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SURVEY RESULTS OF HARBOUR SEALS IN THE WADDEN SEA IN 2026

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INTRODUCTION

Harbour seals observed in the Wadden Sea area are dependent on the North Sea coastal and adjacent offshore areas where they feed and spend most of their time. Seals are, however, difficult to observe or count at sea, whereas counts can be done more easily when they haul out on the sandbanks of the Wadden Sea to rest, moult and breed. During the moulting and pupping periods, seals are particularly dependent on haulout sites, and the numbers of hauled out seals peak in these periods. To obtain an indication of the status of the population observed in the Wadden Sea, counts of harbour seals and pups hauled out in the entire Wadden Sea area and Helgoland, are coordinated between the three Wadden Sea countries, Denmark, Germany and the Netherlands.

Harbour seals are counted during low tide around midday when most seals are hauled out on land. These counts are conducted on five dates coordinated among the responsible institutes from the three countries. Three such counts take place during the pupping season in June, to count the number of pups. During the moulting season in August, two counts are performed, during which all harbour seals on land are counted to estimate the total population.

In addition to these seasonal peaks in numbers, the number of seals hauling out may be influenced by weather conditions, disturbance, distance to food patches, or changes in the age and sex composition of the population (Härkönen et al. 1999). Efforts are made to standardise the surveys, and several consecutive surveys are carried out to reduce the effect of anomalies due to unforeseen events. Over the decades, the timing of births has also shifted (Reijnders et al. 2010). If not accounted for, this could affect the results of the pup counts.

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RESULTS AND INTERPRETATION

PUP COUNTS

Following the second highest pup count on record in 2025, the 2026 surveys yielded a total of 8,819 pups, a decrease of 12% relative to the 2025 count of 10,044 pups (Figure 1; Galatius et al. 2025). In Denmark, there was a decrease of 42% relative to 2025 with 424 pups counted. In Schleswig-Holstein, there was a decrease of 12% with 3,840 pups, while in Lower Saxony and Hamburg, there was an increase of 4% with 2,219 pups counted. In the Netherlands, there was a decrease of 17% relative to 2025 with a 2026 count of 2,336 pups. On Helgoland, no pups were observed.

MOULT COUNTS

During the moult in August 2026, a total of 23,154 harbour seals were counted in the Wadden Sea area. This constitutes a decrease of 3% relative to the count in 2025 (Galatius et al. 2025). As with all counts recorded since 2022, it remains lower than any count from 2012-2021, suggesting a sustained decline in abundance relative to that period (Figure 2).

In Denmark, counts increased by 15% from 2025 to 1,987, and in Schleswig-Holstein, they increased by 2% to 7,996. In Lower Saxony and Hamburg, they decreased by 11% to 6,300, and in the Netherlands they decreased by 6% to 6,821. At Helgoland, 50 harbour seals were counted, compared to 100 in 2025.

Because of possible variations in individual counts, long-term trends should be investigated rather than annual variation. The 2026 count is the fifth successive year of substantially lower counts than in the preceding period of 2012-2021. Thus, after an exponential increase of 10% annually from 2003 to 2012, the trend stagnated (+1% annually) from 2012 to 2020. In recent years, there has been a decreasing trend of -3% annually since 2020. The percentage of pups, as related to the moult count, has generally been increasing substantially since 2000 (Figure 1). In 2026, the pup percentage was 38%, lower than the record of 42% in 2025, but still among the highest values recorded. The generally increasing pup percentages compared to the total count may indicate a relative increase in pup production and/or a change in haulout behaviour. This could be because the age structure of the population has been changing towards a greater proportion of adults, potentially because of increased mortality of pups during their early life.

Effort is needed to understand the underlying mechanism for the high pup production paired with the decreasing moult counts since 2020.

Figure 1. Number of pups counted in the Wadden Sea in June (left y-axis, light blue bars) during the years 2000-2026. Dark blue diamonds (right y-axis) indicate the number of pups as a percentage of the total number of seals counted during the moult count surveys in August.

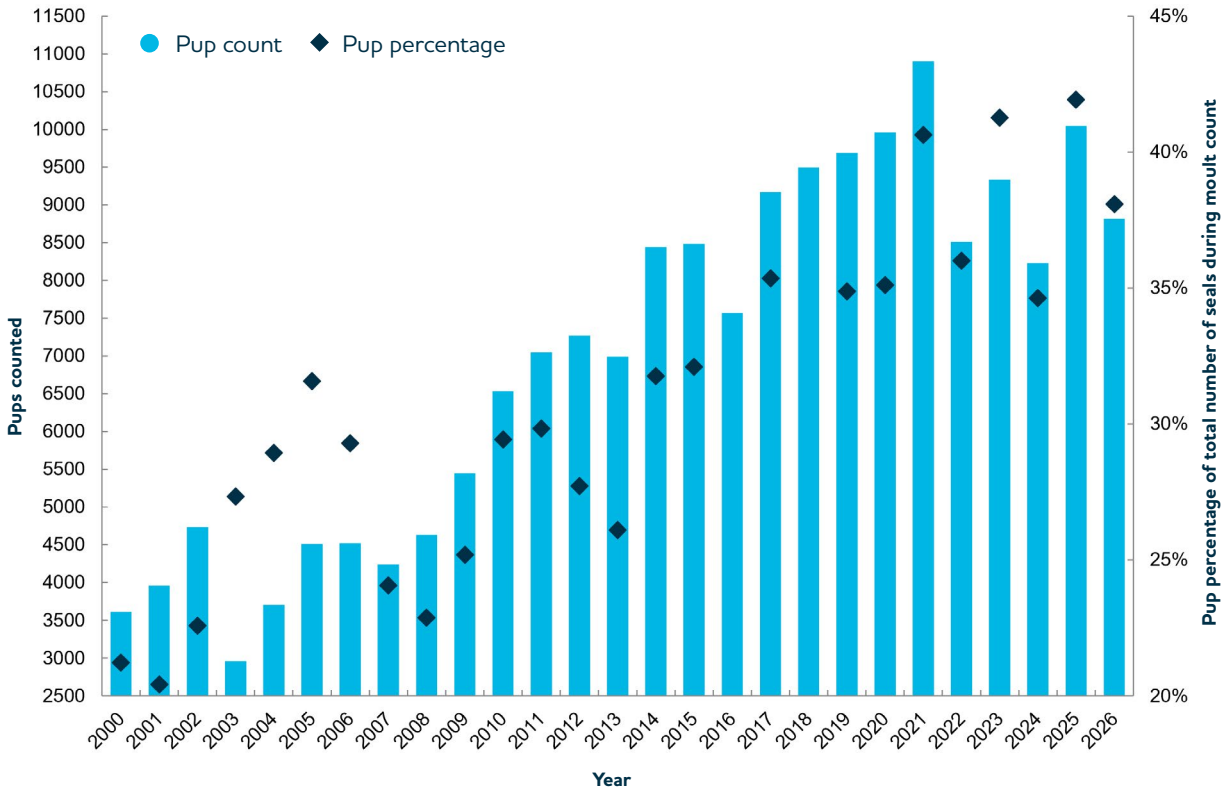
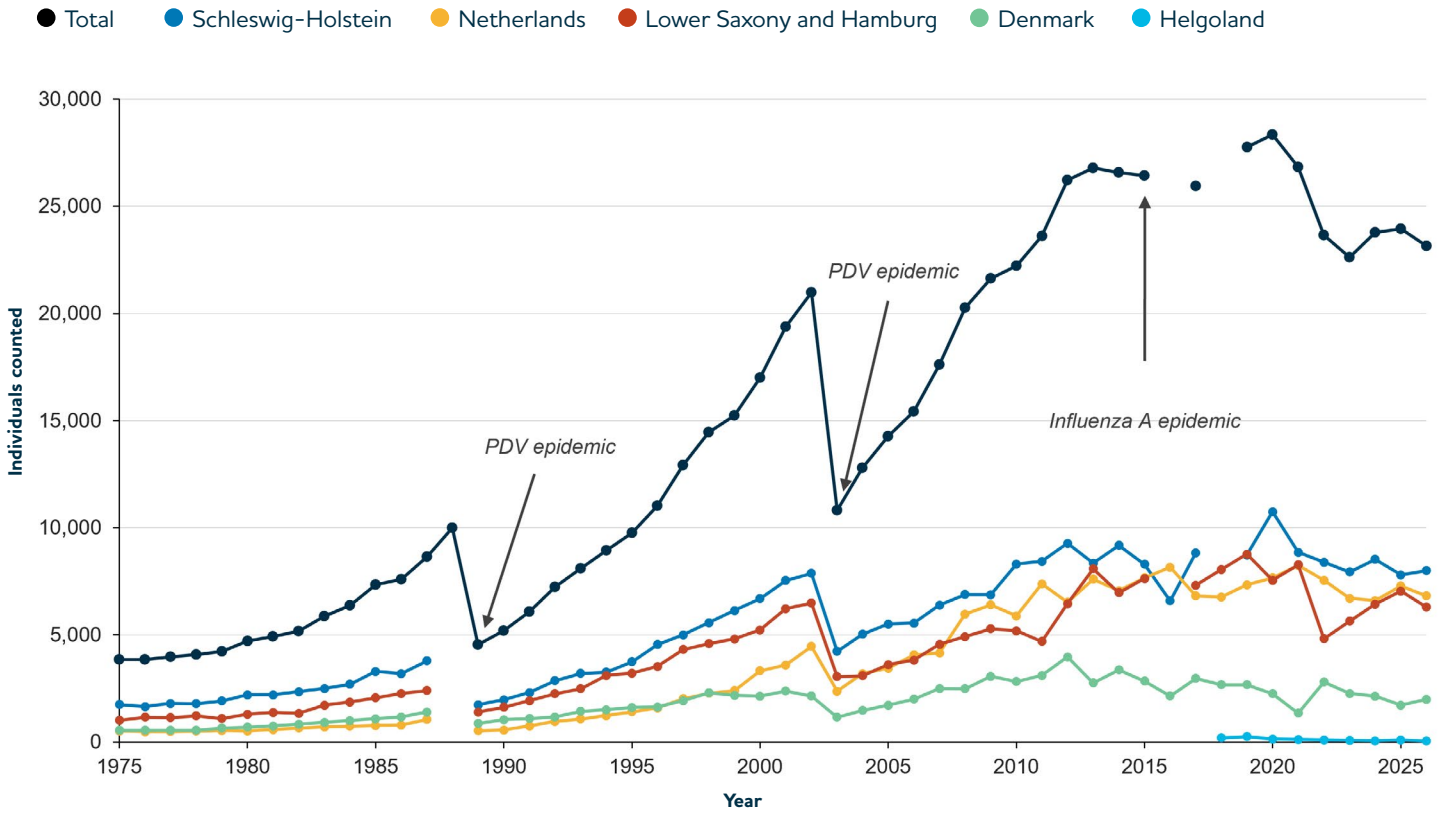


Figure 2. Total number of harbour seals counted in the Wadden Sea during the annual moult in August, as well as number of seals for each region, from 1975 to 2026. Arrows indicate the phocine distemper virus (PDV) epidemics of 1988 and 2002 and the influenza A epidemic of 2014, reflected in the reduced counts of 1989, 2003 and 2015. In 2016 and 2018, parts of the Wadden Sea could not be surveyed on the coordinated dates, resulting in missing total counts for these years. From 2018, data from Helgoland are included.



Based on counts in the wider North Sea area, there is no indication of mass migration (see ICES 2024) and there have been no mass mortality events in recent years. Neither the number of dead harbour seals found stranded, nor the pathological examinations (carried out in Germany and Denmark) have indicated a disease-related decline in the population. Potentially, competition with harbour porpoises and grey seals could affect harbour seal abundance. Recent dietary studies indicate substantial trophic niche overlap between the three sympatric marine mammal species, and a contraction in niche area for harbour seals (Heße et al. 2026). Individual grey seals have also been observed to predate on and have fatal sexual interactions with harbour seals (van Neer et al. 2015; Rohner et al. 2020), this has been inferred to have population consequences in Scotland (Langley et al. 2025). However, in the western part of the Dutch Wadden Sea, where the majority of grey seals are counted, harbour seal numbers are not declining more than in areas with fewer grey seals. In the North Sea, where harbour seals forage, the anthropogenic usage has increased profoundly over the last decade, especially in relation to the construction of offshore wind farms and shipping traffic, with potential detrimental effects on the harbour seals (Maurer et al. 2025). However, effects might not be straightforward, as, for example, attraction to wind farms and other structures have also been detected in some individuals (e.g., Russell et al. 2014, 2016). Moreover, the foraging area of the Wadden Sea harbour seals is subject to intensive fisheries, which may lead to competition for food resources (Aarts et al. 2019) and disturb sediments and bottom communities, degrading the habitat and its resources. However, demersal fisheries have decreased dramatically in recent years (Centraal Bureau voor de Statistiek 2026).

ESTIMATED POPULATION ABUNDANCE

The total abundance of the Wadden Sea harbour seal population, including seals in the water during the survey, can be estimated using data from Ries et al. (1998). They found that on average 32% of the seals were in the water during summer. Using this correction factor, the total population size of harbour seals in the Wadden Sea area in 2026 is almost 34,000. However, the population might currently encounter different ecological conditions compared to almost 30 years ago, and the correction factor might be inaccurate with respect to current conditions. To determine if this is the

case, new studies and additional survey flights are needed to ascertain when peaks in pupping and moulting occur and to determine the proportion of seals on land during the surveys.

CONCLUSION

In 2026, 8,819 harbour seal pups and 23,154 moulting seals were counted. The results from the last decade indicate a change in population trend since 2013 and a decline in the Wadden Sea harbour seal population despite relatively high pup counts since 2020. Studies are needed to interpret the trends and understand the underlying mechanisms for these changes.

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This report was published on 16 November 2026.

This report should be cites as:
Galatius, A., Brasseur, S. M. J. M., Gross, S., Hamm, T., Jeß, A., Meise, K., Meyer, J., Nachtsheim, D. A., Schop, J., Stejskal, O., Teilmann, J., & Thøstesen, C. B. (2026). Survey Results of Harbour Seals in the Wadden Sea in 2026. Common Wadden Sea Secretariat, Expert Group Marine Mammals. https://doi.org/10.5281/zenodo.23916475



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