



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot n°2 – Seabed Habitats

CINEA/EMFAF/2022/3.5.2/SI2.900370

Start date of the project: 25/09/2024 (24 months)

Phase V

Quarterly Progress Report (5)

Reporting Period: 01/10/2024 – 31/12/2024



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1. Highlights in this quarter

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

Although no data upload deadlines were scheduled for Q4–2024, data collation activities continued as usual. During this quarter, ISPRA managed some dataset provided by MNHN and MI. Furthermore, during the last month of 2024 VLIZ started the migration of point data uploaded via the Integrated Publishing Toolkit (IPT) to EurOBIS. Issues with outdated and/or missing vocabularies as well as data template incoherences were raised during the upload preventing the finalization of the process, but ISPRA and JNCC are exploring these to ensure the point data can be uploaded to the IPT available through EurOBIS by the next data delivery.

We completed a review of a new draft EMODnet metadata guidelines document which aims to achieve a common implementation across thematics to improve the user experience with the product catalogue and improve access to data across the thematic repositories.

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

To facilitate the handover of EUSeaMap development, Ifremer and GEUS held an internal workshop on the knowledge transfer and training in the modelling methods. The WP leads took part in a development session to discuss the known challenges and future work on EUSeaMap back-to-back with this session.

The first draft version of the Essential Fish Habitats (EFH) Composite Product was produced by CCMAR and shared with the WP leads, and an online meeting to gather feedback was held.

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

Nothing to report this quarter.

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

A prominent products summary (D5.06) was published and promoted via the EMODnet monthly newsletter. This comprises a [Story Map](#) detailing the library of habitat maps and products delivered from EMODnet Seabed Habitats.

Task 5: Contributing static content to dedicated spaces in the Central Portal

We continue to work closely with the CP team to facilitate up to date and relevant information relating to EMODnet Seabed Habitats (ESH) on the CP. An important Use Case for ESH relating to the European Marine Board (EMB) was delivered. Several of the ESH consortium were on the EMB habitat mapping working group that delivered the Marine habitat mapping Future Science Brief (June 2024). The EMB Habitat Mapping Working Group used EMODnet marine data in the analysis and collation of high-quality marine habitat maps necessary for a variety of marine policies.

Task 6: Ensure the involvement of regional sea conventions

Further communications took place between MI and ICES SCICOM relating to development of its strategy to align external projects/programmes with existing and ongoing ICES activities. The capacity of ESH to develop new composite products on behalf of ICES as part of ongoing ESH work was re-iterated, specifically relating to development of composite products and products that may facilitate ICES WG/EG reporting/ToRs.

CCMAR initiated interactions with the ICES working groups that are dealing with VMEs: Working Group on Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP) and Working Group on Deep-water Ecology (WGDEC). Meetings with the chairs of WGDEEP and WGDEC occurred in this quarter.

Both ICES WGs were informed about ESH intention of producing a new EMODnet Vulnerable Marine Ecosystems (VME) product and they have agreed to collaborate, namely by invitation to their workshops on the subject. Nevertheless, they informed ESH that ICES intends to improve its own maps. Therefore, ESH products should be complementary (e.g. VME indicator species distribution).

MI and JNCC attended and presented ESH updates at the Working Group for Marine Habitat Mapping (WGMHM) and engaged with the WG on potential future composite products.

Syke met with HELCOM to discuss future data products and how to arrange data flows from HELCOM data calls to EMODnet (e.g. HELCOM Red List / Protect Baltic data to seagrass and macroalgae EOVs). ESH (GEUS) will present EUSeaMap at the next HELCOM WG Benthic session (February 2025) to gather feedback on it.

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

Syke took part in the EMODnet Biology workshop for EU research projects, presenting ESH and encouraging the projects to be in contact to facilitate data ingestion. Piloting ESH and research projects collaboration, Syke will prepare a questionnaire for data producers in the OBAMA-NEXT project to gather information on types of data produced, data & metadata standards used etc.

In this quarter we checked and finalised the Seabed Habitats categorisation of our data products in the EDITO-Infra project and provided feedback and suggestions for the next phase of the project.

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

We continue to respond promptly in response to user feedback received directly and via JIRA. During this quarter we have had several queries about specific data downloads and have responded to these promptly sign posting users to the data catalogue and download locations.

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable in numerical order	WP	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	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]	WP1	26/07/2025	To Do		
D1.02: Confidence layer for modified substrate data product published	WP1	26/09/2025	To Do		
D1.03: Tool to spatially simplify EUSeaMap	WP1	26/05/2025	To Do		
D1.04: Updated broad-scale seabed habitat map	WP1	26/09/2025	To Do		
D1.05: Confidence assessment for updated broad-scale seabed habitat map, in all considered classifications	WP1	26/09/2025	To Do		
D2.01: An expanded library of maps of communities, biocenoses, biotopes and habitats for all of Europe and Caribbean Sea ingested and converted to a standard format, with metadata for every map	WP2	26/08/2025	To Do		
D2.02: An expanded collation of point records of communities, biocenoses, biotopes and habitats for all of Europe and Caribbean Sea ingested and converted to a standard format, with metadata for every dataset	WP2	26/08/2025	To Do		
D2.03: Updated and integrated templates for habitat map data exchange formats, if needed	WP2	26/11/2023	Delivered	26/11/2023	
D2.04: Webinars, tutorials or other forms of training material on the EMODnet Seabed Habitats data submission process	WP2	26/01/2024	Delivered	26/01/2024	

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable in numerical order	WP	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
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	WP2	26/08/2025	To Do		
D2.06: Controlled vocabulary lists for classification systems published on NERC Vocabulary Server, as required	WP2	26/08/2025	To Do		
D2.07: An Expanded library of maps of Essential Fish habitats maps for major fish species in the North Sea, Macaronesia, Eastern Mediterranean Sea and, where possible, other European basins, ingested and converted to a standard format, with metadata for every map	WP2	26/08/2025	To Do		
D2.08: An expanded library of coastal wetlands habitats for all of Europe ingested and converted to a standard format, with metadata for every dataset	WP2	26/08/2025	To Do		
D3.01: A list of products to be created or updated and product specifications (New)	WP3	26/03/2024	Delivered	26/03/2024	
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 and Caribbean Sea, with metadata (Update and new)	WP3	26/05/2025	To Do		
D3.03: A combined, harmonized data product showing the best evidence for extent and distribution of the Essential Ocean Variable “Seagrass cover” in Europe and Caribbean Sea, with	WP3	26/06/2025	To Do		

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable in numerical order	WP	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
metadata (Updated and new)					
D3.04: A combined, harmonized data product showing the best evidence for extent and distribution of the Essential Ocean Variable “Macroalgal canopy cover” in Europe, with metadata (Update and new)	WP3	26/07/2025	To Do		
D3.05: A combined, harmonized data product showing the best evidence for extent and distribution of the Essential Ocean Variable “Mangrove cover” in Caribbean, with metadata (Update and new)	WP3	26/08/2025	To Do		
D3.06: A combined, harmonized data product showing the best evidence for the extent of coastal wetland type in Europe and the Caribbean, with metadata (Update and new)	WP3	26/05/2025	To Do		
D3.07: Evaluation of EFH approaches to determine map suitability to combine into products useful for fisheries management and biodiversity conservation (Update and new)	WP3	26/05/2025	To Do		
D3.08: Create a harmonised map of potential VMEs and potential degraded habitats (New)	WP3	26/08/2025	To Do		
D3.09: 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)	WP3	26/08/2025	To Do		
D3.10: An updated combined, harmonized data product showing the best evidence for the extent of	WP3	26/01/2025	To Do		

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable in numerical order	WP	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
biogenic substrate in all regions, with metadata (Update)					
D3.11: Report detailing the construction of the Essential Ocean Variable data products (Update)	WP3	26/08/2025	To Do		
D3.12: Report detailing the construction of the biogenic habitat data product (Update)	WP3	26/05/2025	To Do		
D3.13: Report detailing the construction of the coastal wetlands habitats data product (Update)	WP3	26/05/2025	To Do		
D3.14: Report(s) detailing the construction of the data products defined by stakeholder needs (New)	WP3	26/09/2025	To Do		
D3.15: Report detailing the construction of the Essential Fish Habitat data products (New)	WP3	26/09/2025	To Do		
D3.16: Report detailing the construction of the harmonisation of Vulnerable Marine Ecosystems (VME) and other priority habitats (New)	WP3	26/09/2025	To Do		
D4.01: Geoserver OGC spatial web-services (WMS, WFS, WCS) and a GeoNetwork INSPIRE-compliant metadata instance	WP4	25/09/2023	Delivered	25/09/2023	
D4.02: Access all unrestricted habitat ground-truthing data from the EMODnet Biology database via web services	WP4	24/09/2025	To Do		
D4.03: A publicly available list of all new data and products collected and created under WP1, WP2 & WP3 that have been published via EMODnet Seabed Habitats in year 1	WP4	24/09/2024	Delivered	27/09/2024	

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable in numerical order	WP	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
D4.04: A publicly available list of all new data and products collected and created under WP1, WP2 & WP3 that have been published by EMODnet Seabed Habitats in year 2.	WP4	24/09/2025	To Do		
D4.05: Direct link to services from the Regional Sea Conventions where feasible	WP4	24/09/2024	Delivered	24/09/2024	
D5.01: Evidence of engagement with RSCs and relevant working groups to gather feedback and needs of habitat data requirements and products that will help Member States to fulfil reporting obligations	WP5	-	To Do		
D5.02: Infographics illustrating the spatial distribution, resolution and availability of ESH product and data holdings	WP5	26/09/2024	Delayed		Work is in progress but will be delayed until Q2-2025 due to resourcing issues (personnel) at the MI.
D5.03: Infographic on viewing, accessing and downloading ESH product and data holdings	WP5	26/11/2024	Delayed		Work is in progress but will be delayed until Q1-2025 due to resourcing issues (personnel) at the MI.
D5.04: Promotion of data provider contributions in co-operation with the Central Portal via, news items and social media.	WP5	26/09/2023 – 26/09/2025	To Do		
D5.05: Use cases on the EMODnet Central Portal.	WP5	26/09/2023 – 26/09/2025	To Do		
D5.06: Updated prominent summary of the data and data products available from EMODnet Seabed Habitats on the CP (with WP4)	WP5	26/09/2024	Delivered	15/11/2024	Published in November 2024.
D6.01: Progress reports to CINEA, DG MARE and EMODnet Secretariat	WP6	15th of Jan, Apr, Jul & Oct each year	Delivered	15/10/2024	
D6.02: Interim report	WP6	26/09/2024	Delivered	29/11/2024	Delivered by the end on Nov 2024 as agreed with CINEA, revised version

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable in numerical order	WP	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
					will be submitted mid-Jan 2025.
D6.03: Final report	WP6	26/09/2025	To Do		

2. Identified issues: status and actions taken

[Provide an **overview of issues** identified by CINEA/ DG MARE/ Secretariat (Table A) in the past quarter - 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	Action(s) taken/ remaining actions planned	Date due	Date resolved
	(Pending/ Resolved)			
EM-88 (Sub-task) Seabed Habitats - Web Services Metadata Url and DataUrl fields	pending	All metadata URL issues resolved. No current outstanding problems but issue remains open as regular checks occur.	none	
EM-146 (Sub-task) Seabed Habitats Quality of Service Monitoring: Several of the services did not meet the 99% availability this quarter, and one of the WMS didn't meet the perform	pending	substantial work has gone into investigating the causes of the performance issues and the development of a solution (the so-called 'self-healing' GeoServer. However, this solution is relatively novel as has come across several hurdles. Our next steps are to instigate a data cleansing process to find and eliminate any geometry issues and to add an additional GeoServer instance to help share the load.	none	

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
ance requirement of 5 sec.				
EM-391 (Sub-task) SBH review of the new CP Map Viewer	pending	tasks complete to date but this issue remains open for future requests for SBH to review the CP	none	
EM-644 (Sub-task) Seabed Habitats to provide input to the Tools & Guidelines section	pending	Tools and guidelines have been added to the central portal. Report uploads are in progress	none	
EM-665 (Task) TWG12 - CP & SBH to investigate if CP viewer can deal with layer group styles	pending	we have investigated this but it does not resolve the duplicated legend issue for group layers in the central portal. A temporary solution has been proposed and work is underway.	none	
EM-874 (Sub-task) Seabed Habitats to	Resolved		none	08/11/2023

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
provide metadata records relevant to Ocean Hackathon 2023				
EM-957 (In Review) EMODnet lots to check if filter values are displayed in the preferred order	Pending		none	01/10/2025
EM-1011 (Done) Seabed Habitats to review the guidelines document on metadata harmonization	Resolved	<p>As announced at the Technical Working Group meetings, we have drafted a guidelines document on how the EMODnet metadata, in particular the Distribution Info and Resource Constraints section, should be implemented in order to achieve a common implementation across thematics and following INSPIRE (and thus allowing a common rendering of this information in the Central Catalogue). I have made it available to you as an online document (let me know if you don't have access): [EMODnet_metadata_guidelines_DistributionInfo_ResourceConstraints.docx https://vliz.sharepoint.com/:w:/s/project_EMODnet-Central-Portal/EXCM7rW4dIxCi6OLLhwuCyoB7gCOQ3AFkzACZGI2WawGKA]</p> <p>Please review the document and add any proposed edits or questions directly in the online document (you should be able to suggest changes and add comments, if not please let me know in this ticket) by the next Technical Working Group on the 8th of October 2024. We will then discuss any changes proposed with the aim to reach a guidelines document with a common metadata implementation suitable to all thematics.</p>	08/10/2024	02/10/2024
EM-981 (In Progress) Update of Themes-	Pending	Following the quarterly reports Q2 2024, there may be a need for thematics to update the "Themes" tab in the reporting/progress monitoring spreadsheet to better match the current situation. This ticket provides each thematic with the opportunity to provide updates to their respective Theme and Subthemes.	none	25/09/2024

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
tab in reporting spreadsheet				

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
EM-412 (New Feature) In the layer catalogue on new central portal, indicate which layer groups contain active layers	pending	This is a issue/suggestion that SBH made related to the functionality of the CP. As per last TWG the decision is that if SBH wants this functionality implemented, SBH does the development once the viewer code is shared. SBH will have internal discussion on how to proceed.	none	
EM-513 (New Feature) In the layer catalogue, add the ability toggle entire layer groups on or off	pending	This is a issue/suggestion that SBH made related to the functionality of the CP	none	
EM-666 (New Feature) TWG12-Advanced filter option	pending	This is a issue/suggestion that SBH made related to the functionality of the CP. The majority of the filters have been enabled but still missing a gui freetext filter.	none	
EM-621 (Improvement) manual sorting of layers, rather than alphabetically	pending	This is a issue/suggestion that SBH made related to the functionality of the CP	none	
EM-623 (Improvement) improve access to metadata and download	pending	This is a issue/suggestion that SBH made related to the functionality of the CP	none	
EM-916 (Bug) products catalogue without filter options	Pending		none	
EM-936 (Task) EMODnet Seabed Habitats static content update	Pending	Materials for the static content have been prepared and will be delivered through the ticket in early Q2.	none	
EM-943 (Task) Updated tools and guidance for Seabed Habitats	Pending	Updates have been done on 04/04/2024 and will be reviewed by SBH in early Q2.	none	

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
We have found a problem with the new version of the EMODnet DTM. There are areas, typically bays and estuaries, with depth values that are too high to a sometimes surprising degree. It appears that in all these areas GEBCO 2022 is used. This problem will lead to classification errors in EUSeaMap, and we cannot publish EUSeaMap with such classification errors (they cover too large an area).	pending	We have reported the problem to EMODnet Bathymetry and discussed it with them. Their view is that the problem should be solved by GEBCO first, and as a result future versions of the EMODnet DTM will de facto be corrected. As instructed in the assessment for the 2023-Q1 progress report, we have submitted this issue as a JIRA ticket assigned to Bathymetry (EM-972).		
We have submitted a number of habitat point datasets to EMODnet Biology during this phase, however since this lacks occurrence data it requires significant technical updates to the EMODnet Biology systems to facilitate the display of this data through their web services. Until this is done we cannot progress our plan to submit the habitat point data via this route.	pending	Seabed Habitats and Biology have had a number of discussions about this and will continue work on this in 2024. The work on making habitat data not linked to occurrences available has begun but the process is not yet finished as Biology currently have a restriction in place to only publish data that are mapped to a vocabulary that has a short name. This is the case for most BODC collections (P01 being one of them), however it does mean that they are unable to publish the records mapped to EUNIS codes. We will continue to work on this so we can make all data available as expected.		
EM-916 (Bug) products catalogue without filter options	Resolved		none	13/12/2024
EM-972 (Bug) GEBCO 2022 error affecting EUSeaMap (via EMODnet DTM)	Pending		7/3/2024	05/06/2024
During this quarter we suffered a prolonged period of downtime for the Seabed Habitats CSW due to a cyber attack on ICES who host our metadata instance. This also impacted some of the viewer layers which are cascaded from ICES web services via seabed habitats	pending	We flagged the downtime with the central portal technical team to ensure that this would not impact the central portal data catalogue. The layers were temporarily hidden on the viewer and cached version of the metadata instance was fixed. We are working with ICES to get the webservices operational again.	none	
EM-1014 (Bug) Seabed Habitats Drupal login for deliverable upload	Resolved	New and updated products added to CP viewer as planned.	none	10/10/2024

3. Communication assets

[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	
October 2024	Research Paper	Erzini, K., Sadat, Z., Bentes, L. , Coelho, R., Lino, P. G., Monteiro, P., Oliveira, F. , Ribeiro, J., Gonçalves, J. M.S. (2024). The potential fish provisioning services of vegetated and unvegetated habitat in a lagoon nursery. Fisheries Research, 278, 107115.		https://doi.org/10.1016/j.fishres.2024	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	
	e.g. paper; conference					

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
	proceedings; book chapter; ...				

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

4. Monitoring indicators

[Refer to the standardised monitoring tool, i.e. 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 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 A) Volume and coverage of available data	Custom PostgreSQL views and geoserver layers including vocabulary keyword tagging) with python scripting	No new data uploaded during the quarter as per workplan.
What is your opinion on the data coverage within EMODnet for your thematic?		Overall coverage is considered good, and we continue working on filling gaps in areas where we don't have partners in the consortium.
B) Usage of data in this quarter	Custom PostgreSQL views and geoserver layers including vocabulary keyword tagging) with python scripting	Overall downloads, map visualisations and WFS requests are higher than in the previous quarter, but WMS requests are slightly down. Reasons are uncertain but overall results are positive.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products	Custom PostgreSQL views and geoserver layers including vocabulary keyword tagging) with python scripting	No new data uploaded during the quarter as per workplan.
B) Usage of data products in this quarter	Custom PostgreSQL views and geoserver layers including vocabulary	In general downloads, map visualisations and WFS requests are higher than in the previous quarter but WMS requests are slightly down. Reasons are uncertain but could be that users are choosing to utilise downloads and WFS services to access that data rather than the view only WMS services.

Comments on the progress indicators in the indicators spreadsheet		
Progress indicator	Means of collecting figures	Comment
	keyword tagging) with python scripting	
3. Internal and external organisations supplying/approached to supply data and data products within this quarter	Tracking tables in SharePoint	A total of 19 data / data products were acquired in this reporting period. All of them were provided directly by the project partners covering 2 sea basins from 2 countries and involving 3 different data owners.
5.1 Daily number of page views of EMODnet Thematic entry page	Europa Analytics	Similar to previous quarter with expected decline at the end of the month (holiday season).
5.2 Quarterly total number of visitors, page views, unique page views and percentage of returning visitors	Europa Analytics	Total number of visitors and page views higher with less returning visitors.

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

5. Annex: Other documentation attached

[List in Annex if you wish to provide any additional information.]