

NEBBS Group
Regional Newsletter 24
February, 2018
(With two page Supplement)



**Northeast England
Beached Bird Surveys**



Initial distribution list

Northeast England volunteers	Shetland beached bird survey coordinator
Southeast England volunteers	Orkney beached bird survey coordinator
Southeast Scotland volunteers	Jersey beached bird survey coordinators
Republic of Ireland Beached Bird Survey	South West England Fulmar Project

Newcastle University (Dove Marine Laboratory and various staff)
Dr Jan Andries van Franeker (International coordinator, Northern Fulmar project)
Interested parties in NE England and elsewhere; International Northern Fulmar Study Group

Compiler / editor / photographer (unless stated otherwise) email: dan.m.turner@btinternet.com
Daniel M Turner, Coordinator of the NEBBS Group, North Shields, England

Photographs above: Left: Druridge Bay, Northumberland, 24 June 2017;
 Upper right: Clare Friend collection on display at Old Low Light (N Shields), 22 Feb 2017;
 Lower right: beach art, Druridge Bay, 29 April 2017



NEBBS Group, Newsletter 24

Table of contents

1. Beached Bird Studies Women's Institute in the UK	page 3
2. Litter Action North Tyneside Capturing Our Coast Oiling incident, northeast England, September 2017	page 4
3. Northeast England Fulmars 2017	page 5
NEE-2017-003 ... television star	
NEE-2017-002 ... adult male, found at Coquet Island (Northumberland)	page 6
NEE-2017-001 ... adult male, found at Druridge Bay (Northumberland)	page 7
4. Northeast England Fulmars 2016	page 7
International Fulmar Workshop, February 2018	page 8
5. Laura Shearer, joining our survey group	page 9
6. Current survey team, Northeast England Beached Bird Surveys (NEBBS)	page 10
Dove Marine Laboratory; Gaps in NEBBS coverage;	page 11
Contacts in other regions; NEBBS frozen seabird summary	page 11
7. Exhibitions	page 12
8. Samples of fulmar stomach contents	page 13
Award of grant	
Community of Philosophical Enquiry, Michael Atkinson, Newcastle University	page 14
9. Selected (mostly) recent papers and publications	page 14
10. Further News and web links – Marine pollution and plastics	page 17
Other web links of interest	page 18
Web links (various)	page 19
11. End Notes	page 20

Thanks again and sending good wishes to you all.



Beached bird studies

I have established positive collaborative relationships with Drs Richard Bevan and Jane Delany of Newcastle University, School of Natural and Environmental Sciences. Our beached bird group has over two hundred frozen seabirds (see page 11) which would benefit from laboratory analysis. Seabird species we have squirreled away comprise mainly: guillemot, puffin, razorbill, little auk, kittiwake and shag. I have offered these birds for study to the university and the Centre for Ecology and Hydrology (CEH), and hope to collaborate with these organisations, moving forward, to see them analysed.

Photo on right: ‘The Arches’ of Armstrong Building, Newcastle University, 28 July 2017.



Kittiwake, adult, 26 Feb 2013, Whitley Bay beach



Guillemot, first-winter, 31 Dec 2016, Druridge Bay



Puffin, adult, 25 March 2013, Druridge Bay, Northumberland

Women’s Institute (WI) in the UK (www.thewi.org.uk)

Following my talk to the Northumberland Federation of Women’s Institutes in April (see NEBBS News Note No. 4, April 2017, page 3), here are follow-up notes

Email received (12 June):

Dear Dan

I am pleased to let you know that the WI resolution on the subject of plastic soup was passed at the National Annual Meeting last week. The National Federation now has a mandate on which to base a campaign and will be working on that straightaway.

Again, many thanks for coming to speak to us back in April.

Best wishes,

Jenny McLean

Northumberland Federation of WIs

Email received (23 June), extracts below:

I am delighted to tell you that over 98% of WIs voted in favour of adopting this resolution as a Campaign. The speakers were very passionate about the subject; there was a speaker from the floor who told us that her daughter had sampled water mid-Atlantic en route to the Falkland Islands. Micro fibres were found at this point, about as far from Africa, Europe and the

Americas as is possible. We are now waiting for details from National for guidelines for how to go about engaging people in the campaign at a local level.

A number of us from Northumberland WIs exchanged views about this resolution while we were at Liverpool, and there was a general consensus that we should do some beach clean ups with follow-up publicity.

Very best wishes,
Rosie Harden-Vane (Seaton Valley WI)

The second resolution, alleviating loneliness, was also adopted at the AGM of the WI in June.

Litter Action North Tyneside

A group called 'Litter Action North Tyneside' has organised very well attended beach litter cleaning in association with the Marine Conservation Society. Through these links you may find out more detail ...

<http://www.litteractionnorthtyneside.org.uk/great-british-beach-clean-2017-results/> and
https://docs.google.com/document/d/1w9U_4m2GcQiCC5oyFtAuewbdjKXVdJleesFVzIzZt8s/edit

Litter Action North Tyneside may be found on Facebook or use these contact details:
info@litteractionnorthtyneside.org.uk
<http://www.litteractionnorthtyneside.org.uk>

Capturing Our Coast

Become a citizen scientist and make observations at the coast. 'Capturing Our Coast' has hubs at seven centres in Scotland, Wales and England while the project is coordinated by Newcastle University based at the Dove Marine Laboratory. Current studies include:

- Changes to breeding timing due to water temperature: common shore crab and common whelk
- Wading birds feeding on rocky and sandy shores, linked to wrack (seaweeds)
- Lugworms on sandy beaches and environmental changes which may trigger reproduction

For more information, please check the website <https://www.capturingourcoast.co.uk/>

Oiling incident, northeast England, September 2017

We became aware of an oiling incident from 16-20 September from Amble down to Redcar, roughly a 70 mile stretch of coastline. We received information about a small number (a little over 20) of affected birds found. Those reported via our network: two kittiwakes, Seaton Sluice (M Hepple, 16 Sept); two guillemot, two puffin, a razorbill at Newbiggin (D Dack, 17 Sept); Blyth Wildlife Rescue handled guillemots and puffins (7 auks in total); a guillemot at Marsden (18 Sept); a puffin at Amble (16-17 Sept); a guillemot at Blackhall Rocks (20 Sept); unidentified gulls. For media report see ...

<http://www.chroniclelive.co.uk/news/north-east-news/pollution-scare-coast-puffins-guillemots-13647174>

Northeast England Beached Bird Surveys Group: New Surveyors and interested folk

Thank you very much - to all the newcomers, interested parties and our longstanding regulars of course – your involvement is greatly appreciated!

Northeast England Fulmars 2017 - collected for laboratory analysis (all from Northumberland coast)

Reference	Found	Location	Finder	Notes
NEE-2017-001	03.03.17	Cresswell, Druridge Bay	Steve Lowe	'Wrapped in fishing line and hook in its bill'.
NEE-2017-002	03.05.17	Coquet Island (RSPB)	Wesley Davies, Assistant warden	'found dead in a (historic) nest site'. BTO ring. Finder thought could not have been dead more than 3 days. This nest site had been used [by a fulmar pair] for at least seven years.
NEE-2017-003	09.06.17	Coquet Island (RSPB)	Wesley Davies, Assistant warden	Found dead, floating in water beneath low cliffs on east side of island.

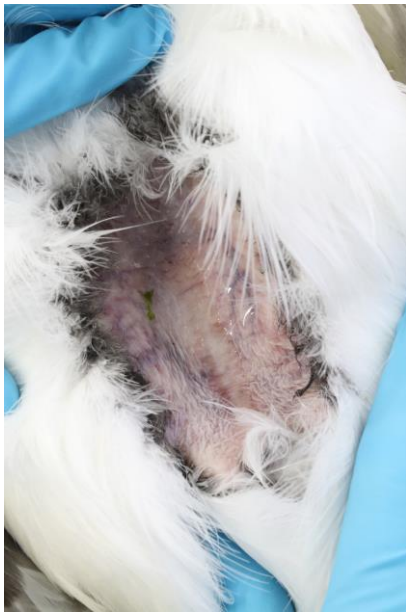
NEE-2017-003 ... television star

I performed analysis on this fulmar on the morning of Wednesday 18 October 2017, assisted by NEBBS Group volunteer Russell Davis, at the Dove Marine Laboratory. This bird was of exceptional external appearance and good overall condition i.e. scoring highly for internal condition and organ health. This was an immature female with a brood patch, therefore perhaps six or seven years of age. The ovary and oviduct showed no indication of being sufficiently mature to lay or have laid an egg. Four tissue samples were collected along with stomach and feathers. This specimen was then filmed by a three-man crew from the BBC during an interview with Dr Richard Bevan of Newcastle University. This was for a television feature concerning the government consultation about a plastic bottle deposit scheme in England. A small number of plastic items were uncovered in the stomach of 003 including a plastic pellet, which is also known as an industrial granule. Cause of death was unknown.



Fulmar NEE-2017-003, immature female, ready for analysis, Dove Marine Laboratory. Volunteer Russell Davis prepares bags to receive tissue samples from 003.





Fulmar NEE-2017-003,
brood patch.

Photos: Daniel M Turner



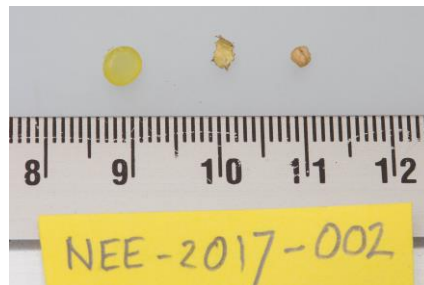
Dove Marine Laboratory (Newcastle University).
Filming underway for BBC One television programme
'Inside Out' (Northeast & Cumbria) for broadcast on 30 Oct.
From left: Dan Farthing (producer), Keith Blackburn (camera man),
Chris Jackson (presenter) and Dr Richard Bevan (interviewee).

NEE-2017-002 ... adult male, found at Coquet Island (Northumberland)

This specimen was analysed on 16 May 2017 at the Dove Marine Laboratory with assistance from NEBBS Group volunteer Aurelie Bohan. It was an adult male with very good organ health, reasonable muscle and fat scores and two small oil deposits on upper, inner right wing. No definitive cause of death was identified. I travelled to the Netherlands in June to hand this stomach, with seven others, to Dr Jan van Franeker for his contents analysis at Wageningen Marine Research (Den Helder).



Wesley Davies, finder of fulmar
NEE-2017-002



Stomach contents: 3 plastic pieces
including an industrial granule (left
in photo). Total plastic weight of
0.0290 g. Upper photo by Dr Jan
van Franeker.

Right photo shows beach surveyor
Aurelie Bohan assisting during
analysis of fulmar NEE-2017-002.



NEE-2017-001 ... adult male, found at Druridge Bay (Northumberland)

An unfortunate specimen with a large fishing hook caught inside its bill and a length of monofilament line entangled around it. There was some decay on bird's rear neck and signs of a little scavenging and damage to breast muscle. Internal analysis showed this was an adult male specimen with generally good organ health. Tissue samples were collected for future analysis. During the necropsy I was assisted by two Newcastle University master's students (Tom Wilson and Martin Bryant) who were keen to learn about the project. Together we discussed some of the methods, processes and findings.



Tissue samples from fulmar NEE-2017-001, ready for cold storage. Dove Marine Laboratory, Wednesday, 18 Oct 2017.



Dove Marine Laboratory, Cullercoats, North Tyneside. Opened in 1908, the laboratory is now part of the Newcastle University School of Natural and Environmental Sciences. Photograph: 15 May 2017.

Northeast England Fulmars 2016 - birds collected for laboratory analysis

During 2016 six beach-washed fulmars were found and collected from northeast England beaches by our group. These six, together with a fulmar from eastern Scotland (ESC-2016-001, Katie Dyke) and a subsequent Coquet Island bird (NEE-2017-002), were examined at the Dove Marine Laboratory during 16-17 May 2017. For each morning and afternoon work period, my assistants came singly, in this order: Mel Rigg, Aurelie Bohan, Russell Davis and Maggie Sheddan. This assistance was most welcome and I am sure we all learned a few things.

The eight stomachs were taken to Holland in June so that Dr van Franeker may carry out his examinations of their contents. The results were interesting and showed a marked decrease in plastic contents of the six northeast England birds when compared to other years of this study. A decline has also been noted in the plastics within fulmars washed onto the Dutch coastline. Perhaps a trend is developing? However six northeast England birds in 2016 is quite a small sample size.

Email extract from Dr Jan A van Franeker email of 2 July 2017:

‘Your 6 NEE-2016 birds all had some plastics, but in small quantities. Only one exceeded the EcoQO threshold value! So 2016 seems like an exceptionally ‘clean’ year. However, please keep in mind that a sample of 6 birds is far too small to draw conclusions. Pity no birds were found at all in 2015, to see if this is more than just incidental, now we have to wait for 2017 (NEE-2017-002 only small amount of plastic too)! There was no other rubbish, only fulmar NEE-2016-004 had also a piece of charcoal in the stomach.’



Maggie Sheddan records during analysis (17 May 2017) of fulmar ESC-2016-001



Un-natural stomach contents: 4 plastic pieces including one industrial granule (left in photo) and three fragments. Total plastic weight of 0.0543 g.

Bird found 27 March 2016, dying, Katie Dyke, Lossiemouth east beach.

Photo by Dr Jan A van Franeker



Un-natural stomach contents: three pieces of sheet like plastic weighing a total of 0.0433 g.

Bird found 15 Oct 2016, Steve Lowe, Druridge Bay, Northumberland.

Photo by Dr Jan A van Franeker



Russell Davis during analysis at Dove Marine Laboratory, 17 May 2017



Un-natural stomach contents: one industrial granule (low cylinder, left in photo) and one piece of foam. Total weight of these two man-made pieces 0.0164 g.

Bird found 13 May 2016, Yorkshire Wildlife Trust, Flamborough north landing.

Photo by Dr Jan A van Franeker



Fulmar NEE-2016-003, un-natural stomach contents: one nylon thread, one industrial granule, seven sheet-like pieces and 12 fragments (one piece of bottle cap). Total plastic weight of 0.0889 g.

Bird found 15 April 2016, Maurice Hepple, Blyth South Beach, Northumberland.

Photo by Dr Jan A van Franeker

International Fulmar Workshop, 16-21 Feb 2018, Den Helder & Texel, The Netherlands

There will be attendees from a range of European countries. The workshop will include laboratory analysis of birds, presentations & discussions and an excursion. This is all organised by Dr Jan Andries van Franeker, marine biologist, Wageningen Marine Research.

Laura Shearer, joining our survey group

Laura recently attended a beached bird survey on a bright and chilly December day and plans to continue regular surveys on parts of the northern Northumberland coastline. A welcome addition to our merry band! Some of her experience with natural history is outlined here.



Laura (with imm. shag) on ringing trip to Inchkeith, Firth of Forth.
Photographer unknown.

Laura studied animal biology as an undergraduate at Edinburgh Napier University and spent three months collecting baseline data on the coral reefs of northern Madagascar. Her fourth-year thesis involved researching the resource use of triggerfish around Mafia Island, Tanzania. Continuing her studies at Edinburgh Napier, Laura investigated the territory requirements of amphibians in Scotland and this culminated in the award of her MSc degree. Then followed three years of work with the National Trust on the Farne Islands where she developed a keen interest in seabird ringing. Laura is a Lothian Ringing Group committee member and has participated in their seabird ringing expeditions on the Forth Islands including ringing gannets on the Bass Rock. At the Mull of Galloway RSPB reserve, on Scotland's southernmost point, Laura became Community Engagement Officer and was responsible for ecological monitoring on the reserve.

After joining Coast Care in July 2017, Laura has been organising a number of volunteer activities in the northern coastal area of Northumberland. Coast Care (www.coast-care.co.uk) was founded by the Northumberland Wildlife Trust, the Northumberland Area of Outstanding Natural Beauty partnership and the Seahouses Development Trust. The project is supported by the Heritage Lottery Fund and has been created to engage volunteers with coastal management and conservation. Based in Seahouses, the Coast Care area extends from Berwick-upon-Tweed to Amble and this young organisation has a number of volunteer roles available to suit a range of interests and abilities.



Laura at Druridge Bay, Northumberland on
Saturday, 16 December 2017

We wish Laura well in all her various work and volunteer activities.

Current survey team, Northeast England Beached Bird Surveys (NEBBS)

Current survey team (and their survey sections) from south to north of our region

Keith Barrow,	Yorkshire: Filey Bay, Flamborough Head, Bridlington Bay (North; down to Skipsea village)
Martin Blick,	County Cleveland (Crimdon Dene to Skinningrove)
Peter Collins,	Whitburn Steel to Roker (Tyne and Wear)
Jon Everett,	Marsden Bay (South Tyneside)
Daniel Turner,	Tynemouth Longsands, [King Edward's Bay] (Tyne and Wear) Whitley Bay, [Cullercoats Bay]
D Turner with Linda Charlton,	Druridge Bay (north) (Northumberland)
Donna Zajak,	Seaton Sluice to St Mary's Island
Maurice Hepple,	Seaton Sluice to South Blyth (Northumberland)
Russell Davis,	Seaton Sluice to Blyth (south) (Northumberland)
Kevin Monaghan,	North Blyth partway towards Wansbeck river mouth
Aurelie Bohan,	Wansbeck river mouth, south towards North Blyth Druridge Bay (part)
Steve Holliday,	Newbiggin Bay (casual)
Mo Dewar,	Druridge Bay (south) Alnmouth to Boulmer
Steve Lowe,	Druridge Bay (part)
NIFCA: Jon Green & Natalie Wallace,	Druridge Bay (part), Beadnell Bay (south)
Barry & Jean Robinson,	Newton Haven, Embleton Bay (Northumberland)
George Moody,	Holy Island (Northumberland)
Andrew Craggs and team,	Lindisfarne NNR shore
Laura Shearer,	Seahouses and northwards (towards Budle Bay), (Holy Island), Annstead and Beadnell Bay
Malcolm Hutcheson,	Berwick beaches, south towards Cheswick Sands (Northumberland)
Gavin Dudley,	Occasional (Tyne & Wear, Northumberland)
Mel Rigg,	Occasional, Craster to Embleton Bay; Whitley Bay
Maggie Sheddan,	East Lothian contact, North Berwick, Scotland (Honorary member of NEBBS Group)

Due to the NEBBS Group involvement with ‘Save the North Sea’ Fulmar Project we have a freezer in **Dove Marine Laboratory** (Newcastle University) at Cullercoats Bay. This freezer was purchased with funds (initially in Feb, 2003) from the SNS Fulmar Project and has a priority for fulmar storage. This original freezer was replaced in January 2016 (with further international funding) after it broke down.

Contacts at Dove Marine Laboratory (phone 0191 208 3051): Jill Cowans (Secretary), John Knowles (Marine Science Technician) and Dr Jane Delany (Head of Laboratory)

Gaps in survey coverage (northeast England)

- Blackhall to Crimdon Dene (South Durham)
- Seaham to Castle Eden (County Durham coast)
- Sunderland to Seaham
- South Shields: Sand Haven & Little Haven (Tyne and Wear)
- Amble to Alnmouth (Northumberland)
- Ross Back Sands (Northumberland)

UK Regional beached bird and fulmar contacts

- | | |
|-------------------|-------------------------|
| Cristina Sellares | Jersey, Channel Islands |
| Dr Glyn Young | Jersey, Channel Islands |
| Alice Tremain | southwest England |
| Dr Heidi Acampora | Republic of Ireland |
| Dr Ewan Edwards | NE Scotland |
| Morag Wilson | Orkney, RSPB |
| Martin Heubeck | Shetland, SOTEAG |
| Will Miles | Shetland, SOTEAG |

Frozen seabird specimens (NEBBS Group) for proposed study purposes, with years collected

Species	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Guillemot					7	18	17	2		7	1		52
Razorbill				1	2	12	5	1		2			23
Little Auk	19	1			1	1		2	2	3			29
Puffin					2	6	65	4		1	2	1	81
Puffin (Jersey)								10					10
Kittiwake				3	1	5	5	3					17
Shag						1	8						9
Gannet						1			2				3
Roseate tern											4		4
Totals	19	1	----	4	13	44	100	22	4	13	7	1	228

From the birds listed in the table above, all were collected in northeast England apart from:

- a) The row indicating puffins from Jersey;
- b) Six kittiwakes (one east Scotland in 2010, three SE England in 2012, two Jersey in 2014);
- c) Two razorbills (one from Norfolk in 2011 and one from Jersey in 2014);
- d) Two guillemots from east Scotland (collected in 2012);
- e) Three little auks from East Lothian, Scotland (one in 2008 and two in 2016).

I hope to see these birds analysed through collaboration, moving forward, with Newcastle University and the Centre for Ecology and Hydrology (CEH) – see article at top of page 3 of this Newsletter.

Exhibitions (attended by NEBBS Group coordinator)

North Shields fish quay, 16 July 2017, Tynemouth Lifeboat Day:
a display of mainly sea and coastal birds (on the fish quay covered market).

Dove Marine Laboratory, Cullercoats, Newcastle University, Wednesdays, 9 & 16 August 2017:
displays about the Fulmar Project and beached bird surveys in Northeast England.

On each of these two Dove Marine Laboratory open days my display table was on the ground floor. Many visitors called and talked with me. A recent graduate in marine biology, Gemma McGregor, had designed a smashing poster for these days and it provided information and photographs about our beached bird work. Gemma was on hand to welcome and guide visitors along with Caitlin Ehlers, a Marine Biology undergraduate who was about to commence her third year with the university. Some of the questions which visitors asked meant I investigated later in order to make informed replies.



Dove Marine Laboratory, Wed 16 Aug 2017, open day.
I attended a bird display to discuss with visitors.
The upper central poster (left) was designed by marine biology graduate Gemma McGregor.

Photos: (left) by Gemma and (right) by myself



This photograph shows the Dove Marine Laboratory open day team of organisers. The laboratory was open to the public each Wednesday during June to August 2017 and regularly attracted 200 and more daily visitors who enjoyed the aquarium and a range of other displays.

From left:
Gemma McGregor, Caitlin Ehlers and Charlotte Foster (CoCoast field assistant and Outreach Officer)

Samples of fulmar stomach contents

In October, at the Dove Marine Laboratory, four samples were prepared of plastic and synthetic beach litter. These were based on northeast England fulmar stomach contents from birds found during 2007-2011. So each sample was of approx. 0.35 g and comprised between 32 and 41 plastic pieces. During that five year period, from the 51 northeast England fulmar corpses collected for examination, each stomach contained on average 46.4 +/- 6.7 pieces of plastic material with a total mass of 0.35 +/- 0.07 g. So these new samples were made to be closely representative of the stomach contents from an actual fulmar washed up on our beaches. Further samples have been made which are based on a 65 kg person and their equivalent stomach contents if they had been a large fulmar. The equivalent, on this human scale, would be 35 gm of plastic litter i.e. one hundred times more litter than in a fulmar of 0.65 kg.

Labels will be prepared to accompany each 'sample' explaining what they represent. One pair of samples is intended for the RSPB Visitor Centre at Bempton, Yorkshire, England. Bempton has a well-known and substantial seabird colony on its high North Sea facing cliffs. Another pair of samples is for a group called Litter Action North Tyneside which is carrying out well-attended beach cleans in our area. The new samples will be used to spread the word about the impact of marine plastic litter and the important need for us all to clean up our act.



Fulmar stomach contents sample. Approx. 0.35 g of plastic pieces. The yellow industrial granule on lower right of image is provided for scale and is 3-4 mm in diameter. The actual sample is contained within the circular petri dish which is resting on a digital balance. This was one of the samples made in the Dove Marine Laboratory on 26 Oct 2017.

Award of grant

In June 2017 the Northumberland & Tyneside Bird Club (NTBC) made a financial award to the Northeast England Beached Bird Surveys Group. This was to pay for taxidermy of four specimens found dead or dying in our region: greenshank, sanderling, kingfisher and redshank. These birds have subsequently appeared at: Tynemouth Lifeboat Day, Old Low Light Heritage Centre (North Shields fish quay), Dove Marine Laboratory and NTBC winter meetings. The redshank is preserved as a cabinet skin while the other three birds have been worked into mounted positions.



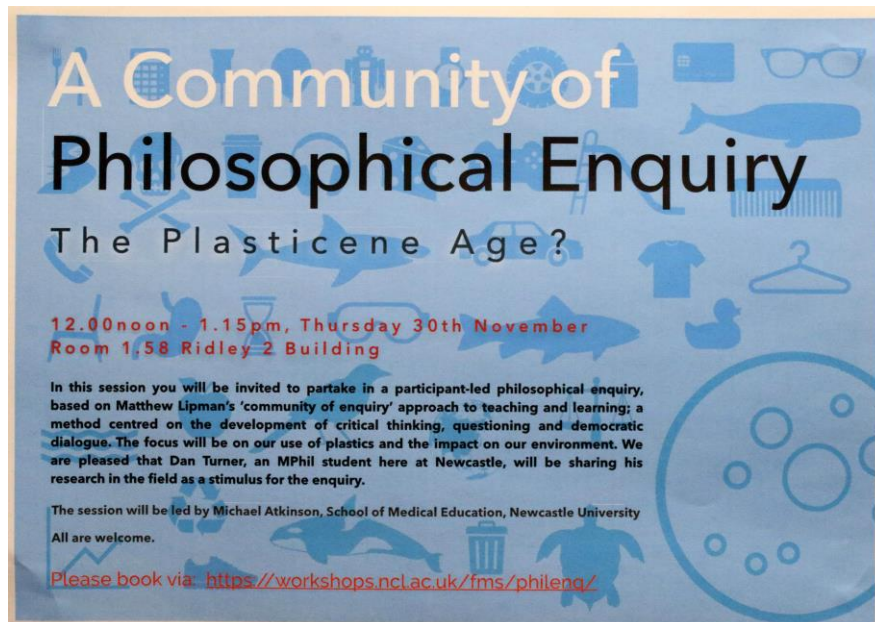
Left: Mounted sanderling, held by finder Mel Rigg. Found 20 Sept 2016 on Whitley Bay beach.

Right: Greenshank found 4 Sept 2016 by Tariq Farooqi, roadside casualty beside Cresswell Pond, Northumberland



Community of Philosophical Enquiry, Michael Atkinson, Newcastle University

Due to our links with Newcastle University I have met with Michael Atkinson, Teaching Fellow in the School of Medical Education. Michael asked if I would be interested in providing the stimulus (or topic) for one of his planned sessions. We discussed it and I became involved. The event was held on 30 Nov 2017 and the small advertising poster is shown here. On the day I took along a few taxidermy birds, plastic samples, newsletters, reports, posters, DVD and an information sheet for attendees to take away. I talked for a few minutes about our project before the discussion expanded amongst those attending. This was a most useful activity with another planned for 2018.



See Michael Atkinson's website ... <https://www.schoolofmindfulness.co.uk/events>

Selected (mostly) recent papers and publications (Marine life, plastics, pollution, litter)

Amélineau, F., Bonnet, D., Heitz, O. & Grémillet, D. 2016 (September). Microplastic pollution in the Greenland Sea: Background levels and selective contamination of planktivorous diving seabirds. *Environmental Pollution* (2016) 219: 1131-1139. <http://dx.dor.org/10.1016/j.envpol.2016.09.017>

Bakir, A., O'Connor, I.A., Rowland, S.J. & Thompson, R.C. 2016 (December). Relative importance of microplastics as a pathway for the transfer of hydrophobic organic chemicals to marine life. *Environmental Pollution*.

Beer, S., Garm, A., Huwer, B., Dierking, J. & Nielsen, T.G. 2017 (October). **No increase in marine microplastic concentration over the last three decades – A case study from the Baltic Sea.** *Science of the Total Environment*. DOI · 10.1016/j.scitotenv.2017.10.101
<https://doi.org/10.1016/j.scitotenv.2017.10.101>

Catarino, A., Thompson, R., Sanderson, W.G. & Henry, T.B. 2016 (September). Development and optimisation of a standard method for extraction of microplastics in mussels by enzyme digestion of soft tissues. *Environmental Toxicology and Chemistry* 36(4). DOI: 10.1002/etc.3608

Clark, J.R., Cole, M., Lindeque, P.K., Fileman, E.S., Blackford, J., Lewis, C., Lenton, T.M., Galloway, T.S. 2016 (August). Marine microplastic debris: a targeted plan for understanding and quantifying interactions with marine life. *Frontiers in Ecology and the Environment* 14(6): 317-324

Connors, K.A., Dyer, S.D. & Belanger, S.E. 2017 (May). Advancing the quality of environmental microplastic research. *Environmental Toxicology and Chemistry*. DOI: 10.1002/etc.3829

Coppock, R.L. & De Moura, A.Q. 2017 (July). A small-scale, portable method for extracting microplastics from marine sediments. *Environmental Pollution*.

Dell'Araccia, G., Phillips, R.A., van Franeker, J.A., et al. 2017 (June). Comment on "Marine plastic debris emits a keystone infochemical for olfactory foraging seabirds" by Savoca et al. *Science Advances* 3(6): e1700526.

Dyachenko, A., Mitchell, J. & Arsem, N. 2016 (January). Extraction and Identification of Microplastic Particles from Secondary Wastewater Treatment Plant (WWTP) Effluent. *Analytical Methods*.

Enders, K., Lenz, R., Beer, S. & Stedmon, C.A. 2016 (October). Extraction of microplastic from biota: Recommended acidic digestion destroys common plastic polymers. *ICES Journal of Marine Science* 74(1): fsw173. DOI · 10.1093/icesjms/fsw173

Foekema, E.M., Gruijter, C.D., Mergia, M.T., van Franeker, J.A., Murk, A.T.J. and Koelmans, A.A. 2013 (June). Plastic in North Sea fish. *Environmental Science and Technology*, 2013, 47, 8818-8824.

Güven, O., Gökdağ, K., Jovanović, B. & Kideys, A.E. 2017 (January). Microplastic litter composition of the Turkish territorial waters of the Mediterranean Sea, and its occurrence in the gastrointestinal tract of fish. *Environmental Pollution* 223 (2017) 286-294. <https://doi.org/10.1016/j.envpol.2017.01.025>

Helm, P. 2017 (March). Improving microplastics source apportionment: a role for microplastic morphology and taxonomy? *Analytical Methods* 9(9): 1328-1331

Hermesen, E., Pompe, R., Besseling, E., Koelmans, A.A. 2017 (September). Detection of low numbers of microplastics in North Sea fish using strict quality assurance criteria. *Marine Pollution Bulletin* 122(1-2), pages 253-258. <http://dx.doi.org/10.1016/j.marpolbul.2017.06.051>

Hidalgo-Ruz, V. & Thiel, M. 2015 (January). Chapter: The contribution of citizen scientists to the monitoring of marine litter. Chapter 16 in the book: *Marine Anthropogenic Litter* (Editors: Bergmann, Gutow & Clages). Springer International Publishing.

Hipfner, J.M., Studholme, K.R. & Galbraith, M. 2017 (June). Low incidence of plastics in food loads delivered to nestlings by a zooplanktivorous seabird over a 21-year period. *Marine Pollution Bulletin* 121, pages 320-322.

Jovanović, B. 2017 (May). Ingestion of microplastics in fish and its potential consequences from a physical perspective: Potential Consequences of fish ingestion of microplastic. *Integrated Environmental Assessment and Management* 13(3): 510-515

Joon Shim, W., Hong, S.H. & Eo Eo, S. 2016 (January). Identification methods in microplastic analysis: a review. *Analytical methods* 9(9) DOI · 10.1039/C6AY02558G

Karlsson, T.M., Vethaak, A.D., Almroth, B.C., Ariese, F., van Velzen, M.J.M., Hassellöv, M. & Leslie, H.A. 2017 (July). Screening for microplastics in sediment, water, marine invertebrates and fish: Method development and microplastic accumulation. *Marine Pollution Bulletin* 122(1-2)

Kooi, M., Besseling, E., Kroeze, C., van Wenzel, A.P. and Koelmans, A.A. 2018 (January). Modeling the fate and transport of plastic debris in freshwaters. (Chapter / ResearchGate).

Kühn, S., van Werven, B., van Oyen, A., Meijboom, A., Bravo Rebolledo, E.L. & van Franeker, J.A. 2017 (15 February). The use of potassium hydroxide (KOH) solution as a suitable approach to isolate plastics ingested by marine organisms. *Marine Pollution Bulletin* 115(1), pages 86-90. <https://doi.org/10.1016/j.marpolbul.2016.11.034>

Li, W.C., TSE, H.F. and Fok, L. 2016 (October). Plastic waste in the marine environment: A review of sources, occurrence and effects. *Science of the total environment*, 566-567: 333-349.

Long, M., Paul-Pont, I., Hégaret, H.,, Soudant, P. 2017 (Sept). Interactions between polystyrene microplastics and marine phytoplankton lead to species-specific hetero-aggregation. *Environmental Pollution*.

Lusher, A. 2015. Microplastics in the marine environment: Distribution, interactions and effects. Chapter 10 in the book: *Marine Anthropogenic Litter* (Editors: Bergmann, Gutow & Clages). Springer International Publishing.

Lusher, A., Welden, N., Sobral, P. & Cole, M. 2017 (January). Sampling, isolating and identifying microplastics ingested by fish and invertebrates. *Analytical Methods* 9(9).

Ogunola, O.S. & Palanisami, T. 2016 (January). Microplastics in the marine environment: Current status, assessment, methodologies, impacts and solutions. *Journal of Pollution Effects & Control*, Volume 4, Issue 2, 13 pages. doi:10.4172/2375-4397.1000161

Provencher, J.F., Bond, A., Hedd, A., et. al. 2014 (July). Prevalance of marine debris in marine birds from the North Atlantic. *Marine Pollution Bulletin*, 84 (2014), pages 411-417.

Ramsden, J.J. 2017 (March). Assault on health. *Journal of Biological Physics and Chemistry* 17(1): 3-7

Seif, S., Provencher, J.F., Avery-Gomm, S., Daoust, P.-Y., Mallory, M.L. and Smith.P.A. 2017 (Dec). Plastic and non-plastic debris ingestion in three gull species feeding in an urban environment. *Archives of environmental contamination and toxicology*.

Steer, M., Cole, M., Thompson, R.C. & Lindeque, P.K. 2017 (April). Microplastic ingestion in fish larvae in the western English Channel. *Environmental Pollution*. DOI: 10.1016/j.envpol.2017.03.062

Sussarellu, R. et al. 2016 (Feb). Oyster reproduction is affected by exposure to polystyrene microplastics. *Proceedings of the National Academy of Sciences* 113 (9): 201519019.

www.pnas.org/cgi/doi/10.1073/pnas.1519019113

Teuten, E., Rowland, S.J., Galloway, T.S. & Thompson, R.C. 2007. Potential for plastics to transport hydrophobic contaminants. *Environmental Science and Technology*. 2007, Vol. 41, No. 22, 7759-7764.

Torre, M., Digka, N., Anastasopoulou, A., Tsangaris, C., Mytilineou, C. 2016 (December). Anthropogenic microfibres pollution in marine biota. A new and simple methodology to minimize airborne contamination. *Marine Pollution Bulletin* 113(1-2), pages 55-61.

<http://doi.org/10.1016/j.marpolbul.2016.07.050>

van Franeker, J.A., Bravo Rebolledo, E.L., Hesse, E., IJsseldijk, L.L., Kühn, S., Leopold, M. & Mielke, L. 2018 (January). Plastic ingestion in harbour porpoises *Phocoena phocoena* in the Netherlands: Establishing a standardised method. *AMBIO, A Journal of the Human Environment*. DOI · 10.1007/s13280-017-1002-y <https://link.springer.com/article/10.1007%2Fs13280-017-1002-y>

van Franeker, J.A., Kühn, S., Pederson, J. & Hansen, P.L. 2017 (November). Fulmar litter EcoQO monitoring in Denmark 2002-2016. Wageningen Marine Research.

Wesch, C., Bredimus, Katja, Paulus, M. & Klein, R. 2016 (September). Towards the suitable monitoring of ingestion of microplastics by marine biota: A review. *Environmental Pollution*.

Ziccardi, L., et al. 2016 (April). Microplastics as vectors for bioaccumulation of hydrophobic organic chemicals in the marine environment: A state-of-the-science review. *Environmental Toxicology and Chemistry* 35(7). DOI: 10.1002/etc.3461

Further News and web links – Marine pollution and plastics

Plastic bottle deposit scheme

The UK government is considering a scheme to recycle plastic bottles in England. Part of the purchase price of a plastic bottle product would comprise a deposit refundable when the bottle is returned. Avaaz and other organisations report that similar deposit schemes in Germany, Denmark and North America have led to plastic bottle recycling rates above ninety percent. The Scottish and Welsh governments are considering similar schemes. Surfers Against Sewage mention that a deposit return system (DRS) in the UK would prevent four million bottles a week from polluting our oceans. The UK government reported that 57% of plastic bottles sold in the UK in 2016 were collected for recycling (see <http://www.bbc.co.uk/news/uk-politics-41474334>), but this needs to increase.

Autumn budget, 22 Nov 2017, included ... **4.14 Environmental tax**

Reducing plastics waste – The UK government will launch a call for evidence in 2018 seeking views on how the tax system or charges could reduce the amount of single-use plastics waste, building on the success of the existing plastic carrier bag charge.

This article in the Guardian (11 Oct 2017) concerning a plastic bottle deposit scheme, reported ... ‘Over eight million tonnes of plastic enter the oceans every year, with 80% coming from land’.

<https://www.theguardian.com/environment/2017/oct/11/plastic-bottle-deposit-return-scheme-could-save-...>

Ben Fogle calls for plastic-free aisle in supermarkets (The Telegraph, 13 Sept 2017)

<http://www.telegraph.co.uk/news/2017/09/13/choking-plastic-pollution-time-uk-act/>

Report from London Assembly Environment Committee on bottled water (April 2017)

<https://www.sas.org.uk/wp-content/uploads/Environment-Committee-Bottled-Water-Report..pdf>

‘Message in a Bottle’ scheme, Surfers Against Sewage <https://www.sas.org.uk/messageinabottle/>

Surfers Against Sewage ... deposit returns ...

<https://www.sas.org.uk/news/government-moves-closer-committing-deposit-returns/>

Article in the Guardian (28 June 2017) ... world’s plastic binge ‘as dangerous as climate change’ ...

<https://www.theguardian.com/environment/2017/jun/28/a-million-a-minute-worlds-plastic-bottle-binge-as-dangerous-as-climate-change>

Article in the Guardian (4 August 2017) ... Green Alliance calls for scheme to reduce oceanic plastic pollution ...

<https://www.theguardian.com/environment/2017/aug/04/uk-needs-bottle-deposit-scheme-to-cut-plastic-litter-in-oceans-says-thinktank>

Article in the Guardian (6 Sept 2017) ... Plastic fibres found in tap water around the world ...

<https://www.theguardian.com/environment/2017/sep/06/plastic-fibres-found-tap-water-around-world-study-reveals>

Article in the Guardian (14 Sept 2017) ... inquiry into plastic bottle use ...

<https://www.theguardian.com/environment/2017/sep/14/uk-to-reopen-inquiry-into-plastic-bottle-use>

Article in the Grocer (3 Oct 2017) ... 'Michael Gove signals government backing for deposit return scheme' ... <https://www.thegrocer.co.uk/home/topics/waste-not-want-not/michael-gove-signals-government-backing-for-deposit-return-scheme/558332.article>

Switching cotton buds from the use of plastic sticks to paper sticks:

Group 'City to Sea' campaigned on this and those retailers which have switched include: Boots, Sainsbury's and Wilko with others to follow by the end of 2017. Here's their video

<https://www.facebook.com/citytosea/videos/1350598178400590/>

Dirty flushing (baby wipes flushed incorrectly down the loo)

<https://www.youtube.com/watch?v=r0VHr2uBinc&feature=youtu.be>

Read more about 'City to Sea' here: <http://www.citytosea.org.uk/about-page/>

Plastic drinks straws are another great polluter and moves are afoot to reduce their use and replace with other materials. McDonald's, Wetherspoon's and Tesco are being called upon to reduce the issue.

Wet wipes in our rivers and seas ('City to Sea')

<https://www.youtube.com/watch?v=0UwE6eUU8Lw&feature=youtu.be>

Other web links of interest

The Oceans Are Drowning In Plastic — And No One's Paying Attention (Huffington Post)

http://www.huffingtonpost.com/entry/plastic-waste-oceans_us_58fed37be4b0c46f0781d426

The Arctic Ocean is clogging with billions of plastic bits (The Atlantic)

<https://www.theatlantic.com/science/archive/2017/04/the-arctic-ocean-is-filling-with-billions-of-plastic-bits/523713/>

Even your sea salt is almost certainly contaminated with plastic (Quartz)

<https://qz.com/979101/sea-salt-is-likely-to-contain-microparticles-of-plastic-according-to-a-new-study/>

Full scale of plastic in the world's oceans revealed for first time (The Guardian)

<https://www.theguardian.com/environment/2014/dec/10/full-scale-plastic-worlds-oceans-revealed-first-time-pollution>

Europe to counter plastic waste? Add your name to the petition

<https://actions.sumofus.org/a/eu-plastic-waste/?akid=34830.3985111.ca5xDE&rd=1&source=fwd&t=2>

An Avaaz campaign petition

https://secure.avaaz.org/campaign/en/end_plastic_pollution_loc/?bgnQAeb&v=93069&cl=12644415361&checksum=17a9c632ae0417d386fe3ce5ff92fdc3510f546bef6eacf6db24f9cf8adbe9c2

Plastic in oceans

<http://www.bbc.co.uk/news/science-environment-40584629>

More on refilling plastic bottles (the Guardian, 29 June 2017)

<https://www.theguardian.com/environment/2017/jun/29/the-bristol-refill-reuse-bottle-campaign-that-is-spreading-across-europe>

NEBBS Newsletter 24, February 2018, Turner D.M.

UK supermarket *Iceland* to go plastic free by 2023

<https://www.care2.com/causes/uk-supermarket-promises-to-go-plastic-free-by-2023.html>

Tell McDonalds to stop using plastic straws

<https://actions.sumofus.org/a/mcdonald-s-is-polluting-our-oceans-2/?akid=32459.3985111.t74h7O&rd=1&source=fwd&t=2>

Fairy liquid bottles to be made from ocean plastic. Proctor and Gamble to make a limited edition of 320,000 Fairy Ocean Plastic Bottles from 100% recycled plastic. Ten percent of the plastic will be sourced as marine litter. See here for more detail ... <https://www.expertskiphire.co.uk/fairy-liquid>

The Guardian (16 January 2018) ... European Union declares war on plastic waste ...

<https://www.theguardian.com/environment/2018/jan/16/eu-declares-war-on-plastic-waste-2030>

Whale and Dolphin Conservation video <https://www.youtube.com/watch?v=OoRoRV-TVCU>

UK ban on microbeads

https://www.globalcitizen.org/en/content/microbeads-ban-uk/?utm_source=Iterable&utm_medium=email&utm_campaign=UK_12_Jan_2018_content_digest_alive

Support a charge on disposable coffee cups

<https://actions.sumofus.org/a/ditch-disposable-coffee-cups/?akid=38130.3985111.ogzmfF&rd=1&source=fwd&t=1>

Most ocean plastic pollution is carried by ten rivers

<https://www.voanews.com/a/ninety-percent-of-ocean-plastic-pollution-carried-by-10-rivers-/4134909.html>

The European Union is considering a continent-wide plastics tax

<https://www.care2.com/causes/the-eu-is-considering-a-continent-wide-plastics-tax.html>

The UK recycling industry faces crisis after China bans waste imports

<https://www.care2.com/causes/the-uk-recycling-industry-faces-crisis-after-china-bans-waste-imports.html>

Nice video Why Plastic Pollution is Personal (City to Sea)

<https://www.youtube.com/watch?v=zJiQt9ASSNg&feature=youtu.be>

Web links (various)

NEBBS Group web page <http://www.nhsn.ncl.ac.uk/activities/conservation-research/beached-birds/>

Wageningen Marine Research / Marine litter
... and Antarctica:

www.wur.eu/plastics-fulmars
<http://www.wur.eu/antarctica>

Further details of our work and beached bird surveys in Northeast England may be seen here:

<http://www.whitewingspublishing.co.uk/beached-bird-diary-2016/theboatoll.wordpress.com> (The Boat, at the Old Low Light)

End Notes

For members of the Northeast England Beached Bird Surveys Group:

Please remember to collect:

1. ringed auks (guillemot, razorbill, puffin);
2. any further ringed seabirds;
3. little auks (whatever the condition and state of completeness);
4. complete kittiwakes and puffins;
5. fulmars with complete abdomens;
6. interesting specimens that are in good condition for the Great North Museum: Hancock or our own collection.

With many thanks to: (Please accept apologies for any omissions, errors and exceptions)

Barry & Jean Robinson and Dr Jane Delany for checking the drafts of this newsletter; also to Laura Shearer; Steve Holliday for checking the two page supplement.

the Natural History Society of Northumbria for storing this newsletter on our NEBBS Group web page ... <http://www.nhsn.ncl.ac.uk/activities/conservation-research/beached-birds/>

If you notice any errors or have ideas for future content then please get in touch.

Note for NEBBS Group surveyors:

Please continue to return your monthly survey forms including 'nil returns' i.e. when no corpses are found during any monthly survey – so that we have a record of the exact length of shore that has been surveyed. If you have un-submitted reports please forward for future inclusion in later, and more complete, reports and papers.



Linda Charlton surveying at Newbiggin-by-the-Sea, 4 January 2018

Supporters of the Northeast England Beached Bird Surveys Group:



Northeast England Beached Bird Surveys Group
NEBBS Group regional *Newsletter 24*

Completed: 11 Feb 2018