Aerial surveys of grey seals in the Wadden Sea in the seasons of 2007-2008 and 2008-2009

Introduction

After having been a common species along continental Europe in the Neolithic and early Bronze Age, grey seals *Halichoerus grypus* virtually disappeared from the Wadden Sea area. The species started to recolonise the Wadden Sea during the second half of the 20th century. Permanent colonies, were established in the 1960s off Amrum (Germany) and in the 1980s in the western part of the Dutch Wadden Sea. Regular surveys from boats have been carried out in The Netherlands since 1980 and off Amrum from 1988 onwards.

From 2006 onwards, aerial surveys of grey seals were synchronized and coordinated trilaterally in the Wadden Sea. At present, two surveys are carried out during the moult (March-April). These are supplemented by several aerial or boat counts during the pupping season (November-January). In Helgoland (Germany), surveys are carried out from land. In the Danish Wadden Sea, grey seal numbers are rather low and therefore no dedicated surveys are carried out for grey seals. However, during the summer counts for harbour seals in the Danish Wadden Sea area in 2009 about 30 grey seals were observed.

Results and Interpretation

In 2008, the maximum number of grey seals counted in the Wadden Sea during the moult amounted to 2194 animals. This was composed of 1716 in the Netherlands, 174 in Niedersachsen, 98 in Schleswig-Holstein, and 206 on Helgoland. The respective figures for the 2009 moult counts are 2108 in the Netherlands, 200 in Niedersachsen, 138 in Schleswig-Holstein, and 310 on Helgoland, amounting to a total of 2756. This represents a 26 % increase in this last year. It should be noted that these figures provide an index only as a fraction of the seals will be in the water during surveys. There is no correction factor available as yet to account for this and therefore the size of the population cannot be estimated.

In the UK, and most other areas, pup counts of grey seals are used to calculate population size. We argue that this cannot be achieved in our area for the following reasons: a) in order to calculate the population from the pup numbers, data on age-specific fertility and mortality is needed, these lack for the Wadden Sea area, b) pups are born on sandbanks which occasionally flood, causing mother-pup pairs to scatter away from breeding sites making total counts of pups variable from year to year, c) as a result of the relatively low number of pups (200-300) born over a long period (10 weeks), the number of newborn animals can only be estimated with great uncertainty, and d) grey seal pups are subject to intensive rescuing by rehabilitation centres, thus affecting survey count data. Despite the inaccuracies in the pup counts, it remains important to follow the development of the population and identify breeding areas for the purpose of adequate management.

The maximum number of newborn pups observed in the Wadden Sea of the Netherlands, Niedersachsen, Schleswig-Holstein, and Helgoland in November-January of 2007/2008 was 107, 25, 12, and 52 respectively, bringing the total number of pups to 196. The corresponding figures for the winter of 2008/2009 were respectively 272, 29, 16, and 70, amounting to a total of 387 pups, almost twice as much as the year before. It should be mentioned that in the different areas, different methods are used for the pup counts, including aerial counts and land counts, taking either the maximum observed in one day (the Netherlands, Niedersachsen) or continuously (tracking every new born pup; Schleswig-Holstein, and Helgoland).

During the suckling period, white coated pups are observed as they stay ashore for about 2-3 weeks. Then, the weaned pup stays ashore for another 2 weeks and moult into a grey coat before leaving the breeding site. Assessing the numbers of pups born differs therefore from the harbour seal, whose pups are born within about 4-5 weeks and are lactated for up to 4 weeks. They can furthermore easily be identified from their size and position close to their mother.

The overall increase in both the moult counts (26%) and maximum pup counts (97%) are a general pattern for all subareas. The very mild winter of 2008/2009 could have influenced the pup counts, as often in other years (i.e. 2007/2008) pups are washed away in winter storms, or preventively rescued and reared in seal rehabilitation centers.
The distribution of grey seals has gradually extended from a few local sites to an almost continuous distribution throughout the Wadden Sea, with some strongholds in the Netherlands and Germany.

Sightings of marked grey seals and results from satellite tagged grey seals clearly demonstrate that there is contact between grey seals from haulout sites within the Wadden Sea and haulout sites in the United Kingdom (e.g. Farne Islands, and Orkney Islands). This implies that the grey seals in the Wadden Sea cannot be considered as a closed population. They are rather part of a North Sea wide meta-population, and numbers and composition are influenced by developments in (sub-) populations elsewhere in the North Sea region.

References

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