Aerial surveys of Harbour Seals in the Wadden Sea in 2011

- Solid increases in total number as well as pups

In 2011 the coordinated aerial surveys for the harbour seal counts of the Wadden Sea were performed as usual. The counts are synchronised between the three Wadden Sea countries: Denmark, Germany and the Netherlands in order to obtain a single estimate for the size of the entire Wadden Sea population, and the number of pups born. As seals are counted when hauling out on sandbanks, counts are carried out when low-tide occurs during midday.

Results and Interpretation

Although this year's growth was less than the average since the PDV epidemic in 2002, the counts from 2011 gave a solid increase in the maximum number of harbour seals hauled out during the moult in August (24,118 and an increase of 9% from last year). The number of pups born in 2011 followed the same trend, during the peak in pupping in June, a total of 7,044 pups were counted, equivalent of an increase of 8% over last year's count.

The total count of 24,118 harbour seals in the Wadden Sea was composed of 3,105 in Denmark, 8,493 in Schleswig-Holstein, 4699 in Lower Saxony and Hamburg and 7,821 in the Netherlands. The general increase of 9% is unevenly distributed; in Denmark there was an increase of 9%, in Schleswig-Holstein the increase was just 2%, the counts in Lower Saxony and Hamburg dropped by 9% while numbers in the Netherlands increased by 34%.

The 34% increase in the Netherlands cannot be attributed to internal recruitment, given an estimated maximum annual growth rate of 13% for harbour seals (Härkönen et al. 2002). This probably means that a substantial proportion of the harbour seals that hauled out in Lower Saxony and Hamburg during last year's moult have moved to the Netherlands and was counted here in 2011. A similar indication of displacement was observed in last years' counts, where a growth of 21% was seen in Schleswig-Holstein. The relatively low numbers in Lower Saxony/Hamburg and Schleswig-Holstein may also conceal higher actual numbers as only one August-survey was conducted in each of these areas. In Schleswig-Holstein, the survey was conducted in early August, while there is a trend of the past years to obtain the maximum count in mid-August.

The increase in pupping over last year's pup-count was driven by higher numbers in Denmark (699; +23.9%) and Schleswig-Holstein (3294; +14.7%), while the pup count was close to last year's in Lower Saxony and Hamburg (1606; -2.5%) and the Netherlands (1445; 0.0%). Evidently, the much higher abundance of harbour seals during the moult in the Netherlands was not reflected in the pup counts.

One can only speculate on factors affecting the number of animals on land, such as disturbance, the necessity for the seals to feed further away limiting the amount of time to haul out, or a change in the age and sex composition of the population. Seals are known to haul out more when moulting. However animals of different age and sex do not moult at the same time (Härkönen *et al*. 1999). Changes in the composition of the population would therefore result in shifts of the peak numbers. As it is not possible to discern the different age and sex classes during the aerial surveys, this cannot be tested.

Based on results from recent years, it has been speculated that the population was approaching the carrying capacity of their habitat and growth was beginning to slow down (TSEG 2009). Even though this years' increase is larger than last years' low growth (3%, TSEG 2010), there is a trend for decreasing growth rates between years since the epidemic in 2002.

The estimate for the total Wadden Sea harbour seal population - correcting for the animals not observed whilst in the water (TSEG 2009) - would result in an estimated population size of 35,500 harbour seals.

References:

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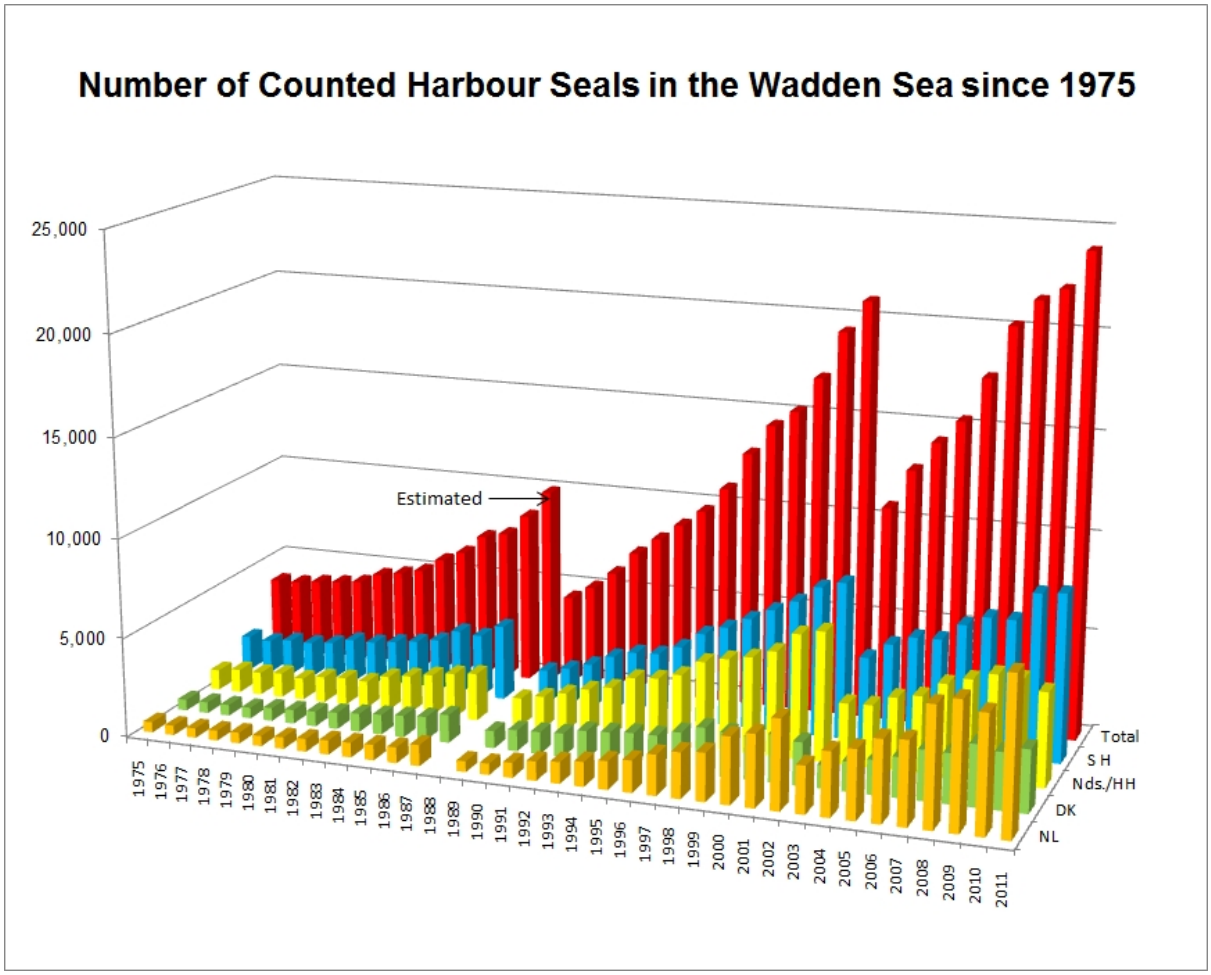
Number of Counted Harbour Seals in the Wadden Sea since 1975
25,000
20,000
15,000
10,000
5,000
0
Estimated
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
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1991
1992
1993
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1995
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1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Total
S H
Nds./HH
DK
NL