

## Aerial surveys of Harbour Seals in the Wadden Sea in 2009

### **Growth of the harbour seal population slowing down?**

By the Trilateral Seal Expert Group (TSEG)

#### Introduction

In accordance to the Trilateral Seal Management Plan, the three Wadden Sea countries Denmark, Germany and the Netherlands perform harbour seal counts annually. These are coordinated and synchronised between the three countries. Five aerial counts are conducted nearly simultaneously every year at low tide from Esbjerg in Denmark, to Den Helder in the Netherlands. This coordination allows for an estimate of the total population size and the number of pups born every year for the entire Wadden Sea. During these flights all seals hauling out on sandbanks are counted.

In 2009 the weather conditions during the pupping season in June and the moulting season in August were favourable during almost all the flights.

#### Results and Interpretation

The maximum number of harbour seals counted during the moulting period amounted to 3,063 in Denmark, 6,880 in Schleswig-Holstein, 5,289 in Lower Saxony/Hamburg and 6,339 in the Netherlands, resulting in a total number of 21,571 in the Wadden Sea.

The maximum number of pups counted was 490 in Denmark, 2,263 in Schleswig-Holstein, 1,446 in Niedersachsen/Hamburg, and 1,249 in the Netherlands, amounting to a total of 5,448 pups.

Compared to 2008, the 1,300 more seals counted in the Wadden Sea result in an increase of 6.5 %. This increase is lower than in previous years, e.g. the average increase between 2006 and 2008 was 12.4%.

The pup index, calculated as the percentage of pups in relation to the total number of seals counted during the moult, was 25.3 %. This is only slightly lower than the previous years of 2006-2008, where the pup index averaged 25.4%. In general the pup index seems to gradually decrease after the epizootic in 2002, presumably due to a normalising population structure (i.e. number of adult females).

Besides an inter-annual fluctuation in count results due to environmental conditions, the observed lower increase could also be due to a population approaching the carrying capacity of their habitat. Given the still relative high pup percentage, it is considered that the latter is not yet the case.

As explained in earlier reports only seals on the sandbanks are counted during aerial surveys. In order to estimate the total population size, a correction factor needs to be used. Such a correction factor (1.47) has only been calculated for the harbour seals in the Dutch part of the Wadden Sea (Ries et al. 1998). Under the assumption that this factor also holds for the rest of the Wadden Sea, the current counts would represent a total population size of nearly 32,000 animals. This population size falls within the order of magnitude for the seal population estimate for the year 1900 (range 19,000 – 38,000, most probable: 38,000 animals) as estimated by Reijnders (1992).

Though the this year observed diminished growth is far from alarming, it is not unlikely to assume that at some point in time the carrying capacity of the Wadden Sea for harbouring seals may be reached. If that is the case, the TSEG expects that

pup production will drop, more sick animals will show up on the beaches and sandbanks and in a later stage also higher mortality rates will be seen. The TSEG would like to emphasise that developments in the coastal areas, such as sea level rise, global warming and/or growth of species such as harbour porpoise and grey seals, competing for the same food resources or even the development of for example wind farms on the seals feeding grounds in the North Sea, could speed up these processes.

References:

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**Number of Counted Harbour Seals in the Wadden Sea since 1975**

