



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 – Quarterly Progress Report (17)

Reporting Period: 01/07/2021 – 30/09/2021





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Disclaimer

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1. Highlights in this quarter

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

- The end of this quarter corresponds with the end of this phase of EMODnet Seabed Habitats (ended on 24 September 2021). Therefore, we spent a lot of this quarter uploading the habitat maps and point datasets collated and processed in the previous months. Specifically, we added 2,941 [survey sample points](#) (0.62% increase) and 30 [individual habitat maps from surveys](#) (3% increase) to the collection.

Task 2: construct products

- A new version of EUSeaMap, named EUSeaMap 2021, was developed so that the product 1) accounts for new seabed substrate data published by EMODnet Geology in 2021 and 2) may be published in new classifications, i.e. the new version of the marine section of EUNIS, the Baltic HELCOM HUB classification, and the revised classification of Mediterranean habitat types. Some issues identified in EUSeaMap 2019 were also fixed (see issue INT 05, section 4, table B). EUSeaMap 2021 was published the 24th of September 2021. Further details on this new version can be found in the [technical report](#).
- We created and published several new composite data products in this quarter – that is products that are a composite of data from multiple sources, brought together to show the best available evidence on the extent and/or distribution of a particular habitat or set of habitats. In this phase we created the following new products: Biogenic substrate in Europe (polygons), Live hard coral cover in Europe (points), Seagrass cover in Europe (points), Macroalgal canopy cover in Europe (points), EUNIS v2007 habitats in the northeast Atlantic (polygons) and Coralligenous and other calcareous bioconcretions in the Mediterranean (polygons).

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

- All habitat maps, point observations and model outputs and all data products produced by the project have been made freely available through our web map service. All vector layers produced by the project (except EUSeaMap due to its size) are also available via our web feature service and all raster layers are soon to be available via our web coverage service, pending the imminent upgrade of our GeoServer system.

Task 4: maintain and further develop a thematic web portal

- The portal and geospatial services are now host to a substantial data upload from the other web packages. Additional quality control and corrections were provided on geographic data and attribute errors identified at this stage and were resolved quickly with excellent communication from data providers.
- New interactive mapper confirmed active this quarter with modifications as described in Q22021 report.
- Further minor improvements made to automated procedures for reporting on data provision.

Task 5: ensure the involvement of regional sea conventions

- HELCOM plans to utilize EUSeaMap for the spatial pressure and impact assessment for the next HELCOM 'State of the Baltic Sea' report. Since the recent update to the EUSeaMap broad-scale



habitat map we have been in touch with HELCOM to arrange a meeting to show them how the map was constructed, its limitations and plans for improvement.

- We have been working closely with the leaders of the OSPAR assessment on the extent of physical damage to the seabed for the next quality status report to produce the most definitive map of seabed habitats in the northeast Atlantic.

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

- This task is operated routinely

Task 7: operate a help desk offering support to users

- This task is operated routinely

Status of the Milestones and Deliverables listed in the workplan

Milestone/Deliverable	WP	Dissemination level	Date due	Status	Comments
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	Public	24/08/2021	Delivered	
D1.02: Modified substrate data product including biogenic substrate to allow new EUNIS classification	WP1	Public	24/05/2021	Delivered	
D1.03: Confidence layer for modified substrate data product [dependent on 1.01, 1.02]	WP1	Public	24/08/2021	Delivered	
D1.04: EUSeaMap in EUNIS and MSFD broad habitat classifications, updated with new substrate data, with metadata	WP1	Public	24/09/2021	Delivered	
D1.05: Confidence maps for updated EUSeaMap in EUNIS and MSFD	WP1	Public	24/09/2021	Delivered (EUNIS 07 , MSFD)	



classifications, with metadata					
D1.06: Method for classifying EUSeaMap according to the new version of EUNIS [dependent on new EUNIS being publishing]	WP1	Public	24/12/2020	Delivered	
D1.07: EUSeaMap classified according to the new version of EUNIS [dependent on new EUNIS being publishing], with metadata	WP1	Public	24/09/2021	Delivered	
D1.08: Confidence maps for EUSeaMap in new EUNIS classification, with metadata [dependent on 1.07]	WP1	Public	24/09/2021	Delivered	
D1.09: Review of stakeholder needs and feasibility of classifying EUSeaMap to regional classifications, such as HUB	WP1	Public	24/03/2020	Delivered	
D1.10: Method for classifying EUSeaMap according to regional classifications [dependent on D1.09]	WP1	Public	24/05/2020	Delivered	
D1.11: EUSeaMap classified according to regional classifications, and metadata [dependent on D1.09]	WP1	Public	24/09/2020	Delivered	EUSeaMap is now classified according to HELCOM HUB (Baltic) and the Mediterranean classification
D1.12: Confidence maps for EUSeaMap classified according to regional classifications, with metadata [dependent on D1.09]	WP1	Public	24/09/2021	Delivered	
D1.13a: Technical report describing the updates to EUSeaMap 2019	WP1	Public	24/03/2020	Delivered	



D1.13b: Technical report describing the updates to EUSeaMap 2021	WP1	Public	24/09/2021	Delivered	
D1.14: Well-documented R code and ArcGIS models used to construct EUSeaMap	WP1	Public	24/09/2021	Delivered	
D1.15: Report describing ways in which EUSeaMap may be improved if funds become available	WP1	Public	24/11/2020	Delivered	
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	Public	24/08/2021	Delivered	
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	Public	24/08/2021	Delivered	
D2.03: Templates for habitat map data exchange formats and for metadata	WP2	Public	24/11/2019	Delivered	
D2.04: Tool for consortium members to quality-check their habitat maps before submission to the WP lead	WP2	Within consortium	24/02/2020	Delivered	
D2.05: Document detailing the quality-control procedure for habitat point data and maps	WP2	Within consortium	24/03/2020	Delivered	
D2.06: Meeting(s) with EMODnet Biology on coordinating the	WP2	Within consortium	24/01/2020	Delivered	



ingestion of species and habitat data from the same samples					
D2.07: Minutes and actions from meeting(s) with EMODnet Biology	WP2	Within consortium		Delivered	
D2.08: Guidelines for submitting habitat point data to OBIS	WP2	Public	24/04/2020	Delivered	
D2.09: List of point datasets, maps and models available via machine-to-machine connections	WP2	Within consortium	Updated regularly	Delivered	
D2.10: Evidence of use of the EMODnet Ingestion and safe-keeping of marine data facility for ingesting data points, maps and models from third parties	WP2	Public	24/09/2021	Delivered	The link points to the Ingestion submissions page, filtered according to the 'seabed habitats' theme.
D2.11: Progress log for the ingestion of point data, maps and models	WP2	Within consortium	Updated regularly	Delivered	
D2.12: Log of failed data requests	WP2	Within consortium	Updated regularly	Delivered	
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	Public	24/08/2021	Delivered	
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	Public	24/08/2021	Delivered	
D3.03: A combined, harmonized data product showing the best evidence for extent and distribution of the	WP3	Public	24/08/2021	Delivered	



Essential Ocean Variable "Macroalgal canopy coral cover" in Europe, with metadata					
D3.04: Report detailing the construction of the three Essential Ocean Variable data products	WP3	Public	24/08/2021	Delivered	
D3.05: A combined, harmonized data product showing the best evidence for the extent of biogenic substrate in Europe, with metadata	WP3	Public	24/04/2021	Delivered	
D3.06: Report detailing the construction of the biogenic habitat data product	WP3	Public	24/05/2021	Delivered	
D3.07: A review of stakeholder needs for combined, harmonized data products for seabed habitats in Europe	WP3	Within consortium	24/03/2020	Delivered	
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	Public	24/08/2021	Delivered	
D3.09: Report detailing the construction of the data products defined by stakeholder needs	WP3	Public	24/09/2021	Delivered	
D3.10: Pilot maps and points translated to the new version of EUNIS (created as part of a pilot project)	WP3	Public	24/03/2021	Delivered	
D3.11: Report describing the process of translating marine	WP3	Public	24/09/2021	Delayed	This and the work that it describes was delayed due to the issues described in INT 04.



habitat data to the new version of EUNIS					
D4.01: A digital map with panning and zooming facilities allowing users to view data, data products and metadata	WP4	Public	24/10/2019	Delivered	
D4.02: Facilities for downloading data, metadata and data products	WP4	Public	24/10/2019	Delivered	
D4.03: A process to enable harvesting and filtering of point habitat information stored in OBIS/ EMODnet Biology, using machine-to-machine connections	WP4	Within consortium	24/06/2021	Delivered	
D4.04: Seamless display of habitat points stored locally and those accessed via machine-to-machine connections (predominantly from OBIS/ EMODnet Biology)	WP4	Public	24/08/2021	Delayed	Delayed due to upstream delays in non-EMODnet procedures required to get full UK dataset into OBIS. The harvest is however scheduled for autumn 2021 so the delay is not infinite.
D4.05: Seamless display of habitat maps stored locally and those accessed via machine-to-machine connections	WP4	Public	24/11/2020	Delivered	
D4.06: Seamless display of other map layers on portal accessed using machine-to-machine connections	WP4	Public	24/09/2020	Delivered	
D4.07: Feature enabling ability to track usage	WP4	Public	24/10/2019	Delivered	
D4.08: Feature enabling live operation of help desk 9-5, MonFri	WP4	Public	24/10/2019	Delivered	
D4.09: User questions and answers on the portal and through RSS so they can be listed on the central EMODnet portal	WP4	Public	24/08/2020	Delivered	Agreed with CINEA that there's no need to publish live Q&R. A FAQ was published instead



D4.10: New map layers to portal	WP4	Public	Upload 24/02/2020 Upload 24/08/2020 Upload 24/02/2021 Upload 24/08/2021	Delivered Delivered Delivered Delivered	
D4.11: Contribution to EMODnet Technical Working Group	WP4	EU	09/2019 04/2020 11/2020 1 st meeting 2021 2 nd meeting 2021	Delivered Delivered Delivered Delivered Delivered	
D4.12: Minutes & actions from Technical Working Group	WP4	Within consortium	Within 1 month of each meeting	Delivered	
D4.13: Planned technical improvements	WP4	Public	24/09/2021	Delivered	
D4.14: Ad hoc technical improvements based on user feedback	WP4	Public	24/09/2021	Delivered	
D4.15: Ad hoc changes to website and visual	WP4	Public	24/09/2021	Delivered	
D4.16: A new URL under the "europa.eu" domain, if requested by the Commission services	WP4	Public	When requested	Cancelled	
D5.01: Evidence of efforts to ensure maximum coherence with data delivery to and from regional sea conventions and ICES	WP5	Within consortium, EU	24/09/2021	Delivered	We had meetings with RSCs (see section 7), the conclusions of which are in report D3.07. Additionally, we met ICES data managers to discuss metadata in ICES Geonetwork
D5.02: Evidence of efforts to coordinate with CMEMS	WP5	Within consortium, EU	24/09/2021	Delivered	We organised a meeting in Toulouse with CMEMS (8/10/2020, see section 7)



					during which we mainly discussed the way EMODnet Seabed Habitats could contribute to the MSFD portfolio that Copernicus created with EMODnet Chemistry.
D5.03: Evidence of collaboration with EMODnet biology to coordinate the ingestion of species and habitat point data from the same samples	WP5	Within consortium, EU	24/09/2021	Delivered	Report D2.08 is the evidence. Meetings are also listed in section 7
D5.04: Widespread promotion of guidelines for submitting habitat point data to OBIS	WP5	Public	24/09/2021	Delivered	Promoted via the EMODnet Newsletter published in August 2021 , Twitter, and the OBIS manual
D5.06: New use cases on the website	WP5	Public	24/09/2021	Delivered	
D5.07: A prominent summary of the data and data products available on the website	WP5	Public	24/09/2020	Delivered	
D5.08: Sustained online presence: news stories, tweets, etc.	WP5	Public	24/09/2021	Delivered	
D5.09: Presentations and posters at conferences and cross-cutting meetings	WP5	Public	24/09/2021	Delivered	Presentations and posters are listed in section 7
D5.10: Promotion of products via ESRI story maps	WP5	Public	24/09/2021	Delivered	
D5.11: Record of all promotion and outreach activities	WP5	Within consortium, EU	Updated regularly	Delivered	Delivered in quarterly reports and in the present document, section 8
D6.01: Project management plan and project initiation document	WP6	Within consortium	24/10/2021	Delivered	



D6.02: Project quality management plan and project audit document	WP6	Within consortium	24/10/2021	Delivered	
D6.03: Consortium Agreement	WP6	Within consortium	24/10/2021	Delivered	
D6.04: Participation in EMODnet Steering Committee meetings	WP6	EU	09/2019 04/2020 11/2020 1 st meeting 2021 2 nd meeting 2021	Delivered Delivered Delivered Delivered Delivered	
D6.05: Minutes & actions from Steering Committee meetings	WP6	Within consortium	Within 1 month of each meeting	Delivered	
D6.06: Progress meeting 1 – WP leads	WP6	Within consortium	24/03/2020	Delivered	
D6.07: Minutes & actions from progress meeting 1	WP6	Within consortium	Within 1 month of each meeting	Delivered	
D6.08: Progress meeting 2 – whole consortium	WP6	Within consortium	24/03/2021	Delivered	
D6.09: Minutes & actions from progress meeting 2	WP6	Within consortium	Within 1 month of each meeting	Delivered	
D6.10: Quarterly progress reports to EASME, DG MARE and EMODnet Secretariat by 15th of the month.	WP6	EU	15/10/2019 15/01/2020 15/04/2020 15/07/2020 15/10/2020 15/01/2021 15/04/2021 15/07/2021	Delivered Delivered Delivered Delivered Delivered Delivered Delivered Delivered	
D6.11: Interim report	WP6	EU	24/09/2020	Delivered	

D6.12: Submission of the invoice for the interim payment	WP6	EU	24/09/2020	Delivered	
D6.13: Final report	WP6	EU	24/09/2021	Delivered	
D6.14: Submission of the invoice for the final payment	WP6	EU	24/09/2021	Delivered	

2. Identified issues: status and actions taken

[Provide an overview of the issues identified by CINEA (Table A), if any, since the start of the project phase (provide date), 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 issues and challenges identified by yourself, if any.]

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
Letter from EASME (ref. Ares(2019)7151776) - EMODnet websites - compliance with applicable data protection rules	Resolved	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):- An updated checklist (annex 1)- An update on the action plan that was submitted on 04/08/2019- a record of processing of personal data		
JIRA issue EMODNET-33, then EM-88. EASME - Action on Web Services MetadataUrl and DataUrl fields Recap of task: for every layer in GeoServer, make it so that the data url points to a predefined download link.	Resolved	We had hundreds of these layers We developed the workflow needed to automate most of this task. We ran this script to complete most of the layers. Then we through the remaining layers and made manual changes where possible, in liaison with distant hosts.		
Email from CINEA 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 compliance in the next report.	Resolved	We reviewed the content of the website, in terms of text, figures and maps and determined that no changes were necessary to reflect the fact that the UK has left the EU.		



Note that we have not yet received any feedback about UK servers now that we are in the transition period.				
BREACH vulnerability issue (JIRA issue EMODnet-35)	Resolved	We clarified with the EMODNet Secretariat Technical Coordinator that we were already compliant hence this was not an issue for our portal.		
Email from EMODnet Secretariat on 12/08/2020: Urgent GDPR requirement from SC&DIGIT 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	Resolved	We disabled the tawk.to service. As a result, there is no longer live chat services on EMODnet Seabed Habitats portal		
JIRA EM-80 - Seabed Habitats to report on status or plans to support INSPIRE Compliant CSW	Resolved	We use the ICES GeoNetwork instance. We worked with ICES data team to rectify INSPIRE extension and advertised port issues on the CSW service of the ICES Geonetwork. As a side-task relating to work on this issue, Seabed Habitats has moved to a sub-portal for easier data management and harvesting by EMODnet Central.		
JIRA EM-93 - GDPR Compliance for Seabed Habitats JIRA EM-107 Seabed Habitats - Removal of Brexit content disclaimer	In review	JNCC digital and data solutions teams have made requested changes to the website to resolve the issue. Remaining action is for secretariat to review that the changes are acceptable.		
JIRA EM-132 - Seabed Habitats to report on number and volume	Resolved			



of downloaded data and data products by 6th of January				
JIRA EM-146 - Seabed Habitats Quality of Service Monitoring	In progress	<p>The metric behind response time was queried by JNCC, as it appeared to relate to last-by response rather than first-byte response. This has been agreed by the secretariat, and amendments have now been made to the code for response time in subsequent reporting periods.</p> <p>Progress on the self-healing GeoServer was delayed, as described in the previous report. It was ready to go live in August when it was hit by an apache flaw. Due to significant data uploads in the intervening period, a further switch will be dependent on a sync check of data holdings between the two infrastructures. Likely 1 month away.</p>		
JIRA EM-181 - Some links on Seabed Habitats Product catalogue are broken	Resolved	Two metadata records were “unpublished”, likely as a result of the Geonetwork subportal move.		
JIRA EM-215 - Seabed Habitats - Banner for Promotion EMODnet Online Survey 2021	Resolved			
JIRA EM-238 - Seabed Habitats - Update of Data Protection Notices	Resolved			
JIRA EM-248 - Seabed Habitats - Banner UPDATE - deadline extension	Resolved			
JIRA EM-288 - Failing: EMODnet Sea Bed Habitats (CSW)	Resolved			
JIRA EM-292 - Expected downtime of EMODnet Seabed Habitats web mapper (upgrades)	Resolved			
JIRA EM-312 - Failing: EMODnet Sea Bed Habitats Geoserver	Resolved			



(WMS/WFS/WCS) web services				
JIRA EM-318 - Content Inventory Seabed Habitats	Resolved			
JIRA EM-324 - Seabed Habitats infrastructure switch - Expected downtime Seabed Habitats geoserver and web mapper	In progress	Initial infrastructure switch reverted due to apache flaw identified. Due to significant data uploads in the intervening period, a further switch will be dependent on a sync check of data holdings between the two infrastructures. Likely 1 month away.		
JIRA EM-325 - Failing: EMODnet Seabed Habitats GeoNetwork (CSW) Web Services	Resolved			

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
Covid-19: Tasks taking longer For some partners, everything takes longer due to slow network speeds or having to take additional time off to look after children	Resolved	More days allocated to these tasks		
Covid-19: Inability to perform some tasks Some partners cannot process data due to inability to access their enterprise network (i.e., they do not have the technology for that)	Resolved	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 were dealt with and made available in the second year.		
EMODnet indicators	In progress	We 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.		



<p>Hosting the ICES VME database on our mapper and GeoServer as a cascaded WMS layer.</p>	<p>In progress</p>	<p>We tried to cascade the VME database to their servers but encountered issues, specifically a CORS error and mixed content error. The mixed content error occurred because the EMODnet Seabed Habitats website has SSL encryption enabled, whereas the ICES website does not, meaning data be pulled through to our servers for security reasons. 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. The ICES site now provides HTTPS via SSL.</p> <p>The CORS (cross-origin resource sharing) error is common, and requires a server setting to be changed on the ICES side. JNCC are currently in discussion with ICES to resolve this.</p>		
<p>INT 01 - Personal data processing issue: due to UK leaving the EU the 1st of January 2021 and JNCC processing personal data, EMODnet Seabed Habitats would no longer have been compliant with the contractual clauses stating that no personal data can be processes outside the EU</p>	<p>Resolved</p>	<p>Responsibility for processing the emails from users was transferred from JNCC over to Ifremer.</p> <p>The server has been relocated in Europe</p> <p>The server logs from both the website and the geoserver have been deleted as they contain IP addresses</p> <p>The server logs for both website and geoserver have been configured not to record log IP addresses going forward</p> <p>The download capture form has also been configured not to record IP addresses</p>		
<p>INT 02 - Deliverable D4.09 (corresponding to a tender requirement - Section 2.1.3.8. User feedback): User questions and answers on the portal and through RSS so they</p>	<p>Resolved</p>	<p>EASME agreed that EMODnet Seabed Habitats would publish an FAQ online instead of an exhaustive list of questions and answers, which are otherwise regularly reported in the progress reports</p>		



can be listed on the central EMODnet portal				
<p>INT 03 - covid, back to full lockdown confinement in the UK, with school closed</p> <p>Everything takes longer due to slow network speeds or having to take additional time off to look after children</p>	Resolved	More days allocated to these task		
<p>INT 04 Issues with the EUNIS 2019 translation table</p>	Resolved	<p>Deliverable 3.10 (pilot translation of EUNIS maps) was relying on the official EUNIS 2019 official translation table published on the EEA website. We found that the table is incomplete and it has serious issues and errors, and that it was published on the EEA website without a guidance manual or a report. In the Atlantic alone, for example, the spreadsheet consists of 980 rows, 293 of these needed manual checks and corrections (where possible). Specific issues included: whole sections of the classification missing, logical rules not followed, incorrect or missing codes. JNCC has corrected the simpler issues, but for other more complex ones, external input or agreement is required. We contacted the EEA and proposed how to solve these more complex issues, but it will take some time before a decision is made. Fixing these issues costed a lot of unplanned effort, and caused a delay of several months in the delivery of D3.10.</p>		
<p>INT 05 unexpected additional work for next EUSeaMap due to data gaps in version 2018 of the EMODnet bathymetry DTM (pixels with no data alongshore, leading to</p>	Resolved	<p>As mentioned in our tender proposal, in order to reduce costs for the development of EUSeaMap 2021 we had not planned to re-run the biological zone layers but to use the version developed as part of the previous contract, in 2019. A substantial issue with that version,</p>		



<p>significant loss of habitat spatial distribution).</p>		<p>due to a data gaps in the EMODnet Bathymetry DTM 2018, was found out. In some places covering sometimes significant areas, the DTM presents gaps (i.e. pixels with no data) alongshore, as a result our biological zone layers also do. This gap represents a total area of approximately 32 500 km² in the Atlantic.</p> <p>We made the decision to fix the issue and use the latest version of the EMODnet Bathymetry DTM (version 2019, which does not present that issue) to fill the gaps. In order to minimise the risk of delays in the provision of EUSeaMap we deployed unplanned resources (2 men.months)</p>		
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3. User feedback (Contact Us form, online chat & other communication means)

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
08/07/2021	Bangor University	General - which environmental variables are available to download for a habitat suitability model on sugar kelp	Email	1 day	resolved	Replied via email	resolved
16/07/2021	Cefas	Technical - I'm looking to obtain Annex I reef data for the North Sea. Please could you point me to the best data sources?	Email	1 day	resolved	Replied via email	resolved
17/08/2021	IEO	general - concerns about the accuracy of some of the EMODNET maps for Spanish waters in certain areas, especially in relationship with the sediment type and with the rock. Since these maps are going to be key for the future assesment of benthic habitat in the frame of the Marine Strategy Framework Directive, we are slightly worry and we were wondering if will possible to contribute with new data (raw or	Email	2 hours	resolved	Replied via email	resolved

		analysed) to the EMODNet as well as what will be the best way to do that. Also, we wondering if will be possible to be more link to the process of generation of these maps as well as to better understand what data were used to produced them and how (if possible) will be the way to uddated them with better and new data.					
13/09/2021	Instituut voor Landbouw- en Visserijonderzoek (ILV)	Technical - Would it be possible to send me the layer of EUSeaMap 2019 Broad-scale Predictive Habitat map- MSFD benthic broad habitat types?	Email	3 days	resolved	Replied via email	resolved
24/09/2021	Not disclosed	Technical - WMS link no longer working	Contact Form	1 day	resolved	Replied via email	resolved
23/09/2021	Not disclosed	Technical - Unable to download kinetic energy due to currents in the Mediterreanean	Contact Form	1 day	resolved	Replied via email	resolved
06/10/2021	Basque Climate Change Center	technical - I am working with some layers that I have downloaded from your (EMODNet) 'Seabed Habitats' database and I find some issues in the Seabed substrate layers. (...) I will appreciate if you can send me the original data of the seabed substrate layers (not the downloaded from EMODNet).	Email, via secretariat	1 day	resolved	replied via email	resolved



EASME/EMFF/2018/1.3.1.8/Lot2/SI2.810241
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Quarterly Progress Report

4. Meetings/events held/attended & planned

[Organisational meetings/events held/participated (incl. presentations, lectures, trainings, demonstrations, workshops, etc.) by the contractor 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					
Date	Location	Type event (internal or external meeting, training/workshop)	Indicate if a ppt was given (yes/no + short description)	Meeting attended (A) / organised (O)	Short description and main results (# participants, agreements made, etc.)
26/06-05/07/2021	Albena, Bulgaria	Conference	Yes: Todorova et al: how EUSeaMap 2019 was used in the assessment of the spatial extent of benthic broad habitats types adversely affected by anthropogenic pressures under D6C5 in 2019.	A	Conference XXIth International Multidisciplinary Scientific GeoConference Surveying, Geology and Mining, Ecology and Management – SGEM 2021, 26 June - 5 July, 2021.
07/07/2021	Videoconf	External meeting		O	Meeting with Tehran Convention to discuss how to engage with Caspian Sea data holders.
12/07/2021	Videoconf	External meeting		A	Meeting with Mission Atlantic and One Ocean Hub projects Mission Atlantic and One Ocean Hub projects have created the first draft of a South Atlantic broad-scale habitat map. This meeting is to present and discuss these outputs.
8-9/09/2021	Videoconf	External meeting		A	15th EMODnet Steering committee

9-10/09/2021	Videoconf	External meeting		A	10th EMODnet Technical Working Group
26/06-05/07/2021	Albena, Bulgaria	Conference	Yes: Todorova et al: how EUSeaMap 2019 was used in the assessment of the spatial extent of benthic broad habitats types adversely affected by anthropogenic pressures under D6C5 in 2019.	A	Conference XXIth International Multidisciplinary Scientific GeoConference Surveying, Geology and Mining, Ecology and Management – SGEM 2021, 26 June - 5 July, 2021.
SUM				O	Total # of meetings organised =1
SUM				A	Total # of meetings attended = 5

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
		Not applicable – end of project		

5. Communication assets

[List all the relevant communication and dissemination products and assets you have developed since the start of the project phase (provide date) (e.g. brochures, videos, press releases, newsletters, blogs) and are planning to do. At the bottom of the table, provide a total number for every type of communication product you have developed (e.g. total # of press releases, etc.) or provide a summary from the actions on Twitter from (e.g. Twitter Analytics: number of Tweets and followers of Twitter account).]

A. Communication products				
Date	Communication material	Short description (of the material, title, ...) of the asset	Main results	Name of event at which material was disseminated (if applicable)
09/07/2021	News item on ESH website	Attendance at the EMODnet Jamboree 2021 and Open Conference	Wider awareness of the Jamboree and Conference, demonstrating our commitment to collaboration and outreach, and raising awareness of the posters and presentation recordings available to those who didn't attend.	
17/08/2021	New or updated web page on the ESH website	Publication of a new page on the EMODnet portal, detailing the submission guidelines for habitat data into OBIS	Wider awareness of guidance, hopefully leading to more standardised approach to recording habitat data in OBIS	
17/08/2021	News item on ESH website	PDF guide for submitting habitat data to into OBIS	Wider awareness of guidance, hopefully leading to more standardised approach to recording habitat data in OBIS	
19/08/2021	Personal LinkedIn Post	Post promoting the publication of guidance for submitting habitat data into EurOBIS	Wider awareness of guidance, hopefully leading to more standardised approach to recording habitat data in OBIS	
18/08/2021	Reference to EMODnet Seabed Habitats in other materials	Updated content to the OBIS manual to include guidance on submitting habitat data	Wider awareness of guidance, hopefully leading to more standardised approach to recording habitat data in OBIS	
19/08/2021	EMODnet Central Tweet	Tweet promoting the publication of guidance for	Wider awareness of guidance, hopefully leading to more standardised approach to recording habitat data in OBIS	



		submitting habitat data into EurOBIS		
18/08/2021	JNCC Tweet	Tweet promoting the publication of guidance for submitting habitat data into EurOBIS	Wider awareness of guidance, hopefully leading to more standardised approach to recording habitat data in OBIS	
19/08/2021	EurOBIS Tweet	Tweet promoting the publication of guidance for submitting habitat data into EurOBIS	Wider awareness of guidance, hopefully leading to more standardised approach to recording habitat data in OBIS	
17/08/2021	Reference to EMODnet Seabed Habitats in other materials	Article in EMODnet Newsletter regarding the new functionality to submit habitat data into OBIS	Wider awareness of guidance, hopefully leading to more standardised approach to recording habitat data in OBIS	
23/09/2021	News item on ESH website	Release of the 2020 OSPAR T&D database	Wider awareness of the availability of a new data product so that it may be used by those who'd benefit from it.	

B. Planned communication products

Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected
Oct 2021	News item on ESH website	End of phase start of a new one	Promote EMODnet Seabed Habitats Activities
Oct 2021	JNCC Tweet	Release of the 2020 OSPAR T&D database	Promote EMODnet Seabed Habitats Products
Oct 2021	EMODnet Central Tweet	Retweet of the above on "Release of the 2020 OSPAR T&D database"	Promote EMODnet Seabed Habitats Products
Nov 2021	JNCC Tweet	Release of new EUSeaMap 2021, including data layers and technical report	Promote EMODnet Seabed Habitats Products
Nov 2021	EMODnet Central for Launching New Datasets	Release of new EUSeaMap 2021, including data layers and technical report	Promote EMODnet Seabed Habitats Products
Nov 2021	News item on ESH website	Release of new EUSeaMap 2021, including data layers and technical report	Promote EMODnet Seabed Habitats Products



Next available	Article in EMODnet Newsletter	Release of new EUSeaMap 2021 and other datasets ESH products , including data layers and technical report	Promote EMODnet Seabed Habitats Products
Dec 2021	JNCC Tweet	Release of the 2021 OSPAR Combined Map and associated methods document	Promote EMODnet Seabed Habitats Products
Dec 2021	EMODnet Central Protocol for Launching New Datasets	Release of the 2021 OSPAR Combined Map and associated methods document	Promote EMODnet Seabed Habitats Products
Dec 2021	News item on ESH website	Release of the 2021 OSPAR Combined Map and associated methods document	Promote EMODnet Seabed Habitats Products
Next available	Reference to EMODnet Seabed Habitats in other materials	Article in MEDIN newsletter about the end of phase 3 and the start of a new one	Promote EMODnet Seabed Habitats Activities
Jan 2022	EMODnet Central Protocol for Launching New Datasets	Release of biogenic substrate layer for Europe	Promote EMODnet Seabed Habitats Products
Jan 2022	News item on ESH website	Release of biogenic substrate layer for Europe	Promote EMODnet Seabed Habitats Products
Feb 2022	EMODnet Central Protocol for Launching New Datasets	Release of coralligenous habitats in the Med	Promote EMODnet Seabed Habitats Products
Feb 2022	News item on ESH website	Release of coralligenous habitats in the Med	Promote EMODnet Seabed Habitats Products

[For the reporting period, please list all publications, e.g. peer-reviewed journals, book chapters, conference papers, etc.) of which you are aware, within the reporting period, including a reference to the EMODnet data or data products which is being discussed.]

List of known publications using EMODnet data or data products				
Date	Type and name of journal, conference, ...	Publication title including DOI (if known)	Author(s)	Organisation(s)
August 2021	Marine Policy	Spatial overlap between human activities and seabed habitats in European Seas: Insights into EMODnet's data for management purposes DOI	Solaun et al	
September 2021	Ecological indicators	Beyond connecting the dots: A multi-scale, multi-resolution approach to marine habitat mapping DOI	van der Reijden et al	

6. Monitoring indicators

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

Comments on the progress indicators in the excel template		
Progress indicator	Means of collecting figures	Comment
1. Current status and coverage of total available thematic data A) Volume and coverage of available data If you don't use the provided sea-basin figures, please indicate why you do not use them, as from when, and what do you use instead and why?	Matomo/ other (Please state which monitoring tool was used to collate the information in each case)	A good increase in data considering the already considerable holdings, especially in the black sea, which was previously a lower-represented area. Distribution within the black sea is also increased alongside volume.
B) Usage of data in this quarter		Relatively stable trends, though a noticeable decrease in WFS requests. Possibly due to service alterations mid-quarter (change of url would cause established links to stop working)
2. Current status and coverage of total number of data products A) Volume and coverage of available data products If you don't use the provided sea-basin figures, please indicate why you do not use them, as from when, and what do you use instead and why?		Another good supply of habitat maps from survey - total holdings are now nearing 1000, main supply covering areas with previously lower representation. EUSeaMap main product updated at end of phase, whilst numbers have not changed much (higher numbers due to new habitat classification systems provided), the entire coverage of the dataset was updated and refreshed. Similarly OSPAR and EOVS datasets have been refreshed. For area coverage, where numbers are given without percent they represent number of datasets represented in the region. Core product EUSeaMap calculated against internal Seavox Regions geographic dataset (available on request) and GSHHS world coastline

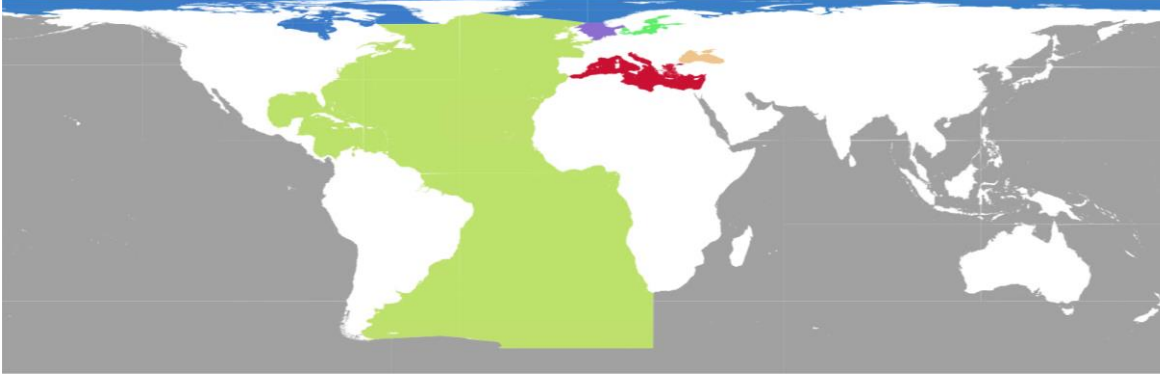
		<p>calculated in World Cylindrical Equal Area. Percentages capped at 100 (possible to exceed 100% in calculations due to differing coastlines).</p> <p>Seavox regions used due to world-ranging area figures rather than constrained values in official areas, regions then cropped by GSHHG world coastline to give an area per full region (Calculated using World Cylindrical Equal Area), and then compared against an intersect of relevant product against regional areas to produce percentages. Use of official figures commonly produce >100% coverage, or near 100% coverage for Atlantic, which is not accurate to the true extent of the Atlantic.</p> <p>Images of datasets shown beneath this table.</p>
B) Usage of data products in this quarter		<p>Some substantial decreases in downloads, core products (EUSeaMap and individual habitat maps) are more stable, reasons could be due to age of datasets with many core users now holding local copies. WFS requests for habitat maps from survey returning to previous stable values, core general increase appear to be increase in number of getcapability and describefeature requests rather than GI data requests (getfeature).</p>
3. Organisations supplying/approached to supply data and data products within this quarter		<p>A good supply of mainly approached data from across the EU. Some data volunteered from organisations already well aware of EMODnet SBH.</p>
4. Online 'Web' interfaces to access or view data		<p>Minor change in URL as part of ongoing geoserver structural revamp.</p>
5. Statistics on information volunteered through download forms		<p>Percentage of users volunteering information marginally higher than last quarter but not significantly. Percentage across sector and locations remains stable.</p>
6. Published use cases		<p>4 new use cases published to central portal. Central portal viewing statistics provided via the central grafana statistics. Significantly higher viewership of Mediterranean use cases this quarter - however reasoning behind this is currently unknown.</p>
8.1. Technical monitoring		<p>Latest ping shows an unusually slow response - uncertain why currently, but this will be monitored.</p>



8.2. Portal user-friendliness (Visual harmonization score)		Remains consistent with previous score. Will follow secretariat's guidance on spending resource on conforming further whilst portal is retired.
9. Visibility & Analytics for web pages		Page views generally consistent. Slight increase in Data Exchange formats, counteracting previous quarter's decline - matches well with volume of data submitted.
10. Visibility & Analytics for web sections		Remains consistent for the past year.
11. Average visit duration for web pages		Generally consistent. Time on DEF page remains high, which is a positive denoting deep reading of standards. Increase of web services pages is marginally higher, possibly users attempting to reconnect to new service URLs.

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), and if so, must be reported in the table above. Each system uses different technical approaches and therefore has its strengths and shortcomings. Therefore, results are indicative and care should be taken when 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.

Image of geographic polygon data used to calculate areas of reporting regions. GSHHG ¹“fine detail” coastline used to remove land:



Geographic polygon used to infer reporting region to emodnet data and data products. Land “filled in” to allow for coastlines of data itself to be taken into account (especially relevant for point data that may otherwise be omitted if close to the intertidal). Land filled in via Euclidean allocation:



EUSeaMap model extent compared against reporting regions (zoomed to extent of EUSeaMap). Lighter areas (e.g. North-East Black Sea, southern and western Atlantic) show those areas not covered by EUSeaMap resulting in a lower than 100% score:

¹ <https://www.soest.hawaii.edu/pwessel/gshhg/>

