Marine Expert Group
under the Birds and Habitats Directives

Meeting of the Marine Expert Group (MEG)

22-23 February 2021
Online meeting (MS Teams)

Agenda item:	1.3
Document:	2
Title:	Sources of information that can be considered for additional MPA designations
Prepared by:	DG Environment
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Background:	This document presents sources of spatial information on marine habitats and species that may be useful for designation of additional MPAs in the context of the Biodiversity strategy. It includes, for each source, a link to the data, a short description of the dataset, including its geographic cover, and a preliminary assessment of the data's relevance. Some sources may have to be quality checked before being used for additional MPAs designations. The members of the group are invited to share additional relevant information they may be aware of, as well as their views on whether it would be useful to compile the data into a centralised online viewer, such as the ones presented under section 1 of the document.

Sources of information that can be considered for additional MPA designations

Contents

1. Examples of existing platforms

1.1. HELCOM database

Link: http://maps.helcom.fi/website/mapservice/

Map viewer includes:

- HELCOM MPAs
- Natura2000 sites
- Baltic Sea EBSAs
- Baltic Sea Fisheries
- RAMSAR sites
- UNESCO sites
- Harbour porpoise probability of detection
- Red list species and biotopes

1.2. Oceana roadmap towards representative EFH network viewer

Link: https://eu.oceana.org/en/essential-fish-habitats-viewer

Map viewer includes:

- Areas of interest for EFH
- Temporary & permanent fisheries closures
- Nursery and spawning areas (including levels of persistence)

1.3. EEA Wise Marine – European Reference Map

Link: https://water.europa.eu/marine/data-maps-and-tools/map-viewers-visualization-tools/european-reference-maps

Map viewer includes:

- Marine regions and subregions
- EU Marine Protected Areas
- MAES marine and coastal ecosystems
- Marine Litter watch data
- Marine species and habitats distribution (HBD Article 17 and Article 12 information)

2. Possible data sources

Data relevance legend:

Relevant: ▮   Yes

Relevant: ▮   Maybe

Relevant: ▮   No

2.1. Important Bird Area's (IBAs)

Relevant:

Link: http://datazone.birdlife.org/site/mapsearch

Description: IBA's are areas of international importance for birds, in terms of presence and abundance of species that occur there, year round or seasonally. The selection of IBAs is achieved through the application of quantitative ornithological criteria together with knowledge of the sizes and trends of bird populations. The criteria ensure that the sites selected as IBAs have true significance for the international conservation of bird populations, and provide a common framework that all IBAs adhere to, thus creating consistency, and enabling comparability between, sites at national and international levels.

Range: all Europe

2.2. Important Marine Mammals Areas (IMMAs)

Relevant:

Link: https://www.marinemammalhabitat.org/immas/

Description: IMMAs are discrete areas, which are important to improving the conservation status of marine mammal species or populations. The objectives of IMMAs is to provide advice on marine mammal conservation priorities. The identification of IMMAs is achieve through the application of eight sub-criteria comprised in four main criteria: 1) Species or population vulnerability, 2) Distribution and Abundance, 3) Key life cycle activities and 4) Special attributes. Any candidate need only satisfy one of the listed criteria and/or sub-criteria to qualify for IMMA status.

Range: Mediterranean

2.3. Oceana Essential Fish Habitats

Relevant:

Link: https://eu.oceana.org/en/essential-fish-habitats-viewer; Oceana 2020 factsheet: https://eu.oceana.org/sites/default/files/oceana_gfcm_2020_an_essential_fish_habitats_network_to_rebuild_fisheries.pdf

Description: Essential Fish Habitats, such as nursery areas and spawning ground of important commercial fish species, including the level of persistence of these areas. The layers include: Areas of interest of EFH, Fisheries Restriction Areas (FRA) proposals and Current regional closures. In addition, there are layers of the nursery areas (including their level of persistence) for *Merluccius merluccius*, *Mullus barbatus* and *Aristaeomorpha foliacea*, and spawning ground layers (including levels of persistence) for *Parapenaeus longirostris*, *Aristeus antennatus*, *Mullus surmuletus*, *Nephrops norvegicus* and *Solea solea*.

Additional EFH data: In addition to the areas shown in the interactive map, Oceana have identified further areas of interest for EFH (Oceana 2020 factsheet, Map 1). Oceana also have information on

Vulnerable Marine Ecosystems EFH such as on the distribution of the bamboo coral *Isidella elongata* (Oceana 2020 factsheet, Map 2).

Range: Mediterranean

2.4. Oceana Biodiversity hotspots

Relevant:

Link: https://eu.oceana.org/en/publications/reports/unprotected-marine-treasures-oceana-proposal-protect-15-marine-biodiversity

Description: 15 marine biodiversity hotspots, which Oceana proposes to protect. Habitats covered by those sites are: biogenic reefs, bubbling reefs/ pockmarks, coral gardens, coralligenous/ rhodolith beds, deep-sea sponges, engineer amphipods, fladas, kelp forests, sabellaria reefs, sandbanks, sea caves, sea pen fields, seagrass beds, seamounts/ banks/ stone reefs and white coral reefs. Key species/ species groups covered are: cod, corals, European eel, marine mammals, turtles, sharks and rays. The document provides more information on the spatial extent and importance of each site.

Range: Throughout Europe: the sites are located in the Baltic Sea (#3), in the North Sea (#4), in the Spanish and Portuguese Atlantic coast (#4) and in the Mediterranean Sea (#4).

2.5. Essential fish habitats identified by JRC

Relevant:

Link 1: https://fishreg.jrc.ec.europa.eu/web/fish-habitat/index.html

Description: Real-time map of potential hake nursery areas. The map is continuously updated based on the latest Copernicus satellite observations to allow for a dynamic management.

Range: Mediterranean

Link 2: https://fishreg.jrc.ec.europa.eu/web/fish-habitat/habitatmapping

Description: Maps showing potential essential habitats of key species using daily satellite chlorophyll-a and physics data from EU Copernicus. Modelled maps are available for the following species:
- Atlantic bluefin tuna – feeding and spawning areas in the North Atlantic (feeding areas are modelled both for juveniles and adults)
- Fin whale – feeding areas in the West Mediterranean Sea
- Hake – nursery feeding areas in the Mediterranean
- Skipjack tuna – feeding areas in the Atlantic
- Blue shark – feeding areas (in preparation)

Range: All Europe (varies with species)

2.6. HELCOM threatened and/or declining species and biotopes/habitats

Relevant:

Link: http://maps.helcom.fi/website/mapservice/?datasetID=d27df8c0-de86-4d13-a06d-35a8f50b16fa&features=MPA_ID:113

Description: The map has a distribution layer for each of HELCOM's threatened and/ or declining species and biotopes. In addition, the distribution is visualised in the information sheets for each of HELCOM's threatened and/ or declining species and biotopes. In some cases, the spatial data may be too coarse, but for some species or habitats it may be useful. The biotopes are EUNIS level 5.

Links to Information Sheets:

- Biotopes: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-biotopes-habitats-and-biotope-complexes/biotope-information-sheets/
- Benthic Invertebrates: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-benthic-invertebrates/
- Birds: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-birds/
- Fish and Lamprey Species: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-fish-and-lamprey-species/
- Macrophytes: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-macrophytes/
- Marine mammals: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-marine-mammals/

Range: Baltic Sea

2.7. OSPAR Threatened and/ or declining habitats

Relevant:

Links:
- OSPAR: https://odims.ospar.org/layers/geonode:ospar2018_points
- EMODnet (includes legend of data; layer in composite data products): https://www.emodnet-seabedhabitats.eu/access-data/launch-map-viewer

Description: The database is a compilation of OSPAR threatened and/ or declining habitat data submitted by the Contracting Parties. Its completeness is related to the effort of its contributors. It does not contain (1) modelled predictions of the presence or extent of habitats in areas of limited data, (2) Information on habitat condition, or (3) many absence records (although the data schema allows for it). More information of the dataset can be found here.

Range: North-East Atlantic

2.8. ICES Vulnerable Marine Ecosystem

Relevant:

Link: https://www.ices.dk/data/data-portals/Pages/vulnerable-marine-ecosystems.aspx

Description: Portal to view and download observations of Vulnerable Marine Ecosystem (VME) indicators and habitats in the North Atlantic. VME habitat types included in the dataset are: Anemone aggregations, Cold seeps, Cold-water coral reefs, Coral garden, Deep-sea sponge aggregations, Hydrothermal Vents/ Fields, Mud and Sand emergent fauna, Seapen fields, Stalked crinoid aggregations, Tube-dwelling anemone aggregations and Xenophyophore aggregations.

The database is comprised of:

1. 'VME habitats': records for which there is unequivocal evidence for a VME, e.g. ROV observations of a coral reef

2. 'VME indicators': records that suggest the presence of a VME with varying degrees of uncertainty. For VME indicators a weighting system of vulnerability and uncertainty is provided as part of the database to aid interpretation

Distinctiveness to OSPAR habitats dataset: The majority of records within the ICES VME database are not duplicated within the OSPAR database of threatened and/or declining habitats. These two databases should be seen as complementary but users should be aware that some habitat types included in the OSPAR database of threatened and/or declining habitats would likely qualify as VMEs. Examples of such habitats include *Lophelia pertusa* reefs and deep-sea sponge aggregations.

Range: North Atlantic

2.9. Nordic Council of Ministers – Vulnerable Marine Ecosystems

Relevant:

Link: https://www.norden.org/en/publication/vulnerable-marine-ecosystems-vmes

Description: The documents includes a map with the position of records of VME indicator species compiled in the study (page 14). The VMEs that were studied are: Sponge aggregations (on soft bottom, hard bottom and deep arctic bottoms), Sea pen communities (sublittoral and bathyal), Gorgonians (on soft bottom and hard bottom), Cup coral fields, Stylasterid corals and Cauliflower corals. The specific indicator species are listed in Appendix 3.

Comment: Although this dataset appears to be very similar to the ICES VMEs dataset, it seems to include additional data (e.g. around Northern Scotland).

Range: North-East Atlantic

2.10. UNEP WCMC Ocean Data Viewer

Link: https://data.unep-wcmc.org/

Relevant layers:

Relevance	Layer name	Comment	Link
🟩	Global Distribution of Saltmarshes	Relevant for Blue Carbon. Dataset shows known extent of saltmarsh distribution globally, drawing from occurrence data (surveyed and/or remotely sensed). The dataset consists of one polygon layer, one point layer, and an accompanying Access database that contains species information (linked exclusively to the point dataset)	https://data.unep-wcmc.org/datasets/43
🟩	Global Distribution of Seagrasses	Relevant for Blue Carbon. This dataset shows the global distribution of seagrasses, and is composed of two subsets of point and polygon occurrence data. The data were compiled by UN Environment World Conservation Monitoring Centre in collaboration with many collaborators (e.g. Frederick Short of the University of New Hampshire), organisations (e.g. OSPAR), and projects (e.g. the European project Mediterranean Sensitive Habitats "Mediseh"), across the globe (full list available in accompanying metadata table within the dataset).	https://data.unep-wcmc.org/datasets/7
🟩	Global Distribution of Cold Water Corals	This dataset shows of the global distribution of cold-water corals. Occurrence records are given for 86 Families under the subclass Octocorallia (octocorals; also known as Alcyonaria) and four Orders (in Class Anthozoa): Scleractinia (reef-forming corals), Antipatharia (black corals), Zoanthidae (encrusting or button polyps), and Pennatulacea (sea pens). Occurrence records are also available for the order sub-Order Filifera (lace corals) in Class Hydrozoa.	https://data.unep-wcmc.org/datasets/3

Comment: Data is relevant, but the question is how accurate it is reflecting the distribution and whether it is still up to date. Also, no information on quality of the habitats is available.

Range: all Europe

2.11.   CBD Ecologically or biologically Significant Marine Areas (EBSAs)

Relevant:

Link: https://www.cbd.int/ebsa/

Description: EBSAs are selected according to the following CBD scientific criteria: (1) Uniqueness or Rarity, (2) Special importance for life history stages of species, (3) Importance for threatened, endangered or declining species and/or habitats, (4) Vulnerability, Fragility, Sensitivity, or Slow recovery, (5) Biological Productivity, (6) Biological Diversity, (7) Naturalness. EBSAs are identified by States and competent intergovernmental organizations.

Comment: Some areas are extremely large and may not be very useful (e.g. the EBSA in the north-western Mediterranean basin). But other areas, such as the Jabuka Pit in the Adriatic Sea, are more concrete and could be useful. Several areas are also, at least partially, outside EEZs.

Range: Mediterranean, Baltic Sea and Black Sea

2.12.   OBIS Ocean Biodiversity Information System

Relevant:

Link: https://mapper.obis.org/

Description: OBIS has open-access distribution data on relevant species, such as EU red listed species and OSPAR/ HELCOM threatened or declining species. The data can be visualised as density maps or as toggle points. However, there may be gaps in the datasets. For instance, remnant populations of *Ostrea edulis* in the West coast of Scotland are not shown after 2001.

Important note: The data also includes historical observations of populations that are locally extinct (e.g. for the angelshark *Squatina squatina*). It is important to filter the time line to recent years.

Range: All Europe

2.13.   EMODnet Biology

Relevant:

Link: https://www.emodnet-biology.eu/portal/index.php; portal user guide: https://www.emodnet-biology.eu/portal/doc/EMODNet_Biological_dataportal_manual-v1.pdf

Description: The EMODnet biology data portal provides free access to data on temporal and spatial distribution of marine species and species traits from all European regional seas. It is built upon the World Register of Marine Species (WORMS) and the European Ocean Biogeographic Information System (OBIS). EMODnet Biology aims to provide a single access point to European marine biodiversity data and products by assembling individual datasets from various sources and processing them into interoperable data products for assessing the environmental state of ecosystems and sea basins.

Important note: Some datasets include historical observations of populations that are now locally extinct (e.g. for the angelshark *Squatina squatina*). It is therefore important to filter the data to observations of recent years.

Range: All Europe

2.14. EMODnet Human Activities

Relevant:

Link: https://www.emodnet-humanactivities.eu/view-data.php

Description: Users can view, query, and download datasets or subsets of them, via web GIS. Metadata are also available for download. The portal (currently) offers access to the following datasets:

- Aggregate Extraction
- Algae Production
- Aquaculture Cables
- Cultural Heritage
- Dredging
- Environment (e.g. Nationally designated sites, Natura 2000, State of Bathing Water)
- Fisheries
- Hydrocarbon Extraction
- Main Ports
- Nuclear Power Plants
- Ocean Energy Facilities
- Other Forms of Area Management/Designation
- Pipelines
- Shipping Density
- Waste
- Wind Farms

Comment: This data can be useful for understanding pressures and setting management objectives

Range: All Europe

2.15. GEBCO Undersea Features

Relevant:

Link: https://www.ngdc.noaa.gov/gazetteer/

Description: Interactive map showing the location and name of all known undersea features, such as seamounts and ridges.

Comment: Most seamounts are highly biodiverse, but actual data 'proofing' the biodiversity value is probably missing in most cases. Nevertheless, this database could be useful to show which seamounts exists under the jurisdiction area of each Member State. This information could then be used to google

whether any scientific data exists on these features. For instance, biological data is available for the Gorringe Bank seamounts (off Spain): https://eu.oceana.org/sites/default/files/reports/seamounts_gorringe_bank_eng.pdf

Range: all Europe

2.16. IDEM (Implementation of the MSFD to the Deep Mediterranean Sea) WebGIS

Relevant:

Link: http://gismarblack.bo.ismar.cnr.it:8080/mokaApp/apps/idem/index.html?null; project page: http://www.msfd-idem.eu/?q=content/about-project

Description: The map has the following layers related to the Marine Strategy Framework Directive (MSFD) implementation:

- D1 – Biodiversity is maintained (deep sea species occurrence, habitat types, geomorphological features and seabed substrate)
- D2 – Non-Indigenous species do not adversely alter the ecosystem (number of multicellular non-indigenous species)
- D3 – The population of commercial fish species is healthy (potential fishing pressure along the Mediterranean Sea coast)
- D5 – Eutrophication is minimised (aquaculture production: fish farms influence)
- D6 – The seafloor integrity ensures functioning of the ecosystem (impact of fisheries on the bottom, exploration/ extraction of oil and gas, utility and service lines, mining and extraction activity, and trawling area)
- D8 – Concentrations of contaminants give no effect (intensity of pollution by maritime transport, dumping zone and point source pollution)
- D10 – Marine litter cause no harm (marine litter, shipping line and marine litter by transport influence)
- D11 – Other (cumulative human impact)

Comment: Layer 1 (biodiversity information) may be particularly relevant

Range: Mediterranean (below 200 m depth)

2.17. IUCN Key Biodiversity Areas (KBA)

Relevant:

Link: http://www.keybiodiversityareas.org/site/mapsearch

Description: Sites qualify as KBAs if they meet one or more of 11 criteria, clustered into five categories: (1) threatened biodiversity, (2) geographically restricted biodiversity, (3) ecological integrity, (4) biological processes, and (5) irreplaceability. Each criteria is associated with thresholds, which can be applied across all taxonomic groups. The KBA identification process is a highly inclusive, consultative and bottom-up exercise. The existing network of KBAs is composed of Important Bird and Biodiversity Areas (IBAs) and Allianz for Zero Extinction sites.

Comment: BirdLife and IUCN host the KBA secretariat jointly. In the EU, many KBA areas overlap exactly with the IBAs and were designated for the same reason (importance for birds). The fact that they have also been designated as KBA does therefore not provide additional biodiversity value to the site.

Range: all Europe

2.18.   EU red list of marine habitats

Link: https://forum.eionet.europa.eu/european-red-list-habitats/library/marine-habitats

Relevant:

Description: The distribution of each habitat type (as well as the Extent of Occurrence and the Area of Occupancy) were derived from a combination of survey data, Article 17 data, modelled data and expert knowledge. Habitat distribution (EUNIS level 4) is presented on a European regional seas map, superimposed with 10 km x 10 km grid squares. The raw territorial data and habitat distribution maps, are available for public download through the website of the European Environmental Agency (EEA).

Problem: EU red list habitats were classified according to EUNIS level 4. This is a relatively high level of typology for marine habitats and whilst appropriate for a European scale assessment, it obscures some very well-known endangered subhabitats (defined at EUNIS level 5). For instance, EUNIS habitat level 4 'Marine Atlantic infralittoral mixed sediments' was classified as data deficient in the assessment. However, enough data is available to classify the threatened level 5 sub-habitats of '*Limaria hians* beds in Atlantic tide-swept sublittoral muddy mixed sediments' as vulnerable, and '*Ostrea edulis* beds on Atlantic shallow sublittoral muddy mixed sediments' as critically endangered. Hence working with level 4 can mask important threatened habitats in need for protection.

Range: all Europe

2.19.   EMODnet Seabed Habitats

Interactive map link: https://www.emodnet-seabedhabitats.eu/access-data/launch-map-viewer/?zoom=4&center=-3.508,52.305&layerIds=1&baseLayerId=-3

Description of relevant layers:

Relevance	Layer name	Comment
	EUSeaMap: EMODnet broad-scale seabed habitat maps for Europe	A broad-scale predictive map, mapped at EUNIS level 4 and at MSFD Benthic Broad Habitat Types. Probably too coarse to be relevant, as it does not reflect biological communities.
	Essential Ocean Variables in Europe (Live hard coral extent, Macroalgal canopy extent & Seagrass extent)	Still a draft. Visible on interactive map, but does not seem to be downloadable yet.
	Individual habitat maps from survey	Data ranges from broad-, medium- to fine-scale. It includes EUNIS habitat maps from survey, Annex I

habitat maps from survey and other habitat maps from survey. All data seems to be connected to Natura 2000 sites.

Range: all Europe