Bewick (Atkinson, 1831). The Society recently acquired the lively manuscript memoir on which the 'Sketch' was based, since published by the Bewick Society (Gardner-Medwin, 2007). In January 1832 Atkinson presented to the Society 'A Notice of the Island of St Kilda' (published in the *Transactions* in 1838) but he also left to his family fuller manuscript accounts of this 1831 journey to the Hebrides and St Kilda, and of another to the Hebrides, Faroes and Iceland in 1833. These were published only much later by Quine (2001) and Seaton (1989) respectively. He was one of the first Curators of Ornithology for the Society, presented many specimens to its collections, and was in 1871 a President of the Tyneside Naturalists' Field Club. He wrote the bulk of the Society's important collaborative survey 'An illustrated catalogue of the remarkable trees of Northumberland and Durham' (issued anonymously in three parts 1873-1877) emphasising the effects of industrial pollution on trees on Tyneside (Atkinson, 1873; Seaton, 1990) and from the 1840s made long-term meteorological observations at his homes, first in West Denton and later in Wylam and elsewhere; some of them he published alone and others in the collaborative studies of the Society (see *Transactions* 1863-1867). There are biographies by Welford (1895), by his great grandson G D Atkinson (in Quine, 2001) and more fully by Seaton (1989).

But in addition to his accounts of his journeys in 1831 and 1833, Atkinson (1832) also left a polished but unpublished manuscript account of the 1832 Shetland visit. In his preface Seaton (1989), who had been given access to all of the manuscripts by the owner, announced his intention of publishing this in 1991, but the project failed. The Revd D A Quine made a transcript of it and generously donated a copy to the Society in 2000; it covers the same ground as Hewitson's journal but is usually less detailed, and is written with a lighter touch and more anecdote. His occasional added points of natural history interest are quoted below. Of special interest are the associated watercolour illustrations, sadly unattributed, some of which are reproduced here. Hewitson was the most able artist on the expedition, mentions making sketches on several occasions in his journal, and was the only one of the three to see Foula (Fig. 8) so it seems likely that the paintings (except the one of the Magnus Troil) are his.

**Hewitson**, the eldest of the three travellers, was born at 81 Percy Street, Newcastle, on 9 January 1806, the second of six children of Middleton Hewitson (1771-1845) a lead merchant with family links with two wealthy Quaker families, the Middletons and Doubledays (Embleton, 1880; Tattersfield, 1999). William's interest in birds evidently began at school, first in Kirkby Stephen and later in York. He describes taking the nest and eggs of a Grey Wagtail in Westmorland, probably while at school there, and he kept a pet Kestrel which roamed freely and 'sometimes, greatly to my consternation, whilst at our daily lessons, it would enter the open window and fly, loudly screaming, round the room' (Hewitson, 1831-1838). After leaving school William remained in York and was apprenticed there to John Tuke (1759-1841), a distinguished land

<sup>3</sup> Fuller information about Edward James, derived from local directories, poll books and parish registers etc, is available in the Society's archives.



**Figs. 1 and 2.**  
Portraits of G C Atkinson  
(left) and W C Hewitson.

surveyor. He seems also to have made friends in York of some young members of the Tuke family, James Hack Tuke (1819-1896) and his brother William who were egg collectors and later provided much information for *British Oology*.<sup>4</sup> They were great nephews of John Tuke and great grandsons of John's father, William Tuke (1732-1822) the founder of The Retreat at York (whom Hewitson may well have met). James Tuke himself and others of the family became noted philanthropists. His association with this Quaker family may well have influenced Hewitson's later major charitable bequests.

In York he had also become interested in insects, stimulated by a 'Mr Phillips' (Embleton, 1880) – no doubt John Phillips (1800-1874) the geologist, who between 1824 and 1840 was curator of fossils and Keeper of the York Museum and Secretary of the Philosophical Society, and who became Professor of Geology at King's College, London, and later Trinity College, Dublin. By 1829 Hewitson was back in Newcastle, where he practised as a surveyor. In that year, aged twenty-three, he became a founder member of the Natural History Society (and later one of its Secretaries) and, jointly with George Wailes, a solicitor, was one of the Society's first Curators of Entomology. But at this stage his principal preoccupation was with birds' eggs. He describes in his *British Oology* (1831-38) many eggs collected and birds observed on the Farne Islands; probably he stayed with his uncle Joshua Hewitson at his estate at Hecky, just north of Alnwick, on these occasions (an estate which in due course he was to inherit). By April 1831 he had already issued the first fascicle of the *Oology*, the part work that was to become his first major publication.

Atkinson's manuscript memoir of Bewick, mentioned above, gives an account of the background to this book. Atkinson had discussed with Bewick the possibility of adding illustrations of eggs to the latter's *A History of British Birds*, the latest of many editions of which had recently been published, in 1826. This would have required colour lithography, a major change from the monochrome wood engravings that had made Bewick's reputation, and in the event it never happened. Atkinson was enthusiastic, however, and invited the Newcastle artist John Wilson Carmichael (then in his early 20s) to do some watercolours of the eggs of the Kestrel, the Raven

<sup>4</sup> They are repeatedly mentioned in *British Oology* in relation to the Goshawk, Honey Buzzard, Long-eared Owl, Barn Owl, Robin, Raven, Wood Pigeon, Black Stork, Jack Snipe, Dunlin, Puffin and Pochard. James Tuke also owned an egg of the Great Auk.



(illustrated in Gardner-Medwin, 2007) and the Green Woodpecker. Atkinson found these 'too pictorial' and, in his own words, 'got a young friend Mr W Hewitson, who has abundance of the finest talent, to undertake this interesting publication'. Hewitson mentions none of this in the book. Nor is there any evidence of whether he himself ever met Bewick, his absence in York possibly preventing his doing so before Bewick's death in November 1828; but it is clear that many of the other keen young naturalists who helped to found the Natural History Society had found Bewick's personal example an inspiration. One of these, who afterwards became Hewitson's closest friend, was John Hancock.

By April 1832 six fascicles of the *Oology*, with twenty-four plates, had appeared. Printed on the wrapper of each was a list of desiderata for the work that suggestively included among others the eggs of the eagles, sandpipers, Whimbrel, Black Guillemot, skuas and petrels. This then was the state of affairs when Hewitson, Atkinson and James planned their journey to Shetland.

#### THE JOURNAL <sup>5</sup>

[Note: the manuscript journal has been fully transcribed with no alteration of wording or spelling. However the original has virtually no punctuation except scattered dashes and almost no initial capital letters. The division into sentences and the punctuation are therefore mine except in a few places where retaining the spirit of the original dashes seemed appropriate. Occasional editorial comments, and queries about illegibility, are in square brackets. The unedited transcript is available in the Society's library.]

A visit to the North, to some little explored district in search of novelties in birds and their eggs, had been a very favourite topic during the winter. Our hopes were at first set upon Orkney as the summit of our wishes. This however soon became so familiar to us by constant anticipation that we resolved to extend our researches to a less explored and more northerly district and to reach, if our time would permit and we found it practicable, the most distant shores of Shetland. Upon making enquiries we found that there were trading vessels from Leith to Lerwick, the chief town of Shetland, at intervals of about one a fortnight. By one of these we therefore determined to go

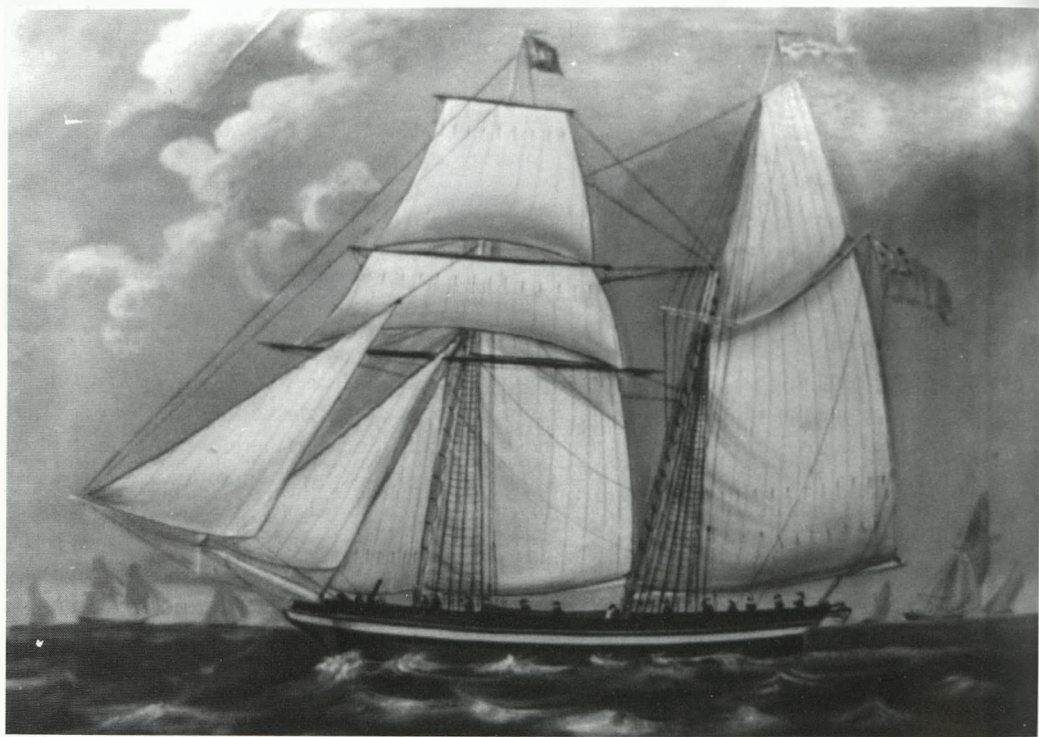
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<sup>5</sup> This begins on the verso of folio 5 with an undated introduction. In a few places (particularly clearly in the entry for Saturday 2 June) it is evident that the final ink version is written over an earlier pencil one, but in only a few places is the latter legible, and there it seems essentially identical. On the front pastedown endpaper is a list of names with sums of money, evidently not related to the Shetland visit.

On four of the first five folios (one being blank) are what appear to be preparatory notes made before the visit, including geographical notes on Orkney and Shetland, a list of birds from Low's *Fauna Orcadensis* (1813) and a section headed 'Distinctions of Birds'. The last quotes from an unspecified source the distinctive features of the 'Pigmy Curlew' (ie Curlew Sandpiper), Spotted Redshank, Sanderling, phalaropes, Brunnich's Guillemot, 'Velvet Duck' (i.e. Velvet Scoter) and two, then spuriously separated, species of cormorant (the 'crested' and the 'Bronzie'), together with a note 'Whimbrel breeds on Hascosea'.

At the end of the notebook are some pencil sketches of geological specimens and brittlestars, an incomplete list of coleoptera, and the itemised expenditure for the visit, amounting to £22.10.09 in total, or £7.10.00 for each of the visitors, plus an additional £2.09.00 for Hewitson's solo visit to Foula and 12/- for a boat for his two companions. A transcription of this additional material is available in the Society's archives.

out and for this purpose left Newcastle for Edinbro' on the 17<sup>th</sup> of May. We were very fortunate in finding, on making enquiries the following morning, that the Magnus Troil was that evening about to sail – we were therefore without wasting time in Edinbro' on our way down the forth and past Inch Keith long ere sunset.<sup>6</sup>



**Fig. 3.** The schooner Magnus Troil. From Atkinson (1832); artist unknown.

On the **24<sup>th</sup> of May 1832** after a tedious voyage of five days from Leith by the Magnus Troil trading vessel<sup>7</sup> we arrived within sight of Fair Isle – bearing about 20 miles to the West – and indistinctly seen thro' a fog. It remained within sight until we could discern the bold promontories of Sumburgh and Fitful Head – forming the one end of the Shetland Islands – and also of the mainland of Shetland. Coasting along the land we left them far behind us and soon came within sight of Mousa and at the same time had a view of Bressay and Noss – each rising with bold head-land towards the east. Making our course between the former and the Mainland we entered the very fine snug and commodious harbour of Lerwick, now (about 8 o'clock in the evening) a very gay and novel sight from the numbers of small fishing boats employed in catching haddocks. Their appearance at first sight is very striking, having very much the resemblance of canoes, being pointed at both ends in the yawl form which reminded us very much of some Indian village.<sup>8</sup>

<sup>6</sup> Atkinson (1832) adds that the party stayed on 17 May at The Crown in Princes Street. Next morning he alone visited the distinguished naturalist William McGillivray, then curator of the museum of the College of Surgeons. McGillivray inadvertently locked him in the museum from which he was released barely in time to catch the boat.

<sup>7</sup> While becalmed and fishing for cod on 21 May they saw two fulmars, the only ones seen on their expedition (Atkinson, 1832).

<sup>8</sup> Atkinson (1832) gave a more detailed account. '... yawl built and very light, high fore and aft like a life



Passing a head of land we very soon dropped our anchor off the town of Lerwick – and were visited by many boats full of people impatient for news from the stirring part of the world and to hear the result of the agitating questions of reform, which even in this remote district causes very much interest and excitement and is generally hailed with joy and satisfaction. Amongst other boats to our very great annoyance and grief was one bearing the yellow quarantine flag, and the most unsatisfactory intelligence that we must perform ten days quarantine from the time of our leaving Leith, leaving us with our very limited time 5 days more to spend in worse than idleness. Tho' the cholera was at this time almost [*sic*]<sup>9</sup> extinct in this country and the quarantine laws done away, yet the most sapient magistrates of Lerwick with a due care and respect for the public good and more especially for their own most valuable personages, and likewise possibly to show their own potency, thought proper to enforce this most grievous and needless imposition on us and their own trade.<sup>10</sup> It is not difficult to conceive our disappointment and vexation at thus having so large a portion of our own time (every hour of which was to us invaluable) thus cut off and that within sight of the shore we had come a distance of 400 hundred [*sic*] miles to explore. In spite of all we could urge in extenuation of our sad lot, we were compelled to make the best of our situation – we were at first forbidden the relaxation of even a row about the bay but this was afterwards conceded to us on condition of landing no where or coming in contact with any one. Of this we very gladly availed ourselves and rather lessened the tedium of our situation – by shooting and fishing. In the latter amusement the young of the colesay, called here Piltocks, afforded us very good sport. They are in great abundance here throughout the country, as in all the islands of our coast, affording a most bountiful and sure supply of food at all seasons of the year and providentially providing against the chance of famine by the failure of any other of the resources of these remote isles. They are everywhere in immense numbers and easily caught, rising eagerly at a small white feather tied to a hook and drawn on the surface of the water at the stern of a boat rowing at a moderate pace. The town of Lerwick stands close to the edge of the bay, the water washing the bases of the foremost houses – those behind being placed upon the side of a hill – it is as irregularly built as it is possible [*sic*], the houses fronting in every point of the compass – they are of moderate size and usually two stories high. A sketch that I made from the deck of the vessel will give a tolerable notion of the place – showing the principal buildings – the goal [*sic* – i.e. gaol], the scotch church and the methodist meeting house – to the north of the town is a fort and garrison established during the war. The bay of Lerwick is very fine and well sheltered affording safe anchorage for the largest ships in the navy many of which were frequently here during the war. Most of the Greenland whalers also call here in their passage, to take in men with which they are supplied by the town of Lerwick.

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boat ... in the hands of a good crew ... very safe good sea boats. They row with only one rollick and a grummet, and in small boats of 4 oars, one man generally pulls both bow oars, and two sitting alongside each other, the after ones. They do not feather them ... In sailing they use a big sail, and never belay the sheet: their boats from their shallowness and height fore and aft are very dry, and instead of cutting through the swell like our cobbles, dance like a gull over the top.'

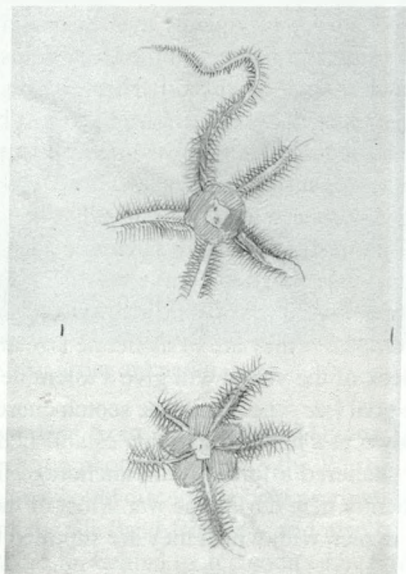
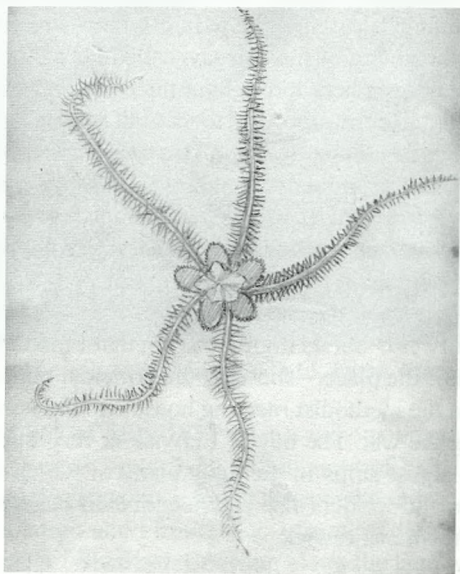
<sup>9</sup> Throughout the diary Hewitson consistently spells with two Ls 'almost', 'allways' and 'alltogether'.

<sup>10</sup> The magistrates of Lerwick were wise. The epidemic of very severe 'Asiatic cholera' had arrived by sea in Sunderland in October 1831 and had caused heavy mortality locally, while spreading around the country. It fluctuated in prevalence but did not die out on Tyneside until the following autumn. Marine quarantine was widespread: in January of 1832, as Darwin recorded in *The Voyage of the Beagle*, he had been prevented from landing at Tenerife for the same reason.

25<sup>th</sup> and 26<sup>th</sup>. Very fine weather and dreadfully annoying to us in our present situation; got a few shells attached to mussels which are got plentifully for bait in the more shallow parts of the bay – rowed in the harbour and saw some black guillemots.

27<sup>th</sup> Sunday Rowed to holme of Cruister;<sup>11</sup> got a few shells and two beetles – also some thrift.

28<sup>th</sup> Monday. Dredging in the harbour – got several small shells attached to muscles [*sic*] and some curious Polipi-like things with long star like feelers, five in number, and varying considerably in their colour and marking of body, whether sufficient to constitute a specific difference or not I am not able to say, not having previously paid the slightest attention to this part of natural history – one specimen having the centre of its body of a red gelatinous substance very much resembling the [blank],<sup>12</sup> attached to rocks – with a diamond like whitish spot in the centre. Another with its body divided into five lobes – [simple sketch here] like flower of five petals and a pentagonal spot in the centre. A third differing again in the pentagonal spot being much larger occupying half of the body; all with horns or stars of about 2½ inches long – with small points like the sea-urchins diverging in every direction.



**Figs. 4 and 5.** Hewitson's sketches of brittlestars – I am grateful to Dr Judy Foster-Smith for identifying these from the sketches and description as *Ophiothrix fragilis*, a very common species, varied in colour, found on all British coasts in the lower littoral and sublittoral zones. The 'five lobes' are probably the gonads in a mature specimen.

29 Tuesday – At 8 o'clock this morning Dr Spence, the chief Bailie of Lerwick and one of the board of health – an old surgeon in the navy, came off to release us from our thralldom – we were not long as may readily be imagined in first setting our feet upon Shetland ground and landing in the town of Lerwick. We had an invitation to breakfast with the Sub-Sheriffe of Shetland and, having first taken possession of lodgings recommended to us, there being no inn in the place, we

<sup>11</sup> i.e. Cuester, across the Sound from Lerwick on the Island of Bressay.

<sup>12</sup> Here he probably intended the sea anemone (*Actina equinus*).



set out for his house in proceeding to which I was much struck with the clean appearance of the town, the principal street being entirely flagged. Upon remarking this we were told that we saw it under most favourable circumstances, the fear of cholera having induced the inhabitants to give it a thorough cleaning. It is a curious circumstance that the farther people are removed from this disease and the less they know about [it] the more their fears are excited, the good people of Lerwick being far more afraid than those living in the midst of it. We were entertained at the house of Mr Duncan in the scotch fashion with a most sumptuous breakfast. To his house is attached a small garden the boast of which is an apple tree, it being a very rare plant in Shetland. Immediately after breakfast we hastened to set out on our first trip to explore the islands – being joined by Mr Cameron the nephew of Mr Mouat<sup>13</sup> the principal landowner in Shetland and to whom we had an introduction. We crossed the harbour of Lerwick in order to visit the island of Noss – the most inhabited by sea birds of any place in our neighbourhood. It being too windy to row round the islands to visit the caves and recesses in the rocks, we crossed the island of Westra and felt extreme pleasure and excitement in the exercise after 10 days of captivity and inactivity. On our way the very first flower that I noticed was the *squilla vernalis*, vernal squill, a plant which a friend of mine had particularly requested me to secure for him if possible. It was here growing in great abundance tho' very stunted and gave a very delightful hyacinth odour to the air. I dug up several by their bulbous roots. Crossing a narrow ferry from Bressay we arrived at the island of Noss – upon which we were in expectation of meeting with several of the sea-fowl and their eggs. We were however too early in the season but enjoyed, notwithstanding the great disappointment, a most glorious treat. Our first object was to visit the holme of Noss, a small detached precipitous rock – about 60 yards from the island and densely peopled by the great black-backed gull – which breeds upon the top. It is about 400 feet from the surface of the sea and inaccessible save from above where it is gained by a most ingenious contrivance – the numbers of eggs and young sea-fowl and the very rich grass – caused by the dung of the birds, was a strong temptation to the people of the neighbourhood – one of whom it is said climbed to the top – and made fast a rope thrown from the opposite side – but in returning down the rock was dashed to pieces – in this way a communication is now kept up – by every spring renewing the rope, throwing over at first one more slender and passing it round a rock on the holme – this requires considerable skill – and when succeeded in, a strong rope is passed round forming a double communication the ends of which are made fast to stakes – and a small cradle is passed upon it the ropes passing through holes at each end upon which it slides – in this way anyone may pull himself across and at the same time carry with [him] a sheep, several of which are fed on the rich grass annually – the cradle was very unfortunately not yet suspended and we could not have the satisfaction we promised ourselves of so novel a conveyance. Passing along the edge of a grand and perpendicular cliff towards Noss head and rapidly rising the whole way, we had a most sublime prospect of one of the finest rocks I had ever seen – covered with such multitudes of sea-birds as it is almost impossible to conceive – wherever the slightest ledge of rock afforded a place on which to stand, presenting with the bold cliff – richly covered with grey and green lichens and the richest foliage of various flowering plants – one of the most beautiful pieces of colouring an artist could wish to see.

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<sup>13</sup> Or Mowat, Hewitson's handwriting on each mention of the name is ambiguous. Atkinson (1832) gives 'Mowat'.



Fig. 6. Noss Head (from Atkinson 1832).

Having arrived at the top of Noss head, we had a prospect that a person must see to be able to form any tolerable idea of. The sea which was breaking at the bases of the rocks far below us was everywhere covered with groups of birds, appearing at so great a distance below us as so many pin heads, and scarcely visible, while the space intervening below us was one busy mass of birds – the divers – guillemots, razor-bills and puffins – far below the kittiwakes and ~~heron gulls~~ heron<sup>14</sup> and black backed gulls, soaring in every direction below and above us, with the continual cries of the whole intermingled together and exceeded by the hoarse bark of the great-black-backed gull – all these birds passing and repassing in one continued and seeming confusion – the various flight of the different species contrasting with each other from the steady slow majestic soar of the large gulls to the rapid short-winged flight of the Puffin. Looking in other directions we had a fine view of Lerwick and many of the islands, nesses and voes of this island ocean, presenting upon the whole a scene which reminded me very closely of Cumberland but without the wood of that most beautiful of countries. Here we dined under a canopy, tho not of Italian blue yet one covering a land very far preferable, a land of hospitality of kindness and simple-hearted people – a land tho' barren in other things yet rich in the best feelings of the heart. From Noss head we shaped our way down hill to a low and rather mossy part of the island where we expected to find the eggs of the Arctic Gull [i.e. Arctic Skua]. But in this we were disappointed, though we saw many of the birds and shot several<sup>15</sup> – most of them were of nearly a uniform colour the breast being rather lighter – a few only (five or six)

<sup>14</sup> Surely he means herring gulls?

<sup>15</sup> Atkinson (1832) specified that they looked carefully for 'Richardson's' (Long-tailed) and Pomarine Gulls (i.e. Skuas) but saw none.



had a very different plumage being quite white underneath. Two of these we dissected and found that they were females, each having eggs, one of the full size and quite formed though yet without any colouring – and most probably to be laid the next day though we in vain searched for some. During this day the only eggs we found were those of the Lesser black-backed Gull and the Oyster Catcher being rather too soon in the year. This tends more strongly than ever to convince me that the sea birds are exceedingly and wonderfully punctual (if the expression may suit) in the season and time of their breeding. My observations as far north as the Ferne Islands having for several years proved, almost to a day, that the first week in June is the time for meeting with their eggs in the greatest plenty, this will be more fully proved by subsequent observations, allowing a day or two for the latitude & of the climate.

The afternoon setting in wet we made our way for Lerwick, where we arrived properly drenched. During this day besides the sweet squilla I got some luxuriant specimens of [blank] or Roseroot on the cliffs – with some other plants all apparently in a most flourishing state.

**30<sup>th</sup> Wednesday** – Rambled out with the intention of reaching Scalloway on the opposite side of the island but, after having proceeded about two miles, my friends being provided with fishing tackle were desirous of reaching a small loch which lay on our right. We left the road and made towards it but for very little purpose; they only succeeded in catching two small trout and I was not much more successful in my researches. The only bird I saw in wandering round it was a Dunlin. I therefore crossed the hills and shaped my course for another which I was informed lay at a short distance. On my way to it I had the satisfaction of catching the first Lepidopteron I had seen in Shetland, a semi-diurnal Noctuum [a moth, presumably of the family Noctuidae] quite new to me if not to our Fauna altogether. At the second lake I was not more successful only seeing a few ducks, which were not now breeding there, quitting the place on my arrival. A third loch gave me no better success the only birds near them being Dunlins and Golden Plovers and of these only three or four altogether. In passing from one loch to another I captured two more specimens of the same moth and one of a small heath geometra quite new also to my collection – with a small Phryganea [a Caddis Fly]. These with the nest of a Titlark, the eggs of which with the bird I secured, were all that this day's walk afforded and I returned home very much disappointed with Shetland moors and locks [*sic*]. But for this we accounted by the number of inhabitants in the near neighbourhood. This afternoon we dined with Mr Mouat of Gardie on the Isle of Westray the whole of which belongs to him. Here we were most kindly received in an excellent house and dined on Shetland mutton and lamb, of his own feeding, and altogether in as good style as we could have done in England. The island of Westray is generally low and not[?] interesting, but a part of it near his house is fine grazing land and capable of producing by cultivation exceedingly good crops, some of it now in grass seeds, being very little inferior to some of our best land in England. Though the present inhabitants of Shetland have never succeeded in raising trees yet flowers seem to flourish very luxuriantly under the shelter of a garden wall, and rose trees against a wall. Mr Mouat has a small hot house for grapes which were when we saw them well covered with an abundant crop. Mr Cameron, a nephew of that gentleman, took us to look at a Shetland poney [*sic*] which tho' very small was one of the most beautifully formed things I remember to have seen and nicely adapted for a young lady's palfrey.

**Thursday 31<sup>st</sup>.** Our intention was to proceed this morning to Scalloway but upon getting up this was rendered rather doubtful by a heavy rain. Having learnt however that the Magnus Troil by which we intended to go north was about to sail on the following day, we resolved wet though it was to go to Scalloway today in the hopes of procuring some of the eggs of the Stormy Petrel upon the islands in that bay. The road across the moors, which was at first tolerably plain and

readily followed, very soon became quite doubtful leaving us to follow the direction of a pocket compass. Our passage was by no means a pleasant one as it rained incessantly the whole way. After a very dubious walk of about 6 miles through mosses and over hills, upon getting to the top of one we had a fine view of Scalloway with its little village and fine old picturesque castle backed by the sea, in every direction adorned by grassy isles. We had intended to stay at Scalloway all night but, upon entering the best lodgings in the place, the prospect of procuring beds and likewise provisions seemed so bad that we resolved, wet as it still was, to visit the islands without delay and for that purpose immediately procured a boat. We had a most exciting sail of about six miles to the isle (Oxney) most famous for the Stormy Petrel – swallows as they are here called. On landing we were soon joined by several youths who conducted us to their home – a long low house thatched with straw and without any chimneys, a vent in the roof supplying their place. Here in a long dark room with a peat fire burning in the middle we found the whole family assembled – and from them received a most kind and friendly welcome. They insisted upon our putting off our clokes [*sic*] and taking the seats nearest the fire to dry ourselves – and in every way these kind simple hearted people gave us every assistance in their power in furtherance of our pursuits.

The inside of their cottage was one well worthy of the pencil and would have furnished a subject worthy of Wilkie: ourselves seated in the middle with our three boatmen and the remainder of the family ranged on both sides, some standing and others seated to the number of nine or ten, with the doubtful gleam of a peat fire. Some of them accompanied us to the place most frequented by the swallow, telling us however that we were too early, and this we found to be the case. The sea-shore to which they took us was a beach covered with large stones under which these birds lay their eggs, frequently to the depth of two or three feet, but to use the expression of these islanders none of them had yet “come up” nor had one been yet seen by them. They told us that they were sometimes very numerous and that their nests are easily discovered by hearing the bird singing on its nest which was sometimes very loud especially in the evening; that when their nets are laid out to dry multitudes of them would come upon them to feed upon any pieces of fish which might adhere to them.

**Friday 1<sup>st</sup> [June].** After calling on Dr Edmonston [*sic*]<sup>16</sup> this morning we went on board the Magnus Troil and at about 2 o'clock P.M. left the bay of Lerwick of which we were pretty well tired. We proceeded with a fine breeze passing the Green Holme and some rocks or stacks as they are here called. Towards evening our breeze died gradually away till it became a dead calm with a thick fog in which we lay tossing about for the whole night in a heavy swell. In the morning with a light air we passed Hascussey the property of Mr Bruce upon which he has just finished building the largest and most expensive house in Shetland; it is entirely of granite and is surrounded with numerous outbuildings of every description. Its situation is very good and commands an extensive view.

**Saturday 2<sup>nd</sup>.** It was 11 o'clock before we were off the entrance to Uyea Sound where having procured a boat from the shore we rowed into the bay and, having also procured comfortable lodgings in one of a few scattered houses and sent up our luggage, we resolved without delay to call upon Mr Leisk the proprietor of two small islands (Half Grunie and Wedderholme) which

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<sup>16</sup> Throughout the journal Hewitson spells the name thus instead of Edmondston. The doctor mentioned here in Lerwick was probably Arthur Edmondston, M.D., the brother of the Dr Laurence Edmondston of Unst. See the Discussion for an account of the family.



he takes great pains to preserve and which in consequence are the great resort of sea gulls. In crossing over to Uyea, also his property and upon which he lives, we saw two Great Northern divers one of which Mr James shot in the most beautiful plumage. We were received by Mr Leisk a fine hearty old gentleman in the kindest way but with some difficulty obtained leave to shoot anything rare that might occur and to take a few of each kind of egg. After tasting some very fine whiskey and receiving an invitation to return to dinner we took our boat to Half Gruinie distant about three miles. Several of the large black backed Gull were soaring over our heads but none had yet laid their eggs. We got some of the Common Gull, a few only having yet laid. The eggs were deposited like the Lesser black backed Gull in a slight nest of grass and were three in number. We found also a nest of the Rock Lark [Rock Pipit] and shot two Turnstones in beautiful summer plumage. We crossed to the other island, where I also found the Common Gull and Oyster catchers eggs, returned to Uyea and found Mr Leisk's dinner ready. One of our dishes was new to me: it consisted of dried fish and potatoes beat together very fine and baked and browned over flat and about the size of a biscuit and was called fish pancakes, and very excellent it was. We found Mr and Mrs Leisk most cheerful kind people and enjoying every comfort allmost entirely the produce of their own property. The island of Uyea is covered with a very fine turf and feeds excellent sheep – most of the sheep fed in Shetland are of the Leicester breed and make a good cross with the original Shetland breed – and what is remarkable, upon being imported to this country undergo a very considerable change in their wool it becoming much closer and finer, an admirable provision like those of all nature against the coldness of the climate. In a reverse way I am told that sheep upon being sent to the West Indies assume a covering more like hair and thinner, no warmth being requisite in so hot a district. They are of course small, seldom exceeding about 60 pounds weight. The wool being very short tho' exceedingly fine and soft, it is the custom here to pull it from the sheep instead of shearing them, which operation they undergo with very great patience and without suffering pain it being done at the time they would otherwise naturally cast their coat – a few are shorn and must continue to be so when once adopted, the wool in consequence becoming more deeply rooted.

**Sunday 3<sup>d</sup>.** A dull misty uncomfortable day. Took a short saunter in the forenoon and in the evening visited two lochs in the hopes of meeting with the rain goose or Red-throated-Diver but had not the good luck. Saw several Dunlins and Ring Dotterels [Ring Plovers] but sought in vain for their nests.

**Monday 4<sup>th</sup>.** A very fine morning. Started for Balta Sound about 5 miles distant to call upon Mr & Dr Edmonston and to visit Balta island. No boat being to be had, excepted [*sic*] an invitation to dine and spend the remainder of the day, to proceed in the morning to Buraforth a fishing station upon Mr Edmonston's estate.<sup>17</sup> Went to Balta island in the evening and on my way found a nest of the Hooded Crow but unfortunately with young ones. It was built upon a rock against a bank-side about fifteen feet from the sea. It was very large and formed of a great quantity of the long thick stalks of sea weed, some of which must have been very heavy and three or four feet in length. These were piled upon each other to the height of 12 or more inches and very thickly

<sup>17</sup> Atkinson (1832) fished successfully for trout this day in the Loch of Cliff, and wrote a long account of Mr Edmondston's tales of the islanders' occasional driving, beaching and slaughter of 'shoals' of the ca'ing whale in Balta Sound (almost certainly the Long-finned Pilot Whale *Globicephala melas*). The shoals comprised up to '500 or 600' whales, up to 22 feet in length. '... the excitement produced by a chase of this kind ... men overboard, boats fowl [*sic*] of each other, oars breaking, whales blowing and spouting, guns firing and Newfoundland dogs barking and plunging must be very great'. Each whale of this species yielded only one barrel of oil.

lined with roots, grass, wool, hair and every procurable soft material. In it were four young ones. On Balta island only a few birds breed: I saw some of the nests of the Herring Gull in the cliffs, which are rather fine. Got a nest of the Oyster catcher and observed the number of nests it makes before it seems to suit itself and these are formed with considerable care, usually amongst small gravel or larger stones. Where fragments of white shells are near, they allways seem to have the preference and are neatly spread over the hole; in lieu of these amongst larger stones the smallest and flattest pieces are substituted. Upon these are allways three eggs – the sea-birds being usually certain in the number of their eggs and much less variable (if at all so) than the land birds, some [of the latter] having from 4 to 6. Purchased some stockings, for which Shetland is very famous, some of them made from the finest wool being as high priced as 30/- whilst many are from 15/ to 20/-, and when made of the best material will pass through a small gold ring and are of as fine and beautiful a texture as silk. Noticed in Mr Edmonston's garden dwarf plants of Mountain Ash, Plain Tree, Elm and Ash, and strawberries with a good show of blossom and [*sic*] generally bear well in Shetland. But nothing seem[s] everywhere through the isles to flourish so abundantly as Rhubarb, which is most luxuriant and furnishes a fine substitute for other fruits – as Apples and Gooseberries. Mr Dr Edmonston was of opinion, but could not at all account for it, and agreed with a remark made by Mr Leisk about which I was very incredulous, that weeds and plants generally are much more easily pulled up during the flowing than the ebbing tide. A remark also made in Mr Dr Edmonston's notices of Shetland birds seems to me strongly to confirm it and to show that there must be some unknown influence produced both on the earth and air by the flowing sea. In speaking of the immature Gulls which are not employed in breeding and have nothing to do but fish, he says he has frequently observed them, after following the shoals of fish during the flow of the tide (the only time at which they feed), immediately on it beginning to ebb withdraw into the country from sight of the sea and remain there quite inactive, but instantly (by some wonderful and hidden impulse), on the tide again changing and beginning to flow, betake themselves again to sea to feed. Mr Leisk also told us (which I omitted in the right place) that he was quite convinced that meat was much better killed during a growing moon; if killed during the wane it pined and dwindled to only half its size.

**Tuesday 5<sup>th</sup>.** Set off this morning accompanied by Mr and Dr Edmonston for Buraforth, a fishing station on his land and at the most northerly extremity of Unst, and at the same time of the Isles of Zetland, and the most frequented of all the islands by sea-birds – and upon it in consequence my hopes were intensely fixed. We arrived at a snug comfortable house, close to a little narrow harbour, and just as some of the boats had returned from the Haaf or deep-sea fishing and were throwing their fish on shore and weighing them, each boats crew going shares and selling their fish to a person who dries it. It was a most interesting sight – the various coloured dresses of the fishermen, the boats and piles of fish, with the rocks composing the harbour and the fine distant cliffs – made a most imposing groupe [*sic*]. Of this scene, when still and deprived of a great deal of its interest, I afterwards made a sketch.

Mr Dr Edmonston explained to me the distinction between the Ling and Tusk – the latter being much shorter [and] more of the colour of the cod, and a good deal like our Northumberland Cat-fish. We dined here and had excellent fish cooked in every way and worthy of the greatest epicure. After dinner we rowed round to the westward to procure eggs of the various sea-birds. The sea was too rough to near the rocks – we were therefore prevented landing at the best places and proceeded to a more sheltered quarter – here we climbed up the rocks and dined again. I climbed to some of the more inaccessible and took the eggs of the Puffin; a boy who was with us got also two of the Razorbill's. The rocks here were so fine that I resolved to have another day in order to view them and make some sketches. The Kittiwakes were in far greater numbers



than I ever saw of one species at the same time. The rocks were literally whitened with them – as the ground after a partial fall of snow. The sea freshening fast, we returned home in a very fine swell occasioned by the waves dashing against numerous rocks amongst which we had to steer our way. On our return we were delighted by the return of a man that Mr Edmonston had sent off to procure us if possible some eggs of the Shearwater Petrel – which we were everywhere told would not lay its eggs for some time. He was however successful and brought us four. My friends having prepared to return with Mr Edmonston, I took up my quarters with the tenant of his house, Magnus Winwick and his family, where I met with the greatest kindness and every comfort. Mr Edmonston had pointed out to us Magnus as a specimen of a Shetlander, and a finer better-looking heartier fellow I never met with. Nor did I ever see such a fine race of men as the Shetlanders generally – usually tall and very good looking, much more so than the females who very soon put on age, brought on very early from hard work and carrying heavy loads of peats – and labour in the fields. I observed one poor woman yoked [*sic*] to and dragging after her a harrow. Many of the younger girls to the age of fifteen or sixteen were pretty and all most of the young children very much so – and with the most beautiful colour in their cheeks. The women generally are very plain.

**Wednesday 6<sup>th</sup>.** A very windy foggy day and much too rough to attempt going amongst the rocks in a boat. I therefore set off immediately after breakfast (having procured an active fellow as an assistant and guide) to Hermaness – part of Mr Edmonston's estate where three pairs of the Bonxie or Skua Gull and also the Arctic Gull [*i.e.* Arctic Skua] breeds in plenty. Of its eggs we very soon found several by the cunning of my guide who (instead of seeking them as I should have done which would have required a length of time), lay down amongst the heath and watched the old one till upon her nest. It is very slight, only a few grasses in a slight hole scratched in the ground, upon which she lays her two eggs. It is not however at all a difficult matter to find the eggs by wandering about and watching the motions of the poor birds which show very great uneasiness by flying nearer and nearer to you as you approach nearer to their nests and screaming loudly. When you have arrived at the place their solicitude is extreme and their motions curious: both the birds settle within a few yards, spreading open their wings and fluttering as if to offer themselves as a ransom for their eggs. We searched for the eggs of the Skua but to no purpose. My guide supposed they had not yet laid, though the birds came very near to us and almost struck my cap with their wings. It was the first time I had ever seen this fine hawk-like gull alive and very much pleased I was. When upon the wing its flight is very fine and much like that of the Eagle or some of the larger species of hawks, but upon the ground looks heavier and more clumsy than any of the other Gulls. We passed on, to the top of the cliffs where we had been the preceeding [*sic*] day, when my guide went down and in about half an hour returned with eggs of the Razor-bill and Scarf [*sic*]. I here parted with him and proceeded [*sic*] west to the top of the highest part, I should suppose about 800 feet high, and affording the finest view I had yet seen in Shetland, though the day was unfavourable and very foggy. Of this I attempted a sketch from a part rather lower down and had the finest possible materials to make a picture. The sea was studded with rocks, covered at the base by the foam of a heavy surge, breaking at their bases and contrasting strongly with their deep black – the nearer rocks below, fine, bold and broken with hugh [*sic, i.e.* huge] fragments piled upon each other at the foot of the cliffs, which were rent and broken asunder – in some places deeply indented by the rain and passage of water, in others adorned with little plots of grass and rich lichens and verdure – all enlivened by the continual flight of the sea-birds.

My next object was proscribed [*sic*] by my feelings of hunger and a desire in consequence of finding the nearest way home, which was rendered rather difficult by a dense fog. My doubts

were soon however cleared up and I found Nature my best guide. The day preceeding [*sic*] I had found multitudes of Kittiwakes passing from Buraforth by sea, each carrying in its bill a piece of grass or clay with the which to build its nest. To day [*sic*] numbers of them the same way employed were crossing over land. I therefore determined to follow the direction in which they were passing, supposing them to come from Buraforth, and found them a most excellent guide.

**Thursday 7<sup>th</sup>.** The weather still boisterous I remained near home and made two sketches, one of the little romantic harbour and house in which I had met with so much hospitality, the other of a fisherman's hut placed upon an isthmus of land and the most northerly habitation in the British empire. In this the fishermen prefer living in the fishing season rather than go to their homes, though only at the distance of about half a mile. For this they give a very good and sufficient reason: if they were to return to their wives and families after each days fishing they would meet with many things to take their attention and deter them from the strict attention required to prosecute their labours. After my return home some men that I had sent out returned with eggs that I was most anxious to procure. One of them had succeeded in finding two of the Black Guillemot (Shetland Tyste) [*sic*] which was only just beginning to lay. The other brought me seven more of those of the Shearwater Petrel – now very hard sitten.<sup>18</sup> To procure these it required a bribe: they are very rare and almost inaccessible, and only known to two or three of the most intrepid climbers who are so fond of the young ones, which are a mass of fat and oil, that they keep the knowledge of their breeding places a close secret in order that they may annually take the young ones for their food. This secret Dr Edmonston informed me was frequently handed down as an heir loom from father to son. From the old man who brought them I got the following information – that they annually resort to the same holes, which are very difficult to find, the entrance to them being usually covered with thick grass and concealed from the view. The egg, allways one only, is at the depth of two or three feet either upon the bare ground or a slight quantity of grass. The bird sits close and is easily caught upon the nest. Having collected all the eggs and information in my power I started to join my companions at Uyea Sound, calling on my way to take leave of the Edmonston's [*sic*] and thank them for their kindness. I got to Uyea Sound about 9 o'clock well tired, having wandered very considerably to the West of my proper course.

**Friday 8<sup>th</sup>.** Being told by Dr Edmonston that Yell afforded nothing that would repay us for visiting it, we made up our minds to avoid it altogether and make our way direct for Mr Cheyne's house at Ollaberry in the Sound of Yell, a distance of about thirty miles, intending on our way to land on the island of Hascussy<sup>19</sup> on which we had been told the Whimbrel bred. Mr Gardner with whom we had been lodging furnished us with a very fine new Herring boat and in it we were carried at a most animating rate over the waves[?]. We were very soon at Hascussy, about 4 miles. Upon it each of my friends got a specimen of the Whimbrel's egg but I was not so fortunate. They were once plentiful but are now becoming exceedingly scarce, the eggs being allways picked up by the inhabitants. We only saw two or three of the birds. The arctic Gull breeds here and here I got a few eggs of the Dunlin, laid like the rest of these birds in a slight hole in the ground upon a little dry grass, as is also the case with the Whimbrel. About an hour and a half from Hascussy we reached Bura Voe on the island of Yell and took tea with a son of Mr Leisks of Uyea by whom we were kindly received. Proceeding onwards without delay we reached Mr Cheynes at about nine

<sup>18</sup> 'Black sitten' was Northumbrian dialect term for an egg in which the bird has begun to form (Heslop, O. *Northumberland Words*. London, 1892-4), and which would therefore be difficult or impossible to blow.

<sup>19</sup> Hascosay.



o'clock, passing in our course the many pretty green grassy islands in the Sound of Yell. From Mr Cheyne we received the kindest reception possible and were all in a few minutes seated at an excellent supper and perfectly at home.

**Saturday 9<sup>th</sup>.** Being not far from Rona's hill which was a great object with us, the day being fine, we set off soon after breakfast. Rona's hill is 1440 feet high and a continual regular climb all the way, sometimes however very much increased by passing some deep valleys. The day was very windy and cold but favourable for walking. Our main object was to get some eggs of the Skua Gull, which breeds on the back or West side of the hill, and to avoid twice climbing to the top we wound round the northern extremity and had soon the pleasure of examining one of these fine birds, first on the wing and afterwards dead at our feet. We went to their head-quarters and were much disappointed in not seeing more of them. They were once abundant here but the last year a man of the name of Dunn, a bird stuffer from Hull, for his own private gain nearly extirpated this rare bird. We did not during the day see above 5 or 6 pairs. These poor birds soon lead you by their solicitude to their nests. The nearer you approach them the more fierce they become in their attacks upon you, sweeping and pouncing repeatedly within a few feet of your head, till on your arrival at the nest (though armed with a gun) when they unhesitatingly pass close over you sometimes striking your hat as they pass. Of their nests we found two – they were built upon little hillocks in the low ground and formed of moss and dry grass placed in a hole in the ground. The eggs were two. Proceeding towards the sea we stood upon the top of some fine cliffs commanding during clear weather a fine prospect of this part. I attempted a drawing. We next took our route for the top of the hill, on our way homewards, and had a stiff climb amongst loose scattered stones upon a dry fine[?] sandy soil. Arrived at the top we were glad to shelter ourselves on the lea [*sic*] side of the pile of stones there erected by the government surveyors of the coast, the wind being exceedingly piercing. Under the loose stones I found in plenty the same beetle (*Helobia Gyllenhalii*) [presumably a ground beetle, perhaps *Nebria gyllenhalii*], which I had (in company with my much valued friend, J.B. Giles) taken the year before on the top of Helvellyn. In descending towards home I picked up some beautiful little flowers and the pretty stagshorn moss, and another also abundant in similar places in Cumberland.

**Sunday 10<sup>th</sup>.** After the severe exercise of the preceeding [*sic*] day we were glad of to-day's rest and did nothing but saunter about the house with our kind host – observed on the wing *Geotrupes Stercorarius* and a rare black *Aphodius* [both dung beetles: *G. stercorarius* is on the current Shetland list].

**Monday 11<sup>th</sup>.** My friends went to a small island to have a few shots at seals and being successful brought home one. Mr Cheyne having supplied us with a fine heron-boat [*sic*] we started for the island of Papa Stour, having to pass down Harasiter Voe<sup>20</sup> in order to pass over a very narrow neck of land at Brae connecting North Maven with the Main Land. Across this neck of land our boatmen were obliged to carry our luggage to the opposite shore where we were to procure another boat. At Mavis Grind a little further north the connection of the two districts is extremely narrow. One of our boatmen said he had known it during a high tide and at high water not much exceed ten yards. This will probably in course of time be washed away and render North Maven an island. Being detained at Brae for some time waiting for a boat we had tea but of the least comfortable kind we had yet met with. We were therefore not sorry when our boat arrived, though very old and leaky and hardly sea-worthy. We soon passed Busta, the residence of Mr Gifford, a

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<sup>20</sup> Presumably the sea loch now called Sullom Voe.

very neat snug looking house and presenting a more sheltered and comfortable appearance than most other houses here, having several shrubby plants and bushes around it. Before we gained the more open sea we passed several islands, amongst the rest Muckle Rooe, one of considerable size and presenting on its south side some fine bold rocks upon which were several Shags. Our wind being very scanty we did not arrive at Papa Stour until about  $\frac{1}{2}$  after nine o'clock, a very awkward hour to call upon a gentleman (Mr Henderson) to whom we had introductions from Mr Cheyne, but as there was no other house on the island in which we could find any comfort for the night we were obliged to have recourse to it, disagreeable though it was. We were most kindly received as we had been everywhere and found ourselves the inmates of a large family who made their appearance shortly afterwards at supper. Our party consisted of the good man and his wife, two sisters, two sons, two daughters and a gentleman lodging with the family besides our three selves, making in all a total of twelve. Yet with all this we found ourselves most comfortably provided for, with beds and every other necessity, and during our stay here nothing could exceed the kind attention shown to us by all the family. But not content with this we were provided by them with little luxuries for our trip to Foula.



Fig. 7. The entrance to Christie's Hole (from Atkinson 1832).

**Tuesday 12<sup>th</sup>.** My friend Geo: Atkinson who was extremely desirous intended to have gone to the Vae Skerries,<sup>21</sup> some rocks lying at a little distance, to shoot Seals; but the weather proving unfavourable it was abandoned. I therefore rowed off to some rocks at a short distance from the island where the Tysties breed and soon succeeded in procuring one of their eggs, tho they were now only beginning to lay. This was deposited on the top of a stack or rock of about 50 feet high, in the remains of an old building. I also procured two more amongst the rocks of a small island

<sup>21</sup> The Ve Skerries, still a breeding site for the Grey Seal.



in chinks or under large stones where sufficient open space was afforded. The eggs are two in number and laid without any nest. After this we took a boat and rowed to examine some rocks and caverns on the west of the island and enjoyed a great treat. Some of the rocks and stacks are very fine and inaccessible. Leriskerry<sup>22</sup> with its almost perpendicular sides is chosen as the breeding place of the Great black backed Gull which are there in great numbers. These rocks and cliffs are perforated by deep, dark and gloomy but most interesting caves, the resort of seals which are sometimes killed with clubs, when overtaken in their retreat, for the sake of their skins for rivelings (a kind of slipper) and for the oil they produce when boiled down. The finest, into which we passed, is called Christies hole and winds into the rock for a distance of about 150 yards. At its entrance stands a fine rock, as if the guardian of this retreat against the stormy sea.

At its entrance the roof is about 50 feet high, rugged and broken. About half way in, the light of the sun gleams upon you admitted by an opening which passes to the top of the cliff. Farther in all again is gloom. From this few scenes of the kind can surpass the one I had now the pleasure of beholding. All was still and silent, only broken by the drops of water from the opening glittering in the sun as they fell. The sea upon which we lay was still and beautifully transparent, every stone and small pebble being distinctly visible though some fathoms deep. To seaward the more dark part thro' which we had first passed, and beyond the open sea finished the picture.

**Wednesday 13<sup>th</sup>.** Set in with unceasing rain. Stayed in the house writing my journal. In the evening crossed the sound to the Mainland to spend the evening with Mr Scott, a young bachelor from whom we had received an invitation to dine but were prevented by the bad weather. We took him quite unexpectedly at about 9 o'clock but met with a most hearty welcome. We found his house and manner of living as comfortable as man could wish. After breakfast next morning, **Thursday 14<sup>th</sup>,** we recrossed the sound to proceed immediately to Foula if the weather would permit. Our boatmen would not venture on account of the mist. Mr Atkinson therefore set off for the Skerries and succeeded in shooting three seals but to his mortification got none, they having sunk (as they usually do if killed) before the boat could reach them. On their return in the evening, it being clear and favourable with a gentle breeze, I resolved to go to Foula if possible and on consulting the men they agreed to do so when the tide turned in their favour at about ten o'clock P.M. My companions were wavering but at last made up their minds to accompany me taking leave of Mrs Henderson from whom we had met with so much kindness (which did not end here, various supplies being provided for our stay at Foula). We embarked at the appointed hour, with every prospect of seeing the sun rise from Foula, but no, the allmost continual mist again began to thicken around us and to fill our boatmen with fear, which was increased by Mr James who did all in his power to dissuade them against the attempting leaving the sight of land. Mr Atkinson and myself prevailed upon them to hoist the sail and make out to sea, which we did with a brisk breeze, but this was soon abandoned and the men refused to leave the land. Our only resource was therefore either to return to Papa or to make for Vaila, the residence of Mr Scott the owner of the island of Foula, the latter of which we chose and arrived at Vaila a distance of about fourteen miles after a row of about five hours – at three o'clock in the morning of **Friday 15<sup>th</sup>.** There was no other house on the island to which we could go and at such an hour we could not call up a household. We were so lucky as to find a fire in a building apart from the house and here we made ourselves tolerably comfortable till seven in the morning and got two hours sleep in our plaids. Mr Scott having expected us we were shown immediately into most comfortable rooms and enjoyed exceedingly a good wash and change of clothes, and repaired

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<sup>22</sup> Lyra Skerry.

to the breakfast table where we found our kind host ready to receive us. He blamed us much for not rousing the servants and seemed much hurt at the idea of our passing so uncomfortable a night. After breakfast we strolled over the island with Mr Scott and afterwards, as no boat could be procured for Foula, we took a small one to row round the island, which in most parts presents a bold rocky front, with several isolated rocks at a short distance from the shore and numerous caves, some of considerable size and depth. All these rocks are peopled with numbers of Shags and Cormorants sitting upon their eggs wherever the most inaccessible ledges of rock are[?] to be found, some three or four hundred feet above us, others near the water, but all beyond our reach. In one of the recesses into which we went we disturbed an otter and some rock pigeons [*sic*]. Having circumnavigated the island we were glad to return to dinner and found it luckily quite ready. After dinner my companions, having given up the idea of visiting Foula, made up their minds to go to Scalloway to-night lest they should miss the Magnus Troil. I remained firm in my resolution of visiting the island at all risks, though Mr Scott hinted the probability of my being detained for many days upon the island, and the uncertainty of getting there at all, the boats being all busy at the fishing. This did not deter me and here we parted company, they setting out for Scalloway and I remaining to go to Foula the next morning. They were lucky in their resolution of setting out tonight, finding that the Magnus Troil was to sail on the morn at noon. Thus ended our joint journey, and thus began my solitary travel. Dreaming of Foula birds and eggs I fell asleep and thus ended another day.



Fig. 8. View of Foula from the east. From Atkinson (1832). Probably by W C. Hewitson.

**Saturday 16<sup>th</sup>.** Much to my relief and satisfaction the day was favourable for my passage and [I] had no difficulty in getting a four oared boat to convey me across, it being Saturday, a day on which none of the boats go to the Haaf fishing that they may not be absent any part of Sunday, which is throughout these islands held in reverence & much more strictly kept than in England. The tide serving at twelve o'clock, I bade adieu to the kind hospitality of Mr Scott, by whom I was treated as tho' I had been his son, and was not only provided by him with a room and



accommodation on the island of Foula but was also provided by him at his own expense with tea, sugar and bread and bedding, sent with me with strict instructions for his tenant to pay me every attention. This is a specimen of Shetland hospitality & and many of such as we had the luck to meet with.

In about 2 hours and a half when about half way to Foula we could see the island indistinctly, the base only being visible under the canopy of mist which shrouded its top. At about five o'clock we touched the shore, upon which I was glad to jump and was immediately beset with many anxious inquiries of the purport of my visit; which having satisfied by telling them that I was anxious to obtain specimens of rare birds and their eggs, I had very soon plenty of volunteers to assist me, but all wishful to have some price fixed for their trouble. One fellow, who was desirous on monopolizing the whole, told me that if I would trust him and not let anyone else poach upon his priveleges [*sic*] he would get me as many as I wanted. This was however quite impossible. The intelligence had spread fast and great part of the younger population of the island were in search of eggs for me, both males and females, and before ten o'clock had brought me upwards of fifty eggs, amongst other things a Shearwater Petrel alive and a stocking full of Stormy Petrels taken in holes in rocks though they had not yet begun to lay their eggs. Of these I took some to try to keep them alive that I might watch their habits. I went this afternoon with a guide to the top of the Sneug, the highest part of Foula, 1380? feet above the sea, to try to take some of the eggs of the Skua Gull which breeds there within about 100 feet of the top. We were very soon in a thick wet mist through which we could see nothing below us, but shortly after coming to their habitat found one of their nests. Had I not been quite positive of their identity I should have been doubtful from the colour of the eggs, which were very dissimilar to those I had seen on Rona's Hill, these now before me being of dirty white

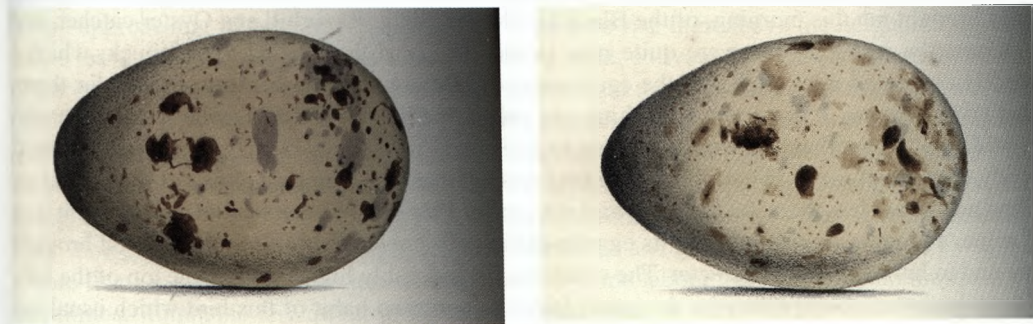


Fig. 9. Hewitson's figures of the Great Skua's eggs.

with very few spots, those of a deep greenish brown with numerous blotches. I thought at first that it might be only an accidental variety but I had this evening many more brought me, all of the same colour. The only way in which I fancy this can be accounted for is by supposing that those on the Sneug must be exposed from their great elevation to some bleaching effect, being almost allways exposed to the moisture of the mist with which this hill is enveloped, whilst those on Rona's hill are near the bottom and at a slight elevation. In the descent homewards I found two or three nests of the Arctic Gull in the low ground at the foot of the hill, and gathered many varieties of allmost every shade of colour – deep purple blue, light blue, pink and white – of the pretty flower. I got home and was soon in bed and sound asleep in a little cupboard-like place in the room where I had taken up my abode.

**Sunday 17<sup>th</sup>.** Dull and misty, the fine hills yet invisible. Took a walk towards the rest of the island along the cliffs towards the north but could derive little satisfaction from the thickness of the weather. After wandering for some time I lost my way and had to call at a cottage to make enquiries. Here I found the good people reading the scriptures aloud and on my way home passed one of their meeting houses, a humble little dwelling and standing alone at the foot of the Sneug and sheltered by one of the finest works of the Almighty in this lovely spot of the creation. The people were as I passed just issuing from it and one or two together winding their different ways home over these rugged mountains. It was a peaceful scene and far more worthy of the Sabbath than the bustle of a town with all the humbug of pomp and nonsense, the rolling of carriages and the parade of lacquies [*sic*]. In the evening I wandered towards the most cultivated part of the island known, by the name of the Hame Town, a considerable tract of barley and oats and having upon it many dwellings. Wherever I went I found these simple people employed either in their houses or enjoying the evening at the door and busily engaged either reading the bible or some tract. In no place did I ever see the Sunday so strictly kept or I believe with half the sincerity. The evening was fine and clear, one of those peculiar to this part of the British dominions, so serene and bright and quiet that it prevented your feeling any inclination for retiring to bed; objects at a distance and the horizon clear and distinct, the air light and pure, and as light at midnight as in England at 9 o'clock. Whilst upon the island I was very rarely in bed before morning – and then usually without any of the usual feelings of drowsiness. The natives are not early in going to rest, rarely before 11 o'clock. Many of them assured me that they often remained at their own doors long after that time enjoying the coolness of the evening. The birds seem to be affected in the same manner as I have frequently heard the Skylark singing in the air at eleven and 12 o'clock at night and as early as one in the morning.

**Monday 18<sup>th</sup>.** The mountains are still cloud-capt and shrouded with thick mist. Had several eggs brought me this morning, of the Black Guillemot, Shag, Razorbill and Oyster-catcher, and amongst the rest four that were quite new to me. The bird they called a Skrippuck, which I readily construed into Snipe, but the eggs were so different, and the situation chosen for them, that I was in hopes of procuring something new and immediately offered a reward to anyone who would find me another and would take me to it. Several boys went in search and soon returned ready to conduct me to two of them. The first was against the steep side of one of the hills at an elevation of not less than 500 feet. The bird was on, and sat so close that I could readily see it was a snipe, and upon its rising found its eggs to differ very considerably from those I had brought me and to have the usual character. The other was considerably higher and on the top of the hill. These instances afford a curious deviation from the common habit of this bird which usual[ly] builds in low marshy-grounds in the neighbourhood of pools of water. I fished a grassy, likely-looking pool for water beetles but only brought up one small species of [blank] and a Notonecta [a water boatman (*Hemipterae*)] and unluckily was disabled from prosecuting my researches further by breaking my net. Near the same place I got a fine yellow Iris and in the evening went to the Kame to see the rocks but this was quite impossible, the mist becoming so dense that I could not discover anything at a distance of many feet. I had my Stormy Petrels at large about my room most of today. I could not persuade the little things to eat anything. When let out of the box in which they were confined their first impulse was to seek some hole into the which to creep, and for this purpose they kept fluttering up and down the walls poking their heads into every cranny. And when tired they would get into the darkest corner of the room and in that way remain till the evening after sun-set, when they became extremely restless, flying round and round the room and against the windows and making never ceasing attempts to regain their liberty. They are called Swallows on most of the islands (on Foula they are more generally known by the name of Alamsuti) and certainly in many respects bear a striking resemblance to that bird, especially in



their flight when the white above the tail gives them somewhat the appearance of a House Martin. When sitting their wings are much crossed over their backs. They are usually concealed in holes of the rocks or under heaps of stones during the day-time but become more active towards night which seems to be the favourite hour of these wanderers of the ocean. The fishermen tell me that, when at sea drawing their lines, if they happen to throw pieces of fish over board numbers of these interesting little birds will settle around them close to the boat to pick them up though they had not previously seen a single one during the night. I went to bed listening to the busy flight of my little companions, sometimes enlivened by a musical chirp much resembling that of our swallow, and fell asleep leaving them upon the window fluttering with their wings wide open. My first search upon rising was for them: one only was to be found, the others having escaped through a broken pain [*sic*].<sup>23</sup>

**Tuesday 19<sup>th</sup>.** The morning being rough and unfit for fishing I engaged a boat for Scalloway and, being all in readiness about ten o'clock, I had the provocation to learn that (the wind having changed) all the boats were preparing for the fishing and could not possibly think of anything else. Thus I was compelled to remain quietly on the island and tho' exceedingly galling at the moment I was glad afterwards of the delay. During my residence on the island its higher lands had been in continual mist and invisible but, very soon after the change of wind, the clouds of fog rose and departed and left me a clear view of the Sneug and the other fine hills of this pretty island. In the evening I engaged a boat to row me under the most lofty part of the Kame, a perpendicular rock to the westward of the island of above 1300 feet, and the highest precipice in Britain next to that of St Kilda.

In going round we passed some fine stacks of rock and were gradually prepared for the towering grandeur of the Kame. The precipice had been gradually rising towards it with a moderate ascent but on approaching its base its top seemed all at once to rise high above the neighbouring hills and to leave them far below. It was a very imposing sight, enlivened by the very numerous birds that breed upon its sides. A part of the cliff was pointed out to me by my boatman upon which the Golden Eagle annually builds her Eyrie.<sup>24</sup> It was near the top and not less than a thousand feet above the sea and to the eye apparently quite inaccessible being almost perpendicular and with very few breaks in its surface. Yet up the face of this a Foula man had this spring ascended and brought the young ones down, but they very soon died being too young to rear. Having remained for a short time to admire and wonder at this stupendous and glorious work of nature I was put ashore that I might climb to its top. This caused me some labour but amply repaid me for it by the almost illimitable and awful prospect presented from its dizzy height. Standing upon its edge you overhang the sea considerably out of the perpendicular and have nothing between you and the mighty ocean except the innumerable sea-birds. It was a position in leaving which I felt considerably relieved. I then made my way to the top of the Sneug, the highest hill on the island, from the summit of which you command a view of the whole island at one glance with its watery boundary, its patches of cultivated green, and its grassy lochs and little rivulets with the huts of the natives and their herds and flocks. From this elevation (about 1380 feet) Orkney is at times visible. I made my descent over the top of the next hill (Hamna Field) which completes this noble range of mountains.

<sup>23</sup> The fate of one the missing petrels was sadder, as recounted in *British Oology* – 'the other had fallen into a basin full of the yolks of eggs which I had been blowing, and was drowned'.

<sup>24</sup> The Golden Eagle has never been reliably reported to breed in Shetland, and the eyrie must almost certainly have belonged to the White-tailed Eagle. Nevertheless, in both editions of his book Hewitson insisted that the sea-cliff eyrie was that of the Golden Eagle, though he seems never to have seen the birds.

**Wednesday 20<sup>th</sup>.** Whilst engaging a boat this morning to take me to Scalloway one arrived from Vaila bringing out Mr Scott's factor. By this I prepared to return, the men having agreed to put me down at Scalloway. The passage was a very tedious one, without wind, and took us nine hours rowing most of the way and I did not arrive till near nine o'clock, after which I crossed over the moors a distance of 6 miles to Lerwick. Though my boatmen were all old men and verging on sixty years or more (one of them being upwards of seventy), they underwent fatigue which none but a Shetlander could endure. The distance they had rowed when they set me down was not far short of sixty miles, relieved only by a few minutes cessation during a light breeze now and then, and yet they finished this apparently without fatigue and pulled as good an oar as at starting. Besides this, after about half an hour's rest, they had to return to Vaila without wind, a distance of twelve miles. All the nourishment which their scanty means could allow them being a little oat or barley bread, with a drink of bland,<sup>25</sup> a preparation of milk after churning of a sharp acid sour flavour, a little whiskey was a great treat and helped them finely on their way.

### Foula

The island of Foula lies about 25 miles from Vaila and the Mainland of Shetland in about [blank] latitude. It is about two miles and a half in length from East to West and one and a half from North to South, its population being two hundred and sixteen souls. Its position is far from any other land, surrounded by a dangerous and stormy sea – and shrouded during a great portion of the year in a dense fog – renders it an exceedingly interesting island. It is scarcely ever visited by the inhabitants of the other islands, who regard it as a place difficult of access, and will by no persuasion be tempted to undertake the passage except in fine clear weather. It is in consequence very little known and is regarded by the other Shetlanders with a good deal of curiosity, as is likewise the visit of a stranger to the isle. The men of Vaila alone keep up any regular communication with it and this only during the summer fishing months.

Foula is a fine island and exceedingly picturesque in every point of view both when seen in profile from the ocean and also inland from the top of its lofty and elegantly formed hills, the chief of these are three known by the names of [long blank] running from [blank] forming one continued range and dividing the island into two parts. Of these the Sneug, the central one, is the highest and measures from the sea 1380 feet and is, with exception of Rona's Hill in North Mavis, the highest elevation in the Shetland isles. Its two companions are little inferior to it in height and form a most interesting trio. The Kame, the base of which is washed by the mighty Western Ocean, presents to its hitherto unimpeded force one of the finest precipices [*sic*] in the British islands, rising perpendicularly from its waves to the height of 1200 feet – covered everywhere by innumerable sea-birds. Its top overhangs this giddy height so that when standing on it you seem detached from the land and balanced on eternity and may drop a line unimpeded into the waves below. From the Sneug you have a very extensive view and may in clear weather discover the Scottish hills and the Orkneys. The prospect is everywhere else bounded only by the horizontal sea line except to the east where you command the many scattered islands of this northern boundary of Britain. All else is the ever-restless and allways interesting ocean and from this spot you can at once see the whole circumference of the island with its pretty lochs and patches of cultivation.

A small portion only of Foula is in cultivation – of oats, barley & potatoes, all of which appeared in a flourishing condition. A part is also kept for hay. The remainder of the island is principally

<sup>25</sup> A word no doubt derived from the Old Norse *blanda* – a mixture of sour whey and water.



short heath, with some fine grass in the more sheltered valleys and near water. On this numbers of cows were grazing and in good condition. They are very superior, as are also the horses, to those of any of the other isles. Some of the cows were the most beautiful things I ever saw, being very neatly formed and finely boned, and would be most ornamental in a gentleman's park. The horses are likewise considerably larger and better formed than any I had yet seen. The island is well watered being everywhere ornamented with small lochs, from which are streams of water.

The inhabitants are (from necessity) a set of the most independent people possible. All their resources are in themselves, and all their wants supplied by their own labour. They are, as throughout the whole of Shetland, all fishermen and pay their rents in fish. Their little farms of ten or twelve acres grow all they want, just a sufficient quantity of barley, oats & potatoes for to supply the family, together with the fish which they keep for their own use, being only the coarsest sorts together with the heads of those supplied to their landlords for drying. They have besides a good many sheep which they kill for their own use and occasionally a small ox for beef, besides fowls and their eggs in abundance. Every family also keeps a cow or more commonly three or four which supply them with milk and butter and bland, which is allmost their only drink, made by a mixture of water with the churn-milk. The quantity of milk given by each cow seldom exceeds three or four quarts during the day.

Their clothes, with the exception of a hat or cap rarely worn by them, are mostly of their own manufacture, the wool being spun woven and dyed by them. And the leather for their shoes tanned by themselves with the little yellow Tormentilla, the root of which is grubbed up for the purpose, as also for sale, but in small quantities the labour required to gather it being very great.

There was not I believe when I was there either a clock or watch on the island, neither had I one with me and, however strange it appeared to me at first, yet there is really no need of such a thing, the sun being quite a sufficiently near a guide for anything they want – though for the three days I spent there, he was never visible and puzzled us a little to guess the hour.

How these poor people spend their long winter nights now I am quite at a loss to know. They used formerly that is a few years ago to be very fond of dancing and fiddling and, assembling in little parties, used to pass a part of their long winter in innocent and sociable merriment which was free from the evils attached to meetings of the kind in other parts – their [*sic*] being no intoxicating liquors to be had on the island and no money to purchase them if they could – many of them assured me that they never tasted anything of the kind for twelve months or double that time, the labours earnings of their summer's fishing frequently leaving them only a few shillings to spend on more necessary things. Within these few years they have been visited with a pest which I fear they will never again cast off. The Methodists have here intruded their gloomy hypocritical faces and creed and have marred God's beautiful works by putting an end to that cheerfulness and innocent gaiety which he has spread throughout his creation and which daily presents itself in the gambols of the lamb and the delightful music of birds. They have persuaded these simple people that all their innocent amusements are sinful and have succeeded in putting a stop to pleasures which their gloomy and ill-constituted minds could never hope to share. They never found a set of people so easily led as the inhabitants of Foula. After having succeeded in ~~persuading~~ impressing them with an idea of their own importance and sanctity, they could persuade them (naturally a religious people) to anything good or bad. I never saw a set of people pay so much reverence to the Sunday or so strictly observe it, employing themselves a great part of the day in reading their bibles, besides their regular attendance at their places of worship of which they have a scotch church, an independent, and a Methodist meeting-house.

The progress of the Methodists is to be attributed (as in other parts) to the shameful neglect of the ministers of the established church. The one i[n] whose living Foula is included having (the people assured me) only visited it once in the last five years, tho' only at a distance (by sea to be sure) of about 30 miles. During his absence his duties are entrusted to an old sailor who has been appointed schoolmaster of the island, and who reads the service every Sunday which the people could do just as well at home. For this quintennial visit the parson has the assurance to receive his unearned[?] wages, the poor people paying him 2s a year for every cow, 1s per mark of land, 2 a sheep, a potato[?] and other tithes. But the tithe which they feel most, and justly, is one of three shillings upon each boat for landing on the beach, of all the abominable imposts of the church the most unjust and imposing, but they have no redress — their poverty prevents it.

[Below, in a space of nearly two blank pages, is a pencilled note, evidently to remind Hewitson of two subjects he had intended to add – 'Marriage &c' – and 'no doctor'.]

**Thursday 21<sup>st</sup>.** It being very fine and warm I spent the day on the moors entomologizing, but to little purpose, the only things I took being a species of *Geometra* and a tiny moth. Saw the first butterflies observed in Shetland, the Great and little garden white and Tortoiseshell. Found also a nest of the Dunlin with four eggs, upon which she sat very close and would not rise until I had nearly trodden upon her.

**Friday & Saturday.** Again visited Noss Head and was again disappointed, the cradle not being swung.

**Sunday 24<sup>th</sup>.** Visited the parish church which, though more like a barn or storehouse outside yet is inside very neat and well-fit up, with the pulpit at one end and a gallery round the other sides. It was very well filled and by a most attentive audience. We had a very good sermon but too much mouthed. I could not make out the use of the clerk who never seemed to take part in the performance, except to sing.

**Monday 25<sup>th</sup>.** A wet day. Stayed in the house journalizing. Found upon making enquiries that the *Fidelity*, the first vessel for Leith, would not sail for a few days. I determined upon visiting the southern part of the island to have a nearer view of those places in which I had long before been much interested by the allusion to them in Scot's Pilate [*sic*].<sup>26</sup>

**Tuesday 26<sup>th</sup>.** Went this morning to see a ship-load of ponies about to sail. The vessel was about 80 tons and had stowed in its hold 74 of these patient little animals, packed in three rows as closely as they could possibly stand, fourteen inches only being allowed between the halter of each. In this way they would have to remain standing and in the same position for the whole voyage to London, a passage in all probability of 10 or 12 days possibly more. Found on my return a man, whom I had hired for my guide, waiting and started about 12 o'clock in the best and most independent way in which anyone can possibly travel – particularly in this country – on foot – my guide carrying my knapsack with a change of clothes. On starting he advised me to procure a walking stick, without which he never travelled, and this I found of the greatest use and assistance afterwards, making a difference I am convinced of many miles in the day. We wandered down the inlets of the sea which forms the bay of Lerwick and soon,

<sup>26</sup> Presumably he means the *Admiralty Pilot* for Scotland, the book of sailing directions issued to accompany the Admiralty Hydrographic Office charts of coastal waters.



leaving the cultivated district, continued by the margin of the sea. Passed a small lake upon which were some gulls and about four miles from Lerwick a neat church and parsonage built by government. About two o'clock came to a group of fishermen's huts where my guide told me we could procure some dinner and whiskey. Being very hungry and an hour's walk from any other place, I determined to try this place of refreshment miserable and dirty though it was. On making enquiries they told us the only thing they had was some piltocks [*sic*], which they had caught for bait. To these I had no objection till they were fried (which was done by placing them upon an iron before the fire and pieces of hot turf upon them) when they came before my nose. A smell was quite enough: they were quite putrid, but in this state the Shetlanders like them. I had on setting out this morning intended to stay at Bigton which lay 8 miles further, and 16 from Lerwick, but feeling so little tired and having Sumburgh head in sight I resolved to reach it to-night. We had come so far over a something like a road – and passable to carts – it now became much narrower and only for horses or foot passengers. We now followed the track along the sides of some rather high hills [blank] luxuriantly covered with grass to their summits, having the sea immediately below us and at a short distance the island of Mousa with its castle or burgh, the most perfect in Shetland. Primroses were growing abundantly on these hills. Had a long and weary uninteresting tramp, and through some very boggy land. Most of the low land on this part of the island is in cultivation and appeared [*sic*] very promising. Upon coming within a few miles of Sumburgh the view was most pleasing – formed by the church, standing alone, the parsonage, the pretty residence of Captain Craigie & a fine lake. At a short distance from these stood the Methodist meeting house, high on the summit of a hill, backed by the fine dark ridge of Fitful head. Between this and [blank] we passed over a large extent of barren, blowing sand with patches of the most beautiful rich grass upon which numerous flocks were feeding. My last chance of a night's lodging was either amongst the few scattered houses which we now approached or at the light-house upon the summit of Sumburgh head. Upon making enquiries at the only place I thought likely, I was disappointed and had to trudge two long miles uphill to the light-house, weary and hungry as I was. From a short distance Sumburgh-Head has the appearance of an island, standing as it does upon a peninsula, joined to the mainland by a narrow piece of very low blowing sand which, gradually diminishing, and within a short time has had several feet in depth blown away, it has now every appearance of being presently an island. After crossing this we passed the old ruin of Jarlshof close upon the sea – and the residence of Mr Bruce. A little farther on, following a good road cut for the purpose of landing the light-house stores, we reached the top of the promontory and were most hospitably received by the chief keeper of the lights. The distance which I had walked today was about 30 miles. The situation of the light-house is very fine indeed, surrounded almost by the sea thundering against its nearly perpendicular cliffs and standing as the only chance of succour in this most dangerous and deadly sea. The tower of [?] the light stands between two houses for the keepers – which are most complete and comfortable and in every way best prepared to withstand the tremendous weather which they sometimes encounter. All the windows are double.

**Wednesday 27<sup>th</sup>.** Turned out a most unpleasant gloomy day. Kept the house till the afternoon when it grew finer and went down the cliff by a path which the Keeper is cutting – as the resource [*sic*] of anyone who may be cast ashore. Numbers of boats from the fishing were taking shelter here frightened by the appearance of the morning. When overtaken by bad weather in this sea Sumburgh is their last chance of safety and the approach to it one of very great danger. Mr [blank] told me that he once witnessed a most deeply affecting sight. All the boats were at sea and a sudden storm had come on – the wives [*sic*] of many of the fishermen had come here to watch anxiously for their return. Several boats had succeeded in crossing the roost, then running very high – one sunk within a short distance of safety – another went to pieces on the rocks – and

the last was seen in vain endeavouring to stem the roost which was carrying it irresistibly along; it was watched till the darkness of night shrouded it from view and was never heard of more. The roost (which is caused by the great strength of the tide flowing at many miles an hour?) is a mess of white water, the waves breaking as upon a beach. It is here that immense numbers of the seethe or Coal fish are caught. It is a most laborious kind of fishing – the men having to constantly row at the rate of three or four miles an hour with a line over the stern of the boat baited with a herring or other small fish. This evening was most enchanting and long after the sun had set bright golden lights lit up the surface of [the] sea and tinted with golden hue the dark sides of Fitful head.

**Thursday 28<sup>th</sup>.** Made for Quendal Bay and, instead of retracing our steps by the route by which we had come, took the opposite side of the island and on my way to Bigton, the seat of Mr Bruce to whom I had an introduction, saw the islands of [blank]. The boats having just arrived from the Coal fishing, great numbers were landing from the various boats and resembled a salmon very considerably in shape – some of them were a great size, and would weigh 15 lbs or more. Dined with Mr Bruce and in the evening had a most weary walk home to Lerwick where I arrived about 11 o'clock.

**Friday 29<sup>th</sup>.** Spent most part of this day upon the moors entomologizing but to no purpose. Enquired about the sailing of the Fidelity and found greatly to my disappointment that her time of sailing was quite uncertain.

**Saturday 30<sup>th</sup>.** Having fortunately the company of a gentleman, who was lodging at the same house as myself and a sportsman, we this morning crossed over to Scalloway for the purpose of again visiting the island of Oxna, to procure if possible some eggs of the Stormy Petrel. With the guidance of the fishermen we repaired to the beach where they breed. Passing cautiously over the large stones upon which they dry their fish, we could soon distinctly hear the birds uttering a sort of warbling-chatter beneath us and were by attentively listening guided to the exact spot underneath which they were. It is the most laborious kind of bird-nesting in which I ever engaged, requiring all our strength to throw out the large stones on all sides of us, till we reached the depth of about a yard where we allways succeeded in taking two or three of the birds, seated upon the ground under the lowest stone, but could only obtain a single egg after a long search. On returning home shot several Black Guillemots.

**Sunday 1<sup>st</sup> [July] & four following days.** Waited with much anxiety for the sailing of the Fidelity – and being constantly told that she was hourly expected was obliged to remain near the town and was only able to make short excursions to the moors to entomologize in which I was very unsuccessful – only captured specimens of the Wood Tyger and a beautiful tiny moth – and tho' I visited many of the most likely ponds never saw a dragon-fly in Shetland.

**Friday 6<sup>th</sup>.** Went on board the Fidelity this afternoon and very soon after made all sail with a favourable wind. Our passengers, six in number, consisted of Shetland tradesmen on their way to Edinbro' to make their purchases of stock. They were all most respectable intelligent men – but most of them in bed a greatest part of the voyage, badly sick, especially one young man who had never been from home before and who never left his bed during the passage.

**Saturday, Sunday & Monday 7<sup>th</sup>, 8<sup>th</sup> & 9<sup>th</sup>.** On Saturday night when the breeze died away we had made half of our passage – but were doomed to undergo very slow weather for the two following days – and did not arrive within sight of the isle of May till Tuesday the 10<sup>th</sup>.



**Tuesday 10<sup>th</sup>.** Was greeted this morning with the welcome sight of the Isle of May – which we soon made with a westerly breeze which blew right in our teeth on reaching the mouth of the forth, against which we made but very slow way. But this I did not much regret, having a fine opportunity of seeing the coast on both sides and the interesting isle of Bass with its Solan Geese. In the evening we had only got to North Berwick where we cast anchor and in the morning found ourselves off the pier of Leith where we landed at eight o'clock after an absence of 52 days.

It is difficult to describe the delightful sensations which I felt on again looking upon the green trees and shrubs – from which my eyes had never before wandered for any length of time. The country never looked so beautiful to my eyes – and to see all my friends amongst the small summer birds and particularly the swallows after a long absence from them gave me a delight which I shall not forget. I looked in vain for the Hawthorn and many other of the early summer flowers which had bloomed and fallen to decay – and I felt that I had missed much pleasure in seeing them as usual and never before knew how much pleasure each flower imperceptibly affords us and how great a blank in the creation the loss of one would leave. I went thro' the Museum at Edinbro' with which I was much disappointed, and also to the top of Arthur's seat from which is a very fine view of the finest city in Britain. The situation of Edinbro' is beyond anything fine – close upon the sea and surrounded by the finest hills and at its very doors. Took the coach this same evening to Berwick and was very much delighted with the ride through the country of the Lothians – laden everywhere with the most abundant crops and appearing like a large garden – slept at Berwick all night – and on the following day arrived at home and was glad to find the fruits of my trip (my eggs) all quite safe & sound.

*[Here the journal ends. After this about half of the pages in the notebook are empty but at the end there are some unfinished notes on beetles (listed below), the heading for a bird list that was never written, and a list of expenditure, together with some rough sketches of rock samples, brittlestars and the claw of a Norway Lobster (Nephrops norvegicus), which were presumably made during the period of quarantine in Lerwick harbour.]*

## DISCUSSION

The notebook is clearly the one Hewitson took to Shetland and used to record his experiences while he was there. The writing has an attractive unpolished immediacy, but is unfinished – there are blanks and clear indications that he intended to add comments about marriage and the absence of medical care on Foula and also to list the birds and insects he had seen in Shetland. He mentions making landscape drawings at Lerwick, Burrasound and elsewhere that are not in the notebook; presumably he used a sketch book. His friend Atkinson brought back sketches from his other expeditions;<sup>27</sup> those made in 1833 he gave to T M Richardson junior and Henry Perlee Parker to be worked up into the fully finished landscapes that have been published by Seaton (1989). Hewitson makes no mention of any such drawings that Atkinson may have made in Shetland. He was no mean artist himself as his illustrations of eggs and butterflies make very clear; the sketches he made of sea stars and geological specimens in his notebook probably do not do him justice. If his Shetland landscapes are irretrievably lost it should at least be possible to publish his drawings done in Norway the following year.

<sup>27</sup> On the 1831 Hebrides expedition his party also included the excellent landscape artist Edward Train whose drawings are reproduced by Quine (2001), though sea-sickness deterred Train from making the trip to St Kilda.

His journal says little about the activities or ideas of his companions and gives the impression that Atkinson and James acted together and were a little detached from Hewitson throughout the visit, and not only at the end when they returned home before him. He was a little older and had perhaps a more specific purpose than they, focused on collecting new species for his egg collection, having already in 1831 started on the publication of fascicles of his *British Oology*. He leaves the impression that the others were mainly interested in shooting and fishing, perhaps a little unjustly since Atkinson was after all a keen ornithologist and also the more experienced traveller. There may also have been an element of class awareness in their relationship; the two well-heeled friends, Atkinson and James, were sons of industrialist landowners, while Hewitson, recently released from his apprenticeship, was working as a land-surveyor. Embleton (1880) describes Hewitson as 'of slender, wiry frame, and decidedly nervous temperment', 'capable of enduring much bodily fatigue' and 'very sensitive to criticism', so he may not have been the easiest of companions. His temperament shows in his comments for example on the quarantine and on the Methodist influence on Foula. The following year, Atkinson and Hewitson went their separate ways, one to Iceland the other to Norway.

As Hewitson sailed home he crossed with another young Newcastle naturalist, the medical student Edward Charlton, who visited Shetland from July to September 1832, and again in 1834 and 1852. His recently published colourful and polished travelogues (Charlton, 2007) concentrate more on geology, shooting, fishing, and adventures than Hewitson's journal. Charlton described some of the same people and places, especially in 1834 when he went to Foula, but from the natural history point of view his accounts are less vivid. Charlton (1814-74) later became President of the Tyneside Naturalists' Field Club (1864), and physician to the Newcastle Infirmary.

Much of Hewitson's journal, while full of interest, speaks for itself and needs little comment. The interest lies largely in the first hand observations of the way of life of the islanders, and of the land-owners with whom the three visitors clearly felt an affinity. Most of the observations on birds, particularly those on the Great Northern Diver, Manx Shearwater, Storm Petrel, Dunlin, Whimbrel, Snipe, the skuas, Great Black-backed Gull, Black Guillemot and Rock Dove, and others not mentioned in the journal (Purple Sandpipers for instance), were later published in equal or greater detail in Hewitson's *British Oology*. The observations of the Storm Petrel are the most detailed. Interestingly, George Atkinson added a late footnote to his paper on St Kilda (Atkinson, 1838) giving a similar description of the petrels gathering to breed beneath the rocks on Oxnay, on 15 June 1832, as a comparison with his observations on the St Kilda island of Soay in 1831. If his date is correct, he must have made a last minute visit to Oxnay between parting with Hewitson that afternoon and sailing home next day. The different colours of the eggs of the Great Skua, darker and with heavier markings on Ronas Hill and pale and only lightly marked on Foula, reflect a well described variation in markings and ground colour (Roselaar, 1983), which Hewitson illustrated in his book, but the apparently consistent local topographical difference is left unexplained. Hewitson's suggestion of weathering is unconvincing, and today a chance local genetic difference in the two restricted populations seems more probable. The account of rarity of the Whimbrel on the single island of Hascossay is consistent with the literature (Low, 1813; Saxby and Saxby, 1874) while the collecting of the eggs by 'the inhabitants' offers a plausible explanation for their reported decline. It appears from the account that not only the Whimbrel, but also the Peregrine and Merlin of which they seem to have seen none at all, were less abundant than they are on Shetland today while others such as the Kittiwake and the auks were present in good numbers, and the Manx Shearwater had a tenuous presence on Unst where it is no longer found. In another of his footnotes, Atkinson (1838) called the shearwaters on Unst 'comparatively abundant' compared with St Kilda, on the grounds that 'one of our party',



obviously Hewitson, 'procured nearly a dozen eggs in the north of Unst'. The (Red-necked) Phalarope, which Hewitson had listed beforehand from Low's *Fauna Orcadensis* (see Note 5), evidently as a 'possible' for Shetland, in the event was not identified there until the late 19<sup>th</sup> century (Forrester and Andrews, 2007). Not surprisingly, Hewitson saw no Gannets until the ship returned past the Bass Rock, since the three existing colonies in Shetland were established only in the 20<sup>th</sup> century.

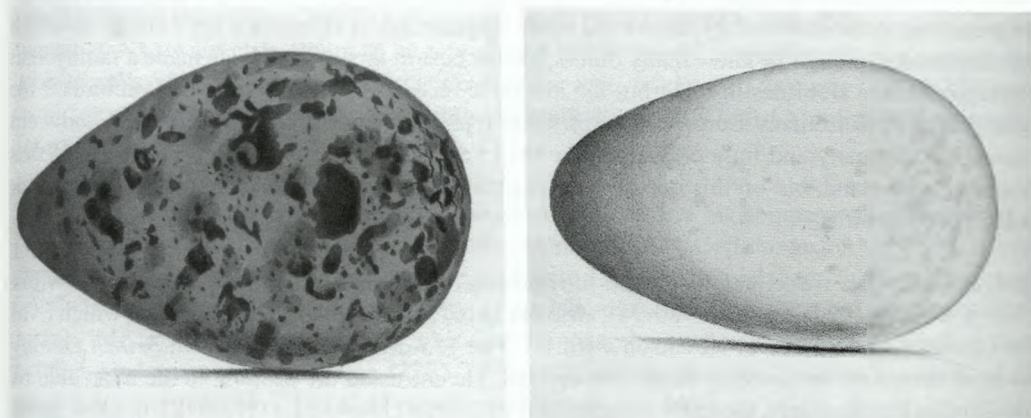


Fig. 10. Eggs of Whimbrel (left) and Manx Shearwater (right) from *British Oology*.

The importance of the Coal Fish *Gadus virens* as a food source in the Northern Isles had been emphasised by Edmondston (1809) and Low (1813), but Hewitson gives a particularly vivid account of the methods and dangers of Coal fishing (27<sup>th</sup> and 28<sup>th</sup> June).

Considering his later eminence as an entomologist, Hewitson's observations of insects on Shetland are disappointing to the reader and seem also to have been so to him at the time. That a man who was at the time a Curator of Entomology for the Society found so few species and often made such tentative determinations as he mentions in the daily journal (a Noctuid moth, some Geometers, a 'Tyger Wood' moth, a caddis fly, some dung beetles, and a water-boatman) is perhaps an instructive indication of the difficulty of using the reference books of the day on a field expedition. The list he began at the end of the notebook (presumably at leisure moments while still in Shetland) covers only the coleoptera (and an earwig) found near Lerwick at the beginning of the visit (on 27<sup>th</sup>-30<sup>th</sup> May): *Calathus melanocephalus*, *C. cisteloides* [later *fuscipes*], *Clivina collaris*, *Loricera pilicornis*, *Omaseus nigrita*, *O. orinomum* (all ground beetles); *Aphodius fimetarius* (a dung beetle); 'two species of Staphylinidae' (rove beetles); *Chrysomela staphylea* (a leaf beetle); *Curculio maritima* (a weevil); *Helopia brevicollis* (genus not identified); and (order Dermaptera) *Forficula auricularia* (an earwig). These identifications to species level, using the nomenclature of the day, make it disappointing that the list is not more complete.

The plants Hewitson recorded are even fewer, Spring Squill, Roseroot, Thrift, and the Stags-horn Clubmoss, and his minor comments on the marine fauna he found in Lerwick harbour, though illustrated, add little to knowledge, as he admitted. He donated some Shetland shells to the Newcastle Museum the following year. In addition, in 1832, a collection of minerals from Shetland was donated by Dr Edmondston of Shetland (frequently mentioned in the journal); these were probably brought back, or at least arranged for, by Hewitson's party.

In the following year Hewitson made a longer expedition to Norway, this time with John Hancock and Benjamin Johnson. Again they had a mainly ornithological purpose (Hewitson, 1838), and the birds they observed and the eggs they brought back have a prominent place in *British Oology*. Hewitson again wrote a journal of the expedition. The manuscript, with some inserted sketches, was in Oslo University Library<sup>28</sup> and, according to Embleton (1880), Hewitson on that occasion brought back sketches to be finished by T M Richardson, as Atkinson did from the Faroes and Iceland in the same year. Hewitson and Hancock remained lifelong close friends. In preparing his *British Oology*, Hewitson made frequent use of Hancock's egg collection, which he described, although he knew many others, as 'the best in this country'. He made a family visit to Arran and the Hebrides in 1834 but the available record gives no information on birds.<sup>29</sup> He obtained eggs from many European countries to represent species on the British list and went himself to Germany and Italy collecting. In 1845 he made another journey with Hancock, this time to Switzerland, but on this occasion it was butterflies that he was seeking, while Hancock was collecting birds.

Only a few earlier works had contained illustrations of the eggs of British birds, those of Albin (1737), Bolton (1794), Lewin (1789-94), Graves (1816) and Donovan (1826), none of which rival the coverage or accuracy of Hewitson's work.<sup>30</sup> The 155 delicate lithographs in *British Oology* were all drawn on the stone by Hewitson himself. He entrusted the printing to the most able of the London lithographers, the early ones to Charles Joseph Hullmandel (1789-1850), a few more to W E and H Mitchell, and the final two thirds to Day and Haghe, of Gate Street, 'lithographers to the King' or, for the last two fascicles, 'to the Queen'.<sup>31</sup> According to the (undated) title pages, the publisher of the first volume was Charles Empson of 32 Collingwood Street in Newcastle, and of the second Currie and Bowman, Empson's successor at the same address. In fact the first fifteen parts (to the end of 1833) were issued by Empson and the remaining twenty-two by Currie and Bowman, and both volumes were compiled from a mixture of plates from each.

It has to be said that the book is not easy to use. The volumes were assembled in a taxonomic order but with the plates and their associated texts numbered in an apparently random sequence, resulting from the order in which they had chanced to be issued in the original thirty-seven parts; and consequently they could have no pagination. Worse, there was no index. The situation was complicated by the issue of a supplement published in London by John Van Voorst in 1842, bound into some copies, with or without a new but inadequate index. Nevertheless it was a pioneering, well researched, and very beautiful publication of which Newcastle and the Natural History Society can be proud.

<sup>28</sup> An unillustrated transcript, donated by H S H Guinness and attributed to Oslo UL (*Annual Report*, 1948), is in the Society's archives (NEWHM:1996.H297). Sadly, a recent enquiry to Oslo revealed no record of the original.

<sup>29</sup> An anonymous manuscript in a quarto notebook in the Society's archives (NEWHM:1998.H121) appears to be by a close relative (a nephew or niece of Henry Hewitson of Seaton Burn) and mentions 'W.C. Hewitson' in the third person. The visitors also included Henry Hewitson senior and junior and at least two ladies and the account principally concerns visits to stately homes and other relatively accessible sites. But no doubt W C H took the opportunity to extend his collections.

<sup>30</sup> Lewin's species coverage was by far the widest of these early works, but his book was rare and expensive, and the egg figures much less precise than Hewitson's.

<sup>31</sup> Louis Haghe (1805-1885) also printed the excellent reproductions of the watercolours of David Roberts and other well-known artists.



Hewitson revised the book with the new title *Coloured illustrations of the eggs of British Birds*, and had it published by John Van Voorst in 1846, with several additions and changes. This edition has well reproduced illustrations, though the colouring, by J Standish, is in some instances rather less fine than in the original. But it is a far easier book to use because Van Voorst put the book in order, with an index. There was another edition, with inferior plates, in 1856. The Victorian and later popularity of egg-collecting led to the publication of many other books, some of them, towards the end of the century, with fine lithographs, but for their scope and consistent fidelity to life Hewitson's illustrations had no serious rival until the advent of modern colour photography. Indeed T A Coward chose them to be reproduced in his 'handy pocket guide', the popular but scholarly Wayside and Woodland Series *Birds of the British Isles and their eggs* (1919-1920 and many later editions). There they rubbed shoulders with the bird plates of Archibald Thorburn and John Gerrard Keulemans.

This is not the place to discuss the many people Hewitson and his companions encountered in Shetland, but some of them are of importance as naturalists. 'Dr Edmonston' of Lerwick was Arthur Edmondston, MD (1776-1841), the author (in 1809) of an important, wide-ranging work on Shetland that included a natural history of the islands (which was however a little shaky on birds). 'Mr Edmonston', was Arthur's brother Thomas, the laird of the island of Unst. A third brother, Dr Laurence Edmondston (1795-1879) of Unst, was the most notable naturalist of the three (Allen, 2004). In a series of papers on birds in the *Memoirs of the Wernerian Society* (from which, incidentally, Thomas Bewick derived several of his bird records) he established the first British records of the Snowy Owl and Glaucous, Iceland and Ivory Gulls, and he listed the birds of Shetland, identifying several previously described spurious 'species', such as the 'imber', 'speckled diver', 'morillon' etc, as the juveniles of known species.<sup>32</sup> He also wrote on birds in the *Edinburgh Philosophical Journal* (Mullens and Swann, 1917). Berry and Johnston (1980) attribute the survival of the persecuted Great Skua in Shetland to the individual efforts of Laurence Edmondston on Unst and John Scott the owner of Foula (who was so helpful to Hewitson).<sup>33</sup> It appears from the journal (June 2<sup>nd</sup>) that Mr Leisk of the island of Uyea was also a conservationist. It is ironic that on the day Leisk welcomed Hewitson's party they shot one of a pair of Great Northern Divers (so described in *British Oology*), a species then as now on the brink of breeding in Britain.

In 1840 Hewitson moved south to live in Bristol (while surveying the route of the Bristol to Exeter railway) and then in Hampstead. There he shifted his interests firmly towards butterflies, and apart from a single paper in *Ibis* on European oology (Hewitson, 1859),<sup>34</sup> all of his subsequent seven books and twenty-seven published papers were on lepidoptera, many of them elegantly and accurately illustrated by the author (see Embleton, 1880, for a list). It was in this field that his reputation has been most lasting, and at least one of his books is still in print in paperback.

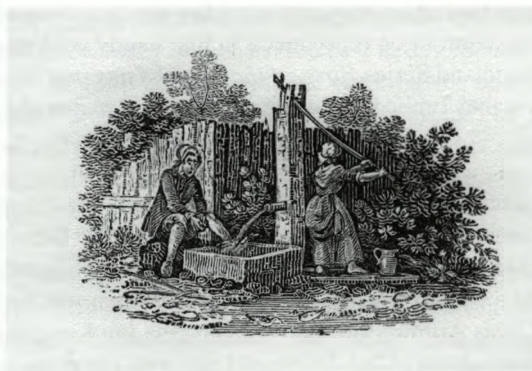
<sup>32</sup> *Memoirs of the Wernerian Society*, (1821-3), 157-160 (Snowy Owl), 176-185 (an 'Iceland Gull' later identified as a Glaucous Gull), 271-275 (a list of Shetland birds), 501-507 (first description of the Ivory Gull and recognition of the 'Greater Iceland Gull' as the Glaucous Gull and the 'Lesser' as the Iceland Gull). Bewick (1826) used specimens provided by Edmondston for his images of the Glaucous and Ivory Gulls and the 'Arctic Gull' (i.e. Skua). He also referred to him in relation to the Snowy Owl, but gives a conflicting account of the first British record, writing that Bullock, on a tour to Orkney and Shetland in June 1812, discovered that the Snowy Owl 'breeds there'.

<sup>33</sup> Low (1813) wrote that the Great Skua was protected on Foula, the penalty for destroying it or its eggs was 16s 8d—an enormous fine compared to the scanty monetary resources of the islanders described by Hewitson.

<sup>34</sup> The eggs of the Great Spotted Cuckoo, Cream-coloured Courser and Andalusian Quail (Hemipode) had been brought back from the Sahara by the Revd H L Tristram whose written record formed the bulk of the text. Hewitson illustrated them in a further splendid lithographic plate, printed by Hullmandel and Watson.

The Society's library has Hewitson's own copies of most of his works, but his matchless butterfly collection was bequeathed to the British Museum.

In 1843 one of his uncles, Henry Hewitson of Seaton Burn, died. (Henry had been friend of Thomas Bewick and, according to Atkinson's manuscript memoir of Bewick, appears in one of his vignettes having his painful ankle, damaged in a carriage accident, doused by a servant girl.)



**Fig. 11.** Thomas Bewick's vignette of Henry Hewitson.

Henry left a legacy to his nephew which, together with a much larger one of the entire estate of his other uncle, Joshua Hewitson of Heckley, made him independently wealthy. In 1848 he bought nearly twelve acres of land at Oaklands in Surrey where he engaged the Newcastle architect John Dobson to build him a house. There he lived for the rest of his life. John Hancock often visited him there and advised on the setting out of the grounds, and in the Society's archives are some of Hancock's sketches of wildfowl in Oaklands' ornamental pond.

Hewitson married Hannah Higgs at St Marylebone on 3 June 1853 but according to Embleton (1880) his wife died childless within a year. He died in May 1878 and left more than £30,000 to a dozen charitable institutions, notably £10,000 to the Newcastle Infirmary, £3,000 to the Natural History Society and (interestingly in view of his comments about the Methodists on Foula) £2,000 to the Wesleyan Missionary Society. A further £22,000 was left to fifty-eight friends and colleagues. Oaklands was bequeathed to John Hancock, together with Hewitson's copies of Gould's 'Birds' (Embleton, 1880). The remainder of Hewitson's rich library of entomological and ornithological books was left to the Society and, together with the Tully bequest in 1951, was one of the two most important donations our library has received.

The money bequeathed to the Society came at a time when the old Museum beside the Literary and Philosophical Society was becoming inadequate for the burgeoning collections. It stimulated the Council to launch an appeal to raise the remainder of the sum needed to build a new museum. John Hancock masterminded the funding campaign and the fitting out of the building that soon afterwards bore his name.



## ACKNOWLEDGEMENTS.

I am very grateful to the archives and library of the Natural History Society of Northumbria for the opportunity to transcribe Hewitson's journal and reproduce Figs. 2, 4, 5, 9, 10 and 11, and to the Revd David Quine for permission to quote from his transcription of Atkinson (1832) and to reproduce his photographs of Hewitson's map and Figs. 3, 6, 7 & 8. I have not been able to identify the copyright holder for Fig 1, reproduced from Seaton (1989). The copyright of Figure 2 is held by the Shetland Museum (as reproduced in Charlton, 2007).

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180 YEARS OF THE *TRANSACTIONS OF THE NATURAL HISTORY SOCIETY OF  
NORTHUMBRIA: 1829 TO 2010*

H. Hugh Chambers

Natural History Society of Northumbria,  
Great North Museum: Hancock, Newcastle upon Tyne, NE2 4PT

In 2010, a redesign of the Society's publications resulted in a change in how we refer to the Society's main scientific publication. Although the *Transactions of the Natural History Society of Northumbria* in effect continue, we now use the simpler title *Northumbrian Naturalist* as part of a broader strategy to make the journal more accessible. This short review puts this change in the context of the history of the *Transactions* since the Society was formed. All of the Society's publications are available to read in the Great North Museum: Hancock library and many are still available for sale from the Society.

The Society was founded in 1829 and up to 1838 published two quarto volumes entitled *Transactions of the Natural History Society of Northumberland, Durham and Newcastle-upon-Tyne*. No other *Transactions* were published until 1846 when the Society's offshoot, the Tyneside Naturalists' Field Club, undertook the publication of scientific papers, chiefly relating to local natural history: six volumes of the *Transactions of the Tyneside Naturalists' Field Club* were published between 1846 and 1864.

In 1864, the Natural History Society and the Tyneside Naturalists' Field Club agreed to publish a joint series of *Transactions* and six volumes were published under the title *Natural History Transactions of Northumberland and Durham* between 1865 and 1877. The title was then changed to *Natural History Transactions of Northumberland, Durham and Newcastle-on-Tyne*, although the existing volume numbering was continued.

In 1903, the Tyneside Naturalists' Field Club and the Natural History Society amalgamated and a new series of *Transactions* was started as the *Transactions of the Natural History Society of Northumberland, Durham and Newcastle upon Tyne (New Series)*. Eighteen volumes were published up to the early 1970s (I-XVII) when it was decided to introduce a more rational scheme: all volumes would be treated as part of a continuous run, re-numbered (counting all the volumes since 1829) and volume 41 was published. This numbering has continued to the present day.

In 1974, the Society changed its name to the less cumbersome The Natural History Society of Northumbria and to reflect this change the *Transactions* became the *Transactions of the Natural History Society of Northumbria*.

In 2010 it was decided to publish the *Transactions* under a simpler name and, although the same volume numbering continues, the *Transactions* have become *Northumbrian Naturalist*.

Sixty-nine volumes of *Transactions* have been published in the past 180 years as follows:

*Transactions of the Natural History Society of Northumberland, Durham and Newcastle-upon-Tyne*

Vol. I and II 1830-1838

*Transactions of the Tyneside Naturalists' Field Club*

Vol. I to VI 1848-1864

*Natural History Transactions of Northumberland and Durham (Old Series)*

Vol. I to VI 1865-1877

*Natural History Transactions of Northumberland, Durham and Newcastle-on-Tyne*

Vol. VII to XV 1878-1913

*Transactions of the Natural History Society of Northumberland, Durham and Newcastle upon Tyne (New Series).*

Vol. I to XVII 1914-1972

Vol. 41 to 42[1] 1970-1973

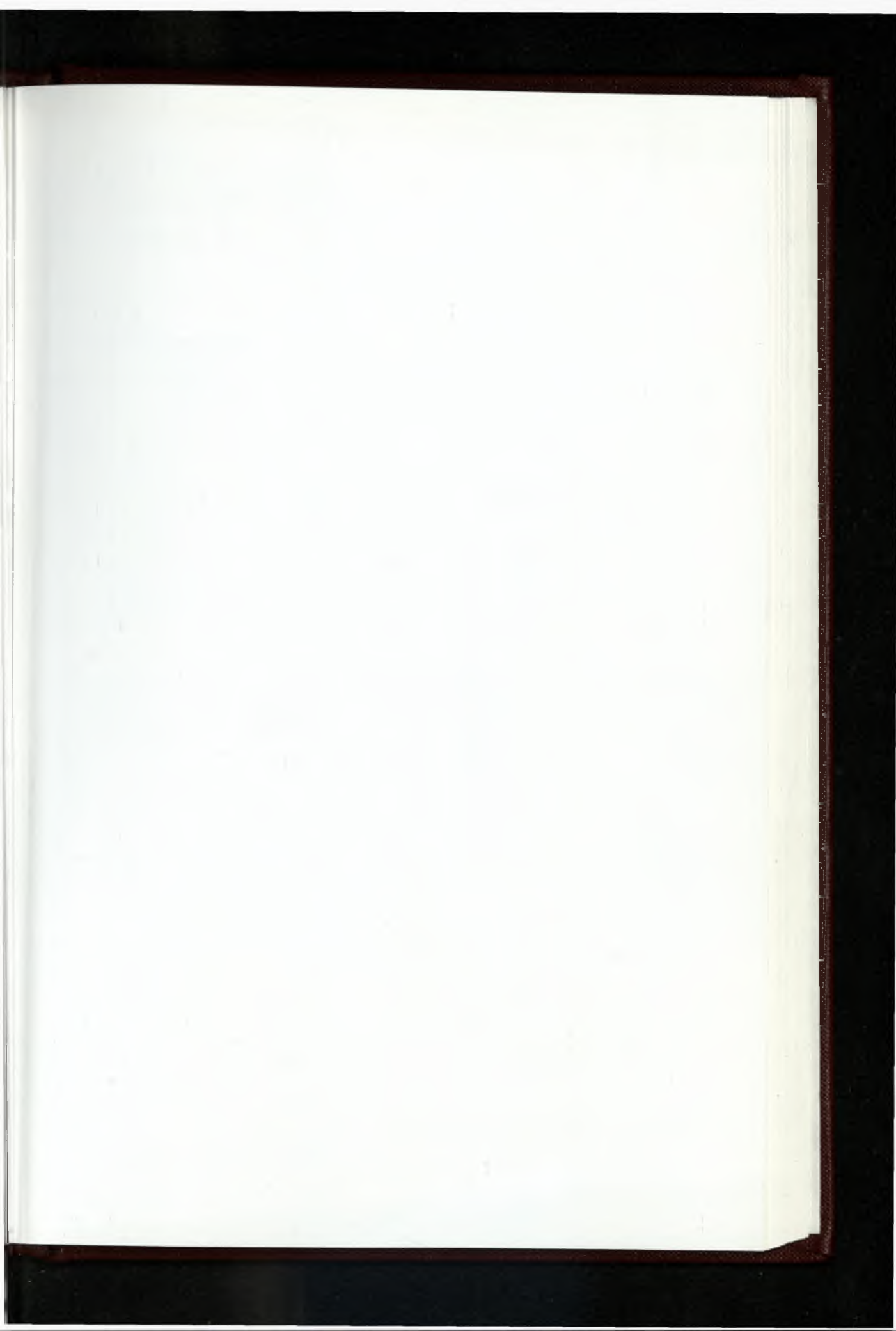
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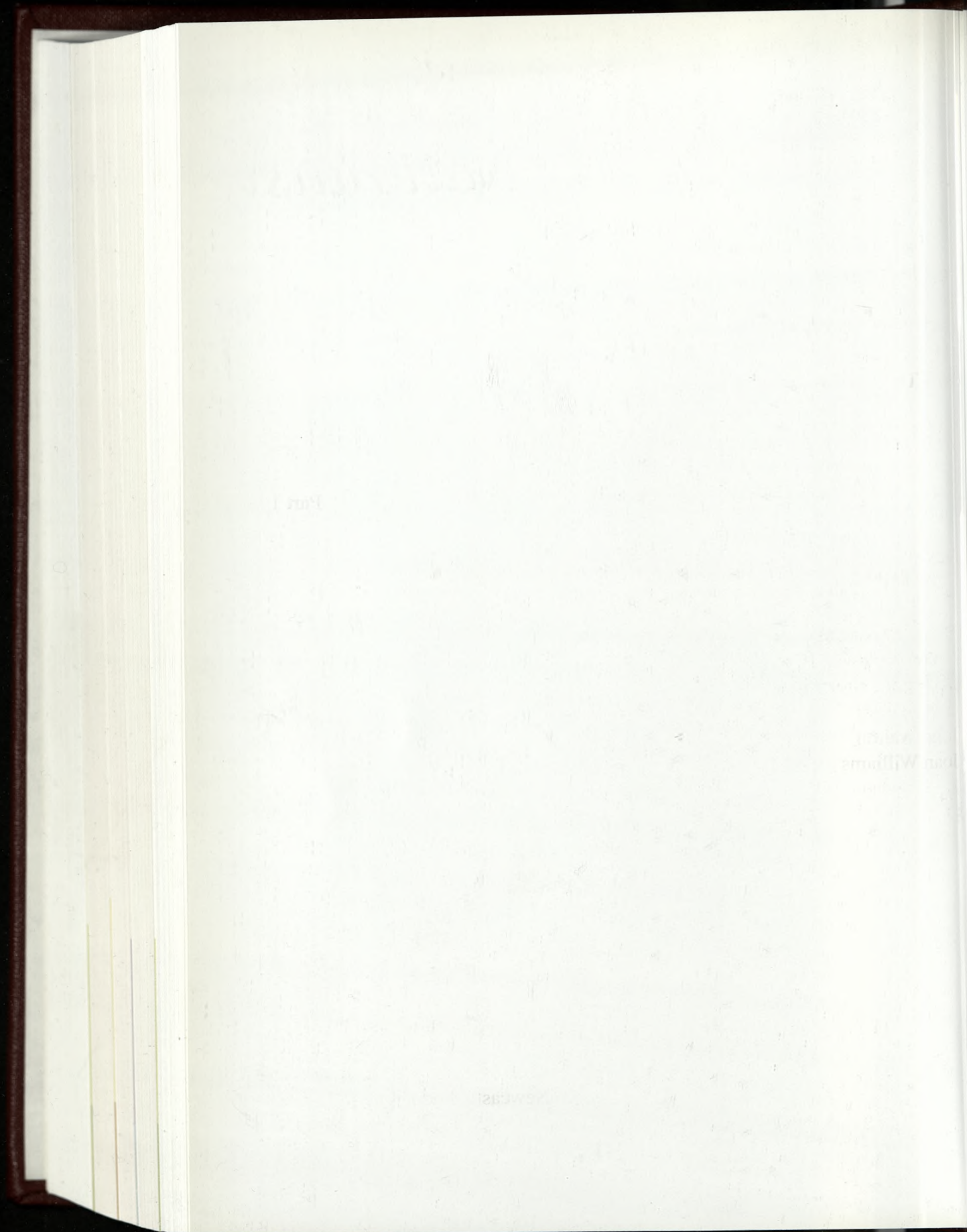
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# Northumbrian *Naturalist*



Birds on the Farne Islands  
2011





# Northumbrian *Naturalist*

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OF  
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## BIRDS ON THE FARNE ISLANDS IN 2011

David Steel

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### INTRODUCTION

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'.

The wardens sailed on 18 March and manned the islands for a total of 262 days until departing on 4 December. Of the 179 species recorded, 23 were breeding species and an estimated 79,696 pairs of seabirds bred on the islands.

### BREEDING BIRD OVERVIEW 2011

In general, the year was considered a successful one with good numbers of seabirds fledging large numbers of young. However like every other seabird season, 2011 had its ups, downs and everything in between. The year started much as 2010, as following one of the coldest winters in recent times nest building and egg-laying was particularly early. Leading the way, Shags were on eggs by 23 March with Eider, Cormorant, Guillemot and Puffin all incubating by the second week of April, the majority of these species breaking their 'earliest ever' laying date. The mild spring conditions and favourable winds also encouraged the early arrival of terns. All were on eggs slightly earlier than normal, with Sandwich Terns incubating by 30 April and Arctic Terns by 13 May.

Population counts revealed some record-breaking totals with Razorbill, Guillemot and Fulmar recording their highest-ever numbers, whilst Shag, Oystercatcher and Black-headed Gull all nested in good numbers. The population of nesting Eiders appears to have stabilised having been in decline for a number of years, whilst Kittiwakes have hopefully turned a corner after being in free-fall for a decade.

On a more worrying note, all three tern species showed population declines, the most noticeable being Sandwich Terns with just over 500 pairs, their lowest population in over 50 years. The other concern was Cormorants which continued their decline for the eleventh consecutive year.

Despite the declines of Cormorants and terns, the breeding season appeared to be good overall. Food supply was excellent and the islands escaped the worst of the mixed mid-summer weather conditions. Productivity revealed some fantastic success, especially for the cliff nesters, with Kittiwake, Shag and Razorbill leading the way. Mallard and Ringed Plover maintained a breeding toe-hold on the islands and the pair of Red-breasted Mergansers nested for their sixth consecutive year. Of the passerines, a record four pairs of Swallow nested on Longstone and Pied Wagtail and Rock Pipit numbers were stable with both species experiencing excellent breeding seasons.

## MIGRATION OVERVIEW 2011

The year brought another good array of migrants. However, the lack of favourable winds during the peak spring and autumn migration periods meant there were no large numbers – unlike the bumper autumn of 2010. The most notable record of the year involved a white-phase **Snow Goose** which was seen flying north through Inner Sound on 23 March. The bird has been considered by most as of wild origin and, if accepted, would represent the first record for the islands. A number of feral/escaped individuals have been recorded in the past but this might be the ‘real thing’!

Spring was notable for non-passerine records, with large raptors amongst the major highlights: two Ospreys, Marsh Harrier, Buzzard and, most noteworthy, the ninth **Honey Buzzard** for the islands. However, the real star of the spring involved the islands’ fifth **Black-headed Bunting** at the end of May.

As climate change brings more southern-based species to the UK, it may not surprise anyone that the islands’ third **Little Egret** was seen in late August, with the summer months recording four **Spoonbills**. As usual, the autumn produced the majority of interesting migrants, many from the east, with the most noteworthy arriving on 1 October: an **Olive-backed Pipit** on Inner Farne, the fourth record for the Farnes. Amongst the expected wildfowl movements at this time of year, a nationwide influx of **European White-fronted Geese** brought 20 to the islands (Table 1).

**Table 1.** Bird Highlights for 2011.

Farnes Record	Species	Dates
1 <sup>st</sup>	<b>Snow Goose</b>	23 March
3 <sup>rd</sup>	<b>Little Egret</b>	25, 26, 30 August and 8 September
4 <sup>th</sup>	<b>Olive-backed Pipit</b>	1 October
5 <sup>th</sup>	<b>Black-headed Bunting</b>	31 May
5 <sup>th</sup> -8 <sup>th</sup>	<b>White-fronted Goose</b> (involving 20 birds)	9 and 12 November
8 <sup>th</sup> -10 <sup>th</sup>	<b>Spoonbill</b> (involving 4 birds)	28 May, 15 June, 10 July
9 <sup>th</sup>	<b>Honey Buzzard</b>	18 May

**Other highlights included** Gadwall (3), Quail, ‘Blue’ Fulmar, Storm Petrel (record influx), Leach’s Petrel, Great Crested Grebe (4), Slavonian Grebe, Marsh Harrier, Hen Harrier, Buzzard, Osprey (2), Corncrake (2), Moorhen (2), Curlew Sandpiper (first since 2003), Spotted Redshank, Wood Sandpiper, Grey Phalarope (15), Long-tailed Skua (10), Sabine’s Gull, Mediterranean Gull (several), Iceland Gull, Glaucous Gull, Stock Dove, Wryneck (2), Great Grey Shrike, Hooded Crow (2), Yellow-browed Warbler (7), Wood Warbler, Icterine Warbler, Waxwing, Bluethroat, Red-breasted Flycatcher, Richard’s Pipit (2), Mealy Redpoll and Common Rosefinch.



As well as the rare and scarce birds, there were new record day counts set for a number of species including Barnacle Goose, Redshank and Short-eared Owl whilst there were good counts of Whooper Swan, Pink-footed Goose, Grey Plover, Turnstone, Black-tailed Godwit, Sand Martin, House Martin and Wheatear. Unlike the previous season there were no substantial 'falls' during the year, mainly due to lack of favourable winds, although noticeable influxes occurred on 8 May and 1, 13 and 24-25 October.

179 species were recorded during the year, with the Outer Group edging the Inner Group by 161 to 158 species. As usual a small handful of 'expected' species failed to show including Balearic Shearwater (for the first time since 1992), Stonechat (first time since 1998), Barred Warbler (first time since 1997), with other noticeable absentees including Scaup, Little Stint and Yellowhammer.

#### ACKNOWLEDGMENTS

Thanks go to the 2011 warding team of Jamie Coleman, Andy Denton, Graeme Duncan, April Eassom, Ciaran Hatsell, Edward Holcroft, Jack Ibbotson, Bex Outram, William Scott, Wesley Smith 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 Steve Bloomfield, John Dawson, Neil Dawson, Toby Douglas, Bill Holland, Bobby Pearson, Craig Pringle, Chris Redfern, William Shiel, John Walton, and Anne Wilson amongst others. Special thanks also go to the crew of *Serenity II*; Andy Douglas and Keith Leeves, who provided numerous records throughout the season, including the under-watched winter months.

We are also very grateful to Bas Teunis for providing the Sandwich Tern illustration and Jamie Coleman, Andy Denton, Andy Douglas, Graeme Duncan, Ciaran Hatsell and William Scott for the use of their photographs.

#### SYSTEMATIC LIST

The status of each species is classified using the following categories:

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

#### **Mute Swan** *Cygnus olor*

An uncommon visitor.

The majority of Farnes reports usually involve local movement through Inner Sound and all records related to sightings through this area. A flock of eight moved north on 13 June, with an immature north on 20 June. Three adults were noted on the sea on 1 September and were joined by a fourth bird before eventually flying south. The final record of a reasonable year involved two north on 17 September.

### **Whooper Swan *C. cygnus***

An uncommon winter and passage visitor.

For the third consecutive year the islands experienced northerly spring passage and it was evident that birds were using the east coast as a northerly flyway during late March. The first record involved seven adults north high over Inner Farne on 19 March followed by a day total of 57 on 20 March, which included 45 through Staple Sound and 12 through Inner Sound including five adults which landed on the sea. Autumn passage commenced on 8 October with an immature flying west over Inner Farne during heavy Barnacle Goose passage. Further reports included an adult north over the Inner Group on 11 October, 11 south over the Wideopens on 28 October and a day total of 24 south through Inner Sound on 5 November (two herds of 11 and 13).

### **Pink-footed Goose *Anser brachyrhynchus***

A well represented winter and passage visitor.

Following last season's impressive northerly spring passage, the islands repeated the showing with a record spring count of 466 north through Inner Sound on 22 March (in nine skeins throughout the day). Further spring passage included 37 north on 15 April, 135 north on 16 April and nine north on 19 April. The final spring report concerned 298 north at dusk on 24 April including a skein of 275. As usual birds started arriving back into the UK from mid-September, with southerly passage producing a skein of 34 over Brownsman on 24 September followed by 85 the following day. The biggest arrival of the autumn occurred on 26 September as 770 were logged during the day in varying sized skeins and included at least one leucistic individual. This represented the fourth highest ever day count and interestingly the top six record day counts have all occurred in the past ten years. Thereafter, 1-72 were recorded on ten dates between 7 October and 19 November with noticeable peaks of 172 south on 11 October and 197 south on 17 November.

### **White-fronted Goose *A. albifrons***

A rare visitor.

It was an interesting year as the east coast experienced a major influx during the autumn bringing record numbers of the European race *A. a. albifrons* to Northumberland. Birds were observed on two dates with an adult low over Brownsman before heading west on 9 November. Three days later, on 12 November, 19 were recorded, which included three south through Staple Sound, 15 off the south end of Brownsman and another landing on Staple Island before eventually departing west. The species remains very rare on the islands and this represented the first records since 27 were recorded in autumn 1997, with the only other Farne record concerning eight on 28 October 1989.

### **Greylag Goose *A. anser***

An uncommon passage and winter visitor.

Movements in and around the Farnes involve both feral and wild birds and spring passage produced eight north through Inner Sound on 23 March. Feral birds were involved in later sightings as two were with Canada Geese on 3-4 April and visited various islands during this period. Further spring reports were birds passing through Inner Sound with eight south on 29 April and 14 south on 1 June. Thereafter, all reports involved birds noted on autumn passage in either late September or mid-November. Records included 10 north on 14 September, eight south on 25 September and 20 north through Inner Sound on 28 September. The only other records were five on the sea off Brownsman on 9 November, eight north on 11 November and two west over the Outer Group on 12 November.



### **Snow Goose *A. caerulescens***

An extremely rare visitor.

This high-arctic breeder is recorded annually in the UK although the status of records is made uncertain by free-flying feral birds. A white morph adult was observed in a skein of Geese flying north through Inner Sound on the morning of 23 March by two observers watching from Lighthouse Cliff. Interestingly, the bird had been seen in Northumberland prior to this record as it was seen briefly on Lindisfarne on 13 March before being relocated in the south of the county near Ashington on 20 March. Experienced observers considered it to be a good candidate for being a wild bird and if accepted it will represent the first record for the Farnes. The species has been recorded on the islands before, although all were considered to involve escapees/feral birds with reports of singles in six years from 1969-2003 with six in 1995 and eight in 2004.

### **Greater Canada Goose *Branta canadensis***

An uncommon passage visitor.

In a normal year all records are confined to late May and early June as birds are recorded on northerly passage heading to moulting grounds in northern Scotland. However this year was very different when three arriving on 2 April increased to eight the following day. This number quickly declined with five present on three dates until last seen on 13 April. Thereafter, a pair became settled on the islands and were often seen on the 'island tops' favouring both Inner Farne and Brownsman. It appeared they were settling down to breed but the arrival of three new birds on 2 June appeared to disrupt plans and all departed by 8 June. All other records involved typical northerly passage through Inner Sound with 19 north on 1 June, another 19 north on 7 June and a noteworthy 88 north on 8 June.

### **Barnacle Goose *B. leucopsis***

A well represented passage and winter visitor.

It was an interesting season with a long staying feral bird and a record Farnes day count in mid-autumn. An individual appeared on Inner Farne on 19 May and remained until at least 25 July and during its stay was also noted on Big Harcar, West and East Wideopens and Northern Hares. However the bird's health appeared to deteriorate as time progressed and its corpse was discovered on Inner Farne during late summer. The first autumn returnees were logged on 7 October as 53 (in three skeins) moved west over the Outer Group but that was just the start of a huge influx of birds the next day. A moderate south-easterly weather front encouraged birds to move west to wintering grounds in the UK and a total of 1,802 were logged over the islands on 8 October. Skeins varied in size and this represented the highest ever Farnes day count, eclipsing the previous record of 1,398 on 26 September 2002. The following day produced a few later stragglers when 55 were logged moving west. The final autumn records involved lingering individuals as two were present on North Wamses from 10-20 October with an individual staying until 28 October. The last of the season was an individual on Brownsman from 14-21 November and during its stay it would often feed near the cottage.

### **Brent Goose *B. bernicla hrota***

A well represented passage and winter visitor.

The hard winter (heavy snow and cold temperatures throughout) appeared to move birds down the coast from nearby Lindisfarne as 21 were noted on Knoxes Reef on 24 February with four on the sea in Inner Sound on 22 March. A lone individual on Staple Island on 8 June was a very unusual summer record and represented only the third ever June record (after birds in 1993 and 2007). More in keeping with the 'norm', the first autumn returnees were logged from early

September with five north through Staple Sound on 2 September followed by four south the following day. Thereafter 1-25 were noted on nine dates from 7 September-19 October with peaks of 63 north (in five skeins) on 15 September and 58 north (in two skeins) on 9 October. Individual birds were also seen briefly on the islands during autumn passage with singles on Knoxes Reef on 7 September and Inner Farne on 14 October. Dark-bellied Brent Goose *B. b. bernicla* remains a scarce visitor with two records involving singles north past Inner Farne on 26 October and west over Brownsman on 25 November.

#### **Shelduck** *Tadorna tadorna*

A well represented visitor and occasional breeder.

This distinctive duck proved once again to be tricky to track as breeding was suspected but not fully confirmed. At least one pair was resident throughout the spring and summer as the veteran female returned for her tenth year (easily distinguished by her white ear-covert markings) and was first seen associating with a male on Inner Farne on 27 March. Throughout April and May the pair regularly commuted between the Inner and Outer Groups and were believed to have finally settled on Staple Island, though Brownsman pond was used as their main feeding area. The nest was never located but courtship and nesting behaviour were observed on several occasions: the male would stand on the edge of Brownsman pond and watch attentively whilst the female fed before departing in the direction of Staple Island. Due to the secretive nature of the pair, the outcome of the breeding attempt remains unknown. Passage of 1-4 was logged on two spring dates between 19 and 26 March and eleven autumn dates between 16 August and 5 November. Peak counts included eight north through Staple Sound on 17 September and eight north through Inner Sound on 5 November.

#### **Wigeon** *Anas penelope*

A common passage and winter visitor.

Well represented on passage with an over-wintering flock containing 30 on 29 January increasing to 100 on 22 February. During this late winter period eight were seen off Longstone on 24 February before numbers declined and the final record of the spring was a pair near the Bridges on 9 April. The first autumn birds included four north through Inner Sound on 20 July and one north through Staple Sound on 24 July. Thereafter small numbers of 1-87 were seen on 56 autumn dates with small numbers on Knoxes Reef and North Wamses. Three-figure counts were made on four dates with 104 north on 17 September, 100 north on 2 October, a season peak of 579 north on 9 October and 116 north on 14 October. As winter progressed, small numbers were again over-wintering on the islands, favouring Knoxes Reef, Brownsman pond, Staple Island and North Wamses.

#### **Gadwall** *A. strepera*

An uncommon visitor.

It was another good showing for this scarce visitor as birds lingered from the previous winter, favouring the Inner Group especially Knoxes Reef. A pair was noted in the Kettle on 24 January, and a male was noted on the churn pool on Inner Farne before eventually joining a pair by the Bridges on 29 March. It is possible these were the same birds involved with sightings around the Inner Group towards the end of 2010. The species remains a scarce visitor to the islands with birds seen in only half of the 32 years since the first record in 1979. Since 2000 there have been records in 2003, 2005, 2008 and 2010.



#### **Teal *A. crecca***

A common passage and winter visitor.

As usual, a few birds were recorded around the islands during the spring with 1-2 on the Inner Group between 19 March and 1 April. The final spring reports involved a pair on Brownsman pond on 3 April and one north over the Inner Group on 9 April. Autumn passage commenced with 12 north through Inner Sound and one in the Kettle on 12 August. Thereafter reports involved 1-81 on 85 dates until early December. Peak counts (and the only three-figure counts) included 105 north on 3 September and 263 north on 9 October, the majority of which were through Inner Sound. As usual, small numbers were over-wintering on the islands with up to 150 on Knoxes Reef with smaller numbers of up to 30 on the Outer Group favouring Staple Island, Brownsman pond and North Wamses.

#### **Mallard *A. platyrhynchos***

A common winter and passage visitor and well represented breeder.

It was another interesting season as the small breeding population kept a toe-hold on the islands. During the spring small numbers were seen around the islands with peaks of 16 on 22 March and 10 April. The first eggs were discovered on 30 March and this was the first of many breeding attempts, with eggs still being incubated as late as 25 September. The small population increased slightly (2010 figures in brackets) with a total of 10 (9) pairs nesting as follows: Inner Farne 5 (5), West Wideopens 1 (1), Staple Island 1 (1), Brownsman 2 (2) and South Wamses 1 (0). The first ducklings started hatching from 26 April and were seen regularly throughout the season on both the Inner and Outer Groups. Despite most pairs having two or three nesting attempts only eight chicks on Inner Farne and two on Brownsman were known to have reached fledgling stage. As usual, heavy predation by large gulls was responsible for the failure of the majority of breeding attempts. The autumn months produced the bulk of records with a daily presence on both island groups and the largest concentration of up to 33 on Knoxes Reef with up to 10 around the Outer Group.

#### **Pintail *A. acuta***

An uncommon passage and winter visitor.

Following a disappointing few years, records of this handsome member of the wildfowl family appear to be increasing. A stunning drake was on Brownsman pond on 21 May before departing north – this represented only the sixth spring record in the past 10 years. Autumn passage produced a noteworthy 10 north low over Inner Farne on the morning of 28 September, whilst a single female was present behind the West Wideopens on 2 October and seven moved north through Inner Sound on 8 October.

#### **Shoveler *A. clypeata***

A well represented passage and winter visitor.

It was a reasonably quiet year with reports on one spring and seven autumn dates. A drake flew south through the Kettle on 19 April whilst mid-summer records included a female north through Staple Sound on 19 July and three moulting adults west from the Outer Group, over the Inner Group and towards the mainland on 24 August. Autumn passage included an individual on Knoxes Reef on 9 September, seven north through Inner Sound on 25 September and four west over Brownsman on 13 November. The final record concerned eight west (having been on Knoxes Reef) towards the mainland on 14 November.

**Pochard** *Aythya ferina*

An uncommon passage visitor.

Small numbers are recorded annually, generally during the autumn with the previous 10 years producing 23 records. This year produced just a single record with a male south through Staple Sound on 12 November.

**Tufted Duck** *A. fuligula*

A well represented visitor.

Recorded in small numbers on passage, the first of the year involved three north (two males and a female) through Inner Sound on 29 April. More unusual, a drake was noted on Brownsman pond on 2-4 May and may have been the same individual responsible for a sighting of a drake in the Kettle off Inner Farne on 3 May. The only other spring report concerned four south over Inner Farne on 9 May. The first autumn returnees were recorded from mid-September with all records referring to birds through Inner Sound with a drake north on 15 September, four north on 25 September and a male north on 8 October.

**Eider** *Somateria mollissima*

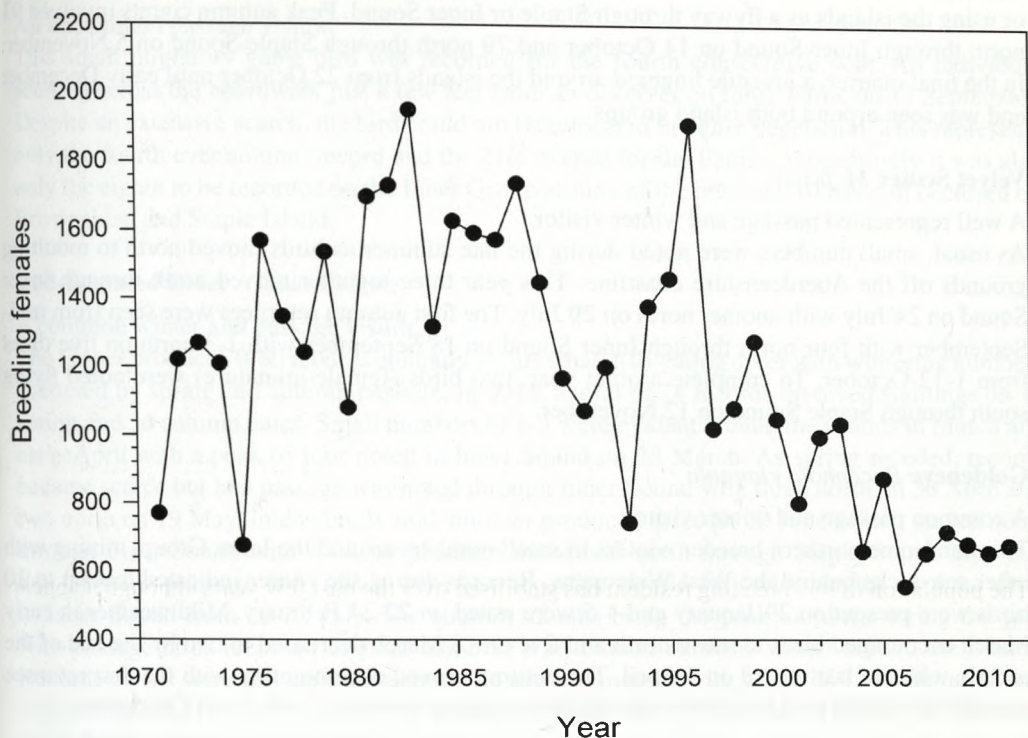
An abundant breeding resident.

The population of this breeding resident has stabilised over the past few years although it appears numbers may not return to the 1,000+ pairs which nested annually just over a decade ago (Fig. 1). As usual, small numbers were present when the wardens arrived in mid-March with courtship display noted from 28 March. The settled spring appeared to have encouraged birds to start nesting early as prospecting pairs were seen by Inner Farne pond on 2 April. The first eggs were discovered on Brownsman on 12 April and Inner Farne the next day. The population showed a slight increase from 2010 (last year's figures in brackets) with 677 (656) pairs nesting in total: Inner Farne 415 (393), West Wideopens 22 (28), East Wideopens 5 (6), Knoxes Reef 6 (4), Staple Island 28 (40), Brownsman 178 (161), North Wamses 3 (3), South Wamses 6 (9), Big Harcar 5 (5), Northern Hares 2 (1), Longstone 3 (0) and Longstone End 4 (6).

The first ducklings were seen on Brownsman on 9 May and this started the exodus from the islands. Late nesters were seen leaving Brownsman on 24 July. Continuing a recent trend, an increasing number of females chose to stay on the islands to raise their young as opposed to heading towards the mainland. As a result large crèches of well-grown chicks were regularly observed on both Longstone and the Wideopens with peak counts of 48 and 26 ducklings respectively. As ever the breeding season proved eventful and unsettled weather conditions throughout the month of May proved challenging whilst large gull predation (particularly prominent early in the season) and abandonment of nests due to human disturbance, were the reasons for failure. From the 337 nests monitored across the islands, a total of 1,090 chicks left their nests giving an overall productivity of 3.23, the best seasonal return in over a decade.



Fig. 1 The Eider population on the Farne Islands 1971-2011.



#### Long-tailed Duck *Clangula hyemalis*

A well represented passage and winter visitor.

The small wintering population which favours the area near the West Wideopens on the Inner Group was evident during the late winter whilst six were on the sea in Inner Sound on 3 January. At least 10 were present on 22 January behind the Bridges on the Inner Group with three still present on 24 February. The very settled and mild weather during the spring encouraged birds to leave wintering grounds early and there were none in March. The first autumn returnees arrived early as a female/immature was on the sea near the Big Harcar on 23 September with a stunning winter plumaged pair in the Kettle off Inner Farne on 8 October. Sightings around the Inner Group over the following few days increased with three together on 10 October and four north on 14 October. Small numbers appeared behind the Bridges by early November with four noted on 5 November. Thereafter 1-2 were noted flying north through Staple Sound on three mid-November dates whilst a juvenile lingered between Brownsman and South Wamses from 28 November to 1 December.

#### Common Scoter *Melanitta nigra*

A common passage and winter visitor.

It was a good year with records covering 78 dates. The early spring period saw a resident flock in Inner Sound with numbers building rapidly from 33 on 23 March increasing to 140 by 9 April and regular counts of 200 throughout mid-April. As spring gradually give way to summer, numbers diminished with only 46 present on 24 April with maximum of 11 present in early May. Only small numbers were recorded during late May before a second wave of birds arrived in mid-June, with 100+ on the sea in Inner Sound and 64 north on 16 June. Thereafter reasonable numbers of 50-70 were recorded before passage peaked with 247 through Staple Sound (involving 165 north

and 82 south) on 28 June. The autumn produced regular records of 1-55 either on Inner Sound or using the islands as a flyway through Staple or Inner Sound. Peak autumn counts involved 91 north through Inner Sound on 14 October and 79 north through Staple Sound on 5 November. In the final quarter, a juvenile lingered around the islands from 22 October until early December and was seen around both island groups.

#### **Velvet Scoter** *M. fusca*

A well represented passage and winter visitor.

As usual, small numbers were noted during the late summer as birds moved north to moulting grounds off the Aberdeenshire coastline. This year three together moved north through Inner Sound on 24 July with another north on 29 July. The first autumn returnees were seen from mid-September with four north through Inner Sound on 18 September with 1-3 north on five dates from 1-12 October. To complete a quiet year, two birds (female/immature) were noted flying south through Staple Sound on 12 November.

#### **Goldeneye** *Bucephala clangula*

A common passage and winter visitor.

This handsome northern breeder winters in small numbers around the Inner Group, mixing with other sea ducks behind the West Wideopens. Records during the winter indicated that up to 10 birds were present on 29 January and 4-5 were noted on 22-24 February. Mild weather in early March encouraged birds to move north and five on 18 March decreased to two by the end of the month, with the last record on 5 April. The autumn proved disappointing with the first returnee noted in the Kettle on 31 October with six present in the wintering area by 31 December.

#### **Red-breasted Merganser** *Mergus serrator*

A well represented passage and winter visitor and rare breeder.

This scarce sawbill once again returned to nest on the Farnes for the sixth consecutive year, the only breeding site in the north-east of England. The breeding female was first observed on the north rocks of Inner Farne on 19 May but was not seen accompanied by a male until 3 June. The behaviour of the pair was consistent with previous years, with multiple sightings of both the female and the moulting male in St Cuthbert's Cove throughout June and early July. However, despite seeing the female disappear into undergrowth on the island, the nest could not be located and therefore the outcome was unknown. Away from the breeding attempt, light spring passage was recorded through Inner Sound with a pair north on 13 January and 23 March and singles noted on four April dates. Mid-summer reports from Inner Sound included six north on 8 July and eight north on 11 July with 1-3 noted on 22 and 25 July. Autumn passage produced 1-3 on nine dates between 1 September and 12 November, the majority through Inner Sound with a peak of four north on 5 September.

#### **Goosander** *M. merganser*

An uncommon passage visitor.

The islands produce a handful of records each year despite the species being regarded as a predominately inland waterways bird. A pair flew north through the Kettle off Inner Farne on 25 March with four north through Inner Sound on 10 April. Two very unseasonal records (possibly involving the same individual) involved a male north through Inner Sound on 31 May and 2 June. The only other records included two south through Inner Sound on 18 August, another flew into the harbour mouth at Seahouses on 24 August and an individual moved west over Staple Island on 10 November; the latter providing the only Outer Group record of the year.



### **Quail** *Coturnix coturnix*

An uncommon passage visitor.

This small migratory game bird was recorded for the fourth consecutive year. An individual scuttled across the boardwalk just a few feet from an observer on Inner Farne on 11 September. Despite an extensive search, the bird could not be relocated in dense vegetation. This represents only the fourth ever autumn record and the 21st overall for the Farnes. Interestingly it was also only the eighth to be recorded on the Inner Group as nine of the previous 10 have all occurred on Brownsman and Staple Island.

### **Red-throated Diver** *Gavia stellata*

A common winter and passage visitor.

The Farnes produce 70-80 records annually of this small fish-eating diver with wintering numbers bolstered by spring and autumn passage. In 2011, a total of 74 records involved sightings on 18 spring and 56 autumn dates. Small numbers of 1-3 were evident around the islands in March and early April with a peak of four noted in Inner Sound on 28 March. As spring receded, records became scarce but late passage was noted through Inner Sound with three north on 30 April and two north on 19 May. Interestingly mid-summer produced three on 20 June as two moved north through Inner Sound with a winter-plumage individual north through Staple Sound later that day. Summer-plumage individuals were also recorded in mid-July with singles on three dates in Inner Sound from 20-22 July. The autumn months bring the peak numbers during the year with passage birds recorded in good numbers whilst small numbers winter around the islands. Records of 1-9 were frequent throughout the autumn months with peaks of 13 south on 15 and 25 September. The most noteworthy passage occurred on 8-9 October with 25 and 20 north respectively, most through Inner Sound.

### **Black-throated Diver** *G. arctica*

A well represented winter and passage visitor.

It was a quiet year with records on three dates all relating to birds seen in Inner Sound. A partial summer plumage individual flew south on 28 September with three north on the morning of 8 October during noticeable sea passage of other divers and wildfowl. The only other record for the year concerned three south on 26 October.

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

A well represented winter and passage visitor.

Still regarded as a rarity in the spring an individual was noted flying north through Staple Sound on 15 April, the first spring record since 2009. The first autumn arrival was observed flying south through Inner Sound on 27 September. Reports of 1-3 were noted on ten October and seven November dates with peak passage involving six south through Inner Sound on 3 October with four around the islands on 28 October and four south through Staple Sound on 12 November. Interestingly during this period, a partial (almost) summer plumage individual was discovered on the sea in Staple Sound on 2 October and was present until at least 6 November. The final record involved a single north through Inner Sound on 2 December.

### **Fulmar** *Fulmarus glacialis*

A common breeder, abundant on passage.

It was another good season for this 'barrel-chested tube-nose' with its population increasing for the fourth consecutive year, reaching an all time high, with good numbers of young fledging

3 April. A total of 121 (139) pairs nested as follows (2010 figures in brackets): East Wideopens 59 (66), North Wamses 17 (18) and Big Harcar 45 (55). The decline remains difficult to explain although their wintering habits may have more to do with their downfall than the breeding success on the islands. Despite the Outer Group colony switching in recent years to the Big Harcar, a small number remained on the North Wamses. The first chicks appeared in mid-May and the first fledgling was confirmed on East Wideopens on 26 June and Big Harcar on 29 June. Although not monitored, the breeding season appeared to be reasonably successful but predation did account for egg loss in some nests. Birds dispersed from the islands during the late summer and only small numbers remained to winter. Typical autumn reports included 10 north through Staple Sound on 1 September, 23 north through Inner Sound on 2 September and 11 present on East Wideopens on 29 November.

#### **Shag *P. aristotelis***

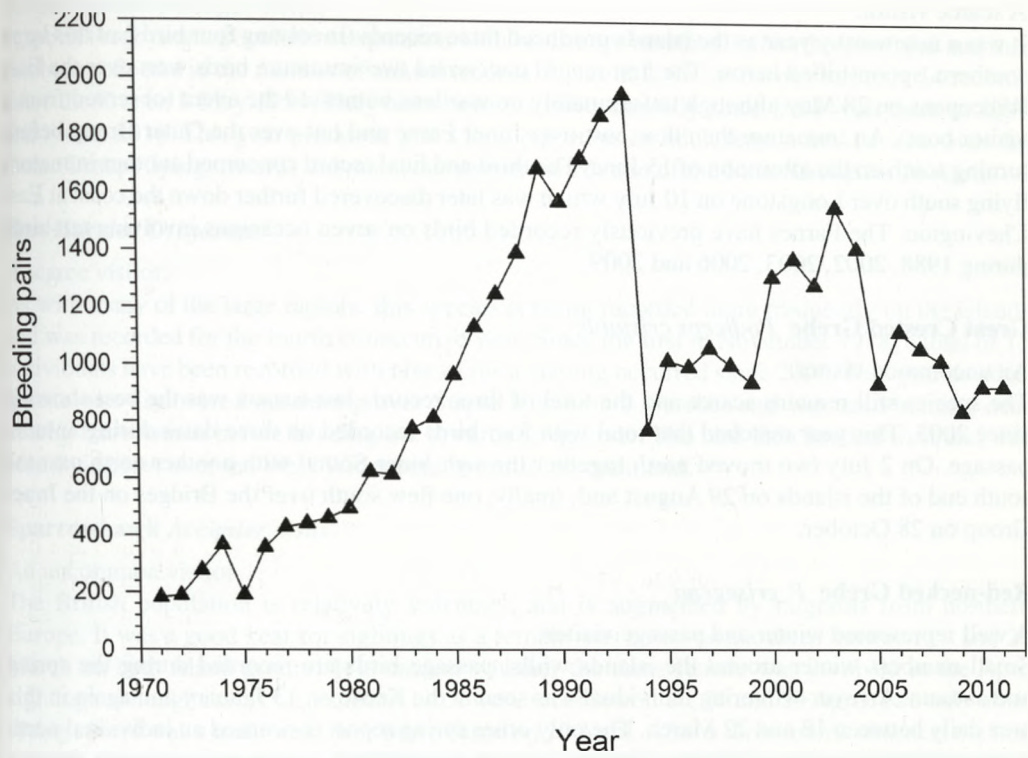
A common breeding resident.

It was another good year for this cliff nester whose population has remained stable and productive (Fig. 2); it was also the earliest ever nesting season on record. When the wardens arrived in mid-March, nest building activities had commenced and the first eggs were discovered on Lighthouse Cliff, Inner Farne, on 23 March; this was the joint earliest ever laying date, matching 2003. After this rapid start, a good number of nests with eggs were recorded by the end of March and the population remained stable with 926 (925) pairs nesting as follows (2010 figures in brackets): Inner Farne 273 (280), West Wideopens 80 (69), East Wideopens 86 (99), Megstone 18 (23), Skeney Scar 52 (34), Staple Island 158 (163), Brownsman 103 (93), North Wamses 28 (34), South Wamses 51 (54), Roddam and Green 10 (9), Big Harcar 50 (53) and Longstone End 17 (14). The first chick hatched on Inner Farne on 29 April and by mid-May many pairs were feeding young. On Brownsman the small colony below the cottage (known as Cottage Cliff) continued to expand with 14 pairs nesting, an increase of four. The first fledglings were seen on the sea off Staple Island from 26 June and, as usual, a protracted season saw the last fledglings leaving the islands on 10 September. Large concentrations of adult and fledged juveniles were seen with up to 600 together in August. It was another good season for overall productivity as the 312 nests produced 439 fledged chicks, resulting in a productivity of 1.41 chicks per pair. However it is never smooth going and gale force winds in mid-May and gull predation in certain areas (especially the quarry on Inner Farne and the central gully on Staple Island) resulted in the loss of some nests and eggs/chicks. As usual, good numbers remained around the islands to winter on the Farnes.

The colour ringing study continued into its third year with over 100 new birds fitted with darvic rings, making them easily identifiable as individuals. This work is starting to provide some interesting information about east coast movements: for example a male carrying a red darvic (ringed on the Farnes) paired with a female carrying a yellow darvic (ringed on the Isle of May) and successfully raised young on Staple Island.



Fig. 2 The Shag population on the Farne Islands 1971-2011.



**Little Egret *Egretta garzetta***

An extremely rare visitor

After the rapid growth of the UK population, good numbers are now seen annually in Northumberland, especially around nearby Budle Bay and Lindisfarne. Despite this, the species remains very rare on the islands and previously only two individuals have been recorded: the first on 2 May 1994 and the second commuted to the islands on several dates between June and September 2003. At long last another arrived on the Farnes this year when a juvenile was feeding in rock pools on Longstone on 25 August and was seen flying west over the Inner Group towards the mainland the following day. The bird appeared to take a liking to Longstone as it was seen there again on 30 August and 8 September.

**Grey Heron *Ardea cinerea***

A well represented visitor. Bred in 1894.

The islands continue to attract good numbers with a presence throughout the year, especially during the autumn with birds becoming 'resident' on the favoured Knoxes Reef and Longstone complex. The spring produced just a handful of records with 1-2 noted on ten dates between March and June. After the breeding season birds became more frequent from early July with 1-2 recorded across both island groups and throughout the autumn months. As with last season, there were no large counts made and a maximum of three were present on the Outer Group on 27 September.

### **Spoonbill** *Platalea leucorodia*

A scarce visitor.

It was a noteworthy year as the islands produced three records (involving four birds) of this large southern, spoon-billed heron. The first record concerned two immature birds west over the East Wideopens on 28 May although unfortunately no wardens witnessed the event (observed from a visitor boat). An immature then flew east over Inner Farne and out over the Outer Group before turning south on the afternoon of 15 June. The third and final record concerned another immature flying south over Longstone on 10 July which was later discovered further down the coast at East Chevington. The Farnes have previously recorded birds on seven occasions involving ten birds during 1988, 2002, 2003, 2006 and 2009.

### **Great Crested Grebe** *Podiceps cristatus*

An uncommon visitor.

The species still remains scarce and the total of three records last season was the best showing since 2005. This year matched that total with four birds recorded on three dates during autumn passage. On 2 July two moved north together through Inner Sound with another north past the south end of the islands on 29 August and, finally, one flew south over the Bridges on the Inner Group on 28 October.

### **Red-necked Grebe** *P. grisegena*

A well represented winter and passage visitor.

Small numbers winter around the islands whilst passage birds are recorded during the spring and autumn. An over-wintering individual was seen in the Kettle on 13 January and again in this area daily between 18 and 22 March. The only other spring report concerned an individual north through Inner Sound on 27 March. The first autumn passage bird was seen flying north through Staple Sound on 30 August with another north through Inner Sound on 15 September. Further records included an individual south through Inner Sound on 24 October with two noted on 26 October (singles in Inner and Staple Sound). The final record was an over-wintering bird seen near Gun Rock on 11 and 26 November.

### **Slavonian Grebe** *P. auritus*

An uncommon winter and passage visitor.

Recorded in only 18 of the last 40 years (since 1970), an individual was noted flying north through Inner Sound on 8 October. Despite good numbers wintering in Northumberland, it still remains a scarcity on the islands and it is suspected that this may be due to lack of observers during the winter months, rather than a true reflection on the status of this species around the Farnes.

### **Honey Buzzard** *Pernis apivorus*

A rare visitor.

The first was a long time in coming, on 25 September 2000 but since then the islands have produced eight records including four during the unprecedented influx of 2008. A pale phase adult was observed flying west over the Inner Group on the morning of 18 May before reaching the mainland at Bamburgh, the first Farnes record since the September influx of 2008.



### **Marsh Harrier** *Circus aeruginosus*

An uncommon passage visitor.

A species enjoying a population expansion with birds now breeding in Northumberland and this has been reflected in the number of annual records. Up until 2005 the Farnes had only 14 records since the first on 8 May 1954. They have been recorded annually since 2008 with three in 2009 and two in 2010. This year produced just a lone report, as an adult female moved west over the Outer Group, flying towards the mainland past the north end of the Inner Group on 26 April.

### **Hen Harrier** *C. cyaneus*

A scarce visitor.

As with many of the large raptors, this species is being recorded more frequently on the islands and was recorded for the fourth consecutive year. Since the first in November 1978, a total of 15 individuals have been recorded with nine of these having occurred since 2000. This year an adult female was discovered quartering over Staple Island on 2 October and was seen hunting over nearby Brownsman before heading out towards Longstone. The bird then headed west and was seen flying low over the West Wideopens towards the mainland.

### **Sparrowhawk** *Accipiter nisus*

An uncommon visitor.

The British population is relatively sedentary, and is augmented by migrants from northern Europe. It was a good year for sightings as a female was noted on six dates between 19 and 28 March on both island groups. It is unclear whether the same female was involved in the April sightings although it was suspected as birds were recorded on 10, 26 and 29 April. The only other spring record was a male west over Inner Farne on 29 April. After a three month absence, the first autumn migrants were seen in mid-August with an immature over Inner Farne on 20 August, a female on the Outer Group on 21 August and a tired juvenile observed sitting on the boardwalk near the cottage on Brownsman the day after. September produced records of singles on five dates with two October reports, including a very large female on Inner Farne on 31 October. The final record concerned one over Brownsman heading towards Longstone on 3 November.

### **Buzzard** *Buteo buteo*

A scarce visitor.

Despite good numbers now breeding in Northumberland, the species remains very scarce on the islands. An individual flew high east over Inner Farne on 24 March and was heavily mobbed as it moved east towards the Outer Group. At this stage the bird retreated and soon departed back west towards the mainland, pursued by the local gull population. This was only the eleventh Farnes record (involving a total of 15 birds) and the first since 13 September 2008.

### **Osprey** *Pandion haliaetus*

A scarce passage visitor.

As the British population increases it may be expected that the number of Farne records of this fish-eating migrant will increase. A bird was observed being mobbed by gulls over the Inner Group as it moved north on 2 April and another flew north over Knoxes Reef on 4 April. These sightings represent the earliest ever Farnes records (eclipsing the previous earliest on 24 April) and the 15th and 16th Farnes records (five of which have occurred in the past four years).

### **Kestrel *Falco tinnunculus***

A well represented passage visitor. May have bred in 1916.

This small hovering falcon is partially migratory within its range, as birds move from the near continent during the autumn. The spring produced just a single report with a male west over Inner Farne on 24 April being mobbed by Pied Wagtails. The first autumn bird was an immature west over Inner Farne on 19 August. After this, a juvenile was on Brownsman on 1-2 September, with singles over the Inner Group on 7 and 14 September. The most noticeable passage occurred between 27 September and 3 October with 1-2 being seen daily, the majority of which moved west towards the mainland. The final record involved an individual on Brownsman on 1-3 October which was observed catching butterflies on a number of occasions, including one released by the wardens from the cottage window!

### **Merlin *F. columbarius***

A well represented passage and winter visitor.

This impressive winged wizard breeds in the uplands of Northumberland and winters in the lowlands. The spring produced a handful of records whilst the autumn produced the bulk of reports. Spring birds involved a female hunting over Inner Farne before alighting on the Pele Tower on 27 March with another seen on four dates on Brownsman from 10 to 16 April. The first autumn bird arrived early as a female/immature was noted chasing waders over Knoxes Reef and Brownsman on 7 and 12 August. As the autumn gathered momentum, 1-2 became resident on the islands from mid-September until the end of the year and on three occasions two birds were seen hunting in tandem. Birds were seen almost daily on Brownsman and prey items included Turnstone, Little Auk, Skylark, Rock Pipit and Meadow Pipit as well as one savouring a dead Fulmar chick in mid-August. An immature was watched hunting a Grey Phalarope on 22 October off Brownsman and was observed until it chased the bird to a great altitude with the final outcome unknown. Birds were still present in early December when the team left the islands.

### **Peregrine *F. peregrinus***

A well represented passage and winter visitor. May have bred *ca* 1925.

This ultimate aerial predator reigned supreme throughout the spring and autumn as birds took up residence. It is evident that birds winter on the Farnes as 1-2 were seen on five dates during January-February including two on Staple Island on 29 January. A male was on the Inner Group on 18-19 March, with presumably the same male on Brownsman on 25 and 27 March. At least two different birds were involved in sightings on five dates between 7 and 15 April with the final spring report involving one west over Inner Sound on 24 April. Arctic Tern 'kills' suggested that a bird was present during mid-summer and this was confirmed when an adult female was seen to kill an Arctic Tern on Brownsman on 14 June. Other unseasonal records included a male over Inner Farne on 22 July and a female over Inner Farne on 19 August. Birds became resident from late August and were seen roosting on the islands throughout September-December. At least five different individuals were involved in sightings with occasional reports of two together on several dates. Hunting was noted on numerous occasions and, as well as the feral pigeons, prey items included Oystercatcher, Redshank, Snipe, Woodcock, Turnstone, Song Thrush, Blackbird, Fieldfare and possibly Corncrake (one wing was found!)

### **Water Rail *Rallus aquaticus***

An uncommon passage visitor.

Although recorded annually, autumn produces the majority of reports as birds migrate into the



UK. There were two records this year: an individual flushed from vegetation at the north end of Brownsman on 3 November which flew to the nearby South Wamses, and one sitting on a gas cylinder at the back of Brownsman cottage on 12 November.

#### **Corncrake** *Crex crex*

An uncommon passage visitor.

For the second consecutive year, this secretive landrail was noted on the islands, with two records. The fresh remains (wing and tertial feathers) were found on the south end of Brownsman on 25 September suggesting a raptor kill, possibly by a Peregrine that was active in the area that day. A bird was flushed (having nearly been stood on) in the same area on Brownsman on 23 October and flew out of sight and could not be relocated. These represent the 17<sup>th</sup> and 18<sup>th</sup> records in the past 50 years, the majority of which have occurred during the autumn (the last spring bird was noted on 22 May 1994).

#### **Moorhen** *Gallinula chloropus*

An uncommon passage visitor. Bred in 1901 and 1947-48.

57 have been recorded on the islands in 63 years since they bred in the late 1940's with almost annual records. An adult was seen in the garden on Inner Farne on the morning of 24 October but soon disappeared and, despite searching, could not be relocated. It or another was discovered the following morning on Brownsman, when an adult was flushed from vegetation behind the cottage before flying towards the Wamses. These were the first records since an adult was seen on Inner Farne on 31 March 2009.

#### **Oystercatcher** *Haematopus ostralegus*

A common winter and passage visitor, well represented breeder.

It was an interesting season although success was limited for nesting pairs. Birds were seen prospecting shortly after the wardens arrived in late March and by the 9 April several pairs were settled around the islands. Vocal displays commenced from mid-April and the first eggs were discovered on Inner Farne on 4 May. The population has been steadily growing in recent years and reached the magic total of 40 (37) pairs (2010 figures in brackets): Inner Farne 6 (5), West Wideopens 6 (5), East Wideopens 1 (2), Knoxes Reef 3 (3), Staple Island 6 (4), Brownsman 10 (9), North Wamses 1 (1), South Wamses 1 (1), Big Harcar 1 (2), Northern Hares 1 (1), Longstone 2 (1), and Longstone End 2 (3). The first chicks were found on the West Wideopens on 5 June and the first fledglings were noted on Inner Farne on 20 July. Despite a record number of pairs nesting, the breeding season was below average with predation by large gulls the main cause for failure. After the breeding season roosting flocks reached a peak on the Inner Group of 180 on 1 October (Table 2).

**Table 2.** Oystercatcher peak monthly roost counts in 2011, Farne Islands.

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
Inner Group	155	126	56	18	88	176	124	180	150
Outer Group	15	24	14	37	65	124	67	129	110

### **Ringed Plover *Charadrius hiaticula***

A common passage visitor, uncommon and declining as a breeding species.

A small population of this black-banded beach dweller maintains a toe-hold on the islands. Pairs were evident when the wardens arrived in mid-March and the first displaying birds were noted on 25 March on Inner Farne. The first eggs were discovered at St Cuthbert's Cove on Inner Farne on 25 April and 8 (9) pairs nested as follows (2010 figures in brackets): Inner Farne 3 (4), Staple Island 1 (1), Brownsman 3 (3), Longstone 1 (1). As expected, the season was tough for these small wading birds as predation, inclement weather and human disturbance all played a part in the failings during the year. Only two from eight nesting attempts made it to chick stage, and these chicks were soon lost. The end result was disastrous as no chicks were fledged from the islands, the first such occurrence in over a decade. A post-breeding flock gathered on the Inner Group with three on 9 August increasing to 33 birds on 31 August. Numbers continued to increase with a peak of 53 on West Wideopens on 18 September and 30-40 present daily until mid-October when the flock finally dispersed. Throughout this period small numbers were recorded on the Outer Group including several fledged juveniles from successful breeding elsewhere.

### **Golden Plover *Pluvialis apricaria***

A well represented passage visitor.

This upland moorland plover is well represented during the late summer as a sizeable post-breeding flock assembles on Longstone. The first arrivals were 43 on Longstone on 2 July and numbers built up gradually with 120 on 10 July, 250 on 18 July and 322 on 30 July. Numbers continued to build and peaked at 1,179 on 31 August. Throughout this period, birds were noted on the Inner Group as the mobile flock on Longstone was often recorded moving to the nearby mainland, just south of Seahouses. After the late August peak, numbers declined with 450 on 3 September reducing to 224 by 17 September with only 15 present by the end of the month. Thereafter, there were very few records with 1-2 on three October dates, an unexpected 97 west over Inner Farne on 5 November and the last record of one on Little Harcar on 12 November.

### **Grey Plover *P. squatarola***

A well represented passage visitor.

It was another good year for this globally-widespread wader as the islands produced records on 15 dates (compared with 17 the previous year). The spring period saw a handful of records on Knoxes Reef as birds congregated before continuing their journey north to high-arctic breeding grounds. Eight were noted on 2 April with an impressive 21 present on 17 April. The only other spring record involved two on Knoxes Reef on 19 April. The first autumn returnee was seen in mid-July with a single on Knoxes Reef on 15 July. September produced the bulk of records with 1-3 on six dates with five on 23 September. In contrast to previous years, Longstone failed to produce a single record and the Outer Group only saw two individuals, with a single east over Brownsman on 23 August and another north on 30 September. The final records were 1-2 on 2 and 14 October with 12 on the West Wideopens on 23 October.

### **Lapwing *Vanellus vanellus***

A well represented passage visitor. Sporadic breeder in the past; last attempt in 1962.

This declining farmland breeder remains noteworthy on passage with small numbers seen annually during spring and autumn. A flock of 12 were roosting during a hard weather spell on Roddam and Green on the Outer Group on 24 February with a single by the Inner Farne pond on 31 March. The final spring record concerned one west through Inner Sound on 10 April. Autumn



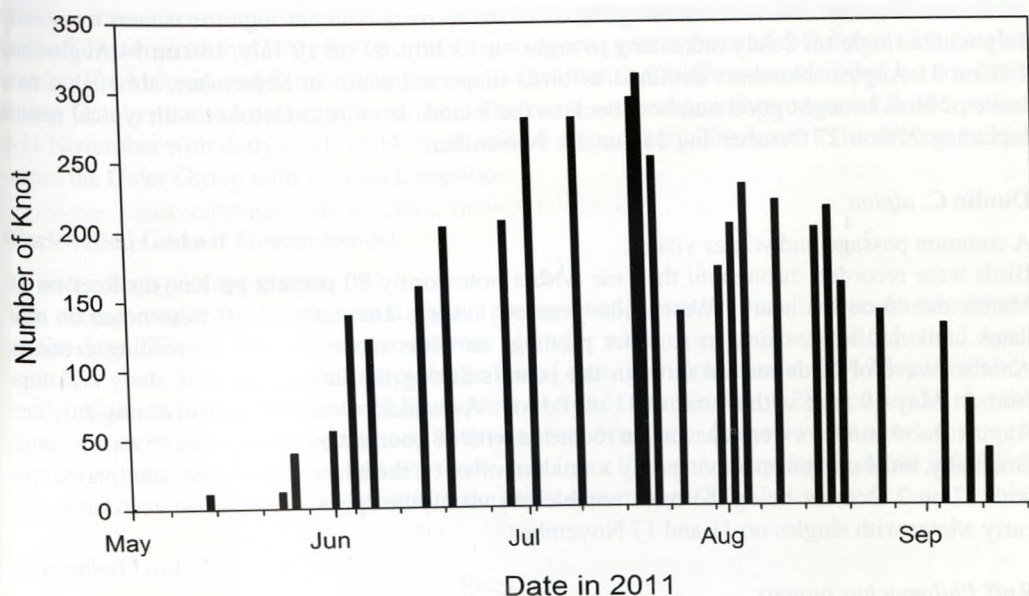
passage was noted from mid-August with two on the north rocks of Inner Farne on 11 August and seven through Inner Sound on 16 August. One of the biggest movements for a number of years occurred on 21 August when 146 were logged through Inner Sound, the fourth highest-ever count from the islands. Further movements of 1-2 were recorded on four October and two November dates, with the exception of 21 west on 5 November and 11 over the Outer Group on 13 November.

### **Knot *Calidris canutus***

A well represented passage visitor.

This high-arctic breeder is commonly found around the coasts of the UK especially during the winter months. Northern-bound birds were recorded on several dates during late March with an influx in early April. A single was near the jetty on Inner Farne on 27 March with between 48-60 present on the nearby West Wideopens between 2 and 5 April, peaking at 70 on 7 April. These birds quickly moved on with only 1-2 noted over the following few weeks. As has become the norm, birds summered on the islands with a gradual increase from early May reaching a peak of 312 on 19 July (Fig. 3). The flock was seen daily and used either Longstone or Knoxes Reef throughout the summer months with occasional records from Inner Farne and Brownsman. The flock generally involved winter plumage individuals but with some summer plumaged birds present. Numbers declined during the late summer and by mid-September the flock had dispersed. Records in October involved up to 25 on seven dates, with 15 on Knoxes Reef on 22 October.

**Fig. 3** The total number of Knot on selected dates in 2011.



### **Sanderling *C. alba***

An uncommon passage visitor.

This long-distance migrant is recorded annually in small numbers (on average six records per year over the past decade). This year brought four reports: a winter plumage individual on West Wideopens on 2 April, a flock of 13 on nearby Knoxes Reef on 14 April, and a summer plumage bird on Longstone on 18 July joined by a second summer plumage bird the following day.

### **Curlew Sandpiper *C. ferruginea***

An uncommon passage visitor.

The islands have produced regular sightings over the years with records in six of the ten years during the 1990s. However since that 'purple patch' there have been only two reports: birds on 22 August 2001 and 6-11 August 2003. The seven year barren spell was broken by a very approachable juvenile discovered roosting on Brownsman on 17 September, which reappeared on 22 and remained until 24 September. During its stay it happily fed within a few feet of the observers on the edge of the central pond.

### **Purple Sandpiper *C. maritima***

A common passage and winter visitor.

The islands are an important site for this small rock dweller, supporting nationally important numbers. A one-day snapshot of the wintering population included 21 on Big Harcar on 24 February. Early spring counts included 87 on 20 March and 229 on 18 April, an indication of the numbers present on the Farnes at this time of year. There were reports on 22 dates in May with a gradual decline during the month, from 55 birds on 7 May to eight birds on 21 May with 1-2 noted until the month's end and four on Longstone on 31 May. An individual was on Longstone on 9 June. As usual, the first returning birds started moving back through the islands from early July with a single on 2 July increasing to eight on 13 July, 81 on 19 July, 156 on 14 August and 141 on 31 August. Numbers declined as birds dispersed south in September, although a new wave of birds brought good numbers back to the islands from mid-October with typical counts including 225 on 27 October and 250 on 14 November.

### **Dunlin *C. alpina***

A common passage and winter visitor.

Birds were recorded throughout the year with a noteworthy 80 present on Knoxes Reef on 19 March and 40 on the nearby West Wideopens on 1 April. Thereafter, 1-10 were noted on nine dates until mid-May, many in summer plumage as birds moved north to breeding grounds. Another wave of birds moved through the islands during the late spring with daily sightings from 21 May-19 June with a peak of 11 on 7 June. As wader passage kicked-in during July and August, good numbers were once again recorded with 58 counted on 15 July and 25 on 2 August. Gradually, birds moved on leaving only a small number on the islands during the autumn months with 17 on 2 October being the most notable. As usual, the species became scarce during the early winter with singles on 11 and 17 November.

### **Ruff *Philomachus pugnax***

A well represented passage visitor.

The last five years have produced variable numbers of this sexually-dimorphic summer visitor and this year there were just two confirmed records. An individual flew west with two Black-tailed Godwits low over Inner Farne on 15 August and another flew west with Curlew over Inner Farne on 21 August.



### **Jack Snipe** *Lymnocyptes minimus*

A well represented passage visitor.

It was a very quiet year for this secretive passage and winter visitor to the islands, with two records in early October. Following a south easterly weather front, two were on Inner Farne on 3 October, favouring the south end of the Dock Bank with one lingering around these wet areas until 7 October. One was flushed from the pond-edge on Brownsman on 14 October and relocated near the north-west cliffs later that day.

### **Snipe** *Gallinago gallinago*

A well represented passage visitor.

It was a quiet spring period with just two records; an individual was flushed from the pond area on Inner Farne on 18 March with another on Brownsman on 19 April. The first autumn birds were noted from 1 September with one on Brownsman and another on Inner Farne the following day. Small numbers of 1-3 were recorded regularly throughout the autumn with a modest peak of six on 2 October. The poor showing was highlighted by the fact that records were produced on only 22 dates during September-October, compared with over 30 in an average year. The final records were of singles on Brownsman on 11 and 16 November.

### **Woodcock** *Scolopax rusticola*

A well represented passage visitor.

This cryptic woodland breeder moves through the Farnes on passage, particularly during the autumn as birds move from the near continent to winter in the UK. Spring passage produced a handful of reports with singles flushed from the garden on Brownsman on 20 March and another from Central Meadow on Inner Farne on 29-30 March. During this period, fresh remains were found on Inner Farne on 19 March, the victim of a Peregrine attack. The final spring bird was one west off Brownsman on 3 April. Autumn arrivals were present from mid-October with singles seen on Brownsman and South Wamses on 13 October. 1-6 birds were recorded on six dates during October and 11 dates in November. The most noticeable influx occurred in the period 8-11 November with daily totals of 14, 6, 10 and 15 respectively. The latter 15 birds were spread across the Outer Group with four on Longstone.

### **Black-tailed Godwit** *Limosa limosa*

An uncommon passage visitor.

This elegant wader is recorded annually on passage and it was an excellent year with reports on ten dates. The first of the year, a summer plumage adult, was on Knoxes Reef on 17 April with four (including three summer-plumage birds) east over Brownsman on 4 May. June-July produced the bulk of reports with 23 south-west over the Outer Group on 28 June and 17 east the following morning. Records continued with two west over Inner Farne on 15 August, four west over Brownsman on 16 August and one north over Inner Farne on 3 September. A late individual flew west over Brownsman on 2 October, the latest report since 2004.

### **Bar-tailed Godwit** *L. lapponica*

A well represented passage visitor.

There were a good number of records for this long distance migrant. 1-2 were present during late March and early April on Knoxes Reef with peaks of nine on 2 April and 34 on 17 April. The most noticeable passage occurred in early May, with 64 north through Staple Sound on 8 May and 46 roosting on Staple Island on 13 May. A stunning summer plumage adult was feeding

around the pond on Inner Farne on 6-7 May. Two were on Ladies Path, Inner Farne on 18 May. Mid-summer passage commenced from 15 July with 1-9 noted on the Inner Group on 17 dates until late August with a peak of 23 on 23 August. September produced 1-15 on nine dates with 26 on 8 September and late records involved 1-2 on 1, 2 and 26 October and two north through Staple Sound on 5 November.

#### **Whimbrel** *Numenius phaeopus*

A well represented passage visitor.

It was a quiet spring but a good autumn for this evocative summer visitor. Spring passage produced two south through Inner Sound on 29 April with singles over Brownsman on 3 May and another on the West Wideopens on 6 May. Autumn passage saw the arrival of five on Knoxes Reef on 30 June and thereafter 1-7 were recorded on 41 dates until last seen in early September. Records generally involved vocal birds flying over or birds favouring non-disturbed islands. August produced the largest numbers with peak counts of 11 over Brownsman on 3 August and 11 on Knoxes Reef on 12 August, nine west on 19 August and 14 south on 21 August and 15 south through Staple Sound on 2 September. Late summer records included singles on Inner Farne on 7-9 September and three present on 10 September.

#### **Curlew** *N. arquata*

A common passage and winter visitor.

This upland breeder is recorded throughout the year with large numbers concentrating on Knoxes Reef. The winter population is largely unknown due to the lack of recording but 100+ on Knoxes Reef on 24 February indicate the numbers of birds that may be present. Numbers peaked during the late summer when post-breeding birds gather at high tide roosts although, as with the previous season, numbers remained below average. The season's peak involved a modest 178 on 13 October on Knoxes Reef (Table 3), well below the 400+ which has been recorded in recent years. Only small numbers were recorded on the Outer Group with a peak of 36 on 23 September.

**Table 3.** Peak monthly Curlew counts on Inner and Outer Groups in 2011, Farne Islands.

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
<b>Inner Group</b>	26	21	18	57	74	135	150	178	150
<b>Outer Group</b>	4	5	1	2	24	27	36	19	33

#### **Common Sandpiper** *Actitis hypoleucos*

A well represented passage visitor.

There were just three spring records: an individual was on the north rocks of Inner Farne on 2 May and the same or a different bird was at the Churn Pool on the same island on 4 May. The only other spring reports involved a single on Brownsman pond on 12-13 May. Singles arrived in mid-July on West Wideopens on 17, Brownsman on 19 and Inner Farne on 30 July. August produced the bulk of records with reports almost daily throughout the month including at least two which found the Inner Group to their liking and stayed for at least three weeks. Counts on the two island groups usually involved 1-4 with peaks of seven on 17 August and five on 23 August.



The number of records declined in early September with singles present on Brownsman on 2, 4 and 8 September, the last being one on Brownsman north rocks on 18 September.

#### **Green Sandpiper *Tringa ochropus***

An uncommon passage visitor.

This distinctive summer wader was noted on five dates during the autumn. One flew low past the jetty on Brownsman on the evening of 8 July with another west over Inner Farne on 11 August. A series of sightings in early September may have involved the same individual: on the West Wideopens on 4 September, the following day on the north rocks of Brownsman, and west over Inner Farne early on 6 September.

#### **Spotted Redshank *T. erythropus***

An uncommon passage visitor.

This distinctive summer visitor remains an uncommon passage visitor to the islands that has been recorded in 26 of the previous 40 years. A winter plumage adult was photographed by a visitor on the north rocks of Inner Farne on 7 September. Shown to the wardens (the magic of digital) it had departed before any of the team could get to see it! This represents the first record since one on Brownsman and Inner Farne on 11 May 2009.

#### **Greenshank *T. nebularia***

A well represented passage visitor.

It was an excellent year for sightings of this familiar and distinctive passage wader with reports on one spring and 22 autumn dates. A bird roosting at high tide on Knoxes Reef on 13 April represented only the 14th spring record in the past 25 years. The first autumn passage bird was seen on West Wideopens on 27 July followed by further singles on Staple Island on 8 August and two different birds on 11-12 and 14 August on the Inner Group. An individual which arrived on Brownsman on 23 August remained for nearly four weeks and was last seen flying west off the island on 18 September. During its stay it preferred the 'flats' area of the island to feed but was also seen on the pond and north rocks. With this bird in residence, two flew over Inner Farne on 25 August with singles on 26-29 August. Three on Inner Farne on 27 August involved two east and a single on Ladies Path.

#### **Wood Sandpiper *T. glareola***

An uncommon passage visitor.

It has been a good decade for records of this striking sandpiper as the species has been seen in every year except 2004. In comparison the 1990s produced records in five years, the 1980s six years and the 1970s in only two years. This year produced a single bird, which flew low west calling over the quarry area of Inner Farne on 13 August and continued towards the mainland.

#### **Redshank *T. totanus***

A common passage and winter visitor. Bred in nine years 1901-1943.

This former breeder remains a common visitor to the islands although very few are recorded during May and June. Early spring passage produced some good numbers on the Inner Group as 47 were counted on 31 March with 51 on 13 April. This was topped by an impressive 226 roosting at high tide on 16 April, the highest total ever recorded from the islands, beating the previous record of 175 on 13 July 2006. Birds become scarce during the summer and there were no records between 25 April-28 June, when one appeared on Staple Island. Thereafter the species

was again present in good numbers with passage in July-August producing the largest numbers (as shown in Table 4).

**Table 4.** Peak monthly Redshank counts on Inner and Outer Groups during 2011, Farne Islands.

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
<b>Inner Group</b>	47	266	0	0	39	22	20	7	16
<b>Outer Group</b>	4	3	0	1	27	40	23	9	7

#### **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-arctic breeding grounds. The spring period produced regular reports of up to 170 throughout March-April with a reduction in numbers during May as birds moved north. Despite this, there remained a presence of non-breeders throughout the summer with a peak count of 132 on 7 June (Table 5). As passage gathered momentum, the islands saw good numbers during the late summer with 255 counted on the Outer Group on 30 July peaking with an all-island count of 716 on 14 August (402 on the Inner Group and 314 on the Outer Group), representing the third highest ever count. Numbers remained high throughout August and early September and the islands supported a good wintering population of 200-300 throughout October-December.

**Table 5.** Peak monthly Turnstone counts during 2011 on the Farne Islands.

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
<b>Inner Group</b>	20	171	40	25	111	314	95	100	165
<b>Outer Group</b>	8	55	19	132	255	402	139	143	210

#### **Grey Phalarope** *Phalaropus fulicarius*

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

There were record numbers of this specialist surface feeder in 2011. There were 15 records, of 17 birds, between 1950-2000. How patterns have changed: since 2001 the species has been seen annually with a total of 27 records involving 32 birds. The first record of 2011 involved two birds feeding on the sea just off Brownsman on the morning of 22 October, before flying north a few minutes later. Soon after, a Merlin appeared from the nearby South Wamses and chased both birds, scattering them in different directions. The raptor then pursued one individual and over the following few minutes they twisted and turned, gaining height until both became distant specks in the skies above Brownsman. The outcome is unknown but minutes later a Merlin was seen without prey - suggesting an unsuccessful hunting mission. Later that day two birds, possibly the same recorded earlier, were seen behind Knoxes Reef on the Inner Group before flying south. Wardens on Brownsman then located six together on the sea off the south end of the island. All six were actively feeding on the sea and this astonishing sight eclipses all previous island and County records. A single was seen on the sea at the base of Lighthouse Cliff on Inner Farne the following morning whilst three were seen together off the south end of Brownsman on the afternoon of 26 October. This latter sighting would have been impressive in a normal year, but it was overshadowed by the records of the previous week. A single was on the sea in Staple Sound



just off Brownsman on 14 November and another was found at the south end of Brownsman on the sea on 24 November, to complete a remarkable series of records. Overall the autumn produced seven reports possibly involving 15 birds.

#### **Pomarine Skua *Stercorarius pomarinus***

A well represented passage visitor, common in some years.

It proved to be an average year for this powerhouse of a skua, with 1-2 reported on nine autumn dates. A juvenile flew north through Staple Sound on 9 September, then two adults passed north through Staple Sound on 20 September. Records in mid-October involved singles north on four dates between 13-23 October, the majority through Staple Sound. One of the highlights of the autumn involved a juvenile which flew along Ladies Path on Inner Farne on 25 October before heading out east towards the Outer Group. The bird arrived on Brownsman minutes later and showed extremely well before heading further east and out of sight. Typically, November produced two late records with singles north through Staple Sound on 15 and 29 November.

#### **Arctic Skua *S. parasiticus***

A common passage visitor.

It was another mixed year for records of this aerial sea pirate as the spring failed to produce any sightings for the first time since 1998. A dark phase adult was seen off the south end of Brownsman on 19 June with singles in Staple Sound on 27 and 30 June. Numbers increased from early July with an almost daily presence throughout the late summer. Records generally involved 1-5 with eight noted on 22 July including five in Staple Sound, three in Inner Sound and eight north on 25 July. The most noticeable passage occurred at the end of August with seven north on 28 August, 28 south on 29 August and seven on 30 August. Thereafter, smaller numbers were reported throughout September with a peak of 15 south on 8 September. Gradually, numbers declined with reports of 1-2 on four October dates plus a small influx north on 22-24 October with six, seven and seven birds respectively. November produced three late autumn records with singles south through Staple Sound on 5, 17 and 28 November, the latter being the latest since 2005.

#### **Long-tailed Skua *S. longicaudus***

An uncommon passage visitor.

For the avid sea-watchers in the team it was an unexpectedly good season for this prized jewel with some noticeable passage in late September. During strong south-westerly winds on 21 September, a juvenile was seen flying north just after midday through Staple Sound and over the following two hours six more juveniles were recorded (overall: four dark, two light and one intermediate phase birds) all moving north. This represented the fourth-highest day count and the highest since 1995. Further passage included single intermediate juveniles north through Staple Sound on 23 September and a pale-phase north through Inner Sound on 30 September. The final record concerned a juvenile north through Staple Sound on 22 October.

#### **Great Skua *S. skua***

A common passage visitor.

It was a poor spring passage with no records and autumn passage was underway by late June. An individual was mobbed by Herring Gulls as it flew north through Staple Sound on 6 June, with further singles north through Inner Sound on 20 June and past Brownsman on 24 June and reports on a further 52 dates until last recorded on 5 November. Passage generally involved

1-6 birds with higher numbers logged as follows: eight north on 24 July, 29 on 29 August (18 north 11 south) and eight north the following day. Further peak passage included 19 north on 11 September and a seasonal peak of 35 north on 22 October, the majority of which were recorded off the south end of the islands.

#### **Sabine's Gull *Xema sabini***

An uncommon passage visitor.

The status of this Nearctic visitor has altered in recent years; the species was first recorded on the Farnes as recently as 1991 but a further 24 since, with 15 in the last ten years, has made this a more regular visitor. There was just one record in 2011, a juvenile feeding in Inner Sound on 22 October and seen flying north through Staple Sound later that day. The bird had arrived amongst an influx of Little Gulls and was seen again the following morning, again flying off north.

#### **Kittiwake *Rissa tridactyla***

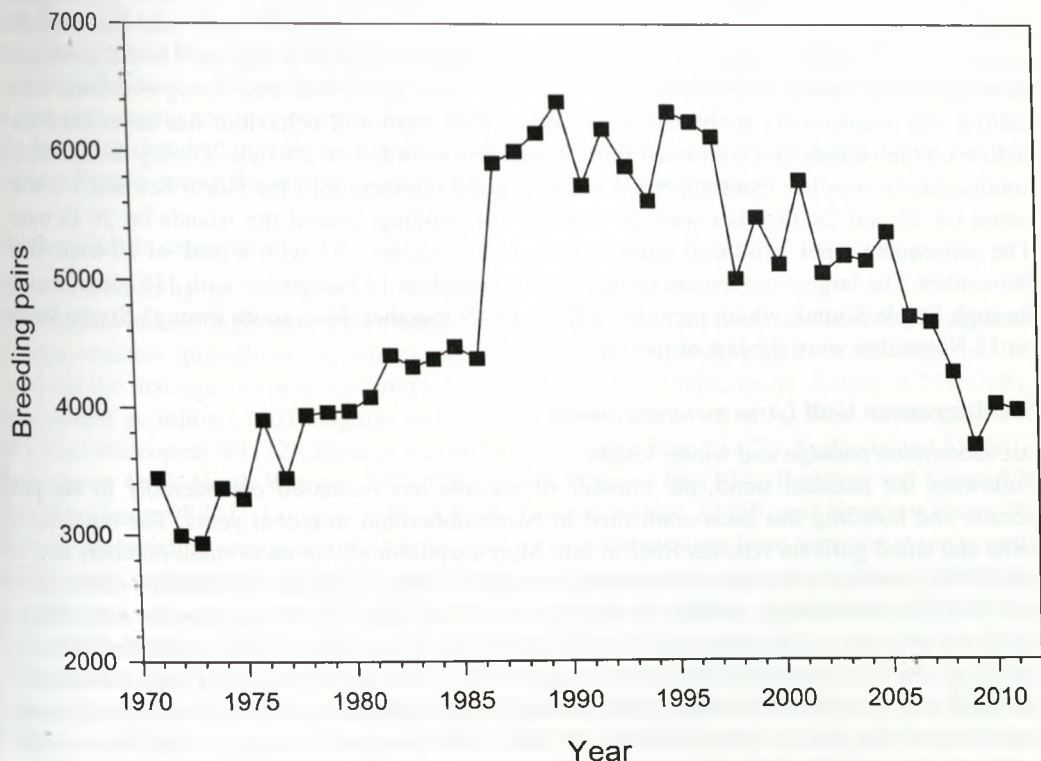
An abundant breeder and passage visitor, well represented in winter.

It proved to be a very good year for this cacophonous cliff nester, as the mild spring encouraged birds to nest early, and courtship displays and territorial disputes were taking place when the wardens stepped ashore on 18 March. Nest building commenced soon after and the first eggs were discovered on 28 April, three weeks earlier than the average laying date of the previous decade. A total of 3,976 (4,025) pairs (Fig. 4) nested as follows (2010 figures in brackets): Megstone 0 (7), Inner Farne 1,192 (1,278), West Wideopens 183 (190), East Wideopens 221 (233), Skeney Scar 155 (138), Staple Island 996 (1022), Brownsman 1104 (1024), North Wamses 42 (35), South Wamses 24 (24), Roddam and Green 15 (19) and Big Harcar 44 (55).

The first chicks hatched on Inner Farne in St Cuthbert's Gut on 22 May (the joint earliest hatching date since 2000) and the other colonies across the islands swiftly followed suit. Following the trend of recent years it was a superb breeding season although, as expected, a few issues were encountered during the summer. Several nests on the west facing ledges were lost during stormy weather on 23 May, as severe westerly gales battered the islands. Predation was also a problem in some areas with large gulls the main culprits although a Peregrine was suspected on two occasions. Despite this, food availability appeared to be good and the first fledglings took to the skies on 26 June with good numbers noted around the islands from 30 June onwards. Nest monitoring revealed that 653 chicks fledged from 658 nests, an overall productivity of 0.99 (slightly down on the previous season but still way up on the average productivity of the last two decades). Research projects during the year included the tracking of birds fitted with data loggers, which revealed some interesting local movements of breeding birds. One individual foraged 189 km from the islands during its fishing trip. Small numbers were observed throughout late autumn with a typical count of 45 north through Staple Sound on 28 November.



Fig. 4 The Kittiwake population on the Farne Islands 1971-2011.



#### **Black-headed Gull *Chroicocephalus ridibundus***

A well represented breeding species from 1972 onwards, common visitor.

The population of this opportunistic pirate has been expanding on the Farnes in recent years and this trend continued in 2011. Late March and early April attracted good numbers to the evening roost on Knoxes Reef with 164 on 19 March increasing to 320 on 21 March with 346 on 19 April. Birds moved to nearby breeding islands and the first eggs were discovered on 25 April (joint earliest laying date) with 430 (341) pairs nesting as follows (2010 figures in brackets): Inner Farne 424 (367) and Brownsman 6 (26). Whilst the Inner Farne colony has increased, the number of pairs on Brownsman has declined and this may be linked to the complete absence of nesting Sandwich Terns on that particular island. The first chicks hatched on 19 May and the first fledglings were seen on the wing from 24 June. Soon after the first fledgling, large crèches of juveniles were seen on Inner Farne especially at the picnic site near the lighthouse, with a peak count of 32 on 2 July. Predation by large gulls took its toll, although ringing activities suggested reasonable numbers of young fledged. During the late summer very few were recorded although one lone juvenile enjoyed the attention of daily visitors and could often be found begging for food at the lighthouse picnic site. Birds returned during the late autumn with peaks of 116 on 10 November and 60 on 29 November.

#### **Little Gull *Hydrocoloeus minutus***

A well represented passage and winter visitor.

It was a peculiar year for this dainty passage visitor with an adult appearing to set up territory and an impressive influx in late autumn. A first-summer bird was noted in the tern roost on Ladies

Path, Inner Farne on 18 May. Staple Island then attracted two first-summer individuals to the roost on the east rocks on the evening of 22 May with an adult present the following morning. Thereafter the two first-summer individuals were seen intermittently until mid-June, but this could not be said about the adult. The bird was recorded daily as it appeared to set up territory between Staple Island and Brownsman as it was often heard and seen flying overhead, alarm calling and occasionally mobbing the wardens. This territorial behaviour has never been seen before on the islands and continued until it was last recorded on 24 June. During the autumn, a south-easterly weather front appeared to drive good numbers into the North Sea and 1-2 were noted on 22 and 24 October with 26 counted dip-feeding around the islands on 26 October. The subsequent week produced daily sightings of between 7-11 with a peak of 20 south on 5 November. The largest movement of the year occurred on 12 November with 116 south, mainly through Staple Sound, which included a flock of 49 together. Five south through Staple Sound on 15 November were the last of the year.

#### **Mediterranean Gull *Larus melanocephalus***

An uncommon passage and winter visitor.

Following the national trend, the number of records has increased considerably in the past decade and breeding has been confirmed in Northumberland in recent years. The build up of terns and small gulls on Knoxes Reef in late March traditionally attracts small numbers and an adult in full summer plumage was present on 24 and 27 March, with a first-summer noted on 19 and 24 April. Interestingly, an adult and first-summer bird were seen flying over the main Black-headed Gull colony on Inner Farne on 11 May with two first-summer birds present the following morning. These birds appeared to move on quickly but a second-summer individual was noted in the same area on 19 May. The final record during this period involved an adult summer-plumage individual on the flats on Brownsman on 22 May. With increased sightings during the summer, it may be that island breeding is only a matter of years away. The autumn produced two reports with a first-winter bird feeding off Knoxes Reef on 26 August and a second-winter bird off Lighthouse Cliff on Inner Farne on 28 September.

#### **Common Gull *L. canus***

A common visitor. Bred during 1910-14 and probably in 1916 and attempted breeding in 1974. The majority of Farnes records occur in spring as birds move east to breeding grounds in Scandinavia, with a distinct build-up on Knoxes Reef during early spring. Three on 18 March increased to eight by 27 March. Numbers continued to build rapidly in early April and 54 were at roost on 11 with a peak of 78 on the evening of 12 April. Just as numbers increased rapidly, they also declined quickly and only 34 were present on 17 April with as few as nine by 19 April. From late April, the species became scarce around the islands with records of first-summer birds on four May dates and on Knoxes Reef on 3 June. Late August saw an adult on Inner Farne on 23 August, with two on Knoxes Reef on 26 September. Small numbers were seen during the autumn, favouring the Inner Group with peaks of 14 off Inner Farne on 28 September and 30 off Brownsman on 16 November.

#### **Lesser Black-backed Gull *L. fuscus***

A common breeding summer and passage visitor.

Good numbers of this menacing mariner arrived in early April (the Farnes population migrates south for the winter) and were noted in territorial disputes by mid-April. Nest building followed soon after and copulating was recorded from 23 April on the West Wideopens. The first eggs were



found in early May and 582 (611) breeding pairs nested as follows (2010 figures in brackets): Inner Farne 18 (20), West Wideopens 138 (144), East Wideopens 83 (82), Knoxes Reef 6 (5), Staple Island 34 (74), Brownsman 5 (6), North Wamses 84 (76), South Wamses 141 (130), Roddam and Green 3 (5) and Big Harcar 70 (69). The species was responsible for a high level of predation among nesting seabirds especially Arctic Tern, Black-headed Gull and Guillemot. The first chicks hatched in early June with a reasonable number of young fledging. Birds left for southern Britain during September, with none recorded after early October.

### **Herring Gull *L. argentatus***

A common breeding species, abundant winter and passage visitor.

This sharp-eyed scavenger once again nested in abundance on the Farnes and birds were present in large numbers throughout the winter and early spring. Copulating pairs were noted on 14 April and the first eggs were discovered in early May on West Wideopens. A total of 759 (768) pairs nested as follows (2010 figures in brackets): Inner Farne 10 (17), West Wideopens 87 (89), East Wideopens 80 (72), Knoxes Reef 81 (78), Skeney Scar 25 (22), Staple Island 55 (54), Brownsman 4 (6), North Wamses 137 (121), South Wamses 98 (102), Roddam and Green 17 (19), Big Harcar 98 (91), Longstone Main 8 (0), Longstone End 32 (50) and Northern Hares 28 (47). As the breeding season started, birds began to switch their diets from foraging at sea to nest raiding, with birds patrolling the cliffs and meadows in search of an easy meal. Heavy predation of Guillemot eggs and chicks was obvious whilst later in the season attention turned to Arctic Tern, Black-headed Gull and Eider eggs and young. These chief scavengers were also recorded bringing in a dead baby Brown Rat *Rattus Norvegicus* on the North Wamses, a Common Field Mouse *Apodemus Sylvaticus* on Knoxes Reef and a European Mole *Talpa Europaea* on the Big Harcar – evidence of visits to the mainland. After the breeding season, good numbers remain to winter around the islands with influxes of northern European birds during late autumn. The autumn months also see huge nightly roosts although, due to access difficulties, these go uncounted. However, estimates of 10,000 individuals have been made.

### **Iceland Gull *L. glaucoides***

An uncommon winter and passage visitor.

This elegant 'white winger' moves through the islands on spring and autumn passage but the months of March-April are traditionally the best time to see them. This year a first-winter bird was discovered roosting on Knoxes Reef on the evening of 27 March. The species has been recorded annually in the past decade apart from in 2006 and 2008.

### **Glaucous Gull *L. hyperboreus***

An uncommon winter and passage visitor.

This stunning northern visitor was once a very familiar sight on the islands, but with the decline of the fishing industry in the region and the milder winters, numbers have declined. Despite this, it remains an annual visitor (but only just) and a first-winter bird was discovered on the sea east of Brownsman on 29 November. The bird showed well before departing west over Staple Island towards the mainland.

### **Great Black-backed Gull *L. marinus***

An uncommon breeder, common winter and passage visitor.

This bruiser of a gull maintains its breeding toe-hold on the Farne Islands and the 12 pairs were a record. Small numbers were seen around the islands during the spring and the first eggs

were found on Staple Island on 6 May. A total of 12 (11) pairs nested as follows (2010 figures in brackets): West Wideopens 1 (2), East Wideopens 3 (2), Knoxes Reef 1 (1), Staple Island 1 (1), Brownsman 2 (2), North Wamses 1 (0) and South Wamses 3 (2). The first fledglings were seen in mid-July with two juvenile birds seen in flight at the south end of Brownsman. These imposing scavengers are renowned for their aggressiveness and this year some astonishing behaviour was observed, when a pair of adults killed and ate two Shags, an adult and juvenile, on Staple Island. Both birds were close to the tide line and although it was not seen, it is presumed the gulls drowned the birds before dragging them to shore to feast on (one of the Shags had been colour-ringed just three days previously). In addition, a pair specialising in predating adult puffins returned to nest on the East Wideopens for the second year running, causing mayhem with well over 100 Puffin corpses found around the nesting area. After the breeding season, good numbers were recorded including 234 on Longstone on 14 October, 301 on the Outer Group on 25 October with 297 present on 12 November.

#### **Little Tern *Sterna albifrons***

A well represented passage visitor.

It was an early start to the traditional evening roost in St Cuthbert's Cove, Inner Farne, with 14 present on 22 April, the earliest ever return on the islands. The roost attracted a steadily increasing number (see Table 6) with a peak of 63 on the evening of 9 May. The roost then rapidly decreased as birds moved to nearby Northumberland breeding grounds with just 1-2 present in early June. In 2010 a bird was a resident on Inner Farne from 23 to 28 July – it was a novelty to see it perched on the Visitor Centre roof! This year a bird was recorded on several occasions from 19 May to 3 June and was watched in courtship display with Arctic Terns over Inner Farne, and seen on the wall of the lighthouse compound on two occasions. The final record concerned two south through Inner Sound on 12 July.

**Table 6.** Evening roost counts of Little Tern in 2011, Inner Farne.

April				May						June
22	23	25	29	3	5	9	12	20	28	4
14	23	22	22	29	53	63	57	32	11	1

#### **Black Tern *Chlidonias niger***

An uncommon passage visitor.

Compared with recent seasons it was a good year for seeing this dainty marsh tern. A stunning summer plumage adult was present in the large tern roost on Ladies Path on Inner Farne on 18-19 June. One, in moult, was present in the same area on 2 August. During the autumn a juvenile was noted in Inner Sound on 29 September and was seen around the Inner Group during the following two days.

#### **Sandwich Tern *Sterna sandvicensis***

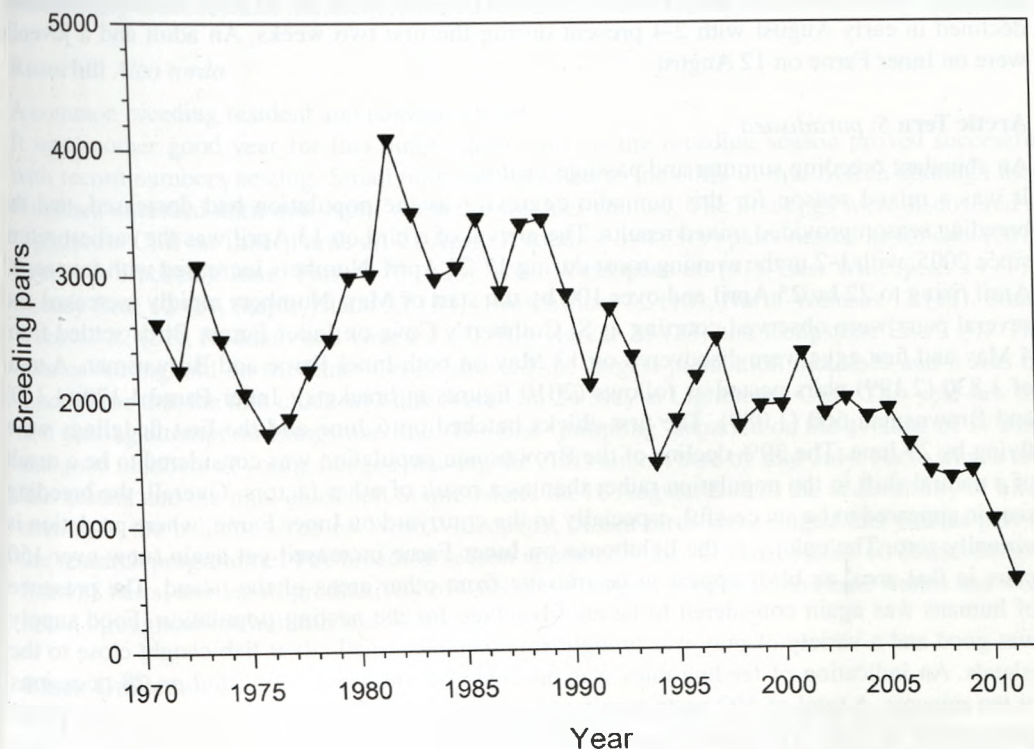
A breeding summer and passage visitor.

It was another disappointing season for this vivacious vocalist with its population falling to almost half that of the previous year. The first birds were spotted in their traditional evening roosting site on Knoxes Reef on 23 March, the second earliest return date on record. Over the following weeks numbers increased nightly reaching a maximum of 811 on 24 April. During



this period courtship displays were observed over Inner Farne and by 24 April up to 50 pairs were settled on Top Meadow. The first eggs were discovered on 30 April (the earliest ever laying date) and a total of 544 (1,019) pairs nested as follows (2010 figures in brackets): Inner Farne 544 (761) and Brownsman 0 (258). The worrying decline in the breeding population continued unabated (Fig. 5) with the population dropping to its lowest number in over 60 years. No birds attempted on Brownsman this year. The breeding population would have been much lower had it not been for a second 'wave' of nesting birds in mid-June. The first chicks hatched on 1 June and fledglings were observed from 26 June onwards. As usual, young birds were one of the last species to fledge with crèches on Ladies Path and St Cuthbert's Cove until 21 August. Thereafter numbers declined with late sightings including one north through Staple Sound on 26 October and another over Inner Farne on 27 October.

Fig. 5 The Sandwich Tern population on the Farne Islands 1971-2011.



#### Common Tern *S. hirundo*

A breeding summer and passage visitor.

This scarce Northumberland breeder saw its population hovering around the 100 pairs mark. The first bird of the year was an individual calling low over the beach on Inner Farne on 6 April with 1-2 noted in the evening roost by mid-April. Displaying birds were seen over Ladies Path on Inner Farne on 22 April and the first birds were settled on Central Meadow on 26 April. The main colony on Inner Farne appeared to have switched areas, as a good majority of nests were located on Central Meadow. The first eggs were discovered on 29 April (the earliest ever laying date) and 101 (112) pairs nested as follows (2010 figures in brackets): Inner Farne 101 (110) and Brownsman 0 (2). There were no nesting attempts on the Outer Group for the first time since

2003. The first chicks hatched on 3 June and the first fledglings started flying on 1 July. Although not monitored, it appeared to be an average year, with small numbers of young fledging from the colony. After the breeding season, numbers declined with late birds noted in Inner Sound on 5 September and Staple Sound on 10 September.

#### **Roseate Tern *S. dougallii***

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

Since the turn of the century the species has been a sporadic breeder with the last nesting attempt in 2009. In addition to an adult flying past the cottage on Brownsman on 16 May, another on Inner Farne on 18 May, and three adults on the Inner Group on 19 May, there were regular reports throughout the summer. Despite birds observed in courtship displays, no nesting attempt was made and breeding has now only been recorded in five years since 2000. During late summer, numbers gradually increased as family parties dispersed from the main breeding colony at Coquet Island with 3-4 daily from 12 July and a peak of 11 on 25 July. Numbers gradually declined in early August with 2-4 present during the first two weeks. An adult and a juvenile were on Inner Farne on 12 August.

#### **Arctic Tern *S. paradisaea***

An abundant breeding summer and passage visitor.

It was a mixed season for this nomadic aggressor as the population had decreased, and the breeding season provided mixed results. The arrival of a bird on 13 April was the earliest return since 2005, with 1-2 in the evening roost during 17-21 April. Numbers increased with four on 22 April rising to 22 by 25 April and over 100 by the start of May. Numbers rapidly increased and several pairs were observed courting at St Cuthbert's Cove on Inner Farne. Birds settled from 4 May and first eggs were discovered on 13 May on both Inner Farne and Brownsman. A total of 1,830 (2,199) pairs nested as follows (2010 figures in brackets): Inner Farne 1,170 (1,110) and Brownsman 660 (1,089). The first chicks hatched on 6 June and the first fledglings were flying by 29 June. The 39% decline of the Brownsman population was considered to be a result of a natural shift in the population rather than as a result of other factors. Overall, the breeding season appeared to be successful, especially in the courtyard on Inner Farne, where predation is virtually zero. The colony at the lighthouse on Inner Farne increased yet again (now over 150 pairs in that area) as birds appear to be moving from other areas of the island. The presence of humans was again considered to be an advantage for the nesting population. Food supply was good and a variety of prey was brought in, especially small silver fish caught close to the islands. An indication of feeding rates was provided by one chick being fed on 28 occasions in ten minutes. A total of 592 nests monitored produced 354 fledged young, giving an overall productivity of 0.60. The main reason for failure was predation by large gulls, especially on Brownsman where some colonies suffered badly. First-summer birds were present between 27 May and 28 June with numbers peaking at 69 on 28 June. As usual, late nesters were recorded, the final chick fledging on 10 August with numbers declining as birds moved away from the islands. Late records included singles north through Staple Sound on 22 and 26 October, the latest records in over a decade.

#### **Guillemot *Uria aalge***

An abundant breeding resident and passage visitor.

This abundant cliff-nesting auk was present on cliff ledges from mid-March, prospecting for the best sites to settle down for another season of life on the edge. Birds remained skittish in this



early spring period and moved off with the onset of poor weather. Gradually they settled and the first egg was discovered (predated) on Brownsman jetty on 9 April, the earliest ever laying date on the Farnes. The whole colony soon followed suit and most birds were on eggs within a week. A total of 47,977 (46,355) individuals was distributed as follows (2010 figures in brackets): Megstone 250 (220), Inner Farne 6,823 (6,834), West Wideopens 2,134 (2,420), East Wideopens 2,739 (3,209), Skeney Scar 2,672 (2,250), Staple Island 22,502 (20,309), Brownsman 8,547 (8,267), North Wamses 1,480 (1,825), South Wamses 440 (618), Roddam and Green 130 (130) and Big Harcar 260 (273). The population continues to grow and it may not be too long before the islands support over 50,000 individuals. The first chicks hatched on 17 May on Staple Island and the first 'jumping' was discovered on the sea on 3 June (quickly predated by a Greater Black-backed Gull). The exodus was not long in coming with the evening of 10 June witnessing over 2,000 young leaving the cliffs. The final 'jumplings' were noted leaving on the evening of 22 July, but in truth the majority had gone by the first week of July. Predation by large gulls was evident throughout, although the size of the colony suggests it is having minimal effect. After the breeding season, small numbers returned to winter around the islands from early September.

### **Razorbill** *Alca torda*

A common breeding resident and passage visitor.

It was another good year for this dinner-jacket auk as the breeding season proved successful with record numbers nesting. Small numbers returned to the cliffs in mid-March although they remained unsettled until mid-April when the weather calmed. The first eggs were discovered at Lighthouse Cliff on Inner Farne on 21 April. A total of 390 (319) pairs nested as follows (2010 figures in brackets): Inner Farne 175 (128), West Wideopens 80 (61), East Wideopens 14 (17), Skeney Scar 12 (8), Staple Island 37 (34), Brownsman 12 (10), North Wamses 13 (13), South Wamses 22 (22), Roddam and Green 1 (3), Big Harcar 23 (23) and Longstone End 1 (0). The species' stronghold on the Inner Group showed the largest population increases and it was on Inner Farne that the first chick was discovered on 24 May at Lighthouse Cliff. This year saw the first nesting attempt on Longstone End. The first 'jumping' departed on the evening of 17 June and good numbers of young fledged, leaving the cliffs almost bare by mid-July. There were a few late nesters and the final chick left Staple Island on 16 August. Due to the accessibility of birds nesting in the boulder scree on West Wideopens, fifteen birds were ringed this year as part of the research programme. The breeding season appeared to be very successful: 60 chicks fledged from 88 nests, an overall productivity of 0.68. Small numbers returned to Farne waters and were noted throughout the autumn and winter.

### **Black Guillemot** *Cephus grylle*

A well represented winter and passage visitor. Bred in 17<sup>th</sup> and possibly 18<sup>th</sup> centuries.

There were few records by Farne standards, with small numbers wintering around the islands. An adult recorded in Staple Sound on 24 January may be an indication of over-wintering. The first autumn record, an adult, was seen flying north through Inner Sound on 8 October before briefly landing on the sea. On the Outer Group, a moulting adult was feeding just off Brownsman on 26 October and was seen again near the South Wamses on 28 October. The islands failed to produce a single November record (usually peak time for sightings) and the lack of easterly or northerly winds may have been the reason. An adult was seen on two occasions by boatmen just north of Inner Farne in mid-December.

### **Little Auk** *Alle alle*

A well represented winter and passage visitor.

Large numbers can occur after northerly gales and the islands boast the all-time British record, set in 2007 when 28,803 moved north on 11 November. The first autumn record involved two birds north through Staple Sound on 22 October with two south through Inner Sound the following day. Small numbers were seen daily from 2 November to 4 December. During this period the peak counts were 15 and 13 on the sea on 11 and 12 November respectively, whilst a sweep of Staple Sound on 2 December produced 40 individuals. Views of some birds were incredible as they happily approached the wardens' Zodiac inflatable during this time. Three December trips to the islands recorded 1-5 birds.

### **Puffin** *Fratercula arctica*

An abundant breeding summer and passage visitor.

It was an excellent breeding season for this difficult to count species. The mild spring encouraged birds to move on to the islands earlier than usual with birds inspecting burrows by 20 March but they remained very unsettled. The first eggs were discovered on 15 April, the earliest laying for 20 years, with the first chicks hatching from 19 May. Due to the complexities of a full island census, the population was not counted – roll on 2013! The first fledglings appeared on 29 June and in the ensuing weeks good numbers left their burrows under the cover of darkness. Wardens 'rescue' wandering juveniles which end up in buildings especially the Chapel and toilets during the night, with the moth trap attracting its fair share of lost youngsters. The evening of 6 July was particularly busy with 25 'off-course' birds having to be re-orientated. A bird with white wings was seen on several dates during the breeding season on Inner Farne whilst another 'coffee-coloured' individual was seen on the same island on 22 June and 17 July. The breeding season appeared to be good although predation and flooding in some Brownsman burrows was a concern. Monitoring data indicated that 129 chicks fledged from 141 monitored nests, an overall productivity of 0.91. After the breeding season, the first wave of birds departed on 12 July and numbers gradually declined with very few present by early August. One very late pair were still bringing food to their chick on 22 August. The autumn months produced a scatter of records with regular sightings from mid-September.

### **Feral Pigeon** *Columba livia*

A common breeding resident.

The Farnes population remained as strong as ever, with good numbers commuting from the nearby mainland with small numbers breeding on several islands. Peak numbers occurred during the autumn months with up to 400 present and as usual, several fell prey to raptors, especially Peregrine.

### **Stock Dove** *C. oenas*

Scarce visitor and former breeder 1928-1979.

This former breeder is now a very scarce visitor to the islands and following a south-easterly weather front, an individual arrived on Brownsman on the evening of 25 October. The bird lingered on the Outer Group commuting between Brownsman and nearby Staple Island for a further two days and was last seen on the morning of 27 October. This represents the first record since an individual graced Staple Island on 6 May 2008 and only the 19th since 1980.



### **Wood Pigeon** *C. palumbus*

An uncommon passage visitor.

It was a typical showing for the islands with records on seven spring and two autumn dates. The first bird of the year was noted flying west over the Inner Group on 23 March followed by another west over Brownsman on 10 April. Light spring passage continued with singles on Inner Farne on 25 April and 4 May with individuals on Brownsman on 7 and 15 May. The final spring record concerned a late individual on Staple Island on 19 June. A quiet autumn produced just two records with a single on Brownsman on 24 October which was later seen on Inner Farne and another on the Outer Group on 8 November.

### **Collared Dove** *Streptopelia decaocto*

Uncommon passage visitor.

The recent record on the Farnes of this common Northumberland breeder has been poor, following on from last seasons blank year (the first occasion the Farnes has not produced records since 1968). This year was only slightly better with just a single record when an individual graced the artificial tree in the garden on Inner Farne on the evening of 4 May before departing west.

### **Long-eared Owl** *Asio otus*

An uncommon passage visitor.

This nocturnal migrant is predominately recorded during the autumn as birds move across the North Sea from Scandinavia for the winter. After a spell of south-easterly winds, early November produced three records, all on the Outer Group, with the first involving a bird flying low over Brownsman before heading to the nearby South Wamses on 3 November. A second individual was flushed from Staple Island near the Pinnacles on 15 November which eventually showed well on the west face cliffs for all admiring wardens. The final record concerned a lingering individual, first seen on Brownsman on 16 November. This was considered to be a different bird from that seen the previous day. The bird was seen roosting on Cottage Cliff on Brownsman and remained loyal to the island for a further three days and was last seen on 19 November. Interestingly, an examination of the bird's pellets revealed that it was feeding on migrants on the island, with at least one Robin falling prey to this nocturnal hunter.

### **Short-eared Owl** *A. flammeus*

An uncommon passage visitor.

It was a superb season with reports on 15 dates including a new record day count for the islands. The first bird of the year was flushed from the south end of Brownsman on 17 September and was followed by another in almost the same spot on 28 September. October produced the majority of records as three arrived on 2 October followed by no fewer than eight on 13 October including the spectacular sight of five together over the South Wamses. This latter count represents a peak day-count record, eclipsing the previous highest of seven on 23 October 2011. Thereafter singles were recorded daily on 14-16 October and again on 24 October. Passage continued throughout November with 1-2 noted on six dates on the Outer Group between 5 and 15 November. The final record concerned an individual lingering on the east rocks of Brownsman on 16 November.

### **Swift** *Apus apus*

A well represented summer and passage visitor.

It was another quiet year for this aerial master, as reports remained thin on the ground with records from 22 dates during the summer, as usual with an Inner Group bias. The first sighting of

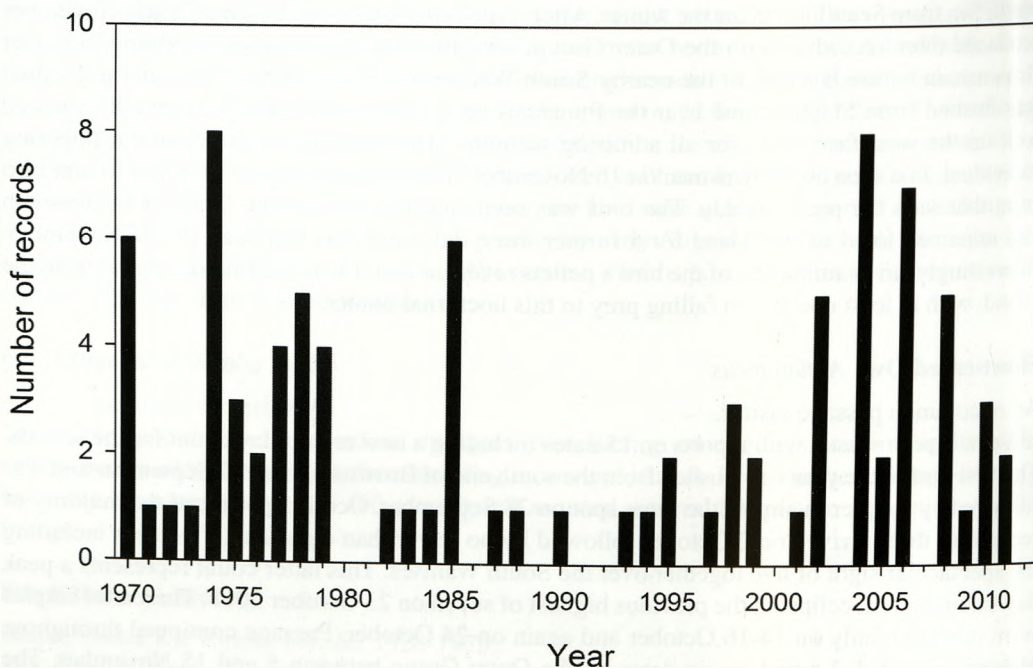
the year involved four north through Inner Sound on 12 May, followed by five north over Inner Farne on 18 May. Thereafter 1-6 were recorded on five June and eight July dates with a modest peak of seven over the Inner Group on 28 June and 3 July. After post-breeding dispersal, birds move rapidly south and 1-3 were noted moving through the Farnes on six dates during August, with a peak of four on 13 August. The final records involved singles over Inner Farne on 11 and 26 September, the latest recorded on the islands in a decade.

### **Wryneck** *Jynx torquilla*

An uncommon passage visitor.

This cryptic east-coast drift migrant appeared for the fourth consecutive year (recorded in 23 of the previous 30 years) as two different birds graced both the Inner and Outer Group of islands. An individual was discovered at the south end of the Dock Bank on Inner Farne on 26 August and commuted to the nearby West Wideopens where it showed well to all admiring wardens. The bird eventually returned to Inner Farne where it remained until dusk. The same day also produced another on Brownsman, which was found below the boardwalk and was later seen going to roost on the north beach area of the island. The islands have now recorded over 105 individuals with some impressive numbers in recent seasons (eight in 2004, seven in 2006 and five in 2008; Fig. 6).

**Fig. 6** Numbers of records for Wrynecks in each year 1970-2011.



### **Great Grey Shrike** *Lanius excubitor*

A scarce passage visitor.

Despite regular appearances in the 1970s and 1980s no one could have predicted that after a bird in October 1991, it would be another 14 years before the next island record. However since that bad run was halted in 2005, the Farnes have recorded a further six individuals including three





**Lesser Redpoll**  
(William Scott)

**Great Northern Diver**  
(Andy Douglas)



**Hen Harrier**  
(Graeme Duncan)







**Black-headed Bunting** (Jamie Coleman)

**Gadwall** (Graeme Duncan)







**Little Egret**  
(Andrew Douglas)

**White-fronted Goose**  
(Jamie Coleman)



**Glaucous Gull**  
(Graeme Duncan)





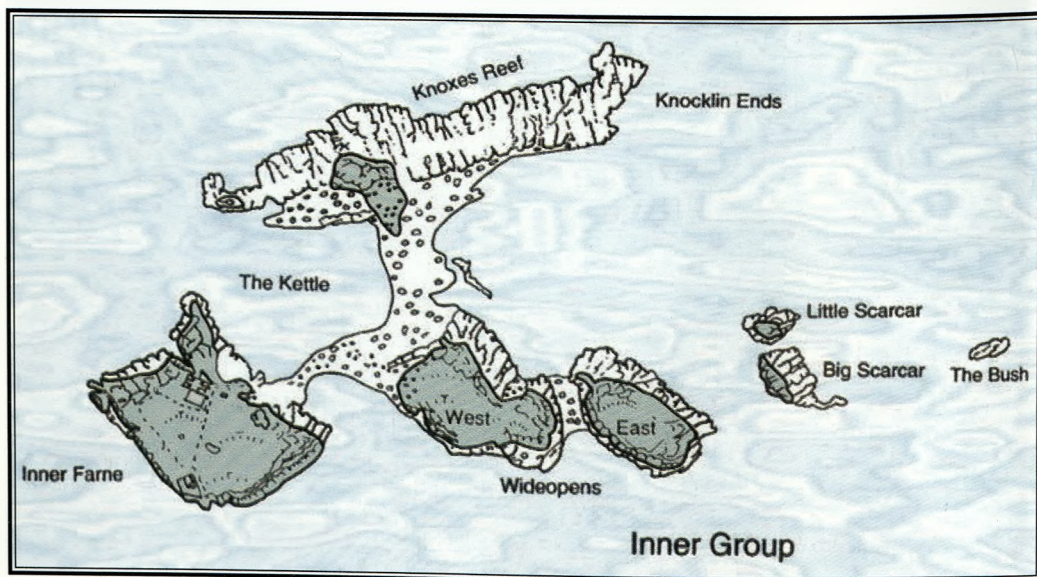
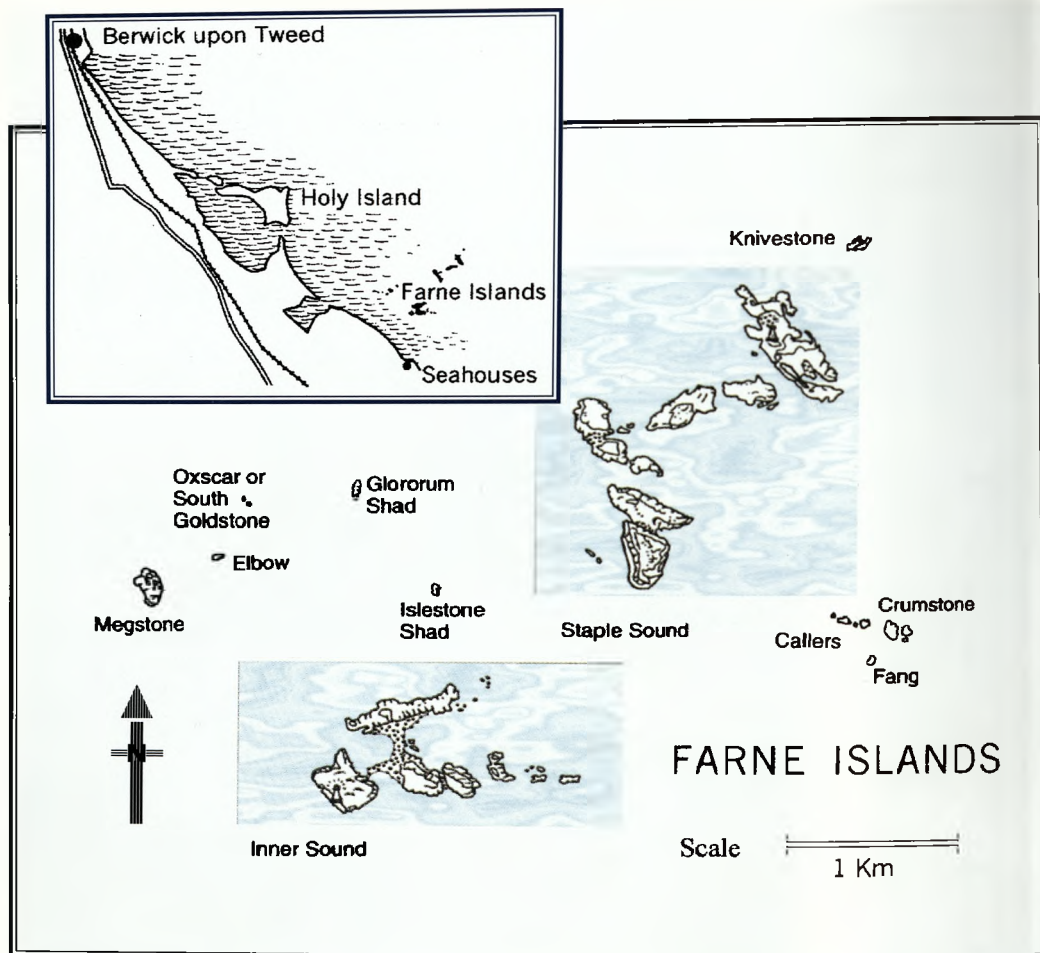


Manx Shearwater  
(Andrew Douglas)

















**Curlew Sandpiper**  
(Andy Denton)

**Wood Warbler**  
(Ciaran Hatsell)



**Leach's and Storm Petrel** (William Scott)





last year. This year an adult was discovered perched on the artificial tree on Brownsman on 24 October and was seen to kill and devour a Brambling soon after its arrival. The bird was still present the following morning when another Brambling was found skewered in its larder (which it later ate). Throughout its stay it showed well to the admiring warden team.

#### **Jackdaw** *Corvus monedula*

A well represented visitor. Former breeder, last in 1966.

The species is still a scarce visitor with the majority of reports involving birds passing overhead during the early spring period. The first sighting of the year involved five over Inner Farne on 19 March as a single flew west whilst four flew east together. This early spring movement over the Inner Group went on to produce 1-2 on four dates from 22-29 March. April produced three west over Inner Farne on 3, a single on Brownsman on 10-11 and four west over Inner Farne on 27 April. A more unseasonal record involved two east over Inner Farne on 26 May. The first autumn passage birds were seen from mid-September with three west over Inner Farne on 14 September with a single on 1 October. The autumn produced a final flurry of records with two west over Brownsman on 15 October and five over Inner Farne the following day.

#### **Rook** *C. frugilegus*

A well represented visitor.

This town and country *corvid* wanders to the islands in small numbers and following two east over Inner Farne lighthouse on 19 March, spring passage produced 1-3 on thirteen dates. Peak passage involved four over the Inner Group on 8 April with another four over Brownsman on 11 April and the final spring record involved a single over Inner Farne on 1 May. As expected, autumn passage was light with 1-3 recorded on six dates between 3 September and 6 November and during this period 12 were noted together over the Inner Group on 26 September. The final record involved two west over Inner Farne on 6 November.

#### **Carrion Crow** *C. corone*

A well represented visitor and rare breeding species.

As usual, the species was well reported throughout the spring and autumn period with large numbers noted. There was an almost daily presence from mid-March (when the wardens arrived) until mid-May with seven double-figure counts including peaks of 24 on 10 April and 21 on 2 May. Interestingly, this species appeared to be present throughout the seabird breeding season, when they are generally absent from the islands, as small numbers were recorded on 15 dates in June and 7 dates in July. As summer progressed, daily sightings resumed with 1-4 recorded almost daily throughout August-December with a peak of ten over Inner Farne on 6 November. Unusual behaviour was observed off Brownsman on 20 November as an individual was noted plucking a food item with its feet from the surface of the sea.

#### **Hooded Crow** *C. cornix*

An uncommon visitor.

This once-common winter visitor is now a real scarcity on the islands with only six records from the previous ten years, all of which have occurred in late March-early April. An individual was seen flying north-west from Longstone on 13 April whilst another was seen flying west through Staple Sound, over Inner Farne and towards the mainland on 24 April.

### **Goldcrest** *Regulus regulus*

A common passage visitor.

It was a contrasting season for this diminutive sprite; after the huge numbers of the previous year, the species was recorded on only 36 dates on the Inner Group and 14 dates on the Outer Group. Spring passage was very light with a single on Brownsman on 21 March followed by two on Inner Farne on 23 March. Passage 'peaked' at three on 25 March with singles on three dates until last seen on 3 April. The first autumn returnee arrived on 20 August with a single on Inner Farne which lingered for a further two days. Thereafter, 1-3 were recorded on nine dates from 24 August-31 September before the bulk of records occurred during October. There was a daily presence from the 2 October with a peak of 10 on 13 October and 13 on 14 October. Numbers dwindled thereafter with just 1-2 recorded on a further six dates until mid-November. The final influx of a below average season involved seven scattered across the island groups on 8 November with the last record involving a single on Brownsman on 12 November.

### **Skylark** *Alauda arvensis*

A common passage visitor. May have bred in 1865 and *ca* 1900.

This declining farmland vocalist was recorded throughout the spring and autumn with typical peak passage occurring during October. It was generally a quiet spring with 1-2 present on Inner Farne on 19-29 March with April producing only two reports: a singing individual on Inner Farne on 7 and another west over the Inner Group on 9 April. The only spring Outer Group records concerned birds in early May with singles on Brownsman on 1 May and another lingering on 9-10 May. After a three month absence, the first autumn returnees were recorded from 14 September when two were discovered on Inner Farne with a single west on 19 September. Thereafter, small numbers became resident throughout the autumn from 29 September and were bolstered by passage birds, with 20 west on 24 October and 17 west on 26 October. Numbers varied with up to six present on Brownsman and three on Inner Farne throughout October-November but all had moved on by late November and it appeared that no birds were over-wintering this year.

### **Sand Martin** *Riparia riparia*

A well represented summer and passage visitor.

This summer hawk was seen on seven dates, a typical annual total for this passage visitor although, interestingly, all records were confined to the Inner Group of islands this year. The first of the season was seen on the early date of 2 April flying north over Inner Farne, the earliest since 2004. An impressive 13 moved north over the Inner Group on 8 April and was followed by two west on 14 April and nine north on 15 April. Strong northerly passage continued with a season's peak of 16 north on 16 April, the third highest-ever island count but falling short of the all-time record of 45 in 1990. The only other spring record concerned a single over the Dock Bank on Inner Farne on 23 May. The only autumn report was of a single south with a flock of Swallows in Staple Sound on 5 September.

### **Swallow** *Hirundo rustica*

A common summer and passage visitor. Scarce breeder.

It was a landmark year for this aerial acrobat with an unprecedented four pairs breeding. The first of the year was noted flying north over Inner Farne on 2 April and thereafter small numbers of 1-17 were recorded on 43 dates during the spring. Peak passage during this period involved 38 west on 8 May whilst small numbers lingered on several islands including one which was caught in the bathroom of Brownsman cottage on 5 May. Interestingly during this period up to seven



were present at Longstone lighthouse where successful breeding had occurred the previous year and eventually a nest lined with seaweed was discovered in the lighthouse compound on 30 May, making this the third consecutive year that breeding was confirmed. The first eggs were found on 19 June and two days later a further two nests were discovered and each nest was confirmed as containing four eggs each with adults in attendance. The first chicks were seen on 2 July and, more impressively, a fourth nest was discovered that day. Further observations revealed that the original three nests contained chicks by 9 July with the fourth pair incubating eggs. Unfortunately strong westerly winds in mid-July affected the supply of invertebrate food around the islands, causing complete failure in three of the nests. Despite this, two chicks fledged and were seen on several occasions feeding around the islands for the ensuing weeks. Adults remained around the Outer Group into August and September, with second broods discovered on 31 August, but once again adverse weather resulted in only two chicks fledging. Interestingly, two birds made incomplete nest cups on Brownsman cottage on 8-9 August but departed soon afterwards. Autumn passage was logged throughout August-September with daily counts of 1-33 birds heading west or south. Peak westerly passage involved 38 on 14 August, 42 on 19 August and a peak of 60 on 20 August. After 56 west on 3 September numbers dwindled as the autumn progressed with the final record involving two west over Inner Farne on 1 October and two south over Brownsman the following day.

#### **House Martin** *Delichon urbica*

A well represented summer and passage visitor. Six pairs attempted to breed in 1950.

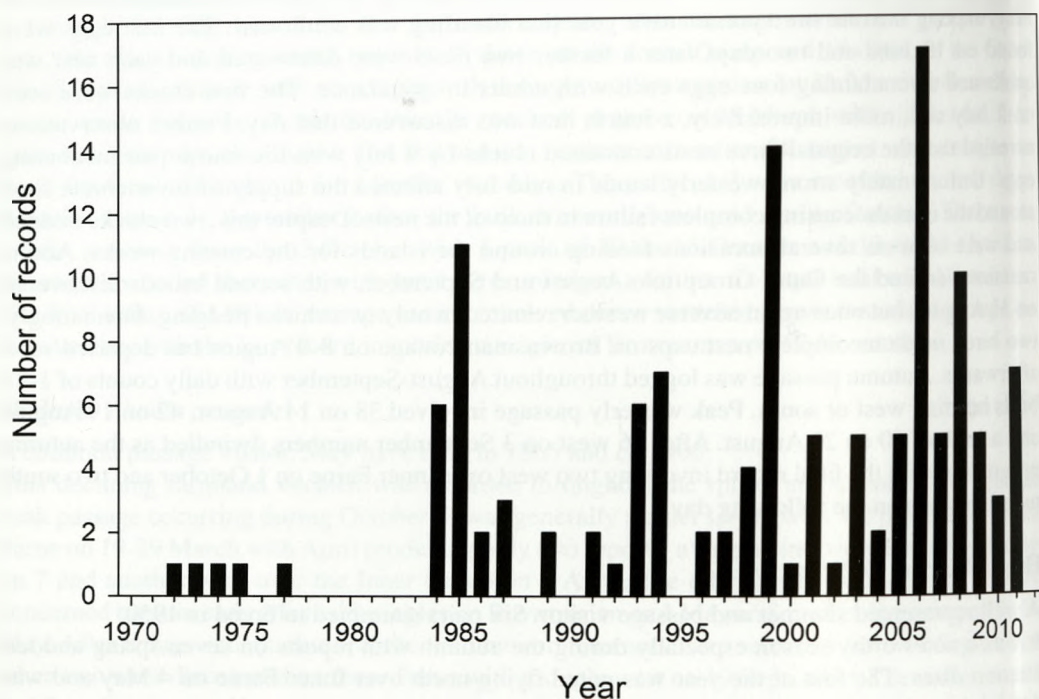
It was a noteworthy season especially during the autumn with reports on seven spring and ten autumn dates. The first of the year was noted flying north over Inner Farne on 4 May and was followed by further singles over the Inner Group on 6 May and Brownsman on 7 May. Thereafter 1-3 were recorded on three dates between 18 and 31 May with the last spring sighting involving two at Longstone on 5 June. Autumn passage commenced from 13 August with two south over Inner Farne and 1-9 were recorded on six dates until 14 September. During this period a group of ten hawked with Swallows over Staple Sound on 5 September whilst a flock of 47 together west over Inner Farne on 11 September was the second highest-ever day total (the highest being 115 on 9 September 1987). The final record concerned three west over Inner Farne on 20 September.

#### **Yellow-browed Warbler** *Phylloscopus inornatus*

An uncommon passage visitor.

Records of this Siberian sprite continue to increase annually, a statistic mirrored nationally; the Farnes boasted 60 during the 2000s, compared with 38 in the 1990s and 24 in the 1980s (Fig. 7). There was another bumper haul in 2011 with seven individuals discovered during the autumn, all in early October. Following light easterly winds, a total of three were at the lighthouse compound on Inner Farne on 1 October, showing well throughout the day, and being joined by a fourth individual the following morning (an impressive count by any standards). The Outer Group eventually got in on the act when an individual showed well around the Brownsman pond on 3 October. To complete the haul, an elusive individual graced Brownsman on 13-14 October and a very confiding bird was discovered feeding around the Longstone lighthouse on 14 October.

**Fig. 7** The number of records of Yellow-browed Warbler in each year 1970-2011.



#### **Wood Warbler** *P. sibilatrix*

An uncommon passage visitor.

This stunning summer visitor appeared on the islands for the second consecutive year as a striking individual was discovered on Brownsman on 7 August. The bird, originally discovered in the garden, showed well during the late afternoon; interestingly, 44% of all Wood Warbler records on the Farnes have occurred during the month of August.

#### **Chiffchaff** *P. collybita*

A common passage visitor.

It was generally a quiet year for this early-returning summer migrant, especially considering the huge numbers seen the previous year. The first of the year was discovered feeding by Longstone lighthouse on 3 April with another singing on Inner Farne the following day. Thereafter, small numbers of 1-3 moved through the islands during the spring with reports on 25 dates with peaks of five on 13 and 29 April. A short-lived easterly weather front in early May produced the largest influx of the spring as up to nine were present daily between 7 and 9 May. Numbers gradually dwindled and the final spring record concerned an individual on Inner Farne on 22 May. After a three month absence, the first autumn Chiffchaffs arrived on 20 September when a single was discovered on Inner Farne. Thereafter 1-4 were recorded on a further 27 dates until late October. Autumn passage never reached the dizzy heights of the previous season (147 recorded on 10 October 2010) and numbers remained modest, with a peak of seven on 2 October. As the autumn progressed, numbers diminished and the final record concerned a late individual on Brownsman on 13 November. An individual of the eastern race *P. c. tristis* was noted on Inner Farne on 23 October and remained throughout the day.



### **Willow Warbler** *P. trochilus*

A common passage visitor.

It proved to be a good year despite the lack of any noticeable 'fall' conditions, as reasonable numbers moved through the islands during spring and autumn. The first arrival was on 10 April when an individual was caught inside the Brownsman cottage whilst another was discovered in the vegetable garden on Inner Farne. The following few days brought 1-2 across the islands with a major influx on 15 April resulting in 23 recorded (nine on Inner Farne, 14 on Brownsman). Thereafter, good numbers moved through the islands with 1-8 noted on 29 dates until last recorded in early June. During this period an influx (which included several pale 'northern' birds) on 6 to 9 May produced 13, 15, 25 and 11 respectively. Thereafter, numbers dwindled with just singles recorded on four dates during late May. The final spring record concerned an individual on Inner Farne on 9 June. The first autumn bird, a fresh juvenile, arrived on Brownsman on 30 July and thereafter passage was documented on 55 dates until mid-October. Numbers during this period generally involved 1-10 scattered across the islands although noticeable influxes occurred with 14 recorded on 7 August, 12 on 8-9 August, 15 on 11 August and 11 the following day. Gradually, numbers declined with daily counts of 1-5 throughout September and reports were few during October with the final record of the year involving a single on Inner Farne on 25 October.

### **Blackcap** *Sylvia atricapilla*

A common passage visitor.

It was another early start for this distinctive summer visitor when a male was discovered on Brownsman on 3 April, following on from last season's earliest ever on 31 March. Spring passage was slow to get underway with another male noted on Inner Farne on 9 April followed by a pair on Brownsman on 18 April. Thereafter records became more frequent with reports of 1-2 on 16 dates between 19 April and 12 May with a modest peak of three on 30 April (which included a female lingering on Brownsman from 29 April to 10 May). The final spring passage records involved two very late female-types on Brownsman on 1 June and on the extreme date of 20 June on Staple Island. Autumn passage commenced from 10 September with two arriving on Inner Farne followed by singles on Inner Farne and Brownsman on 17-18 September. As autumn progressed, numbers increased with 1-6 on 25 dates with a peak of seven on 16 October followed by a noticeable influx on 23-26 October with records of 6, 8, 12 and 10, respectively (the majority on the Inner Group). Further peaks included 12 on 8 November but thereafter numbers dwindled with the final few reports concerning a male on Longstone and a female-type on Inner Farne on 14 November, another female-type on Brownsman on 15 November and the final record of the season on Inner Fane involving a female-type on the Dock Bank on 16 November.

### **Garden Warbler** *S. borin*

A common passage visitor.

It was another below-par showing during the spring, although the two records were better than the blank of the previous spring. Two individuals arrived on 8 May with a single on Brownsman and another on Inner Farne, the latter bird also being seen briefly the following day. The lack of any serious 'fall' conditions during the autumn resulted in only small numbers being recorded with the first autumn arrival noted on Brownsman on 7 August. A small influx occurred four days later as five arrived across the islands with two on Inner Farne and singles on Longstone, Longstone End and Staple Island. Over the following few days, 2-3 lingered with further autumn reports of 1-2 on five dates between 20 August and 18 September. The final record of a quiet autumn involved a single on Brownsman on 30 September.

### **Lesser Whitethroat** *S. curruca*

A common passage visitor.

Predominately a spring migrant through the Farnes, it proved to be a lean year with autumn failing to produce a single report. The first bird of the year arrived on Brownsman on 29 April and favoured the upper vegetable garden, whilst another was found the following day on the Inner Farne Dock Bank. May produced the bulk of records with two on Inner Farne on 7-8 with one lingering until 9 May, whilst two arrived on 10 May. The only other May record concerned a single on Brownsman on 26 May. What proved to be the final record of the year involved a late spring passage bird on Brownsman on 4-6 June which favoured the vegetable garden. Surprisingly there were no autumn records, the first 'blank' autumn since 1991.

### **Whitethroat** *S. communis*

A common passage visitor.

It was a reasonable year for records of this long-distance summer migrant which was seen on 12 spring and 22 autumn dates. The first of the year arrived in the vegetable garden on Inner Farne on 24 April and the next arrivals occurred during a south-easterly weather front between 6-9 May. During this period, two were discovered on 6 May increasing to four on 7 May with an impressive peak of 11 on 8 May (including seven on Inner Farne, three on Brownsman and a single on Staple Island); at least four of these were still present the following day. Spring northerly passage continued with three on 12 May and 1-2 on four other May dates with the final spring report involving one on Inner Farne on 2 June. The first autumn returnee was noted on Inner Farne on 3 August with singles on Brownsman and Inner Farne on 7 August. Thereafter 1-2 were noted on a further ten August dates (including one lingering on Brownsman from 24-29 August), and seven September dates, with peaks of four on 11 August and 8 September. The final record concerned a single on Brownsman on 3 October.

### **Grasshopper Warbler** *Locustella naevia*

A well represented passage visitor.

Over the previous decade, this streaky *Locustella* warbler has had a mixed showing with as few as three in 2002, up to the record-breaking total of 18 last season. As with many of the other migrants, it was a quiet year with the only spring report concerning a confiding individual on Brownsman on 8 May. All other reports were from mid-August when two were discovered on Staple Island on 11 August followed by singles on Inner Farne and Brownsman on 13 August. The last record involved a single on Longstone End on 14 August.

### **Icterine Warbler** *Hippolais icterina*

An uncommon passage visitor.

The islands continued their impressive run of recent records as this classic east-coast drift migrant appeared on the islands for the sixth consecutive year. A first-winter bird was discovered near the vegetable garden on Brownsman on 25 September and remained throughout the following day, showing well on occasions for the admiring wardens. This represents the 69th record for the islands since the first on 3 September 1963 and the species has been recorded in 16 of the previous 20 years.

### **Sedge Warbler** *Acrocephalus schoenobaenus*

A well represented passage visitor.

This trans-Saharan migrant is only recorded in small numbers annually on the islands and this



year was no different with 1-2 noted on nine spring and twelve autumn dates. The first of the year arrived on 6 May with a single flushed off the Dock Bank on Inner Farne and another on Brownsman the following day. Spring peak passage occurred on 8 May when five were recorded, two on Inner Farne and three on Brownsman. Thereafter singles were recorded on five further dates until the last spring record of a single on Inner Farne on 26 May. The first autumn passage bird was discovered on Inner Farne on 3 August followed by another on Brownsman on 5 August. During August there were single records on eight dates including a lingering individual on Inner Farne on 11-13 August. The final records concerned one on Brownsman on 3 September and another on Inner Farne on 9 September.

#### **Reed Warbler** *A. scirpaceus*

A well represented passage visitor.

This reedbed specialist is recorded annually in small numbers, with the majority of Farne records occurring during the autumn. After a 'blank' spring, it proved to be a very disappointing season with just three confirmed records. The first record of the year was on Staple Island and this bird favoured the east side of the island for two days between 7-8 August. The only other records included a showy individual on Longstone End on 11 August with another on Brownsman on 23 August.

#### **Waxwing** *Bombycilla garrulous*

An uncommon winter and passage visitor.

Recent years have seen some impressive early-winter irruptions with good numbers recorded on the Farnes in 2004, 2008 and 2010. This year produced just a lone record, an individual flew low past the west face of Staple Island on 15 November before heading west with accompanying Redwings. This represents the sixteenth year the species has been recorded since the first in 1949, although more notably the fifth in the previous ten years.

#### **Wren** *Troglodytes troglodytes*

A common visitor and passage migrant. A rare breeder.

Despite the harsh weather, small numbers over-wintered on the islands and these birds were evident during mid-winter visits with up to three noted on several dates on Inner Farne during February-March. When the wardens arrived on 18 March up to seven were present on Inner Farne and four on Brownsman. On Inner Farne numbers remained high with up to five resident into early April but thereafter numbers dwindled with 1-2 present until last seen on 25 April. It was a similar story on Brownsman where 1-2 were present until last seen on 14 April. After a four month absence, the first autumn arrival was seen on Inner Farne on 1 September although it was a slow start with further singles on 9 and 22 September. After the arrival of an individual on Inner Farne on 28 September, birds were resident throughout the autumn period with small numbers again wintering on the islands. During the autumn, peak counts included up to six on Inner Farne and three on Brownsman in late October and in early December up to four were over-wintering on Inner Farne with singles on Staple Island and Brownsman.

#### **Starling** *Sturnus vulgaris*

A common visitor, extremely rare breeder.

One of the most numerous passerines recorded on the islands, especially from mid-summer when local birds commute daily to the islands, whilst immigrants arriving from northern European bolster numbers during the autumn. As usual, small numbers were present daily from mid-March

to 3 April with up to ten noted on 19 March. Thereafter there was a complete absence until a singing male was noted on Brownsman on 2 May with possibly the same individual noted on Inner Farne the following day. After another four week absence the first family parties started arriving from the mainland in early June. A family party of two adults and two juveniles visited both Inner Farne and Staple Island from 4 June and numbers gradually increased during the month with 19 on 13 June, 35 on 18 June and 45 on 24 June. Thereafter there was a continued presence until the wardens departed the islands in early December with mid-summer peak counts of 144 on 5 July, 155 on 22 August increasing to 168 the following day and 210 on Inner Farne on 27 August. As the autumn progressed, local numbers were swelled by continental immigrants moving in small groups westwards towards the mainland, with counts of 196 on 23 October and 258 on 24 October. November produced a resident flock of up to 60 across the islands which were still present when the wardens departed.

#### **Ring Ouzel *Turdus torquatus***

An uncommon passage visitor.

It was a disappointing season for sightings of this upland thrush as the islands recorded just a single bird, mirroring the worst season on record in 2008. An individual was discovered on the artificial tree on Brownsman on 23 October and showed well in late afternoon but was not seen the following day.

#### **Blackbird *T. merula***

An abundant passage visitor. Rare breeder, last in 1974.

Small numbers over-winter on the islands with light passage recorded in spring, whilst autumn traditionally witnesses the largest movements. When the wardens arrived in mid-March, small numbers were scattered across the islands with a peak of seven on Inner Farne on 22 March and four on Brownsman on 26 March. Birds remained in residence into mid-April with 1-2 on Inner Farne and Brownsman until 19 April (including one individual seen departing east out to sea from Longstone on 15 April). The final spring sighting involved two females on Brownsman on 7 May with one still present the following morning. The first autumn migrants started moving through the islands from 27 September with a single on Staple Island followed by nine across the Outer Group on 1 October. Thereafter birds either lingered (up to 80 on occasions) or moved through on westerly passage with peak counts shown in Table 7. As the autumn progressed, numbers dwindled and as the wardens departed just a handful remained with two on Inner Farne and an individual on Brownsman in early December.

**Table 7.** Peak westerly passage of thrushes over the Farnes on selected dates in 2011.

	1 Oct	13 Oct	23 Oct	8 Nov	12 Nov
<b>Blackbird</b>	9	185	156	142	147
<b>Fieldfare</b>	0	1,062	82	167	38
<b>Song Thrush</b>	139	28	7	9	2
<b>Redwing</b>	798	2,012	146	190	28



### **Fieldfare** *T. pilaris*

A common passage visitor.

This large northern thrush is recorded on spring and autumn passage and if winds are favourable impressive numbers can be recorded. As usual, spring passage was very light with only three records including two on Inner Farne on 30 March, a single west over the Inner Group on 2 April, and a final spring report of one on Brownsman on 20 April. The first autumn migrants arrived in early October with two west over Brownsman on 9, another west on 10 and two on the artificial tree on 12 October. After a switch of wind direction to the north-east, a major movement occurred on 13 October with 1,062 west over the islands throughout the day and 71 stragglers recorded the following day. Thereafter birds were recorded on westerly passage throughout October and November with generally 1-43 noted daily although further peaks occurred with 67 on 3 November and 167 west on 8 November. The number of reports gradually decreased and the final record concerned a single on Staple Island on 21 November.

### **Song Thrush** *T. philomelos*

A common passage visitor.

Small numbers of northern breeders move through the islands during spring and autumn migration but are often over-looked in large concentrations of other thrushes. It proved to be a very quiet spring period as only two were recorded including one on Inner Farne on 21 March and an individual seen on Brownsman on the late date of 7 May. The first autumn birds arrived in mid-September with two on Inner Farne on 16-17 September. Following a single on Inner Farne on 26 September, the flood gates opened and birds were recorded throughout October-November. Small numbers of 1-25 lingered on various islands during this period with peak passage involving 139 west on 1 October and 73 on 2 October. As winter approached, records diminished with the final record concerning a single on Brownsman on 2 December.

### **Redwing** *T. iliacus*

An abundant passage visitor.

Although small numbers of northern-bound migrants move through the islands on spring passage, the autumn months are the time to witness heavy passage, especially if weather conditions prevail from the east in October. As expected, spring passage was light with a single on Inner Farne on 29-30 March increasing to four on 31 March. The final spring report concerned a single on Brownsman on 11 April. The first autumn migrants started filtering through the islands in mid-September as a single arrived on Inner Farne on 17 September with ten across the islands on 30 September. Thereafter the winds switched to the east bringing an impressive passage as shown in Table 7. Apart from these major movements, 1-72 were recorded daily throughout the autumn with numbers gradually decreasing in late November; one was noted on Inner Farne on 3 December and another on Brownsman on 22 December.

### **Mistle Thrush** *T. viscivorus*

An uncommon passage visitor.

The species remains scarce on passage as the islands produce only a handful of records each season. In total, three different individuals were noted, all during November. The first involved a single on Inner Farne which was seen over Central Meadow on 4 November whilst another was noted at dusk near the lighthouse on the same island on 22 November. The third and final record involved one west over Brownsman on 28 November.

### **Spotted Flycatcher** *Muscicapa striata*

A well represented passage visitor.

It was a quiet season although the islands produced their first spring sightings for three years. The first bird of the year arrived on Brownsman on 7-8 May with another on Inner Farne on the latter of those days. A very late passage bird was noted in the vegetable garden on Brownsman on 5 June. Autumn passage was extremely light, just three records with individuals present on Inner Farne on 11 August, Brownsman on 20 August and Inner Farne on 25 September.

### **Robin** *Erithacus rubecula*

A common passage visitor. Bred in 1951.

It was a tough winter for the small over-wintering population on the islands with several months of snow and cold temperatures hampering winter survival. Despite this, at least two were seen in mid-February and when the wardens arrived in mid-March, 2-3 were still present. Early spring peaks included four on 23 and 29 March but numbers quickly dwindled in early April with singles on Inner Farne on five dates until 23 April and Brownsman on three dates until 21 April. The final spring record involved one present in the vegetable garden on Inner Farne on 10 May. The first autumn returnee appeared early as an individual was discovered on Longstone on 3 August followed by further singles on Inner Farne on 14 and 18 August with a juvenile noted on Brownsman on 31 August. Gradually, birds became more numerous with some taking up residence once again on Inner Farne from early September with 1-2 present increasing to 3-4 by mid-October. The autumn produced no large influxes as experienced in 2010 (which produced a peak day count of 122 on 10 October) and the modest peak day totals included eight on 26 October and 19 on 8 November. Thereafter, numbers dwindled and as the wardens departed in early December, small numbers were again over-wintering with a single on Brownsman and up to three on Inner Farne.

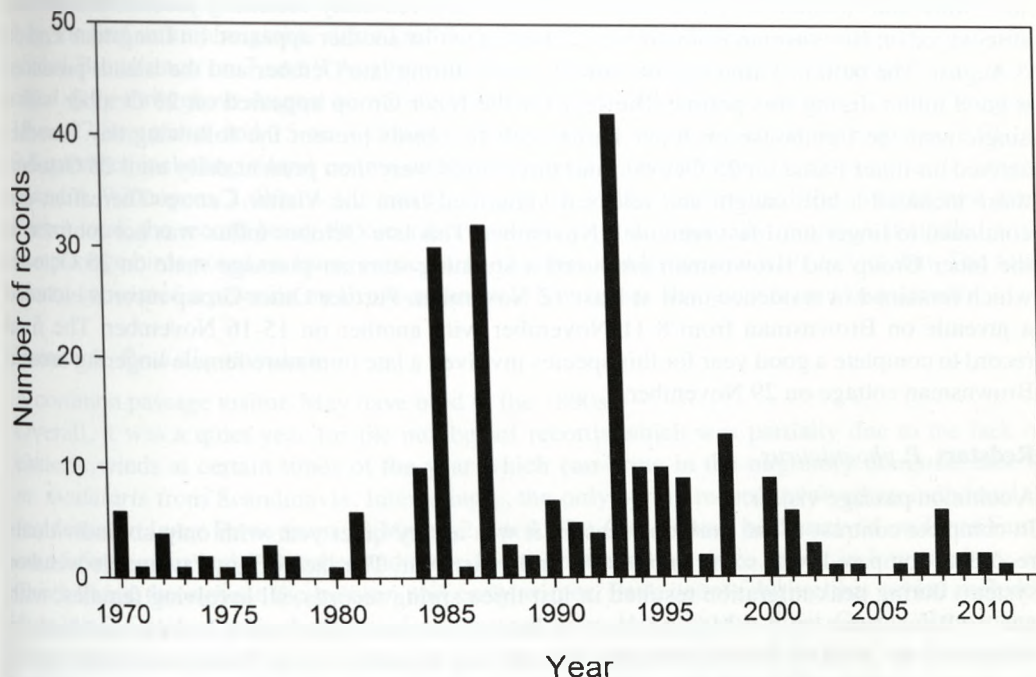
### **Bluethroat** *Luscinia svecica*

An uncommon passage visitor, well represented in some years.

The Farnes remain part of a handful of exclusive UK localities which can still boast annual records, despite numbers on passage decreasing considerably (Fig. 8). In 60 years of recording, the Farnes have boasted records in every year apart from nine seasons with recent 'blanks' occurring in 1983, 1999 and 2005. The species was regarded as predominately a spring passage migrant, with just 16 documented autumn birds but that has slowly changed in recent years. An adult female graced Brownsman on 15-16 October and showed well to the admiring warden team during its stay. The bird favoured the buildings on the island and could often be found doing a set circuit around the cottage. This represents the fifth consecutive year that the islands have boasted autumn birds compared with three spring years.



Fig. 8 The number of records for Bluethroat in each year 1970-2011.



#### Red-breasted Flycatcher *Ficedula parva*

An uncommon passage visitor.

One of the real highlights of the spring was the discovery of a female in the vegetable garden on Brownsman on 26 May. The bird showed well for all admiring wardens as it often perched on the surrounding fence lines allowing great views of this classic east coast drift migrant, which last occurred in October 2009. Although the islands boast 49 previous records, they remain rare in spring as this represented only the fourth spring occurrence with previous individuals in May 1984, May 1987 and May 1988.

#### Pied Flycatcher *F. hypoleuca*

An uncommon passage visitor.

This majestic black and white flycatcher has become a scarcity on spring passage and a female on Brownsman on 7-8 May was only the second spring record in the previous five years. Autumn passage commenced with the arrival of four on 11 August (two on Inner Farne and singles on Longstone and Staple Island), which proved to be a very modest peak count for the year. At least one of the Inner Farne birds lingered until 13 August. Other autumn records concerned individuals on Brownsman on 31 August, Inner Farne on 17 September and Brownsman on 25 September. The final record in a disappointing year for this species concerned a single on the Dock Bank on Inner Farne on 3 October.

#### Black Redstart *Phoenicurus ochruros*

A well represented passage visitor.

The Farnes remains one of the best north-east localities for this passage visitor and the year produced another impressive haul. Light spring passage brought a stunning male coming into

summer plumage on Brownsman on 3 April with females present on Brownsman from 30 April to 3 May and another on Longstone on 30-31 May. An early returning juvenile/female was discovered on Brownsman from 30 July-1 August whilst another appeared on Longstone End on 3 August. The bulk of Farne reports usually occur during late October and the islands produced a good influx during this period. The first for the Inner Group appeared on 23 October with a single near the lighthouse on Inner Farne with two birds present the following day. Another arrived on Inner Farne on 25 October and three birds were then present daily until 28 October: these included a bird caught and released unharmed from the Visitor Centre. Thereafter, one continued to linger until last seen on 4 November. This late October influx was not confined to the Inner Group and Brownsman produced a stunning summer-plumage male on 25 October which remained in residence until at least 12 November. Further Outer Group records included a juvenile on Brownsman from 8-11 November with another on 15-16 November. The final record to complete a good year for this species involved a late immature/female lingering around Brownsman cottage on 29 November.

**Redstart** *P. phoenicurus*

A common passage visitor.

In complete contrast to the previous season, it was a very quiet year with only six individuals recorded, compared with some impressive 'falls' last year. The lack of any favourable weather systems during peak migration resulted in just three spring records, all involving females, with one on Brownsman on 5-6 May, another on Inner Farne on 8 May and a late passage bird on Longstone on 26 May. The first autumn migrant was discovered near Brownsman jetty on 17 September with a male lingering near the cottage on 27 September. The final report of the quietest season for this species since 2003 involved an individual on Brownsman on 1 October.

**Whinchat** *Saxicola rubetra*

A common passage visitor.

The trend of recent years continued as spring produced just a handful of records with the majority of reports occurring during autumn passage. The first of the year, a male, arrived on Brownsman on 5 May and moved to adjacent Staple Island where it was still present the following day. The only other spring records involved a mini-influx during light south-easterly winds on 8 May which produced five across the islands including a male and two females on Inner Farne and two females on Brownsman. The first autumn migrants arrived on Inner Farne on 7 August followed by a light influx during 11-15 August. On Inner Farne there were three on 11 with two present on 12-13 and a single still evident on 14 August whilst a juvenile lingered on Brownsman from 11-15 August. Further autumn records included 1-2 on 5-8 September, four on 16 September which increased to five on 17 September with 1-3 on a further three dates until 29 September. The last record concerned a single on Staple Island on 30 September.

**Wheatear** *Oenanthe oenanthe*

A common passage visitor. Bred in six years from 1931-59.

The sentinel of the uplands was very evident on passage through the islands with reports from 43 spring and 70 autumn dates and as usual Greenland race birds were recorded in small numbers. The first of the year arrived on 25 March and two males graced Inner Farne with another two present on 29 March. After a lingering male on 30-31 March, spring northerly passage intensified with 1-8 recorded on 24 dates in April with peaks of 12 on 3 April, 15 on 11 April, 18 on 19 April and 13 on 20 April. As spring progressed, numbers dwindled with reports of 1-3 on eleven May



dates with a peak of four on 6 May. Late spring stragglers were noted on Inner Farne on 1 June and Brownsman on 4-5 June. After a mid-summer record of an individual on Inner Farne on 3 July, the first autumn migrants started moving through the islands from early August. A juvenile graced Brownsman on 7 and 9 August with three present on 11 August. Thereafter, 1-10 were noted daily throughout August to mid-October with peak passage involving 12 on 18 August, 19 on 27 September and 15 on 3 October. However this was eclipsed by an impressive 71 on 8 September including island counts of Brownsman 27, Inner Farne 25, Longstone 10, Staple Island 4, Wideopens 2, Wamses 2 and Knoxes Reef 1. This represented the third highest ever Farnes total, the record being 80 recorded on 4 May 1962. Gradually, numbers dwindled with late passage birds noted on Inner Farne on 15 October and Brownsman on 24 October. The final record concerned a juvenile on Brownsman on 2 November, the latest record in a decade.

#### **Dunnock** *Prunella modularis*

A common passage visitor. May have bred in the 1890s.

Overall, it was a quiet year for the number of records which was partially due to the lack of easterly winds at certain times of the year which can bring in the migratory nominate race *P. m. modularis* from Scandinavia. Interestingly, the only spring record involved an individual in residence on Inner Farne from 18 March-2 April. The first autumn birds arrived on Inner Farne on 15 September and 1 October and there was a continued presence, albeit in low numbers, on Inner Farne throughout the autumn and early winter. Peak counts during this period included four on 2 October with three noted on several dates. As with the Inner Group, Brownsman experienced a similarly low number of reports and after the first of the year on 11 October, singles were recorded on only a further nine dates until last seen on 16 November.

#### **Tree Sparrow** *Passer montanus*

An uncommon visitor.

Sparrows remain the quintessential 'Farnes rarity' as neither House nor Tree has been recorded since 2007. However the barren spell was ended with the appearance of an individual on Brownsman on 3 April. The species has been recorded on 26 occasions in the previous 40 years, the majority during spring passage and this was the first record since the long-staying individual of September-December 2007.

#### **Yellow Wagtail** *Motacilla flava flavissima*

An uncommon passage visitor.

This declining summer visitor has had some interesting years of late with no records in 2007 compared with the impressive influxes of last season when the islands recorded double figure counts on two days. 2011 proved to be another lean year as the islands boasted just three birds. The first of the year, a vocal male, landed on the west side of Inner Farne on 30 April before disappearing west. Another individual flew over Staple Island and landed on Brownsman on 6 May before eventually turning west toward the mainland. The only autumn report concerned an individual on Inner Farne which roosted on the Dock Bank (with Pied Wagtails) on 2-3 August.

#### **Grey Wagtail** *M. cinerea*

An uncommon passage visitor. May have bred in the 1890s.

The population in Scotland and northern England are partial migrants as birds move to southern Britain for the winter. It proved to be a quiet year, with only four records, matching the lowest annual total in 1997. The only spring report involved one on the north rocks of Inner Farne on

19 March which departing west towards the mainland. The first autumn record involved a single over Inner Farne on 19 September, another on the north rocks of Brownsman on 24 October and the final record concerning one over Brownsman on 5 November.

#### **Pied Wagtail** *M. alba yarrelli*

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

When the wardens arrived in mid-March, at least one pair had established territory on Inner Farne with several passage birds logged during this period. Nesting activity was noted from 21 April and the first eggs were discovered on 4 May. Once again, nest sites varied with birds utilising the hole above the window in St Cuthbert's chapel and the lighthouse compound on Inner Farne, although the open fronted nest box was not used this year. On the Outer Group, a pair used an old bin on Longstone as a nest site whilst a stone wall was used on Brownsman. The population continued to remain stable with 5 (5) pairs nesting as follows (2010 figures in brackets): Inner Farne 2 (2), Brownsman 1 (1), Staple Island 1 (1) and Longstone Main 1 (1). It proved to be another successful year for the breeding population (good numbers of young fledging) and adults carrying food were recorded from 12 May and the first fledglings appeared across the islands from 24 May. Once again, successful second broods were discovered, with young fledging from Inner Farne and Brownsman nests. After the breeding season, the now-traditional evening roost on the Dock Bank/Cemetery Bank on Inner Farne brought good numbers to the islands with 40+ recorded on several late August dates. Small numbers remained throughout September and gradually became increasingly rarer with the last confirmed sighting of the autumn noted on 28 October.

It was an excellent year for the continental sub-species '**White Wagtail**' *M. alba alba* which are recorded annually on the islands with the majority of records occurring on spring passage. The first of the year, a male, was noted on Inner Farne on 10 April followed by an impressive four males together on Ladies Path on the same island the following day. Spring passage continued with singles on seven dates between 15 April and 4 May with a second peak of three on Inner Farne on 16 April. The final record of the year concerned a female on Inner Farne on 8 May. Due to the difficulties of autumn identification, records of *Alba spp.* considered to be 'White Wagtails' were noted on Brownsman on 23 August, Staple Island on 31 August and Inner Farne on 11-12 September.

#### **Richard's Pipit** *Anthus richardi*

A scarce visitor.

The Farnes have now become *the* locality in the north-east of England for this robust Siberian Pipit, as the almost total monopoly of Northumberland records continued. A vocal bird was discovered on the south side of Brownsman on 14 October before eventually flying west towards the mainland. Thankfully for the Inner Group wardens, the bird arrived minutes later on Inner Farne favouring the south end of the island and remained in residence for three days, occasionally commuting to the nearby West Wideopens. A second bird was discovered on the north hill of Brownsman on 27 October but did not linger and flew west soon after. These two records bring the overall Farnes total to 22 since the first individual on 14 September 1993. Interestingly, this represented the seventh consecutive year that the species has been recorded, involving no fewer than 13 individuals during these seven years.



### **Olive-backed Pipit *A. hodgsoni***

An extremely rare visitor.

One of the major highlights of the autumn was the discovery of this eastern vagrant, which followed hard on the heels of the record last season. An individual was seen and heard as it moved from Top Meadow to Central Meadow on Inner Farne on 1 October and showed reasonably well in long grass, despite its skulking nature. The vocal bird then moved back over to Top Meadow but unfortunately was not seen again as light faded. This represents the fourth Farnes record and the first for the Inner Group after individuals on Brownsman on 12-15 October 2010, 14-15 October 2001 and 28-29 September 2001.

### **Tree Pipit *A. trivialis***

A common passage visitor.

It was a quiet year for this woodland breeder as only small numbers were recorded during both spring and autumn passage. The first of the year arrived on Inner Farne on 16 April (earliest since 2003) and was followed by singles on Staple Island on 18 April, Brownsman on 19 April and Inner Farne on 20-23 April. The latter sightings involved up to two birds, which were both present on 21-22 April. The first autumn migrants arrived on 7 August with two present on Inner Farne and another lingering on Brownsman from 11-13 August. After an individual on Brownsman on 23 August, 1-2 were recorded on eight dates from 23 August-30 September. The only noticeable arrival during the autumn involved a small influx in early October as two lingered on Brownsman on 1-2 October with a further four west on the latter date. The final record concerned one near the pond on Brownsman on 3 October. A very frustrating record of a vocal bird flying high west over Brownsman on the very late date of 24 October could not be assigned to species, as Olive-backed Pipit could not be ruled out at that late stage.

### **Meadow Pipit *A. pratensis***

A common passage visitor. Bred *ca* 1901 and in eleven years 1946-1973.

As usual, the species was one of the most numerous passage migrants on the islands during the spring and autumn and it was evident that the mild spring had prompted an early start to northerly passage. Birds were evident across all the islands with small numbers moving north daily from 19-30 March with a peak count of 28 north on 25 March. April continued where March had left off with an impressive 351 north on 2 April, the third-highest day count for the islands. Thereafter, numbers dwindled with 1-9 logged daily throughout April and early May. Eventually, birds became scarce and the last spring record concerned two west over Staple Island on 17 May. After a three month absence, the first autumn migrants started arriving on 5 August with 13 south over Brownsman. Passage was slow to build with 1-6 on 20 dates in August, but birds were almost daily throughout September and October. Daily counts ranged from 1-32 most days with peaks of 39 on 9 September and 55 on 14 September. The best autumn showing involved 112 on Inner Farne and 75 on Brownsman on 2 October. As expected, numbers dwindled as the autumn progressed and the species was scarce by mid-November with the final record of a single on Brownsman on 15 November.

### **Rock Pipit *A. petrosus***

A common resident well represented as a breeding species.

It was a good year for this parachuting passerine and excellent numbers were recorded breeding. Birds were singing and in flight display from early March with the first indications of nest building noted from 13 April. The first eggs were discovered on 3 May and the population remained stable

with a total of 24 (22) pairs nesting as follows (2010 figures in brackets); Inner Farne 5 (5), West Wideopens 2 (2), East Wideopens 1 (1), Staple Island 3 (3), Brownsman 9 (9), North Wamses 1 (0), South Wamses 1 (0), Longstone Main 1 (1) and Longstone End 1 (1). Adults were kept busy throughout May to June and it appeared to be a productive breeding season with second broods raised on several islands. Good numbers of fledglings were seen, especially in mid-August, and thereafter the local population was swelled in the autumn by northern breeding birds. Counts during this period included 17 on Longstone End on 3 October and 20 on Inner Farne on 15 October. More unusually, a male was heard and seen singing in flight on Brownsman on 12 October.

#### **Chaffinch** *Fringilla coelebs*

A common passage visitor.

Small numbers move from the near continent during the spring and autumn, and the majority of island reports are believed to involve these birds. It was a quiet season (compared to the previous record breaking year) with spring passage noted on five dates. The first of the year, a male, was discovered on Inner Farne on 21 March with a female on Brownsman on 27 March, two west over the Inner Group on 1 April and a lingering female on Brownsman on 10-11 April. The first autumn migrant arrived on 17 September with an individual on Inner Farne and thereafter all records referred to sightings in October-November. Passage produced 1-4 on 11 dates in October with a peak of 13 on 14 October (eight on Brownsman, five on Inner Farne). November proved no better as only 1-4 were noted on nine dates until last recorded on Brownsman on 17 November.

#### **Brambling** *F. montifringilla*

A common passage visitor.

As expected, the bulk of records of this handsome northern finch were reported in the autumn, and a quiet spring produced just a single sighting. A stunning adult male, in almost full summer plumage, was discovered on the artificial tree on Brownsman on 11 April. The first autumn migrants arrived in late September and two were present on Inner Farne on 25 September with one lingering until the next day, and a single flew west over Brownsman on 27 September. After ten on 30 September (six Brownsman, two Staple Island, two Inner Farne), the main influx occurred over the following few weeks. A total of 47 were logged on 1 October with 17 west and 15 lingering on both Inner Farne and Brownsman. The following day, 21 were still present with small numbers lingering over the subsequent few days. Another surge of birds moved through the islands on 13 October, with 55 west over the Outer Group and 1-6 were present daily until 27 October. During this period, at least two fell victim to a resident Great Grey Shrike on Brownsman on 24 October. Gradually, passage declined and 1-4 were noted on five dates in early November with the final report concerning a single on Brownsman on 11 November.

#### **Greenfinch** *Chloris chloris*

A well represented passage visitor.

It was another poor season for records of this large seed-eater, continuing the trend of recent years, as the islands produced just two records. The only reports concerned singles west over Inner Farne lighthouse on 22 March and 7 April. This follows on from just two records the previous year and five the year before. It has now been five years since the islands boasted any good numbers.



### **Goldfinch** *Carduelis carduelis*

A well represented passage visitor.

This colourful seedeater is predominately recorded on spring passage and this year was no different with reports on ten dates compared to six autumn dates. The first of the year involved two east over Inner Farne on 28 March with another on the island on 30 March. April produced reports of 1-4 on seven dates between 8-20 April with a peak of five north over the Inner Group on 16 April. The final spring record concerned a single east over Brownsman on 27 April. The first autumn birds were logged on 27 August when two flew west over Inner Farne followed by single juveniles on Inner Farne on 12-14 September and 3-4 October. The final autumn report concerned two south over Brownsman on 16 October.

### **Siskin** *C. spinus*

A common passage visitor.

It was a quiet season with light westerly passage logged on thirteen dates with the first reports of the year involving individuals west over Inner Farne on 21 and 29 March. The only other spring report concerned two north over Ladies Path on Inner Farne on 8 April. As usual, mid-summer brought a small arrival as four flew west over Staple Island on 26 June and, later that day, another dropped in on Inner Farne before eventually departing west. During this spell, a very confiding juvenile was discovered on the east side of Staple Island on 28 June. Autumn passage commenced with a female on Inner Farne on 13-14 September, with another over the lighthouse on the same island on 17 September. All other reports involved 1-2 on four dates between 2-11 October with the final record of a quiet year involving two on Inner Farne on 22 October.

### **Linnet** *C. cannabina*

A common passage and winter visitor. Bred in the 1890s.

Linnets are numerous throughout the year as the islands attract a combination of passage and loafing birds. When the wardens arrived in mid-March there was a daily presence until late April, especially on the favoured Inner Group. Numbers remained low with 1-8 recorded throughout although passage produced 17 north on 2 April with 15 the following day. Other double-figure counts included 10 on 11 April and a spring peak of 18 north on 16 April. Gradually, numbers declined and the final spring reports concerned two east over Brownsman on 2 May with another two over Inner Farne on 30 May. The first autumn Linnets arrived from 11 September and once again a small resident flock became established on Inner Farne with occasional roving birds recorded on the Outer Group. Numbers during the autumn involved 1-23 daily with a modest peak of 46 on 27 September. Birds were still present when the wardens departed in early December.

### **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, predominantly during the autumn months. It was a very quiet year with reports on five dates including a single associating with linnets on the Dock Bank on Inner Farne on 15 October. Another individual was discovered on Staple Island on 28 October with three present on Inner Farne on 31 October, which proved to be the highest count of the year. The final record of the autumn involved a single lingering on Brownsman on 5-6 November.

### **Lesser Redpoll** *C. cabaret*

An uncommon passage visitor.

It was a good year for records of this small distinctive visitor with reasonable numbers moving through during the autumn. The only spring report concerned a single near the lighthouse on Inner Farne on 15 April. The first autumn birds were noted from early September with singles on Inner Farne on 5 and 8-10 September. Thereafter 1-5 were noted on a further 11 dates in September and seven dates in October with some noticeable passage during this period. Peak counts included 10 west over Inner Farne on 22 September with six west the following day and nine west on 27 September. The only other passage of note included 11 west on 2 October before numbers dwindled with the final report concerning a single on Inner Farne on 31 October.

### **Mealy Redpoll** *C. flammea*

An uncommon passage visitor.

After the irruption last season, numbers returned to normal as the islands produced just a single autumn record. A very tame individual (approachable to within a few feet) was discovered feeding below the lighthouse on Longstone on 8 November. It soon moved west to nearby Brownsman where it found more suitable feeding habitat and remained for a further seven days and was last seen on 15 November. This represents the seventh consecutive year the species has been recorded on the islands.

### **Common Rosefinch** *Carpodacus erythrinus*

An uncommon passage visitor.

This chunky east-coast drift migrant appeared for the thirteenth consecutive year on the islands, as the Farnes remains the number one site for the species in the north-east. An immature/female was flushed from the pond area on Brownsman on 23 August and unfortunately departed high west before it could be observed by the majority of the warden team. The bird arrived during an influx down the east coast and represents the 65th record since the first in May 1972.

### **Snow Bunting** *Plectrophenax nivalis*

A well represented passage visitor.

This charismatic visitor had a reasonable showing although there were no spring records. The first of the year, an adult male on Inner Farne, showed well on Ladies Path on 17 September and was followed by another calling over Brownsman on 1 October. Further October records involved four west over Inner Farne on 14 October, with another west over the Inner Group on 22 October. November produced the bulk of records and 12 on Brownsman on 5 November increased to 15 birds the following day. This mobile flock was seen on several islands across the Outer Group including Brownsman, Big Harcar and Longstone. Thereafter 1-4 were recorded on a further 11 dates in November until the last record of an immature on Brownsman on 28 November.

### **Lapland Bunting** *Calcarius lapponicus*

An uncommon passage visitor.

Reports returned to normal after the unprecedented influx last autumn of this high arctic breeder, with the first records of the year involving two west over Inner Farne on 19 September. Further records included a single discovered on the east side of Brownsman on 24 October, followed by singles west over Inner Farne on 31 October and 1 November completing a quiet autumn.



### **Reed Bunting** *Emberiza schoeniclus*

A well represented passage visitor.

It was a poor year for records of this species and reports were received from just two spring and sixteen autumn dates with a very modest peak of eight during October. Spring passage produced two records with a male noted on Inner Farne on 22 and 27 March. The first autumn birds were logged on 1 October with three on Inner Farne and a single on Brownsman. Thereafter, the expected avalanche of records did not materialise and only 1-5 were recorded on a further seven October dates with a peak of eight on 25 October. There was no real improvement in November as 1-2 were recorded daily between 11-17 November with the final record of a poor autumn involving a single on Brownsman on 23 November.

### **Black-headed Bunting** *E. melanocephala*

Extremely rare visitor.

Another of the major highlights of the year involved the discovery of one of these eastern vagrants, the 197th recorded in the UK. A female was found on Staple Island on the morning of 31 May and remained loyal to the island despite the presence of visitors. Later that day it switched to nearby Brownsman where it showed well until dusk. This represents the islands' fifth record after a male from 23-28 July 1971, another male from 10-20 July 1999 and first-winter individuals on 23 August 2004 and 14 September 2009. Interestingly, the Farnes has the near-monopoly of Northumberland records as the only other County record involved a male at Hauxley on 26 July 1977.

## **RECENT DECISIONS**

All scarce and rare bird sightings recorded on the Farne Islands are scrutinised by the Northumberland & Tyneside County Records Committee with some species requiring further acceptance at a national level by the British Birds Rarities Committee (BBRC). Recent decisions, since 2009, have included:

#### **Northumberland Records Committee:**

All records accepted

#### **BBRC records all accepted:**

Lanceolated Warbler	29 September 2009
Black-headed Bunting	14 September 2009
Fea's Petrel	5 October 2009
Melodious Warbler	9 August 2010
Thrush Nightingale	14 August 2010
Arctic Redpoll (race <i>Hornemanni</i> )	24 Sept-2 October 2010
Olive-backed Pipit	12-15 October 2010

The interesting wagtail which arrived on Brownsman before moving to nearby Staple Island on 6 May 2010 has been accepted as an Ashy-headed x Spanish Wagtail (also known as Southern Wagtail) and represents only the third UK record of this intergrade.

The islands reported a 'clean bill of health' during this period with no 'non-proven' or 'non-acceptable' records.

## FARNE ISLANDS BIRD SPECIES YEAR LIST

The last 20 years have seen an increase of observer coverage on the Farne Islands with wardens staying for longer periods on the islands, from mid-March to early December. This change has also coincided with improvements in communication, technologies, optics and ornithological knowledge which have all contributed to an increase in the number of species being recorded compared with earlier periods. The 2011 total of 179 species is in the top ten of all-time bird species counts (Table 8).

**Table 8.** Top-ten yearly species counts on the Farne Islands.

Number of Species	Year
189	2005
188	2001, 2003
183	1999, 2010
181	1994, 2000
179	1991, 1998, 2004, 2011
178	2002, 2009
177	1997, 2007, 2008
175	1996
174	1993
167	2006

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## BIRD RINGING AND RESEARCH ON THE FARNE ISLANDS IN 2011

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### RESEARCH PROJECTS

During 2011 the biometric study of Arctic Tern chicks on the Farnes reached its fifteenth year and it was the eleventh year of the study on adults. We are now in a position to begin to understand how variation in climatic conditions, food supply and reproductive performance affects the body condition during breeding of these charismatic seabirds. In 2011, the sample size for both adult and chick Arctic Terns was maintained and the capture of adult birds allows additional data to be obtained on adult survival rates and variation in nesting location within the colony from year to year. Similar biometric studies are being carried out on adults and chicks for Kittiwakes and Puffins; while the sample size for Puffins was good in 2011, Kittiwakes bred unexpectedly early and we only achieved a small sample of adults and were too late in the season to get data for the chicks. For the Kittiwakes, given the early breeding season, the fitting and recovery of GPS dataloggers to elucidate their foraging areas became a higher priority. GPS loggers were recovered from five of eight birds and revealed some impressive foraging statistics with one bird travelling to a distance almost 190 km from the islands. Otherwise, compared with the previous year, the data revealed a shift to foraging in areas rather closer to the Farnes, particularly an area within 10 km north of Holy Island.

For several years since 2000, optical coincidence rangefinders were used by the research team to plot the foraging locations of terns and Shags around the Farne Islands. Richard Bevan is leading analyses of these data and, over the past few years, has carried out additional studies to complement the range-finding data with GPS tracking studies of Shags, terns and Puffins. While GPS studies are relatively easy to carry out with Shags and Puffin, he is pushing the limits of current technology with devices light enough to be attached (for up to 24 h) to Arctic Terns. Exploratory studies in the 2011 season have suggested that the birds tolerate these devices very well and are likely to give useful data to define the foraging behaviour and strategies of individual birds.

### RINGING TOTALS AND ACTIVITY IN 2011

Capture totals for 2011 were well down on the previous year at 1162 compared to 1917 in 2010 (Tables 1-3). This was largely due to reduction in the number of nestlings ringed, particularly Sandwich Terns, Kittiwakes and Puffins. Otherwise, the capture totals for adults (new adults ringed and adults recaptured from previous years) were maintained. The reduction in numbers of Sandwich Tern, Kittiwake and Puffin nestlings ringed was mainly as a result of competing priorities which, coupled with an unexpectedly early start to the breeding of Kittiwakes, led to difficulties in timing the visits to ring chicks at the appropriate ages. Thus, most of the Sandwich Tern chicks were too old to ring safely, the ringing of Kittiwakes chicks was not carried out in favour of further GPS datalogger studies on adult birds, and the number of Puffin chicks was lower than expected because many chicks in the monitoring plots were too small to ring at the time of the visits. The number of Arctic Tern chicks ringed was also down by nearly 100 birds, but this was well within our usual year-to-year variation; otherwise all targets for biometric studies on Arctic Terns (both adults and chicks) were met. The colour-ringing of Shags was

continued with red plastic rings, each carrying a unique three-letter identification code, fitted to 71 chicks and 33 adults (25 new adults and eight retraps ringed in previous years).

The number of Fulmar chicks ringed (Fig. 1) was substantially increased in a deliberate effort to target as many as possible and the team was only foiled in its attempt to ring all Farnes Fulmar chicks by running out of rings on the home straight! Two new species to appear on the ringing-total lists in 2011 were a single Leach's Petrel, caught by chance during a Storm Petrel ringing session on Inner Farne, and the Razorbills ringed in the colony on the Wideopens. The latter will be targeted again next year and, since both adults and chicks can be caught, we hope that these will be the subject of more intensive studies in subsequent years.

**Fig. 1** Ringing a Fulmar chick on Inner Farne (David Steel).



**Table 1.** Adult seabirds retrapped or 'controlled' in 2011 compared to 2010.

Species	2010	2011
Storm Petrel	2	3
Shag	20	19*
Eider	38	50
Puffin	15	7
Kittiwake	39	19
Arctic Tern	81	73
<b>Total</b>	<b>196</b>	<b>171</b>

\*Physical recaptures, not re-sightings



**Table 2.** New adult seabirds ringed in 2011 compared to 2010.

<b>Species</b>	<b>2010</b>	<b>2011</b>
Storm Petrel	12	10
Leach's Petrel	0	1
Fulmar	2	1
Shag	17	26
Eider	15	10
Puffin	90	112
Razorbill	0	6
Kittiwake	54	3
Arctic Tern	89	84
Common Tern	0	0
<b>Total</b>	<b>279</b>	<b>253</b>

**Table 3.** Chicks ringed in 2011 compared to 2010.

<b>Species</b>	<b>2010</b>	<b>2011</b>
Fulmar	64	156
Shag	68	90
Puffin	126	29
Razorbill	0	9
Kittiwake	76	0
Black-headed Gull	24	32
Herring Gull	1	0
Lesser Black-backed Gull	4	0
Sandwich Tern	571	29
Common Tern	10	0
Arctic Tern	486	391
Oystercatcher	7	2
Ringed Plover	5	0
<b>Total</b>	<b>1442</b>	<b>738</b>

### RINGING RECOVERIES

With very few exceptions, all birds caught for ringing in Great Britain and Ireland are ringed with metal rings. For specific projects, birds can also be ringed with plastic colour rings where birds can (if required) be identified individually from a unique combination of colours or from large letters or numbers engraved into the plastic. Since 2009, most of the Shags ringed on the Farnes have also been fitted with lettered plastic rings as part of a study of Shag dispersal, organized by researchers from the Centre for Ecology and Hydrology (CEH) based on the Isle of May. This approach is now generating a large number of resightings of individuals in their wintering areas and of birds which have returned to the colony to breed. So far, the resightings of Shags away

from the colony during the winter have confirmed what we know from recoveries of dead ringed birds in that there is a predominantly northerly dispersal from the Farnes during the winter as far as Aberdeen. However, the distribution of sightings can be biased by the distribution of observers deliberately searching for these birds.

Sightings of Shags breeding on the Farnes this year included 60 colour-ringed Farnes birds from previous years and 24 birds from the Isle of May. Observations in the years to come will give us valuable insights into the natal and breeding dispersal of Shags. For example, Yellow ZPB was seen on the Wideopens in June 2011 but was ringed as an adult female on the Isle of May in 2009, so this may be an instance of breeding dispersal, where an individual has changed breeding colonies. Conversely, Blue NCU was ringed as a chick on the Isle of May in 2009 and seen on Inner Farne in August 2011, so may be an individual that has been recruited into the Farnes breeding population, an example of natal dispersal.

With respect to recoveries of dead Shags, four long-distance movements were reported in 2011: a Brownsman chick from 1982 was recovered dead in Eastbourne, East Sussex, in September 2011; a chick ringed on Staple Island on 12 June 1981 was recovered dead in Fife, on 16 June 2011; a Staple Island chick from June 2010 was recovered dead on the Isle of May in June 2011 and another Staple Island chick from July 2000 was recovered in Eyemouth, Scotland in April 2011. Of these four, two are of particular interest: the Staple Island Shag ringed in 1981 exceeds the current UK longevity record (elapsed time between ringing and recovery) for Shag by just over a month, although when found the finder recorded the bird as 'not freshly dead' so the actual age at death is not known precisely. The Eastbourne recovery is relatively unusual for being a southerly movement compared to the more regular northerly dispersal of Shags from the Farnes.

Increasing effort is now being put into Storm Petrel ringing on the Farnes, using sound lures at night to attract birds into the nets, and this is generating recoveries and controls. The first three birds caught on Inner Farne on the night of 26 July 2011 were all controls (birds ringed elsewhere) and had previously been ringed at Souter Lighthouse, Tyne & Wear (August 2008) and Sanday, Orkney (one from August 2009 and another from August 2010), respectively. Storm Petrels attracted to sound lures are immature birds which are in a prospecting or wandering phase; as a result of a study of nearly 800 Storm Petrels ringed in the Shetlands, Okill and Bolton (2005) suggested that few, if any, remain in the pool of prospecting birds by five years of age. The Souter bird, therefore, was either only one year old when first ringed (and very few 'wandering' Storm Petrels seem to be attracted to sound lures when one year old [Okill and Bolton, 2005]) or was unusually old for a wandering-phase Storm Petrel. However, one of only three Storm Petrels ringed on Inner Farne at the beginning of August 2007 was sound-lured at Eyemouth at the end of July 2011, so this bird was clearly a minimum of five years old when controlled.

We received three reports of Kittiwake recoveries this year: again, one ringed as a chick on Brownsman in July 2006 was seen in the small Danish colony at Bulbjerg Klint, Hantsholm (680 km north-east of the Farnes) on several occasions between 19 April and 5 June 2011. Evidence of a widespread natal dispersal of Farnes Kittiwakes is also shown by the two other birds reported, both of which were caught by ringers and therefore presumably at breeding colonies: one, ringed on Inner Farne in July 1999, was controlled by RSPB ringers on St Martins, Isles of Scilly, on 3 July 2011, and the other, also ringed on Inner Farne but in July 2007, was controlled on Puffin Island, Anglesey, on 9 July 2011. This latter bird was also fitted with a uniquely identifiable plastic ring on recapture, so we may well be hearing more about this individual in the future.



In 2010, the retrap of an Arctic Tern on Inner Farne established a new UK longevity record for this species (Clark *et al.*, 2011). Sadly, one just a year younger, ringed on Brownsman in June 1982, was found with a fatal injury on Brownsman in 2011. On a happier note, the regular programme of retrapping adults yielded five controls: four of them ringed as chicks in local colonies (three from Coquet Island and one from the nearby Long Nanny colony), and one ringed as a chick on the Skerries, Isle of Anglesey in July 1989, usefully demonstrating the interconnectedness of colonies around our coastline.

Sandwich Tern recoveries this year came from three sources: cannon-net catches at Seal Sands, Teesmouth, in September 2011 by the Tees Ringing Group, mist-net catches on the Ythan Estuary, Aberdeen, between 21 July and 21 August 2011 by the Grampian Ringing Group, and sightings of ringed birds by Kjeld Petersen at Hirsholm in Denmark. The three Seal Sands birds were ringed as chicks on Inner Farne or Brownsman in 1998, 2009 and 2011. Of the seven Ythan birds, two were from 1996 and the others from 2001, 2002, 2005, 2008 and a single juvenile from 2011. All seven are now carrying red, lettered plastic rings courtesy of the Grampian Ringing Group so we hope to hear more about these birds in the future too. As in previous years, Kjeld Petersen's regular programme of ring reading through telescopes at the Danish colony of Hirsholm has yielded sightings of eight birds: five from Inner Farne (ringed in 1996, 1998, 2001 and two from 2007) and three from Brownsman (all ringed in 1998).

The only Puffin reported this year was recovered locally in April 2011. This bird was ringed on Brownsman in 1981, but although this was 30 years ago it is not a longevity record; the current UK longevity record for a Puffin, established relatively recently, is just short of 36 years (Clark *et al.*, 2011).

With respect to other species, two recoveries are of note: a Fulmar ringed as a chick on Brownsman in August 2010 was recovered dead on the shoreline at Texel, The Netherlands, after a period of violent weather on 25 May 2011, a sadly-early demise for an individual of a normally long-lived species (current UK longevity record is in excess of 40 years). Finally, another bird which also survived less than a year after being ringed was a Ringed Plover, ringed as a chick on Brownsman in June 2010 and recovered at Beadnell on 30 April 2011 as a result of predation by a gull.

#### ACKNOWLEDGEMENTS

Although we were greatly saddened by the passing of Billy Shiel in June this year, he leaves a tremendous legacy of memories enjoyed by the many thousands of visitors to the islands. We are very grateful to Billy and his crews, and indeed all the Farnes boats, for the frequent lifts back which make the tasks of maintaining a seabird study programme very much easier. Property Manager John Walton and Head Warden David Steel have enthusiastically supported the research and ringing studies and we hope that the results from the work will justify their confidence in us. David and his team also took part in the ringing and biometric studies and we are very grateful for their help. We also thank the Local Management Committee, chaired by Fiona Fell, for their support and encouragement. The Wardens frequently gave up their time to help get the team across to the islands and generously shared their facilities with us for short periods, with the evening meal a particular highlight. We are grateful for the opportunity to add the lettered plastic rings to Farnes Shags and thank Francis Daunt of CEH for providing the rings. We thank the Natural History Society of Northumbria for the rings and funds for GPS

dataloggers and are particularly grateful to Stephanie Needham of the Society Ringing Group for her generous contribution. Finally, we are grateful to members of the ringing team for their time, expertise and enthusiasm which help to maintain the momentum of the project.

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## CETACEANS ON THE FARNE ISLANDS IN 2011

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### INTRODUCTION

Throughout the year, wardens, along with the increased support of boatmen, recorded all sightings of whales, dolphins and porpoises seen around the Farne Islands. As in recent years, two methods of recording were maintained, with casual sightings producing the bulk of records whilst systematic daily cetacean surveys from Inner Farne also contributed to the species' totals.

In total, there were 99 cetacean sightings during the year and, although it was generally a quiet year in terms of diversity of sightings, there was a welcome return of White-beaked Dolphins and a fourth-ever recording of Risso's Dolphins (Table 1).

Overall, wardens carried out 75.8 hours of cetacean surveys, the majority of this time spent by the Inner Farne team watching Inner Sound from Lighthouse Cliff. Due to the manner in which these data were collected, the survey data from 2011 can be compared directly to data from the previous three seasons. The 2011 observations yielded a total of 21 sightings, more than in recent years (only three in 2010). However, on average 3.6 hours of effort was still necessary to produce a single sighting, but still good compared to one sighting per 10.5 hours in 2009 and 9.3 hours in 2010. In general, surveys were carried out between 0730h and 0830h, and suggest that species other than Porpoise (which are most probably resident) may move into these shallower waters later in the day to feed. This is supported by the fact that all sightings of other species were made during the afternoon period. A summary of data from 2011 compared to previous years is shown in Table 2.

**Table 1.** Farne Islands Cetacean sightings by month 2011.

Species	Jan	Feb	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Grand Total
Dolphin spp. (pr Bottlenose)				1							1
Harbour Porpoise	3	2	19	4	3	19	24	13	4	2	93
Minke Whale					1	1		1			3
Risso's Dolphin						1					1
White-beaked Dolphin						1					1
Grand Total	3	2	19	5	4	22	24	14	4	2	99

**Table 2.** Comparison of 2011 cetacean sightings to previous years.

Species	2003	2004	2005	2006	2007	2008	2009	2010	2011
Basking Shark					5				
Bottle-nosed Dolphin	1	8	10	3	5	3	7	1	
Dolphin sp.								2	
Dolphin spp. (pr Bottlenose)									1
Harbour Porpoise	47	50	59	42	49	26	24	37	93
Humpback Whale							1		
Minke Whale	7	8	14	1	7	6	5	2	3
Risso's Dolphin				1	1		1		1
White-beaked Dolphin	7	1	1	2	2	2			1
Grand Total	62	67	84	49	69	37	38	42	99

#### SYSTEMATIC LIST

##### **Minke Whale** *Balaenoptera borealis*

It proved to be another disappointing season for this species with less than five sightings for the second consecutive year. The first of the year was noted by a single observer from Inner Farne as it travelled north through Staple Sound just before sunset on 18 June. The second record involved a lone animal seen lunge feeding at around 2130h just south of Crumstone on 13 July. The animal was seen to surface on three occasions causing a frenzy of activity amongst the local bird populations as it forced fish to the surface. The final record concerned two individuals noted south of the islands on 4 September, which were originally discovered by the boatmen, as two individuals were seen feeding at distance (approximately two miles south-east of Inner Farne).

##### **Bottle-nosed Dolphin** *Tursiops truncatus*

It was a disappointing year as there were no confirmed records, the first such occasion in nine years. However during a seawatch on 25 May (at approximately 0730h) a dolphin spp. was noted travelling south through Inner Sound, and although identification was not confirmed, it was suspected as being of this species.

##### **White-beaked Dolphin** *Lagenorhynchus albirostris*

The year provided the first confirmed sighting of this species since 2008 as two adults and a juvenile were seen in Inner Sound on 13 July. Fortunately for the Inner Farne team, this pod remained for half an hour allowing good views as the animals lingered to feed before eventually heading south.



### **Harbour Porpoise** *Phocoena phocoena*

It was an excellent year as a total of 93 were recorded with 21 of these noted during the cetacean surveys from Inner Farne. This represents the highest annual total since systematic cetacean recording commenced in 2003 and reverses the declining number of records in recent years.

The peak number of sightings occurred in early August (compared to September and October in previous years). Adult Harbour Porpoise tend to give birth from May to August, although if food availability is good, births can be earlier. Such an example was noted between 16-24 April when a female with calf were seen in Inner Sound, with a different family pod noted between 1-4 August. The only other report of a calf concerned one on 3 September in Inner Sound.

Data collected throughout the year suggest that there are three main feeding areas around the islands including south of the Scarcars, mid-way between Bamburgh Castle and Inner Farne lighthouse (Inner Sound) and just off Stag rock, where a family appeared to be resident all summer.

### **Risso's Dolphin** *Grampus griseus*

The most significant sighting of the year occurred on 11 July as the diagnostically large dorsal fin was spotted from the top of the Pele Tower on Inner Farne travelling south through Inner Sound, just after 1800h. After a series of sightings, the identification was eventually confirmed with two animals present. This represents only the fifth ever Farnes record following records in 1996, 2006, 2007 and 2009.

## GREY SEALS ON THE FARNE ISLANDS IN 2011

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### INTRODUCTION

It proved to be a very successful breeding season for the Grey Seals *Halichoerus grypus* on the Farne Islands, as pup production increased and overall productivity was high. The first pup born, a male, was discovered on the South Wamses on 27 September and thereafter pupping was recorded throughout the autumn and early winter months with two Brownsman births in early January 2012.

In total, 1,555 pups were born on 11 islands (the fourth consecutive year the population has increased) and this represented the highest pup production since 1975. The Staple Island nursery continued to grow and became the largest pupping grounds on the islands during 2011 (Table 1). Interestingly, the Inner Group continued to be populated with a total of 29 pups born, including five on Inner Farne.

2011 was also the 60th anniversary of Grey Seal research on the Farne Islands, one of the longest studies of British mammals. When the work of counting and tagging Grey Seals began in 1951 it was carried out by members of the Natural History Society of Northumbria led by Grace Hickling and Ian Telfer before it was eventually turned over to the National Trust warden team in 1971. During this period, the population size has fluctuated as a result of two major seal culls in the 1970s which reduced numbers, before a gradual return in recent years to pre-1972 levels. The Farnes remain the largest English Grey Seal colony although when surveys began in 1951, scientists knew almost nothing about how seals bred, what they ate or where they went during the winter. Those early studies on the Farnes were groundbreaking, setting the standard for all later seal research around the world.

### DATA FOR 2011 SEASON

Pups born: 1,555 (1,499 were born in 2010)

**Table 1.** Pups born in the three largest colonies.

	2011	2010
<b>Staple Island</b>	475	343
<b>South Wamses</b>	374	418
<b>Brownsman</b>	334	358

Large storms from the north or east can result in high mortality of pups, as youngsters born on the low lying ridges and islands of the Farnes can be easily washed off. In recent years, the average annual mortality rate has been between 45-55%. However during autumn 2011 there



was a lack of any serious storms and the overall mortality rate was 30.7% missing or dead from 1,555 pups, the best productivity in over 23 years (Table 2).

Table 2. Grey Seal Mortality statistics in 2011 compared to 2010.

	2011	2010
Successful	1,077	806
Unsprayed dead	62	56
Sprayed Dead	61	54
'Missing'	355	583
Mortality rate	30.7%	48.2%

## BUTTERFLIES ON THE FARNE ISLANDS IN 2011

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### INTRODUCTION

National butterfly results indicated that it was a poor year with records showing that average numbers of individual butterflies seen per count were down by 11% compared with 2010. Cold and often unsettled summer weather is thought to be the main cause of this drop. Despite the national results, it was generally an average season for butterflies on the Farne Islands although there were some interesting highlights along with a few absentees. During the year, 12 species were recorded with an impressive total of 1,613 individuals (Fig. 1). The first species to be sighted was Small Tortoiseshell on 18 March and the last sighting was of a Painted Lady on 12 November.

The spring period (March-May) was remarkable for the lack of rainfall and unusual warmth (especially during April) with the summer being dominated by westerly winds. The persistent westerly winds during the later part of the year decimated vast areas of stinging nettle *Urtica dioica* with salt spray, which will undoubtedly have had adverse effects on the breeding species in larval or pupal form.

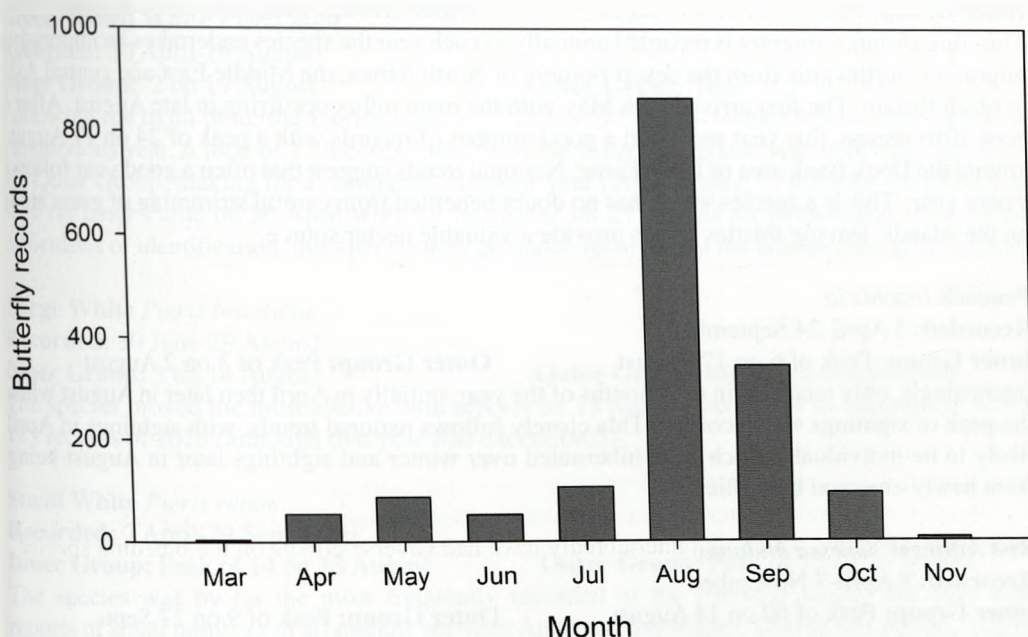
As usual, there were high and low points during the season as it was a poor year for butterflies of the *Pieridae* family (Green-Veined White, Large White and Small White) with records from this family down 78% on 2010 records. In contrast to this decline, members of the *Nymphalidae* family (Painted Lady, Peacock, Red Admiral) showed a marked increase of 37% compared to 2010, largely due to the vast number of Red Admirals recorded.

Highlights of the year included an excellent August with a total of 865 records (more than half of the year's total records) which included 11 species and 60 individual butterflies recorded on 5 August. Other highlights include multiple records of Speckled Wood and single records of Comma and Dark Green Fritillary, both on 5 August.

Several species have failed to show on the Farne Islands this year including Small Copper and Ringlet. All of these species have been defined as rapidly spreading (in keeping with predicted positive responses to climate change) and all have been recorded on the islands in recent years.



Fig. 1 Number of Butterfly records per month in 2011.



#### SPECIES ACCOUNTS (grouped by taxonomic family)

##### NYMPHALIDAE

###### **Comma** *Polygonia c-album*

**Recorded:** Individual on 5 August

**Inner Group:** Single Record

**Outer Group:** Absent

The only record this year came from the Dock Bank area of Inner Farne on 5 August. The individual was a suspected first-brood butterfly. This is only the third confirmed record for the Farne Islands, other records being in September 2008 and August 2010. The increase in records from recent years support the national trend suggesting that the species has been expanding its range further north in recent years (Northumberland being in the northern-most extent of its range).

###### **Dark Green Fritillary** *Argynnis aglaja*

**Recorded:** Individual 5 August

**Inner Group:** Single Record

**Outer Group:** Absent

Despite a decline in central and eastern England this species is abundant on the neighbouring mainland where it maintains a stronghold in the North Northumberland dunes. The only record this year came on 5 August (same date as the only Comma record this year). The worn female was observed and photographed by several wardens while it rested in the sun on the Dock Bank area of Inner Farne. Strong westerly winds are thought to have accounted for the arrival of this butterfly.

**Painted Lady** *Vanessa (Cynthia) cardui*

**Recorded:** 6 May-12 November

**Inner Group:** Peak of 24 on 17 August

**Outer Group:** Peak of 6 on 14 August

This long-distance migrant is recorded annually as each year the species undertakes an impressive migration, northwards from the desert borders of North Africa, the Middle East and central Asia to reach Britain. The first arrived on 6 May with the main influx occurring in late August. After a poor 2010 season, this year produced a good number of records with a peak of 24 on 17 August around the Dock Bank area of Inner Farne. National trends suggest that often a good year follows a poor year. This is a species which has no doubt benefited from careful strimming of grass areas on the islands, leaving thistles which provide a valuable nectar source.

**Peacock** *Inachis io*

**Recorded:** 3 April-24 September

**Inner Group:** Peak of 6 on 17 August

**Outer Group:** Peak of 3 on 2 August

Interestingly, only recorded in two months of the year, initially in April then later in August when the peak of sightings was recorded. This closely follows national trends, with sightings in April likely to be individuals which have hibernated over winter and sightings later in August being from newly-emerged butterflies.

**Red Admiral** *Vanessa atalanta*

**Recorded:** 8 April-3 November

**Inner Group:** Peak of 60 on 14 August

**Outer Group:** Peak of 9 on 27 Sept.

Red Admiral was the most abundant species this year with 1,051 individual records. Early migrants began to arrive in March and records peaked in August with an incredible 503 individuals recorded across all the islands during the month. This species migrates from southern Europe and even north Africa. Our records closely follow the national trend with sightings gradually building up through the early months, these being migrants. New individuals begin to emerge around late July and early August creating a peak around mid-August. Although the species breeds here during the summer, raising first generation butterflies, few return south and many perish when winter begins. Caterpillars were also found on Common Nettle on 8 September.

**Small Tortoiseshell** *Aglais urticae*

**Recorded:** 18 March-22 October

**Inner Group:** Peak of 11 on 29 July

**Outer Group:** Peak of 4 on 27 Sept.

Initial March records relate to individuals found hibernating in various buildings including the Visitor Centre and Pele Tower on Inner Farne. Records during April also probably referred to individuals which had been hibernating, with the first noted on the wing on 23 March. The vast majority of sightings occurred in July and August with the majority seen on Inner Farne with reports on 65 dates. The species was less numerous on the Outer Group with records on ten occasions, including individuals sighted on the South Wamses and Staple Island. Overall, this was an average year for this resident and migrant species.



## PIERIDAE

### **Green-veined White** *Pieris napi*

**Recorded:** 30 April-19 August

**Inner Group:** 2 on 19 August

**Outer Group:** Peak of 2 on 7 July

Following the trend of all the Pieridae species, numbers of Green-veined Whites were down on the previous year. A total of 12 records came from the Inner Group this year with only five from the Outer Group, making for a comparatively poor year (2010 having 73 records). The first was seen on Inner Farne on 30 April with the last noted on 21 August on Brownsman. Due to the difficulties of identification, this species may go under-recorded on the islands during the season.

### **Large White** *Pieris brassicae*

**Recorded:** 30 June-29 August

**Inner Group:** 3 on 14 August

**Outer Group:** singles on several dates

The species proved the most elusive with reports on 15 dates, a poor year in comparison to the 185 records of 2010 (although that year was exceptional).

### **Small White** *Pieris rapae*

**Recorded:** 7 April-29 September

**Inner Group:** Peak of 14 on 13 August

**Outer Group:** Peak of 12 on 20 August

The species was by far the most frequently recorded of the *Pieridae* family this year with reports of small numbers in all months between April and September. During this period, August provided the bulk of records with a peak of 14 individuals on Inner Farne on 13 August and 12 on 20 August on Brownsman.

## SATYRIDAE

### **Meadow Brown** *Maniola jurtina*

**Recorded:** 5 August-23 August

**Inner Group:** Peak of 7 on 14 August

**Outer Group:** Absent

Only recorded on three occasions since 2000, it was an exceptional year for this species, with numbers equalling the record of seven in 1994. All records came from the Inner Group, all within an 18-day period suggesting a small influx from the nearby mainland. An interesting record also came from the West Wideopens on 11 August.

### **Speckled Wood** *Pararge aegeria*

**Recorded:** 5 August-16 October

**Inner Group:** Single Records on several dates

**Outer Group:** Absent

A record breaking year for this primarily woodland species with a record Farnes haul. Individuals were recorded on several dates between 5 August and 16 October which involved at least three different individuals. Nationally this species is thought to be increasing in range so it may not be surprising to see an increase in numbers in its northern range.

### **Wall Brown** *Lasiommata megera*

**Recorded:** 17 May-26 September

**Inner Group:** A peak of 3 on 6 August

**Outer Group:** Absent

A great year with a total of six individuals sighted, with three together on 6 August. This follows a strong trend showing that records have been gradually increasing in recent years. Having been recorded mating in 2009 and with a general increase in numbers over the past few years (Table

1), it is suspected that a small colony may have recently become established on the islands. The unique environment of the Farne Islands, having a mixture of unimproved grassland and cliff edges along with an abundance of Yorkshire-fog *Holcus lanatus* (a foodplant for larvae), could provide an opportunity for the species to thrive. This is particularly important as this species has suffered severe declines over recent decades particularly in central England where it is now gradually being confined to coastal areas.

**Table 1.** Sightings of Wall Brown since 2004 (only one record prior to 2004).

Year	Number of individuals seen
2004	0
2005	1
2006	0
2007	5
2008	4
2009	2 (seen mating)
2010	7
2011	6



## MOTHS ON THE FARNE ISLANDS IN 2011

William Scott

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### INTRODUCTION

Moths, unlike some of the Farne Island birds, are often elusive and difficult to record, but in many ways are just as important in terms of the islands' ecology. A highly abundant group of insects, they promote floral diversity by feeding on vegetation as larvae and pollinating flowers as adults. Moths (larvae and adults) along with the seeds which are created by their pollination services are vital for migrant birds passing through the islands. Additionally, their ability to produce several generations in a short northern summer allows moths to indicate subtle changes in our environment. Finally, being an archipelago, the Farne Islands boast a unique moth assemblage worthy of detailed study.

Since 1991 there has been constant moth recording but of varying intensity across the Inner and Outer Farne Island groups. This year was no exception with Inner Farne running a 125 W Mercury Vapour Skinner Trap on 32 nights; Brownsman running a 15 W Actinic Heath Trap on 13 nights; and daily casual observations made across the islands. As with many aspects of island life, the weather played a significant role in recording intensity as a season dominated by strong westerly winds hampered 'trapping', as wind and moths do not mix (especially on the exposed North Sea coast!).

Despite the unsettled conditions, a total of 117 species were recorded this year consisting of 81 'macro' and 36 'micro' species. Moth Traps recorded 103 species, while casual sightings accounted for an additional 13 species. As expected, the smaller, less florally diverse and isolated Brownsman recorded fewer species with 41 totalling 1,182 moths. Compare this to the larger, more florally-diverse Inner Farne which recorded 109 species and a total of 4,027 moths. Many moths can and will originate from the nearby mainland as 'dispersal migrants', potentially setting up temporary colonies which make it more difficult to identify moth species that are long-term residents on the islands. However, these 'dispersal migrants' have provided some of the most notable records during the year while the eclectic group of resident species never ceases to fascinate.

### MOTH HIGHLIGHTS IN 2011

#### **1341 *Eudonia lineola***

The first record for the Farnes and the only known colony in Northumberland. This intricately-marked lichen feeder was first discovered on 2 July in the Inner Farne moth trap and recorded in low numbers through to 13 August with a peak of three on 31 July. Its presence is a result of the abundance of preserved historic dry stone walls dotted across the islands that possess fantastic lichen growth.

#### **1842 Plain Pug *Eupithecia simplicata***

The most northerly and numerous Northumberland colony of this classic saltmarsh species occurs across both the Inner and Outer Groups. First seen on 3 July, sightings by day and night were regular until 2 August – a flight period of exactly one month. Casual sightings account for

the bulk of records with wardens 'dusking' sessions producing counts of 60, 66 and 41 on 23, 24 and 29 July respectively. The abundance of the usually saltmarsh-favouring Orache *Atriplex* sp. on most islands helps explain why this species is so abundant away from its usual range further south.

**1984 Hummingbird Hawk-moth *Macroglossum stellatarum***

The season produced three records of this scarce migrant from Europe, with two discovered in the Visitor Centre on Inner Farne on 28 June during light, humid southerly winds and were part of a mini-invasion of around 20 individuals to Northumberland during that period. Another was seen near the jetty on Inner Farne on 31 July.

**1716 Vestal *R. sacraria***

The first example of this charismatic European species on the Farne Islands was recorded in 2011. A major migration event of continental species into the UK brought a single specimen on to Brownsman on 3 October.

**2057 Garden Tiger *Arctia caja***

A colourful species and one of only a handful whose larva was discovered during the year. A single larva on a stone wall on a warm day on 19 May confirmed it as a Farnes resident. It was not until 19 July that adults emerged with singles recorded on seven dates until 2 August. This rapidly-declining species is scarce on the islands and had the larvae not been found may have been classified as 'Unknown' in the 2011 checklist on the following pages.

**2099 Portland Moth *Actebia praecox***

Moth of the year! A single specimen of this Nationally Scarce B dune specialist was found in Brownsman's 15 W Heath trap on 28 August with the presumed origin being the adjacent dunes on the mainland where its food plant Creeping Willow *Salix repens* grows.

[Note: The numbers before the moth names are the Log Book numbers widely used in moth field guides, in this case from Bradley and Fletcher (1979). Pictures of many species can be found on the UK Moth website: <http://ukmoths.org.uk/systematic.php> ]

## SYSTEMATIC LIST

The following list (Table 1) has been compiled using data for 2011 and historical notes and is by no means definitive. However it summarises the 2011 species flight periods and abundance, forming a base to build on in future years. Each species is classified with respect to origin and abundance as follows:

**Resident** – caught in sufficient numbers and time period with food-plant present.

**Non-Resident** – caught in low numbers and/or without food plant present (mainland in origin).

**Unknown** – insufficient data to classify status (but food plant present).

**Migrant** – known migrant species from the continent.

**Abundant** – many (20+) individuals on multiple dates.

**Common** – many (<20) individuals on multiple dates.

**Scarce** – a few (<10) individuals on a few dates.

**Rare** – isolated records of single specimens.

\* represents the first record for the Farne Islands.



Table 1. Systematic list of moths on the Farne Islands 2011.

Species	First Date	Last Date	No. Days	Peak Count	Status
<b>Ghost Moth</b> <i>H. h.humuli</i>	18 Apr	31 Jul	7	20	Resident – Abundant
<b>Common Swift</b> <i>H. lupulinus</i>	03 Jun	25 Jun	7	36	Resident – Abundant
<b>Map-winged Swift</b> <i>H.fusconebulosa</i>	28 Jun	03 Jul	8	10	Resident – Common
<i>Anthophila fabriciana</i> *	06 Jun	29 Sep	10	150+	Resident – Abundant
<i>Yponomeuta evonymella</i> *	02 Aug	02 Aug	1	1	Migrant – Rare
<i>Plutella xylostella</i> *	04 Aug	04 Aug	1	1	Non-Resident – Rare
<i>Coleophora spp.</i> *	19 Jul	28 Aug	8	6	Resident – Scarce
<i>Hofmannophila pseudospretella</i> *	13 Aug	01 Oct	40+	2	Resident – Common
<i>Depressaria heraclei</i> *	23 Aug	23 Aug	1	1	Unknown – Rare
<i>Agonopterix heracliiana</i> *	12 Aug	12 Aug	1	1	Unknown – Rare.
<i>Agonopterix alstromeriana</i>	19 Mar	30 Sep	16	16	Resident – Common
<i>Bryotopha affinis</i>	28 Jun	28 Jun	1	1	Unknown – Rare
<i>Metzneria lappella</i> *	18 Mar	19 Jul	4	1	Resident – Scarce
<i>Scrobipalpa sp.</i> *	15 Jun	28 Aug	7	1	Resident – Scarce
<i>Blastobasis lignea</i> *	02 Aug	09 Aug	3	1	Unknown – Rare
<i>Agapeta hamana</i>	25 Jun	19 Jul	2	3	Resident – Scarce
<i>Aethes rubigana</i>	19 Jul	29 Jul	2	2	Unknown – Scarce
<i>Aphelia paleana</i> *	31 Jul	02 Aug	2	1	Unknown – Rare
<i>Cnephasia longana</i>	02 Aug	13 Aug	5	1	Resident – Rare
<i>Cnephasia incertana</i> *	03 Aug	13 Aug	2	2	Unknown – Rare
<i>Celypha lacunana</i>	01 Jun	10 Aug	19	51	Resident – Abundant
<i>Epiblema scutulana</i> *	05 Jun	05 Jun	1	1	Resident – Rare
<i>Eucosma cana</i>	15 Jun	19 Jul	4	3	Resident – Scarce
<i>Chrysoteuchia culmella</i>	25 Jun	19 Jul	5	2	Resident – Scarce
<i>Agriphila straminella</i>	19 Jul	10 Aug	13	21	Resident – Abundant
<i>Agriphila tristella</i>	31 Jul	02 Aug	7	11	Resident – Common
<i>Agriphila inquinatella</i> *	05 Aug	05 Aug	1	1	Unknown – Rare
<i>Scoparia subfusca</i> *	29 Jul	02 Aug	3	1	Unknown – Rare
<i>Scoparia ambigualis</i> *	11 Jun	11 Jun	1	1	Unknown – Rare
<i>Eudonia lineola</i> *	02 Jul	13 Aug	8	4	Resident – Scarce
<i>Evergestis forficalis</i> *	29 Jul	29 Jul	1	1	Unknown – Rare
<i>Eurrhpara hortulata</i> *	28 May	01 Aug	10	4	Resident – Scarce
<i>Udea lutealis</i>	04 Aug	20 Aug	2	1	Unknown – Rare
<i>Udea olivalis</i>	18 Jun	19 Jul	7	50+	Resident – Abundant
<i>Udea ferrugali</i>	29 Sep	29 Sep	1	1	Migrant – Rare
<i>Pleuroptya ruralis</i> *	23 Jul	10 Aug	6	2	Resident – Scarce
<i>Trachycera advenella</i> *	05 Aug	05 Aug	1	1	Migrant – Rare
<b>Riband Wave</b> <i>I. aversata</i> *	31 Jul	31 Jul	1	1	Unknown – Rare

Species	First Date	Last Date	No. Days	Peak Count	Status
<b>Vestal</b> <i>R. sacraria</i> *	03 Oct	03 Oct	1	1	Migrant – Rare
<b>Gem</b> <i>O. obstipata</i>	26 Aug	26 Aug	1	1	Migrant – Rare
<b>Flame Carpet</b> <i>X. designata</i>	18 Apr	18 Apr	1	1	Unknown – Rare
<b>Silver-ground Carpet</b> <i>X. montanata</i>	30 May	04 Jul	15	68	Resident – Abundant
<b>Garden Carpet</b> <i>X. fluctuata</i>	30 Apr	26 Aug	13	2	Resident – Scarce
<b>Common Carpet</b> <i>E. a. alternate</i>	10 Aug	13 Aug	2	1	Unknown – Rare
<b>Yellow Shell</b> <i>C. bilineata</i>	27 Jun	27 Jun	1	2	Unknown – Scarce
<b>Dark Spinach</b> <i>P. comitata</i>	15 Jun	19 Aug	40	106	Resident – Abundant
<b>Common Marbled Carpet</b> <i>C. truncata</i>	29 Sep	29 Sep	1	1	Non-Resident – Rare
<b>Grey Pine Carpet</b> <i>T. obeliscata</i>	29 Sep	30 Sep	2	3	Non-Resident – Rare
<b>Spruce Carpet</b> <i>T. Britannica</i>	02 Aug	02 Aug	1	1	Non-Resident – Rare
<b>July Highflyer</b> <i>H. furcata</i>	02 Aug	16 Aug	4	6	Non-Resident – Scarce
<b>Barred Rivulet</b> <i>P. bifaciata</i> *	02 Aug	02 Aug	1	1	Non-Resident – Rare
<b>Wormwood Pug</b> <i>E. absinthiata</i>	04 Aug	04 Aug	1	1	Non-Resident – Rare
<b>Tawny Speckled Pug</b> <i>E. i. subfulvata</i>	19 Jul	19 Jul	1	1	Non-Resident – Rare
<b>Plain Pug</b> <i>E. simplicata</i>	03 Jul	16 Aug	21	66	Resident – Abundant
<b>Double-striped Pug</b> <i>G. rufifasciata</i>	27 Jun	27 Jun	1	1	Non-Resident – Rare
<b>Canary-shouldered Thorn</b> <i>E. alniaria</i>	29 Sep	30 Sep	2	1	Non-Resident – Rare
<b>Scalloped Oak</b> <i>C. elinguaris</i> *	19 Jul	19 Jul	1	1	Non-Resident – Rare
<b>Willow Beauty</b> <i>P. rhomboidaria</i>	05 Aug	05 Aug	1	1	Non-Resident – Rare
<b>Hummingbird Hawk-moth</b> <i>M. stellatarum</i>	28 Jun	28 Jun	1	2	Migrant – Rare
<b>Common Footman</b> <i>E. lurideola</i>	31 Jul	05 Aug	3	2	Unknown – Scarce
<b>Garden Tiger</b> <i>A. caja</i>	02 Jul	02 Aug	6	1	Resident – Rare
<b>White Ermine</b> <i>S. lubricipeda</i>	11 Jun	11 Jun	1	1	Unknown – Rare
<b>Cinnabar</b> <i>T. jacobaeae</i>	29 Jul	29 Jul	1	300+	Resident – Abundant
<b>Garden Dart</b> <i>E. nigricans</i>	19 Jul	26 Aug	26	30	Resident – Abundant
<b>Heart and Dart</b> <i>A. exclamationis</i>	25 Jun	18 Aug	3	1	Unknown – Scarce
<b>Dark Sword-grass</b> <i>A. ipsilon</i>	09 May	10 Aug	5	3	Migrant – Scarce
<b>Shuttle-shaped Dart</b> <i>A. puta</i> *	09 Aug	09 Aug	1	1	Non-Resident – Rare



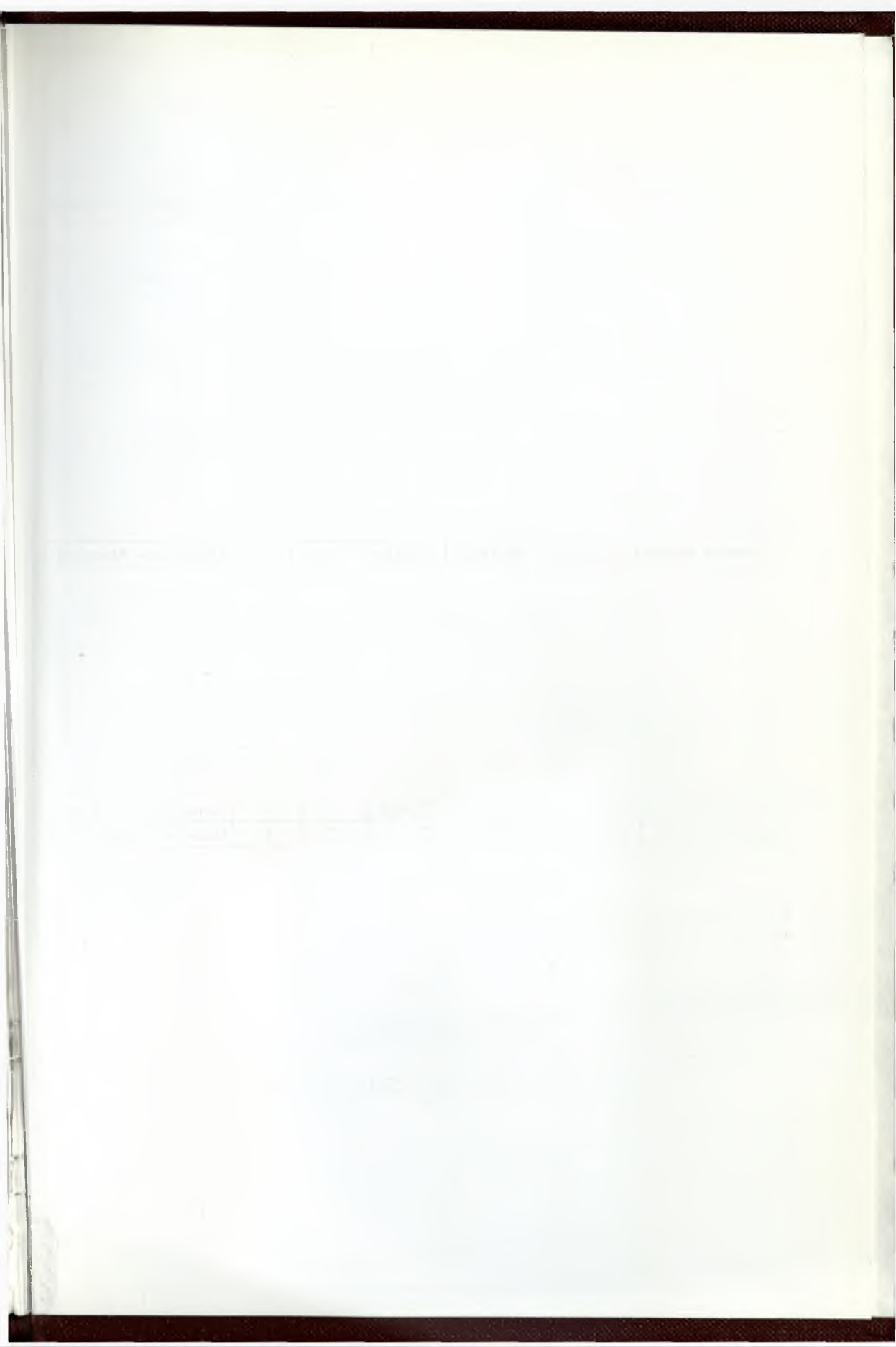
Species	First Date	Last Date	No. Days	Peak Count	Status
The Flame <i>A. putris</i>	05 Jul	30 Jul	3	1	Unknown – Scarce
Portland Moth <i>A. praecox</i>	22 Aug	22 Aug	1	1	Non-Resident – Rare
Flame Shoulder <i>O. plecta</i>	18 Jun	18 Jun	1	1	Non-Resident – Rare
Large Yellow Underwing <i>N. pronuba</i>	05 Jul	30 Sep	23	11	Resident – Common
Lesser Yellow Underwing <i>N. comes</i>	24 Jul	29 Sep	12	6	Resident–Uncommon
Lesser Broad-bordered Yellow Underwing <i>N.</i> <i>janthe</i>	30 Jul	14 Aug	4	1	Unknown – Scarce
Least Yellow Underwing <i>N. caliginosa</i>	13 Aug	13 Aug	1	1	Non-Resident – Rare
True Lover's Knot <i>L.</i> <i>porphyrea</i>	25 Jun	25 Jun	1	1	Non-Resident – Rare
Small Square-spot <i>D. rubi</i>	01 Aug	23 Aug	3	1	Non-Resident – Rare
Setaceous Hebrew Character <i>X. c. nigrum</i>	23 Sep	23 Sep	1	1	Non-Resident – Rare
Dotted Clay <i>X. baja</i> *	31 Jul	31 Jul	1	1	Non-Resident – Rare
Six-striped Rustic <i>X.</i> <i>sexstrigata</i> *	29 Jul	16 Aug	6	2	Unknown – Scarce
Square-spot Rustic <i>X.</i> <i>xanthographa</i>	26 Aug	29 Sep	2	1	Non-Resident – Rare
Red Chestnut <i>C. rubricosa</i>	05 Apr	05 Apr	1	1	Non-Resident – Rare
Cabbage Moth <i>M.</i> <i>brassicae</i>	01 Jun	05 Aug	25	7	Resident – Common
Bright-line Brown-eye <i>L.</i> <i>oleracea</i>	17 May	15 Aug	20	33	Resident – Abundant
Marbled Coronet <i>H.</i> <i>confuse</i>	03 Jun	05 Jul	7	7	Resident – Common
The Lychnis <i>H. bicuris</i>	05 Jul	18 Aug	6	4	Resident – Scarce
Antler Moth <i>C. graminis</i>	19 Jul	16 Aug	13	4	Resident – Scarce
Hebrew Character <i>O.</i> <i>gothica</i>	15 Apr	22 Jun	6	2	Resident – Scarce
Smoky Wainscot <i>M. impure</i>	21 Jul	13 Aug	15	21	Resident – Abundant
Blair's Shoulder-knot <i>L.</i> <i>leautieri</i> *	29 Sep	29 Sep	1	1	Non-Resident – Rare
Lunar Underwing <i>O.</i> <i>lunosa</i> *	23 Sep	30 Sep	4	4	Resident – Scarce
Dark/Grey Dagger <i>A.</i> <i>tridens/psi</i>	19 Jul	19 Jul	1	1	Non-Resident - Rare
Marbled Beauty <i>C.</i> <i>domestica</i>	01 Aug	01 Aug	1	1	Non-Resident – Rare
Mouse Moth <i>A.</i> <i>tragopoginis</i>	05 Aug	22 Aug	4	2	Resident – Scarce
Angle Shades <i>P. meticulosa</i>	28 Jun	30 Sep	3	1	Non-Resident – Rare

Species	First Date	Last Date	No. Days	Peak Count	Status
<b>Dun-bar</b> <i>C. trapezina</i>	02 Aug	05 Aug	2	1	Non-Resident – Rare
<b>Dark Arches</b> <i>A. monoglyphia</i>	19 Jun	30 Sep	41	111	Resident – Abundant
<b>Clouded-bordered Brindle</b> <i>A. crenata</i> *	18 Jun	18 Jun	1	1	Non-Resident – Rare
<b>Dusky Brocade</b> <i>A. remissa</i> *	26 Aug	26 Aug	1	1	Non-Resident – Rare
<b>Rustic Shoulder-knot</b> <i>A. sordens</i>	25 Jun	25 Jun	1	1	Non-Resident – Rare
<b>Marbled Minor</b> sp. <i>Oliga</i> agg.	04 Jun	25 Jun	2	3	Non-Resident – Scarce
<b>Middle-barred Minor</b> <i>O. fasciuncula</i>	13 Jun	30 Jul	14	41	Resident – Abundant
<b>Rosy Minor</b> <i>M. literosa</i>	19 Jul	22 Aug	16	21	Resident – Abundant
<b>Common Rustic</b> sp. <i>Mesapamea</i> agg.	19 Jul	26 Aug	30	59	Resident – Abundant
<b>Small Wainscot</b> <i>C. pygmina</i> *	02 Aug	02 Aug	1	2	Non-Resident – Rare
<b>Flounced Rustic</b> <i>L. testacea</i>	02 Aug	26 Aug	12	36	Resident – Abundant
<b>Ear Moth</b> sp. <i>Amphipoea</i> spp.	01 Aug	01 Aug	1	1	Non-Resident – Rare
<b>Rosy Rustic</b> <i>H. micacea</i>	19 Jul	30 Sep	24	32	Resident – Abundant
<b>Frosted Orange</b> <i>G. flavago</i>	23 Sep	30 Sep	2	1	Unknown – Scarce
<b>Mottled Rustic</b> <i>C. Morpheus</i>	15 Jun	03 Aug	17	13	Resident – Common
<b>Burnished Brass</b> <i>D. chrysitis</i>	05 Jul	13 Aug	12	6	Resident – Common
<b>Silver Y</b> <i>A. gamma</i>	30 May	30 Oct	40	100	Migrant – Abundant
<b>Spectacle</b> <i>A. tripartite</i>	15 May	30 Jul	11	8	Resident – Common
<b>Straw Dot</b> <i>R. sericealis</i>	02 Aug	02 Aug	1	1	Non-Resident – Rare
<b>Snout</b> <i>H. proboscidalis</i>	18 Jun	02 Jul	2	1	Unknown – Rare

#### REFERENCE

BRADLEY, J D and FLETCHER, D S (1979). *A Recorder's Log Book or Label List of British Butterflies and Moths*. Harley Books, Colchester.





# Northumbrian *Naturalist*

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