

Fulmar wreck in the Southern North Sea

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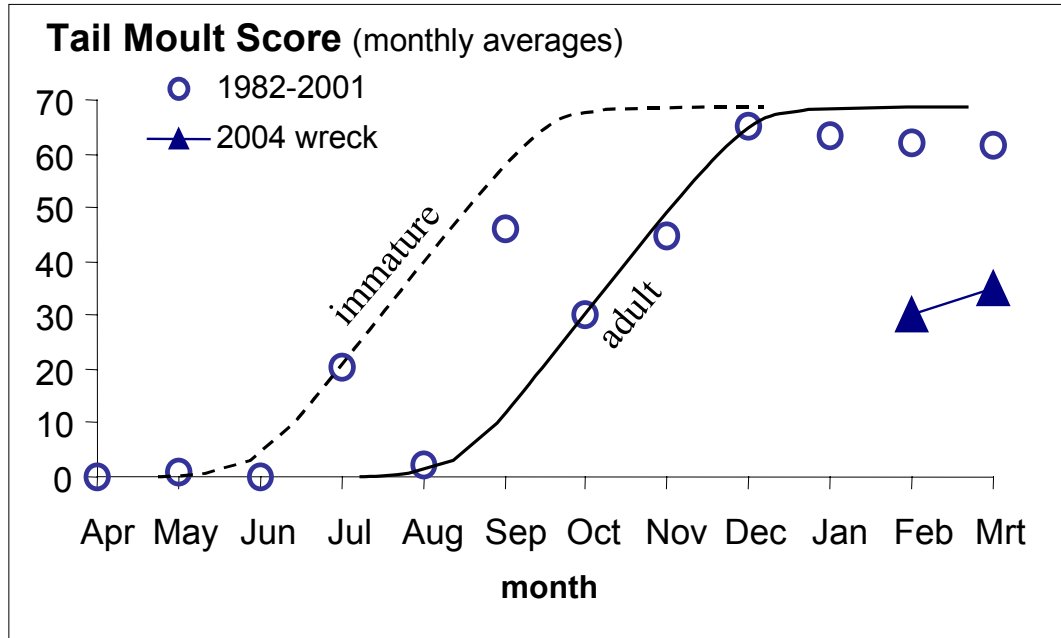
During the last week of February 2004, increased mortality of Northern Fulmars in the southern North Sea became evident. Since then, a true Fulmar wreck has developed in the area, with definitely thousands of mortalities. Large numbers of beachwashed corpses were reported from Belgian and French Channel coasts. Noticeable increases in dead birds have been observed up to at least the German Bight and northeast English coasts. In the north of the Netherlands significant numbers first appeared on beaches on 25 and 26 February. After that, many volunteers have been forwarding Fulmars to Alterra from different parts of the country. At Alterra, a long-term research project is conducted studying litter in stomach contents of Fulmars as an environmental monitoring tool. Since about two years, this Fulmar study has spread out to all North Sea countries. The Fulmar study is part of the 'Save the North Sea' marine litter project (SNS), which is supported by the EU Interreg IIIB program. Fulmars are being used as the symbol of the SNS (see www.savethenorthsea.com/fulmars). The long term research and wide geographical coverage will allow closer analysis of the mortality. Processing all the available material from the full freezers will take considerable time. However, in order to obtain a first impression, fifteen Fulmars from the Netherlands were dissected, eight from the north (Windbreker, Noord Holland, 26 Feb.), and seven from the south (RIKZ, Zeeland, 1-5 Mar). In spite of the small sample size, some interesting preliminary findings are worth mentioning. The most relevant results have been summarized in the table below, which makes a comparison between "normal" beachwashed Fulmars from the Netherlands (1982-2001) and the birds washing ashore in the current wreck.

	Feb-Mar 1982-2001 (<i>n</i> =186)	Feb-Mar 2004 (<i>n</i> =15)	notes
% plumage fouling	43 %	33 %	with oil and/or eg.paraffin like substances
average condition-score	1.8	1.1	on scale 0 (emaciated) to 9 (excellent)
% adult	63 %	93 %	by inspection of sexual organs
% female	66 %	93 %	by inspection of sexual organs
% dark colourphases	11 %	13 %	dark indicating high arctic origin
avg. headlength female	91.9 mm	90.6 mm	small size indicating more northern origin
% primary moult (avg.score)	8 % (99.7)	60 % (97.4)	moult completed at score 100
% tail moult (avg.score)	20 % (62.6)	73 % (32.3)	moult completed at score 70

Plumage fouling with oil or other contaminants appears to have no direct role in the mortality: fouling rates are below the long-term average. All birds were strongly emaciated, which means they had depleted all of their fat reserves and most of the protein-reserves in flight muscles. Although females are somewhat more abundant than males in our long term Feb-Mar samples, the wreck seems highly remarkable in a very strong predominance of females, and among these an unusual high percentage of adults that either have bred or are fully sexually mature. An analysis of the origin of the birds involved in the wreck requires a much larger sample than the current fifteen birds. Increased proportions of dark coloured (colourphases L, D, DD) and small sized birds might indicate an unusual influx from northern Arctic locations. Our current data do not support a sudden higher influx from northern birds as compared to our usual winter population, but more work is needed.

Highly remarkable is that an unusual high proportion of the wrecked birds has not finished the moult of primaries and tail-feathers. Healthy birds complete their moult long before February. Primaries moult first and tail moult starts once primary moult is about 75% completed. Immature birds start their moult early in the season and are about finished at the end of summer. Adults can only start such moult when the breeding season is well on its way, but even successful breeders normally will have completed their primary and tail moult by December (see tentative lines in graph). Moulting puts high energy demands on the birds, and

when in problems, moult will be slowed down or completely stopped (arrested). In our long-term data (circles in graph) small proportions of birds with arrested moult are the reason that average tail moult does not reach the maximum score. Such cases of 'arrested moult' are exceptionally abundant in the current wreck, occurring in about three out of every four birds! The stage at which the moult process has been interrupted, shows that these birds already encountered serious energy problems at least four to five months before they died in the southern North Sea!



PRELIMINARY CONCLUSION.

The current Fulmar wreck appears NOT to be triggered by instantaneous events in terms of food-shortage, pollution incidents, unfavourable weather or disease. The problems of the birds date back to at least October last year, or probably earlier. Breeding success of several seabird species in the Scottish Isles was very poor in summer 2003 (Seabird Group Newsletters nrs. 95 and 96). The problems coincided with apparent shortage of Sandeels. By comparison, breeding success of Fulmars was not too bad, but possibly the extra effort of breeders takes a heavy toll in the post-breeding periods. The analysed sample of corpses suggests that the food conditions around the breeding areas are still poor. Adult breeding Fulmars usually reside near their colonies during much of the winter for regular attendance of their nest-sites. Females have a less prominent role in the nest-attendance, which could explain why it is especially adult females that have spread out in search for better foraging areas. Persistent northwesterly storms in February may have assisted in their accumulation in the southern North Sea, but the lack of adult males suggests that travelling with these storms was a choice rather than a 'must'. Unfortunately, the southern North Sea has not offered the female Fulmars the possibility to recuperate. Many issues, like maybe low food abundance, persistent bad weather, higher levels of pollutants, and secondary diseases may have played a role in the process leading to the current wreck. For example, stomach analyses of the dissected birds showed an average of about 25 pieces of ingested plastic particles, plus the occasional bird having ingested paraffin like lumps. This is not unusual in our region, but will definitely not have a positive effect on the rebuilding of an improved body-condition. Seabird wrecks often seem to follow Murphy's Law: once something goes wrong, everything goes wrong. The current wreck seems an example of this. Many potential secondary factors may be involved in the southern North Sea, but the event is triggered by older and lasting problems in distant area(s).

These preliminary interpretations are based on a small sample of birds from the Dutch coast only. Remarkably, a French report mentions analysis of two birds in good condition and with stomachs full of fish (Phil Cannesson, in lit.). Within the Save the North Sea project, as many birds as possible from different regions will be examined, and results will be reported. Gratitude needs to be expressed towards all contributors to Beached Bird Surveys and the collection of Fulmar corpses. Please continue counts and collections in contact with regional/national co-ordinators, or contact Kees.Camphuysen@wxs.nl (BBS counts) or Jan.vanFraneker@wur.nl (dissections). Please note that freshness of corpses is not a prerogative for fulmar dissections, but that internal organs (i.e. stomach) have to be present. This preliminary report will be made available on the Dutch Seabird Group website www.zeevogelgroep.nl. For updates on numbers of beached birds and their regional spread please consult the NZG-NSO page <http://home.planet.nl/~camphuys/fulmarwreck.htm>.



Photo

Unfinished primary moult in Northern Fulmar, found 26 Feb 2004. All flight feathers are new, but the outer primaries are not fullgrown. When moult is completed, the outer primary is the longest. In healthy birds such a fullgrown stage is reached before the onset of winter.



Photo:

Arrested tail moult in Northern Fulmar found 26 feb 2004. The tail shows a mix of fulgrown or nearly fullgrown new feathers and a number of non-moulted old feathers (worn, with brownish outer flag). Tail moult follows primary moult, and should largely be completed in December, even in late moulting breeders.

May be cited as:

Van Franeker, J.A. 2004. Massa-sterfte van Noordse Stormvogel in de zuidelijke Noordzee. Nieuwsbrief NZG 5(2):6-7.