Agenda Item 13.3.1 Relations with other Bodies

Cooperation with European Union Institutions

Report and Recommendations of the MSFD Working Group

**Document 13.3.1**

# Report of the Joint ACCOBAMS/ASCOBANS Working Group on the Marine Strategy Framework Directive (MSFD)

**Action Requested**

- Take note
- Give guidance

Submitted by Working Group


***NOTE:***
**DELEGATES ARE KINDLY REMINDED**
**TO BRING THEIR OWN COPIES OF DOCUMENTS TO THE MEETING**

# A preliminary report from the Joint ACCOBAMS/ASCOBANS Working Group on the Marine Strategy Framework Directive (MSFD)

## Report to the 21st ASCOBANS Advisory Committee Meeting

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This WG operates via correspondence, and it coordinates and cooperates closely with other relevant scientific bodies and working groups within both Agreements, in particular the sub-regional working groups. The WG liaises with relevant working groups established by other international bodies, i.e. OSPAR and ICES as well as national processes.

The overall aim of this WG is to ensure that cetacean conservation issues are adequately taken account of in the framework of ongoing work related to the MFSD. Therefore the joint ACCOBAMS/ASCOBANS working group on the MSFD will:

1) Collect information on how the implementation of the MSFD is furthered in the various relevant regional fora with regard to (small) cetaceans (e.g. OSPAR, ICES, …)

2) In close cooperation with other scientific bodies and working groups within both Agreements, ensure consistency and identify gaps in the implementation of the MSFD with regard to (small) cetaceans in these regional fora

3) Liaise with scientific bodies and working groups within ACCOBAMS/ASCOBANS that work on matters relevant to the implementation of the MSFD

4) Report back on the conclusions of its work to the relevant working groups of ACCOBAMS/ASCOBANS, and to its relevant scientific and technical bodies

5) Ensure that the conclusions of its work are brought to the attention of the relevant groups working on the implementation of the MSFD

6) Prepare draft ToR for work within ACCOBAMS/ASCOBANS related to the further implementation of the MSFD after 2014

CMS Instrument:

ACCOBAMS

ASCOBANS

1) **Collect information on how the implementation of the MSFD is furthered in the various relevant regional fora with regard to (small) cetaceans (e.g. OSPAR, ICES)**

In 2013, OSPAR ICG-COBAM (Coordination of Biodiversity Assessment and Monitoring ) submitted a working document on common mammal biodiversity (Descriptor 1) indicator development for consideration to the ASCOBANS Advisory Committee meeting (AC20 3.1.1.b rev1 Draft OSPAR Marine Mammal Indicator). A copy of this submission can be found at http://www.ascobans.org/en/document/draft-ospar-marine-mammal-indicators. This report included information on the technical specification of proposed common biodiversity indicators. Below is the preliminary list of OSPAR's common biodiversity indicators proposed for cetaceans, and last year members of the Joint ACCOBAMS/ASCOBANS Working Group on the Marine Strategy Framework Directive (MSFD) provided feedback on the working document.

| Code | Previous code | Indicator | Category |
|---|---|---|---|
| M-2 | 32&34 | Distributional range and pattern of cetaceans species regularly present | Core |
| M-4 | 36 | Abundance at the relevant temporal scale of cetacean species regularly present | Core |
| M-6 | 38&39 | Numbers of individuals within species being bycaught in relation to population | Core |

In March 2014, the ICES WGMME further developed these indicators following a special request from OSPAR to address this topic. The ICES WGMME assessed the suitability of the proposed common mammal indicators. For those indicators that warranted further development, targets and baselines were proposed. Additionally, the ICES WGMME proposed marine mammal assessment units, undertook a review of current monitoring practices for cetaceans in OSPAR regions II, III, and IV, and provided advice on coordinated monitoring and methodology per OSPAR common mammal MSFD indicator. The WGMME also discussed issues around quality control in monitoring programmes for MSFD indicators. The final report from the ICES WGMME is available at http://www.ices.dk/community/groups/Pages/WGMME.aspx.

Following this, ICES made recommendations to OSPAR on the implementation of MSFD for marine mammals. This advice can be found at http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/Special%20Requests/OSPAR_Implementation_of_MSFD_for_marine_mammals.pdf

During 2014, Sinéad Murphy kept joint WG members updated on the continued development of mammal indicators within the ASCOBANS region by other international bodies, i.e. OSPAR and ICES.

***Main ICES recommendations to OSPAR on common mammal indicator development***

ICES noted that several of the indicators proposed by OSPAR are compound indicators (e.g. indicators that cover more than one species), which do not include specific rules defining how the indicator should operate. ICES recommended breaking the compound indicators down to species level, before setting rules for their use.

ICES advised that distributional range is a difficult concept to set MSFD targets for in relation to cetaceans with the exception of inshore assessment units of bottlenose dolphins. The ICES WGMME (2014) recommended that, because it is not possible to propose a firm and measurable baseline, metric and target for the distribution indicator, this indicator should be removed from the list of common OSPAR indicators. The WGMME agreed that distribution changes should act as warning signals and research should be carried out to investigate the causes of those changes, especially to determine if they have an anthropogenic cause. The distribution indicator should therefore be subsumed within the cetacean abundance indicator, and monitoring of a species´ range or its pattern of distribution within its range should be carried out as part of the monitoring to determine population abundance and its evolution over time (ICES WGMME 2014).

ICES provided general advice on the need to understand the statistical power of monitoring programmes before targets are set under MSFD in relation to that monitoring. It is not advisable to set targets that demand a higher statistical precision than can be met within a feasible monitoring programme. This requires that the statistical power of a monitoring programme needs to be analysed prior to setting targets.

The decadal frequency of current surveys of cetaceans that range over wide areas mean that it is very difficult to detect, with any statistical certainty, any change in abundance on a reasonable time scale (a six-year time scale is implied in some EU legislation). This implies that survey frequency needs to be increased – the (societal) choice of statistical power has implications for survey frequency. ICES also noted that IUCN uses a three-generational approach to the detection of changes in population abundance and recommends that OSPAR might switch to such an approach in setting targets.

Previously ICES provided advice to the European Commission under EU Regulation 812/2004 on setting targets for limits on bycatch using an approach known as the “Catch Limit Algorithm”. ICES based this advice on a broad review of other options (i.e. percentage of abundance, Potential Biological Removal, IWC’s Revised Management Procedure for whaling). However prior to undertaking this (or any other) approach, specific conservation objectives must first be specified. In both cases improved information on bycatch and the biology of the species would improve the procedure. The conservation objectives must also set the level of detection accuracy. Key choices need to be made at the societal/policy level for this advice to be further developed and ICES has offered to help organize a workshop to consider these choices.

The assessment units proposed by the ICES WGMME (2014) for those species regularly present, such as the harbour porpoise, bottlenose dolphin, common dolphin, white-beaked dolphin, white-sided dolphin and striped dolphin, in OSPAR regions II, III and IV are provided in Annex A. Originally the OSPAR common mammal indicators were only proposed for OSPAR region II (the

greater North Sea), but ICES has proposed that this area has now been extended to incorporate OSPAR Regions III (Celtic Seas) and IV (Bay of Biscay and Iberian coast) (see Annex A).

**Table 1.** Proposed updates by ICES to the OSPAR's common mammal biodiversity indicators.

| Number | Indicator | Target | Category |
|---|---|---|---|
| M-4a | Abundance [at the relevant temporal scale] of harbour porpoise | For each assessment unit, maintain harbour porpoise population size at or above baseline levels, with no decrease of ≥30% over a three generation period (36 or 22.5 years)[1] | Core |
| M-4b | Abundance [at the relevant temporal scale] of inshore bottlenose dolphin | For each assessment unit, maintain inshore bottlenose dolphin population sizes at or above baseline levels, with no decrease of ≥30% over any ten-year period. | Core |
| M-4c | Abundance [at the relevant temporal scale] of offshore bottlenose dolphin | Maintain the offshore NE Atlantic bottlenose dolphin population size at or above the baseline level, with no decrease of ≥30% over a three-generation period (63 years). | Core |
| M-4d | Abundance [at the relevant temporal scale] of white-beaked dolphin | Maintain the white-beaked dolphin population size at or above the baseline levels, with no decrease of ≥30% over a three-generation period (54 years). | Core |
| M-4f | Abundance [at the relevant temporal scale] of common dolphin | Maintain the Northeast Atlantic common dolphin population size at or above the baseline level, with no decrease of ≥30% over a three-generation period (44 years). | Core |

[1]For harbour porpoise, there are two different generation time estimates. Taylor *et al (2007)* considered the maximum age of reproducing females to be between 24 and 27 years. In European waters, whilst a maximum life expectancy of 24 years has been recorded, a maximum age of 12 years is considered more normal, with the average age of a reproductive females considered to be 7.5 years (Pierce unpub. data).

As no quantitative information exists on the past state or on a state with negligible impacts for all species concerned, baselines were selected based on the "current state". As the "current state" may represent an already deteriorated state of biodiversity, the associated target typically includes an expression of no further deterioration from this state (ICG-COBAM 2012).

A further suggestion by the WGMME (2014) was that for the purposes of setting targets "population size reduction of ≥30% over any ten year or three generation period, whichever is appropriate to the species concerned". This was primarily because for certain species assessment units, with small abundance, i.e. coastal and resident bottlenose dolphins, it is important to identify biologically significant rates of decline on a shorter-time scale than three generations.

Abundance indicators could also be set for white-sided and striped dolphins, as these species are regularly present, and have previously been reported as bycatch.

Currently, ICG-COBAM is updating the indicator summaries based on recommendations by ICES. These will be re-submitted for a review to the national experts nominated by OSPAR, and also to the Joint ACCOBAMS/ASCOBANS MSFD WG in October 2014.

### *Timeplan for OSPAR "common" mammal indicator development*

A number of indicators related to cetacean abundance should be up and running in 2015 – for OSPAR region II at least as these countries have agreed to the "common" indicators - and the first full assessment will be undertaken in 2016. Input from national organisations dealing with cetacean monitoring will, however, be indispensable to achieve this. It is likely that this first assessment will be undertaken by OSPAR/ICG-COBAM, possibly through ICES (to be confirmed) and will be included in the next OSPAR Quality Status Report in 2017. For a number of cetacean species, such as those predominately living offshore, there is no possibility to make an assessment. OSPAR are currently developing a data collection and assessment framework. The first stage of this includes the production of an indicator testing report, which will require some data collection, and will tentatively be completed by mid-November 2014.

For the cetacean bycatch-mortality indicator, an identical process of indicator development takes place within EC-CFP, outside the influence of OSPAR. The outcome is not yet clear, and technical specifications may differ. This causes a high level of (inherent) uncertainty in the data of the indicators, the dependency on project outcomes, and societal choices involved – For further information see "*Societal decisions required for the determination of safe bycatch limits for harbour porpoise, common dolphin and bottlenose dolphin*" that was submitted to the ASCOBANS Advisory Committee in 2013 - http://www.ascobans.org/en/document/societal-decisions-required-determination-safe-bycatch-limits-harbour-porpoise-common.

### Proposed mammal indicators for each country in the NE Atlantic

Table 2 outlines the indicators currently proposed/used by each Member State in the NE Atlantic, collated for the purposes of the joint WG. Although as noted earlier, countries boarding OSPAR region II, the greater North Sea, agreed to participate in the development and usage of OSPAR's common indicators, not all Member States in this region are undertaking this task.

**Table 2.** Cetacean indicators proposed/used by Member States in the ASCOBANS region as of 2014. This table will be updated when further information on indicators and targets becomes available to the WG.

| Member State | Indicators | Target |
|---|---|---|
| **Belgium** | Bycatch rate of harbour porpoises vs average population size | |
| **Denmark** | | |
| **France** | | |
| **Germany**<br><br>**Descriptor D1 (biodiversity) indicators** | Distribution area and pattern of regularly occurring cetaceans | |
| | Abundance of regularly occurring cetaceans | |
| | Bycatch of individuals in relation to the population of a species | |
| | Causes of mortality of cetaceans found dead | |
| **Ireland**<br><br>**Descriptors 1 (biodiversity) and 4 (food webs) indicators** | Distributional range and distributional pattern within range, at the relevant temporal scale, of cetacean species regularly present (in consultation) | Maintain populations in a healthy state, with no decrease in population size with regard to the baseline (beyond natural variability) and restore populations, where deteriorated due to anthropogenic influences, to a healthy state. |
| | Abundance, at the relevant temporal scale, of cetacean species regularly present (in consultation) | Maintain populations in a healthy state, with no decrease in population size with regard to the baseline (beyond natural variability) and restore populations, where deteriorated due to anthropogenic influences, to a healthy state. |
| | Bycatch mortality of cetacean species, at the relevant temporal scale, in relation to population size (in consultation) | Maintain populations in a healthy state, with no decrease in population size with regard to the baseline (beyond natural variability) and restore populations, where deteriorated due to anthropogenic influences, to a healthy state. |
| **Portugal** | | |

| | | |
|---|---|---|
| **Spain** | Population size | |
| | Distributional range and pattern | |
| | Demographic conditions (mortality rates, including by-catch) | |
| | Litter in stomachs (still to be decided) | |
| | Pollutants in cetaceans (still to be decided) | |
| **Sweden** | | |
| **The Netherlands**<br><br>**Descriptors 1 (biodiversity) indicator** | Population abundance | Not yet defined |
| | Bycatch mortality of porpoises | 1.7% limit |
| **UK (Defra 2014)**<br><br>**Descriptors 1 (biodiversity) indicator** | Distributional pattern within range | At the scale of the MSFD subregions the distribution of Cetaceans is not contracting as result of human activities: in all of the indicators monitored there is no statistically significant contraction in the distribution of marine mammals caused by human activities. |
| **Descriptors 1 (biodiversity) indicator** | Population abundance | At the scale of the MSFD subregions abundance of cetaceans is not decreasing as a result of human activity: in all of the indicators monitored, there should be no statistically significant decrease in abundance of marine mammals caused by human activities. |
| **Descriptor 4 (food webs) indicator** | Abundance trends of functionally important selected groups/species | At the scale of the MSFD subregions abundance of cetaceans is not decreasing as a result of human activity: in all of the indicators monitored, there should be no statistically significant decrease in abundance of marine mammals caused by human activities. |
| **MSFD pressure indicator** | Population condition pressure indicators based harbour porpoise bycatch and short-beaked common dolphin bycatch | At the scale of the MSFD subregions cetacean populations are in good condition: mortality of cetaceans due to fishing by-catch is sufficiently low so as not to inhibit conservation objectives being met |

**Mammal MSFD indicator development in the ACCOBAMS region**

Currently, the University of La Rochelle is undertaking a survey that is collating information on the implementation of the MSFD in countries that are parties to ACCOBAMS and other EU non-ACCOBAMS countries. The survey covers issues regarding organisational aspects, progresses made so far, description of the initial assessment, visions of national focal persons in charge of implementing the measures (or the MSFD), and the key deadlines of the implementation (Ridoux and Spitz 2013). Information such as indicators/targets proposed/used by Member States within the ACCOBAMS region will possibly then be used to propose common indicators and monitoring practices.

**Mammal MSFD indicator development in the Baltic 0Sea**

HELCOM has developed two biodiversity core indicators that encompass monitoring and assessment for harbour porpoises: these include: (1) Number of drowned mammals and waterbirds in fishing gear and (2) Population growth rate, abundance and distribution of marine mammals. HELCOM's core indicators form a critical set of indicators that are needed to regularly assess the status of the Baltic Sea. HELCOM's strategic goals and the ecological objectives are to a certain extent comparable with the qualitative descriptors and the associated criteria of the EU MSFD (see http://helcom.fi/baltic-sea-trends/biodiversity/indicators/).

Member States are also proposing their own set of indicators. Theses have been reviewed by the Coalition Clean Baltic (2013) and a progress table for harbour porpoises, as of 2013, is presented in Table 3. Please note that as the harbour porpoise is rare in the eastern Baltic Sea, species specific indicators have not been prioritised in that region.

2) **In close cooperation with other scientific bodies and working groups within both Agreements, ensure consistency and identify gaps in the implementation of the MSFD with regard to (small) cetaceans in these regional fora**

The MSFD Directive (2008) outlined that each Member State shall, in respect of each marine region or subregion concerned, develop a marine strategy for its marine waters. Member States sharing a marine region or subregion shall cooperate to ensure that, within each marine region or subregion, the measures required to achieve the objectives of this Directive are coherent and coordinated. By reason of the transboundary nature of the marine environment, Member States should cooperate to ensure the coordinated development of marine strategies with all Member States and third countries concerned. Where practical and appropriate, existing institutional structures established in marine regions or subregions, in particular Regional Sea Conventions, should be used to ensure such coordination.

In developing and implementing its marine strategy, each Member State shall following the same common approach:

*(a) preparation:*

(i) an initial assessment of the current environmental status of the waters concerned and the environmental impact of human activities thereon (July 2012);

(ii) determination of good environmental status for the waters concerned (July 2012);

(iii) establishment of a series of environmental targets and associated indicators (July 2012);

(iv) establishment and implementation, except where otherwise specified in the relevant Community legislation, of a monitoring programme for ongoing assessment and regular updating of targets (July 2014);

*(b) programme of measures:*

(i) development of a programme of measures designed to achieve or maintain good environmental status (by 2015)
(ii) implementation of the programme of measures (by 2016)

*Qualitative descriptors for determining good environmental status*

(1) Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.

(2) Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems.

(3) Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.

(4) All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.

(5) Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.

(6) Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.

(7) Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.

(8) Concentrations of contaminants are at levels not giving rise to pollution effects.

(9) Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.

(10) Properties and quantities of marine litter do not cause harm to the coastal and marine environment.

(11) Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.

Table 3. Taken from the Coalition Clean Baltic (2013) report.

**Harbour porpoise**

**Table 1.** Indicators for Descriptor 1 Biodiversity about harbour porpoise. Only national indicators matching the EU criteria are listed. The colouration of the cells illustrate qualitative grading of indicators and targets, accordingly (categorization for different grades, see below):

| -2 | -1 | 0 | +1 | +2 |
|---|---|---|---|---|

| EU criteria and associated indicators | EE | LV | LT | PL X | DE X | DK | SE X | FI |
|---|---|---|---|---|---|---|---|---|
| 1.1. Species distribution | | | | | | | | |
| Distributional range (1.1.1) | | | | | UD | Occurrence in disrtribution range | UD | |
| Distributional pattern (1.1.2) | | | | | | | | |
| 1.2. Population size | | | | | | | | |
| Population abundance and/or biomass (1.2.1) | | | | Pop. growth X | UD | Population growth GES | UD | |
| 1.3. Population condition | | | | | | | | |
| Population demographic characteristics (1.3.1) | | | | Pop. growth rate X Blubber thickness X Gestation X | Population devolopment By-catch rate Discard rate | Pop. growth rate GES Gestation GES Blubber thickness GES By-catch GES | UD | |
| Pop. genetic structure (1.3.2) | | | | | | | | |
| 1.4. Habitat distribution | | | | | | | | |
| Distributional range (1.4.1) | | | | | | | | |
| Distributional pattern (1.4.2) | | | | | | | | |
| 1.5. Habitat extent | | | | | | | | |
| Habitat area (1.5.1) | | | | | | | | |
| Habitat volume (1.5.2) | | | | | | | | |
| 1.6. Habitat condition | | | | | | | | |
| Condition typical species and communities (1.6.1) | | | | | | | | |
| Relative abundance and/or biomass (1.6.2) | | | | | | | | |
| 1.7. Ecosystem structure | | | | | | | | |
| Composition & proportions of ecosystem components (1.7.1) | | | | | | | | |
| ∑ indic. | 0 | 0 | 0 | 4 | 3 | 6 | 0 | 0 |
| N grade Qual | -2 | -2 | -2 | -1.6 | -1.8 | -1.0 | -2 | -2 |

GES: indicator target is final and aiming to Good Environmental Status (GES) of marine areas by 2020; **Interim** target to achieve by 2020 to later on achieve GES; X indicator exist, but GES/Interim target not set; X not reported to EU; † indicator not matching EU criteria included * Indicators not reported to EU are included. UD = under development.

**Work undertaken to date within the ASCOBANS region**

Within the ASCOBANS region, Member States have/are deciding on environmental targets and associated indicators pertaining to marine mammals, in addition to deciding on monitoring requirements for undertaking assessments and regular updating of targets.

In 2013, ICES proposed to the EU that they host a workshop with the objective of reviewing different mechanisms for determining safe bycatch limits, and finalising conservation objectives for a bycatch limit approach that would enable conservation aspirations to be met. The European Commission have yet to respond to ICES regarding this offer. Due to a lack of agreed conservation objectives, decisions on mechanisms for determining safe bycatch limits (and production of those limits) and further development of bycatch mortality indicators is currently being stalled (ICES WGMME 2014). Concerning the monitoring of bycatch, which is strongly related to the setting up of indicators and objectives, there is a possible overlap with initiatives taken in the development of the new Data Collection Regulation and the review of the 812/2004 'bycatch' Regulation, in which ICES is also involved (with work undertaken in WGBYC).

For the most part, individual countries and OSPAR have focused on developing indicators on mammal species distribution, population size and population condition (bycatch mortality) for **Descriptor 1** (biodiversity). These proposed indicators are largely based on current monitoring requirements for other European legislation. For all cetacean species, unless there is knowledge and continued assessment of population diversity, structure and biological parameters, as well as an understanding of the pressure-state relationships, the usefulness of indicators such as 'population abundance' is questionable, as understanding the root cause of a significant decline in population abundance is necessary for successfully managing that population and achieving GES - though it should be noted that data on population abundance are necessary for evaluating other indicators, such as by-catch mortality (Murphy *et al.* 2013). Ultimately, additional indicators focusing on pressures and changes in population condition should be explored. In 2011 and 2012, the ICES WGMME reviewed and discussed possible structure, function, condition and pressure indicators for marine mammals (ICES WGMME 2011, 2012).

In 2012, the ICES WGMME proposed an additional indicator for assessment of population condition based on population demographic characteristics (e.g. body size or age-class structure, sex ratio, fecundity rates, survival/mortality rates). The parameter/metric being "assessing temporal changes in population pregnancy rates, proportion of mature individuals, proportion of females simultaneously pregnant and lactating, average age attained at sexual maturity, nutritional condition, and variations in reproductive parameters with age" (ICES WGMME 2012). Further development of this population demographic characteristics indicator was undertaken by Murphy et al. (2013). The authors noted that in addition to particular sampling requirements, in order to interpret reproductive data correctly, information on population abundance estimates, trends in abundance and data on parameters that affect the dynamics of the population, such as annual mortality rates in fisheries, temporal variations in prey abundance, and levels of anthropogenic toxins, are required.

The UK and Ireland are proposing to use mammal indicators for **Descriptor 4** (food webs) (see Table 2), though this was not an approach taken by OSPAR (2012). In the Mediterranean Sea, Azzellino *et al.* (in press) assessed the applicability of using a marine mammal indicator for Descriptor 4. Based on their analysis, fisheries resulted to be by far the most significant of the existing pressures on

cetaceans. Amongst all the species assessed in Italian waters, the bottlenose dolphin was found to be the most correlated with dynamics of the fishery sector - though this may be a regional effect. Interestingly, this and previous studies in this region reported that the proportions of species in the stranding records reflected quite well the relative abundance of live animals of species living in those waters, and thus the authors used strandings data, in addition to sightings, when assessing species biodiversity (Azzellino *et al.* in press).

No marine mammal indicator was proposed by OSPAR for **Descriptor 8** (contaminants and pollutant effects). In 2014, the ICES WGMME proposed an additional common mammal indicator "Blubber PCB toxicity threshold". This indicator is now being reviewed by OSPAR's committees ICG-COBAM and HASEC (Hazardous Substances and Eutrophication Committee overseeing indicator development for Descriptor 8). Additionally Spain is currently evaluating using a pollutant indicator for cetaceans (Table 2). Within the Mediterranean Sea, a workshop was held in Italy in 2012 focusing on large marine vertebrates as potential sentinels of Good Environmental Status in the marine environment. Particular attention was paid to MSFD Descriptors 8 and 10, and recommendations from the workshop included that biomarkers offer real potential for the determination of good ecological status detecting the "undesirable biological effects" (indicator for descriptor 8) (Fossi *et al.* 2012a).

With regard to **Descriptor 10** (marine litter), no surveillance indicator for monitoring the amounts of plastic found in the stomach contents of cetaceans has been proposed. Primarily, as cetaceans were not regarded to be a good indicator species, due to low numbers of samples (of marine litter) obtained to date, and possible secondary consumption of marine litter – i.e. ingested by species consumed by marine mammals (MSFD GES Technical Subgroup on Marine Litter 2011). Additionally, stranding's of species known to be more prone to marine debris ingestion, e.g. Cuvier´s beaked whales and Sperm Whales, are rare on European coasts and thus occur in too low a frequency to be used in a monitoring system (MSFD GES Technical Subgroup on Marine Litter 2011). In the Mediterranean Sea, floating micro debris have reached an unprecedented level and the impacts of microplastics on biota such as baleen whales is unknown (Fossi *et al.* 2012a). Preliminary data are now been collated on the uptake and potential adverse effects of microplastics on fin whales in the Mediterranean Sea (Fossi *et al.* 2012b), and thus there may be potential for future development of an indicator based on this work (Galgani *et al.* 2014).

Targets and indicators related to **Descriptor 11** (underwater noise) pertain to the production of a noise registry and surveillance indicator for monitoring trends in the ambient noise level. Proposed indicators for Descriptor 11 are:

1. Distribution in time and place of loud, low and mid frequency impulsive sounds - Proportion of days and their distribution within a calendar year over areas of a determined surface, as well as their spatial distribution, in which anthropogenic sound sources exceed levels that are likely to entail significant impact on marine animals measured as Sound Exposure Level (in dB re 1µPa 2 .s) or as peak sound pressure level (in dB re 1µPa peak) at one metre, measured over the frequency band 10 Hz to 10 kHz;

2. Continuous low frequency sound - Trends in the ambient noise level within the 1/3 octave bands 63 and 125 Hz (centre frequency) (re 1µPa RMS; average noise level in these octave bands over a year) measured by observation stations and/or with the use of models if appropriate (Van der Graaf *et al.* 2012).

3) **Liaise with scientific bodies and working groups within ACCOBAMS/ASCOBANS that work on matters relevant to the implementation of the MSFD**

During 2014, updates on the development of OSPAR common mammal indicators were provided to members of the Joint ACCOBAMS/ASCOBANS WG on MSFD.

4) **Report back on the conclusions of its work to the relevant working groups of ACCOBAMS/ASCOBANS, and to its relevant scientific and technical bodies**

A report from the joint working group was submitted to the 21st Meeting of the Advisory Committee.

5) **Ensure that the conclusions of its work are brought to the attention of the relevant groups working on the implementation of the MSFD**

A copy of this report will be submitted to the forthcoming OSPAR ICG-COBAM meeting in October 2014.

6) **Prepare draft ToR for work within ACCOBAMS/ASCOBANS related to the further implementation of the MSFD after 2014**

Continued implementation of the ToRs agreed at the 20$^{th}$ Advisory Committee meeting.

## Acknowledgements

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**ANNEX A - WGMME (2014) PROPOSED ASSESSMENT UNITS FOR SMALL CETACEANS IN OSPAR Regions II, III, IV.**

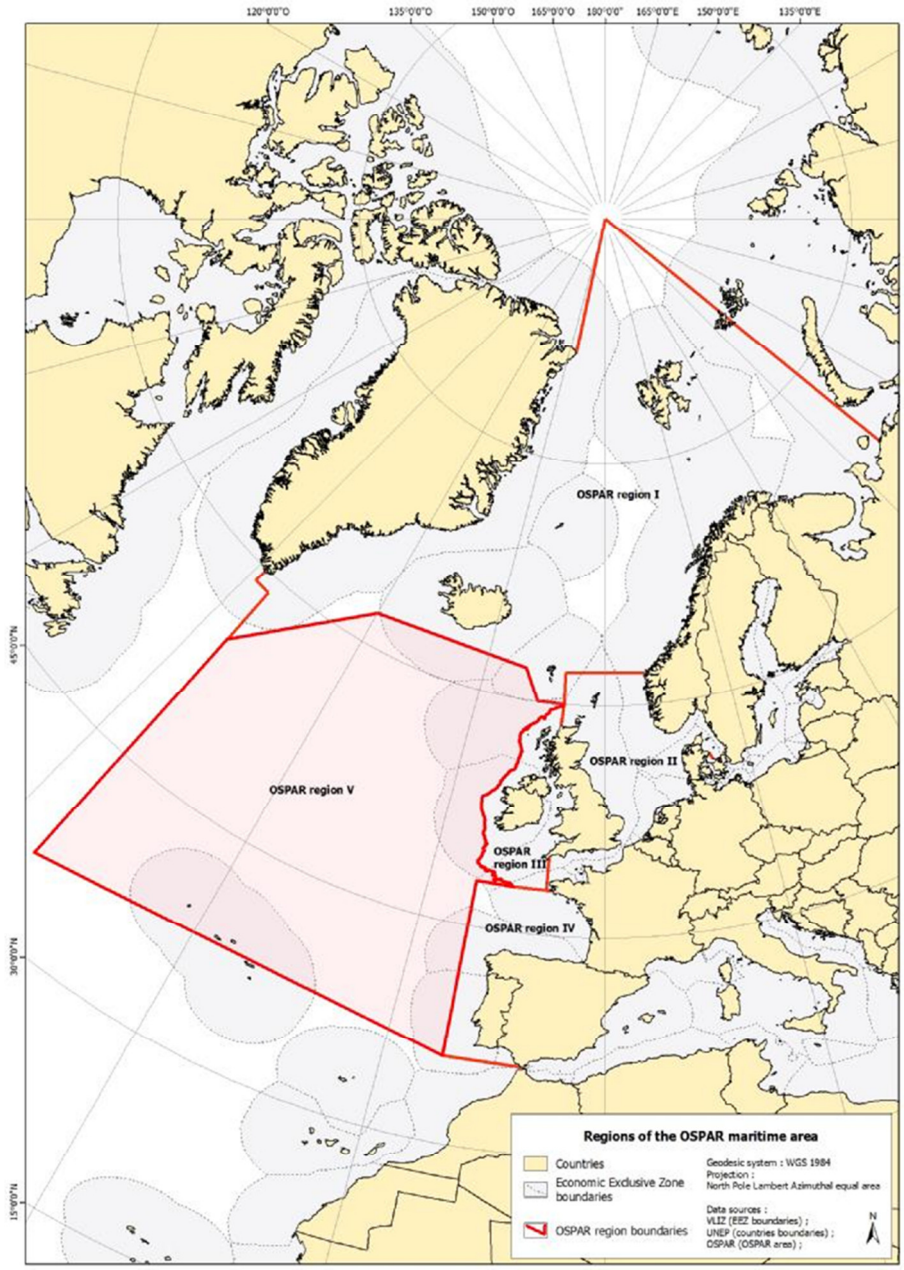


**Figure 1**. Regions of the OSPAR maritime area and Economic Exclusive Zone boundaries.

**1. Proposed Harbour Porpoise Assessment Units (AU) for OSPAR Regions II, III, IV**

1) North Sea (NS): Area IV, Divisions VIId and part of IIIa (Skagerrak and northern Kattegat), the boundary between NS and Kattegat/Belt Seas is currently being revised;

2) Kattegat and Belt Seas (KBS): Part of Division IIIa (southern Kattegat) and Baltic Areas 22 and 23;

3) Western Scotland and Northern Ireland (WSNI): Divisions VIa, VIb2;

4) Celtic Sea and Irish Seas (CIS): Divisions VII with the exception of VIId;

5) Iberian Peninsula (IB): Divisions VIIIc and IXa.

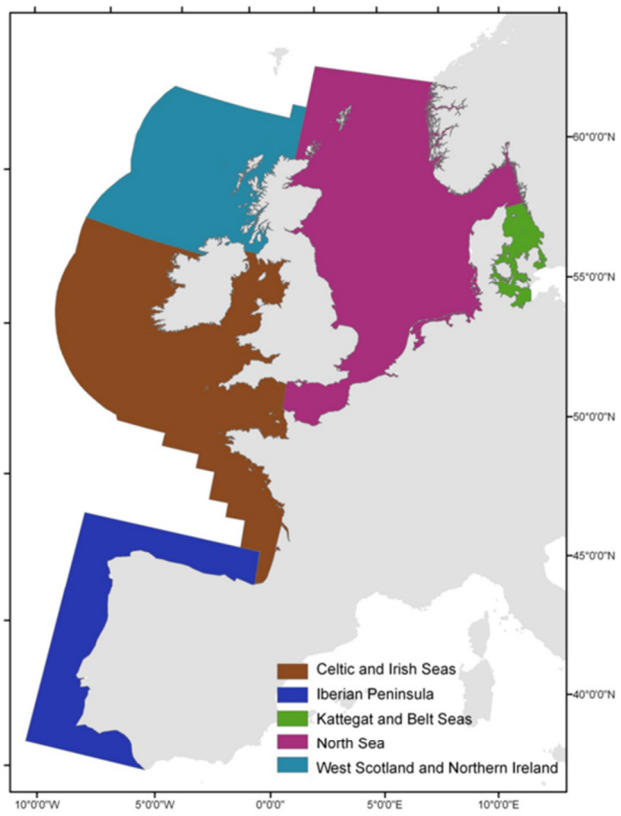


**Figure 2**. Harbour porpoise assessment units proposed for MSFD indicator assessments. The boundary of the North Sea AU to the west in Kattegat will be subject to change once the boundaries of the ASCOBANS conservation plan for harbour porpoise in the Western Baltic, the Belt Sea and the Kattegat have been fully decided.

**2. Proposed Bottlenose Dolphin Assessment Units for OSPAR Regions II, III, IV**

Three types of assessment units were proposed for bottlenose dolphins including (1) resident groups, (2) coastal groups and (3) oceanic waters (see Figure 3). Resident groups were based on time-series of photo-identification data, and for some group's genetic data which identified them as geographically isolated populations e.g. the Shannon estuary. It was proposed that these groups should be regarded as separate assessment units as there was no evidence that these groups will be maintained by recruitment from other populations, if their numbers decline (ICES WGMME 2013). In contrast to resident groups, coastal groups range over a larger scale, though still a relatively small spatial scale. Analyses of photo-identification data and some genetic studies have shown that although some coastal groups are more mobile, they still show strong site fidelity along defined stretches of coast (ICES WGMME 2013).

Resident groups: Barra (Scotland; although for management purposes this group is included within the wider Scottish west coast group); Shannon Estuary (Ireland); Ile de Sein (France) Archipel de Molene (France); southern Galician Rias (NW Spain); Sado Estuary (Portugal).

Coastal groups: west of coast Scotland (UK); east coast of Scotland (UK); Irish Sea (Ireland and UK); west coast Ireland AU (northern and west coasts of Ireland); the English Channel/Celtic Sea (Ireland, UK and France); north coast of Spain; coast of Portugal (except for the Sado Estuary); the Azores (Portugal), Gulf of Cadiz (south coast of Spain) and Strait of Gibraltar (south coast of Spain).

Oceanic waters: a single AU for all continental shelf/slopes/oceanic waters outside 12 nm from the coast. It should be noted that although a separate AU is 'designated' for the North Sea (represented by ICES Area IV, excluding coastal east Scotland), there are very few bottlenose dolphin are seen in this area. Although there is no conclusive evidence, those seen are thought to belong to the East Scottish coastal group.

Please note that the ICES 2014 advice document provided slightly different AUs for bottlenose dolphins.

**3. Proposed Common Dolphin Assessment Units for OSPAR Regions II, III, IV**

Only one population of short-beaked common dolphin (*Delphinus delphis*) exists in the Northeast Atlantic, ranging from waters off Scotland to Portugal, and there is thus a single AU.

**4. Proposed White-beaked Dolphin Assessment Units for OSPAR Regions II, III, IV**

A single AU for white-beaked dolphin (*Lagenorhynchus albirostris*) around Britain and Ireland, comprising all relevant ICES areas and divisions. Additional AUs may be appropriate to northern Norwegian waters and waters around Iceland.

**5. Proposed White-sided Dolphin Assessment Units for OSPAR Regions II, III, IV**

A single AU for white-sided dolphin (*Lagenorhynchus acutus*) in the eastern North Atlantic, comprising all relevant ICES areas and divisions.

**6. Proposed Striped Dolphin Assessment Units for OSPAR Regions II, III, IV**

The WGMME recommended further genetic and morphological studies to be undertaken to investigate population structure in striped dolphins in this region. Until this work has been carried out, the WGMME recommended a single AU for striped dolphins within OSPAR Regions II, III, IV.

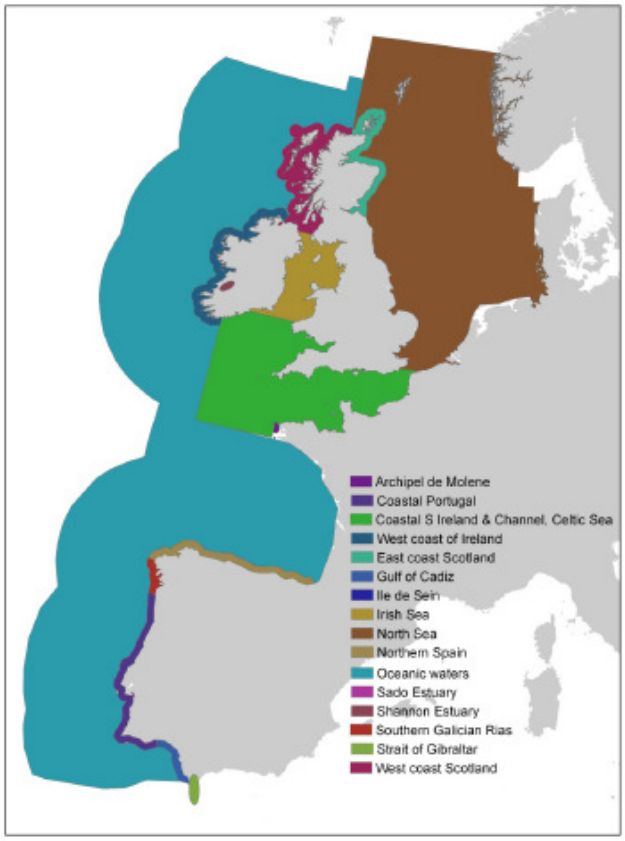


**Figure 3**. Bottlenose dolphin assessment units proposed for MSFD.