



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot n° 6 – HUMAN ACTIVITIES

EASME/EMFF/2016/1.3.1.2 – Lot 6/SI2.749458

Start date of the project: 03/03/2017 - (24 months)

EMODnet Phase III – Quarterly Progress Report (4)

Reporting Period: 15/01/2018 – 16/04/2018



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1 Highlights during the reporting period

- A grid was created for the vessel density map. Cleaning and pre-processing of data still ongoing
- It has been agreed that EMSA will prepare vessel density maps for EMODnet Human Activities, starting 2019.
- The project was presented at the Member States Expert Group on Maritime Spatial Planning.
- WP 8 Involvement of Regional Sea Conventions: meeting with the OSPAR Convention has been held.
- WP 9 Analyses of standards and protocols of the mapped organization have been started.
- 6 new blogs have been published (January, February, March, April).

2 Work package updates

2.1 WP 2 - Data collection

2.1.1 Cultural heritage

The main progress related to cultural heritage since the 3rd progress report has concerned collecting data for wrecks and their harmonization. Specifically, collected data cover wrecks in the Mediterranean region and in the Black Sea. The collected database is largely incomplete with a huge number of wrecks without geographical positions. In this context, contacts are in progress with the project responsible to check the availability of additional information and to identify other relevant sources.

Contacts are in progress with other data sources, particularly wrecksites.eu to gather data on wrecks in all EU and neighbouring countries' waters. The data owner is "reluctant" to provide an extraction of the database because this might negatively affect their business. A discussion is ongoing on the feasibility to find a deal based on mapping wrecks without allowing downloading the full dataset.

Alternative sources, mostly national sources (Finland, Sweden, Poland, Baltic States...), concerning the Baltic Sea are under assessment: type of wrecks, geographic coverage, metadata and harmonizing issues.

2.1.2 Aquaculture

The bulk of the work for aquaculture since the 3rd progress report has concerned collecting updated data for marine fish and shellfish farming and harmonising them.

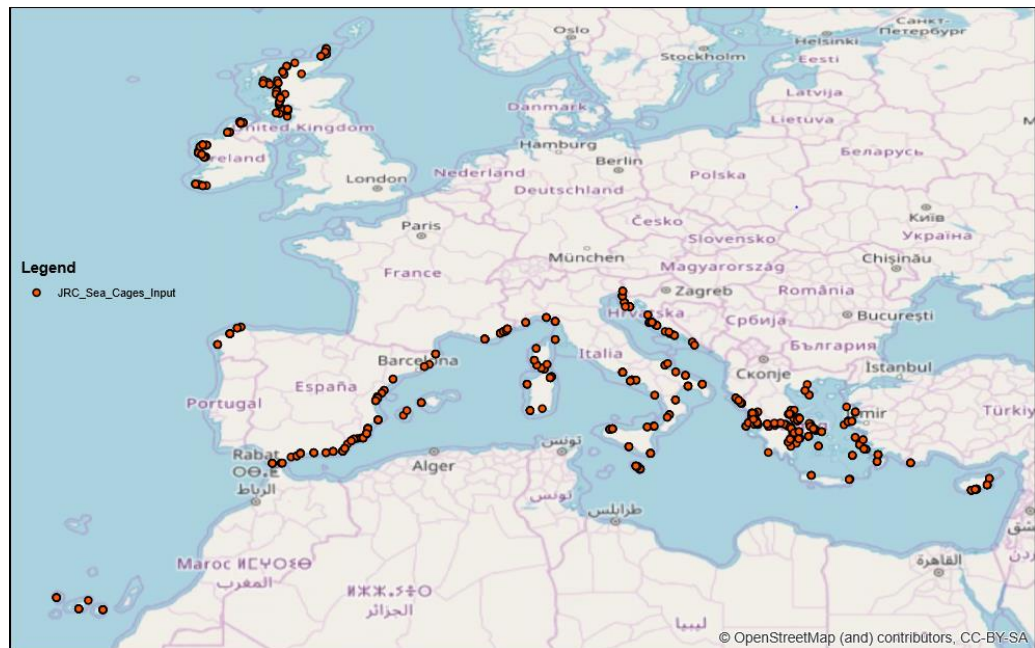
Specifically, collected data cover marine fish and shellfish farming for Greece and Cyprus.

Contacts are in progress with other national authorities to gather updated data and to ensure better geographical coverage by including other MSs and countries of adjacent seas and regions (the Mediterranean region and the Black Sea).

Particularly, contacts have been made with:

- Croatian authorities to gather data on marine farming (finfish and molluscs farms);
- Spanish authorities to gather updated data on marine farming (finfish and molluscs farms);
- JRC team to check technical details in order to use data from JRC¹ as initial source of marine aquaculture activities for MSs for which data have not been gathered yet.

¹ JRC data concern the space occupation of marine cages aquaculture in the EU and cover ten MSs representing almost 93% of the EU marine finfish aquaculture production by volume (Cyprus, Spain, France, Greece, Croatia, Ireland, Italy, Malta, Slovenia, United Kingdom).



Source: Hifherr, Natale, Trujillo, *Is lack of space a limiting factor for the development of aquaculture in EU coastal areas?*, Ocean & Coastal Management, November 2015, pp.27-36

Following the meeting with the Barcelona Convention secretariat, held the first of February 2018 in Athens, we have contacted the General Fisheries Commission for the Mediterranean (GFCM) to check if any centralized database on geographical information related to aquaculture activities exists (in the Mediterranean region). In the meantime, we have gathered relevant national contacts and data sources in Morocco, Algeria, Tunisia and Turkey.

2.1.3 Aggregate extraction

Shapefiles with polygons of licence areas for aggregate extractions have been collected for United Kingdom, Denmark, France, Belgium, The Netherlands, Poland, Germany and Italy. A new dataset including the data available in these shapefiles is being prepared: Emodnet_HA_Aggregates_areas.

2.1.4 Dredging

Data on dredging activity in the Spanish ports for 2016 and 2017 have been requested.

2.1.5 Ocean energy facility

A new field in the data model (“EIA/Environmental Statement”) has been included to add the link to the documents in relation to the studies conducted for the Environmental Impact Assessment (during the consenting process) for different test sites in the United Kingdom, Ireland, Spain, Portugal, France, Sweden, The Netherlands and Denmark and for different projects in the United Kingdom. Moreover, the datasets Emodnet_HA_Ocean Energy_TestSites and Emodnet_HA_Ocean Energy_Projects for United Kingdom are being updated, mainly focusing on project and test site current status update and possible changes in promoters.

2.1.6 Wind farms

The dataset was updated in January 2018, and is already available for viewing and download (geodatabase and shapefile) on the portal. Compared with the previous version this new version now includes not only points showing the approximate location of wind farms, but also polygons that accurately represent wind farm fields, when available.

2.1.7 Major ports

Waste disposal collected in ports:

Contact with ECORYS has been established in order to obtain the list of contacts suggested by DG-MOVE.

The contact list has been reviewed and updated based on the list of 50 ports from the Supporting study for an Impact Assessment for the Revision of Directive 2000/59/EC on Port Reception Facilities.

Datasets and fragmented data have been collected from ports (Tallin, Igoumenitsa, Ferrol, Vilanova i la Geltrú, Villagarcía de Arousa, Le Havre, Nantes Saint-Nazaire, Liepaja, Riga, Ventspils, Lisbon and Ponta Delgada).

2.1.8 Fish catches

2016 data on fish catches by FAO statistical areas are now available on Eurostat. The dataset has been downloaded and processed so as to group species by EUMOFA groupings ('Main commercial species' and 'Commodity Group'). It is now being georeferenced and will soon be available on the portal.

2.1.9 Spatial planning zones

New round of contacts with 23 Marine Spatial Planning National Authorities. Datasets have been collected for Belgium, Germany (including Federal MSP and Mecklenburg Vorpommern Länder) and the United Kingdom. Furthermore, the project was presented at the Member States Expert Group (MSEG) meeting on Maritime Spatial Planning in Slovenia in March 2018. It was agreed that a preliminary version of the dataset will be submitted to the MSEG for review as soon as it is available.

2.2 WP 3 - Data harmonisation

2.2.1 INSPIRE

In order to specify the compliance degree and the actions/transformations needed to align the data models to INSPIRE requirements, an analysis of the current EMODNET's data models was carried out. In March, this report was published on DG MARE's Maritime Forum (<https://webgate.ec.europa.eu/maritimeforum/en/node/4147>).

2.2.2 Spatial planning zones

Definition of a Harmonization strategy for the themes:

- review of the datasets to identify themes within the Marine Spatial Planning Plans
- analysis of the themes included in the Directive 2014/89/EU. Art. 8.2
- analysis of proposals from groups of experts: Baltic Sea Region Maritime Spatial Planning

2.3 WP 6 - Maintenance of the portal

Progress:

- Implementation of pipeline layer and associated web services
- Data revisions
- Draft version of updated site using elements from the visual guidelines created for review prior to EMODnet Human Activities partners meeting April
- Revision of Title and Abstract information in web services (GetCapabilities)

Next Steps:

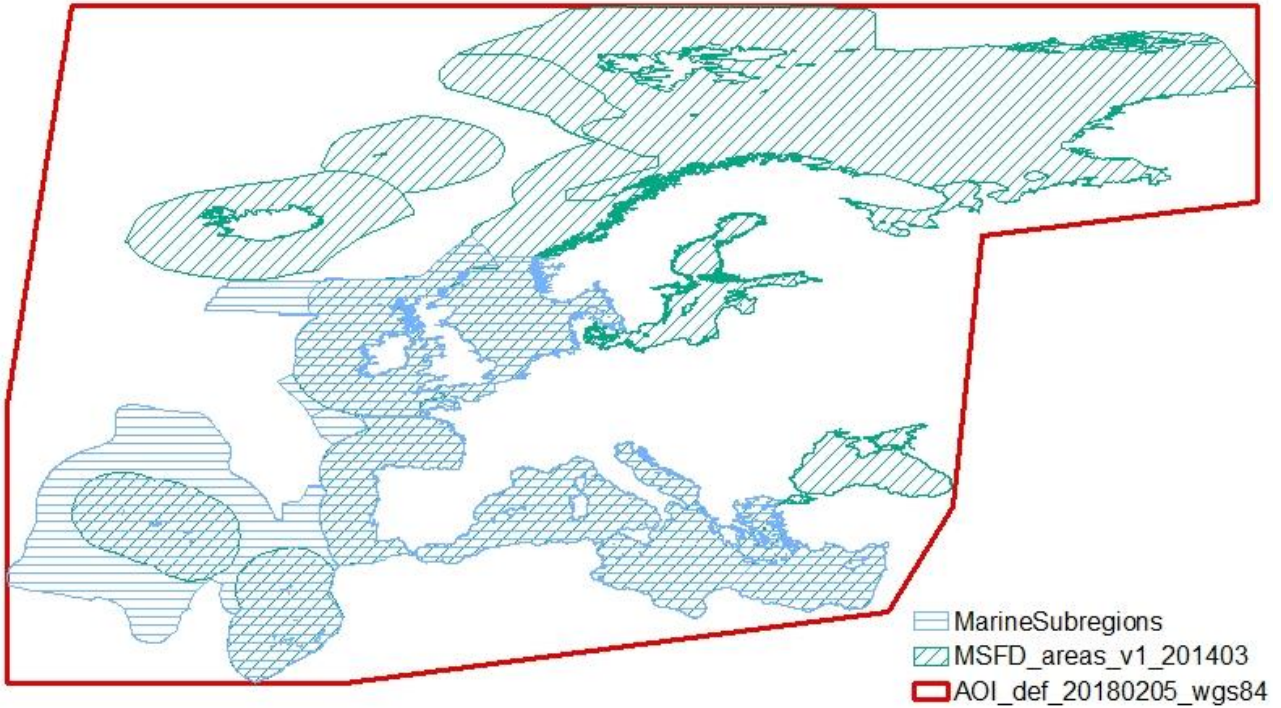
- Go live of site using elements from the visual guidelines in May

2.4 WP 7 - Development of data products

2.4.1 Vessel density map

We have been working on the definition of the grid dataset to be used for analysing density and processing map products. The grid dataset spatial extent is based on the Vessel Density Map Area of Interest (AOI) previously defined.

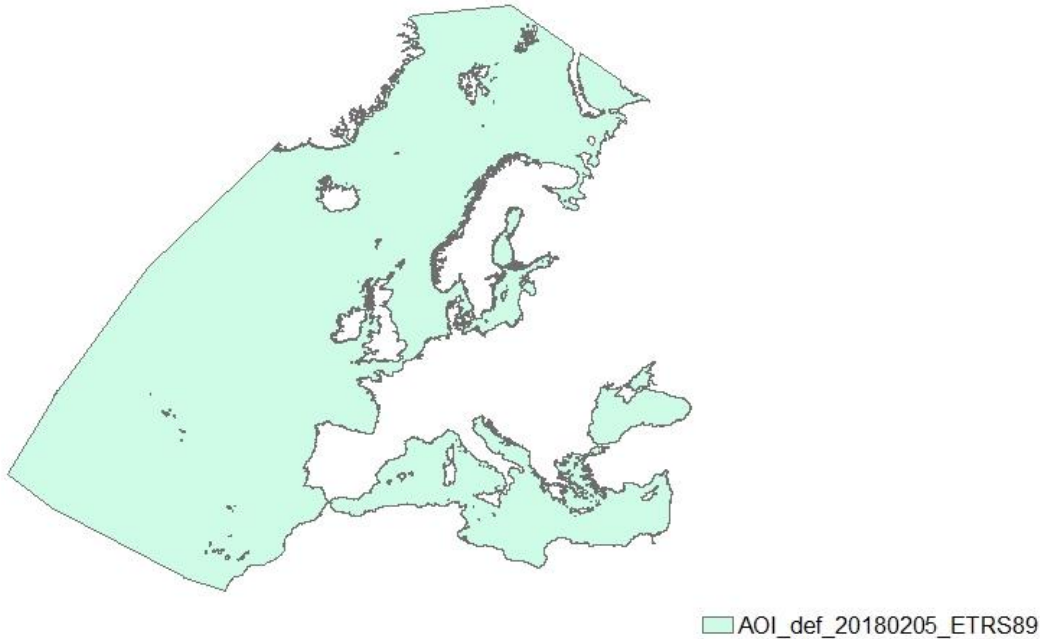
In 2017, we defined the Vessel Density Map AOI (the red polygon in the image below) according to the spatial extent of the MSFD marine subregions shapefile (the MSFD marine regions shapefile is not usable) and according to the spatial extent of the MSFD_areas_v1_201403 layer.



We obtained the current AOI (without land) by intersecting the AOI polygon layer with the polygons of the [European coastline](#) and the polygons of the most detailed [World countries shapefile](#) at 1:1 Million scale available on GISCO. Both datasets are provided by the EEA. It was necessary to complete the EEA coastline polygon by adding the missing land of Greenland and remote Russian regions from the GISCO dataset.



After re-projecting layers into ETRS89-LAEA, Europe projected coordinate system, we erased land from the whole AOI. The final result is shown in the picture below:

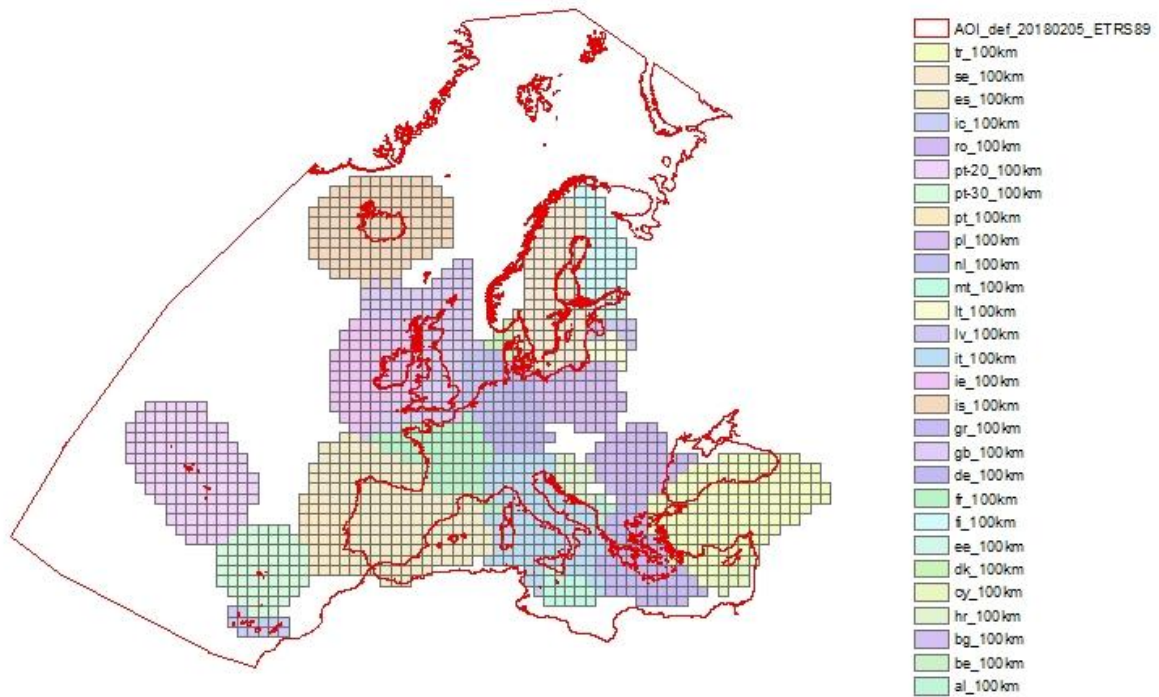


The final AOI covers all EU waters and doesn't include land areas. This step is necessary to define the grid area based on the [EEA grid](#), and to speed up the vessel density data processing.

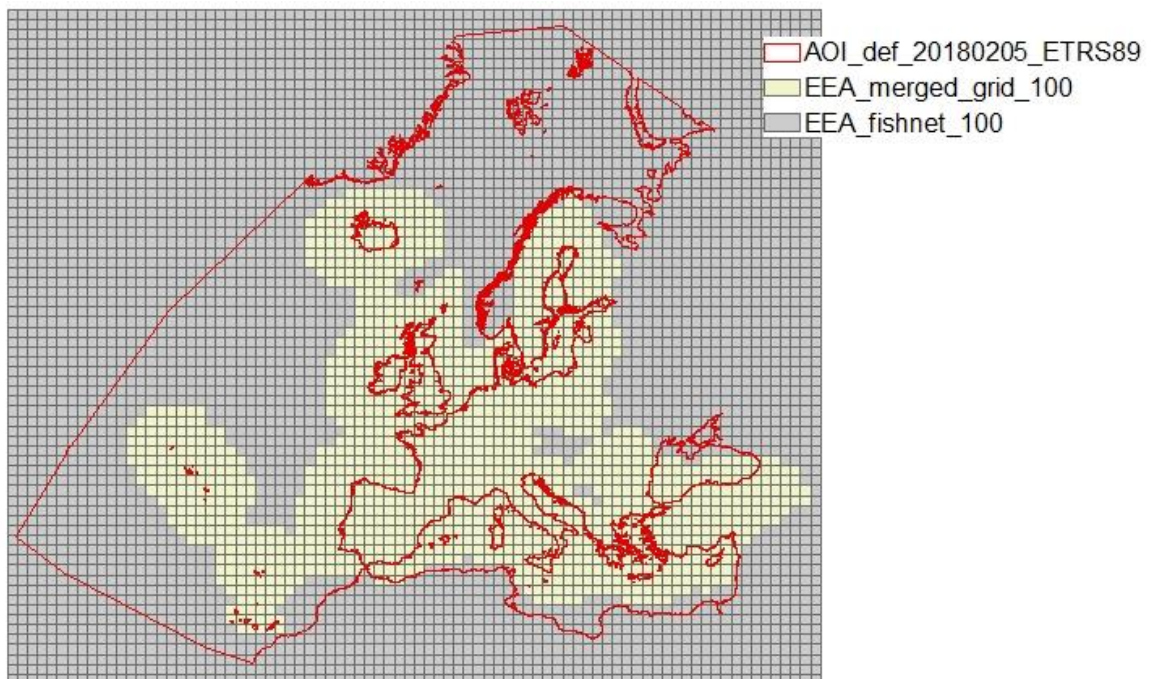
The use of the EEA grid is suitable for 2 reasons:

- the grid is based on the recommendations from the 1st European Workshop on Reference Grids in 2003 and, later on, from INSPIRE geographical grid systems;
- being based on an equal area projection, the EEA reference grid is suitable for generalising data, statistical mapping and analytical work whenever a true area representation is required. Recommended grid resolutions are 100 m, 1 km, 10 km and 100 km.

For each EEA member country, and for Europe as a whole (except Norway), three polygon shapefiles are made available, according to grid cells resolutions of 1, 10 and 100 km. The coordinate reference system (CRS) is ETRS89-LAEA Europe, also known in the EPSG Geodetic Parameter Dataset under the identifier: EPSG:3035. The Geodetic Datum is the European Terrestrial Reference System 1989 (EPSG:6258).

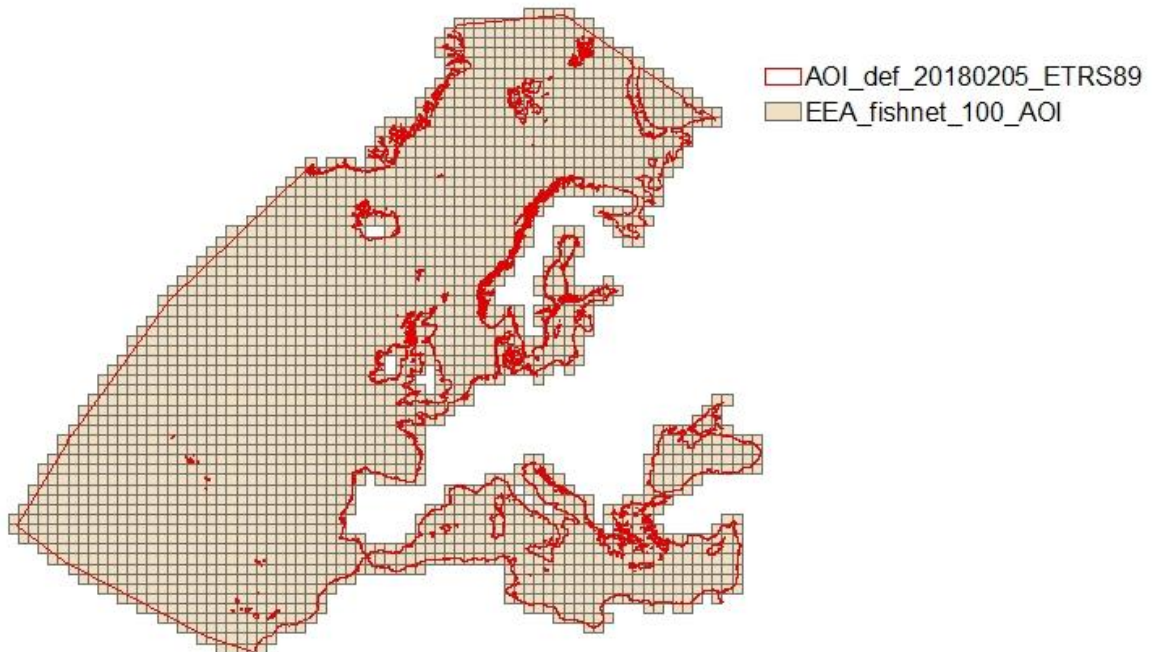


Country grids could sometimes overlap each other and, as we can see in the map above, the available data do not fully cover the AOI (for visualisation purposes only the 100 km grids are shown). So, it was necessary to merge all the national grids and extend the result to the whole AOI envelope. The obtained grid fully corresponds to, and exactly overlaps, the cells of the merged EEA national grids.

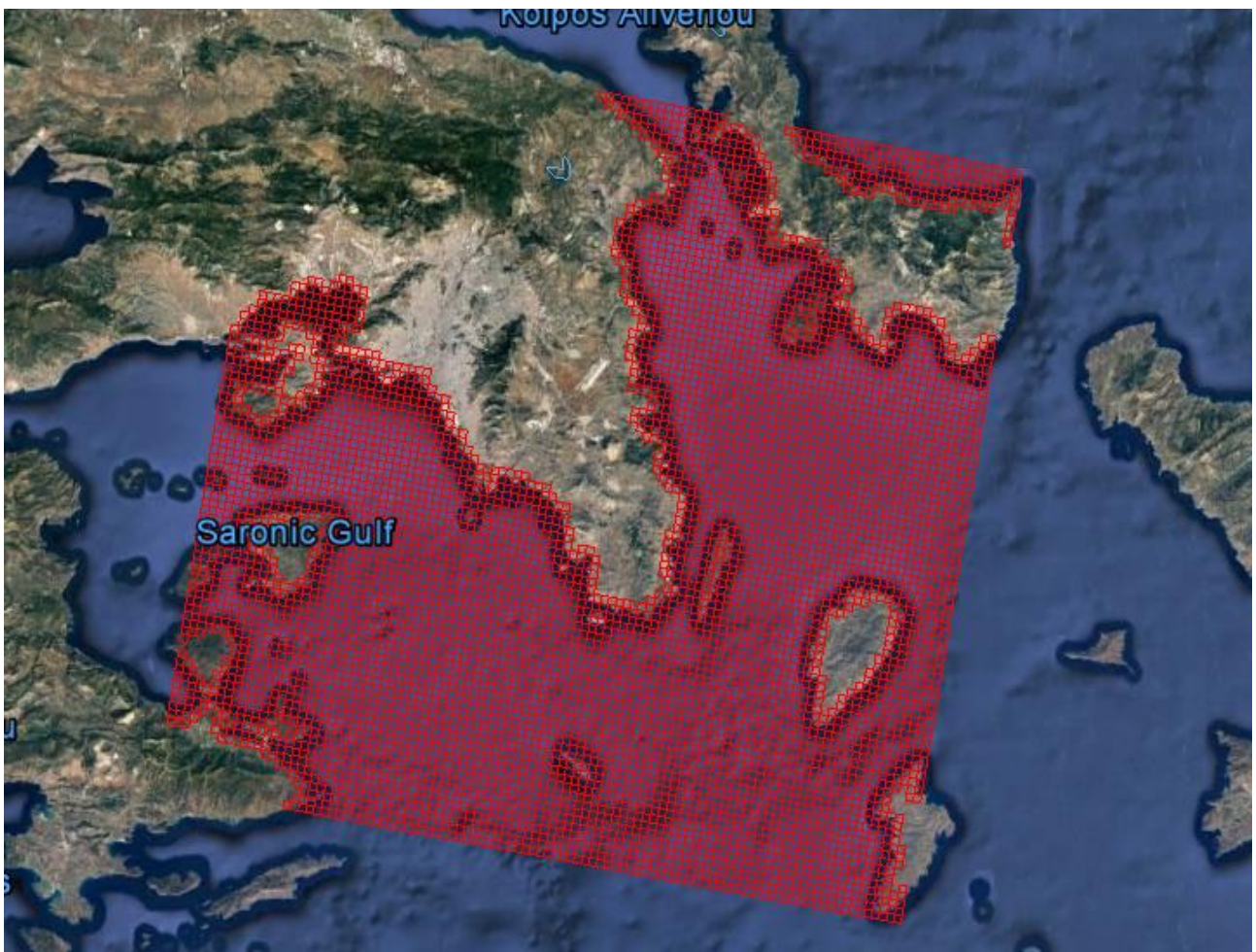
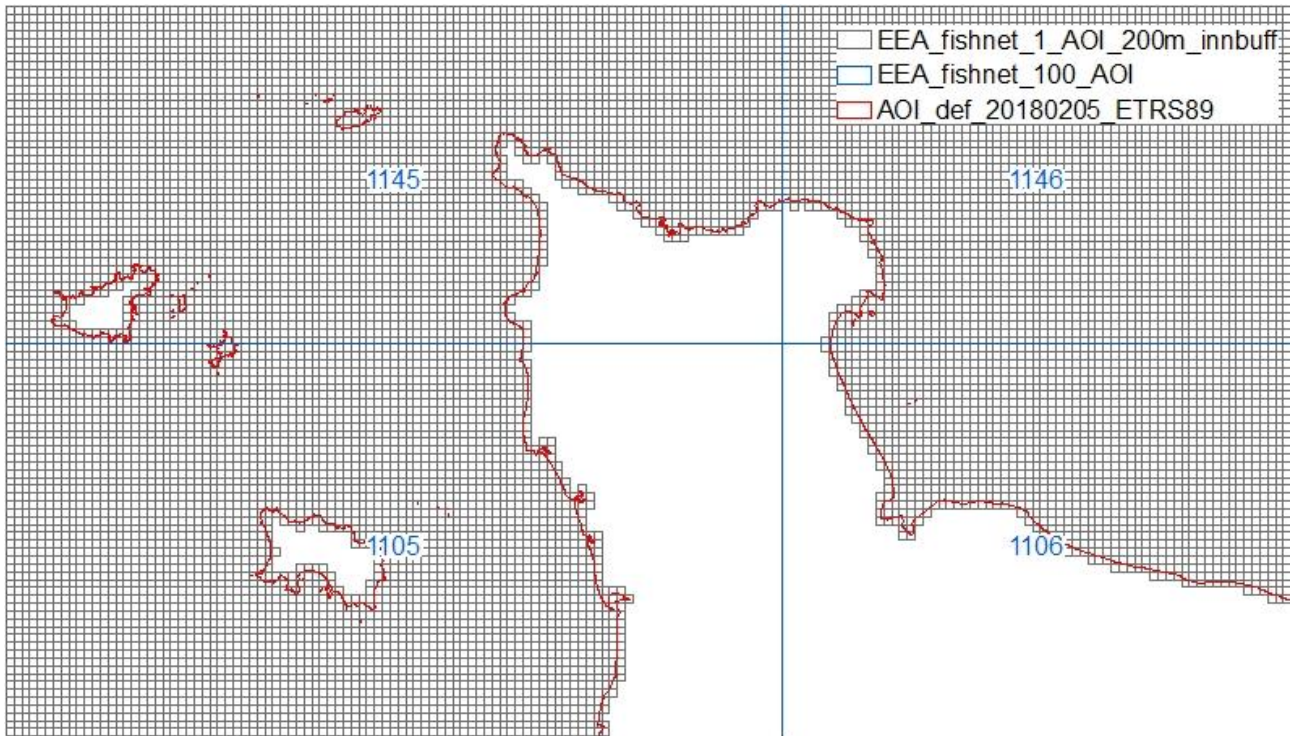


The same process was repeated for 4 more resolutions, the required 1km, 10 km, 200 km and 500 km. The last two grid layers could be useful in the future to iterate the density calculation zone by zone and/or split the final products (GeoTIFF and Esri grid raster datasets).

Finally, only the cells that have their centroid in the AOI or are within an inner buffer of 200 metres from the AOI borders were selected, defining in this way a fully INSPIRE-compliant grid for the future calculation of the vessel density map. The 200-metre inner buffer was set to avoid loss of data along the coastline because of the resolution of the used coastline layers, to limit the calculation only to available cells and to filter out wrong message records that may fall inland farther than 200 metres. The same process has been replicated with an inner buffer of 1 km from the coastline. Once the data are available, we will choose which grid dataset is most appropriate for elaborating the vessel density map.



The 1km grid perfectly overlaps the corresponding cells available in the EEA national grids. E.g. see the focus of the 1x1 km grid layer on the Channel Islands and Normandy, and on Athens (plotted on Google Earth). Additional fields were added to the 1 km grid attributes table reporting the ID of the 100 km and 200 km cells where the 1km cells have their centroid in.



According to the needs and methodology chosen to develop the vessel density map, a further elaboration of a 500 m grid is planned.

Another important issue to address and discuss in the future with the EEA and the INSPIRE teams should be the adoption of the EEA's cell coding system also for the Vessel Density grid, particularly for new cells not included in the national grids.

2.5 WP 8 - Involvement of Regional Sea Conventions (RSCs)

2.5.1 OSPAR Convention

In order to establish a structured form of cooperation with Regional Sea Conventions, a face-to-face meeting with OSPAR was organised. The Human Activities team visited OSPAR in February 2018 to discuss the progress of the project, what actions should be taken to ensure that Human Activities is consistent with their work and what could be improved to make Human Activities team's work more useful to them. The minutes of the meeting are attached to the Interim Report delivered in March.

2.6 WP 9 – Analysis of standards and protocols used by non-EU organisations

To facilitate interoperability with Human Activities data distributed by non-EU organisations, an analysis of standards and protocols of the mapped organisations is being carried out. Contact with UNESCO's inventory "MSP Around the World" has been established in order to obtain a list of potentially relevant Marine Spatial Planning (MSP) initiatives to be analysed. Currently, through desk-based analysis, we have gathered information on standards and protocols used by the Marine Cadastre in the US. An analysis of organisations from other continents are expected to be completed in April 2018 and reported in a structured pro forma which will inform the recommendations formulated in the Fine-Tuning work package. Analysed initiatives will be presented in a specific section on the Human Activities portal.

2.7 Dissemination and communication

Six blogs have been published since the last progress report:

- Marine aquaculture zoning and site selection, contribution of GIS-based tools (January)
- And then there were pipelines (January)
- Links between dredge spoil dumping and the marine environment (February)
- The importance of unified co-management of cross-boundary fisheries (March)
- Wild is the Wind: Who is stepping up for offshore wind farms? (March)
- Fishing for data – EMODnet and the oldest maritime activity (April)

Other dissemination and communication activities:

In February, EMODnet Human Activities was presented during the Eurofish's annual Governing Council

3 Challenges encountered during the reporting period

Main challenge	Measures taken
<p>Spatial Planning zones: most of the countries have informed that they will not have a full plan approved until the very end of 2021.</p>	<p>The Consortium is exploring whether it would be useful to include pilot/proposal as well as final management plans.</p>

4 User Feedback

Date	Name	Organization	Type of user feedback (e.g. technical, case study etc.)	Response time
24/01	Pascal Derycke	EMODnet Secretariat	<p>Pascal reported a series of issues that he encountered using EMODnet HA portal:</p> <ul style="list-style-type: none"> it seems that wfs and wms services are down (<i>issue was solved immediately</i>) when you open the mapviewer from the EMODnet central portal and you open it for the first time you have always a warning: "Warning: Cannot modify header information - headers already sent by (output started at E:\WEBROOT_subroot1\emodnet\view-data.php:101) in E:\WEBROOT_subroot1\emodnet\blog\wp-content\plugins\cleantalk-spam-protect\cleantalk.php on line 183 (<i>issue was solved immediately</i>)" I would like to use your OGC web services in my service. Would it be possible to use www.emodnet-humanactivities.eu/geoserver/emodnet/wfs instead of http://77.246.172.208/... We are not supposed to use IP addresses in our system. (<i>in the near future, we intend to migrate the web services to a URL</i>) I have noticed that the wms service is blocked when I do a getmap request (connexion refused in QGIS). Why ? Getcapa works fine 	Same day
25/01	Youshuo Yan	Unknown	Technical: he couldn't open the downloaded dataset without a GIS Software. An excel file with the required dataset was sent to him via email.	Same day
14/02	Allan Audsley	University of Stirling	Technical: he couldn't open the downloaded 7-Zip file. An unzipped file with the required dataset was sent to him via live chat	Same day
27/03	Kevin	Hartley Anderson - environmental consultancy	Kevin reported that some UK platforms that should be west of Shetland and in Norwegian waters (<i>OSPAR, the primary source, was informed of this issue that will be dealt with in their next update</i>)	Same day

5 Meetings held/attended since last report

List here the internal and external meetings held/participated by the contractor since the last quarterly report. Please add short description on the meeting as well as the nature and volume of the audience.

[Please, provide information in table]

Date	Location	Title	Internal/External + Short Description
16 February 2018	London	Involvement of Regional Sea Conventions	External: a meeting was organized with OSPAR to discuss how EMODnet could support their work and <i>vice versa</i> .
13-14 March 2018	Portorož, Slovenia	MSP MSEG meeting	External: EMODnet Human Activities was presented to the Member State Expert Group on Maritime Spatial Planning. The presentation focused on how the two initiatives could support each other and on the forthcoming dataset on MSP that is being prepared by EMODnet
20-21 March 2018	Alcudia, Mallorca	Technical Working Group	Internal: the TWG discussed the lessons learned from OpenSeaLab and other issues related to technical aspects of the portals.
21-23 March 2018	Alcudia, Mallorca	Steering Committee Meeting	Internal: The EMODnet Steering Committee meets twice a year to revise progress and set the priorities for future developments.
4 April 2018	Webex	Vessel density maps	External: the EU Commission, the JRC and EMODnet Human Activities talked to EMSA about the possibility that EMSA make vessel density maps for EMODnet.
13 April 2018	Webex	Discussion on marine data and INSPIRE	External: experiences from various EMODnet portals with INSPIRE were shared with DG Environment and INSPIRE experts to understand how EMODnet's compliance with INSPIRE could be enhanced.

6 Outreach and communication activities

Date	Media	Title	Short description and/or link to the activity
18 January 2018	Blog	“Marine aquaculture zoning and site selection, contribution of GIS-based tools”	http://www.emodnet-humanactivities.eu/blog/?p=513
25 January 2018	Blog	“And then there were pipelines”	http://www.emodnet-humanactivities.eu/blog/?p=533
01 February 2018	Eurofish’s Annual Governing Council	EMODnet Human Activities	Presentation about EMODnet main activities was presented to the representatives of Eurofish’s Contracting Parties and observers from other relevant organisations (the Baltic Sea Advisory Council, FAO, etc.) and countries.
15 February 2018	Blog	“Links between dredge spoil dumping and the marine environment”	http://www.emodnet-humanactivities.eu/blog/?p=558
02 March 2018	Blog	“The importance of unified co-management of cross-boundary fisheries”	http://www.emodnet-humanactivities.eu/blog/?p=576
19 March 2018	Blog	“Wild is the Wind: Who is stepping up for offshore wind farms?”	http://www.emodnet-humanactivities.eu/blog/?p=584
09 April 2018	Blog	“Fishing for data – EMODnet and the oldest maritime activity”	http://www.emodnet-humanactivities.eu/blog/?p=598

7 Updates on Progress Indicators

Indicator 1 - Volume of data made available through the portal

Activity		Type/format				
		Points	Lines	Polygons	Related tables/records	Raster tiles/cells
Cultural heritage (Lighthouses)						
Aquaculture	Mariculture - Shellfish					
	Mariculture - Finfish					
	Freshwater					
Aggregate extraction						
Dredging						
Ocean energy facility	Projects					
	Test sites					
Other forms of area management/designation	International conventions					
	Maritime boundaries					
	Advisory councils					
Waste disposal (solids, including dredge material, dumped munitions, marine constructions)	Dumped munitions					
	Dredge spoil dumping					
Wind farms		359		208		
Fisheries	Fishery zones and ICES)	FAO Fishery Statistical Areas				
		ICES Statistical Areas				
	Fishery catches by FAO statistical area					
	Monthly first sales, EUMOFA					
Hydrocarbon extraction	Boreholes					
	Active licenses					
	Offshore installations					
Cables	Landing stations (schematic cables)					
	Schematic cables					
	Actual route locations (cables)					
Pipelines						

Environment	Protected areas	Nationally designated areas (CDDA)					
		Natura 2000					
	State of bathing waters						
Vessel density							
Major ports traffic	Goods						
	Passengers						
	Vessels						

Indicator 4 - Volume of each type of data and of each data product downloaded from the portal

Included are instances of downloads and initial requests for web service links. Statistics exclude Human Activities and Central Portal partners.

1st January 2018 to 31st March 2018

Wind Farms	137
Telecommunication Cables (schematic)	83
Telecommunication Cables (actual)	69
Offshore Installations	66
Shellfish Production	52
Pipelines	51
Main Ports	45
Natura2000	31
Ocean Energy Facilities	31
Hydrocarbon Extraction Active Licenses	30
Finfish Production	29
Dredging	28
Dredge Spoil Dumping	23
Hydrocarbon Extraction Boreholes	23
Aggregate Extraction	22
Dumped Munitions	21
Fish Catches	19
CDDA	18
Maritime Boundaries	16
Lighthouses	14
Fish Sales	13
Advisory Councils	10
State of Bathing Waters	9
FAO Fishery Statistical Areas	5

Freshwater Production	5
ICES Statistical Areas	4
OSPAR Maritime Area	1
Telecommunication Landing Stations	1
Barcelona Convention	0
Bucharest Convention	0
HELCOM Maritime Area	0
Ship Wrecks	n/a
Submerged Prehistoric Archaeology and Landscapes	n/a

Indicator 5 - Organisations that have downloaded each data type

Users are asked for their organisation name when downloading data or requesting WFS links. It is a non-mandatory field. Only those organisations that can be easily validated online as genuine are listed.

1st January 2018 to 31st March 2018

- 4C Offshore (Energy), UK
- Aberystwyth University (Education), UK
- ABPmer (Environment), UK
- Acadia University (Education), CA
- Aechelon Technology Espana (Research),ES
- Agricultural Development Consultants LLC (Fisheries and agriculture), US
- APEM Ltd (Environment), UK
- Arlington Public Schools (Education), US
- Atlas Engineering (Energy), FR
- Beagle Geoscience (Energy), UK
- Bilbomatica (Other), ES
- BioConsult SH GmbH (Environment), DE
- Bloomberg New Energy Finance (Energy), UK
- British Trust for Ornithology (Research), UK
- Brockmann Consult (Research),DE
- Brown and May Marine (Fisheries and agriculture), UK
- C2Wind, (Energy), DK
- Cathie Associates Ltd (Energy), UK
- CCMAR - Center of Marine Sciences (Research), PT
- CEFAS - Centre for Environment (Environment), UK
- Cor Leonis Consultancy BV (Research), NL
- Cranfield University (Research), UK
- Damen Shipyards (Transport), NL
- Darley Marine (Fisheries and agriculture), UK
- Deep BV (Energy), NL
- Deltares (Research), NL
- Democritus University of Thrace (Research), GR
- Descartes Labs (Other), US
- DGRM (Environment), PT
- DHI (Environment), UK

- Dienst der Hydrografie (Other), NL
- Dow Europe GmbH (Other), CH
- DP Energy (Energy), IE
- DROTA (Environment), PT
- ECN - Energy Research Centre of the Netherlands (Energy), NL
- EDF Energies Nouvelles (Energy), FR
- EGS International (Other), UK
- Eoliennes en mer (Energy), FR
- ESA - European Space Agency (Transport), FR
- Esri UK (Research), UK
- Joint Research Centre (Fisheries and agriculture), IT
- Flanders Marine Institute (Fisheries and agriculture), BE
- Floating Power Plant (Energy), UK
- Forschungszentrum Jülich (Research), DE
- Fugro Survey (Energy), NL
- GBI - Gulf Bridge International (Other), AE
- Genesis Oil and Gas Ltd (Energy), UK
- GoBe Consultants Ltd (Energy), UK
- G Tec SA (Energy), FR
- Harokopio University (Energy), GR
- Hartley Anderson Ltd (Research), UK
- HCMR - Hellenic Centre for Marine Research (Research), GR
- Hellenic Naval Academy Greece (Education), GR
- Heriot Watt University ICIT (Education), UK
- IFREMER (Fisheries and agriculture), FR
- Institute for Agricultural and Fisheries Research (Fisheries and agriculture), BE
- Institute for Water of the Republic of Slovenia (Environment), SI
- Institute of Botany, Kiev (Environment), UA
- Instituto Portugues do Mar e da Atmosfera (Research), PT
- ION Geophysical (Energy), UK
- Istanbul Technical University (Education), TR
- Università Iuav di Venezia (Physical planning), IT
- IUEM - University Institute European De La Mer (Research), FR
- Jan De Nul Group (Other), BE
- Jarðfeingi - Faroese Geological Survey (Other), DK
- Leidos (Environment), US
- Lloyds Register (Energy), UK
- Marine Harvest Scotland Ltd (Fisheries and agriculture), UK
- Marine Scotland (Fisheries and agriculture), UK
- Maritime and Coastguard Agency (Physical planning), UK
- Ministry of Agriculture and Fisheries, Food and Environment (Environment), ES
- MSG Sustainable Strategies (Other), NL
- National Research Council (Environment), IT
- Newcastle University (Environment), UK
- NIRAS A/S (Environment), UK
- NJIT - New Jersey Institute of Technology (Environment), US
- NL Hydrographic Office (Transport), NL
- NLWKN (Environment), DE

- Nventures (Research), UK
- Paetoro Consulting UK Ltd (Energy), UK
- Parc national des Calanques (Environment), FR
- Phoenix RDS Ltd (Energy), UK
- Plymouth University (Education), UK
- Portland State University (Education), US
- Portuguese Institute of the Sea and the Atmosphere - IPMA (Research), PT
- RPS (Environment), UK
- SHOM (Other), FR
- SINAY (Environment), FR
- Southern Water (Environment), UK
- SSE (Energy), IE
- Swire Blue Ocean (Energy), DK
- The Renewables Consulting Group (Energy), UK
- TU Dresden (Education), DE
- Unep-WCMC (Environment), UK
- University of Seville (Research), ES
- University of Algarve (Education), PT
- Università Politecnica delle Marche (Environment), IT
- Université de Bretagne Occidentale (Education), FR
- Universitat Rostock (Research), DE
- University Center of the Westfjords (Education), IS
- University of Colorado Boulder (Education), US
- University of Edinburgh (Education), UK
- University of Houston (Energy), US
- University of Nairobi (Education), KE
- University of New South Wales (Research), AU
- University of Oldenburg, COAST (Education), DE
- University of Queensland (Research), AU
- University of Stirling (Environment), UK
- University of Thessaly (Physical planning), GR
- University of Southern California (Education), US
- Utrecht University (Energy), DK
- Van Hall Larenstein (Van Hall Larenstein), DK
- Vermilion Energy (Energy), DK
- Vison Energy Group (Physical planning), VN
- Vodafone (Physical planning), UK
- Wind World India Limited (Energy), IN
- Wageningen Marine Research (Environment), NL
- WSP (Physical planning), SE
- Xtera Communications Ltd (Other), UK

Indicator 6 - User statistics to determine the main pages utilised and identify user navigation routes

1st January 2018 to 31st March 2018

Statistics include all visitors including partners.

View Data

Month	Unique Page Views	Avg. Time on Page (mm:ss)	Page Views	New Visitors	% New Visitors
Jan-18	392	03:06	601	158	40.31%
Feb-18	469	02:27	770	227	48.40%
Mar-18	597	03:11	905	320	53.60%

Home

Month	Unique Page Views	Avg. Time on Page (mm:ss)	Page Views	New Visitors	% New Visitors
Jan-18	209	01:13	267	75	35.89%
Feb-18	218	01:12	272	88	40.37%
Mar-18	256	00:40	330	118	46.09%

Search Data

Month	Unique Page Views	Avg. Time on Page (mm:ss)	Page Views	New Visitors	% New Visitors
Jan-18	489	01:10	748	217	44.38%
Feb-18	688	01:04	973	345	50.15%
Mar-18	770	00:47	1,200	379	49.22%

Indicator 7 - List of what the downloaded data has been used for

1st January 2018 to 31st March 2018

Users must select their sector when downloading data or requesting web service links.

1	Research	33.76%
2	Environment	21.81%
3	Other	12.88%
4	Education	8.58%
5	Fisheries and agriculture	7.66%
6	Energy	7.31%
7	Physical planning	2.32%
8	Transport	2.09%
9	Demography	1.51%
10	Mining	0.93%
11	Tourism	0.70%
12	Health	0.35%
13	Forestry	0.12%

Indicator 8 - List of web-services made available and organisations connected through these

Both WFS (XML and JSON format) and WMS are now both available for the following datasets:

Aggregate Extraction

- Aggregate Extraction

Aquaculture

- Finfish Production
- Shellfish Production
- Freshwater Production

Cultural Heritage

- Lighthouses

Dredging

- Dredging

Environment

- Protected Areas - Nationally Designated Areas
- Protected Areas - Natura 2000
- State of Bathing Waters

Fisheries

- ICES Statistical Areas
- FAO Fishery Statistical Areas
- First Sales of Fish
- Fish Catches by FAO Fishery Statistical Areas - Major Area*
- Fish Catches by FAO Fishery Statistical Areas - Sub-area Area*
- Fish Catches by FAO Fishery Statistical Areas - Division Area*
- Fish Catches by FAO Fishery Statistical Areas - Sub-division Area*
- Fish Catches by FAO Fishery Statistical Areas - Sub-unit Area*

**WFS Only. For WMS, FAO Fishery Statistical Areas can be used.*

Hydrocarbon Extraction

- Active Licenses
- Boreholes
- Offshore Installations

Main Ports (WMS)

- Goods Traffic (WFS)
- Passengers Traffic (WFS)
- Vessels Traffic (WFS)

Ocean Energy Facilities

- Project Locations
- Test Sites

Other Forms of Area Management/Designation

- Advisory Councils (WFS)
 - Advisory Councils - Baltic (WMS)
 - Advisory Councils - Long Distance Fleet (WMS)
 - Advisory Councils - Mediterranean (WMS)
 - Advisory Councils - North Sea (WMS)
 - Advisory Councils - North Western Waters (WMS)
 - Advisory Councils - Pelagic Stocks (WMS)
 - Advisory Councils - South Western Waters (WMS)
- Barcelona Convention
- Bucharest Convention
- HELCOM Maritime Area
- ICES Statistical Areas
- Maritime Boundaries
- OSPAR Maritime Area

Pipelines and Cables

- Telecommunication Cables (schematic routes)
- Kis Orca Subsea Cables
- Landing Stations
- SIGCables Submarine Cables Route
- BSH CONTIS Cables
- Pipelines

Waste Disposal

- Dredge Spoil Dumping (Points)
- Dredge Spoil Dumping (Polygons)
- Dumped Munitions (Points)
- Dumped Munitions (Polygons)

Wind Farms

- Wind Farms (Points)
- Wind Farms (Polygons)

Users are asked to volunteer their organisation name and sector and country when requesting initial web services information. Organisation name and country are not mandatory fields. Only those organisations that can be easily validated online as genuine are listed. It is not possible to track user's organisations who have acquired the web service links from other sources (e.g. from a shared link) or track an organisation's usage once web services are in use.

Organisations that have made initial requests for web service links include the following:

1st January 2018 to 31st March 2018

- Atlas Engineering (Energy), FR
- Bilbomatica (Other), ES
- Brockmann Consult (Research), DE
- Cathie Associates Ltd (Energy), UK
- Deep BV (Energy), NL

- Deltares (Research), NL
- Dow Europe GmbH (Other), CH
- Flanders Marine Institute (Fisheries and agriculture), BE
- Hellenic Naval Academy Greece (Education), GR
- Heriot Watt University ICIT (Education), UK
- Università Iuav di Venezia (Physical planning), IT
- Jan De Nul Group (Other), BE
- Jarðfeingi - Faroese Geological Survey (Other), DK
- Lloyds Register (Energy), UK
- Marine Harvest Scotland Ltd (Fisheries and agriculture), UK
- Marine Scotland (Fisheries and agriculture), UK
- Ministry of Agriculture and Fisheries, Food and Environment (Environment), ES
- MSG Sustainable Strategies (Other), NL
- Parc national des Calanques (Environment), FR
- Phoenix RDS Ltd (Energy), UK
- SHOM (Other), FR
- SINAY (Environment), FR
- Swire Blue Ocean (Energy), DK
- The Renewables Consulting Group (Energy), UK
- University of Seville (Research), ES
- University of Algarve (Education), PT
- Université de Bretagne Occidentale (Education), FR
- University of Colorado Boulder (Education), US
- Utrecht University (Energy), DK
- Vermilion Energy (Energy), DK
- Vison Energy Group (Physical planning), VN