

## DETONATING CORD FOUND IN THE STOMACH OF A NORTHERN FULMAR

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Since early 2017, many strings of plastic were found on beaches of the Faroe Islands. These strings were thin and ragged hollow plastic tubes of different colours. Only after local research did it become clear that these strings were detonation cords. Such cords are filled with explosives that allow almost simultaneous detonation of multiple charges of explosives over large distances ([https://en.wikipedia.org/wiki/Detonating\\_cord](https://en.wikipedia.org/wiki/Detonating_cord)). They were released into the environment by blasting basalt rock for harbour reconstruction. The strings were initially found close to the harbour construction area in Tórshavn (figure 1), but were later seen in large quantities on many other beaches around the Faroe Islands (figure 2; [https://www.jenskjeld.info/artikler/FO\\_nature.html#UK](https://www.jenskjeld.info/artikler/FO_nature.html#UK)).

As often, once you have recognized a particular type of debris, you see it everywhere. We have seen many detonating cords for example on Icelandic shores and they were recently found on the beach of Texel, The Netherlands, as well (figure 3). On Texel there are no rock quarries in the neighbourhood, but the country imports substantial amounts of basalt for coastal reinforcements.

Once at sea, marine debris, and in particular plastics, are ingested accidentally or intentionally by many species of marine wildlife (Kühn & Van Franeker 2020). Almost any type of plastic can be retrieved from stomachs of marine animals. In stomachs of large species, such as whales, large objects such as a car bumper, big pieces of fishing net and agricultural plastics have been found (De Stephanis et al. 2013,



figure 1. Jens-Kjeld Jensen showing a sample of detonating cords of different lengths and colours found at the beach of Sandágerði, just south of the harbour works in Tórshavn, Faroe Islands, 5 March 2017. Photo: Marita Gulklett

*Jens-Kjeld Jensen met slagsnoeren in verschillende lengtes en kleuren op het strand van Sandágerði, net ten zuiden van de havenwerkzaamheden in Tórshavn, Faröer-eilanden, 5 maart 2017.*



figure 2. Marita Gulklett, Yvonne Hermes and Jens-Kjeld Jensen with detonation cords collected from a short stretch of beach at Skálabotnur, Eysturoy, Faroe Islands, 26 May 2018. Photo: Jan van Franeker

*Marita Gulklett, Yvonne Hermes and Jens-Kjeld Jensen met ontstekingslonten verzameld op het strand van Skálabotnur, Eysturoy, Faröer-eilanden, 26 mei 2018.*



figure 3. Twelve pieces of detonating cord were found on just 3 km beach of the island of Texel, 24 June 2020. Photo: Susanne Kühn

*Op 24 juli 2020 vonden we op slechts drie kilometer strand op Texel twaalf stukken slagsnoer.*

Unger et al. 2016). In smaller animals, ingested objects are not always easily identifiable, but frequently include industrial plastic pellets, fragments of balloons, bottle caps and pieces of rope.

Recently, we analyzed a series of thirty stomachs of northern fulmars (*Fulmarus glacialis*) beached in Germany in order to update the North Sea monitoring programme regarding plastic particles in stomachs of this species. This work is commissioned by national and international authorities as a formal indicator of the abundance in marine plastic litter (Van Franeker *et al.* 2011, OSPAR 2015, 2019). Among the many items found (figure 4), we encountered a detonating cord of approximately 20 cm in length from 2011 (figure 5). This is the first record of detonating cord in a stomach of a northern fulmar since the start of the international monitoring program in 2002 (Van Franeker *et al.* 2011). If not for the events on the Faroe Islands, this item from the bird stomach would likely have remained unidentified. Linking marine litter to sources is important in order to effectively reduce plastic pollution of the marine environment.

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figure 4. Overview of plastics found in the stomachs of recently autopsied fulmars from Germany. The detonating cord is the third sample in the top row; it is enlarged in figure 5. Photo: Jan van Franeker

*Overzicht van plastics in de magen van een recent onderzochte serie noordse stormvogels uit Duitsland. Het slagsnoer is zichtbaar in het derde monster in de bovenste rij; deze is vergroot weergegeven in figuur 5.*



figure 5. Plastics from the stomach of northern fulmar nr. GER-2011-042. In addition to a range of small unidentified particles, threads and sheets, a detonating cord of 20 cm was found. Photo: Jan van Franeker

*Plastics uit de maag van noordse stormvogel nr. GER-2011-042. Naast een aantal niet nader geïdentificeerde stukjes plastic, draadjes en vellen vonden we een slagsnoer van 20 cm lang.*

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## **SAMENVATTING – SLAGSNOER GEVONDEN IN DE MAAG VAN EEN NOORDSE STORMVOGEL**

Vanaf begin 2017 vonden we op de Faeröer-eilanden onbekende plastic draden. Deze waren hol, vaak rafelig en hadden verschillende kleuren. Na enig onderzoek bleken het stukken slagsnoer (ontstekingslont) te zijn, die meekwamen met basaltblokken die bij havenwerkzaamheden in Tórshavn werden gestort. Het basalt was gewonnen uit lokale steengroeves met behulp van explosieven. Later zijn zulke slagsnoeren ook op vele andere stranden van de Faeröer-eilanden gevonden. Ook in andere gebieden, waaronder Texel, zijn dergelijke stukken slagsnoer te vinden. Onlangs onderzochten we maaginhouden van een serie in Duitsland gevonden noordse stormvogels. Dit monitoringonderzoek vindt plaats op verzoek van nationale en internationale overheden en dient als indicator voor de huidige toestand en de beoogde afname van plastic zwerfvuil in zee. Onder de vele materialen die in de magen werden gevonden, bevond zich ook een circa 20 cm lang slagsnoer. Zonder de toevallig opgedane kennis van de Faeröer-eilanden hadden we dit snoer niet herkend. Het herkennen van bronnen van zwerfvuil is van belang voor gerichte maatregelen ter voorkoming ervan.



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