

TSEG Grey Seal surveys in the Wadden Sea and Helgoland in 2015-2016

First year of almost complete monitoring by aerial surveys



Grey seals in the water near Helgoland. Photo: Richard Czeck

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Introduction

The relatively mild winter of 2015-2016, during which storms did not wash young animals off the breeding sites, yielded very high numbers of grey seal (*Halichoerus grypus*) pups in the Wadden Sea area. During the coordinated aerial, boat and land surveys, the Danish, Dutch and German Wadden Sea grey seal breeding areas including Helgoland (Germany) were covered. Furthermore, during the grey seal moulting period in the spring of 2016, the first ever dedicated grey seal surveys were carried out throughout the Wadden Sea area by air.

Results and Interpretation

The maximum number of grey seal pups counted in the Wadden Sea around the pupping peak in mid-December was 1,113, considerably more than in 2014/15 (829 pups). 657 pups were counted in the Netherlands, 154 pups were counted in Lower Saxony /Hamburg, 3 pups were counted in the Wadden Sea area of Schleswig-Holstein, and no pups were recorded in Denmark. On Helgoland, where from 2015 onwards land counts have been performed simultaneously to the other areas, 299 pups were counted.

The relative growth in pup numbers compared to 2014/15 (Brasseur et al. 2015a) was higher than can be expected in a stable population: 34% vs 11% (Harding & Harkonen 1999). The high growth rate may have been fuelled by an annual influx of new females from the UK, driving up the number of births (Brasseur et al. 2015b) and relatively young grey seal colonies in the Wadden Sea. The increase in pup numbers amounted to 29% in the Netherlands, 56% in Lower Saxony/Hamburg and 38% in Helgoland. The latter could also be influenced by the new counting method, as in the past numbers were derived from cumulative counts (Brasseur et al. 2015a), while from this season onwards, the counts are calculated from a single peak day as established for the aerial surveys. In the Wadden Sea area of Schleswig-Holstein pups were counted in limited boat and land surveys, possibly leading to an underestimation of total numbers of pups. From 2016 onwards, aerial surveys dedicated to the grey seal pup counts will be carried out in this area as well.

The maximum numbers of grey seals in the Wadden Sea area are counted in spring during the moult. However, studies show that in this period the animals present are not necessarily animals breeding in the Wadden Sea and considerable exchange occurs with the much larger UK population (Brasseur et al. 2015b). Thus the numbers counted could be the result of local population growth and local environmental factors (such as weather), but also a result of the seasonal influx from the UK. For the moult counts, the highest number counted within the space of a few days throughout the Wadden Sea is chosen, even if this total does not reflect the highest number recorded in a subarea (for example in the Schleswig Holstein Wadden Sea where more seals were observed in later counts than those presented i.e. 75 vs. 47 animals)

In Denmark, 148 grey seals (+68%) were observed, confirming the further expansion northwards. On Helgoland the numbers grew to 744 animals (+34%, compensating for last year's observed drop). In the Schleswig Holstein Wadden Sea, the number of grey seals using the area during the moult dropped to 47 animals (-61%). In Lower Saxony/Hamburg, where numbers had been dropping in the past two years, a growth to 301 seals (+41%) was observed. In the Netherlands, numbers of grey seals during the moult grew to a maximum count of 3,696 (+4%). All in all, the total number recorded in 2016 increased by 9% to 4,936 grey seals. This year's growth is slightly lower than the average recorded since 2008 (16%), and certainly lower than the growth in the number of pups born in the region.

In a stable and closed population the ratio between the number of pups and the total numbers would give some indication of the breeding success and demographics. In the Wadden Sea area, however, both the number of pups and the total number of grey seals are assumed to be influenced by the annual influx from the UK. As the population grows, the influence of the UK population might stabilise and so should the pup ratio.

References

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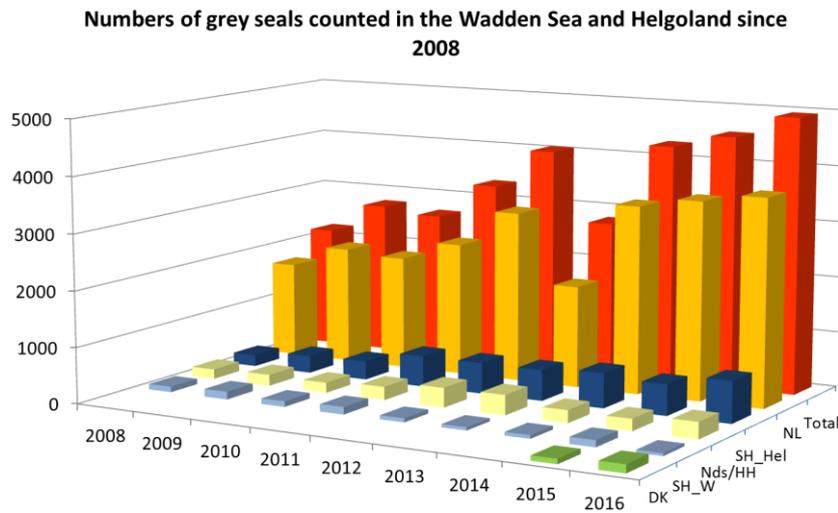


Figure 1.: Total number of grey seals counted in the Wadden Sea during the moult, as well as numbers broken down by region, for 2008-2016.

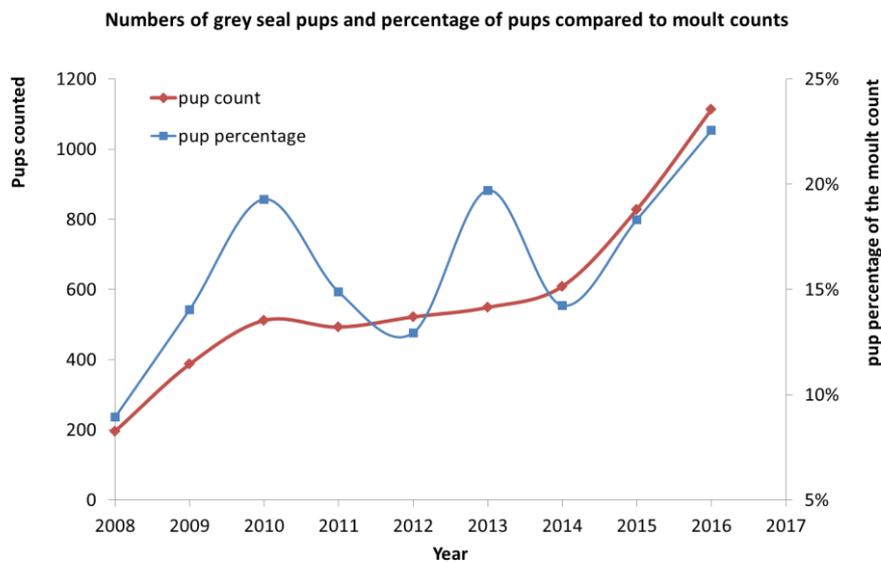


Figure 2. Number of pups counted in the Wadden Sea (red line, right vertical axis) in the years 2008-2015. The number of pups as a percentage of the total moult count is given by the blue line (left vertical axis).