

To: NE England SNS Volunteers:
Martin Blick, Cleveland
Peter Collins, Marsden
Phil Davey, Beal Station (Fenham Flats)
Malcolm Hutchinson, Berwick
George Moody, Holy Island
Jenny Prince Belford (Budle Bay/Bamburgh North)
David Rollo Vet, Berwick Swan and Wildlife Trust

Daniel M Turner
North Shields
Tuesday 3 March 2004

Dear 'Save The North Sea' volunteers,

Many thanks for your hard work so far – please find enclosed a brief summary report for the three months of regular Beached Bird Surveys for which I have received data from December 2003 – February 2004.

Jenny found a Fulmar corpse on 29 Feb on her Budle Bay to Harcessrocks stretch, but unfortunately it seems to have been partially scavenged so the internal organs were not present. Therefore it will not be possible to retrieve its stomach for analysis. Dr Jan van Franeker tells me that in Texel / Holland they had a lot of beach washed Fulmars in the last week of February – so please keep a close eye on your shores just now. Today however Martin found a dead Fulmar at Saltburn Beach, Cleveland, dead about 2 days, quite fresh and complete. I have collected it this evening and will place it in our freezer early on Wednesday morning.

Of course we do not really want to find a lot of dead birds, but if they are there we are in a good position to record the information and look into trends in our region. Data on Fulmar stomach contents is a valuable indicator of cleanliness of the North Sea – and presently our group is the only one looking for their corpses in mainland Britain. The only other British groups are based in Orkney and Shetland.

Please continue to record your additional observations while looking for beach-washed seabirds – you can see that they make interesting reading from the report enclosed. It is also important that we continue to record the presence or absence of oil on birds and the shore – so that we may determine incidents offshore.

One useful method that is worth mentioning again is that when surveying the shore it is useful to carry a pair of scissors. You may then cut across the tips of the outer primary wing feathers of corpses (apart from Fulmars) so that you do not re-record them on your way back along the shore in the opposite direction or on a later date.

I look forward to hearing from you again and receiving your future reports. Please remember to let me know a.s.a.p. when you retrieve any Fulmars, particularly where the internal organs are intact, as I shall need to store them on Tyneside for later analysis. Last June's Fulmar from Marsden still resides intact in the freezer at the Cullercoats Dove Marine Laboratory.

If you have any additional ideas on how I pass on information please let me know. I trust such a report back to you all every two to three months will suffice for the present time. The more BBS reports I receive from everyone then the more comprehensive will be our work and the more detailed and useful our surveys will prove to be.

I have spoken with the Hancock Museum in Newcastle today and they are keen to take any reasonably fresh specimens (birds or other, but not Badger!) which are in good condition. Please let me know if you find any such specimens so that I may collect and pass on. Please do not cut across the wing tips of such bird corpses.

With best wishes,

Dan Turner

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David Rollo, Vet, Berwick Swan and Wildlife Trust

Daniel M Turner
North Shields
Friday 15 May 2004

Dear 'Save The North Sea' volunteers,

Many thanks for continuing to carry out your Beached Bird and Fulmar Surveys and for sending me your reports for summarisation.

I enclose the running report recording our findings since approx December 2003 – it will be further updated as I continue to receive your survey results.

It is excellent if I can receive monthly survey results from each of you for your coastal stretches. You may send them to me on a monthly, two-monthly or even three-monthly basis. If you need some more forms please give me a ring. Completion of forms, even for nil return, when no seabird specimens were found, are also important – they show how much coastline is being covered each month and so I may therefore work out the number of specimens per km during each month. This will enable us to see how relative numbers of birds recovered vary during the progressing seasons. If you check your stretch more than once in any month please also record that fact including dates, times, oil and litter details, and other people present, etc. It all helps to build up a bigger picture.

Our European organiser, Dr Franeker, is currently in the Antarctic on a research vessel, he will be home in the Netherlands in early June.

The 'Birdwatch' magazine for April 2004 reported on page 15, in news digest, an article entitled 'Hundreds of Fulmars die after mysterious wreck'. It began by stating, 'High numbers of Fulmars washed up on beaches of northern France and Belgium during February, together with simultaneous movements of 'blue' birds, more coastal corpses and a scattering of inland records in Britain, have sparked fears for the species in the North Sea'. It went on, 'French birders reported more than 200 picked up dead in less than a week in the vicinity of Le Clipon, near Dunkirk,'. It reported that smaller numbers of corpses were on the East Anglian coast.

In 'British Birds' Journal, May 2004, Vol. 97, No.5 – there is a Note by Dr Jan Andries van Franeker on pages 247 – 249 which is entitled, 'Fulmar wreck in the southern North Sea: preliminary findings'. This reports '..... thousands of casualties'. Jan reports on preliminary findings of 15 Fulmar dissections from birds collected in The Netherlands. All birds were severely emaciated and there was a high proportion of females. A high proportion of birds had not completed their primary and tail moult indicating problems for them over a period of some months. A combination of events may have been involved: 'e.g. low food abundance, persistent bad weather, higher levels of pollutants, and secondary diseases'. The dissected birds had an average of about 25 pieces of ingested plastic particles in their stomachs.

I look forward to hearing from you all over the coming months. Please remember to let me know a.s.a.p. when you retrieve any Fulmars, particularly when the internal organs are intact, as I shall need to store them on Tyneside a.s.a.p. for later analysis. Any fresh specimens (in good condition) of other species are welcomed by the Hancock Museum in Newcastle. Please let me know if you find any such specimens so that I may collect and pass them on. Please do not cut across the wing tips of such bird corpses which are intended for preservation and study purposes.

With best wishes, Dan Turner

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Malcolm Hutcheson, Berwick
George Moody, Holy Island
Jenny Prince Belford (Budle Bay/Bamburgh North)
David Rollo Vet, Berwick Swan and Wildlife Trust

Daniel M Turner
North Shields
Sunday 10 Oct 2004

Dear 'Save The North Sea' volunteers,

Enclosures:

1. Summary of measurements of the five NE England Fulmars found between June 2003 and Sept 2004.
If you would like more data for your particular birds – please get in touch.

The stomach contents of our five NE England Fulmars will be analysed during the next few weeks at Alterra in Texel, Holland. I was involved in the dissections of our birds at the BTO HQ (The Nunnery, Thetford) in early September and took their stomachs, along with another nine from SE England, to Holland on 16 Sept.

I attended the SNS Fulmar workshop from 16 – 21 Sept on the Dutch island of Texel along with other delegates from Orkney (1 person), Shetland (1), the Faeroes (1), Norway (1), Denmark (2), Belgium (3), Germany (2) and Holland (1 – the organiser, Dr. Franeker). The funding for the three year phase of the project has come to an end, but Dr Franeker is investigating more EU funding next year to continue the study and extend it to include the northern coasts of France and Spain. Dr Franeker will be writing up the project findings for the North Sea by the end of 2004 for publication. Meanwhile we would like you to continue your regular Beached Bird Surveys and in particular looking for Fulmars. I shall continue to store beached Fulmar corpses on Tyneside for future analysis.

In order to standardise the BBS work in NE England and make better use of the data we would like you please, our NE England surveyors, to commit to surveying one core length of coast on a monthly basis throughout the year. For example if one person commits to a 2km stretch (or 2 x 2km stretches), then that (or those) core stretches need to be surveyed once every month and the survey results returned to me. Any additional surveys of other stretches of coastline (for example in the winter months) would be welcome, but can you all please commit to a regular monthly core section?

Can you please let me know if you are able to commit to this regular core survey once every month and inform me of the stretch(es) to be covered and its/their length. We should aim to start this survey work asap, but definitely from January 2005. If we commit to a total core length of say 20 km NE England coastline that would be great for standardised surveys and make our data more valuable scientifically. I shall update our recording forms to include the words 'CORE / ADDITIONAL' – then the surveyor may circle the appropriate word describing their survey.

I intend to write a summary of the NE England 2004 Beached Bird Surveys and our Fulmars for publication in 'The Transactions' of the Natural History Society of Northumbria.

With best wishes,
Dan Turner

Table recording certain biometrics of N.E. England Fulmars

Ref	Colour-phase	Sex	Culmen Length	Bill Depth	Head Length	Tarsus Length	Wing Length	Weight	Biometrics by, dissected by, dissection date. Comments.
NEE-01	LL	M	39.9	17.4	99.0	55.3	340	n/t	MJG, MJG, 03.09.04. Found 20.06.03, P. Collins, Marsden, Tyne & Wear.
NEE-02	LL	F	38.7	15.6	89.7	50.5	(313) in moult	n/t	MJG, MJG, 03.09.04. Found 02.03.04, M. Blick, Saltburn Beach, Cleveland.
NEE-03	LL	F	No head	No head	No head	54.0	329	n/t	MJG, MJG, 03.09.04. Found 03.03.04, M. Blick, Redcar, Cleveland.
NEE-04	D	F	36.1	15.1	89.1	53.0	332	n/t	MJG, DMT, 03.09.04. Found 14.03.04, D.M. Turner, South Blyth, Northumberland.
NEE-05	LL	M	42.9	17.3	99.4	59.3	339	n/t	MJG, DMT, 03.09.04. Found 30.05.04, D.M. Turner, Seaton Sluice, North/land.

Other NE England birds (unsuitable for analysis) were found on: 29 Feb, 09 April, 02 June and 07 Aug 2004.

Key: Lengths are in millimetres
n/t Measurement not taken
MJG Mark Grantham, BTO, SE England
SN Stuart Newson, BTO, SE England
DMT Dan Turner, NE England
Colour phase LL double light, L light, D dark, DD double dark.

NEE-01 was shot, but otherwise a quite healthy male with fair fat deposits. It seems to have been shot through the lung and died from such internal damage and bleeding. NEE-02 to NEE-05 had much poorer fat deposits.

In March 2004 many hundreds of dead Fulmars were washed up in the southern North Sea. We dissected many during the workshop in Texel in September. The majority of these birds were females that died from starvation.

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 Phil Davey, Beal Station (Fenham Flats)
 Malcolm Hutcheson, Berwick
 George Moody, Holy Island
 Jenny Prince, Belford (Budle Bay/Bamburgh North)
 David Rollo, Vet, Berwick Swan and Wildlife Trust

Daniel M Turner
 North Shields
 Monday 15 Nov 2004

Dear 'Save the North Sea' volunteers,

Many thanks for your efforts and returned reports during recent months, especially during October while a Guillemot wreck developed. Please keep up the work during November in order to determine the ending of the Guillemot wreck and any further occurrence.

Enclosed is some summary info from our growing 2004 data. From this you will see, so far, 214 auk corpses (including 198 Guillemots) recorded from 35.8 km of NE England coastline during October. That represents an average of 5.53 Guillemot corpses per km which, extrapolated over an approx. total length of 174 km NE England coastline, amounts to a total of about 962 Guillemots (if the spread is even). This is a significant event and appears un-seasonal, Guillemots normally being beached in some numbers in Feb/March. The birds appear to have been dying from starvation – being very thin and showing prominent breastbones. However George Moody reported large concentrations of gulls and Gannets in the Holy Island area in mid October, perhaps indicating a presence of shoals of fish.

I also enclose a few more recording sheets for your purposes.

From recent communications with everyone I have drawn up a table of monthly core coastal stretches (see below) for surveying from January 2005, or earlier. By recording these stretches monthly we can build up data for future comparative purposes with our own region and others, for example Orkney and Shetland. I am in the process of arranging monthly surveys in part of East Lothian, SE Scotland.

Committed coastal *core* stretches for Monthly Beached Bird surveys in NE England from Jan 2005

Surveyor	Section	Length km	Comments
Malcolm Hutcheson	Cocklawburn Beach to Cheswick Black Rocks	1.8	This section is midway between Berwick and Holy Island. Northumberland.
George Moody	Holy Island coast	14.0	Northumberland
Jenny Prince	Budle Bay south to Harkessrocks	1.7	Northumberland
Dan Turner	Druridge Bay: Country Park to Hadston Carrs	1.2	Northumberland
Dan Turner	Blyth South Harbour southwards	2.0	Northumberland
Dan Turner	Seaton Sluice northwards	2.0	Northumberland
Dan Turner	Whitley Bay northwards	0.8	North Tyneside, Tyne & Wear
Dan Turner	Tynemouth Long Sands	1.0	North Tyneside, Tyne & Wear
Peter Collins	Marsden Bay	1.0	South Tyneside, Tyne & Wear
Martin Blick	Hartlepool North Sands	2.0	Cleveland (approx 9 from 12 months)
Martin Blick	Redcar	1.5	Cleveland (approx 9 from 12 months)
Martin Blick	Saltburn	1.5	Cleveland (approx 9 from 12 months)
Six surveyors	Total	30.5	

If you have any changes for the above list – please let me know.

With best wishes, Dan Turner

Northeast England – Beached Bird Survey. Extract from ongoing summary report

This report is in progress. Last updated on 14 Nov 2004.

Month	August 2004						September 2004					
Location	NN	MN	SN	NT	Cle	Total	NN	MN	SN	NT	Cle	Total
Kilometres	4.2	2.0	4.6	3.0	0.0	13.8	18.2	0.0	0.6	0.0	0.0	18.8
Fulmar	0	0	1	0	-	1	0	-	0	-	-	0
Gannet	0	0	1	0	-	1	2	-	0	-	-	2
Cormorant	0	0	0	0	-	0	0	-	0	-	-	0
Shag	0	0	0	0	-	0	0	-	0	-	-	0
Mallard	0	0	0	0	-	0	0	-	0	-	-	0
Eider Duck	0	0	0	0	-	0	2	-	0	-	-	2
Waders	0	0	0	0	-	0	0	-	0	-	-	0
Gulls	3	3	4	0	-	10	0	-	1	-	-	1
Terns	0	0	0	0	-	0	0	-	0	-	-	0
Auks	0	0	0	0	-	0	25	-	0	-	-	26
Gulls / km	0.71	1.5	0.87	0	N/A	0.72	0	N/A	1.67	N/A	N/A	0.05

Month	October 2004						November 2004					
Location	NN	MN	SN	NT	Cle	Total	NN	MN	SN	NT	Cle	Total
Kilometres	23.2	1.2	4.0	1.8	5.6	35.8			2.6	1.0		
Fulmar	0	0	0	0	0	0			0	0		
Gannet	1	0	1	0	0	2			0	0		
Cormorant	1	0	0	0	1	2			0	0		
Shag	0	0	0	0	0	0			0	0		
Heron	1	0	0	0	0	1			0	0		
Mallard	0	0	0	0	0	0			0	0		
Eider Duck	4	0	0	0	0	4			0	0		
Waders	0	0	0	0	1	1			0	0		
Gulls	1	2	5	2	14	24			1	3		
Terns	0	0	0	0	0	0			0	0		
Auks	77	13	51	9	64	214			12	1		
Auks / km	3.32	10.83	12.75	5.0	11.43	5.98						
Gulls / km	0.04	1.67	1.25	1.11	2.5	0.67						

Other interesting shore finds (continued) during the NE England Beached Bird Surveys

Species	Date	Where found	Observer	Comments
Grey Seal	10.10.04	Nacker Hole, Beadnell. (NU236290)	Malcolm Hutcheson	Adult female. Dead 3-4 days. No smell!
Oystercatcher	27.10.04	Hartlepool North Sands	Martin Blick	Wings and skeleton.
Fieldfare	27.10.04	Hartlepool North Sands	Martin Blick	Wings and skeleton.
Redwing	30.10.04	Tynemouth Long Sands	Dan Turner	Dead a few days
Racing Pigeon	30.10.04	Tynemouth Long Sands	Dan Turner	Green ring: NEHU,2004,N 417. North of England Homing Union. A Newcastle Federation bird of the year, went missing from an inland race two months earlier.

Auk summary tables:

Species	Jul 04	Aug 04	Sep 04	Oct 04	Nov 04	Dec 04	Total
Guillemot	2	0	21	198	13		
Razorbill	1	0	3	9			
Puffin	2	0	0	4			
Auk sp.	2 (Juv)	0	1	3			
Total	7	0	25	214			

Guillemot wreck, Oct 2004. Additional observations not recorded in the BBS tables above.

Martin Blick heard of 17 Guillemot corpses handed in to vet around 10-11 Oct 2004 (from Hartlepool / Redcar area).

One Puffin corpse reported to me from Sunderland beach – 9/10 Oct 2004

Peter Collins phoned me afternoon of Thur 14 Oct 2004: he had a report of some Fulmar corpses washed up on Roker beach – he will check on Fri 15 Oct. These were probably Guillemot corpses and had been cleared from the beach by the council workers by the time that Peter arrived.

Jenny Prince heard of two headless Guillemot corpses on the green of the golf course, above the beach, at Alnmouth on 6-8 Oct. Perhaps foxes/rats (or skull collectors?).

Phil Davey reported by email (18 Oct) thin live Guillemots in his area, some being handed to the vet (David Rollo) at Berwick. The vet had examined two corpses and determined that they were suffering from a severe nematode infestation.

The birds are clean and not oiled.

Reports from Orkney (Keith Fairclough, RSPB) of a Guillemot wreck in early Oct, birds dead from starvation.

On 17 Oct in Blyth South Harbour there were four Guillemots swimming in the harbour – perhaps signs that more will be beached.

Prof. Mike Harris also reported Guillemots being washed up in (Fife) area at the same time (Oct).

Two shore surveys on the Budle Bay stretch south to Harkessrocks (i.e. 2 x 1.7 km) were made during October 2004.

Ringed Guillemot details

Ref	Date found. By. Location.	Ring details, etc	Ringing details	Comments
1	13 Oct 2004. Peter Collins. Roker beach, Sunderland. (NZ408590)	T07184, left leg. Right leg: BL Measurements by DMT: Rt wing: 200mm Lt wing: 199mm Rt tarsus: (38.6)	Isle of May, Firth of Forth. Ringed as adult at colony on 12 Oct 1984. Bred since then, including 2004.	Head saved for ringed (known-age) Guillemot study in Holland by Kees Camphuysen and Edward Soldaat. Reported to BTO, online, 28 Oct
2	18 Oct 2004. Jenny Prince. Budle Bay, Northumberland (NU163362)	T56152, right leg		Complete bird saved for ringed (known-age) Guillemot study in Holland by Kees Camphuysen and Edward Soldaat. Reported to BTO, online, 27 Oct

Colour rings key (eg BL = Blue over Lime):

B Dark Blue
L Lime Green

To: NE England SNS Volunteers:

Martin Blick, Cleveland
 Peter Collins, Marsden (email)
 Ray Chilton, North Blyth / Wansbeck
 Phil Davey, Beal Station (Fenham Flats)
 Malcolm Hutcheson, Berwick
 George Moody, Holy Island
 Jenny Prince, Belford (Budle Bay/Bamburgh North) (email)
 David Rollo, Vet, Berwick Swan and Wildlife Trust

Daniel M Turner
 North Shields
 Saturday 01 Jan 2005

Dear 'Save the North Sea' volunteers,

I trust you are well and had a pleasant Christmas.

Welcome to Ray Chilton who is going to have a go at recording in the mouth of the River Wansbeck / North Blyth area in southern Northumberland.

Enclosed find:

- (a) a few more recording forms as appropriate
- (b) Copy of article from Sunday Herald on seabirds and plastic waste, by Rob Edwards.
- (c) More data on NE England Fulmar analysis – including stomach content information and a comparison with data from The Netherlands
- (d) Summary table on the 'champion' Fulmar (maximum plastic consumption) as well as averages and maxima of plastic stomach contents per study region.

It seems that the Guillemot wreck of October 2004 petered out quite quickly in November, thank goodness. Here is a brief summary table from the recent auk data I currently have for our survey area:

Species	Jul 04	Aug 04	Sep 04	Oct 04	Nov 04	Dec 04	Total
Guillemot	2	0	21	198	24	1	
Razorbill	1	0	3	9	1		
Puffin	2	0	0	4			
Little Auk	0	0	0	0	2		
Auk sp.	2 (Juv)	0	1	3			
Total	7	0	25	214			

I have data from 18.8 km of coastline for Sept, 36.7 km for Oct, 15.4 km for Nov and 8.7 km for Dec so far.

Please return to me your outstanding Nov and Dec 2004 forms as soon as possible – so that I may report back to Dr Franeker and complete a NE England 2004 report for publication.

The RSPB are to extend their Beached Bird Surveys (BBS) from autumn 2005 – with recording during each of the winter months instead of just February. I shall be discussing with them how to manage their surveys and the additional ones that we are performing. In the meantime please continue as normal. If you participate in the RSPB BBS – please ensure you send them your completed February 2005 recording cards as well as recording your Feb data (on the forms I send you) for return to me also (this may mean that you report the same data twice: once to the RSPB and once to me). I am keen for you all to continue your monthly beach surveys and reporting back to me so that I may manage and report on our complete data for 2005.

As before – please let me know when you find Fulmar or ringed auk corpses. In addition fresh corpses of any species in good condition can be collected – I shall come and collect so that they may be passed to the Hancock Museum in Newcastle. Fulmar corpses will have stomach contents analysed in Holland when appropriate and ringed auks will be sent to Holland for use in another study.

In the early January 2005 edition of 'New Scientist' magazine there will be another article on seabirds and plastic waste by Rob Edwards (he attended recent press conferences led by Dr Franeker in Texel).

Keep up the good work!
With best wishes for 2005,
Dan Turner

Data on this page are from Dr Jan Andries van Franeker, Dec 2004.

"Champion plastic consumption (mass) in the 2002-2004 data analysis (2004 may give further data later)

JAFCODE	date found	sex	age	n plastic items	g plastic mass
SKA-2004-006	08-Mar-04	Female	adult	607	20.5923

AVERAGES AND MAXIMA OF PLASTICS (industrial and user combined) in our different study locations						
FOR STUDY PERIOD 2002-2004 (2004 as far as could be included in the SNS final data ana						
Location	<i>sample size</i>	incidence	average n plastic items	max n plastic items	average plastic mass (g)	max plastic mass (g)
Faeroes	38	92%	7.3	77	0.088	0.5
Shetland	41	88%	14.8	59	0.184	1.7
Orkney	23	96%	28.4	162	0.279	1.2
NE England	5	100%	13.0	25	0.184	0.3
SE England	40	93%	29.8	226	0.210	1.1
France	36	100%	57.6	363	0.249	0.9
Belgium	85	98%	74.5	1603	0.374	4.3
Netherlands	95	97%	42.2	558	0.363	11.1
Germany	92	95%	39.1	1175	0.355	4.3
Denmark Skagen	105	94%	39.1	761	0.375	20.6
Norway Lista	32	97%	59.8	457	0.386	1.8
Sweden Sotenas	6	83%	48.2	182	0.626	3.0

The 'champion' was an adult female, collected 8 March 2004, with the so far unsurpassed mass of plastic in the stomach of 20.6 grams, in 607 items.

(If you translate that to a "human sized Fulmar" that would mean a bag of plastics in the order of 2 kilogrammes", a burden no doubt contributing to death.

One of the Belgian birds proves to be the King of numbers, with over 1600 pieces recorded. This must be one of the birds with stacks of tiny "chopped up" fragments.

Dr Franeker states: 'Do not expect such a count to be very accurate'.

Table recording certain biometrics of N.E. England Fulmars

Ref	Colour-phase	Sex	Age	Culmen Length	Bill Depth	Head Length	Tarsus Length	Wing Length	Condition index (0-9)	Possible death cause	Finding information
NEE-2003-01	LL	M	Imm	39.9	17.4	99.0	55	340	6	UNK	Found 28.06.03, Peter Collins, Marsden, Tyne & Wear.
NEE-2004-01	LL	M	Imm	42.9	17.3	99.0	59	339	1	STA	Found 30.05.04, Dan Turner, Seaton Sluice, Northumberland.
NEE-2004-02	LL	F	Ad	38.7	15.6	90.0	51	313	1	STA	Found 02.03.04, Martin Blick, Saltburn Beach, Cleveland.
NEE-2004-03	LL	F	Juv	n/a	n/a	n/a	54	329	2	STA	Found 03.03.04, Martin Blick, Redcar, Cleveland.
NEE-2004-04	D	F	Ad	35.1	15.1	89.0	53	332	3	CEM	Found 14.03.04, Dan Turner, Blyth Beach, Northumberland.

Key: Lengths are in millimetres
 n/a Not applicable
 Colour-phase LL double light, L light, D dark, DD double dark.
 Condition index 0 Very poor
 9 Healthy

UNK Unknown
 STA Starvation
 CEM Cement cloaca

Ref	Fulmar stomach analysis selected details					Other comments
	Number of plastic pieces	Number of other rubbish	Number of pollutant objects	Number of prey items	Number of non- food items	
NEE-2003-01	16	0	0	7	4	Suspected shot; but no hail / pellet found; non-breeding male
NEE-2004-01	4	0	0	6	6	Gut scavenged; bursa not noted; non-breeding male
NEE-2004-02	7	0	0	0	0	Arrested moult
NEE-2004-03	25	0	0	0	10	Bird juv or 2nd year; plumage + bursa suggest juv; no head
NEE-2004-04	13	0	0	3	0	Very large concrete cloaca

There was no oil present on any of these five birds, their weights were not taken.

Other NE England Fulmar corpses (unsuitable for analysis) were found on: 29 Feb, 09 April, 02 June and 07 Aug 2004.

In March 2004 many hundreds of dead Fulmars were washed up in the southern North Sea. Many were dissected during the workshop on Texel in September 2004. The majority of these birds were females that died from starvation.

Fulmar data, 2002 – 2004.

Type of rubbish in stomachs	Northeast England			The Netherlands		
	Total	Adults	Non-Adults	Total	Adults	Non-Adults
Sample size	5	2	3	95	52	43
ALL PLASTICS (industrial and user combined):						
Incidence	100%	100%	100%	97%	94%	100%
Number of pieces per bird	13	10	15	42.2	34.0	52.2
Mass per bird (gram)	0.184	0.159	0.202	0.363	0.254	0.494
Standard Deviation of mass (gram)	0.113	0.104	0.138	1.157	0.368	1.674
Maximum mass observed (gram)	0.35	0.23	0.35	11.12	1.99	11.12
INDUSTRIAL PLASTIC:						
Incidence	80%	50%	100%	61%	56%	67%
Number of pieces per bird	1.8	0.5	2.7	3.7	3.7	3.6
Mass per bird (gram)	0.065	0.013	0.099	0.069	0.068	0.070
Standard Deviation of mass (gram)	0.100	0.019	0.124	0.097	0.097	0.098
Maximum mass observed (gram)	0.24	0.03	0.24	0.47	0.33	0.47
USER PLASTICS:						
Incidence	100%	100%	100%	95%	90%	100%
Number of pieces per bird	11.2	9.5	12.3	38.6	30.3	48.6
Mass per bird (gram)	0.120	0.145	0.103	0.293	0.185	0.424
Standard Deviation of mass (gram)	0.065	0.085	0.061	1.104	0.306	1.607
Maximum mass observed (gram)	0.21	0.21	0.16	10.65	1.66	10.65
NON PLASTIC RUBBISH (paper, foil, foodwastes, wood, etc):						
Incidence	0%	0%	0%	14%	12%	16%
Number of pieces per bird	0	0	0	0.38	0.48	0.26
Mass per bird (gram)	0	0	0	0.0661	0.0871	0.0407
Standard Deviation of mass (gram)	0	0	0	0.3029	0.3775	0.1762
Maximum mass observed (gram)	0	0	0	2.452	2.452	1.067
OTHER POLLUTANTS (slags, tar, fouled feathers, suspected chemicals):						
Incidence	0%	0%	0%	39%	38%	40%
Number of pieces per bird	0	0	0	2.40	3.50	1.07
Mass per bird (gram)	0	0	0	1.0155	1.4732	0.4620
Standard Deviation of mass (gram)	0	0	0	7.0524	9.4454	1.5522
Maximum mass observed (gram)	0	0	0	68.175	68.175	7.500
SUSPECTED CHEMICALS (mainly paraffin like substances):						
Incidence	0%	0%	0%	22%	25%	19%
Number of pieces per bird	0	0	0	2.08	3.23	0.70
Mass per bird (gram)	0	0	0	0.8168	1.2905	0.2440
Standard Deviation of mass (gram)	0	0	0	6.6962	9.0092	1.0868
Maximum mass observed (gram)	0	0	0	65.000	65.000	6.000

Northeast England became involved in the Fulmar study from early to mid 2003.

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Most seabirds are filled with plastic waste

Shocking study supports demands for charges on disposable carrier bags

From Rob Edwards in Texel, The Netherlands

ALMOST every seabird in the world has waste plastic inside it. The stomachs of fulmars in the North Sea, storm petrels in the Antarctic and albatrosses in Hawaii have all been found to contain plastic discarded by consumers or industry. Some of the birds have eaten hundreds of plastic fragments and many have died as a result.

"It's a disgrace for humankind that we have so much unnecessary rubbish," says Dr Jan van Franeker, a Dutch marine biologist. "We should respect other forms of life on this planet, not offload our problems onto them."

Franeker is a world expert on plastic waste at sea who has been leading a "Save the North Sea" research project funded by European governments for the past two years. Last week, at the Alterra laboratory on the Dutch island of Texel, he revealed his results exclusively to the Sunday Herald.

The scale and extent of the plastic pollution he has uncovered is staggering. Nineteen out of every 20 dead fulmars analysed by his team from around the North Sea had plastic in them. Each bird had swallowed an average of 44 pieces, weighing a total of 0.33 grams. One fulmar found in Belgium had ingested 1603 pieces, while another from Denmark had 20.6 grams of plastic in its stomach - equivalent to two kilograms in a human-sized stomach.

Franeker said toxic additives in the plastic can poison the birds while sharp fragments can damage or puncture their stomachs. Birds with stomachs full of plastic also ate less and grew weak. Fulmars were chosen for investigation because they are a good "indicator species" for illustrating the damage that plastic litter is doing to all marine life, he said. "If you look long enough, you can find it in almost any seabird worldwide."

Franeker's team collected 560 dead fulmars from the shores of eight countries around the North Sea between 2002 and 2004, plus 38 from the Faroes for comparison. Fulmars are members of the petrel family of seabirds and are common throughout the North Sea.

They feed at sea, eating fish, squid, plankton and carrion from near the surface. But at the same time they seem to ingest any waste, like plastic, which is floating around, causing them to be dubbed "flying dustbins".

The worst-polluted fulmars were found in the southeast of the North Sea along the shores of France, Belgium, the Netherlands and Germany. The number and weight of ingested plastic scraps were twice those in fulmars from Orkney and Shetland.

But Franeker pointed out that the high levels of contamination in every region of the North Sea are far in excess of environmental safety limits being proposed by European governments. And the amounts of plastic in fulmars from Scotland were more than twice as high as levels in fulmars from the Faroes.

He believes the main source of plastic in the sea is waste illegally jettisoned by ships, fishing boats and marine installations. Fulmars near busy shipping lanes, like the Pentland Firth south of Orkney, have higher concentrations of plastic in their stomachs than fulmars from quieter areas like Shetland.

But Franeker stressed that it is not just boats that are to blame. Some of the waste is dumped into rivers and washed out to sea, and some, like plastic bags and balloons, is blown off the land.

"We regularly find pieces of balloons in birds," he said. "Although letting off lots of balloons at a party can bring joy, there is a risk that it will kill wildlife."

He added: "Litter is an environmental issue which is absolutely an issue of personal behaviour. If we don't have the discipline as a human race to solve this problem, how are we going to solve more complicated problems?"

One of Franeker's partner organisations in the European Union's Save The North Sea project is the anti-litter group, Keep Scotland Beautiful. "We are horrified by the results of the latest European marine litter research," said the organisation's national director, John Summer.

"That 95% of fulmars in the North Sea area have plastic in their stomachs is shocking enough, but when you think that this is just an indicator species, which feeds solely at sea, and scale the problem up you start to realise how many, and to what extent, other marine mammals and birds are affected.

"More needs to be done to tackle marine litter sources round the coast of Scotland - and we can only urge people to have some pride, and think before leaving litter at the beach, throwing unwanted items overboard or discharging waste illegally."

Franeker also found evidence that North Sea fulmars are feeding plastic waste to their chicks in regurgitated food. After breeding, adult birds recorded lower levels of plastic in their stomach than chicks.

In another study in the Antarctic, he found plastic fragments in the stomachs of eight out of every 10 chicks born to small seabirds called Wilson's storm petrels. An analysis of Laysan albatross chicks that had died in their nests in Hawaii uncovered a wide range of ingested plastic debris, including a cigarette lighter, a toothbrush, a tampon applicator, a toy robot, a golf ball, and lids from a car battery and shampoo bottle.

The plastics industry responded to Franeker's study by criticising the shipping industry. "The UK plastics industry does not condone marine pollution," said the British Plastics Federation's senior executive, Matt Clements. "Fundamentally, the issue calls for better and more responsible waste management practices for all materials on the part of the shipping industry."

Environmentalists, however, highlighted the need to reduce our dependence on plastics.

"The terrible toll being inflicted on our wildlife through entanglement or ingestion of plastic waste calls for a drastic yet simple response," said Dr Dan Barlow, head of research at Friends of the Earth Scotland. "The introduction of a plastic bag levy in Scotland would slash plastic use as people either reuse bags or switch to re-useable cloth bags. In turn, less plastic waste will end up in the environment."

Edinburgh Liberal Democrat MSP, Mike Pringle, is proposing a new law in Scotland to tax plastic bags. Two major retail chains, B&Q and Ikea, have backed the idea by introducing charges for plastic bags instead of giving them away.

Friends of the Earth, however, attacked other retailers for being "wedded to the misplaced belief that such a charge would be catastrophic for business". Barlow said: "Unless they change their position, our marine wildlife will continue to be turned into living dustbins."