Viewing: Latest Version (No Archives)

Marine Mammals Thematic Assessment (/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/marine-mammals/)

The status of seals and small toothed cetaceans is not good while the status of other marine mammals remains unknown

The integrated status of marine mammal species was assessed by using the outcome of four indicators for 15 species, although not all indicators assessed all 15 species. These species were grouped into four functional groups, across three OSPAR Regions and the OSPAR Maritime Area. All the species groups that could be assessed, including seals in the Greater North Sea (Region II), and small toothed cetaceans in the Greater North Sea, Celtic Seas and Bay of Biscay and Iberian Coast, were not in good environmental status (**Figure S.1**). The status of all other species groups (baleen whales and deep-diving toothed cetaceans) in the OSPAR Maritime Area (with data available only in the Greater North Sea (Region II), Celtic Seas (Region III) and Bay of Biscay and Iberian Coast (Region IV)) and of seals in the Celtic Seas remains unknown due to limited data and time series.

Not all common indicators have been developed or extended to Arctic Waters (Region I) and the Wider Atlantic (Region V), and data deficiencies have impacted Arctic Waters assessments. Therefore, although a narrative is presented on the status of marine mammals for Arctic Waters, insufficient data were available for all common indicator assessments. No narrative exists for the Wider Atlantic.

“Not in good status” assessments are assigned to the OSPAR-listed blue whale and bowhead whale in Arctic Waters and the Wider Atlantic, and the northern right whale is considered to have been eliminated in the OSPAR Maritime Area.

A preliminary assessment of polychlorinated biphenyls (PCBs) in 30 species of marine mammals at the scale of the OSPAR Maritime Area was presented as a pilot assessment (“”). This analysis was not included in the integration of marine mammal status but hints at high PCB toxicity risk in small toothed cetaceans in the Greater North Sea, Celtic Seas and Bay of Biscay and Iberian Coast, possibly contributing to the explanation for the trends given by the common indicators.

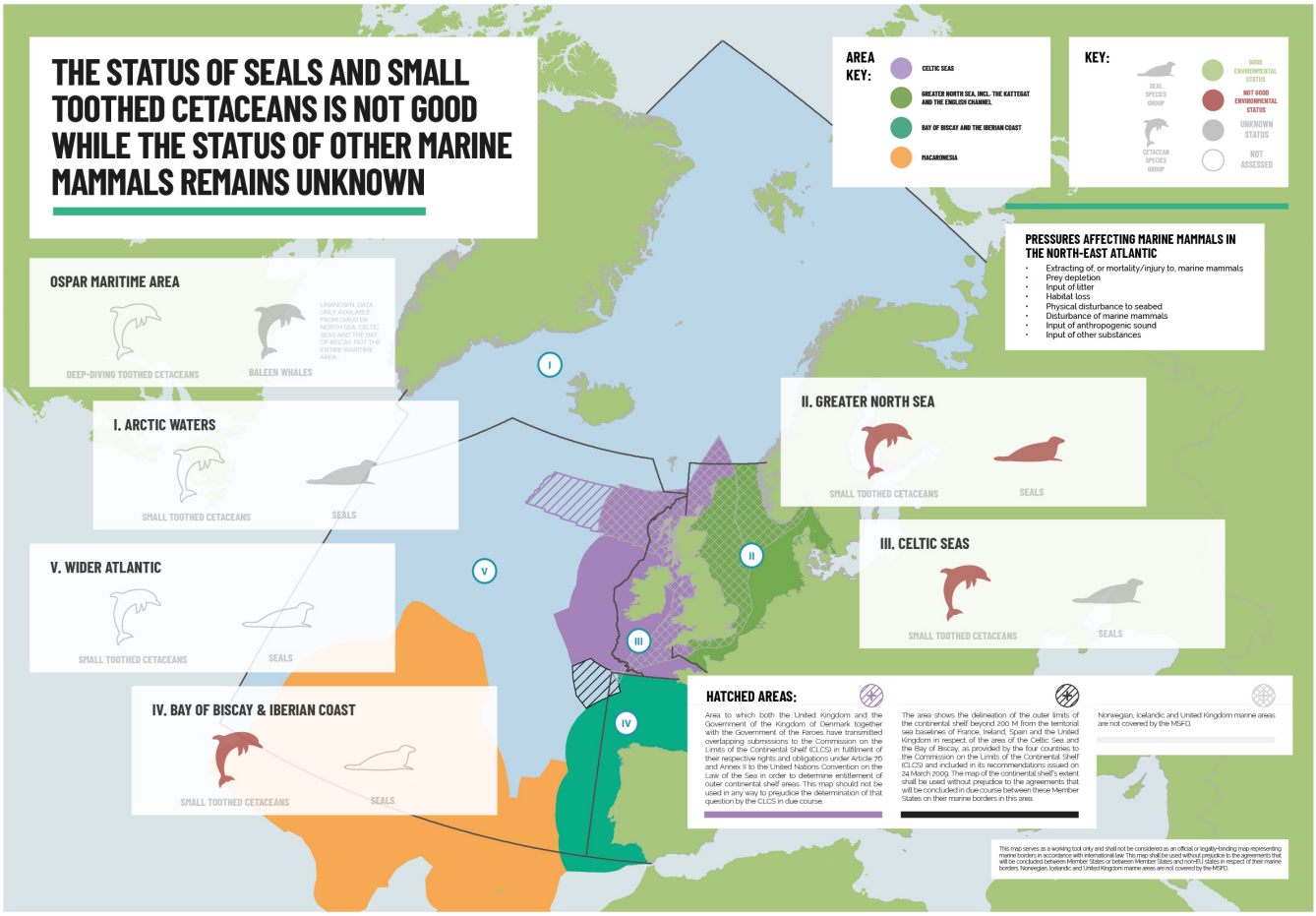


Figure S.1: Integrated status of marine mammal functional groups in the different Regions of the OSPAR Maritime Area. This graphic has been designed to follow the format outlined in McQuatters-Gollop *et al*. (2022)

The confidence of the assessment is medium in the Greater North Sea because of the limited number of species groups assessed, but the results of the assessments are mostly in consensus; the confidence is low in the Celtic Seas and Bay of Biscay and Iberian Coast due to medium agreement and either limited evidence or no data available to carry out common indicator assessments. See **Table S.1**.

Table S.1: Confidence in assessing the state of marine mammal functional groups

OSPAR Region	**Arctic Waters (Region I)**	**Greater North Sea (Region II)**	**Celtic Seas (Region III)**	**Bay of Biscay and Iberian Coast (Region IV)**	**Wider Atlantic (Region V)**
Confidence	Not assessed	Medium	Low	Low	Not assessed

OSPAR acts as a coordination platform in the North-East Atlantic for the regional implementation of the EU Marine Strategy Framework Directive (MSFD) that aims to achieve a Good Environmental Status (GES) in European marine environments, as well as for the coordination of other national frameworks. The characteristics of GES are determined by the individual EU member states, based on criteria elements, threshold values and methodological standards set regionally or at EU level. Norwegian, Icelandic, United Kingdom, Greenlandic and Faroese marine areas are not covered by the MSFD.

For the QSR 2023, the integrated assessments of marine mammals in each Region were largely based on four common indicator assessments (**Table S.2**).

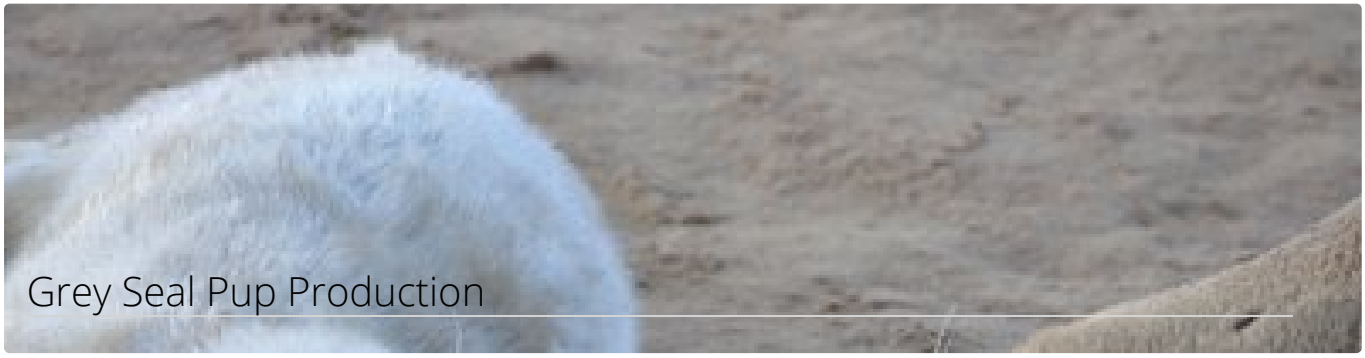
BODY:

Table S.2: Indicators used in the QSR 2023 marine mammal assessments for each OSPAR Region. *Denotes pilot assessment not considered for integration

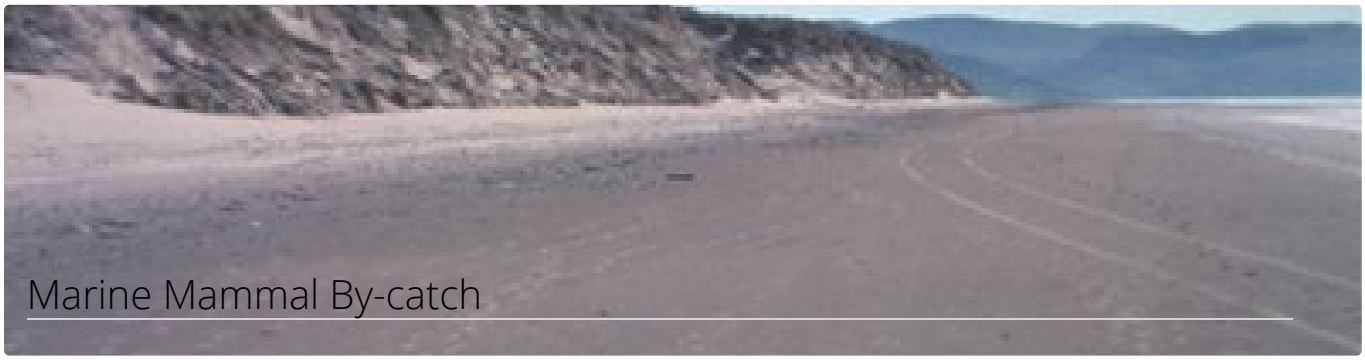
Indicator	Status	Region I	Region II	Region III	Region IV	Region V
Seal Abundance and Distribution (M3)	Common	X	X	X		
Abundance and Distribution of Cetaceans (M5)	Common		X	X	X	
Grey Seal Pup Production (M5)	Common	X	X	X		
Marine Mammal By-catch (M6)	Common		X	X	X	
Marine Mammal By-catch in Arctic Waters (M6)*	Candidate	X				
Status and Trends of Persistent Chemicals in Marine Mammals*	Candidate	X	X	X	X	

Seal Abundance and Distribution

Abundance and Distribution of Cetaceans



Grey Seal Pup Production



Marine Mammal By-catch

Pilot Assessment of Marine Mammal By-catch in Arctic Waters

Pilot Assessment of Status and Trends of Persistent Chemicals in Marine Mammals

Additional information on the status and trend of persistent chemicals in marine mammals is provided in the Pilot Assessment of Status and Trends of Persistent Chemicals in Marine Mammals (/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/pcb-marine-mammals-pilot/) . The information related to this indicator is given in the text but did not contribute to the integrated status of species groups.

The status of marine mammals is assessed for four 'functional groups' in the context of the Marine Strategy Framework Directive (Commission Decision (EU) 2017/848 of 17 May 2017 (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017D0848)) comprising species with similar structural, functional, or taxonomic characteristics, representing an ecological role in the marine ecosystems. The common indicator assessments available per species are indicated as a code (see list below for details). (*OSPAR acts as a coordination platform in the North-East Atlantic for the regional implementation of the EU Marine Strategy Framework Directive (MSFD) that aims to achieve a Good Environmental Status (GES) in European marine environments, as well as for the coordination of other national frameworks. The characteristics of GES are determined by the individual EU member states, based on criteria elements, threshold values and methodological standards set regionally or at EU level. Norwegian, Icelandic, United Kingdom, Greenlandic and Faroese marine areas are not covered by the MSFD*.)

Small odontocetes (toothed cetaceans):

- harbour porpoise (M4, M6)
- common dolphin (M4, M6)
- striped dolphin (M4)
- offshore bottlenose dolphin (M4)
- coastal bottlenose dolphin (M4)
- white-beaked dolphin (M4)
- white-sided dolphin (M4)

Deep-diving odontocetes (toothed cetaceans):

- Due to a lack of data, no species were assessed (see **Table S.4** for example species).

Baleen whales:

- minke whale (M4)
- fin whale (M4)

Seals:

- harbour seal (M3)
- grey seal (M3, M5, M6)

Within these functional groups, the common indicator assessments were integrated to provide an assessment of status for each species within each Region. A particular challenge to the integration of marine mammals was the different scale of the species-specific assessment units (AU) for each indicator. How these units were nested and divided between OSPAR regions is further described in the CEMP Guideline (https://www.ospar.org/documents?d=51183).

The output of the integrated assessment is presented for each OSPAR Region in a comprehensive table displaying the status of each species by criterion, the overall status of each species after integration of criteria/indicators and the overall status of the species group after integration from species status.

Integrated assessment approach

For cetacean species functional groups, the integrated assessments were based on the common indicators for Abundance and Distribution of Cetaceans (/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/abundance-distribution-cetaceans/) (M4) and Marine Mammal By-catch (/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/marine-mammal-bycatch/) (M6). The possible assessment outcomes for each common indicator in every assessment unit were threshold achieved, threshold not achieved, and unknown. These indicator assessments were first aggregated across AUs overlapping a Region, then integrated per species. Unknown outcomes (NA) due to insufficient data to compute a trend, or due to a null value within an assessment unit, were considered for aggregation or integration (see: CEMP Guideline (https://www.ospar.org/documents?d=51183)).

The common indicator assessments are supplemented by status assessments for the OSPAR- listed blue whale and humpback whale. Additional information on the status of marine mammals in Arctic Waters is available from a candidate extension of the M6 indicator in Arctic Waters, in Marine mammal by-catch (M6).

For seals, the integrated assessment was based on Seal Abundance and Distribution (/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/seal-abundance-and-distribution/) (M3) and Grey Seal Pup Production (/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/grey-seal-pup-production/) (M5) and, for grey seal, also on Marine Mammal By-catch (/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/marine-mammal-bycatch/) (M6). Each common indicator was assessed in each assessment unit as threshold achieved, threshold not achieved, inconclusive, or unknown. In the common indicator assessments Seal abundance and distribution (M3) and Grey seal pup production (M5) for seal species, an assessment could be inconclusive if confidence intervals spanned the threshold value and it was not possible to confidently determine whether a generated trend was achieving or not achieving the threshold values. An indicator outcome was considered unknown (NA) if there were no data or insufficient data to compute a trend within an assessment unit. Unknown outcomes were not considered for aggregation or integration, whereas inconclusive outcomes were considered from aggregation (see: CEMP Guideline (https://www.ospar.org/documents?d=51183)).

Marine mammals within Arctic Waters are summarised separately below, since data availability limited the calculation of indicators and the effectiveness of an integrated approach.

Small toothed cetaceans

Based on the integrated outcomes, the status of small toothed cetaceans is not good across the Greater North Sea, Celtic Seas and Bay of Biscay and Iberian Coast (**Table S.3**). This is largely due to the not good status of each species in relation to the assessed mortality rate from incidental by-catch (M6) within the Regions, but is also due to the status outcome of coastal bottlenose dolphin and harbour porpoise within the Bay of Biscay and Iberian Coast, and of harbour porpoise within Celtic Seas under Abundance and distribution of cetaceans (M4). The harbour porpoise, also on the OSPAR Threatened and/or Declining Species and Habitats list, was assessed by applying the common indicators for abundance and distribution (M4) and by-catch (M6).

Table S.3: Small toothed cetacean species group common indicator outcomes (M4, M6) and integrated status. Green: indicator threshold achieved / status good; Red: indicator threshold not achieved / Status not good; Grey: unknown, data available but too scarce for indicator assessment; Blank: not assessed.

Small toothed cetaceans	**Greater North Sea (Region II)**			**Celtic Seas (Region III)**			**Bay of Biscay and the Iberian Coast (Region IV)**		
	M4	**M6**	**Status**	**M4**	**M6**	**Status**	**M4**	**M6**	**Status**
Harbour porpoise			not good			not good			not good
Common dolphin			not good			not good			not good
Offshore Bottlenose dolphin			unknown			unknown			unknown
Coastal Bottlenose dolphin			unknown			unknown			not good
White-sided dolphin			unknown			unknown			
White-beaked dolphin			unknown			unknown			
Striped dolphin									unknown
Status of small toothed cetaceans			not good			not good			not good

Bottlenose Dolphins. © Shutterstock

Deep-diving toothed cetaceans

The status of deep-diving odontocete species remains unknown across the OSPAR Maritime Area (**Table S.4**). There were some data from the Greater North Sea, Celtic Seas and Bay of Biscay and Iberian Coast for some species, but due to either limited or no data no common indicator assessments could be carried out and the status is Not Assessed.

Assessment units for deep-diving toothed cetaceans need to be defined to enable future assessments and currently remain a knowledge gap (see: CEMP Guideline (https://www.ospar.org/documents?d=51183)).

Table S.4: Indicator outcomes (M4, M6) and status of deep-diving toothed cetaceans. Green: indicator threshold achieved/Status good; red: indicator threshold not achieved / Status not good; grey: unknown, data available but too scarce for indicator assessment; blank: not assessed

Deep-diving toothed cetaceans	**OSPAR Maritime Area**		
	M4	**M6**	**Status**
Risso's dolphin			
Long-finned pilot whale			
Beaked whales			
Sperm whale			
Status of deep-diving toothed cetaceans			not assessed

Baleen whales

The status of the functional group 'baleen whales' is unknown in the Greater North Sea, Celtic Seas and Bay of Biscay and Iberian Coast. Within this group, assessments of Abundance and Distribution of Cetaceans (/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/abundance-distribution-cetaceans/) (M4) were able to be carried out for minke whale, but data were not available for other species under abundance and distribution (M4) and Marine Mammal By-catch (/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/marine-mammal-bycatch/) (M6), limiting the integration's ability to report on overall status for the group. Results are presented by Region (**Table S.5**), where data were available, but noting that, for example, the minke whale assessment unit is a larger unit encompassing several Regions.

The status assessments for three OSPAR listed baleen whale species, the blue whale, the bowhead whale and the northern right whale (considered extirpated from the OSPAR Maritime Area) concluded that they are not in good status, and are summarised below under "Threatened and/or declining marine mammals". These assessments are more of a qualitative nature and therefore are not included in the integrated assessment.

Table S.5: Indicator outcomes (M4, M6) and status of baleen whales. Green: indicator threshold achieved/Status good; red: indicator threshold not achieved / Status not good; grey: unknown, data available but too scarce for indicator assessment; blank: not assessed

Baleen whales	**Greater North Sea (Region II)**			**Celtic Seas (Region III)**			**Bay of Biscay and the Iberian Coast (Region IV)**		
	M4	**M6**	**Status**	**M4**	**M6**	**Status**	**M4**	**M6**	**Status**
Minke whale									
Fin whale									
Status of baleen whales			unknown			unknown			unknown

Seals

The status of the grey seal remains good across Greater North Sea and Celtic Seas, although still reflecting the recovery from previous depletion. The status of seals as a species group (harbour seal and grey seal) in the Greater North Sea is not good, and overall is unknown in the Celtic Seas. Similarly, based on the indicator assessments for the abundance and distribution of the harbour seal species, the status is not good in the Greater North Sea owing to more than 25% (4 out of 12) of the associated assessment units not achieving the threshold values given the declining populations, and inconclusive in the Celtic Sea owing to uncertainty in the status of the species within Northern Ireland. See **Table S.6**.

While data from Arctic Waters were gathered as part of the common indicators for these species, the outputs are not included in this integration. This is because data for Arctic Waters seals were limited to a single country and so cannot be used to report on status at the wider Arctic Seas scale.

Table S.6: Indicator outcomes (M3, M5, M6) and status of seals. Green: indicator threshold achieved / Status good; red: indicator threshold not achieved / Status not good; orange: inconclusive; grey: unknown, data available but too scarce for indicator assessment; hatched: not applicable; blank: not assessed

Seals	**Greater North Sea (Region II)**				**Celtic Seas (Region III)**			
	M3	**M5**	**M6**	**Status**	**M3**	**M5**	**M6**	**Status**
Harbour seal				not good				unknown
Grey seal				good				good
Status of seals				not good				unknown

Marine mammals in Arctic Waters

Marine mammal evaluation for Arctic Waters covers the northern Atlantic Ocean to the marginal ice zone for some seal species, harp- and hooded seals, and for cetaceans. The assessment is drawn from recent publications, mainly from 2020 to 2022 and not older than 2017. For coastal seals, grey seals and harbour seals, data from Iceland and Norway have been submitted, but in the case of Norway the data are patchy and the timeline too short, for an assessment to be made by OSPAR. The Norwegian timeline data series will be updated in 2023, although the trends are still given in the text based on national reports. Where given, information on possible drivers for the observed changes is presented.

Seal pup production:

Estimated harp seal pup production in the Greenland Sea was significantly lower than the estimates obtained in similar surveys in 2002, 2007 and 2012, while harp seals in the Greenland Sea have been stable since 2012 after a decline between 2005, 2007 and 2012, showing similar trends to the Barents Sea and White Sea harp populations (Biuw *et al*., 2022). Large-scale environmental or ecological changes are considered possible causes for the decline.

As for grey seals, although monitored systematically for 20 years, the data are few, but some trends are suggested, with variable production along the Norwegian coast. There has been an increasing trend in the northern regions of Norway, and a recent decline in the southern part of the Norwegian coast in Arctic Waters. The reason behind these opposing trends is not known.

Cetacean abundance and distribution:

The Norwegian Red List status of bowhead whales was changed from Critically Endangered (CR) to Endangered (EN) in 2021, based on acoustic monitoring in addition to observed registrations. The Spitsbergen stock is considered to be less than 230 individuals (88-560; Bachmann *et al*., 2020; Cooke *et al*., 2018; Kovacs *et al*., 2020; Storrie *et al*., 2018). Blue whales have been more often sighted, but this may be due to better monitoring.

The abundance of fin whales, humpback whales, sperm whales, killer whales, harbour porpoises, dolphins and northern bottlenose whales, has been assessed from line-transect survey data from 2002 to 2018 (Leonard, Øien, 2020a, Pike *et al*., 2019). The most recent estimates are summarized in **Table S.7**.

Table S.7: Best available estimates of abundance for cetaceans in Arctic Waters. CV denotes the coefficient of variation. The lower and upper bounds are for a 95% confidence interval

Species	Scientific name	Abundance	CV	Lower bound	Upper bound
Harbour porpoise	*Phocoena phocoena*	255 929	20%	172 742	379 175
White-sided or white-beaked dolphin	*Lagenorhynchus* spp.	192 767	25%	114 033	325 863
Killer whale	*Orcinus orca*	15 056	29%	8 423	26 914
Fin whale	*Balaenoptera physalus*	11 387	17%	8 072	16 063
Humpback whale	*Megaptera novaeangliae*	10 708	38%	4 906	23 370
Northern bottlenose whale	*Hyperoodon ampullatus*	7 800	28%	4 373	13 913
Sperm whale	*Physeter macrocephalus*	5 704	26%	3 374	9 643

The abundance of humpback whales has approximately doubled since the 1990s, with the largest increase in the Barents Sea. The pattern in distribution and abundance of fin whales and sperm whales is consistent with earlier surveys. The abundances of small odontocete species show stable distributions, with some variation in their estimates (Leonard, Øien, 2020b).

There is little spatial overlap between seasonally occurring (migratory) whales and the three Arctic resident whales (beluga, narwhal and bowhead whales). Belugas are coastal while bowhead whales and narwhals are associated with sea ice. By contrast, the migratory species were found over the shelf and along its edges (Vaquie-Garcia *et al*., 2017). Cetacean distribution within the Barents Sea, including toothed cetaceans, is presented in the joint Norwegian-Russian survey reports from the annual Barents Sea Ecosystem survey (latest report of Prozorkevich, van der Meeren 2022, Ch. 12).

Furthermore, mapping of migration and distribution patterns has shown several key marine mammal hotspots, areas with high species richness and areas important for common resting, nursing, moulting and foraging. The marginal ice zone (MIZ) of the Greenland Sea and northern Barents Sea, the waters surrounding the Svalbard Archipelago and a few North-east Greenland coastal sites were all key marine mammal hotspots (Hamilton *et al*., 2021; 2022; Løviknes *et al*., 2021).

Feeding humpback whales. © Shutterstock

Marine mammal incidental by-catch:

Some incidental by-catch data are provided as registered by-catch by the Norwegian reference fleet, but they are not sufficient for assessing by-catch mortality in many marine mammal species. Several registrations are also expected to be incorrect with respect to species identification, particularly for seals. However, the species registered by the Norwegian authorities over the past 40 years are:

- hooded seal
- bearded seal
- harbour seal
- grey seal
- harbour porpoise
- humpback whale
- minke whale
- killer whale
- beluga
- pilot whale

Harbour seals and harbour porpoises are presumed to be most commonly incidentally by-caught from the above list, while the other species are infrequent and not common as by-catch. Moan *et al*., (2020) estimated porpoise by-catch for the period 2006-2018 in Norwegian commercial gillnet fisheries using the Norwegian reference fleet data. By-catch of harbour porpoise in Norwegian gillnet fisheries has been unsustainable for several of the last 13 years but is decreasing due to a recent reduction in monkfish fishing effort (Moan *et al*., 2020). A recent NAMMCO (North Atlantic Marine Mammal Commission) working group concluded that by-catch of harbour porpoises in Norwegian waters is unsustainable and recommended its reduction (NAMMCO, 2022).

Threatened and/or declining marine mammals

The harbour porpoise is one of the four cetacean species on the OSPAR List of Threatened and/or Declining Species and Habitats (OSPAR Agreement 2008-06 (https://www.ospar.org/documents?d=32794)) and has been assessed with the common indicators. Therefore, this section describes the large whale species, drawing on the dedicated status assessments. The three large whale species that have been added to the OSPAR List have all suffered severe historical declines due to whaling and all are still considered to be in poor status.

In recent years, there have been indications of an increase in the population of blue whales from surveys conducted around Iceland, where the species congregates in summer. A potential recovery of the population from the historical threat of whaling will be slow due to the long life cycle of the species. Blue whales are rare throughout the North-East Atlantic. This low density makes it difficult to assess the scale and trend of impacts from human activities.

Bowhead whales in the OSPAR Maritime Area are part of the Spitsbergen stock, which has been estimated to number a few hundred animals. Calves have only rarely been observed in the population and the species has a very long lifespan. The current main threats are direct and indirect effects from climate change, as the species is heavily dependent on areas of sea ice to find its prey species and is sensitive to increased disturbance from human presence and predation from killer whales, which may increase as the sea ice retreats.

The northern right whale is considered eliminated in the OSPAR Maritime Area. Occasional sightings are believed to belong to populations west of the OSPAR Maritime Area. Chances of a recovery in the OSPAR Maritime Area are considered non-existent in the short term.

All three of the OSPAR-listed large whales are rarely registered in the OSPAR Maritime Area and information is scarce. It has not been possible to carry out a quantitative assessment for any of these species, although a qualitative status assessment was carried out for them (**Table S.8**).

Table S.8: Status assessment outcomes and status of threatened and / or declining marine mammals

	Blue whale		Bowhead whale	Northern Right whale				
Region	**I**	**V**	**I**	**I**	**II**	**III**	**IV**	**V**
Distribution	↔	↔	↔[1,2]	↔[1,2]	↔[1,2]	↔[1,2]	↔[1,2]	↔[1,2]
Population size	↑	↔	↓[1,2]	↓[1,2]	↓[1,2]	↓[1,2]	↓[1,2]	↓[1,2]
Condition	?	?	?	?	?	?	?	?
Previous OSPAR status assessment								
Status (overall assessment)	poor	poor	poor	poor	poor	poor	poor	poor

Legend:
↓ decreasing trend or deterioration of the criterion assessed
↑ increasing trend or improvement in the criterion assessed
↔ no change observed in the criterion assessed

Assessment type:
1 - direct data driven
2 - indirect data driven

(/en/ospar-assessments/committee-assessments/biodiversity-committee/status-assesments/blue-whale/)

Blue Whale

Status Assessment - 2020

Read More › (/en/ospar-assessments/committee-ass

(/en/ospar-assessments/committee-assessments/biodiversity-committee/status-assesments/bowhead-whale/)

Bowhead Whale

Status Assessment - 2020

Read More › (/en/ospar-assessments/committee-ass

(/en/ospar-assessments/committee-assessments/biodiversity-committee/status-assesments/right-whale/)

PCB pollution in Marine mammals

The pilot assessment for " Status and Trends of Persistent Chemicals in Marine Mammals (/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/pcb-marine-mammals-pilot/) " concluded that small toothed cetaceans is the functional group of marine mammals most at risk of high toxicity from legacy pollutants such as Polychlorinated Biphenyls (PCBs). Specifically, harbour porpoises, killer whales and bottlenose dolphins from the Greater North

Sea and the Celtic Seas present PCB levels often above the existing thresholds for reproductive impairment.

A major outcome of this pilot assessment is the urgent need for structural and harmonised protocols for PCB data acquisition, including for the list of congeners and the tissue matrix analysed, as well as integration on a spatial scale to allow geographical comparison. Future scientific efforts should focus on filling the existing gaps and homogenize the information at OSPAR scale.

The large knowledge gaps and heterogeneity of data did not allow this information to be used for the integration of the overall status of marine mammals, but hints at the potential influence of chemical pollution in species such as the harbour porpoise, for which status is assessed as not good (**Table S.3**).

These results underline the necessity of increasing future efforts to achieve OSPAR objectives with regard to marine pollution (as proposed in the Hazardous Substances Thematic Assessment (/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/hazardous-substances/) , assigning particular priority to the development of better assessment criteria, the management of pollutant disposal into the marine environment and understanding of the potential impact of climate change on chemical bioavailability (North-East Atlantic Environment Strategy (NEAES) 2030 (https://www.ospar.org/documents?v=46337) Operational Objectives S1.O2, S1.O3 and Strategic Objectives S.10, S.11 and S.12).

⊞ References

← Pressures (/en/ospar-assessments/quality-status-reports/qsr-2023/thematic-assessments/marine-mammals/pressures/) | Impact → (/en/ospar-assessments/