

MANAGEMENT BRIEFING: Harbour seal *Phoca vitulina*



Contents

SUMMARY OF KEY MANAGEMENT MEASURES	3
THE SPECIES	4
Distribution in the Baltic Sea	5
Conservation status	6
PRESSURES AND THREATS	7
MANAGEMENT MEASURES	7
Conservation objectives	7
Management objectives	7
Practical measures	8
Regulatory measures	9
Supporting measures.....	9
USEFUL REFERENCES	10

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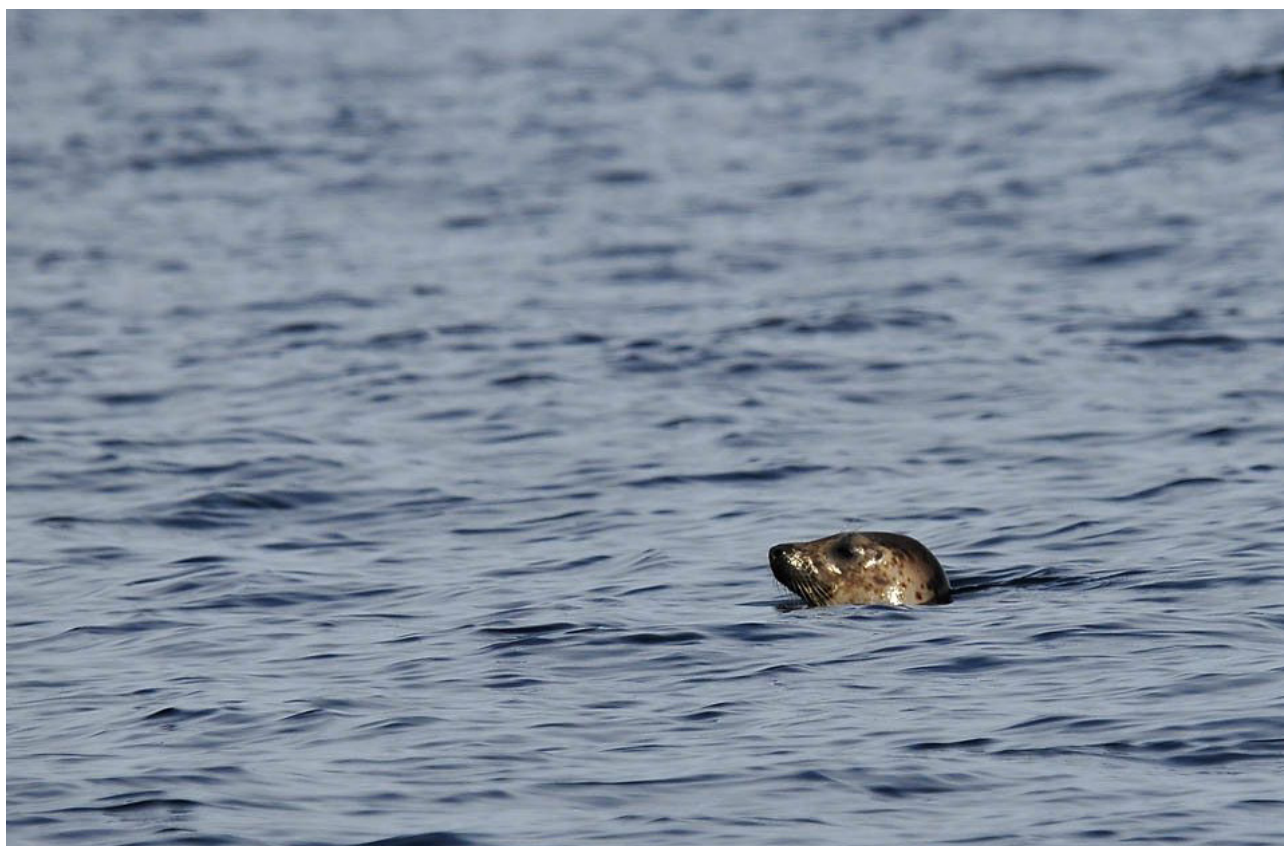
Swedish Agency
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Water Management

SUMMARY OF KEY MANAGEMENT MEASURES

Six genetically distinct populations of harbour seal frequent European coastlines, one of which, the Kalmarsund population, is found in the Baltic proper. There are also sub-populations along the southern Danish and Swedish coasts in the southwestern Baltic and the Kattegat.

Historical hunting of the harbour seal for its skin and blubber took the population close to extinction in the 20th century. Seals, including harbour seals, have also been hunted because of their interactions with commercial fisheries. Other pressures are infertility caused by organohalogen and significant mortality events due to disease. The main threats to the harbour seal in the Baltic Sea today are entanglement in fishing gear, disease/immunosuppression associated with effects of pollution, and habitat loss/disturbance.

Given the small numbers of the Baltic Sea harbour seal population the conservation objectives for this species need to focus on maintaining and improving its status. The management objectives for harbour seal should be aimed at preventing bycatch, any degradation or loss of suitable habitat particularly at haul out sites and supporting measures to improve the water quality of the Baltic Sea. Practical measures include modification of fishing gear to reduce the risk of bycatch and codes of practice to prevent disturbance, particularly of nursing mothers. MPAs provide a valuable framework for effective conservation measures but more widespread measures, such as reducing pollutant loads are also needed.



Harbour seal (*Phoca vitulina*) © OCEANA Carlos Minguell
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THE SPECIES

Harbour seals are a gregarious species, with regular haul-out sites used for mating, giving birth, moulting and resting. Females give birth on sheltered shorelines once a year in May and June. The pups, which suckle for around 3-4 weeks, can swim and dive almost immediately after birth. Moulting occurs in August when the seals spend more time on land to develop the new fur. Six genetically distinct populations of harbour seal frequent European coastlines, one of which, the Kalmarsund population, is found in the Baltic proper¹. There are also sub-populations along the southern Danish and Swedish coasts in the southwestern Baltic and the Kattegat².

Groups of harbour seals general stay within 100km of the shore, hauling out on undisturbed beaches and islands. They typically forage in areas shallower than 100m although can dive deeper, and do not migrate although they may move to new areas to feed. Harbour seals are opportunistic feeders, mainly feeding on fish but with their diet varying substantially between regions. In the Kattegat the main prey are sandeels and dab, in the southwestern Baltic Sea it is dominated by small sandeel, followed by black goby and Atlantic cod, and in Kalmarsund the European eel appears to make up the largest proportion of the diet with Atlantic cod and European Flounder the next most common prey³.

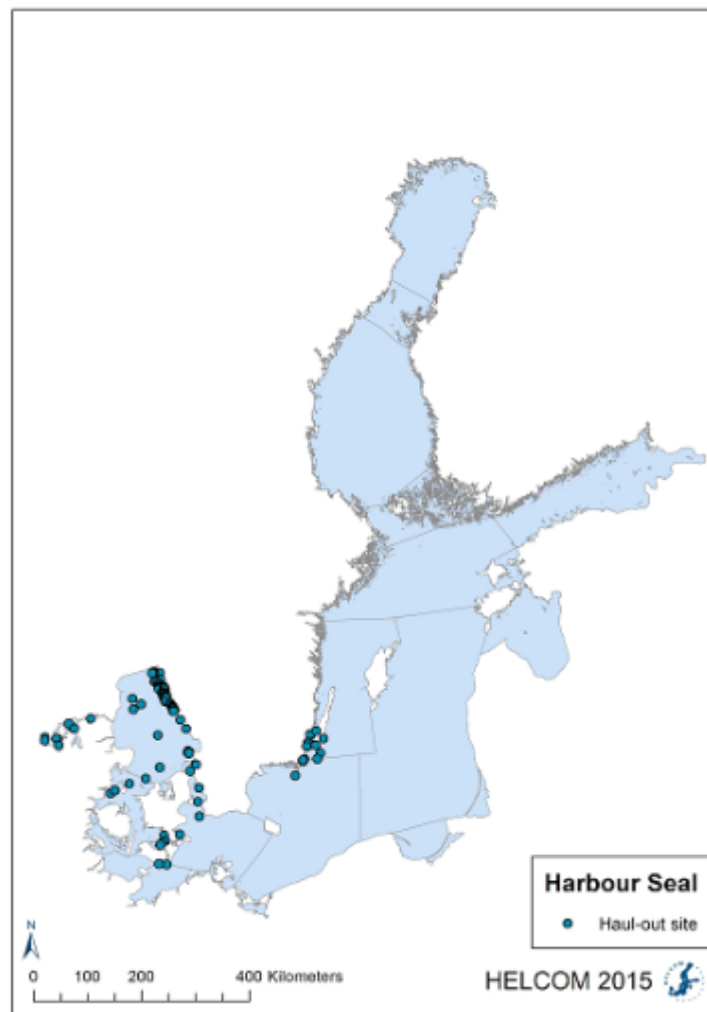


Hauled out harbour seals (*Phoca vitulina*) © Ivan Ingemansen.
<http://www.undine-baltic.eu/species/index.php?id=105&lang=de>

1 Andersen & Olsen, 2010.
2 Olsen et al., 2014
3 Scharff-Olsen et al., 2018.

Distribution in the Baltic Sea

Archaeological data show that the harbour seal has been confined to the southern Baltic ever since entering the Baltic Sea some 8,000 years ago. There are no records of harbour seal remains north of a line from Oskarshamn, Sweden, to Hiiumaa in Estonia¹ but it was formerly present along the southern Estonian coast, Gotland, and southern Baltic including the current Polish, German, Danish and Swedish coasts. Today the harbour seal is found in the Kalmarsund region (Sweden) and the southwestern Baltic Sea in Danish, Swedish and German waters. Although occasionally visiting other areas to feed, no regular haul-out sites are known along the coasts of any of the other Baltic countries. Haul-out sites reflect both the distribution of breeding sites as well as sites used for other activities².



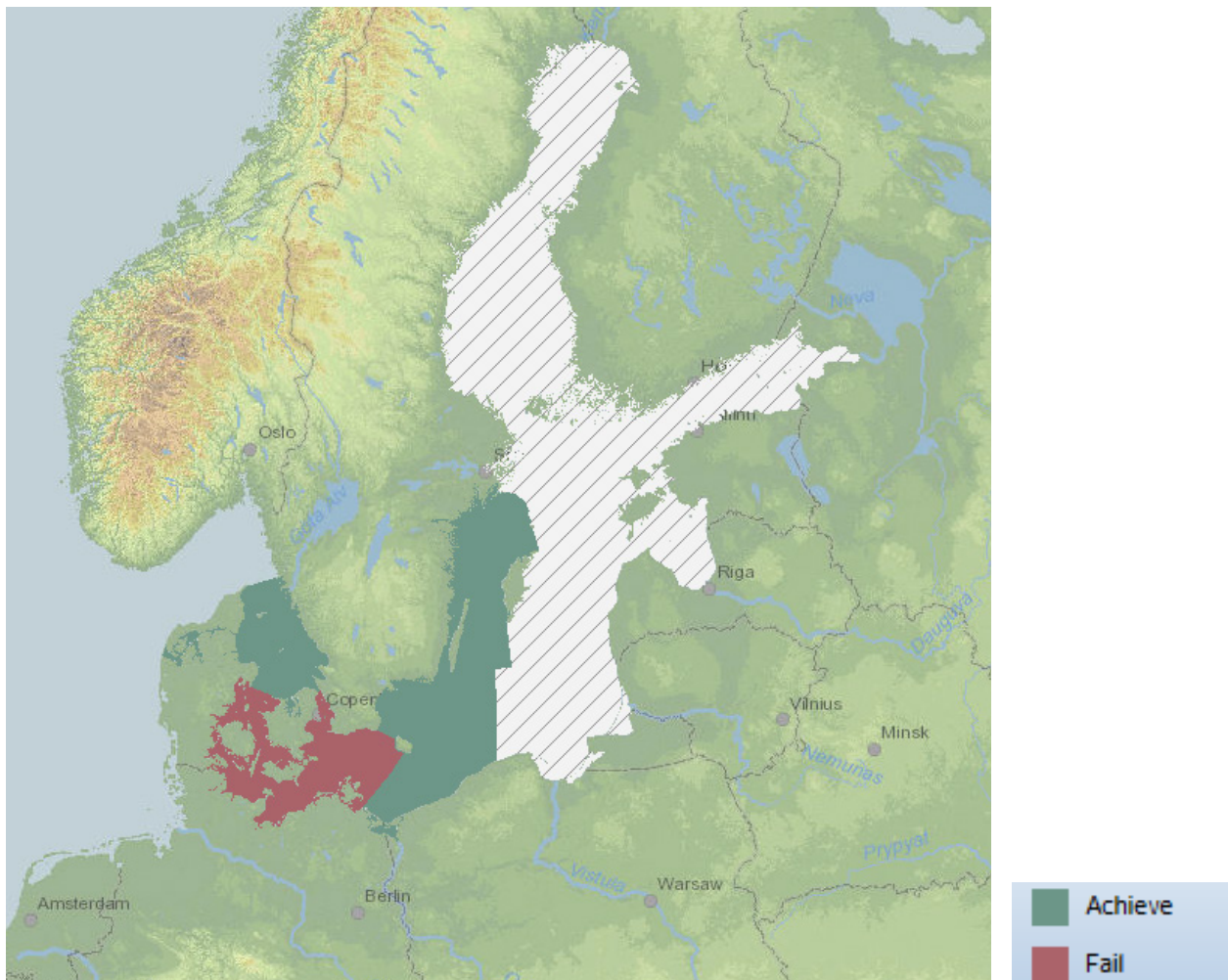
Haul out sites of Baltic harbour seals (from HELCOM, 2018, Figure 10)

1 Harkonen et al. 2005

2 <http://www.helcom.fi/Core%20Indicators/Distribution%20of%20Baltic%20seals%20HELCOM%20core%20indicator%202018.pdf>

Conservation status

The HELCOM core indicator for the period 2011-2016 on the state of the harbour seal (based on three components - distribution of haul-out sites, breeding sites and foraging areas) shows that the threshold for good status has not been achieved for some areas of Denmark or in the western Baltic (Arkona basin, Bay of Mecklenburg, Kiel Bay, Great Belt and Sound). Status is good in Kattegat and Limfjord.



Distribution of and status of harbour seal indicator, 2018

<http://maps.helcom.fi/website/mapservice/?datasetID=386d3bcc-9338-4ab2-8013-0bb785c17742>

The harbour seal is on Annex II of the EU Habitats Directive, indicating that its conservation requires designation of Special Areas of Conservation.

Article 17 reports on the status of the harbour seal in the Baltic Sea for the period 2007-2012 indicate it as having a Favourable (FV) status in Denmark, Unfavourable – inadequate status (U1) in Germany, Unfavourable-Bad status (U2) in Sweden. The overall status for the marine Baltic region is Unfavourable – Bad (U2)¹.

HELCOM have assessed the status of the Kalmarsund subpopulation of harbour seal as Vulnerable and the Southern Baltic sub-population as Least concern. Both sub-populations are listed as Vulnerable in Sweden.

¹ <https://www.eionet.europa.eu/article17/reports2012/species/progress/?period=3&group=Mammals&conclusion=overall+assessment>

The HELCOM MPA database¹ records 2 MPAs (in Sweden) where the Kalmarsund subpopulation of harbour seal is listed as a present (Värnanäs Archipelago and Torhamns archipelago) but not the reason for site designation. There are also 17 MPAs where the southern Baltic sub-population is reported as present (in Sweden, Denmark and Germany), 15 of which justify the site's designation as an MPA. The harbour seal is considered resident in three of these sites; Kullaberg-Skålderviken and Hallands Väderö (Sweden) and Fehmarnbelt (Germany). There is a breeding colony at a fourth MPA (Falsterbo Peninsula with Måkläppen, Sweden).

PRESSURES AND THREATS

Historical hunting of the harbour seal for its skin and blubber took the population close to extinction in the 20th century with the Kalmarsund subpopulation reduced to an estimated 200 seals by 1960². Seals, including harbour seals, have also been hunted because of their interactions with commercial fisheries. Other pressures are infertility caused by organohalogen pollution which could have contributed to the consistently low numbers by the end of the 1970s and there have been significant mortality events due to disease. Harbour seals in the southern Baltic experienced a mass mortality caused by a Phocine Distemper virus epidemic in 2002 as did those in the Kattegat and Danish Straits in 1988 and 2002³. The cellular immune response of harbour seals, which is crucially important in dealing with morbillivirus infections, is known to be suppressed when exposed to environmental contaminants such as PCBs and dioxins in their diet⁴.

The main threats to the harbour seal in the Baltic Sea today are entanglement in fishing gear, disease/immunosuppression associated with effects of pollution, and habitat loss/disturbance.

MANAGEMENT MEASURES

Management measures need to be linked to conservation objectives and to address the main pressures and threats to the species. For the harbour seal this will include limiting anthropogenic activities which lead to bycatch, and habitat loss or degradation. Although not considered below, monitoring the effects of management measures is also essential to review progress, and to modify actions in light of the findings.

Conservation objectives

Given the small numbers of the Kalmarsund subpopulation the conservation objectives for this species need to focus on maintaining and improving its status. This is consistent with objectives under the EU Habitats Directive.

Management objectives

The management objectives for harbour seal should be aimed at preventing bycatch, any degradation or loss of suitable habitat particularly at haul out sites and supporting measures to improve the water quality of the Baltic Sea.

1 <http://www.helcom.fi/action-areas/marine-protected-areas/database/>

2 Härkönen & Isakson, 2010.

3 Härkönen et al., 2006

4 De Swart et al., 1995.

Practical measures

Fisheries technical measures

Modifying fishing gear and switching to alternative gears are ways of reducing or eliminating the risk of seal bycatch and/or incidental damage to fishing gear by seal depredation. Although the primary focus in the Baltic Sea is on avoiding such interactions with grey seals, the more abundant seal species, mitigation measures will also benefit the harbour seal as both juvenile and adult harbour seals are taken as bycatch. This is primarily an issue for small-scale coastal fisheries using gillnets for flatfish and cod, and trap fisheries for salmon and eel. Mitigation measures tested include the use of cod pots instead of gillnets, but with a strong recommendation to use seal exclusion devices on pot entrances because intensive use of cod pots on the west coast of Sweden with such devices is considered likely to cause a mortality of large numbers of harbour seals¹. Salmon traps with an outer protecting net (“pushup fish bag”) also appear to have reduced interactions with seals if the entrance areas are also modified.

Avoiding disturbance

Harbour seals are vulnerable to disturbance when hauled out on land. Vessel traffic (e.g. fishing boats, speedboats), walkers on the shore, and recreational activities on the water such as swimming and canoeing are some of the potential sources of disturbance. This is likely to be most problematic when seals have newborn pups as disturbance has been shown to affect the behaviour of the nursing mothers². Apart from increased vigilance, disturbance can lead seals to flush into the water and disrupt post-natal bonding. Disturbance during the moulting period can result in loss of energy, interruption of hair growth and prolongation of the moulting period³. Public information campaigns with codes of practice providing information such as safe approach distances of vessels and people on foot, can be used to alert the public to the issue and reduce the likelihood of disturbance.



Harbour seal (*Phoca vitulina*) © OCEANA Carlos Minguell

<https://www.flickr.com/photos/oceanaeurope/35105472193/in/photolist-GruGDF-9BB2hQ-Vu9HPX-n6sKQ9-czk7r9>

¹ Königson et al., 2015; Westerberg et al., 2006.

² Stein, 1989

³ <https://www.pinnipeds.org/attachments/article/199/Disturbance%20for%20SCS%20-%20text.pdf>

Regulatory measures

Marine Protected Areas and their management

Protected areas have been established for harbour seals through national conservation programmes and these locations may also be recognized as Baltic Sea MPAs and Ecologically or Biologically Significant Marine Areas (EBSAs). The Habitats Directive require the designation of Special Areas of Conservation to protect harbour seals and their habitat. Designation provides a regulatory framework for action and needs to be operationalized through management plans which set out conservation objectives, how they might be achieved, by whom and on what timescales. Management plans should also set out procedures for enforcement, review and stakeholder involvement. Whilst practical management measures, such as prohibiting the use of bottom set gillnets and entangling nets, could be agreed without MPA designation (the procedures depending on whether they are within territorial waters or EEZs), the supporting mechanisms of MPAs such as conservation objectives, management planning, monitoring, and enforcement provide a framework for effective implementation.

Supporting measures

Species action/management plans

Species action plans focus attention and can set out very specific recommendations as well as identifying who should take action to improve the status of species. A key element of such plans for the harbour seal needs to be long-term monitoring and research, the restoration of suitable habitats where appropriate and the establishment and proper management of seal sanctuaries. National management plans for seal conservation are recommended through the HELCOM Recommendation 27-28/2 on Conservation of Seals in the Baltic Sea Area. National authorities should co-ordinate their conservation and monitoring strategies regarding shared seal populations with neighboring countries¹.

International agreements

International agreements support the introduction and enforcement of measures to protect the marine environment of the Baltic Sea and are essential to protect a species such as the harbour seal which is present in more than one Baltic Sea country. This is also necessary because significant threats, such as pollution and disease may need to be tackled by joint action at regional or international level.

HELCOM Recommendation 27-28/2 on Conservation of Seals in the Baltic Sea Area (2006)² states that the long-term objectives for the management of Baltic Seals are a natural abundance and distribution and a health status that ensures their future existence. The Baltic Sea Action Plan (BSAP) further stipulated that “By 2015, improved conservation status of species included in the HELCOM lists of threatened and/or declining species and habitats of the Baltic Sea area will be achieved and by 2015 the by-catch of harbour porpoise, seals, water birds and non-target fish species has been significantly reduced with the aim to reach by-catch rates close to zero”. Many of the associated actions have still to be accomplished³.

The BSAP provides a framework for joint actions across Baltic states as well as added incentive for national initiatives aimed at reaching good environmental status for the Baltic Sea.

¹ HELCOM 2013.

² <http://www.helcom.fi/Recommendations/Rec%2027-28-2.pdf>

³ <https://portal.helcom.fi/meetings/SFI%20WS%201-2019-631/Related%20Information/Presentation%201%20Haldin.pdf>

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