



# EMODnet



European Marine  
Observation and  
Data Network

## EMODnet Thematic Lot n° 2 - Seabed Habitats

**EASME/EMFF/2018/1.3.1.8/Lot2/SI2.810241**

**Start date of the project: 25/09/2019 - (24 months)**

**EMODnet Phase III – Interim Report**

**Reporting Period: 25/09/2019 – 24/09/2020**



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## Disclaimer

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## Executive summary

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This two-year contract for the continuation of phase 3 started on September 25, 2019, with a total budget of €552,000. The contract brings together a consortium of ten organisations (8 partners, 2 subs-contractors) that assembles a complimentary set of specialists in benthic ecology, geology, spatial habitat modelling, data collation and management, web delivery, oceanography and marine policy.

During the first year, despite the COVID-19 crisis that made everything more difficult, we managed to maintain activities and services, and achieve our objectives.

- New datasets were made available on the portal
  - 36 individual habitat maps from surveys made available: 11 in France, 7 in Ireland, 9 in Italy, 5 in Denmark, 4 in Spain.
  - 10 survey sample points datasets made available: 4 in Estonia, 1 in Bulgaria, 6 in Denmark.
- Regarding M2M connections, effort was put for collating M2M OGC endpoints for disseminating additional map layers through the portal which users may find useful. These include, but not limited to, data from GEBCO/NOAA and HELCOM.
- Collaborating with EMODnet Biology we have liaised with the OBIS team to agree a standard structure for submitting class-based habitat data into OBIS, which has been taken forward to form the basis of a set of guidelines for habitat submission (in progress) to publish to the wider scientific community
- The technical report on EUSeaMap 2019 was published (<https://doi.org/10.13155/74782>)
- We consulted the four regional sea commissions/conventions of Europe and concluded that the priorities for new composite data products to be produced as part of the current contract will be:
  - A combined, harmonized data product showing the best evidence for extent of habitats classified to level 3 of EUNIS v2007-11 in the OSPAR area, due March 2021, so that OSPAR ICG-COBAM may carry out an up-to-date assessment of the OSPAR common indicator 'Extent of Physical Damage to Predominant and Special Habitats'.
  - A combined, harmonized data product showing the best evidence for extent and distribution of coralligenous and other calcareous bioconcretions in the Mediterranean, due May 2021, to support RAC/SPA in delivering the Regional Action Plan for the conservation of this key marine habitat.
  - In the Baltic, EUSeaMap will be published either in EUNIS 2019 alone or in EUNIS 2019 and HELCOM HUB, due September 2021
- New functionalities were added to the mapper including, but not limited to, measurement tools, zooming to XY coordinates and mapper layer searching, which currently need to be pushed to the production mapper environment

In the second year we will continue to make data available, EUSeaMap will be updated, and new products will be constructed.

# 1. Introduction

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The thematic lot “Seabed Habitats” of EMODnet was created in 2009, at a time when datasets on the spatial distribution of seabed habitats were patchy, scattered and used habitat classifications that were different from one country to another, hence could not be combined. However, the need for knowledge of seabed habitats spatial distribution within and across European Regions was starting to emerge with initiatives such as the MSFD. Therefore, within the framework of ur-EMODnet (2009-2012), EMODnet Seabed Habitats was commissioned to demonstrate the potential of predictive mapping to provide seabed habitats maps over extensive areas, which was performed by producing prototypes in four trial basins (Greater North Sea, Celtic Seas, Baltic, Western Mediterranean), this predictive model is commonly known as “EUSeaMap”. In EMODnet Phase 2, EUSeaMap coverage was extended to all European regions, leading to the first full-coverage pan-European habitat map<sup>1</sup>. In the first two years of phase 3 (May 2017-2019), the spatial resolution of EUSeaMap was improved<sup>2</sup>; simultaneously, EMODnet Seabed Habitats started to collate and make available online new types of data about ground truthing surveys, habitat survey maps and individual habitat modelled maps.

After a 4-month gap in activity during which the web portal and helpdesk service had continued, uninterrupted operation, a new two-year contract for the continuation of phase 3 started the 25th of September 2019, with a total budget of €552,000 (compared to €1.4M for the first two years of phase 3). The new contract brings together a consortium of ten organisations (8 partners, 2 subs-contractors) that assembles a complimentary set of specialists in benthic ecology, geology, spatial habitat modelling, data collation and management, web delivery, oceanography and marine policy, from a variety of organisations – government, agencies, research institutes, and private companies:

- the French National Institute for Ocean Science (**Ifremer**, France, lead partner),
- **JNCC** Support Co (UK, Technical Project Manager),
- the Centre of Marine Sciences (**CCMAR**, Portugal),
- the National Institute of Research and Development for Marine Geology and Geoecology (**GeoEcoMar**, Romania),
- the Geological Survey of Denmark and Greenland (**GEUS**, Denmark),
- the Institute of Oceanology, Bulgarian Academy of Science (**IO-BAS**, Bulgaria),
- the Italian National Institute for Environmental Protection and Research (**ISPRA**, Italy),
- the **Marine Institute** (Ireland),
- Norwegian Institute for Water Research (**NIVA**, Norway, subcontractor),
- the Finnish Environment Institute (**SYKE**, Finland, subcontractor).

Due to the reduced budget, the Project has a reduced scope. There is less focus on improving the flagship product EUSeaMap, and more focus on producing new composite products. The Project comprises six work packages, as summarised below.

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<sup>1</sup> Populus et al, 2017. <https://doi.org/10.13155/49975>

<sup>2</sup> Vasquez et al, 2020. <https://doi.org/10.13155/74782>

Work package	Tasks (as per tender specification EASME/2019/OP/0003) addressed	Lead
<b>WP1 – Improving the base layer of modelled habitats (EUSeaMap)</b>	2 – Construct products from one or more data sources that provide users with information about the distribution of parameters in time and space	Ifremer
<b>WP2 – Data collation</b>	1 – Develop a common method of access to data held in repositories	ISPRA
<b>WP3 – Building composite data products (points and polygons)</b>	2 - Construct products from one or more data sources that provide users with information about the distribution of parameters in time and space	JNCC
<b>WP4 – Portal</b>	1 – Develop a common method of access to data held in repositories  3 – Develop procedures for machine-to-machine connections to data and data products  4 – Maintain and further develop a thematic web portal allowing users to find, visualise and download data and promote the data and data products of the portal  6 – Install a process to monitor performance and deal with user feedback  7 – Operate a help desk offering support to users	JNCC
<b>WP5 – Communication and outreach</b>	4 – Maintain and further develop a thematic web portal allowing users to find, visualise and download data and promote the data and data products of the portal  5 – Ensure the involvement of regional sea conventions	JNCC
<b>WP6 – Coordination and formal reporting</b>	Management of all tasks	Ifremer

The current document reports on the activity and results of the first year.

## 2. Update on the Tasks

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### Task 1: develop a common method of access to data held in repositories

- New tool for validation of datasets made available by the partners: an online [Validation tool](#) has been developed by the JNCC for validation of individual habitat maps from surveys. This tool enables to check the conformity of a polygon habitat map with the standards required by EMODnet Seabed Habitat. ISPRA has developed VBA scripts for point dataset quality check. These tools enable partners to validate their own data before they can be uploaded to the portal, resulting in greater efficiency by reducing the burden on the work package leader.
- In order to facilitate data ingestion from third parties (i.e. data providers that are not partners), a new, more flexible, policy for survey habitat map confidence assessment has been implemented. All templates and tools have been updated to integrate the changes induced by this new policy. We now accept maps whose confidence assessment varies spatially, that do not follow the MESH confidence assessment method, and even those for which no confidence assessment has been made.
- 36 individual habitat maps from surveys made available: 11 in France, 7 in Ireland, 9 in Italy, 5 in Denmark, 4 in Spain.
- 10 survey sample points datasets made available: 4 in Estonia, 1 in Bulgaria, 6 in Denmark.

### Task 2: construct products

- We have established a need from OSPAR for an updated EUNIS level 3 map for the NE Atlantic, combining survey maps and EUSeaMap. This product is needed for the assessment of the OSPAR common indicator named “Extent of Physical Damage to Predominant and Special Habitats”. - due March 2021.
- Based on the RAC/SPA requirement and the conversations with the Archipelagos Institute<sup>3</sup>, we agreed that the EMODnet Seabed habitats would lead on the creation of a new product showing best evidence on “coralligenous and other calcareous bio-concretions” in the Mediterranean Sea.
- EUSeaMap; the technical report on EUSeaMap 2019 has been published. It is available at the following address: <https://doi.org/10.13155/74782>.

### Task 3: develop procedures for machine-to-machine connections to data and data products

- Additional third-party layers have been provided through the portal, using M2M OGC endpoints for extracting and disseminating data. Includes layers from GEBCO/NOAA, HELCOM, VLIZ, EEA and EMODnet Human Activities.
- Progress has been made on collating and disseminating third-party maps from survey using M2M connections where possible. Work is still underway to find the most suitable process, but maps should be on the portal for the next quarterly report.
- Notable increase in data scientists using M2M connections for accessing data directly from software/programming environments. This is a significant change from the previous phases’ of EMODnet Seabed Habitats, where users were more interested in the static downloading of datasets. Work is underway to revamp our GitHub pages to provide basic tutorials for accessing our data via programming environments (e.g. R) and GIS.

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<sup>3</sup> <https://archipelago.gr/en/>

- Specific work with OBIS/EMODnet Biology on harvesting and filtering habitat point information stored in OBIS is due to begin in the second year of the phase. Preparatory work has already been undertaken with trialing the submission of the UK's habitat point database to OBIS.

#### **Task 4: maintain and further develop a thematic web portal**

- The ownership of the emodnet-seabedhabitats.eu domain from JNCC (UK-based) to Ifremer (France-based) has been transferred
- We registered the portal on FAIRsharing.org in October: <https://fairsharing.org/biodbcore-001328/>
- Improvements have been made to user-friendliness of the portal and visual identity to comply with EMODnet visual identity guidelines
- We continue to develop and maintain the contents of the website:
  - We added 10 new Use cases;
  - We created [a page](#) summarising data and data products available from EMODnet Seabed Habitats;
  - We updated the “About” section to reflect plans for the current phase
  - We added new resources on habitat mapping (e.g. [Recommended Operating Guidelines](#) for habitat mapping) and added all EMODnet Seabed Habitats progress reports and indicators spreadsheets in the “Resources” pages, as requested by the EMODnet Secretariat
  - We updated the webpages on habitat data submission to reflect improvements guidance for the habitat point submission process
  - We published several new items to publicised EMODnet Seabed Habitats and wider EMODnet activities.
  - We have updated the web portal contents to comply with GDPR legislation, and in particular we updated the data protection notice and the cookies policy.
- We have renewed the support contract with the same contractor who redeveloped the interactive mapper. New functionality has been added over the past year including, but not limited to, measurement tools, zooming to XY coordinates and mapper layer searching, which currently need to be pushed to the production mapper environment. New functionality currently in development is the ability to search and download map data within a specified bounding box.
- We have renewed the website support contract with the same contractor who developed the content management system for the portal. They have amended the download forms so they are consistent with the quarterly reporting requirements.
- Following feedback with users, we have made some changes to our download forms, specifically to allow users to download multiple layers from different download forms by using the same URL: for example [this link](#) will select 4 layers from 3 different download forms.
- JNCC have worked with their inhouse developers to develop a new GeoServer environment. The aim is for the GeoServer instances to be provided through a series of “self-healing” Docker containers, whereby if one container goes down for any reason a replica copy will activate to continue the provision of web services, therefore minimizing any downtime.

### **Task 5: ensure the involvement of regional sea conventions**

- We have consulted the four regional sea commissions of Europe, either by email (Black Sea,) or through meetings (HELCOM, OSPAR, RAC/SPA). Detailed feedback on habitat product requirements from the Black Sea commission is pending. Based on the consultations, we have concluded that the priorities for new composite data products to be produced in the 2019-2021 phase of EMODnet Seabed Habitats will be:
  - a. A combined, harmonized data product showing the best evidence for extent of habitats classified to level 3 of EUNIS v2007-11 in the OSPAR area, due March 2021, so that OSPAR ICG-COBAM may carry out an up-to-date assessment of the OSPAR common indicator ‘Extent of Physical Damage to Predominant and Special Habitats’.
  - b. A combined, harmonized data product showing the best evidence for extent and distribution of coralligenous and other calcareous bioconcretions in the Mediterranean, due May 2021, to support RAC/SPA in delivering the Regional Action Plan for the conservation of this key marine habitat.
- A report on the stakeholder needs for combined harmonized seabed habitat data products in Europe has been created and provided to the EU (deliverable D3.07)

### **Task 6: install a process to monitor performance and deal with user feedback**

- No new work has taken place as at the beginning of the contract we already had a process to monitor performance and deal with user feedback.

### **Task 7: operate a help desk offering support to users**

- This task is operated routinely (see section 6 for a recap of all feedbacks). It’s noteworthy that in response to the request from the EU Secretariat General and DIGIT following the invalidation of the EU-US Privacy Shield framework (see specific issue in section 4), we decided to discontinue the use of tawk.to in August 2020. As a result, the EMODnet Seabed Habitats portal no longer provides live chat services.



### 3. Work Package updates

Status of the Milestones and Deliverables listed in the workplan			
D1.01: Modified substrate data product including data not possible to include in EMODnet Geology product, but which would improve the broad-scale seabed habitat map for Europe (EUSeaMap) [dependent on new product from Geology]	WP1	24/08/2021	Pending
D1.02: Modified substrate data product including biogenic substrate to allow new EUNIS classification	WP1	24/09/2021	Pending
D1.03: Confidence layer for modified substrate data product [dependent on 1.01, 1.02]	WP1	24/09/2021	Pending
D1.04: EUSeaMap in EUNIS and MSFD broad habitat classifications, updated with new substrate data, with metadata	WP1	24/09/2021	Pending
D1.05: Confidence maps for updated EUSeaMap in EUNIS and MSFD classifications, with metadata	WP1	24/09/2021	Pending
D1.06: Method for classifying EUSeaMap according to the new version of EUNIS [dependent on new EUNIS being publishing]	WP1	24/12/2020	Pending
D1.07: EUSeaMap classified according to the new version of EUNIS [dependent on new EUNIS being publishing], with metadata	WP1	24/09/2021	Pending
D1.08: Confidence maps for EUSeaMap in new EUNIS classification, with metadata [dependent on 1.07]	WP1	24/09/2021	Pending
D1.09: Review of stakeholder needs and feasibility of classifying EUSeaMap to regional classifications, such as HUB	WP1	24/12/2020	Resolved
D1.10: Method for classifying EUSeaMap according to regional classifications [dependent on D1.09]	WP1	24/02/2021	Pending
D1.11: EUSeaMap classified according to regional classifications, and metadata [dependent on D1.09]	WP1	24/09/2021	Pending
D1.12: Confidence maps for EUSeaMap classified according to regional classifications, with metadata [dependent on D1.09]	WP1	24/09/2021	Pending
D1.13a: Technical report describing the updates to EUSeaMap 2019	WP1	24/03/2020	Resolved
D1.13b: Technical report describing the updates to EUSeaMap 2021	WP1	24/09/2021	Pending

D1.14: Well-documented R code and ArcGIS models used to construct EUSeaMap	WP1	24/09/2021	Pending
D1.15: Report describing ways in which EUSeaMap may be improved if funds become available	WP1	24/11/2020	Pending
D2.01: An expanded library of maps of communities, biocoenoses, biotopes and habitats for all of Europe, ingested and converted to a standard format, with metadata for every map	WP2	24/08/2021	Ongoing
D2.02: An expanded collation of point records of communities, biocoenoses, biotopes and habitats for all of Europe, ingested and converted to a standard format, with metadata for every dataset	WP2	24/08/2021	Ongoing
D2.03: Templates for habitat map data exchange formats and for metadata	WP2	24/02/2020	Resolved
D2.04: Tool for consortium members to quality-check their habitat maps before submission to the WP lead	WP2	24/02/2020	Resolved
D2.05: Document detailing the quality-control procedure for habitat point data and maps	WP2	24/03/2020	Resolved
D2.08: Guidelines for submitting habitat point data to OBIS	WP2	24/04/2020	Pending
D2.09: List of point datasets, maps and models available via machine-to-machine connections	WP2	24/07/2021	Pending
D3.01: A combined, harmonized data product showing the best evidence for extent and distribution of the Essential Ocean Variable “Live hard coral cover” in Europe, with metadata	WP3	24/08/2021	Pending
D3.02: A combined, harmonized data product showing the best evidence for extent and distribution of the Essential Ocean Variable “Seagrass cover” in Europe, with metadata	WP3	24/08/2021	Pending
D3.03: A combined, harmonized data product showing the best evidence for extent and distribution of the Essential Ocean Variable “Macroalgal canopy coral cover” in Europe, with metadata	WP3	24/08/2021	Pending
D3.04: Report detailing the construction of the three Essential Ocean Variable data products	WP3	24/08/2021	Pending
D3.05: A combined, harmonized data product showing the best evidence for the extent of biogenic substrate in Europe, with metadata	WP3	24/08/2021	Pending
D3.06: Report detailing the construction of the biogenic habitat data product	WP3	24/08/2021	Pending

D3.07: A review of stakeholder needs for combined, harmonized data products for seabed habitats in Europe	WP3	24/03/2020	Resolved
D3.08: Combined, harmonized data products showing the best evidence for extent and distribution of habitats defined in other classifications and lists in Europe, with metadata, depending on stakeholder needs	WP3	24/08/2021	Pending
D3.09: Report detailing the construction of the data products defined by stakeholder needs	WP3	24/09/2021	Pending
D3.10: Pilot maps and points translated to the new version of EUNIS (created as part of a pilot project)	WP3	24/03/2021	Pending
D3.11: Report describing the process of translating marine habitat data to the new version of EUNIS	WP3	24/09/2021	Pending
D4.01: A digital map with panning and zooming facilities allowing users to view data, data products and metadata	WP4	24/10/2020	Resolved
D4.02: Facilities for downloading data, metadata and data products	WP4	24/10/2020	Resolved
D4.04: Seamless display of habitat points stored locally and those accessed via machine-to-machine connections (predominantly from OBIS/ EMODnet Biology)	WP4	24/08/2021	Pending
D4.05: Seamless display of habitat maps stored locally and those accessed via machine-to-machine connections	WP4	24/11/2020	Pending
D4.06: Seamless display of other map layers on portal accessed using machine-to-machine connections	WP4	24/09/2020	Resolved
D4.07: Feature enabling ability to track usage	WP4	24/10/2020	Resolved
D4.08: Feature enabling live operation of help desk 9-5, MonFri	WP4	24/10/2020	Resolved
D4.09: User questions and answers on the portal and through RSS so they can be listed on the central EMODnet portal	WP4	24/08/2020	Delayed
D4.10: New map layers to portal	WP4	Upload 24/02/2020 Upload 24/08/2020 Upload 24/02/2021 Upload 24/08/2021	Resolved Resolved Pending Pending
D4.11: Contribution to EMODnet Technical Working Group	WP4	09/2019 04/2020 11/2020 1 <sup>st</sup> meeting 2021	Resolved Resolved Pending Pending

		2 <sup>nd</sup> meeting 2021	Pending
D4.13: Planned technical improvements	WP4	24/09/2021	Ongoing
D4.14: Ad hoc technical improvements based on user feedback	WP4	24/09/2021	Ongoing
D4.15: Ad hoc changes to website and visual	WP4	24/09/2021	Ongoing
D5.01: Evidence of efforts to ensure maximum coherence with data delivery to and from regional sea conventions and ICES	WP5	24/09/2021	Ongoing
D5.02: Evidence of efforts to coordinate with CMEMS	WP5	24/09/2021	Ongoing
D5.03: Evidence of collaboration with EMODnet biology to coordinate	WP5	24/09/2021	Pending
D5.04: Widespread promotion of guidelines for submitting habitat point data to OBIS	WP5	24/09/2021	Pending
D5.06: New use cases on the website	WP5	24/09/2021	Ongoing (10 published)
D5.07: A prominent summary of the data and data products available on the website	WP5	24/09/2020	Resolved
D5.08: Sustained online presence: news stories, tweets, etc.	WP5	24/09/2021	Reported in progress reports
D5.09: Presentations and posters at conferences and cross-cutting meetings	WP5	24/09/2021	Reported in progress reports
D5.10: Promotion of products via ESRI story maps	WP5	24/09/2021	Ongoing (one published)
D5.11: Record of all promotion and outreach activities	WP5	24/09/2021	Reported in progress reports
D6.04: Participation in EMODnet Steering Committee meetings		09/2019	Resolved
		04/2020	Resolved
		11/2020	Pending
		1 <sup>st</sup> meeting 2021	Pending
		2 <sup>nd</sup> meeting 2021	Pending
D6.10: Quarterly progress reports to EASME, DG MARE and EMODnet Secretariat by 15 <sup>th</sup> of the month.		15/10/2019	Resolved
		15/01/2020	Resolved
		15/04/2020	Resolved
		15/07/2020	Resolved
		15/10/2020	Pending
		15/01/2021	Pending
		15/04/2021	Pending
		15/07/2021	Pending
D6.11: Interim report		24/09/2020	Resolved
D6.13: Final report		24/09/2021	Pending

## ***WP1 – Improving the base layer of modelled habitats (EUSeaMap)***

In the period 2017-2019, the EMODnet Seabed Habitat project produced “a base layer of modelled habitat at a scale of 1:100,000 or better” that included the entire geographic scope required by the present tender specifications – this is commonly known as “EUSeaMap 2019”. The technical report on EUSeaMap 2019 is a deliverable (D1.13a) of the current contract. It is available at the following address: <https://doi.org/10.13155/74782>.

For the current contract we identified two opportunities that would enable the provision of an improved version of EUSeaMap over the course of this new contract:

1. EMODnet Geology has again been asked to produce a seabed substrate data product – this is the most important component of a habitat type for our map.
2. The new version of the marine section of the EUNIS (European Nature Information System) habitat classification system, predicted to be published in the period 2019-2021.

This new version of EUSeaMap integrating EMODnet Geology’s seabed substrate product and the new EUNIS classification will be developed at the end of the second year. Key to its development is the availability of the new version of EMODnet Geology’s seabed substrate data product. Initial discussions have been done with EMODnet Geology on the timeline and format that would be suitable for integration of the Seabed Substrate product in EUSeaMap. Another condition was that the new version of EUNIS be published. It was released by the European Environmental Agency in early 2020, under the name ‘EUNIS marine habitat classification 2019’ and in the form of an Excel spreadsheet<sup>4</sup>.

A task of the WP was a “review of stakeholder needs and feasibility of classifying EUSeaMap to regional classifications, such as HUB” (D1.09). To avoid over-solicitation of stakeholders, we have merged this task with WP3’s task “D3.07: A review of stakeholder needs for combined, harmonized data products for seabed habitats in Europe”. During the meeting with HELCOM we discussed the opportunity to develop the next version of EUSeaMap in the HELCOM HUB classification, and agreed that should the EUNIS 2019 classification integrate HELCOM HUB (as originally planned by the EEA), EUSeaMap will not be published in HELCOM HUB but in EUNIS 2019 only. The extent to which EUNIS 2019 and the HELCOM HUB match will be evaluated in early 2021 by HELCOM.

## ***WP2 – Data collation***

During the first year of the project, approximately 40% of the 64 datasets indicated in annex 2 of the consortium’s proposal were collected, processed and made available on the portal. Moreover, about 50 new datasets were identified, of which more than 50%, were uploaded on the website. The table below describes the progress of the WP. For a status of each dataset, please refer to Annex 1 (section 11).

Datasets	Total number	Resolved	Pending
Indicated in the proposal	64	41%	59%
Supplemental	46	54%	46%
Total	110	46%	54%

<sup>4</sup> <https://www.eea.europa.eu/data-and-maps/data/eunis-habitat-classification>

During the second year, the goal will be to complete the collection and validation of all the datasets already identified as well as add further datasets with particular focus on data from non-partner countries. The collation of habitat maps resulting from species distribution modeling approaches is also ongoing and, so far, about 15 maps have been identified. Some of these models are already available as wms services and specific request for the use of these models via seabed habitats portal are ongoing / resolved.

Additionally, standard data structures, vocabularies, and procedures for storing and sharing class-based habitat data within the Darwin (Event) Core EMOF data schema have been agreed with OBIS technical staff after close collaboration alongside EMODnet Biology, which has now provided the foundation work to generate robust standard guidelines for submitting habitat data into OBIS (D2.08). Drafting of the guidance has started and will be distributed to OBIS for approval and comments prior to wider publication and promotion.

### ***WP3 – Building composite data products (points and polygons)***

Activities under this work package relate directly to the activities already summarised under Task 2 on creation of data products.

We have reviewed the stakeholder needs for combined harmonized seabed habitat data products in Europe in a report (Deliverable D3.07) which we used to update our work plans for WP3. In this phase we focused on interviewing the Regional Sea Conventions/Commissions (RSC), our main stakeholders. In some case we were able to gather detailed specifications for the creation of the products that the RSC identified. We then agreed with the project partners which proposed new products (D3.08) (and associated method papers, D3.09) will be delivered next year as part of this WP. The following specific deliverables were added to the project plan:

- *D3.08a Combined, harmonized data product showing the best evidence for extent of habitats classified to level 3 of EUNIS v2007-11 in the OSPAR area, with metadata. (Due March 2021)*
- *D3.09a Report detailing the construction of the OSPAR EUNIS data product described in D3.08a. (Due September 2021)*
- *D3.08b Combined, harmonized data product showing the best evidence for extent and distribution of coralligenous and other calcareous bioconcretions in the Mediterranean, with metadata. (due August 2021)*
- *D3.09b Report detailing the construction of the Mediterranean coralligenous data product described in D3.08b. (Due September 2021)*

Furthermore through dialogue with RAC/SPA and the Archipelagos Institute we have identified the need for a harmonised map of seagrass beds for the Mediterranean. This requirement will be fulfilled by the planned update of the GOOS Essential Ocean Variables layer for seagrass beds (D3.02).

The main activities for the creation of the products are planned for the second year of the project following data collation as part of WP2. However we started working on D3.08a as the deadline we established with OSPAR is March 2021, in order to deliver the product in time for the start of the OSPAR assessments.

### ***WP4 – Portal***

The portal continues to operate as usual. We have made improvements to the user-friendliness of the portal and visual identity to comply with EMODnet visual identity guidelines (D4.15), although minor issues were recently raised by Trust-IT in indicator 9.2 (I.e. incorrect footer, icons and LinkedIn link) which will be resolved promptly.

We have continued to the develop and maintain the contents of the website. More new resources on habitat mapping have been provided, for example the Recommended Operating Guidelines for habitat mapping), and all progress reports and indicators spreadsheets have been uploaded as requests by the EMODnet Secretariat. Updated guidance on the data submission processes have been provided, particularly for habitat point datasets.



The ownership of the domain (emodnet-seabedhabitats.eu) has been transferred from JNCC (UK-based) to Ifremer (France-based), and the portal has been registered on the FAIRsharing.org website in October: <https://fairsharing.org/biodbcore-001328/>.

We have renewed the support contract with the same contractor who redeveloped the interactive mapper. New functionality has been added over the past year including, but not limited to, measurement tools, zooming to XY coordinates and mapper layer searching, which currently need to be pushed to the production mapper environment. New functionality currently in development is the ability to search and download map data within a specified bounding box (D4.13).

We have renewed the support contract with the contractors who developed the content management system. Following changes to the reporting indicators, the contract have amended the download forms so they are consistent with the requirements in the new templates. Additionally, following feedback from users, we have made changes to our download forms, specifically allowing users to download multiple layers from different download forms by using the same URL, [this link](#) will select 4 layers from 3 different download forms (D4.14).

The interactive mapper has been carried forward from the last phase when it was completely redeveloped. The support contract with the original developer has been renewed. New functionality has been added over the past year including, but not limited to, measurement tools, zooming to XY coordinates and mapper layer searching, which currently need to be pushed to the production mapper environment. New functionality currently in development is the ability to search and download map data within a specified bounding box (D4.13 & D4.14).

The in-house software developers at JNCC are working to create a new GeoServer environment. The objective is to have all GeoServer instances provided through a series of “self-healing” Docker containers, whereby if one container goes down for any reason a replica copy with activate to continue the provision of web services, minimising any downtime in service (D4.01 & D4.02).

Bi-annual portal updates were performed for uploading data collated within the project, largely from partners. Ad-hoc updates were made for third-party layers which are identified as the project progresses. Effort was put into the first year of this phase for collating M2M OGC endpoints for disseminating additional map layers through the portal which users may find useful (D4.06). These include, but not limited to, data from GEBCO/NOAA, HELCOM, EEA. We have liaised with ICES regarding their web services as, unfortunately, there was previously no SSL certificate enabled on their sites meaning we cannot provide their layers through our portal; this is something they are currently looking to implement.

Progress has been made on disseminating individual habitat maps from survey using M2M connections where possible. Data has been identified from the mapping program MAREANO which collates various data from Norwegian coastal and marine areas. Work is still underway to find the most suitable process to seamlessly displaying the data, but the maps should be on the portal for the next quarterly report (D4.05).

There has been a notable increase in data scientists using M2M connections for accessing data directly from software environments, which a significant shift from previous phases of Seabed Habitats’ where users were more interested in static downloads of datasets. Previously the guidance provided through our website and GitHub pages were directed to the latter in mind, but given the recent of uptake of data scientists work is underway to revamp our GitHub pages to provide basic tutorials for accessing our data via programming environments (e.g. R) and GIS. These examples would build upon the tutorials provided ahead of Open Sea Lab II and would ideally provide more in-depth examples and tutorials of what the data can be used for (D4.14).

Specific work with OBIS/EMODnet Biology on harvesting and filtering habitat point information stored in OBIS is due to begin in the second year of the phase. Preparatory work has already been undertaken with trialing the submission of the UK’s habitat point database to OBIS. Collaborating with EMODnet Biology we have liaised with the OBIS team to agree a standard structure for submitting class-based habitat data into OBIS, which has been taken forward to form the basis of a set of guidelines for habitat submission (in progress) to publish to the wider scientific community (D2.08). The pilot study of translating and importing UK joint species/habitat data is progressing well, with the initial data transformation complete. These data will now be presented to the EurOBIS team for QC and

comments before aiming to be ingested into EurOBIS during November. Alongside the ingestion, technical talks will now be held with EMODnet Biology concerning best practice to subsequently extract the habitat data out of the OBIS system for presentation within the EMODnet Seabed Habitats web-services (D4.04).

No further development has been required on monitoring performance and addressing user feedback as these systems are currently in place. Following requests from EASME and the Secretariat, Seabed Habitats decided to deactivate the tawk.to instant messaging service (D4.08) following the changes in the US-EU privacy shield agreement.

Progress has been made on addressing the INSPIRE issues highlighted in JIRA issue-33, whereby some GeoServer layers do not have the dataURL field populated. Most of the highlighted layers have no value because there is nowhere to download the data, but changes will be made by the next quarterly report (D4.02 & D4.13).

## ***WP5 – Communication and outreach***

One of the ongoing deliverables (D5.01) of this workpackage is ensuring coherence with activities of the Regional Sea Conventions. This directly links to Task 5. The planned meetings with RSC secretariats could not take place in person due to COVID 19 travel restrictions. However, we held remote conference meetings and/or exchanged emails with all European RSC. In general all RSCs are supportive and value our work. We described in detail outcomes of conversations we had with RSCs in the report on Stakeholder Engagements (Deliverable D3.07). As well as enquiring about their needs for habitat data products, we also discussed ways of collaborating and working together.

HELCOM proposed that we attended the meeting of their Expert Group (EN-BENTHIC) to discuss more technical details about product creation and joint data collation activities. Since the teleconference with HELCOM, our partner SYKE contacted the chair of EN-BENTHIC by email. The EN-BENTHIC chair and HELCOM Secretariat found the collaboration very valuable and agreed in principle to invite EMODnet Seabed Habitats to one of the next EN-Benthic meeting to discuss products needs, feedback and joint data collation. The next EN-benthic group meeting is planned for mid November 2020, which would be ideal timing, but we are currently waiting for confirmation. We will also collaborate with HELCOM Secretariat to review compatibility between the new EUNIS and the HELCOM HUB classifications. Depending on how well the new EUNIS matches HELCOM HUB, EUSeaMap will be published in EUNIS 2019 only (good match), or in EUNIS 2019 plus HELCOM HUB (inadequate match).

RAC/SPA provided a contact detail of a member of staff that will be dedicated to liaise with us on data products and data collation for the Mediterranean. As mentioned under WP3 we agreed we will support RAC/SPA's activities with the creation of 2 harmonised data products. We also have reopened discussions with RAC/SPA about the creation of a Memorandum of Understanding that will allow them to share habitat data with the project via machine-to-machine connections.

From our conversation with the Black Sea Commission Permanent Secretary we learnt that their activities on habitat mapping and classification have not progressed. The Secretariat provided comprehensive information about the need for habitat classification reviews and habitat mapping in the Black Sea, but we were not in a position yet to discuss specific data products needs or data collation activities. We will continue this dialogue in Year 2.

As part of the data call to OSPAR contracting parties for point and polygon data on OSPAR threatened and/or declining habitats, the EMODnet Seabed Habitats partners were introduced as people who could assist in the collection and formatting of data. JNCC were approached and provided assistance on formatting the data. We are now working with the OSPAR Secretariat on a new joint EMODnet Seabed Habitats/OSPAR data call to gather the latest EUNIS habitat maps in the NE Atlantic from National contact points. These new maps will be included in the harmonised EUNIS map (D3.08a). We have provided to OSPAR instructions for the data call which will be launched soon.

Another aspect of Deliverable D5.01 is to ensure consistency with ICES data delivery. Ifremer and Marine Institute attended as members the ICES Working Group on Marine Habitat Mapping (WGMHM) annual meeting, a 5-days online event in May 2020. The meeting focused on supporting Working Group on Deep-water Ecology (WGDEC) in the delineation of the Physical Vulnerable Marine Ecosystems (VME) Indicator Elements (e.g. seamounts, canyons). Important discussions were on the appropriateness of using VME element maps for the provision of



management advice. The conclusions were interesting and a point made in section 10 (recommendation for the EU) is based on them.

As part of deliverable D5.02, in February 2020 we had a teleconference with the Head of Head of Mercator Ocean's Operations & Services Department (CMEMS) to liaise on Copernicus Marine Service (CMEMS) activities and to introduce how we use CMEMS-derived products (physical oceanography climatologies) in EUSeaMap. We agreed on a follow-up face-to-face meeting in Toulouse for the summer (now delayed to October, due to Covid19 travel restrictions) in order to discuss potential collaborations for improvements of EUSeaMap. In April we presented use of CMEMS products in EUSeaMap at the EMODnet-CMEMS coordination meeting. Furthermore in June 2020 we attended the EMODnet-CMEMS thematic workshops on coastal issues which brought together EMODnet, CMEMS, inter-DG representation and the EEA to discuss marine data and data products and information on Coastal behavior. Capabilities and emerging areas for collaboration across EMODnet themes and between EMODnet and CMEMS, were also discussed. We presented the EMODnet Seabed Habitats project and we identified potential areas of collaboration in the medium term. This includes a collaboration opportunity involving EMODnet Physics, EMODnet geology and CMEMS (and others) on coastal sediment dynamics and affect of colonising communities on sediment movement. We have planned to meet at CMEMS' headquarters in October 2020 to go further.

EMODnet Seabed habitats (Ifremer and JNCC) are attending the upcoming (13th-14th October) Copernicus user uptake [workshop on Earth Observation](#) and discussing potential use of the latest Earth Observation products from the new copernicus Sentinel satellites as a way to improve light at the seabed estimates for EUSeaMap modelling. As part of the workshop we will also be presenting use of EO data in habitat modelling, which will publicise EUSeaMap and EMODnet Seabed Habitats products and services to a different audience.

We have submitted to DASHH (partner in EMODnet biology) a pilot joint habitat/species point collated dataset (comprising multiple different surveys) to be ingested as part of OBIS, through remote collaboration, initial translation/transformation has been determined, and the dataset is now ready to be QC'd externally by EurOBIS and EMODnet Biology staff. Deliverables D5.03 and D5.04 are dependant on the succesful harvest by EurOBIS of the pilot dataset (In September 2020). Crucial to this pilot is feedback from EurOBIS on the harvest of the test dataset, with the dataset now ready, the aim is to collaborate with EurOBIS staff late October on initial QC before harvesting towards the end of the calendar year. EMODnet Biology is working with us on the OBIS testing and simulataneous ingestion of species data (D5.03), but the publication of guidelines (D2.08) and promotion of the guidelines (D5.04) are delayed until confirmation of successful testing. Nevertheless, the guidance documentation (D2.08) is currently being drafted pending the successful pilot scheme.

Maintenance and development of the EMODnet Seabed Habitats portal are going as described under Task 4. We have published the prominent [summary of data and data products](#) on the web portal (D5.06). For each product or dataset listed a hyperlink provides direct access to the corresponding spatial layer in the interactive mapper.

EMODnet Seabed Habitats activities are also promoted through the publication of news items and by [a new story map](#), published on the portal. The Story map provides guidance on products available on the site and the interactive mapper. We are planning to use the story map in social media communications to publicise new uploads to the portal.

To publicise EMODnet results we had planned to attend several conferences and events, most of which have been cancelled or delayed due to COVID 19 travel restrictions. When possible we have presented EMODnet projects remotely and have contributed to communication activities of the EMODnet Secretariat (As reported in Section 7) . For example we have contributed to the upcoming EMODnet 10 years webinar and the 2019 EMODnet Annual report.

## ***WP6 – Coordination and formal reporting***

The EMODnet Seabed Habitats consortium is composed of eight partners and two subcontractors. Of the partners, three are WP leaders. The Project Coordinator (from Ifremer) is assisted by a Technical Project Manager (from the JNCC). This staff coordinates the scientific and technical work of the consortium in accordance with the description of work and WPs and carries out the management of the project. The management structure is established as described below.

- The Project Steering Group, chaired by the Project Coordinator, is made up of one person from each partner organisation. The Project Steering Group provides strategic guidance for the project and ensure the project is managed correctly. The Project Steering Group is responsible for financial decisions, for agreeing remediation actions to resolve any project issues and for taking decisions on priorities. It meets annually. At these meetings the progress of WPs is presented and discussed.
- The Project Management Team, chaired by the Technical Project Manager, implements the scientific and technical activities necessary to achieve the project objectives. The Project Management Team comprises the three WP leaders. It meets every 3 months, primarily through web conferencing, and is responsible for operational decision making.

During the first year, the Project Management Team met four times and the Project Steering Group met two times (see section 7). All the meetings were web conferences. We had planned to have a face-to-face meeting of the Project Management Team in London, and another one of the Project Steering Group in Ostend, but these meetings were replaced by web conferences due to the covid-19 crisis.

The Project Coordinator and the Technical Project Manager attended the EMODnet Steering Committee and the Technical Working group meetings organised in Spring.

## 4. Identified issues: status and actions taken

<b>A. Priority issue(s) identified and communicated by EASME/ DG MARE/ SECRETARIAT</b>			
<b>Priority issue</b>	<b>Status (Pending/Resolved)</b>	<b>Action(s) taken / remaining actions planned</b>	<b>Date due</b>
<p><b>Letter from EASME (ref. Ares(2019)7151776) - EMODnet websites - compliance with applicable data protection rules</b></p>	Resolved	<p>EMODnet Seabed Habitats is now compliant with all the requirements. The reply for all thematic portals was coordinated by the EMODnet Secretariat, to which was sent (09/12/2019):</p> <ul style="list-style-type: none"> <li>- An updated checklist (annex 1)</li> <li>- An update on the action plan that was submitted on 04/08/2019</li> <li>- a record of processing of personal data</li> </ul>	31/12/2019
<p><b>21/11/2019 JIRA issue EMODNET-33. EASME - Action on Web Services MetadataUrl and DataUrl fields</b></p> <p><b>Recap of task: for every layer in GeoServer, make it so that the data url points to a predefined download link.</b></p> <p><b>The problem is that we have hundreds of these layers.</b></p>	Pending	<p>We have developed the workflow needed to automate most of this task. We ran this script to complete most of the layers.</p> <p>Tim Collart reran the evaluation report which highlighted some outstanding issues remaining. Most of the highlighted layers have no value because there is nowhere to download the data, but changes will be made by the next quarterly report</p>	15/10/2020
<p><b>Email from Lucie Pautet (EASME) on 24/2/2020: Brexit: as you know, the UK has officially left the EU. Please review the content of your portal and make sure that it is reflecting that fact. We expect that the impact on the portal will be minimum. Alessandro (Human Activities) has kindly provided us with documentation he received on that subject. The documents are provided here for support if needed. Please report on</b></p>	Resolved	<p>We have reviewed the content of the website, in terms of text, figures and maps and determined that no changes have been necessary to reflect the fact that the UK has left the EU.</p>	31/03/2020

<b>compliance in the next report. Note that we have not yet received any feedback about UK servers now that we are in the transition period.</b>			
<b>BREACH vulnerability issue (JIRA issue EMODnet-35)</b>	Resolved	We clarified with the C. Delaney that we were already compliant hence this was not an issue for our portal.	
<b>email from EMODnet Secretariat on 12/08/2020: Urgent GDPR requirement from SC&amp;DIGIT</b>  <b>Judgment invalidating the EU-US Privacy Shield – the way forward. the EU Secretariat General and DIGIT are requesting EMODnet portals to either terminate, or inventorise (using an excel File) any processing agreements involving transfer of personal data to non-EU/EEA</b>	Resolved	We disabled the tawk.to service. As a result there is no longer live chat services on EMODnet Seabed Habitats portal	28/08/2020

### B. Issues / challenges identified by the thematic assembly group itself

Priority issue / challenge	Status (Pending/Resolved)	Action(s) taken / remaining actions planned	Date due
<b>Covid-19: Tasks taking longer</b> <b>For some partners, everything takes longer due to slow network speeds or having to take additional time off to look after children</b>	Pending	More days allocated to these tasks; although this will inevitably mean that fewer days will be available for other tasks later in the project.	
<b>Covid-19: Inability to perform some tasks</b> <b>Some partners cannot process data due to inability to access their enterprise network (i.e., they do not have the technology for that)</b>	Pending	Data processing were postponed in some cases. As a result, we were not able to meet all the objectives we had set internally for the first year. Unprocessed data will be dealt with and made available in the second year.	
<b>Covid-19: communication activities</b> <b>The two conferences we had planned to communicate on the project have been cancelled (GeoHab, MeriGéo)</b>	Resolved	MeriGéo will be organised in November as a webconference. We have agreed to keep the presentation and poster for which we were scheduled.	

		Geohab will take place in 2021.	
<b>EMODnet indicators</b>	Pending	JNCC voiced some concern over the new indicators to be used, mainly surrounding area calculations for sea basins and having a streamlined and consistent approach across all lots.	
<b>Hosting the ICES VME database on our mapper and GeoServer as a cascaded WMS layer.</b>	Pending	JNCC tried to cascade the VME database to their servers but encountered issues, specifically a CORS error. This occurred because the EMODnet Seabed Habitats website has SSL encryption enabled, whereas the ICES website does not, meaning it cannot be pulled through to our servers. JNCC contacted ICES, who in turn asked how we implemented SSL across our services and websites. JNCC provided general advice on how we have done it within EMODnet and JNCC internally.	

## 5. Allocation of project resources

Information on the allocation of project resources	
Categories	Resource usage <sup>5</sup> (%)
Making data and metadata interoperable and available	52
Preparing data products	14
Preparing web-pages, viewing or search facilities	9
Managing user feedback	3
Project management	16
Outreach and communication activities	6
Others	

<sup>5</sup> Provide the workings of your calculations, *i.e.* percentage allocation of the total amount awarded.

## 6. User feedback (Contact us form, online chat & other communication means)

Overview of user feedback and/or requests received during the reporting period (25/09/2019 - 24/09/2020)							
Date	Organization	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query: resolved/pending	Measures taken to resolve the query	Status: if not (yet) resolved/pending, explain reason why and expected timeline
30/10/2019	University of Venice	Data enquiry - Is it possible to download the posidonia oceanica layer?	Email	30 mins	resolved	Data sent, and data made available	resolved
14/11/2019	University of St. Andrews	Data enquiry - I'd like to download the full kinetic energy at the seabed due to waves in the Atlantic. The download link appears, but nothing is checked in the downloads page.	Contact Form	30 mins	resolved	Data sent separately and file uploaded to GeoServer	resolved
15/11/2019	Marche polytechnica university	Data enquiry - I can't find any shapefiles when I download EUSeaMap 2019	Contact Form	20 mins	resolved	Instructions given	resolved
19/11/2019	European Comission	Technical - Do you have any statistics to show the % cover shifts in EUNIS habitats from the two latest versions of EUSeaMap? It would be useful, moving forward, if this could be included in the final reports released alongside the product.	Contact Form	18 hours	resolved	Agreed statistics would be given in the next technical report	resolved
05/12/2019	University of Toyko	General - What is the oldest and newest dataset? Are there any datasets that are new from this year? How often do you	Contact Form	2 hours	resolved	Range of dataset dates given	resolved

		update your data? What's the spatial resolution of your data?					
20/12/2019	EMODnet Geology	Technical - The high resolution sediment maps of the Danish waters were sent again to EMODNet Geology. They acknowledge that these maps were not included in the last (2018) version. They will include them in the new version.	Email	3 days	resolved	Agreed that data would be included moving forward	resolved
03/01/2020	Not disclosed	Data enquiry - I am trying to access some climatology data from EMODnet Physics and I can't seem to access the data.	Live Chat	3 hours	resolved	Forwarded enquiry to physics lot	resolved
09/01/2020	Atlantic Resource Consultants (ARC) Marine	Data enquiry - Is there any way to discern between the broad-scale habitats on the mapper? The key has too many similar colours.	Live Chat	1 minute	resolved	Advised the user to click on the mapper to display attributes in that area	resolved
10/01/2020	Not disclosed	General - I received the layer from the author and I'm working on it. Do you perhaps know which is the coordinate reference system of the map?	Live Chat	1 minute	resolved	Advised of the coordinate reference system	resolved
13/01/2020	Not disclosed	Technical - We need to know what GUI our habitat map has to submit data	Contact Form	13 mins	pending	Set up meeting to advise	resolved
23/01/2020	Grenoble Institute of Technology	General - Where can I access a world depth map?	Live Chat	1 minute	resolved	Provided options for Gebco Data and EMODnet bathymetry data	
23/01/2020	Aquaculture Stewardship Council	General - I cant download the Posidonia oceanica layer in the Med?	Email	1 hour	resolved	WMS links provided	resolved
24/01/2020	Ifremer	Use of the webGIS - I would need to know what the habitat is at a specific location.	Live Chat	30 mins	resolved	Live guidance	resolved



		What is the data layer I should look at on the webGIS?					
27/01/2020	Ricardo (environmental consultants)	General - I would like to download a fine scale map but the link is taking me to every habitat map from survey classified to EUNIS.	Live Chat	1 minute	resolved	Advised to find the GUI of the habitat map, then to download the layer and filter by GUI after.	resolved
30/01/2020	Liverpool University	General - Do you have data on the percentage of substrate type in the Mediterranean?	Live Chat	1 minute	resolved	Advised we do not hold such data, but provided a link to EMODnet Geology	resolved
03/02/2020	Muséum National d'Histoire Naturelle (MNHN)	Technical - How do I narrow down the list of OSPAR Habitats in the Map viewer ?	Email	2 hours	resolved	Emailed guidance	resolved
10/02/2020	Not disclosed	General - What is the unit for kinetic energy at the seabed due to currents	Contact Form	2 days	resolved	Provided live assistance and linked to the metadata	resolved
20/02/2020	Not disclosed	General - how do I download the salinity data in Vancouver?	Contact Form	20 mins	resolved	Advised we do not hold such data and provided a link to EMODnet Physics	resolved
21/02/2020	Not disclosed	General - what year was the data collected for kinetic energy at the seabed due to currents	Live Chat	1 minute	resolved	Provided live assistance and linked to the metadata	resolved

25/02/2020	Bangor University	Technical - How do I access seabed substrate data for the celtic sea using your mapper?	Live Chat	1 minute	resolved	Provided a link to EUSeaMap	resolved
25/02/2020	Cornwall Wildlife Trust	Technical - The habitat maps are not loading onto the mapper properly. Is this issue occurring at your end?	Live Chat	1 minute	pending	Server was down, Jordan investigated	resolved
25/02/2020	Not disclosed	General - Do you have seagrass bed data in Studland Bay and Weymouth Bay, Dorset, UK?	Live Chat	1 minute	resolved	Provided a download link	resolved
02/03/2020	Not disclosed	General - Can I get all the information about plymouth sound and plymouth waterfront available	Live Chat	1 minute	resolved	Provided a multitude of links to download data	resolved
18/03/2020	Not disclosed	General - we are planning to use your substrate type map, but wanted to ensure to cite it properly in the report.	Live Chat	1 minute	resolved	Provided a link to the citation page	resolved
27/03/2020	Advisian	General - what units are the currents data recorded in?	Contact Form	3 hours	resolved	Provided a link to the metadata for further details	resolved
01/04/2020	Not disclosed	General - do you have any baselayers I can download from your portal?	Live Chat	1 minute	resolved	Advised we do not have this type of data.	resolved
01/04/2020	Bioconsult	General - do you have a .lyr file for EUSeaMap symbology?	Live Chat	1 minute	resolved	Provided a download link from GeoServer	resolved
08/04/2020	Not disclosed	General - Do you have seabed habitat data that I can download?	Live Chat	1 minute	resolved	Provided a download link to EUSeaMap	resolved

22/04/2020	Southampton University	Technical - how are the infralittoral and circalittoral biozones separated?	Live Chat	1 minute	resolved	Live guidance and provided a link to the technical report	resolved
27/04/2020	AWJ Marine	General - How do I load EUNIS & MSFD into QGIS.	Contact Form	25 hours	resolved	Provided a link to QGIS guidance	resolved
29/04/2020	AWJ Marine	General - Do you have a .sld file for the EUSeaMap EUNIS symbology?	Contact Form	10 mins	resolved	Attached the .sld file	resolved
04/05/2020	Emodnet Central	General - One of the diagrams on the Data Submission pages is not working	Live Chat	1 second	resolved	Re-uploaded the image	resolved
06/05/2020	The Rivers Trust	Technical - Is EUSeaMap available as a WFS?	Live Chat	1 second	resolved	Links provided	resolved
18/05/2020	Karteco	General - Are the MEDISEH layers available to download?	Query sent to Secretariat	4 days	resolved	Made the layers available to download and resent the link	resolved
20/05/2020	Not disclosed	General - Do you have QGIS data in the north sea?	Live Chat	1 day	resolved	Sent a link to EUSeaMap	resolved
25/05/2020	Clearwater Fine Foods	General - Do you have a .lyr file for the EUNIS Symbology?	Email	1 day	resolved	Attached the .sld file	resolved
25/05/2020	Not disclosed	Technical - I'm having problems with the WMS raster legend. I've downloaded the files but don't know how to use them on QGIS.	Live Chat	1 day	pending	Emailed to ask which layers they are having problems with	resolved
26/05/2020	French Natural History Museum	General - Do you have homogenised datasets available on seabed habitats available to download?	Contact Form	1 day	resolved	Emailed with a download link to EUSeaMap and enquired whether	resolved

						there were any other data needed	
28/05/2020	Not disclosed	Technical - I'm having issues displaying the legend for the substrate data I downloaded	Live Chat	1 second	resolved	Provided assistance live	resolved
01/06/2020	BP	General - I would like to understand the biotopes and predominant species on the seabed around Hornsea. If at all possible, I am also interested in the water column.	Contact Form	2 hours	resolved	Emailed with a link to mapper with some layers turned on	resolved
04/06/2020	Not disclosed	Technical - The download links from the mapper to the download page aren't working.	Live Chat	1 second	resolved	Provided assistance live	resolved
10/06/2020	Not disclosed	Technical - I don't know how to download the bathymetry data for the Med.	Live Chat	1 second	resolved	Provided assistance live	resolved
11/06/2020	Not disclosed	General - A download link doesn't seem to appear when I select the OSPAR data to download	Live Chat	2 hours	resolved	Emailed with the correct link	resolved
12/06/2020	Not disclosed	Technical - I've downloaded your polygon data which is in WGS84, but how do I calculate the area?	Live Chat	1 second	resolved	Provided assistance live	resolved
22/06/2020	Not disclosed	Technical - How do I download the bathymetry data for the Med basin?	Live Chat	1 second	resolved	Provided assistance live	resolved
23/06/2020	Not disclosed	Technical - Do you have any data on current direction in Moray Firth?	Live Chat	1 second	resolved	We do not hold that data	resolved
25/06/2020	AVS Dev (Acoustic Visual System)	Technical - I am trying to download habitat maps for Atlantic and Celtic Seas but they are not being downloaded. The	Contact Form	1 minute	resolved	Reassured that the download links are correct and offered	resolved

	Development) UK	result returns a gdb for habitats in the West of Spain.				to send data separately if unable to still access.	
07/07/2020	EMODnet Central	Technical - the WFS server is not working	Email	1 hour	resolved	Assistance provided	resolved
16/07/2020	Blue Marine Foundation	Technical - what is the best data source for depth to seabed that I can combine with EUSeaMap?	Live Chat	1 second	resolved	Provided live assistance	resolved
16/07/2020	Swansea University	Technical - Is the EOVS seagrass data available for download?	Email	1 second	resolved	Link to download sent	resolved
20/07/2020	National meteorological, seismic, sea and atmospheric organization of Portugal (IPMA)	General - Do you have any seabed habitat data around Portugal?	Live Chat	1 second	resolved	Live assistance provided	resolved
21/07/2020	Not disclosed	Technical - I have downloaded EUSeaMap 2019 but cannot access the data	Live Chat	20 minutes	resolved	Emailed ways to access the feature classes in the GeoDatabase	resolved
22/07/2020	Blue Marine Foundation	Technical - Can you please tell me how wave classes were identified	Live Chat	1 second	resolved	Emailed link to technical report	resolved
23/07/2020	National meteorological, seismic, sea and atmospheric organization of Portugal (IPMA)	Technical - What are the values surrounding EUSeaMap confidence and how were they assigned?	Live Chat	1 second	resolved	Live assistance provided	resolved

## 7. Meetings/events held/attended & planned

**\*Project Management Team meetings:** The Project Management Team comprises WP leaders, i.e. Ifremer, ISPRA, JNCC, and meets every 3 months. Chaired by the Technical Project Manager (Helen Lillis until 30/04/2020, then Eleonora Manca, JNCC). Its task is to implement the scientific and technical activities

**\*\*Project meetings:** All partners. Occurs every 6 months. Chaired by the Project coordinator (Mickaël Vasquez, Ifremer)

**\*\*\*Project Office meeting** The Project Office comprises the coordinator (Mickaël Vasquez, Ifremer) and the Technical Project Manager (Helen Lillis until 30/04/2020, then Eleonora Manca, JNCC)

A. Meetings/events organised and attended				
Date	Location	Type event (internal or external meeting, training (workshop), etc.)	Meeting attended (A) / organised (O)	Short description and main results (# participants, agreements made, etc.)
16-17/10/2019	Dingle, Co. Kerry, Ireland	seminar	A	<b>Annual seminar of the Irish National Seabed Mapping.</b> 100+ participants.  Poster - Title: "Marine habitats of importance in Kerry" presented at the Annual seminar of the Irish National Seabed Mapping Programme, Dingle, Co. Kerry, Ireland. Link to event details: <a href="https://www.infomar.ie/sites/default/files/2019-10/INFOMAR_2019_Seminar_Agenda_0.pdf">https://www.infomar.ie/sites/default/files/2019-10/INFOMAR_2019_Seminar_Agenda_0.pdf</a>
24/10/2019	Videoconf	meeting	O	<b>First Project Management Team meeting*</b>
14/11/2019	Videoconf	meeting	O	<b>First project meeting**</b>
16/12/2019	Videoconf	meeting	O	<b>2nd Project Management Team meeting*</b>
30/01/2020	Paris	seminar	A	<b>Oral Presentation of Mickaël Vasquez</b> - An overview of EMODnet Seabed Habitats - Seminar on Habitats, Museum of Natural History, Paris, France, 30-31/01/2020  Seminar that gathered French habitat specialists, both from land and marine realm. 200 participants (scientists, policy makers) Sessions were on typology, mapping and data dissemination
06/02/2020	Esposende, Portugal	conference	A	<b>Oral Presentation of Jorge Gonçalves</b> - Marine Habitat Mapping - International conference on Marine Information Systems, Esposende, Portugal
24/02/2020	Videoconf	meeting	O	<b>Project Office meeting***</b> - Discussed on technical report, Annual EMODnet report, First portal update, Website developments, Consortium agreement, Management meeting in London, Jamboree, Next EUSeaMap update, EMODnet Ingestion, upcoming events, meeting with CMEMS
28/02/2020	Videoconf	meeting	O	<b>Meeting with CMEMS</b> - Organised by JNCC - Partners attending: JNCC, Ifremer - Discuss

				ways to highlight and link to EMODnet products on CMEMS data services (e.g. seabed habitat maps JNCC). - Briefly discussed on how CMEMS products could be more appropriate to Seabed Habitat mapping/modelling (Products at seabottom, Better resolution) and about publishing EMODnet Seabed Habitats' products on CMEMS website Agreed on a face-to-face meeting at a date tbd
03/03/2020	Copenhagen	conference	A	<b>Oral Presentation of Ziyad Al-Hamdani</b> - Broad-scale benthic habitat maps. A prerequisite for Maritime Spatial Planning - EcoMar Project final conference, Copenhagen, Denmark, 03/03/2020  EcoMar Project final conference, Copenhagen, Denmark  70 participants
13/03/2020	Videoconf	meeting	A	<b>Thematic coordinator meeting</b> - Organised by DG MARE - Partners attending: Ifremer - DG Mare convened thematic coordinators to inform them of an important decision for the future of EMODnet. - The DG MARE has decided that in the next phase, all EMODnet data and data products will have to be findable, visible and downloadable through a unique access point, the central portal. Individual thematic groups will maintain their servers and web services, but not their websites. This decision will take effect in the next phase, that will not start before the end of the current one (24/09/2021 in our case)
20/03/2020	Videoconf	meeting	A	<b>EMODnet bathymetry technical presentation</b> - Organised by DG MARE - Partners attending: Ifremer, JNCC - EMODnet Bathymetry to present an overview of features/technology specific to the thematic portal
27/03/2020	Videoconf	meeting	A	<b>3rd Project Management Team meeting*</b> - Was supposed to be a 2-day face-to-face meeting in London. Replaced by a one-day videoconf due to Coronavirus crisis
28/04/2020	Videoconf	Meeting	O	<b>WP2 meeting</b> - Organised by ISPRA - Partners attending: All Partners - to discuss about the work already done, any issue in data preparation and check processes and the future step - Upcoming
21-22/04/2020	Videoconf	meeting	A	12th EMODnet Steering Committee Meeting
23-24/04/2020	Videoconf	meeting	A	7th EMODnet Technical Working Group Meeting
04-08/05/2020	Videoconf	meeting	A	<b>ICES working group on marine habitat mapping</b> - Organised by ICES - Partners attending: JNCC, Ifremer - WGDEC (Working Group on Deep-water Ecology) has asked WGMHM for help with another important

				<p>component of their work. NAFO and ICES are adopting VME Elements for predicting the areas where VMEs are likely to occur. Elements are topographical, hydro-physical or geological features. WGHMH has offered the help of WGMHM in the delineation of these Elements for WGDEC this year - 1) VME elements are defined without clear rule-sets for their consistent calculation, 2) for investigating where VME habitats are likely to occur WGMHM does not recommend the use of VME elements without further refinement, 3) it is recommended that geostatistical modelling techniques are used instead Report: <a href="https://doi.org/10.17895/ices.pub.6034">10.17895/ices.pub.6034</a></p>
27/05/2020	Videoconf	meeting	O	<b>2nd project meeting**</b>
05/06/2020	Videoconf	meeting	A	<b>EMODnet Seabed Habitats portal technical presentation</b> - Organised by DG MARE - Partners attending: Ifremer, JNCC - EMODnet Seabed Habitats presented an overview of features/technology specific to the thematic portal - EMODnet Seabed Habitats presented the data and products, and how to find, visualize and download Seabed Habitats data and metadata through the central portal- Provided some thoughts on main functionalities required in the new central portal to allow users to easily discover, visualise and access habitat data
15/06/2020	Videoconf	workshop	A	<b>EMODnet biology WP4 products Workshop</b> - Organised by Emodnet Biology - Partners attending: JNCC - One of the deliverables of EMODnet Biology WP4 work package is a workshop, focusing on populating our Atlas of Marine Life - Supporting a piece of work started by EMODnet Biology aimed at using species and habitat occurrences to improve both our products - Scoping a method/iterative process to make use of both lots data
15/06/2020	Videoconf	meeting	O	<b>HELCOM and EMODnet Seabed Habitats collaboration</b> - Organised by SYKE - Partners attending: SYKE, Ifremer, JNCC - EMODnet Seabed Habitats objectives for data collation and creation of new products; HELCOM's approach data collation and the need for regional-scale habitat products. Ways to work together on data collation and making data available. Whether there are products that EMODnet could produce/collaborate on that would be useful to HELCOM.  Five participants: Leena Laamanen (SYKE), Mickaël Vasquez (Ifremer), Eleonora Manca (JNCC), Jannica Haldin (HELCOM Secretariat), Joni Kaitaranta (HELCOM Secretariat).
16/06/2020	Videoconf	workshop	A	<b>EMODnet-CMEMS Thematic Workshop on Coastal Issue</b> - Organised by co-organizers EMODnet, CMEMS/MOi, DG MARE and DG



				DEFIS - Partners attending: JNCC - A technical meeting with EMODnet, CMEMS, inter-DG representation and the EEA to discuss marine data and data products and information on Coastal behavior. Objectives include assessing existing capabilities and emerging areas for collaboration across EMODnet themes and between EMODnet and CMEMS, with a regional focus. - Identified some complementarities and interoperability of both initiatives for coastal behavior information as well as some areas for collaboration between EMODnet and CMEMS in the coastal area - These will be discussed in more detail - Some opportunities for collaboration across different EMODnet themes were also discussed.
19/06/2020	Videoconf	meeting	A	<b>EMODnet biology technical presentation</b> - Organised by DG MARE - Partners attending: Ifremer - EMODnet Biology to present an overview of features/technology specific to the thematic portal
23/06/2020	Videoconf	meeting	A	<b>Update on indicators</b> - Organised by EMODnet Secretariat - Partners attending: Ifremer, JNCC - Secretariat to update thematic lots on new indicators - Excel file largely revised
25/06/2020	Videoconf	meeting	A	<b>Oral Presentation of Eleonora Manca (JNCC)</b> at a project meeting. Title: EUNIS and EUSeaMap broad scale seabed habitat map. Project: Lanfest Gap analysis of U.S. marine biodiversity protection: Scoping a framework for marine stewardship.  The presentation was part of an interactive series of scoping discussions focusing on case studies that approach marine biodiversity from either a conservation planning or biodiversity monitoring lens. It was presented to a working group of experts from around the world, charged with developing a data-based framework for quantifying marine biodiversity, and assessing spatial gaps in its protection, in US waters.  Link: <a href="https://www.lenfestocean.org/en/news-and-publications/fact-sheet/expert-teams-marine-biodiversity-dialogues">https://www.lenfestocean.org/en/news-and-publications/fact-sheet/expert-teams-marine-biodiversity-dialogues</a>
01/07/2020	Videoconf	meeting	0	<b>4th Project Management Team meeting*</b>
03/07/2020	Videoconf	meeting	A	<b>EMODnet human activities technical presentation</b> - Organised by DG MARE - Partners attending: Ifremer - EMODnet human activities to present an overview of features/technology specific to the thematic portal

13/07/2020	Videoconf	meeting	O	<b>EMODnet biology and EMODnet Seabed habitats OBIS collaboration and outreach</b> - Organised by Emodnet Biology - Partners attending: JNCC - Catch up with EMODnet biology coordinator and WP-lead on coordinating outreach activities and working together for ingestion of data into EurOBIS - Agreement of joint outreach activities catch up on progress with EurOBIS ingestion. Coordination of future work, synergies and improved way of working together
17/09/2020	Videoconf	meeting	A	<b>Update on indicators</b> - Organised by EMODnet Secretariat - Partners attending: Ifremer, JNCC - Secretariat to update thematic lots on new indicators
22/09/2020	Videoconf	webinar	A	<b>Webinar - EMODnet: A decade of achievements connecting marine data to knowledge</b> - Organised by EMODnet Secretariat
<b>SUM</b>			<b>O</b>	<b>Total # of meetings organised = 10</b>
<b>SUM</b>			<b>A</b>	<b>Total # of meetings attended = 19</b>

### B. Meetings/events planned in the future

Date	Location	Type event (meeting, training (workshop), etc.)	Meeting to be attended (A) / organised (O)	Short description and main expected outcomes
08/10/2020	Toulouse, France	meeting	O	<b>Meeting with CMEMS</b> - Organised by Ifremer and CMEMS - Partners attending: Ifremer Follow-up of the videoconf that occurred 28/02 - Further discuss ways to highlight and link to EMODnet products on CMEMS data services - Upcoming
09/10/2020	Videoconf	workshop	A	<b>EMODnet biology Transatlantic data products workshop</b> - Organised by Emodnet biology - Partners attending: JNCC - EMODnet biology Transatlantic data products workshop - how can we applying US/Canadian data to the product workflows -
14/10/2020	Videoconf	workshop	A	<b>Oral Presentation of Mickaël Vasquez</b> at Copernicus user uptake workshop 'Using Earth Observation for Water Quality Monitoring' - Presentation title: Using Earth Observation for Seabed habitat mapping - The workshop is funded by 'Copernicus User Uptake' funds to deliver collaborative projects and events which are aimed at increasing the use of Copernicus satellite data for environmental applications. EMODnet Seabed habitats is going to participate

				from the perspective of end users and give a presentation on the first day.
09-10/11/2020	Videoconf	meeting	A	13th EMODnet Steering Committee Meeting
12-22/11/2020	Videoconf	meeting	A	8th EMODnet Technical Working Group Meeting
24-26/11/2020	Videoconf	conference	A	<p>MeriGéo: French Marine GIS and remote sensing conference (occurs every 2 years).</p> <p><b>Oral Presentation of Mickaël Vasquez and Thierry Schmitt (EMODnet Bathymetry).</b>          Title: “Synergies between EMODnet Seabed Habitat et EMODnet Bathymetry”.</p> <p><b>Poster.</b> Title: “A European web portal to access spatial data on benthic habitats: EMODnet Seabed Habitats”.</p>

## 8. Communication assets

A. Communication products				
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results	Name of event at which material was disseminated (if applicable)
16-17/10/2019	Poster	Title: “Marine habitats of importance in Kerry” presented at the Annual seminar of the Irish National Seabed Mapping Programme, Dingle, Co. Kerry, Ireland. Link to event details: <a href="https://www.infomar.ie/sites/default/files/2019-10/INFOMAR_2019_Seminar_Agenda_0.pdf">https://www.infomar.ie/sites/default/files/2019-10/INFOMAR_2019_Seminar_Agenda_0.pdf</a>		Irish National Seabed Mapping Programme
20/11/2019	Portal’s News item	Title: “Phase three extended through to 2021”. Link to new item: <a href="https://www.emodnet-seabedhabitats.eu/news/phase-3-extension/">https://www.emodnet-seabedhabitats.eu/news/phase-3-extension/</a>		
30/01/2020	Oral Presentation	Mickaël Vasquez (Ifremer) - An overview of EMODnet Seabed Habitats - Seminar on Habitats, Museum of Natural History, Paris, France, 30-31/01/2020		Seminar that gathered French habitat specialists, both from land and marine realm. 200 participants (scientists, policy makers) Sessions were on typology, mapping and

				data dissemination
06/02/2020	Oral Presentation	Jorge Gonçalves et al (CCMAR) - Marine Habitat Mapping - International conference on Marine Information Systems, Esposende, Portugal		International conference on Marine Information Systems, Esposende, Portugal  100+ participants
21/02/2020	EMODnet Data and data product portfolio	Helen Lillis (JNCC) - Coordination EMODnet Secretariat	Document updated	
24/02/2020	EMODnet Seabed Habitat Factsheet	Helen Lillis (JNCC) - Coordination EMODnet Secretariat	Document updated	
03/03/2020	Oral Presentation	Zyad Al-Hamdani (GEUS) - Broad-scale benthic habitat maps. A prerequisite for Maritime Spatial Planning - EcoMar Project final conference, Copenhagen, Denmark, 03/03/2020		EcoMar Project final conference, Copenhagen, Denmark  70 participants
05/03/2020	Report	Helen Lillis (JNCC) - Contribution to EMODnet Annual Report 2019	Description of EMODnet Seabed Habitats activity (key facts, data providers and users)	
06/05/2020	News item on ESH portal: A webpage providing a prominent summary of the data and data products	The variety of harmonised marine data and products are summarised in the form of pivot tables. The tables can be used to identify which data and products are available in different basins, which can be viewed by clicking on the links within in each product.  <a href="#">Link</a>	Promotes the data content	
14/07/2020	EMODnet Seabed habitat Map viewer Story Map on accessing data on the EMODnet Seabed Habitats Portal	A story map which will be available on the ESH website describing data available through the portal and how users can access it	Improve user-friendliness of the portal and promote the portal	
14/07/2020	News item on ESH portal: a story map	Promoting the publication of the Story map  <a href="#">Link</a>	Improve user-friendliness of the portal and promote the portal	
12/06/2020	Report	Jordan Pinder (JNCC) - Contribution to EMODnet Annual Report 2019	Input to the “EMODnet in Figures” section	
22/10/2020	Slides + photos	Contribution to presentation on thematic lots' achievements	Inputs on  (1) the situation before EMODnet, contrasting with	Webinar - EMODnet: A decade of achievements connecting

			<p>(2) the situation now;</p> <p>(3) share 3 key highlights/achievements realized over the past 10 years.</p> <p>(4) Forward look – remaining challenges and opportunities: what's next?</p>	marine data to knowledge
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<b>B. Planned communication products</b>			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected
14/10/2020	Oral Presentation	Copernicus user uptake workshop 'Using Earth Observation for Water Quality Monitoring' – Presentation title: Using Earth Observation for Seabed habitat mapping - The workshop is funded by 'Copernicus User Uptake' funds to deliver collaborative projects and events which are aimed at increasing the use of Copernicus satellite data for environmental applications.	
24-26/11/2020	Oral presentation / poster	Merigéo 2020 : French Marine GIS and remote sensing conference (occurs every 2 years). Joint presentation EMODnet Seabed Habitats / EMODnet Bathymetry	
05/2021	Oral presentation / poster	Geohab 2021	
14-18/06/2021	Oral presentation / poster	EMODnet Second Open Conference	

### List of known publications using EMODnet data or data products

Date	Type and name of journal, conference, ...	Publication title	Author(s)	Organisation(s)
2020	Journal “Biodiversity and Conservation”	Evaluating seabed habitat representativeness across a diverse set of marine protected areas on the Mid-Atlantic Ridge <a href="#">DOI</a>	Milla-Figueras, D., Schmiing, M., Amorim, P. et al. Biodivers Conserv	Institute of Marine Research (IMAR), Department of Oceanography and Fisheries, University of the Azores
2019	Final workshop for the Nordic Blue Carbon project 21-22/11/2019, Oslo, Norway	Distribution and biomass of blue forests in the Nordic countries	Gundersen H, Andersen GS, Bekkby T, Christie H, Frigstad H, Hancke K, Rinde E.	NIVA
2020	Science of The Total Environment	Relative impacts of multiple human stressors in estuaries and coastal waters in the North Sea-Baltic Sea transition zone <a href="#">DOI</a>	Jesper H. Andersen, Zyad Al-Hamdani, E. Thérèse Harvey, Emilie Kallenbach, Ciarán Murray, Andy Stock	NIVA GEUS Columbia University
2019	Volume III-C/PCE Decree law-Diário da República n.º 250/2019, 1º Suplemento, Série I de 2019-12-30.	Portuguese Maritime Spatial Plan - Situation Plan		DGRM - Sea Affairs Administration PT
February 2020	Progress in Oceanography	Distribution and life history trait models indicate vulnerability of skates <a href="#">DOI</a>		
January 2020	ETC/ICM Report	ETC/ICM Report 4/2019: Multiple pressures and their combined effects in Europe's seas <a href="#">Link</a>		Eionet
June 2020	Dataset	Europe Seas habitats potentially affected by anchoring <a href="#">Link</a>		EEA

<b>June 2020</b>	Mediterranean Marine Science	The contribution of wind-wave energy at sea bottom to the modelling of rhodolith beds distribution in an off-shore continental shelf <a href="#">DOI</a>		
<b>March 2020</b>	Ecological Modelling	Assessing natural capital value in marine ecosystems through an environmental accounting model: A case study in Southern Italy <a href="#">DOI</a>		
<b>March 2020</b>	ICES Journal of Marine Science	Seasonality of spatial patterns of abundance, biomass, and biodiversity in a demersal community of the NW Mediterranean Sea <a href="#">DOI</a>		
<b>May 2020</b>	Journal of Applied Ecology	Extending full protection inside existing marine protected areas, or reducing fishing effort outside, can reconcile conservation <a href="#">DOI</a>		

## 9. Monitoring indicators

Comments on the progress indicators in the excel template		
Progress indicator (collected using Matomo)	Means of collecting figures	Comment
1 Status/Volume and coverage of all available acquired data		
1A) Volume and coverage of available data  Please explain in the narrative if you don't use the provided sea-basin figures, why you do not use them, as from when, and what do you use instead and why?		<p>Large increases of point data come from the submission of datasets towards the end of the last project, but not included in the previous final report. Zero trend increase in Black Sea is due to not having any point data in that sea basin previously.</p> <p>Only point data submitted in the first year of this phase was Estonian data, which is restricted data.</p> <p>Partners have collated new datasets which will be available for the next quarterly report.</p>
1B) Usage of data in this quarter		<p>Map visualisation comparison is misleading. Mapper was redesigned in the last phase, which used a different way of reporting on map visualisations, whereas now we aggregate the Trust-IT figures for cumulative times the web mapper page is loaded.</p> <p>OGC web service usage makes more sense give the new mapper has been in place for &gt;1 year, with larger focus on WFS provision of data usage has increased a lot.</p>
2 Status/Total number and the coverage of all built & external data products		
2A) Volume and coverage of available data products		<p>Coverage of data products does not refer to coverage of the sea basins. Per previous discuss from Seabed Habitats and following the technical working group meeting on the latest indicators, we are needing a steer and guidance on what data we should performing these area calculations on.</p> <p>Haibtat Directive reporting grids previously described in last annual report as 1 dataset, which is incorrect - they are 7 datasets, these have been amended.</p>



		Two rows on the Essential Ocean Variable products were newly created in the last phase but weren't included in the final indicator report.
2B) Usage of data products since the start of the project phase		Modelled habitat maps, survey sample points, dissolved gasses, EUSeaMap regions 2019 have all been made available through the current phase and therefore aren't comparable to the previous phase.
3) Organisations supplying/ approached to supply data and data products		More private companies providing data which is good. University of Tartu provided point datasets which were 100%, with bounding box data only.
4) Online 'Web' interfaces to access or view data		Compared to previous report, changes were made to M2M endpoints with regards to view only geoserver workspaces with WMS-only services, and access to real data with workspaces providing WFS & WCS.
6) Statistics on information volunteered through download forms		Information on usage by country is only from 01/07/2020 - 15/09/2020 following amendments to the download forms to capture this information. Considerable user base continues to be within research and academia which seem to be our main users.
7) Published use cases		As mentioned in previous quarterly reports there is still a lot of use cases on the Seabed Habitats website which are not appearing on the Central Portal.
9.1) Technical monitoring		Nothing substantial to note here - seems to be relatively comparable across previous annual and quarterly reports.
9.2) Visual Harmonisation score		Seabed Habitats will correct the issues noted above regarding icons, incorrect footer and LinkedIn link not working.
10) Visibility & analytics for web pages		Recurring theme with spike of activity across all activities around the April 2020 quarterly report, unsure what caused this.
11) Visibility & analytics for web sections		
12) Average visit duration for web pages		

*The monitoring numbers reported as part of the progress monitoring of EMODnet performance are collected through Matomo. In some cases, numbers from other monitoring systems may also be reported (e.g. Awstats, Google Analytics). Each system uses different technical approaches and therefore has its strengths and shortcomings. Therefore, results are indicative and care should be taken with interpreting absolute numbers or comparing results from different tools. It is often more sensible to consider trends over time collected by the same monitoring tool.*

## 10. Recommendations for follow-up actions by the EU

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The new version of EUNIS is today available in the form of a spreadsheet only, on a web page that is not easy to find using search engines. We believe that this new version, which is a major one, would deserve a better visibility and that a report of how/why the recent changes were made should be published.

EUSeaMap can be improved on a regularly basis as new datasets on seabed substrate distribution are released, but the approach is not (and will never be) suitable for mapping spatial patterns of biological communities. Therefore, we need to start thinking about a new generation of products to inform stakeholders, such as species distribution models (SDMs). SDMs have been proven to accurately predict the spatial distribution of some key habitat-forming species. The prerequisite for a large, operational species distribution modelling (SDM) program in Europe is the availability of oceanographic data throughout Europe at the appropriate resolution for SDM. We would like to encourage initiatives of high resolution (e.g. 200-300m nearshore, 3-4km offshore) modelling of key environmental variable (e.g. wave- and current-induced energy, light availability, temperature, biogeochemical variables) done at a European scale.

## 11. Annex: Other documentation attached

### 11.1 Annex 1 - Status of primary data available to the project

In the table below, the dataset which have a reference number are those that were indicated in the annex 2 of the consortium's proposal. The datasets referred to as "Supplemental" were not identified in the proposal.

Resolved = dataset made available online;

Pending = dataset not made available online (because not collated yet, or not processed by the Project yet)

Reference number	Title	Area	Owner	Status (Pending / Resolved)
<b>MI01</b>	Habitat map - single: Youghal seabed classification map	local scale, Ireland	INFOMAR	Resolved
<b>MI02</b>	Habitat map - single: Shannon seabed classification map	local scale, Ireland	INFOMAR	Resolved
<b>MI03</b>	Habitat map - single: Dungarvan seabed classification map	local scale, Ireland	INFOMAR	Resolved
<b>MI04</b>	Habitat map - single: Boyne seabed classification map	local scale, Ireland	INFOMAR	Resolved
<b>MI05</b>	Habitat map - set: Celtic Sea habitats	local scale, Ireland	INFOMAR	Resolved
<b>MI06</b>	Point dataset: Celtic Sea Folk Sediment Classes	local scale, Ireland	Marine Institute	Pending
<b>CCMAR01</b>	Habitat map - single: Marine communities from the litoral of Cadiz	local scale, Spain	MAPAMA	Resolved
<b>CCMAR02</b>	Habitat map - single: Marine communities from the litoral of Almeria	local scale, Spain	MAPAMA	Resolved
<b>CCMAR03</b>	Habitat map - single: Marine communities from the litoral of La Gomera	local scale, Spain	MAPAMA	Resolved
<b>CCMAR04</b>	Habitat map - single: Marine communities from the litoral of El Hierro	local scale, Spain	MAPAMA	Pending
<b>CCMAR05</b>	Habitat map - single: Marine communities from the litoral of Gran Canaria	local scale, Spain	MAPAMA	Pending
<b>CCMAR06</b>	Habitat map - single: Marine communities from the litoral of Lanzarote	local scale, Spain	MAPAMA	Resolved
<b>CCMAR07</b>	Habitat map - single: Marine communities from the litoral of Fuerteventura	local scale, Spain	MAPAMA	Pending
<b>CCMAR08</b>	Point dataset: EUNIS habitat points from the PNSACV (South west coast of Portugal)	local scale, Portugal	CCMAR	Pending
<b>Ifremer01</b>	Habitat map - single: Bancs des Flandres (France) - EUNIS classification	local scale, France	AFB	Resolved
<b>Ifremer02</b>	Habitat map - set: Parc naturel marin estuaires picards et mer d'Opale (France) - EUNIS classification	local scale, France	AFB	Resolved
<b>Ifremer03</b>	Habitat map - single: Baie de Seine Orientale (France) - EUNIS classification	local scale, France	AFB	Resolved
<b>Ifremer04</b>	Habitat map - single: Baie de Seine Occidentale (France) - EUNIS classification	local scale, France	AFB	Resolved
<b>Ifremer05</b>	Habitat map - single: Récifs et marais arrière littoraux du Cap Levi à la pointe de Saire (France) - EUNIS classification	local scale, France	AFB	Resolved
<b>Ifremer06</b>	Habitat map - set: Mission d'étude PNM golfe Normand Breton (France) - EUNIS classification	local scale, France	AFB	Resolved
<b>Ifremer07</b>	Habitat map - single: Côtes de Granit Rose sept îles (France)	local scale, France	AFB	Pending

<b>Ifremer08</b>	Habitat map - single: Baie de St-Brieuc Est (France)	local scale, France	AFB	Pending
<b>Ifremer09</b>	Habitat map - single: Abers Côte des légendes (France)	local scale, France	AFB	Pending
<b>Ifremer10</b>	Habitat map - single: Les abers (France) - EUNIS classification	local scale, France	Ifremer	Resolved
<b>Ifremer11</b>	Habitat map - single: Trévignon (France) - EUNIS classification	local scale, France	Ifremer	Pending
<b>Ifremer12</b>	Habitat map - single: Rade de Brest (France) - EUNIS classification	local scale, France	Ifremer	Pending
<b>Ifremer13</b>	Predictive model: Kelp spatial distribution along Brittany coasts (France)	local scale, France	Ifremer	Pending
<b>GeoEcoMar01</b>	Point dataset: L35-132A map sheet with 36 point data within circalittoral and offshore circalittoral soft bottom habitats	Romanian shelf (~ 300 km <sup>2</sup> )	NIRD GeoEcoMar	Pending
<b>GeoEcoMar02</b>	Point dataset: L35-132B map sheet with 25 point data within offshore circalittoral soft bottom habitats	Romanian shelf (~ 300 km <sup>2</sup> )	NIRD GeoEcoMar	Pending
<b>GeoEcoMar03</b>	Point dataset: L35-132C map sheet with 35 point data within offshore circalittoral soft bottom habitats	Romanian shelf (~ 300 km <sup>2</sup> )	NIRD GeoEcoMar	Pending
<b>GeoEcoMar04</b>	Point dataset: L35-132D map sheet with 50 point data within offshore circalittoral soft bottom habitats	Romanian shelf (~ 300 km <sup>2</sup> )	NIRD GeoEcoMar	Pending
<b>GeoEcoMar05</b>	Habitat map - set: L35-132 A,B,C,D polygon	Romanian shelf (~ 1,200 km <sup>2</sup> )	NIRD GeoEcoMar	Pending
<b>GeoEcoMar06</b>	Point dataset: L35-144C map sheet with 30 point data within offshore circalittoral soft bottom habitats	Romanian shelf (~ 300 km <sup>2</sup> )	NIRD GeoEcoMar	Pending
<b>GeoEcoMar07</b>	Point dataset: K35-12A map sheet with 26 point data within offshore circalittoral soft bottom habitats	Romanian shelf (~ 300 km <sup>2</sup> )	NIRD GeoEcoMar	Pending
<b>GeoEcoMar08</b>	Habitat map - set: L35-144C and K35-12A polygon	Romanian shelf (~600 km <sup>2</sup> )	NIRD GeoEcoMar	Pending
<b>GeoEcoMar09</b>	Point dataset: 35 point data in North Western part of the Black Sea (Romania and Ukraine) GEF Project, 2006	Romanian and Ukrainian shelf (~28,900 km <sup>2</sup> )	NIRD GeoEcoMar	Pending
<b>GeoEcoMar10</b>	Point dataset: Core Programme, PN 18 16 03 01 - Investigation of benthic and pelagic habitats of the Romanian Black Sea coast	Romania	NIRD GeoEcoMar	Pending
<b>GeoEcoMar11</b>	Point dataset: 43 point data in Western and North Western part of the Black Sea (Bulgaria, Romania and Ukraine) POS363 Project - 2008	Western and North Western Black Sea (~33,280 km <sup>2</sup> )	Dr. Jana Friedrich	Pending
<b>GeoEcoMar12</b>	Point dataset: 26 point data within EMBLAS 2 project in the Ukrainian and Georgian shelf of the Black Sea	North Western (Ukraine)and Eastern (Georgia) part of the Black Sea	UNDP	Pending
<b>ISPRA01</b>	Habitat map - single: Inventario e Cartografia delle praterie di Posidonia oceanica nell'ambito del POR Puglia 2000 – 2006	Apulia Region - Italy	Apulia Region	Pending
<b>ISPRA02</b>	Habitat map - single: Rivisitazione di alcune praterie di Posidonia oceanica lungo le coste delle regioni Liguria - Toscana - Lazio - Basilicata - Puglia. Subste relativo a Toscana e Lazio	Latium and Tuscany Regions - Italy	MATTM	Resolved
<b>ISPRA03</b>	Habitat map - single: CARTA BIONOMICA DEI FONDI MARINI - AMP Tavolara - Punta Coda Cavallo	N-E Sardinia	MATTM - Consorzio Gestione AMP	Pending

<b>ISPRA04</b>	Habitat map - single: Carte Bionomica AMP Tor Paterno	Latium Region - Italy	MATTM - Consorzio Gestione AMP	Resolved
<b>ISPRA05</b>	Habitat map - single: Caratterizzazione bio-ecologica e bionomica dell'AMP Punta Campanella	Campania Region - Italy	Parthenope Un. Napoli	Resolved
<b>ISPRA06</b>	Habitat map - single: Caratterizzazione bio-ecologica e bionomica del Parco Marino Sommerso di Gaiola	Campania Region - Italy	MATTM - Consorzio Gestione AMP	Resolved
<b>ISPRA07</b>	Habitat map - single: Caratterizzazione bio-ecologica e bionomica del Parco Marino Sommerso di Baia	Campania Region - Italy	Parthenope Un. Napoli	Resolved
<b>ISPRA08</b>	Habitat map - single: Studi di fattibilità per l'area marina protetta di Capri, 2000	Campania Region - Italy	Parthenope Un. Napoli	Resolved
<b>ISPRA09</b>	Habitat map - single: Caratterizzazione bio-ecologica e bionomica dell'AMP di Porto Cesareo	Apulia Region - Italy	MATTM - Consorzio Gestione AMP	Pending
<b>ISPRA10</b>	Habitat map - single: Caratterizzazione bio-ecologica e bionomica dell'AMP di Capo Caccia	Sardinia Region - Italy	MATTM - Consorzio Gestione AMP	Pending
<b>SYKE01</b>	Point dataset: Estonian reef habitats 1 (Annex I of the Habitats Directive)	Estonia	Tartu Ülikooli Eesti Mereinstituut	Resolved
<b>SYKE02</b>	Point dataset: Estonian reef habitats 2 (Annex I of the Habitats Directive)	Estonia	Tartu Ülikooli Eesti Mereinstituut	Resolved
<b>SYKE03</b>	Point dataset: Estonian sandbank habitats 1 (Annex I of the Habitats Directive)	Estonia	Tartu Ülikooli Eesti Mereinstituut	Resolved
<b>SYKE04</b>	Point dataset: Estonian sandbank habitats 2 (Annex I of the Habitats Directive)	Estonia	Tartu Ülikooli Eesti Mereinstituut	Resolved
<b>IO-BAS01</b>	Point dataset: 26 point data	Bulgarian Black Sea coastal waters, 2018, WFD monitoring network	IO-BAS	Pending
<b>IO-BAS02</b>	Point dataset: 97 point data	Bulgarian Black Sea, 2019, MSFD monitoring network	IO-BAS	Pending
<b>IO-BAS03</b>	Point dataset: 32 point data	North-Western and Western Black Sea, 2019, ANEMONE project	ANEMONE Consortium	Pending
<b>JNCC01</b>	Habitat map - set: 4 Habitats Directive Annex I composite data products, combining data from multiple resources	UK continental shelf	JNCC	Pending
<b>JNCC02</b>	Habitat map - set: ~7 Habitats Directive Annex I habitat maps in offshore UK SACs	UK continental shelf	JNCC	Pending
<b>JNCC03</b>	Habitat map - set: ~4 Habitats Directive Annex I habitat maps in Welsh SACs	Welsh inshore and offshore waters	Natural Resources Wales	Pending
<b>JNCC04</b>	Habitat map - set: ~10 Habitats Directive Annex I habitat maps in English SACs	English inshore waters	Natural England	Pending
<b>JNCC05</b>	Habitat map - set: ~6 Habitats Directive Annex I habitat maps in Scottish SACs	Scottish waters	Scottish Natural Heritage	Pending
<b>JNCC06</b>	Habitat map - set: 2 Habitats Directive Annex I habitat maps in SACs	UK	MALSF	Pending
<b>JNCC07</b>	Habitat map - single: Habitats Directive Annex I habitat map in English SAC	English waters	Defra	Pending
<b>JNCC08</b>	Habitat map - single: Habitats Directive Annex I habitat map from the "Points to Polygons 2" contract	Scottish waters	Scottish Natural Heritage	Pending

<b>Supplemental</b>	Habitat map - single: Bancs des Flandres (France) - Habitat Directive classification	local scale, France	AFB (French Agency for the Biodiversity)	Resolved
<b>Supplemental</b>	Habitat map - set: Parc naturel marin estuaires picards et mer d'Opale (France)	local scale, France	AFB (French Agency for the Biodiversity)	Resolved
<b>Supplemental</b>	Habitat map - single: Baie de Seine Orientale (France) - Habitat Directive classification	local scale, France	AFB (French Agency for the Biodiversity)	Resolved
<b>Supplemental</b>	Habitat map - single: Baie de Seine Occidentale (France) - Habitat Directive classification	local scale, France	AFB (French Agency for the Biodiversity)	Resolved
<b>Supplemental</b>	Habitat map - single: Récifs et marais arrière littoraux du Cap Levi à la pointe de Saire (France) - Habitat Directive classification	local scale, France	AFB (French Agency for the Biodiversity)	Resolved
<b>Supplemental</b>	Habitat map - set: Mission d'étude PNM golfe Normand Breton (France) - Habitat Directive classification	local scale, France	AFB (French Agency for the Biodiversity)	Resolved
<b>Supplemental</b>	Habitat map - single: Les abers (France) - Habitat Directive classification	local scale, France	Ifremer	Resolved
<b>Supplemental</b>	Habitat map - single: Caratterizzazione bio-ecologica e bionomica dell'AMP Punta Campanella - seagrass meadows	Campania Region - Italy	Parthenope Un. Napoli	Resolved
<b>Supplemental</b>	Habitat map - single: Caratterizzazione bio-ecologica e bionomica del Parco Marino Sommerso di Baia - seagrass meadows	Campania Region - Italy	Parthenope Un. Napoli	Resolved
<b>Supplemental</b>	Habitat map - single: Studi di fattibilità per l'area marina protetta di Capri, 2000 - seagrass meadows	Campania Region - Italy	Parthenope Un. Napoli	Resolved
<b>Supplemental</b>	Habitat map - single: Wexford seabed classification map	local scale, Ireland	INFOMAR	Resolved
<b>Supplemental</b>	Habitat map - single: Celtic Sea BH	local scale, Ireland	INFOMAR	Resolved
<b>Supplemental</b>	Habitat map - single: Celtic Sea East	local scale, Ireland	INFOMAR	Resolved
<b>Supplemental</b>	Habitat map - single: Celtic Sea West	local scale, Ireland	INFOMAR	Resolved
<b>Supplemental</b>	Habitat map- Hab Dir Annex I. Part of the North Sea	Denmark	Danish Nature Agency	Pending
<b>Supplemental</b>	Point dataset: 3613 point data	Germany	Germany-State Office for the Environment, Nature Conservation and Geology	Pending
<b>Supplemental</b>	Habitat Map: Habitat Dir Annex I. Germany-Macklenburg-Vorpommern.	Germany	Germany-State Office for the Environment, Nature Conservation and Geology	Pending
<b>Supplemental</b>	Habitat & Point data	Sweden	Swedish Agency for Marine & water Management	Pending
<b>Supplemental</b>	Habitat map Annex I Hab Dir. Gulf of Gdansk and Western Pomerania	Poland	Polish General Directorate for Environmental Protection	Pending

<b>Supplemental</b>	Point dataset: North Sea data from 2017	Denmark	NCC Denmark	Resolved
<b>Supplemental</b>	Point dataset: North Sea Data from 2017. three sets of sediment and biotop samples.	Denmark	Orbicon I WSP	Resolved
<b>Supplemental</b>	Hab Dir Annex I. the North Sea and Skagerrak 2017	Denmark	Danish Nature Agency	Resolved
<b>Supplemental</b>	Hab Dir Annex I. the North Sea and Skagerrak 2018	Denmark	Danish Nature Agency	Resolved
<b>Supplemental</b>	Habitat map- Hab Dir Annex I. Skagerrak Natura 2000 habitat	Denmark	Danish Nature Agency	Resolved
<b>Supplemental</b>	Habitat map- Hab Dir Annex I. North Sea Natura 2000 habitat	Denmark	Danish Nature Agency	Resolved
<b>Supplemental</b>	Habitat map- Hab Dir Annex I. North Sea Natura 2000 habitat	Denmark	Danish Nature Agency	Resolved
<b>Supplemental</b>	Habitat map- Hab Dir Annex I. North Sea Natura 2000 habitat	Denmark	Danish Nature Agency	Resolved
<b>Supplemental</b>	Habitat map- Hab Dir Annex I. Frederikshavn Natura 2000 habitat	Denmark	Danish Nature Agency	Resolved
<b>Supplemental</b>	Hab Dir Annex I. the North Sea and Skagerrak 2018	Denmark	Danish Nature Agency	Resolved
<b>Supplemental</b>	Habitat map - seagrass meadows	Denmark	Archipelagos Institute	Pending
<b>Supplemental</b>	Habitat map - coralligenous	Greece	Archipelagos Institute	Pending
<b>Supplemental</b>	Habitat maps- set: 6 updated Hab Dir Annex I habitats in Finland	Finland	Finnish Environment Institute / Metsähallitus	Pending
<b>Supplemental</b>	Habitat map - single: Habitats Directive Annex I habitat map in Lithuania (Distribution of reefs defined based on Mytilus distribution)	Lithuania	Klaipeda University	Pending
<b>Supplemental</b>	Any kind of available data - habitat models	Estonia	Estonian Marine Institute, University of Tartu	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Bulgaria	Balikesir University, Faculty of Arts and Science, Department of Biology-Turkey	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Turkey	Department of Hydrobiology, Faculty of Fisheries, Ege University,	Pending



			35100, Bornova - Izmir, TURKEY	
<b>Supplemental</b>	Any kind of available data- point data and maps	Turkey	Institute of Marine Sciences and Technology, Dokuz Eylül University, İnciraltı, İzmir, Turkey	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Turkey	Çanakkale Onsekiz Mart University, Faculty of Science and Arts, Department of Biology, Çanakkale, Turkey	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Turkey	Sinop University-Turkey	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Turkey	Katip Celebi University Faculty of Fisheries	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Turkey	KTU Faculty of Marine Science, Department of Fisheries, Trabzon	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Turkey	Mersin University, Faculty of Arts and Science, Department of Biology	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Turkey	Istanbul University-Turkey	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Bulgaria	Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences -Bulgaria	Pending
<b>Supplemental</b>	Any kind of available data- point data and maps	Bulgaria	Institute of Fishery Resources (IFR), Varna, Bulgaria	Pending
<b>Supplemental</b>	Phytobenthic occurrence in WFD 2015 monitoring	Bulgaria	IO-BAS	Resolved

## 12. List of abbreviations and acronyms

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<b>AFB</b>	French Agency for the Biodiversity
<b>CCMAR</b>	Centre of Marine Sciences (Centro de Ciências do Mar, Portugal), a partner
<b>CMEMS</b>	Copernicus Marine Environment Monitoring Service
<b>DIGIT</b>	Directorate-General for Informatics
<b>EEA</b>	European Environmental Agency
<b>ETC/BD</b>	European Topic Centre on Biological Diversity
<b>ETC/ICM</b>	European Topic Centre on Inland, Coastal and Marine Waters
<b>EUNIS</b>	European Nature Information System; The datasets consists of information on Species, Habitat types and Sites for terrestrial, freshwater and marine realm; in the current document, the term is (abusively) used to refer specifically to the marine section of the EUNIS habitat classification system
<b>EU</b>	European Union
<b>EurOBIS</b>	European node of the Ocean Biogeographic Information System
<b>EUSeaMap</b>	The broad-scale physical habitat map produced by the Consortium
<b>GeoEcoMar</b>	National Research and Development Institute for Marine Geology and Geocology (Romania), a partner
<b>GEUS</b>	Geological survey of Denmark and Greenland, a partner
<b>GIS</b>	Geographic Information System
<b>HELCOM</b>	Helsinki Commission
<b>HELCOM HUB</b>	Helsinki Commission Underwater Biotope and Habitat Classification System
<b>ICES</b>	International Council for the Exploration of the Sea
<b>Ifremer</b>	French Research Institute for Exploitation of the Sea (Institut français de recherche pour l'exploitation de la mer), a partner
<b>INSPIRE</b>	Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community
<b>IO-BAS</b>	Institute of Oceanography – Bulgarian Academy of Sciences, a partner
<b>ISPRA</b>	Italian National Institute for Environmental Protection and Research (Istituto Superiore per la Protezione e la Ricerca Ambientale), a partner

<b>IUCN</b>	International Union for Conservation of Nature
<b>JNCC</b>	Joint Nature Conservation Committee (UK), a partner
<b>MI</b>	Marine Institute (Ireland), a partner
<b>MPA</b>	Marine Protected Area
<b>MSFD</b>	Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)
<b>NIVA</b>	Norwegian Institute for Water Research, a subcontractor
<b>OBIS</b>	Ocean Biogeographic Information System
<b>OGC</b>	Open Geospatial Consortium
<b>OSPAR</b>	Oslo Paris Convention
<b>RAC/SPA</b>	Regional Activity Centre for Specially Protected Areas
<b>RSC</b>	Regional Sea Convention/Commission
<b>SYKE</b>	Finnish Environment Institute, a subcontractor
<b>ur-EMODnet</b>	the Preparatory action for EMODnet (2009-2012), aka EMODnet phase 1
<b>WFS</b>	Web Feature Service
<b>WMS</b>	Web Map Service
<b>WP</b>	Work Package