

Plastic i færøske mallemukkers fødeindtagelse

Plastic ingestion by fulmars at the Faroe Islands

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www.imares.wur.nl/UK/research/dossiers/plastic/
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Mallemukker spiser næsten hvad som helst, som de finder på havet, inklusive menneskeskabt affald. Havforureningen i Nordsøen viser sig bl.a. i mængden af plastic i mallemukkernes mavesække. Selv omkring Færøerne har mallemukkerne betydelige mængder af plastic i mavesækken, især ungfuglene. Dette er et problem både for fuglene og for færingerne, som fanger fuglene for at spise dem.

The successful spread of the Northern fulmar over the temperate North Atlantic in just 200 years shows that the species must be very smart in using a wide variety



of food sources. But nowadays being smart can turn into being foolish. Not everything floating around the sea is edible. Unfortunately, fulmars, like many seabirds, often mistake plastic debris floating around the ocean as something they can eat.

This habit of eating litter is so common, that in the North Sea, stomach contents of beached fulmars are used as monitoring instrument for the marine litter situation in the area. Trends in the quantity of plastic in the fulmar stomachs and regional differences can show where plastic pollution is the most serious and if policies to reduce marine litter are producing results.

Long term research in the Netherlands has shown a sharp increase in plastic pollution from the early 1980s to the mid-1990s, then a decline but unfortunately no further improvement since about 2003. Pollution levels are the worst in the south of the North Sea, and gradually decrease to the north. Over the whole of the North Sea, 95 % of the fulmars have plastic in the stomach, on average 30 particles per stomach weighing 0.33 gram (2005-2009; 916 stomachs). Combined with the North Sea project, stomach contents of fulmars from the Faroe Islands are being analyzed for comparative purposes. Even this far away from the industrialised areas of western Europe, the plastic pollution proves to be serious. Around the Faroe Islands, 91 % of the fulmars have plastic in the stomach, with an average of 15 particles per bird, and a plastic mass of 0.21 gram (371 birds 2005-2009). Even in high-arctic pristine environments fulmars are not completely free of plastic.

Plastic, et blækspruttenæb o.a. fra en mallemukmave
Plastic, a squid beak etc from a fulmar stomach



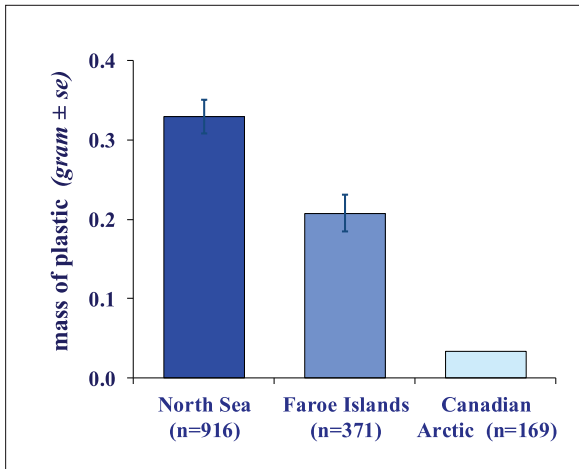
Plast fra en færøsk mallemuk (venstre gruppen viser indholdet af den store glandulære fragmenter (øverst til højre). 2 industrielle granulat (i midten til højre), den højre gruppe viser indholdet af den lille muskuløse mave eller krås, med 3 granulater, et ark stykke og en række af hårde fragmenter.

Plastics from a Faroese fulmar (the left group shows the contents of the large glandular stomach or proventriculus with 3 types of foamed plastics (left and bottom), hard fragments (top right) and 2 industrial granules (centre right); the right group shows the contents of the small muscular stomach or gizzard, with 3 granules, a sheet-like piece and a series of hard fragments.

Disse avisstykker fra en færøsk mallemukmave beviser, at ihvertfald en del af affaldet, som mallemukkerne spiser, kommer fra Færøerne

This newspaper fragments found in a Faroese fulmar stomach, provides evidence that at least part of the litter they eat comes from the Faroe Islands





Regional differences in plastic ingestion by Northern Fulmars in the North Atlantic show an intermediate level of marine litter occurring around the Faroe Islands. (The data for the North Sea and the Faroe Islands are for the period 2005-2009, see: Van Franeker & the SNS Fulmar Study Group 2011. The data for the Canadian arctic are for the period 2002-2008, derived from several published sources and personal information; for details see Van Franeker et al. 2011)

Regionale forskelle i mængden af plastic i de nordiske mallemukkers fødeindtagelse i det nordlige Atlanterhav viser et mellemniveau af havforurening omkring Færøerne. (Dataene for Nordsøen og Færøerne er for perioden 2005-2009, se: Van Franeker & the SNS Fulmar Study Group 2011. Dataene for det arktiske område i Canada er for perioden 2002-2008 og stammer fra flere publicerede kilder og personlig information; se Van Franeker et al. 2011)

On the Faroe Islands fulmars are hunted and also accidentally caught in longline fisheries. Because of this, sufficient stomachs are available here to study details such as seasonal variation and age related differences in plastic ingestion.

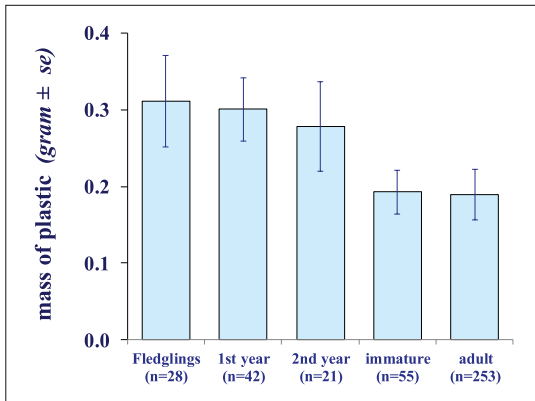
For the monitoring programme in the North Sea it is very important to be aware of the factors that might influence the results. As shown by Faroese data, especially the age of the birds has an influence on the quantity of plastic found in their stomachs. Younger birds have more plastic than older ones. Partly this may be caused by the fact that both parents feed the chick with regurgitated stomach contents that include accumulated plastics. A chick thus starts its



Jan A. van Franeker rinsing a fulmar stomach, while Poul Johannes Simonsen is watching. PJS is the one person who collected most stomachs for van Franeker's studies

Jan A. van Franeker renser en mallemukmave, mens Poul Johannes Simonsen ser på. PJS er den, der har samlet flest maver til Franeker's undersøgelser

life with the plastics from both its parents. However, also other factors must play a role, possibly including learning experience. Fulmar chicks from the Faroe Islands have as much plastics in their stomachs as full-grown birds from the polluted North Sea. Because it is especially the young birds that are harvested for human consumption on the Faroe Islands, the level of plastic ingestion is of serious concern. Plastics contain a lot of dangerous chemicals that should not be in food!



Age related differences in plastic loads found in fulmars from the Faroe Islands (period 2005-2009; n=371)

Aldersbetingede forskelle i mallemukker fra Færøerne (perioden 2005-2009; n=371)

Elisa Bravo Rebolledo and Poul Johannes Simonsen doing fieldwork in Viðareiði

Elisa Bravo Rebolledo og Poul Johannes Simonsen på feltarbejde på Viðareiði



Jan A. van Franeker and Elisa Bravo Rebolledo are examining Faroese fulmars in Tórshavn, 2011

Jan A. van Franeker og Elisa Bravo Rebolledo undersøger færøske mallemukker i Tórshavn, 2011