

Dear all,

This document intends to inform the volunteers in the UK about the beached fulmars that they collected for our monitoring study of plastics in their stomachs. This monitoring work intends to inform UK and international authorities about the situation and changes in marine litter in the North Sea. This update (UK nr 3) provides information on fulmars mainly found in year 2019 which were processed during and following the fulmar workshop early 2020.

We occasionally receive birds without a stomach. Please note that we strongly prefer to receive occasional 'empty' old and dirty birds, rather than that birds that do have a stomach are left on the beach! So, when in doubt, just collect the bird, and don't be disappointed if the occasional one proves to have no stomach.

We thank all helpers, not only the ones that did find a bird discussed in this report, but all the volunteers that year after year are on the lookout for fulmars suitable for our project. Your individual support represents an important contribution to marine litter policy decisions!

Best regards

Jan & Suse.
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Beste allen

De meeste vogelgegevens in dit document zijn in het engels opgesteld om ook buitenlandse collega's dit soort informatie te kunnen laten zien, of om het document te kunnen gebruiken als bijlage bij internationale rapportages. Hopelijk is dat geen probleem.

Deze update voor Groot Brittannië (UK nr 3) betreft voornamelijk de Noordse stormvogels die in 2019 zijn gevonden en waarvan de samples gedurende de stormvogelworkshop van begin 2020 en daarna zijn uitgezocht. Dit monitoring project dient ter informatie van Britse en internationale overheden over de status en de veranderingen in de zwerfvuilbelasting van de Noordzee.

Niet alle vogels hadden een maag, maar we blijven benadrukken, dat we veel liever zo nu en dan een vogel met incomplete of ontbrekende maag op de snijtafel hebben, dat dat er bruikbare stormvogels op het strand blijven liggen! Dus blijf s.v.p. ook oudere vieze kadavers verzamelen zolang je het mogelijk acht dat de maag nog aanwezig is. Alleen laten liggen als echt duidelijk is dat maag e.d. ontbreekt.

We bedanken iedereen voor de steun aan dit onderzoek: niet alleen de mensen die de hier besproken stormvogels hebben verzameld, maar zeker ook al diegenen die jaar in jaar uit voor ons op de uitkijk zijn en trouw met een plastic verzamelzak op stap gaan, maar dit jaar helaas geen bruikbare vogels zijn tegengekomen! De resultaten van al die inspanningen bepalen mede hoe het zwerfvuil-beleid van de Nederlandse en Europese overheden zich ontwikkelt.

Met hartelijke groet,

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Dossier on Marine Litter: www.wur.eu/plastics-fulmars

Dossier on Antarctica: <http://www.wur.eu/antarctica>

[Google Scholar](#) [Research Gate](#)

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Individual details with photos (acronyms / afkortingen)

NB: The ruler in photo's shows cm/mm scaling

Abbreviations on photopages provided are fairly evident or directly explained. However, the acronym for cause of death is less straightforward and explained below.

De meeste afkortingen op de fotopaginas zijn min of meer vanzelfsprekend of ter plekke verklaard. Alleen de afkorting voor doodsoorzaak is niet altijd helder. Daartoe wordt hieronder uitleg gegeven

CEM = cementcloaca cementcloaca

A blockage of the final part of the intestine by a 'hard' egg shaped ball formed by accumulation of layer on layer of hardened faeces and ureum. At some stage this completely blocks defaecation, the above parts of the intestine fill up with digested mud that can't be excreted.

Blokkering van de einddarm met een steenachtige meestal eivormig bal van laag op laag opgehoopte uitwerpselen met ureum. Op zeker moment blokkeert dit de volledige 'stoelgang' en de voorliggende darm zwelt op met darmmateriaal

COL=collision - botsing

Collision is used when we observe signs of a mechanical death, e.g. broken bones, or internal heavy bruises. These may be caused by collisions with cables, wires, ship- or lighthouse lights, cliff accidents, and also roadkills. Collision may lead to instant death, but also to a slow starvation in birds being injured and alive, but unable to provide themselves with food.

Collision als doodsoorzaak wordt gebruikt wanneer er tekenen zijn van een 'mechanische' doodsoorzaak, zoals gebroken botten of zware inwendige kneuzingen. Dit kan ontstaan door botsing met kabels, draden, verlichting op schepen of vuurtoren, ongelukken op de klif, maar bv ook verkeersslachtoffers. Botsingen kunnen de onmiddellijke doodsoorzaak zijn, maar kunnen ook leiden tot de hongerdood als een dier niet meer in staat is voldoende voedsel te verzamelen.

DRO = drowning - verdrinking

This is used when the birds appear healthy, and in good body condition, except for bloodfilled or soaked lungs. These things suggest that the bird may have drowned instantly in surface nets. This could also be on longline hooks but without visible damage from the longline (see below).

De term DRO wordt gebruikt als de vogel uitwendig en inwendig gezond oogt en in normale conditie is, maar waarbij bloed in longen of gesprongen aderen een aanwijzing zijn dat de vogel verdronken is. Dat kan in netten zijn, maar ook door lange-lijn-visserij maar zonder zichtbare schade van haken of lijnen (zie hieronder).

LLV = long-line victim Lange-lijn slachtoffer

A specific case of drowning or entanglement. Evidence showing that the bird drowned from longline hooking or entanglement, where birds are drawn down with the hooked line. This may be indicated by hook damage, often in the bill, or in the arm wing, in combination with good body condition, but e.g. fresh blood in lungs and burst internal veins

Dit is een speciaal geval van verdrinking en verstrikking en wordt gebruikt wanneer uit aanwezigheid van haak en lijn, of daarvoor typerende schade aan snavel of lijf duidelijk aanwezig zijn die de vogel oploopt als hij een vastraakt aan een beaasde haak en mee onder water wordt getrokken.

GUT = various internal problems - diverse inwendige problemen

This acronym is used for a range of problems observed during autopsy in the internal parts of the bird. This could be serious inflammations, e.g. in the oviduct of females, or serious kidney problems (granular obstructions); malformations, etc., or combinations of such problems. In the case of

heavy cancers, the more specific acronym CAN Cancer is used. In general some details will be given under dissection notes.

Deze afkorting wordt gebruikt voor een hele reeks inwendig geobserveerde problemen die waarschijnlijk als doodsoorzaak moeten worden gezien. Dat kunnen zware ontstekingen zijn, bv in het vrouwelijk oviduct, nierfalen (korrelige structuur) misvormingen, etc. In het geval van grote kanker gezwakken wordt CAN Cancer als meer specifieke afkorting gebruikt. Veelal zal onder de dissectie notities wat meer toelichting worden gegeven.

PLU-plumage - veerkleed

In some cases, birds may have had problems in primary, tail or body feather moult, which has led to such poor plumage that difficulties in flying or water-proofing may be suspected causing excessive energy needs. In other cases, birds seem to suffer from problems with the down feathers, needed for insulation and additional water proofing. Sometimes down is completely lacking, exposing bare skin immediately below the covers.

Soms hebben vogels ernstige probleem met de rui van vleugel, staart of lichaamsveren, die tot een dermate slechte toestand van het verenkleed leiden dat gebrekkig vliegvermogen of waterdichtheid van het verenpak hebben geleid tot extreem energieverbruik en de hongerdood. In andere gevallen kan de donslaag onder de dekveren slecht zijn of zelfs ontbreken.

OIL – oiling - Olie

Mineral oil in plumage is likely to have caused disrupted waterproof plumage or toxication.

Aardolie vervuiling van het verenkleed heeft waarschijnlijk de dood veroorzaakt, door lekkage van de veren of vergiftiging.

EXT -other external plumage fouling – andere uitwendige vervuiling

Other substances than mineral oils, such as vegetable or animal oils, paraffins or complex chemical mixtures may affect birds in similar ways as mineral oil.

Andere substanties dan olie, bijv plantaardige of dierlijke olie, paraffine en chemische mengsels kunnen het verenkleed aantasten op een vergelijkbare manier als aardolie

ING – ingestion – ingslikte stoffen

Ingestion of materials is suspected to have caused the death of the bird, e.g. excessive amounts of paraffine or palmlike substances, but also extreme accumulation of plastics or other litter.

Het opeten van bepaalde substanties kan soms aangewezen worden als de meest waarschijnlijke doodsoorzaak. Het gaat dan om bijv. extreme hoeveelheden paraffine-achtige of palmolie-achtige stoffen, maar ook om bijv extreme ophoping van plastics of ander zwerfvuil.

STA = starvation - Verhongering

The bird died slowly from starvation, but it is unknown what has caused this. It may have been prolonged food shortage, but also individual problems that cannot be identified during simple autopsies may play a role. For example one may think of some diseases, undetected injuries, invisible pollution, poisoning or whatever.

Deze term wordt gebruikt als de vogel totaal vermagerd is, zonder dat duidelijk is wat dat heeft veroorzaakt. Dat kunnen ernstige voedseltekorten zijn, maar ook ziektes of niet direct zichtbare verwondingen, vervuiling, vergiftiging e.d.

UNK = unknown onbekend

Used if we really do not have any clue to what has caused the death of the bird, which may be the case especially in very old or heavily scavenged corpses.

Dit wordt gebruikt als geen van de bovenstaande afkortingen bruikbaar is, bijvoorbeeld in het geval van extreem oude of totaal leeggevreten kadavers.

Nr: NEE-2019-001

JAFCODE	NEE-2019-001
Country	United_Kingdom
Location	Whitburn Steel Tyne and Wear
Date	18-May-2019
Finder	Peter Collins
Sex (Male, Female or UNKnown)	UNK
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK	UNK
Colourphase (LL, L, D, DD or UNKnown)	
Condition score (0=fully emaciated to 9=excellent condition)	1
Likely cause of death (STA=starvation for unknown reason)	UNK
Notes from dissection	Body is old and scavenged but stomach complete
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	68
Total mass of plastic in stomach (g)	0.6897



Nr: NEE-2019-002

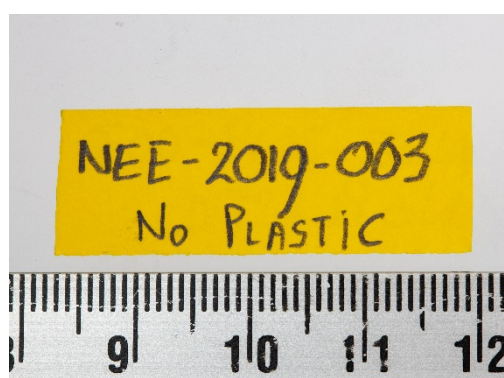
JAFCODE	NEE-2019-002
Country	United_Kingdom
Location	Druridge Bay Northumberland
Date	1-Oct-2019
Finder	Pauline Gilbertson
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	JU
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	1
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	live in surf but died quickly;
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	7
Total mass of plastic in stomach (g)	0.1177



Nr: NEE-2019-003

JAFCODE	NEE-2019-003
Country	United_Kingdom
Location	Druridge Bay Northumberland
Date	24-Nov-2019
Finder	Mo Dewar
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	JU
Colourphase (LL, L, D, DD or UNKnown)	D
Condition score (0=fully emaciated to 9=excellent condition)	3
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	0
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	0
Total mass of plastic in stomach (g)	0

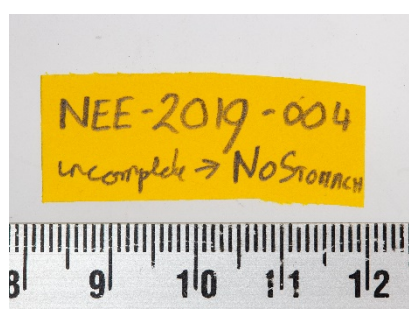
STOMACH PRESENT BUT CONTAINS NO PLASTICS



Nr: NEE-2019-004

JAFCODE	NEE-2019-004
Country	United_Kingdom
Location	Bustom Links Northumberland
Date	3-Dec-2019
Finder	Steve T. Holliday
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	IM
Colourphase (LL, L, D, DD or UNKnown)	
Condition score (0=fully emaciated to 9=excellent condition)	1
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	partial stomach no gizzard
nr of industrial plastic pellets	
nr of consumer debris plastic particles	
Total mass of plastic in stomach (g)	

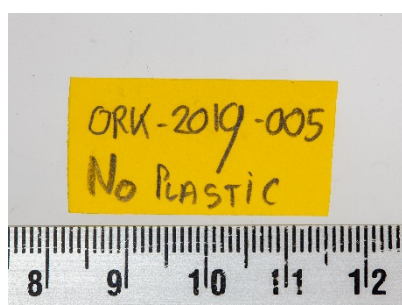
Gizzard missing by scavenging; stomach cannot be used for monitoring



Nr: ORK-2019-005

JAFCODE	ORK-2019-005
Country	United_Kingdom
Location	Birsay Bay Orkney Mainland
Date	26-Jan-2019
Finder	Martin Gray
Sex (Male, Female or UNKnown)	UNK
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK	JU
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	0
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	Sexed as female but judged to be impossible by Jan because of the measurements
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	0
Total mass of plastic in stomach (g)	0

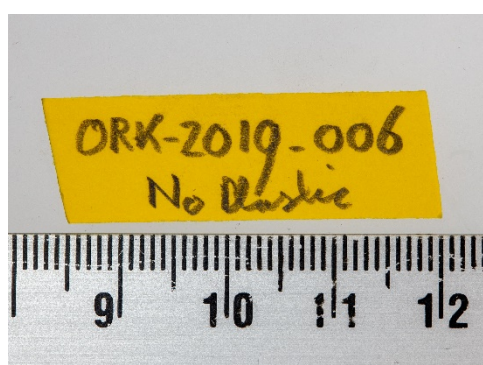
STOMACH PRESENT BUT CONTAINS NO PLASTICS



Nr: ORK-2019-006

JAFCODE	ORK-2019-006
Country	United_Kingdom
Location	Skail Bay Sandwich Mainland Orkney
Date	3-Feb-2019
Finder	Martin Gray
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	AD
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	2
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	No head; scavenged; stomach wall damaged but judged to be OK by Jan
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	0
Total mass of plastic in stomach (g)	0

STOMACH PRESENT BUT CONTAINS NO PLASTICS



Nr: ORK-2019-007

JAFCODE	ORK-2019-007
Country	United Kingdom
Location	Orkney West Mainland Stromness Billia Croo
Date	7-Feb-2019
Finder	Martin Gray
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	AD
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	0
Likely cause of death (STA=starvation for unknown reason)	COL
Notes from dissection	deathcause collision due to broken right wing at elbow joint
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	7
Total mass of plastic in stomach (g)	0.0185



Nr: ORK-2019-008

JAFCODE	ORK-2019-008
Country	United Kingdom
Location	Orkney Sanday (Island) Bay of Lopness
Date	27-Nov-2019
Finder	Martin Gray
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	AD
Colourphase (LL, L, D, DD or UNKnown)	L
Condition score (0=fully emaciated to 9=excellent condition)	0
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	intestines partly scavenged
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	13
Total mass of plastic in stomach (g)	0.1054



Nr: ORK-2019-009

JAFCODE	ORK-2019-009
Country	United_Kingdom
Location	Orkney West Mainland Marwick Bay
Date	21-Sep-2019
Finder	J. Wells
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	JU
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	0
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	x
nr of industrial plastic pellets	3
nr of consumer debris plastic particles	22
Total mass of plastic in stomach (g)	0.4298



Nr: ORK-2019-010

JAFCODE	ORK-2019-010
Country	United_Kingdom
Location	Orkney East Mainland Deerness Newark Beach
Date	27-Sep-2019
Finder	Jean Williams
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	IM
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	1
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	x
nr of industrial plastic pellets	2
nr of consumer debris plastic particles	24
Total mass of plastic in stomach (g)	0.4218



The ring on the right, with the diagonal ribs, is what we call a 'sewage wheel' These items are used in waste water treatment in order to offer surface for algae and micro-organisms to grow on, by which nutrients are removed from the waste water. , and thereby act as



Nr: ORK-2019-011

JAFCODE	ORK-2019-011
Country	United Kingdom
Location	Orkney East Mainland Holm Loch of Ayre
Date	30-Sep-2019
Finder	E. M. Ross
Sex (Male, Female or UNKnown)	M
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	AD
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	1
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	x
nr of industrial plastic pellets	2
nr of consumer debris plastic particles	21
Total mass of plastic in stomach (g)	0.7646



Nr: **ORK-2020-001**

JAFCODE	ORK-2020-001
Country	United_Kingdom
Location	Orkney South Ronaldsay Widewall Bay
Date	1-Feb-2020
Finder	Martin Gray
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	IM
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	0
Likely cause of death (STA=starvation for unknown reason)	CEM
Notes from dissection	Cement cloaca 30 x 35 mm; soft mustard yellow; liver has dark growth 20 x 10 mm; cancer?
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	4
Total mass of plastic in stomach (g)	0.1193



Nr: ORK-2020-002

JAFCODE	ORK-2020-002
Country	United_Kingdom
Location	Birsay Bay Orkney Mainland
Date	5-Feb-2020
Finder	Keith Fairclough
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	IM
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	4
Likely cause of death (STA=starvation for unknown reason)	UNK
Notes from dissection	x
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	9
Total mass of plastic in stomach (g)	0.1366



Nr: SEE-2019-001

JAFCODE	SEE-2019-001
Country	United_Kingdom
Location	North Norfolk Blakeney Point
Date	20-May-2019
Finder	Leighton Newman
Sex (Male, Female or UNKnown)	M
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	2Y
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	3
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	x
nr of industrial plastic pellets	5
nr of consumer debris plastic particles	31
Total mass of plastic in stomach (g)	0.2013



Nr: SEE-2019-002

JAFCODE	SEE-2019-002
Country	United_Kingdom
Location	North Norfolk Blakeney Point
Date	26-May-2019
Finder	Leighton Newman
Sex (Male, Female or UNKnown)	F
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	IM
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	2
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	fouling on inner wing sticky; soft beginning of cementcloaca
nr of industrial plastic pellets	2
nr of consumer debris plastic particles	18
Total mass of plastic in stomach (g)	0.062



Nr: SEE-2019-003

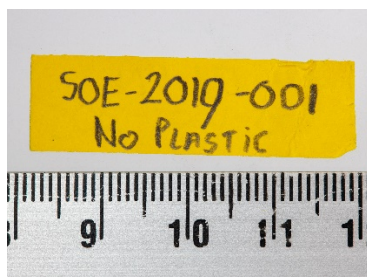
JAFCODE	SEE-2019-003
Country	United_Kingdom
Location	North Norfolk Blakeney Point
Date	26-May-2019
Finder	Leighton Newman
Sex (Male, Female or UNKnown)	M
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	JU
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	0
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	bursa somewhat unclear; still thought juv
nr of industrial plastic pellets	1
nr of consumer debris plastic particles	22
Total mass of plastic in stomach (g)	0.1541



Nr: SOE-2019-001

JAFCODE	SOE-2019-001
Country	United_Kingdom
Location	Gloucestershire field next to river Severn
Date	10-Dec-2019
Finder	Peter Kirmond; Hannah Meinertzhagen
Sex (Male, Female or UNKnown)	M
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	IM
Colourphase (LL, L, D, DD or UNKnown)	LL
Condition score (0=fully emaciated to 9=excellent condition)	0
Likely cause of death (STA=starvation for unknown reason)	CEM
Notes from dissection	heavily constipated or soft cementcloaca with crumbly parts ; other testis score 18.1; found alive dead 1 day
nr of industrial plastic pellets	0
nr of consumer debris plastic particles	0
Total mass of plastic in stomach (g)	0

STOMACH PRESENT BUT CONTAINS NO PLASTICS



Nr: SOE-2019-002

JAFCODE	SOE-2019-002
Country	United_Kingdom
Location	Jersey St Aubins Bay
Date	12-Mar-2019
Finder	Cris Sellares
Sex (Male, Female or UNKnown)	M
Age (JUvenile, 2 nd Year, IMmature, ADult, or UNK)	JU
Colourphase (LL, L, D, DD or UNKnown)	L
Condition score (0=fully emaciated to 9=excellent condition)	0
Likely cause of death (STA=starvation for unknown reason)	STA
Notes from dissection	x
nr of industrial plastic pellets	3
nr of consumer debris plastic particles	24
Total mass of plastic in stomach (g)	0.5624

