

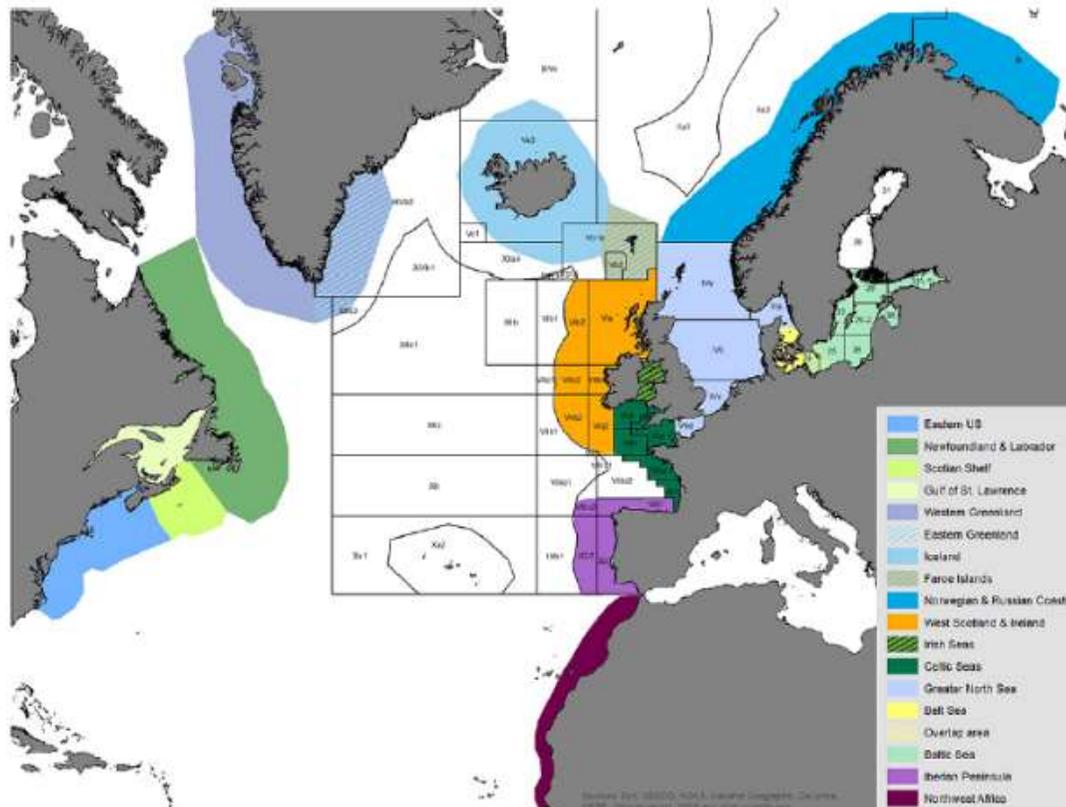
**ASCOBANS**  
**Conservation Management Plan**  
**(CMP)**

**For Harbour Porpoise**  
**(*Phocoena phocoena*)**  
**in the Greater North Sea**



# Harbour porpoise Assessment Units

ICES WGMME units, adapted by NAMMCO-IMR (2019)



**JOINT IMR/NAMMCO INTERNATIONAL WORKSHOP ON  
THE STATUS OF HARBOUR PORPOISES IN THE NORTH ATLANTIC**

**Area Status Report**

**North Sea**

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**1. IDENTIFICATION OF ASSESSMENT UNITS WITHIN EACH SUB-AREA**

One continuous harbour porpoise population has been reported to exist ranging from waters off Norway to the northern Bay of Biscay based on genetic analysis of 10 microsatellite loci and 752 individuals (Fontaine et al. 2007). Fontaine et al. (2014, 2017) reported significant isolation by distance within the region, i.e. increasing genetic differentiation with geographic distance that was more apparent in the southern extent of their range. A distinct sub-species *Phocoena phocoena meridionalis* of a larger-sized morphotype has been proposed, with two genetically distinct populations inhabiting Iberian and Mauritanian waters (Fontaine et al. 2014).

The ASCOBANS/HELCOM small cetacean population structure workshop considered “a few generations (equivalent to low tens of years) as the appropriate time frame for defining a management unit, and we identify a MU as a group of individuals for which there are different lines of complementary evidence suggesting reduced exchange (migration/dispersal) rates”, i.e. a maximum of 10% migration per generation (Evans and Teilmann 2009). Within the North-east Atlantic, the ICES WGMME (2013, 2014) delineated five management units (MU) (or assessment units (AU) under the MSFD), including the (1) Kattegat and Belt Seas, (2) North Sea, (3) West Scotland, (4) Celtic and Irish Seas (including French Atlantic waters), and (5) Iberian Peninsula (see Figure 1a). Delineations of the five MUs/AUs were based partially on genetic analysis as well as measurements of time-integrated ecological tracers and morphological differences – though limited data were available from porpoises inhabiting waters off the west of Scotland and delineation was based more on the extent of anthropogenic activities (LAMMWG 2015). More recent genetic analysis further supported separation of porpoises in the Celtic Sea and French Atlantic waters, with the Irish Sea as a transition zone between admixed and non-admixed North Sea porpoises. However, it did not justify a western Scotland AU based on genetic structure alone (Fontaine et al. 2017). Both Fontaine et al (2014) and Fontaine et al (2017) showed no genetic distinction between the porpoises from the Atlantic coasts of Ireland and north-western Scotland.

## 1.2 Overall objective of the Conservation Management Plan

A conservation management plan must have measurable objectives by which its success or failure can be evaluated regularly, and to ensure that required changes are identified and actioned promptly. Failure to monitor progress will result in inaction and subsequent failure of the CMP. Integral and essential to the plan are, therefore, monitoring of:

- Regional and overall trends in the North Sea harbour porpoise management unit;
- human activities identified to pose potential risk to the species;
- implementation of mitigation measures and;
- the assessment of effectiveness of those measures.

ASCOBANS intermediate conservation objective aims to *'restore and/or maintain biological or management stocks of small cetaceans at the level they would reach when there is the lowest possible anthropogenic influence'* with *'a suitable short-term practical sub-objective to restore and/or maintain stocks/populations to 80% or more of the carrying capacity'* (ASCOBANS, 1997). To work towards achieving this intermediate goal, the CMP identifies the key pressures and threats facing the management unit, gaps in evidence and information, and proposes actions necessary to achieve the goal of maintaining the management unit and population at a favourable conservation status. These actions include coordination of monitoring programmes on direct and indirect pressures, including bycatch, marine pollution and anthropogenic noise, to allow a full assessment of the effects on the management unit. The actions in this CMP also complement and support wider measures for small cetaceans in the North East Atlantic.

**ASCOBANS**  
**Conservation Plan for Harbour Porpoises (*Phocoena phocoena* L.)**  
**in the North Sea**

<b>Action 1</b>	Implementation of the Conservation Plan: co-ordinator and Steering Committee
<b>Action 2</b>	Implementation of existing regulations on bycatch of cetaceans
<b>Action 3</b>	Establishment of bycatch observation programmes on small vessel (<15m) and recreational fisheries
<b>Action 4</b>	Regular evaluation of all fisheries with respect to extent of harbour porpoise bycatch
<b>Action 5</b>	Review of current pingers, Development of alternative pingers and gear modifications
<b>Action 6</b>	Finalise a management procedure approach for determining maximum allowable bycatch limits in the region
<b>Action 7</b>	Monitoring trends in distribution and abundance of harbour porpoises in the region
<b>Action 8</b>	Review of the stock structure of harbour porpoises in the region
<b>Action 9</b>	Collection of incidental porpoise catch data through stranding networks
<b>Action 10</b>	Investigation of the health, nutritional status and diet of harbour porpoises in the region
<b>Action 11</b>	Investigation of the effects of anthropogenic sounds on harbour porpoises
<b>Action 12</b>	Collection and archiving of data on anthropogenic activities and development of a GIS

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Improve estimates of bycatch rates to support development of conservation strategy

Implement and assess pinger and other mitigation measures to reduce bycatch

Implement a wide-scale surveillance programme to monitor trends in distribution and abundance in the Greater North Sea

Improve understanding of causes of seasonal and annual variation in abundance and distribution, particularly in relation to human activities and environmental change, to facilitate the consideration of the species within marine spatial plans

Monitor health and nutritional status, diet, life history parameters, and causes of mortality

Further our understanding on population structure

Improve understanding of and develop mitigation for the risks of anthropogenic sound

Ensure screening and assessment of the occurrence and effects of hazardous substances

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## Action RES-01: Identify the priority issues and relevant stakeholders

### Tasks

Identify and monitor medium-to-high-risk static net and other fisheries with a medium-to-high risk of harbour porpoise bycatch in order to ascertain more accurate assessments of bycatch rates to meet the agreed objectives of Resolution 3 MOP 3, Resolution 5 MOP 8 and Resolution 8.5 MOP9.

Implement the management framework procedure developed through OSPAR and progress development of suitable indicators of bycatch for the harbour porpoise with other fora, to meet the agreed objectives of Resolution 5, MOP 8 and Resolution 8.5 MOP9.

Facilitate the identification of factors influencing bycatch rates; including an assessment of temporal (seasonal) and spatial, gear characteristics, fishing practices and target/non-target species.

Facilitate research in order to assess evidence of bycatch selectivity of age-sex groups in different fishing operations (e.g. gears, target species, seasons), with the inclusion of those data within a population viability analysis.

Monitor causes of death in the population through strandings programmes for aiding assessments of spatio-temporal relationships and trends in bycatch, aiding implementation of the agreed objectives of Resolution 10, MOP8 and Resolution 8.10 MOP9 on strandings.

Represent ASCOBANS and the North Sea Plan at meetings of NANSEA and the North Sea Regional Advisory Council, as well as engagement with Parties' fisheries administrations.

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## **Action RES-02: Improve estimates of bycatch rates to support development of conservation strategy**

### **Tasks**

Ensure that existing regulations with respect to bycatch reduction measures are being effectively implemented and to collect data on their efficacy in reducing bycatch to meet the agreed objectives of Resolution 3, MOP 3, Resolution 5, MOP 8 and Resolution 8.5 MOP9.

Drive coordination of bycatch monitoring observer programmes across Parties and non-Party Range States, ensuring that monitoring programmes have been designed appropriately, with a sufficient level of monitoring to produce robust and unbiased estimates of bycatch with confidence intervals.

Increase reliability of fishing effort data particularly for small vessels (<12 m) and recreational fisheries and continue evaluating appropriate fishing effort metrics for calculating bycatch rates, supporting the wider work of ICES. This involves, working nationally (e.g. through work plans) and regionally (through Regional Coordination Groups) to improve quality and availability of fishing effort data (e.g. by region, gear type, net length, vessel size category, season, and country).

Support innovative monitoring methods, e.g. REM, particularly for use on smaller vessels (<12 m) where the placing of onboard observers is not feasible, and liaise with ICES WGBYC on how best these data should be collated and assessed as different monitoring methods will have different levels of uncertainty.

Support the development of OSPAR's M6 Biodiversity Common Indicator 'Marine Mammal Bycatch', which will aid EU Member States in meeting requirements of the MSFD as well as agreed objectives of ASCOBANS Resolution 3, MOP 3, Resolution 5, MOP 8 and Resolution 8.5 MOP9.

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## Action MIT-01: Implement and assess pinger and other mitigation measures to reduce bycatch

### Tasks

Implement mitigation measures that have shown to produce a significant bycatch reduction and that are appropriate to the nature of the vessels and their size, with subsequent monitoring to ensure effectiveness and the ongoing need to meet the agreed objectives of Resolution 5, MOP 8 and Resolution 8.5 MOP9. It may be necessary to undertake an Environmental Risk Assessment for the implementation of pingers *en masse*.

Collaborate with the industry to develop and test mitigation measures (including modifications to fishing gear and fishing practices; pinger-related technology and deployment (e.g. interactive pingers, less pingers per length of net), and alternative porpoise alerting passive and active devices) and develop a framework for the critical evaluation of pinger, gear modification and other mitigation measures to identify effectiveness in the reduction of bycatch to meet the agreed objectives of Resolution 5, MOP 8 and Resolution 8.5 MOP9.

Support research evaluating the behaviour of harbour porpoises around fishing gear, especially static nets, including their sensory capabilities and auditory health, for a better understanding of factors leading to bycatch.

Prevent, retrieve, and recycle derelict (“ghost”) fishing gear, with focus on high-density areas of harbour porpoises as agreed by Resolution 9.3 MOP9. This will require authorities to provide appropriate facilities to ensure gear is recycled and to prevent disposal of at sea.

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## **Action MON-01: Implement a wide-scale surveillance programme to monitor trends in distribution and abundance in the Greater North Sea**

### **Tasks**

Encourage Parties and non-Party Range States to collaborate and fund regular systematic North Sea-wide and regional surveys to establish trends in abundance and distribution, and undertake density surface modelling, to meet the agreed objectives of Resolution 7, MOP4 and Resolution 7, MOP5.

Encourage Parties and non-Party Range States active participation with the ICES Working Group on the Joint Cetacean Data Programme (WGJCDP) which has developed a mechanism for collation of all relevant, standardised data at a relevant spatial scale, collected through ship-based and aerial methodologies, and aims to develop analyses and data products in line with identified priorities across the cetacean research and policy community. Such work would enable seasonal trends to be evaluated to meet the agreed objectives of Resolution 7, MOP4.

Ensure Parties and non-Party Range States that the outputs of this action provide a suitable mechanism to enhance transboundary reporting of conservation status and good environmental status, as well as contributing to the assessment of OSPAR's M4 Biodiversity Common Indicator 'Abundance and Distribution of Marine Mammals', evaluating temporal trends and any further re-distribution of individuals within the Greater North Sea.

**Action RES-03: Improve understanding of causes of seasonal and annual variation in abundance and distribution, particularly in relation to human activities and environmental change, to facilitate the consideration of the species within marine spatial plans**

**Tasks**

Continued collection and collation of appropriate standardised data on anthropogenic activities with the aim of supporting implementation of the MSFD and assessment of Good Environmental Status through OSPAR.

Complete fine-scale seasonal risk assessment/risk mapping of relevant human activities and harbour porpoise distribution to meet the agreed objectives of Resolution 7, MOP4, Resolution 7, MOP5 and Resolution 5, MOP8.

Collate and monitor data on important prey species of harbour porpoises to identify spatial areas of concern for fisheries management measures to meet the agreed objectives of Resolution 7, MOP4, Resolution 7, MOP 5 and Resolution 9.4 MOP9.

Through collaboration with other ASCOBANS working groups, such as the Resource Depletion Working Group, regularly review of evidence for potential impacts of environmental change on harbour porpoises to inform on appropriate mitigation measures.

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## Action MON-02: Monitoring of health and nutritional status, diet, life history parameters and causes of mortality

### Tasks

Fund national stranding and bycatch observer programmes and undertake full necropsies on a representative sample of carcasses (sex, age), for assessing cause of death, health status, diet, and life history parameters, to meet the agreed objectives of Resolution 10, MOP8 and Resolution 8.10 MOP9.

Ensure implementation of the joint ASCOBANS and ACCOBAMS 'Best Practice on Cetacean Post-mortem Investigation and Tissue Sampling' to achieve standardised, comparable datasets.

Encourage collaboration between stranding networks in the event of an unusual mortality event to identify potential causes of death, as well encouraging collaborative research on the extent and potential reasons for grey seal predation, starvation/emaciation and acoustic trauma observed in harbour porpoises.

Support strandings programmes to enable the analysis of diet, including tissue samples for fatty acids, stable isotope, stomach contents, and prey DNA analysis.

Support North Sea-wide monitoring of life history parameters through the collection and analysis of teeth and gonadal samples from stranded and bycaught animals, to assess evidence of temporal changes in life history parameters and explore links to anthropogenic drivers.

Support expansion of drift prediction modelling capabilities for determining the origin of stranded harbour porpoises, e.g. MOTHY (Peltier et al. 2013, Peltier et al. 2018) to identify potential bycatch high risk areas/seasons.

Support the development of a biodiversity 'population condition' indicator for the region.

## Action RES-04 Further our understanding of population structure

### Tasks

To further research relevant to ASCOBANS objectives on population structure of the harbour porpoise, to improve conservation measures, as agreed in Resolution 7 MOP5.

Actively support and encourage development of suitable techniques for discriminating population structure, as agreed in Resolution 7, MOP5.

To identify funding and develop a programme of research to further elucidate the population structure of harbour porpoises in the region. Strategic sampling approaches (i.e. temporal and spatial) and statistical power analysis should be undertaken to determine level of sampling required to detect appropriate units to conserve.

Facilitate the provision of dead bycaught animals for population structure assessment and other appropriate studies. This may require repeal of national legislation or the issuing of licenses to facilitate landing of bycaught harbour porpoise for research.

## **Action MIT-02: Improve understanding of and develop mitigation for the risks of anthropogenic sound**

### **Tasks**

Parties and non-Party Range States should introduce precautionary guidance on measures and procedures for all activities surrounding the development of renewable energy production and other noise-producing industry to minimise risks to populations and mitigate possible effects following current best practice as agreed in Resolution 2, MOP 6 and Resolution 8.11 MOP9.

Parties to make every effort to mitigate the effects of activities involving explosions of munitions, as agreed in Resolution 8 MOP8.

Parties and non-Party Range States should coordinate and support research on the effects of underwater noise on harbour porpoises, including further development of individual based modelling frameworks, to meet the agreed objectives of Resolution 4, MOP 5, Resolution 2, MOP 6, Resolutions 6, 8 and 9, MOP 8 and Resolution 8.11 MOP9.

Annually monitor and assess knowledge of the effects of anthropogenic sound through review of literature, including acoustic capabilities of harbour porpoises, behavioural responses of harbour porpoises and the effectiveness of mitigation technologies as agreed in Resolution 2, MOP6 and Resolution 6, MOP8.

Support the work of MSFD Common Implementation Strategy Technical Group on Underwater Noise (TG-NOISE), and for Parties to implement agreed thresholds as they are developed (e.g. common methodology for assessment of impulsive underwater noise and continuous noise).

## Action MON-03: Ensure screening and assessment of the occurrence and effects of hazardous substances

### Tasks

Continue collecting, archiving and analysing representative samples of porpoise tissues for relevant contaminants, with associated data on cause of death, health and nutritional status, and life history (linked to Action MON-02: Monitoring of health and nutritional status, diet, life history parameters, and causes of mortality; and RES-04: Further our understanding of population structure). Further assessment of confounding factors such as age, body condition, reproductive activity, and health status on individual pollutant loads should be undertaken.

Continue to monitor and assess emerging chemical pollutants and marine litter (including macro-, micro- and nanoplastics) in harbour porpoises through review of literature to progress agreed objectives of Resolution 4, MOP 7, Resolution 7, MOP5, Resolution 7, MOP8, and Resolutions 9.3 and 9.4, MOP9. Such work should devise a North Sea-based risk list of priority pollutants for monitoring in the species.

Monitor effects from exposure to legacy pollutants on immune, endocrine and reproductive functions in harbour porpoises against agreed toxicity thresholds, through continued analysis of strandings data to meet agreed objectives of Resolution 7, MOP8.

Encourage Parties and non-Party Range States to further develop thresholds to be employed for contaminants of concern, including the continued development of dose-response relationships between contaminants and physiological (reproductive and immunological) impacts for the harbour porpoise.

Encourage Parties and non-Party Range States to work through OSPAR and other relevant fora to aid the development of a marine mammal persistent chemical contaminants indicator of GES to meet Criteria D8C2 in order to ascertain that the health of the species is not adversely affected due to contaminants, including cumulative and synergetic effects. For such work, collection of a sufficient number of stranded and/or bycaught harbour porpoises is required to assess trends and status of persistent chemicals in the harbour porpoise assessment unit (linked to RES-04 Further our understanding of population structure).

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## **Action MON-04: Monitor for potential increases in anthropogenic activities that lead to incidences of death, injury or adverse health effects including cumulative effects**

### **Tasks**

Encourage Parties and Range States to continue to give their full support to the activities related to applying an ecosystem approach to the management of human activities under the frameworks of OSPAR, HELCOM, the European Union and the Convention in Biological Diversity as agreed in Resolution 9, MOP8 and Resolutions 8.11 and 9.3 MOP9.

As part of the annual reporting for the CMP, collect and review information to monitor changes in exposure to key anthropogenic pressures, and the effects arising from such, to support OSPAR's cumulative effects assessment work.

Requests that Parties and Range States ensure that cross-sectoral and transboundary consultations take place as early as the planning stage of activities in marine areas (marine spatial planning) with the aim of identifying potential impacts and minimising or mitigating such impacts effectively as agreed in Resolutions 6 and 9, MOP8, particularly where such work occurs within or adjacent to protected sites of the harbour porpoise (see Action MON-05: Monitor habitat quality, including protected sites, to ensure ecological functions are maintained).

Identify emerging pressures (e.g. wet renewables and ecotourism) and ensure monitoring is in place to establish risk. These emerging pressures need to be considered in the context of those already existing, and to take impacts into account cumulatively.

## **Action MON-05: Monitor habitat quality, including protected sites, to ensure management is effective and that the ecological functions are maintained**

### **Tasks**

As part of the annual reporting for the CMP, collect and review information on habitat quality and protected area condition within the Greater North Sea.

Review conservation objectives and the implementation of management measures for SACs, assessing whether the conservation objectives are fit for purpose and that the management is effective.

Collect and review information on anthropogenic activities within and adjacent to SACs, and whether they have a significant impact on harbor porpoises at those sites (Action RES-03: Improve understanding of causes of seasonal and annual variation in abundance and distribution, particularly in relation to human activities and environmental change, to facilitate the consideration of the species within marine spatial plans).

Encourage Parties and Range States to identify the location of any further suitable sites for the establishment of protected areas, and to implement appropriate management actions in these areas on their own or in the context of other intergovernmental bodies to ensure the protection of harbour porpoise as agreed in Resolution 7, MOP5.

## North Sea Harbour Porpoise Conservation Plan 2023

Priority	Action	Code
Essential	Identify the priority bycatch issues and relevant stakeholders	RES-01
Essential	Improve estimates of bycatch rates to support development of conservation strategy	RES-02
Essential	Implement and assess pinger and other mitigation measures to reduce bycatch	MIT-01
High	Implement a wide-scale surveillance programme to monitor trends in distribution and abundance in the Greater North Sea	MON-01
High	Improve understanding of causes of seasonal and annual variation in abundance and distribution, particularly in relation to human activities and environmental change, to facilitate the consideration of the species within marine spatial plans	RES-03
High	Monitor health and nutritional status, diet, life history parameters, and causes of mortality	MON-02
Medium	Further our understanding on population structure	RES-04
Medium	Improve understanding of and develop mitigation for the risks of anthropogenic sound	MIT-02
Medium	Ensure screening and assessment of the occurrence and effects of hazardous substances	MON-03
Low	Monitor for potential increases in anthropogenic activities that lead to incidences of death, injury or adverse health effects	MON-04
Low	Monitor habitat quality, including protected sites, to ensure management is effective and that the ecological functions are maintained.	MON-05

## Public Awareness and capacity Building

### Tasks

All key milestones (e.g. timetables for actions; assessment of progress against objectives etc.) to be publicised through ASCOBANS and Range State media outlets in a coordinated manner agreed through the SG.

ASCOBANS webpages to host key documents and updates, to be publicised by SG members.

Presentation of the progress at relevant events and conferences.

Identification and publication of papers through journals and list servers/webpages to publicise lessons learned and successes.

Wider circulation of articles and news items through the media/social media to support the dissemination of factual information to the wider public.

Coordination with relevant NGO's with an interest in harbour porpoise, to join up approaches for public information campaigns.

# Timelines

- Date for initial feedback from NSG
- Delivery of revised version including annex 3
- Final comments/feedback from NSG and secretariat
- Delivery of final version of revised plan
- Revised plan made available to Parties