# EMODnet Thematic Lot n°3 – Seabed Habitats

**EASME/EMFF/2020/3.1.11/Lot3/SI2.843624**

**Start date of the project: 25/09/2021 - (24 months)**

**Centralisation Phase**

## Quarterly Progress Report (3)

**Reporting Period: 01/04/2022 – 30/06/2022**

# Contents

**Disclaimer**

The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the CINEA or of the European Commission. Neither the CINEA, nor the European Commission, guarantee the accuracy of the data included in this study. Neither the CINEA, the European Commission nor any person acting on the CINEA's or on the European Commission's behalf may be held responsible for the use which may be made of the information.

# 1.   Highlights in this quarter

*[List progress for each of the tasks specified in Section 1.4.1 of the Tender Specifications; provide an explanation for any tasks in which progress has not been noted. Provide in the table a list of **all** Milestones and Deliverables as from the technical workplan in numerical order, the date due and status. Max 2 pages]*

**Task 1: Maintain and improve a common method of access to data held in repositories**

- A new data exchange format, confidence assessment method and guidance document have been developed and published, which will ensure a common format for sharing essential fish habitat maps – a new theme for this phase of EMODnet (D2.11).

- In response to the widening spatial (Caribbean and Caspian) and thematic (coastal wetlands) scope in the most recent phase, we were also required to review the data exchange format for seabed habitat maps. We have now developed and published an updated data exchange format that is able to accept coastal wetland maps and is generally more flexible about which classification systems are accepted. It also consolidates three separate data exchange formats that previously existing into a single format that will be easier to understand (D2.03, D2.08).

**Task 2: Construct products from one or more data sources that provide users with information about the distribution and quality of parameters in time and space**

- For the new broad-scale seabed habitat map for the Caspian Sea:
  - environmental data layers have been prepared from existing data archives on KdPAR (light attenuation in the water column), wave wavelength, seabed temperature and salinity (D1.07).
  - Benthic species data were identified from literature and a statistical cluster analysis carried out to identify communities.
  - Ifremer and GeoEcoMar met in Constanta (Romania) for a two-day workshop to make progress in the definition of physical seabed habitats in the Caspian Sea (D1.05). Decisions were made about the broad habitat classes to map, input data to use and thresholds for classifying the input data (D1.10).

- We have drafted a summary of the composite data products that we plan to produce, and/or have the capacity to produce, which we intend to share with regional sea conventions and other stakeholders. The intention is to gather their feedback about requirements (D3.01).

- Through a subcontract with DHI, we now have a now one-year mean prediction for the depth to the halocline in the Baltic Sea (D1.09). The next step is to produce a multi-year mean for use in EUSeaMap.

- An online workshop was held in June to ensure that all partners understood what was required for formatting habitat maps and point data for submission to EMODnet, and to check progress (D2.01, D2.02).

**Task 3: Develop procedures for machine-to-machine connections to data and data products**

- Connections to HELCOM Mapping and Data Service have been re-established following some changes at their end causing the linkages to break (D4.17).

**Task 4: Contribute data, data products and content to a central portal that allows users to find, view and download data and data products**

- As a portal with a significantly large number of products on offer, both through its catalogue but also through its current thematic web mapper, we have worked with the Central portal team to produce a

list of layers to prioritise for transfer to the central portal, highlighting urgent/key datasets which MUST be transferred to the central portal before decommissioning of the thematic site, and remaining prioritised datasets which could be added in a future migration phase. In addition to this, we have worked to successfully provide merged options for some of its layers that appear in the current interactive map, again working with the Central team to identify merging opportunities, suitable technical solutions, and have begun trialling the creation of additional merged layers ready for centralisation in earnest.

- Prioritisation has successfully identified 81 key layers out of 258 currently available in the Seabed Habitats interactive map, and grouping has successfully reduced this number to around 50. We will continue to liaise with the central team in the next quarter to continue the centralisation efforts.

**Task 5: Contribute content to dedicated spaces in the Central Portal**

- We have agreed the final text for the Seabed Habitats information pages on the central portal.

**Task 6: Ensure the involvement of regional sea conventions (RSC)**

- Through discussion with OSPAR, we have embedded EMODnet Seabed Habitats into the 2022 data call for data on threatened and/or declining habitats in the northeast Atlantic by expliciting offering our services to gather and format data for compilation in the database. Furthermore, we have encouraged the use of an existing EMODnet product (Macroalgal canopy cover) to form the baseline dataset for a new habitat that has been added to the threatened and/or declining list: Kelp Forests.

**Task 7: Contribute to the implementation of EU legislation and broader initiatives for open data**

- Based on a request from the OSPAR Intersessional Correspondence Group dealing with marine assessments, we have produced a translated version of the combined EUNIS habitat map for the northeast Atlantic that shows MSFD Benthic Broad Habitats. This was requested for use by Member States in their upcoming MSFD assessments.

- In May, we sent a formal letter to the four most relevant ICES Working Groups (Marine Habitat Mapping, Deep-water Ecology, Benthos Ecology and Biodiversity Science) to promote our products and services, and to show willingness to engage with them and their requirements. They all acknowledged receipt and committed to review (D5.03).

**Task 8: Monitor quality/performance and deal with user feedback**

- We receive instant alerts about web performance problems and resolve them as necessary.

- We have received several pieces of feedback through our web form and always respond and resolve any issues promptly (see User Feedback table).

**Task 9: Maintain the existing thematic web portal for a maximum of 6 months from the start of the project**

- We have continued to maintain the existing thematic web portal for even longer than 6 months.

| Status of the Milestones and Deliverables listed in the workplan | | | | |
|---|---|---|---|---|
| Milestone/Deliverable | WP | Date due | Status (Delivered/ Delayed) | If Delayed: reason for delay and expected delivery date |
| D1.01: Modified substrate data product including biogenic substrate and 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] | 1 | 25/05/2023 | | |
| D1.02: Confidence layer for modified substrate data product published | 1 | 25/05/2023 | | |
| D1.03: A ready-to-use DTM for EUSeaMap | 1 | 25/05/2023 | | |
| D1.04: Confidence layer for the DTM product published | 1 | 25/05/2023 | | |
| D1.05: EUNIS-style habitat classification in the Caspian Sea for broad-scale habitat mapping | 1 | 25/09/2022 | | |
| D1.06: EUNIS-style habitat classification in the Caribbean Sea for broad-scale habitat mapping | 1 | 25/12/2022 | | |
| D1.07: Environmental layers for the Caspian Sea ready for EUSeaMap | 1 | 25/12/2022 | | |
| D1.08: Environmental layers for the Caribbean Sea ready for EUSeaMap | 1 | 25/12/2022 | | |
| D1.09: Halocline layer for the Baltic Sea ready for EUSeaMap | 1 | 25/05/2022 | Delayed | subcontractor requiring more time. New expected due date: end of 09/2022. Nothing to worry about.The deliverable is internal to the project. It is an input to EUSeaMap, and having it ready after the planned deadline (05/2022) will not jeopardise the delivery date of EUSeaMap (09/2023). |
| D1.10: Thresholds for Caspian, Caribbean, Baltic, and Mediterranean Seas | 1 | 25/05/2023 | | |
| D1.11: Broad-scale seabed habitat map for Europe, Caribbean Sea, and Caspian, in EUNIS 2019 and MSFD broad habitat classifications, including a column that describes the habitat descriptor classes | 1 | 25/09/2023 | | |
| D1.12: Confidence assessment for updated broad-scale seabed habitat map in all considered classifications | 1 | 25/09/2023 | | |

| | | | | |
|---|---|---|---|---|
| D1.13: Confidence associated to all environmental layers published | 1 | 25/09/2023 | | |
| D1.14: A R script automating the calculation of environmental layers at the seabed from a CMEMS product archives | 1 | 25/09/2022 | | |
| D1.15: Technical report published | 1 | 25/09/2023 | | |
| D1.16: Well-documented R code and ArcGIS models used to construct the broad-scale seabed habitat map | 1 | 25/09/2023 | | |
| D1.17: For Swedish waters, a modelled habitat map based on Geology's novel type of seabed substrate map for habitat modelling [dependent on applicability if this new type of map to habitat modelling] | 1 | 25/12/2022 | | |
| D2.01: An expanded library of maps of communities, biocenoses, biotopes and habitats for all of Europe, Caribbean Sea and Caspian Sea ingested and converted to a standard format, with metadata for every map | 2 | 25/2/22-25/8/23 | | |
| D2.02: An expanded collation of point records of communities, biocenoses, biotopes and habitats for all of Europe, Caribbean Sea and Caspian Sea ingested and converted to a standard format, with metadata for every dataset | 2 | 25/2/22-25/8/23 | | |
| D2.03: Updated and integrated templates for habitat map data exchange formats | 2 | 25/11/2021 | Delivered | Delivered |
| D2.04: Webinars, tutorials or other forms of training material on the EMODnet Seabed Habitats data submission process | 2 | 25/12/2021 | Delivered | Delivered |
| D2.05: An expanded library of modelled maps of specific habitats for all of Europe ingested and converted to a standard format, with metadata for every dataset | 2 | 25/2/22-25/8/23 | | |
| D2.06: Evidence of use of the EMODnet Ingestion and safe-keeping of marine data facility for ingesting data points, maps and models from third parties | 2 | 25/09/2023 | | |

| | | | | |
|---|---|---|---|---|
| D2.07: Translation tables for coastal wetland types into one or more standard classifications | 2 | 25/01/2022 | Delayed | A final draft of a translation table between Ramsar wetlands and Habitats Directive Annex I habitats, accompanied by explanatory notes and justifications, has been shared with project partners from all regions for review. The final, reviewed version is due to be published within weeks. |
| D2.08: A data submission process and protocol for coastal wetlands types maps and points | 2 | 25/01/2022 | Delivered | Delivered |
| D2.09: Controlled vocabulary lists for classification systems published on NERC Vocabulary Server, as required | 2 | 25/12/21-25/08/23 | | |
| D2.10: A library of maps of Essential Fish habitats maps for major fish species in the Mediterranean, North East Atlantic and Baltic Sea ingested and converted to a standard format, with metadata for every map | 2 | 25/2/22-25/8/23 | | |
| D2.11: A data submission process and protocol for Essential Fish Habitats maps | 2 | 25/01/2022 | Delivered | Delivered |
| D2.12: Formal protocol for data sharing and identification of relevant benthic data between EMODnet Biology and EMODnet Seabed Habitats | 2 | 25/09/2022 | | |
| D2.13: Updated data model and guidance for benthic point data | 2 | 25/09/2023 | | |
| D2.14: A standard transformation between OSPAR T&D data schema and OBIS Schema to enable import into OBIS, including a test pilot run using the 2022 OSPAR T&D database | 2 | 25/09/2022 | | |
| D2.15: Agree a protocol with the OSPAR commission for the continued archiving of the public database within the OBIS network, pending success of D2.14 | 2 | 25/09/2023 | | |
| D2.16: List of point datasets, maps and models available via machine-to-machine connections | 2 | 25/11/21-25/8/23 | | |
| D2.17: Progress log for the ingestion of point data, maps and models | 2 | 25/10/21-25/09/23 | Delivered | Delivered |
| D3.01: A list of products to be created or updated and product specifications | 3 | 25/03/2022 | | |
| D3.02: 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 (updated) | 3 | 25/08/2023 | | |

EMODnet
European Marine
Observation and
Data Network

| | | | | |
|---|---|---|---|---|
| D3.03: A combined, harmonized data product showing the best evidence for extent and distribution of the Essential Ocean Variable "Seagrass cover" in Europe, with metadata (updated) | 3 | 25/08/2023 | | |
| D3.04: 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 (updated) | 3 | 25/08/2023 | | |
| D3.05: A combined, harmonized data product showing the best evidence for the extent of wetland type in Europe, Caspian Sea and the Caribbean, with metadata (new) | 3 | 25/04/2023 | | |
| D3.06: Data contributed to a harmonized data product showing the best evidence for extent and distribution of the Essential Ocean Variable "Mangrove cover and composition", with metadata (new, if required) | 3 | 25/08/2023 | | |
| D3.07: Evaluation of EFH approaches to determine map suitability to combine into products useful for fisheries management and biodiversity conservation | 3 | 25/05/2023 | | |
| D3.08: Combined, harmonized data products showing the best evidence for extent and distribution of habitats defined in other classifications in all regions, with metadata, depending on stakeholder needs (new) | 3 | 25/08/2023 | | |
| D3.09: An updated combined, harmonized data product showing the best evidence for the extent of biogenic substrate in all regions, with metadata (updated) | 3 | 25/01/2023 | | |
| D3.10: Report detailing the construction of the biogenic habitat data product (updated) | 3 | 25/05/2023 | | |
| D3.11: Report(s) detailing the construction of the data products defined by stakeholder needs (new) | 3 | 25/09/2023 | | |
| D3.12: Report detailing the construction of the Essential Ocean Variable data products (updated) | 3 | 25/09/2023 | | |
| D4.01: A web portal including a digital map, facilities for downloading data, metadata search and technical information | 4 | 25/09/2021 | Delivered | Delivered |

| | | | | | |
|---|---|---|---|---|---|
| D4.02: Contribute to EMODnet Technical Working Group as necessary | 4 | As necessary | | | |
| D4.03: Minutes & actions from Technical Working Group within 1 month of meeting | 4 | Within 1 month of each meeting | | | |
| D4.04: Ad hoc changes to website and visual identity, as requested by Secretariat | 4 | 25/10/21-25/03/22 | | | |
| D4.05: A set of data schema standards for the provision of habitat data, built upon international standard. | 4 | 25/09/2021 | Delivered | Delivered | |
| D4.06: Method for indirect cascading of problematic external services prior to onward publication | 4 | 25/12/2022 | | | |
| D4.07: Habitat ground-truthing data from EurOBIS extracted via web services | 4 | 25/12/2021 | Delayed | As explained in the previous quarter; progress is pending some changes to the EurOBIS toolsets, but we are on track for the revised delivery date of 25/09/23. | |
| D4.08: IPT (or alternative) infrastructure for the publication of habitat data into EurOBIS | 4 | 25/08/2023 | | | |
| D4.09: Internal database of unpublishable habitat data for use in WP1 and to aid public discoverability | 4 | 25/09/2021 | Delivered | Delivered | |
| D4.10: A GeoServer web-server for the provision of OGC spatial web-services (WMS, WFS, WCS) | 4 | 25/09/2021 | Delivered | Delivered | |
| D4.11: A plan of action for the provision of key habitat datasets as attributed raster data | 4 | 25/08/2022 | | | |
| D4.12: A GeoNetwork INSPIRE-compliant metadata instance with OGC CSW capabilities | 4 | 25/09/2021 | Delivered | Delivered | |
| D4.13: Publication to the central portal of relevant data and products collected and created under WP1 and WP2 | 4 | 25/03/22 with updates at least every 6 months | | | |
| D4.14: Website liaison and training node between lot partners/content creators and central portal team. | 4 | 25/09/2021 | Delivered | Delivered | |
| D4.15: Transfer of key habitat mapping resources from the thematic portal to the central portal | 4 | 25/09/2022 | | | |
| D4.16: Direct link to the HELCOM Mapping and Data Service, and similar services from other Regional Sea Conventions where feasible | 4 | 25/03/2022 | Delivered | Delivered | |

| | | | | |
|---|---|---|---|---|
| D4.17: A direct data link to the ICES VME database, providing access to vulnerable marine ecosystem data | 4 | 25/03/2022 | Delivered | Delivered |
| D4.18: Tracked issues and suggestions regarding the portal and services, and improvements made as a result. | 4 | 25/09/2021 | Delivered | Delivered |
| D4.19: Abstracts submitted for annual INSPIRE conference and participation in community forum where relevant. | 4 | depends on conference dates | | |
| D4.20: Publication of relevant products, datasets and services through EOSC and EUODP | 4 | 25/12/2022 | | |
| D4.21: Live operation of help desk 9-5, Mon-Fri | 4 | 25/10/2021 | Delivered | Delivered |
| D4.23: Provision of Matomo (or similar as steered by secretariat) web analytics information to secretariat for reporting | 4 | 25/09/2021 | Delivered | Delivered |
| D4.24: Statistics from OGC webservice usage - to be guided by secretariat. | 4 | 25/12/2021 | Delivered | Delivered |
| D5.01: Evidence of efforts to ensure maximum coherence with data delivery to and from regional sea conventions | 5 | 25/09/2023 | | |
| D5.02: Updated review of RSC needs | 5 | 25/01/2022 | Delayed | Delayed Engagements / Feedback with RSC due to limitations on availability of comms opportunities and restricted resources/meetings due to Covid/Ukraine Crisis.  Expect Delivery Q3 2022 |
| D5.03: Liaise with ICES in advance of annual WG meetings to ascertain products they require for reporting on ToRs | 5 | 25/05/2022, 25/05/2023 | | |
| D5.04: Tutorials for creating new maps from existing data | 5 | 25/03/2023 | | |
| D5.05: Promotion of simple procedural guidelines for creating alternative data formats from existing data formats | 5 | 25/03/2023 | | |
| D5.06: Tutorial on how to format habitat maps using templates and to simplify the data submission process. | 5 | 25/03/2023 | | |
| D5.07: Evidence of engagement with relevant working groups and expert groups to gather feedback and needs of habitat data requirements and products that will help Member States to fulfil reporting obligations | 5 | 25/01/22-25/09/23 | | |
| D5.08: Minutes of meeting(s) with EMODnet biology | 5 | 25/03/2022 | Delivered | Delivered |
| D5.09: Communications plan | 5 | 25/01/2022 | Delivered | Delivered |

| | | | | |
|---|---|---|---|---|
| D5.10: New use cases on the EMODnet central portal | 5 | 25/10/21-25/09/23 | | |
| D5.11: A prominent summary of the data and data products available from EMODnet seabed Habitats web services | 5 | 25/09/2022 | | |
| D5.12: Co-ordinated and sustained online presence: news stories, blogs, tweets, etc. | 5 | 25/10/21-25/09/23 | | |
| D5.13: Presentations and posters at conferences and cross-cutting meetings | 5 | 25/10/21-25/09/23 | | |
| D5.14: ESRI story maps / Infographics | 5 | 25/03/2022 | Delivered | Delivered |
| D5.15: Record of all promotion and outreach activities | 5 | 25/10/21-25/09/23 | | |
| D6.01: Project management plan and project initiation document | 6 | 25/10/2021 | Delivered | Delivered |
| D6.02: Project quality management plan and project audit document | 6 | 25/10/2021 | Delivered | Delivered |
| D6.03: Consortium Agreement | 6 | 25/10/2021 | Delivered | Delivered |
| D6.04: Participation in EMODnet SC meetings as necessary | 6 | As necessary | | |
| D6.05: Minutes & actions from Steering Committee meetings within 1 month of meeting | 6 | Within 1 month of each meeting | | |
| D6.06: Progress meeting 1 - WP leads | 6 | Mar-22 | Delivered | Delivered |
| D6.07: Minutes & actions from progress meeting 1 | 6 | Within 1 month of meeting | Delivered | Delivered |
| D6.08: Progress meeting 2 - whole consortium | 6 | 25-Mar | | |
| D6.09: Minutes & actions from progress meeting 2 | 6 | Within 1 month of meeting | | |
| D6.10: Quarterly progress report to EASME, DG-MARE and EMODnet Secretariat | 6 | 15 Jan, 15 Apr, 15 Jul & 15 Oct each year | | |
| D6.11: Interim report | 6 | 25/09/2022 | | |
| D6.12: Submission of the invoice for the interim payment | 6 | 25/09/2022 | | |
| D6.13: Final report | 6 | 25/09/2023 | | |
| D6.14: Submission of the invoice for the final payment | 6 | 25/09/2023 | | |

# 2. Identified issues: status and actions taken

*[Provide an **overview of issues** identified by CINEA (Table A) - new as well as pending ones, the status of those issues, and actions taken to address them and/or roadmap with remaining actions planned to resolve the issues. In Table B, provide information about any issues and challenges identified by yourself.]*

| A. Priority issue(s) identified and communicated by CINEA/ DG MARE/ SECRETARIAT | | | | |
|---|---|---|---|---|
| Priority issue | Status (Pending/ Resolved) | Action(s) taken/ remaining actions planned | Date due | Date resolved |
| **EM-591 (Task) SBH Layers in the Map Viewer Content Management System** | pending | JNCC sought clarification on this request at the most recent centralisation meeting and are now working on providing the requested statistics. status according to JIRA: To Do | 04/07/2022 | |
| **EM-570 (Sub-task) Feedback on CP Main Menu** | resolved | JNCC provided some feedback as requested. status according to JIRA: Done | 30/06/2022 | 27/04/2022 |
| **EM-558 (Bug) Seabed Habitats Catalogue no longer has any public records** | resolved | JNCC enquired with ICES who maintain the catalogue and they explained that they were carrying out a software update. status according to JIRA: Done | none | 03/05/2022 |
| **EM-539 (Task) Seabed Habitats products' centralisation** | pending | This is a rather large task to help the central portal team to understand the seabed habitat data products and how they can be mapped across to the central portal map viewer. We have provided a list of products and summarised which are used in the map viewer. The central portal have just sent us something to review. status according to JIRA: In Progress | none | |
| **EM-531 (Task) SBH - EMODnet Catalogue Tags** | pending | We asked a question related to this issue and are waiting for a reply before progressing. status according to JIRA: In Progress | none | |
| **EM-354 (Task) statistics for downloads and visitors for the whole EMODnet party for the last 12 months (per month)? > EM-495 (Sub-task) Seabed Habitats to report on number and volume of downloaded data and data products** | resolved | JNCC provided the required statistics. status according to JIRA: Done | 09/02/2022 | 09/02/2022 |

| | | | | |
|---|---|---|---|---|
| **EM-420 (Task): Log4jShell Critical Bug > EM-422 (Sub-task): Log4Jshell Update from SBH** | pending | Secretariat has raised a critical security issue affecting all portals. JNCC is looking into it. Marked as 'In Progress' on JIRA. | none | |
| **EM-389 (Task): Please review the new CP map viewer > EM-391 (Sub-task): SBH review of the new CP Map Viewer** | resolved | JNCC provided feedback on the new CP Map Viewer. Resolved as far as JNCC is concerned, although still marked as 'To Do' on JIRA. | none | 01/12/2021 |
| **EM-384 (Task): SBH to produce an inventory ofproducts** | resolved | JNCC provided a inventory of products. Resolved as far as JNCC is concerned, unless the Secretariat have further questions. Marked as 'In Review' on JIRA. | none | 30/11/2021 |
| **EM-383 (Task): SBH Grafana dashboard stopped tracking webpage Search Metadata** | resolved | the page URL had changed. JNCC confirmed the URL of the new page. marked as 'In Progress' on JIRA at time of writing this. | none | 06/01/2021 |
| **EM-354 (Task): statistics for downloads and visitors for the whole EMODnet party for the last 12 months (per month)? > EM-363 (Sub-task): Seabed Habitats to report on number and volume of downloaded data and data products by 29th of October 2021** | resolved | JNCC provided the requested statistics. Resolved as far as JNCC is concerned, unless the Secretariat have further questions. Marked as 'In Review' on JIRA. | none | 27/10/2021 |
| **EM-350 (Bug): Missing attribute in eusm2019_full_800 layer of Seabed Habitat WMS service** | resolved | JNCC updated the styling of this layer and resolved the bug. Marked as 'Done' on JIRA | none | 07/10/2021 |
| **EM-340 (Task): Collect fields/forms used on Thematic Portals > EM-347 (Sub-task): Collect fields/forms used on Seabed Habitats Thematic Portal** | resolved | a straightforward task to tell the Secretariat what forms are used on the website, which JNCC completed. Although the Secretariat have not marked it as 'Done' on JIRA yet (still 'To Do'). | none | 28/11/2021 |
| **EM-326 (Task): Collect names of Portal editors for a possible DG COMM training > EM-339 (Sub-task): Collect names of Portal editors** | resolved | a straightforward task to send a list of portal editors to the Secretariat, which JNCC completed. Marked as 'Done' on JIRA | none | 29/11/2021 |

| B.   Issues / challenges identified by the thematic assembly group itself | | | | |
|---|---|---|---|---|
| Priority issue / challenge | Status (Pending/ Resolved) | Action(s) taken / remaining actions planned | Date due | Date resolved |
| **Lack of an EMODnet DEM in the Caspian Sea for broad-scale habitat mapping. It is well known that a vital input layer into the broad-scale habitat map (EUSeaMap) is a digital elevation model provided by EMODnet Bathymetry. However, in this phase of the project Seabed Habitats has been asked to produce a broad-scale habitat map for the Caspian Sea, while Bathymetry were not asked to produce a DEM for that sea. As a result, we are forced to use GEBCO, which is of low resolution and quality in the Caspian Sea. We will be able to deliver the deliverable of a broad-scale habitat map for the Caspian Sea, but its quality will not be high.** | pending | raised at the April Steering Committee meeting, which proposed a meeting between CINEA, Bathymetry and Seabed Habitats to discuss the issue. | none | |
| **EM-515 (New Feature) Ability to filter habitat layers by habitat type or map ID** | pending | This is a feature from the SH portal that we have requested for the central portal. Actions lie with the central portal development team. status according to JIRA: To Do | none | |
| **EM-514 (Improvement) Return custom feature/pixel information when user clicks on a feature/pixel in the map** | pending | This is a feature from the SH portal that we have requested for the central portal. Actions lie with the central portal development team. status according to JIRA: To Do | none | |
| **EM-513 (New Feature) In the layer catalogue, add the ability toggle entire layer groups on or off** | pending | This is a feature from the SH portal that we have requested for the central portal. Actions lie with the central portal development team. status according to JIRA: To Do | none | |
| **EM-412 (New Feature) In the layer catalogue on new central portal, indicate which layer groups contain active layers** | pending | This is a feature from the SH portal that we have requested for the central portal. Actions lie with the central portal development team. status according to JIRA: To Do | none | |
| **EM-317 (Improvement) 'Seabed Habitats' missing from list of Topics on Newsroom** | pending | status according to JIRA: In Progress | none | |
| **EM-316 (Improvement) reorder EMODnet Themes on Reports page to force the 'active' themes to the top of the list** | pending | status according to JIRA: Done | none | 16/09/2021 |

# 3. User feedback

*[Provide a list of all user feedback received in the reporting period in chronological order. Indicate the type of the feedback received, a clear description of the query, and the actions undertaken to resolve the issue (e.g. update of metadata, fixing a particular issue with the map viewer). Indicate the status of the query, and if not provide an explanation why. List any feedback you received on the portal that can be used to build EMODnet use cases.]*

| Overview of user feedback and/or requests received in this quarter | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date** | Organisation | 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 |
| 01/04/2022 | Aqualicence | technical - The user was enquiring about some missing data in the EMODnet seabed substrate layer, which they were accessing via WMS. | web form | 3 hours | resolved | it transpired that they were viewing an old version of the layer, which is still available via WMS but not on the map viewer. I directly her to the latest version, which she was happy to see had the gaps filled. I also promised to rename the WMS layers to make it clear if they were not the most recent version. This has been added to our internal technical issues log | resolved |
| 08/04/2022 | SHOM | technical - The user was confused about the fact that there are EUSeaMap confidence layers on the map viewer, but when they clicked the download link they were taken to a link to download the EUSeaMap map package. | web form | 3 hours | resolved | explained that the confidence layer is not available to download on its own via the download page, it is zipped up with the EUSeaMap habitat map. | resolved |
| 16/05/2022 | Havochvatten - Swedish Agency for | technical - ICES metadata catalogue was down. | web form | 1 hour | resolved | contacted ICES data centre to check status. They confirmed that the service was down termporarily due to system maintenance. | resolved |

| | Marine and Water Management | | | | | | |
|---|---|---|---|---|---|---|---|
| 16/06/2022 | University of St Andrews | technical - The user was asking why there was substrate information missing from some coastal areas (e.g. Orkney Islands) in EUSeaMap 2021 when it was present in EUSeaMap 2016. | web form | 2 hours | resolved | Responded to explain that this information disappeared from the EMODnet Geology seabed substrate layer and that JNCC were planning to discuss the issue with BGS | resolved |
| 21/06/2022 | Intertek | technical - The user informing us that the OSPAR points layer doesn't have a symbology in the legend for Oceanic Ridges | web form | 1 day | resolved | The legend graphic was updated to show the missing habitat. | resolved |

# 4. Meetings/events held/attended & planned

*[List organisational meetings/events held/participated (incl. presentations, lectures, trainings, demonstrations, workshops, etc.) since the last quarterly report and planned in the future. Please add a short description on the meeting as well as the nature and volume of the audience.*

*When listing a meeting, please indicate whether it was an internal (i.e. within your partnership/lot) or external meeting (i.e. outside your partnership/lot).]*

| A. Meetings/events organised and attended in the quarter | | | | | |
|---|---|---|---|---|---|
| Date | Location | Type event (internal or external meeting; training/ workshop) | Was a presentation given? (yes/no + short description) | Meeting attended (A) / organised (O) | Short description and main results (# participants, agreements made, etc.) |
| **07/04/2022** | Web | External Meeting | No | A | European Marine Board Working Group on Marine Habitat Mapping - kick-off meeting. The EMB WG on Marine Habitat Mapping should aim to highlight the science and policies needed to advance marine habitat mapping to fulfil the objectives of the European Green Deal, the EU Biodiversity Strategy for 2030, and international commitments on biodiversity and climate. The WG should also make links to the societal outcomes of the UN Decade of Ocean Science for Sustainable Development. |
| **14/04/2022** | Web | Internal Meeting | No | O | Meeting on "D1.05 EUNIS-style habitat classification in the Caspian Sea for broad-scale habitat mapping". 3 participants. Discussions on Impact of the war on our work. Review of the list of environmental variables collated. Review of sample point data propects. |

| 26/04/2022 | Web | External Meeting | Yes - Seabed Habitats portal update | A | EMODnet TWG. |
|---|---|---|---|---|---|
| 27/04/2022 | Web | External Meeting | Yes - Seabed Habitats general update | A | EMODnet Steering Committee. |
| 06/05/2022 | Web | External Meeting | No | A | EMODnet Central Portal Technical team meeting with Seabed Habitats - meeting 5. 11 participants. Central Portal team gained a better understanding of steps needed to incorporate the data and functionality of the Seabed Habitat portal into the Central Portal. |
| 09/05/2022 | Lisbon, PT | Internal Meeting | Yes - WP updates | O | EMODnet Seabed Habitats Project Management Group Meeting. 9 participants. Updates from each WP on the current phase and identification of issues regarding the deliverables. Planning commencement for potential next phase which will include a new project co-ordinator due to JNCC/UK status. |
| 11/05/2022 | Web | External Conference | Yes - OSPAR use case | A | EU Marine Data Services All-Atlantic Workshop - satellite event to the Ocean Decade Laboratory on the Outcome "An Accessible Ocean". 150 participants. This 2-hour webinar discussed how a future All-Atlantic Ocean Data Space could be realized by building on existing initiatives such as the two EU operational marine data services, i.e. Copernicus Marine Service and EMODnet. |
| 16/05/2022 | Venice, Italy | External Conference | No | A | GeoHab. 150 participants. GEOHAB is an international association of marine scientists studying and mapping geophysical, biophysical, and geomorphic indicators of benthic communities, species diversity, and distribution. Enhancing Visibility of ESH outputs. |

| | | | | | |
|---|---|---|---|---|---|
| 23/05/2022 | Web | Internal Meeting | No | O | Making progress on setting up the subcontract with Anguilla Community College. 5 participants. Anguilla Community College/Government of Anguilla gaining a better understanding of the requirements so they can recruit a new member of staff to work on the project. |
| 25/05/2022 | Web | Internal Meeting | Yes - summary of WP2 progress, guidance, templates | A | WP2 progress meeting (Europe region). 10 participants. To make sure everyone understood what was required for preparing habitat maps and point datasets for submission as part of WP2. |
| 31/05/2022 | Constanta, Romania | Internal Meeting | No | O | Workshop on "D1.05 EUNIS-style habitat classification in the Caspian Sea for broad-scale habitat mapping". 3 participants. A draft habitat classification for Caspian Sea |
| 15/06/2022 | Web | External Meeting | No | A | European Marine Board Working Group on Marine Habitat Mapping . The EMB WG on Marine Habitat Mapping should aim to highlight the science and policies needed to advance marine habitat mapping to fulfil the objectives of the European Green Deal, the EU Biodiversity Strategy for 2030, and international commitments on biodiversity and climate. The WG should also make links to the societal outcomes of the UN Decade of Ocean Science for Sustainable Development. |
| 20/06/2022 | Web | Internal Meeting | No | O | Making progress on setting up the subcontract with Anguilla Community College. 5 participants. Anguilla Community College/Government of Anguilla gaining a better understanding of the requirements so they can recruit a new member of staff to work on the project. |
| 22/06/2022 | Web | External Meeting | No | A | EMODnet Vision for the future, governance and business model. 15 participants. |

| 29/06/2022 | Web | External Meeting | No | A | EMODnet Central Portal Technical team meeting with Seabed Habitats - meeting 6. 11 participants. Central Portal team gained a better understanding of steps needed to incorporate the data and functionality of the Seabed Habitat portal into the Central Portal. |
|---|---|---|---|---|---|
| | | | | | |
| **SUM** | | | | **O** | **Total # of meetings organised = 5** |
| **SUM** | | | | **A** | **Total # of meetings attended = 10** |

| 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 |
| 13/07/2022 | Web | External Meeting | A | European Marine Board Working Group on Marine Habitat Mapping . 9 participants. Catch-up on the drafting of a Future Science Brief on Marine Habitat Mapping in Europe |
| 13/07/2022 | Web | External Meeting | A | Meeting with new chair of MSFD EU TG Seabed about EUSeaMap. 5 participants. For TG Seabed to understand why the definition of mud and sand differs between EUNIS and EUSeaMap and for a general introduction |
| 14/07/2022 | Web | External Meeting | O | Meeting with the hosts of the NERC Vocabulary Server, BODC, to discuss to addition of new vocabularies for habitat classification systems. 4 participants. The get a better understand of how the NERC Vocabulary Server works and the process for adding new vocabularies. |
| 29/08/2022 | Reykjavik, IS / Web | External Meeting | A | ICES Working Group on Marine Habitat Mapping. To investigate the applicable uses of Habitat maps in policy / MSFD. |
| 19/09/2022 | Genova, IT | External Conference | A | Marine Key Habitats and Non-indigenous Species Symposia. The main objective of Symposia is to gather available knowledge on Marine Key Habitats at Mediterranean level. |
| 19/09/2022 | Dublin, IE | External Conference | A | ICES Annual Science Conference. To promote EUSeaMap and enhance engagement of ICES WGS/ EGS with ESH |

# 5.  Communication assets

*[List all the relevant communication and dissemination products and assets you have developed in the reporting period (e.g. brochures, videos, press releases, newsletters, blogs) and are planning to do. At the bottom of the table, provide a summary from the actions on Twitter from (e.g. Twitter Analytics: number of Tweets and followers of Twitter account).]*

| **A.  Communication products developed** | | | | |
|---|---|---|---|---|
| Date | Communication material | Short description (of the material, title, …) of the asset | Main results | Name of event at which material was disseminated (if applicable) |
| 29/4/2022 | Article in EMODnet Newsletter | Promotion of products currently available from ESH mapper through a story map | Promote EMODnet Seabed Habitats Products | |
| 17/5/2022 | News Article | EMODnet news item entitled "Summarising the extents of MSFD benthic broad habitats per sub-region and country" | Promotion of new EMODnet Seabed Habitats tool to facilitate Member States with MSFD reporting requirements on D6 Seafloor | |
| 19/5/2022 | Tweet | ESH Attendance at Geohab | Promotion of ESH products and relevance of EMODnet to the wider EU research community | |
| 31/5/2022 | Article in EMODnet Newsletter | Summarising the extents of MSFD benthic broad habitats per sub-region and country | Promotion of new EMODnet Seabed Habitats tool to facilitate Member States with MSFD reporting requirements on D6 Seafloor | |
| 08/6/2022 | Tweet | ESH Products Promotion for World Ocean Day | Promotion of ESH products | |
| 30/6/2022 | Article in EMODnet Newsletter | ESH Attendance at Geohab | Promotion of ESH products and relevance of EMODnet to the wider EU research community | |

| **B.  Planned communication products** |
|---|

| Date | Communication material | Short description (of the material, title, ...) and/or link to the asset | Main results expected |
|------|------------------------|-------------------------------------------------------------------------|-----------------------|
| 08/2022 | EMODnet Central Protocol for promoting new datasets | Release of coralligenous layer for Med | Promote EMODnet Seabed Habitats Products |
| 08/2022 | News Item on ESH website | Release of coralligenous layer for Med , | Promote EMODnet Seabed Habitats Products |
| 08/2022 | EMODnet Central Protocol for promoting new datasets | Release of biogenic substrate layer for Europe | Promote EMODnet Seabed Habitats Products |
| 08/2022 | News Item on ESH website | Release of biogenic substrate layer for Europe | Promote EMODnet Seabed Habitats Products |

*[In Table A, list peer reviewed publications directly (co-)authored by consortium and project partners in the reporting period. In Table B, list all non-peer reviewed publications (co-)authored. In all cases, indicate the type of publication, provide the full reference incl. title, volume and issue etc., and whether the publication is open or closed access.]*

| A. (Co-)Authored peer-reviewed publications in the quarter | | | | | |
|---|---|---|---|---|---|
| Date of publication | Type of publication | Full reference | ISBN | DOI | Is it open access? Yes/No |
| 12/02/2022 | Paper | Manolis Tsapakis, Ioanna Kalantzi, Alexandra Pavlidou, Nomiki Simboura, Konstantinos Tsiaras, Nikolaos Katsiaras & Maria Louiza Petre (2022). The Coastal Environmental Status of Argolikos Gulf. In: The Handbook of Environmental Chemistry. Springer, Berlin, Heidelberg. | | https://doi.org/10.1007/698_2021_838 | Yes |

| B. Other/non-peer reviewed types of publications (co-)authored in the quarter | | | | | |
|---|---|---|---|---|---|
| Date of publication | Type of publication | Full reference | ISBN | DOI | Is it open access? Yes/No |
| 01/05/2022 | Spreadsheet | Vasquez, M. (2022). Summary of extents of MSFD benthic broad habitats per sub-region based on EUSeaMap 2021. Available online at https://www.emodnet-seabedhabitats.eu/resources/documents-and-outreach | | | Yes |

For a compressive overview of publications referring to/making use of EMODnet data and/or data products, please consult Google Scholar.

# 6. Monitoring indicators

*[Refer to the standardised monitoring tool, i.e. Matomo/ Europa Analytics, to complete the indicators excel template, and provide a short explanation in the table below on the numbers and trends for each indicator when possible/applicable. **Indicate clearly if monitoring was carried out using tools other than Matomo/Europa Analytics.**]*

| Comments on the progress indicators in the indicators spreadsheet | | |
|---|---|---|
| Progress indicator | Means of collecting figures | Comment |
| 1. Current status and coverage of total available thematic data<br>A) Volume and coverage of available data | Custom postgresql views and geoserver layers including vocabulary keyword tagging) with python scripting | Note that a new method has been used to calculate these statistics in order to increase robustness, replicability and standardisation across periods. For this reason, numbers between this quarter and previous reports are not equivalent.<br>Reporting regions used: EMODnet Biology reporting regions, obtained from marineregions.org<br><br>Numbers continue to increase in good quantities relative to know data data sources, especially in areas historically lower in number (e.g. black sea), as a result of focus on these regions. |
| What is your opinion on the data coverage within EMODnet for your thematic? | | Point data coverage is concentrated in the EEZs of countries where project partners are based. There is likely to be much more data to be found in countries like Spain, Poland, Croatia, etc., which we may be able to target with dedicated subcontracts in year 2. |
| B) Usage of data in this quarter | Custom geoserver layers (including vocabulary keyword tagging), with python scripting, geoserver server-side | Overall downloads of data lower than previous quarters - reason unknown as no correlating factors identified. Conversely, WMS requests are significantly higher, may be driven by external use of the services by OSPAR, ICES web mappers. |

| | logging and data download web forms. | |
|---|---|---|
| 2. Current status and coverage of total number of data products<br><br>A) Volume and coverage of available data products | Custom postgresql views and geoserver layers including vocabulary keyword tagging) with python scripting | Note that a new method has been used to calculate these statistics in order to increase robustness, replicability and standardisation across periods. For this reason, numbers between this quarter and previous reports are not comparable.<br><br>Reporting regions used: EMODnet Biology reporting regions, obtained from marineregions.org. This is the first month we have used these new regions.<br><br>3 new habitat maps from survey added during this reporting round. |
| B) Usage of data products in this quarter | Custom geoserver layers (including vocabulary keyword tagging), with python scripting, geoserver server-side logging and data download web forms. | Significant reduction in download of products across the board. Reasons uncertain (no change in site or service), but follows trend with habitat point data.<br><br>Note that map visualisations and WMS requests are pooled across the entire service.<br><br>Statistics marked with an asterisk * or dagger † symbol were grouped together in the previous reporting period, therefore the trend is presented here as total of each group against the previous quarter. |
| 3. Internal and external organisations supplying/approached to supply data and data products within this quarter | Tracking tables in sharepoint. | |
| 4. Online 'Web' interfaces to access or view data | N/A | no changes since last quarter. |
| 5. Statistics on information volunteered through download forms | Download data forms along with python scripting and geoserver layer tagging. | Marginally higher Academic proportion this reporting round compared to previous reporting rounds. Regional statistics remain consistent. |

| 6. Published use cases | Grafana dashboard | problems with Grafana mean that we have no information for this quarter. |
|---|---|---|
| 8.1. Technical monitoring | Grafana dashboard | acceptable response time, better than last quarter. |
| 9. Visibility & Analytics for web pages | Grafana dashboard | problems with Grafana mean that we only have information for a single web page. |
| 10. Visibility & Analytics for web sections | Grafana dashboard | problems with Grafana mean that we have no information for this quarter. |
| 11. Average visit duration for web pages | Grafana dashboard | problems with Grafana mean that we only have information for a single web page. |

*The monitoring numbers reported as part of the progress monitoring of EMODnet performance are collected through Matomo and/or Europa Analytics, unless reported otherwise.*