



EMODnet Thematic Lot n° I – Biology
CINEA/EMFAF/2022/3.5.2/SI2.895681
Start date of the project: 10/05/2023
(24 months)

Centralisation Phase

Quarterly Progress Report (QR27)
Reporting Period: 01/10/2023 – 31/12/2023

Contents

1. Highlights in this quarter	3
2. Identified issues: status and actions taken	11
3. Communication assets	13
4. Monitoring indicators	16
5. Annex: Other documentation attached	18

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1. Highlights in this quarter

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

During the reporting period, a data harvest was carried out, bringing 12 new datasets from partners into EMODnet Biology. This data harvest increased the EMODnet Biology occurrence data holdings by approximately 1.5M new records distributed around the Atlantic Ocean and the North Sea with a temporal range between 1970 and 2022 and covering macroalgae, angiosperms, mammals, birds, fish, benthos, phytoplankton and zooplankton. A list of the published datasets and their details is available in the Annex, the maps with the distribution per functional group and sea region are included in Figure 1 and the geographic distribution of all occurrences published during the reporting period is in Figure 2, also in the Annex.

Deliverable [D2.2.1 Summary on consortium data flows](#) was published and made available in the EMODnet Biology Portal during the reporting period. This document describes the consortium members general data flow to EMODnet Biology and introduces the technical implementation of data flows for new partners (UniHB and CEFAS).

Two workshops were held in November, the first was a two day event, by invitation only and the second was a hybrid event open to the wider community. The first workshop focused on data training for organisations bordering the Mediterranean, 32 targeted invitations were sent to organisations within 7 countries. In total 8 organisations confirmed they would participate in the workshop but, due to VISA constraints, only 6 people managed to attend in person and one joined online. The second workshop was dedicated to citizen science, more specifically providing training on how to use citizen science platforms like Zooniverse to capture data that exists only in paper format. 38 people registered for this event however only 19 were able to join (10 in person and 9 online). The results of both workshops, in terms of data, will be the topic of Deliverable D2.4.3 which is due at the end of the Phase in May 2025.

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

In this quarter, several WP3 members participated in the EMODnet Jamboree and Open Conference held in late November in Brussels. During the pre-conference Jamboree, the EMODnet lots Biology, Geology and Seabed Habitats organized a breakout meeting with the goal to discuss cross-thematic collaboration possibilities. The specific aim was to follow up on an idea of linking the Biology product on [Temporal Turnover in European Macrobenthos Communities](#) (Webb,T.J. 2023) to Seabed Habitat types. The goal is to link European habitat maps that contain polygons representing all mapped habitats in European seas to [benthos presence/absence](#), which will allow the production of species lists for each individual habitat polygon, and summaries of species for different habitat types. In addition, all participating lots discussed further possibilities for cross thematic outputs including inter alia:

- a product that relates benthic species with information on substrate fractions (Geology) to investigate species specific substrate preferences,
- to assess relationships between biodiversity and geodiversity within the same areas
- to optimize data flows from SBH to Geology on substrate types
- to raise awareness of what is possible to do with the products

A follow up meeting between Seabed Habitats and Biology for initiating the next concrete steps will be scheduled during the next quarter.

In addition to these activities, WP3 held their third community call in which the partners reported the progress towards the planned data products. All products' progress is on track with expectations. As part of the community call, VLIZ colleagues were invited to give a presentation on the EU public infrastructure for the European Digital Twin Ocean (EDITO-INFRA), where it became clear that in order to include the thematic lot's products in the data lake, adjustments will be needed. Some of the changes for published products will be done by the thematic lot and other changes by the EDITO-INFRA team themselves. The open tasks and required adjustments were presented and will be internally further discussed and addressed.

Several contacts have been made with different groups and/or initiatives to enquire about the possibility of hosting developed products that cover the impacts of coastal infrastructures in migrating species, more specifically birds and marine mammals. The feedback received so far was not positive, the initiatives do not have digital products that are feasible for publication via the Central Portal or have not yet developed such outputs as they were recently set up and are in an ongoing data analysis stage.

Task 3: Develop a complete and robust machine to machine (M2M) interface to transfer data and products in bulk, which is easily accessible for other machines and initiatives

As part of the continuous development and system maintenance, the EurOBIS API (which allows for the querying through Central Portal viewer) was improved and various bugs were fixed. Additionally, continuous monitoring and changes have been done to the data publication procedures which resulted in several improvements that optimised the procedures.

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

Work was done to address EM-78 'Biology to report on status or plans to support INSPIRE Compliant CSW' and a synchronisation between the EMODnet Biology catalogue and the EMODnet Central Portal catalogue was implemented. This increased the number of metadata records in the CP catalogue by 1308, all referring to datasets with available data through EMODnet Biology. The process needs to be completed to include the metadata for all existing products and data links will have to be updated to reflect the correct catalogues. This work is planned for the next quarter.

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

The reporting period was quite busy with static content updates and publication of news and/or events. The list below summarises the news items published during this period:

- Updated to the Biology static content page (<https://emodnet.ec.europa.eu/en/biology>) Key services section to include a new link for the Online course "Contributing datasets to EMODnet Biology". Associated news item was published on 2023-12-07 ([Contributing datasets to EMODnet Biology OTGA course- New version | European Marine Observation and Data Network \(EMODnet\) \(europa.eu\)](#))
- Update to the page EMODnet web service documentation (<https://emodnet.ec.europa.eu/en/emodnet-web-service-documentation>) in the section 'Other useful links with documentation on EMODnet web services' to include the new GitHub repository that provides detailed information on how to query EMODnet Biology's web services to search and download information
- News item published on 2023-10-30, inviting input to the EMODnet Biology stakeholder survey (<https://emodnet.ec.europa.eu/en/request-contribute-emodnet-biology-stakeholder-survey>). This item was also included in the EMODnet October newsletter.

- News item published on 2023-11-09, announcing the data call for time series from European marine ecosystems from the Marco Bolo project, which fosters data publication via EMODnet Biology (<https://emodnet.ec.europa.eu/en/marco-bolos-data-call-time-series-european-marine-ecosystems-and-fosters-data-publication-emodnet>)
- News item published on 2023-12-07, announcing the data call for the DTO-BioFlow data call to unlock sustained and long-term marine biodiversity data and foster its publication via EMODnet Biology (<https://emodnet.ec.europa.eu/en/dto-bioflow-open-call-help-unlock-sustained-and-long-term-marine-biodiversity-data-and-foster>)
- News item published on 2023-12-18, announcing the publication of the G7 FSOI workshop report. EMODnet Biology participated in this workshop by contributing to the session planning and chairing (<https://emodnet.ec.europa.eu/en/emodnet-biology-joined-g7-future-seas-and-oceans-initiative-fsoi-workshop-late-september>)

Alongside the news items above, input was also provided for the December EMODnet newsletter which was published in mid-December. The news item can be accessed via the link <https://emodnet.ec.europa.eu/en/emodnet-biology-last-data-publication-2023>.

The thematic lot provided information to the EMODnet Secretariat on all the data providers since Phase IV and this information was compiled for all thematic lots in the page Data Providers list (<https://emodnet.ec.europa.eu/en/data-providers-list>).

The first Phase V use case was submitted to the EMODnet Secretariat in early December; its publication is delayed until the next quarter due to a combination of the holiday period, EMODnet Jamboree/Open Conference wrap up and text review.

Task 6: Ensure the involvement of Regional Sea Conventions (RSC)

In early October, a questionnaire to capture the feedback from EMODnet Biology stakeholders, more specifically Regional Sea Conventions (RSC) and ICES working groups, was published through the EU Survey-management system. The survey was open from 2023-10-04 until 2023-12-31 and was sent to 74 contacts within the RSCs, government organisations, NGOs and expert groups that had been identified by EMODnet WP4. Alongside the news items and social media posts, reminders were sent in mid December. A total of 20 respondents participated to the survey and covered all sea basins surrounding Europe. Feedback was collected from the academic and research sector (13 responses) and from government and public administration (7 responses), from the Black Sea Commission, from UNEP/MAP, from OSPAR and from experts in the fields of biodiversity monitoring. The analysis of the feedback received is in progress and will be used to organise a workshop in mid-April (D4.2.3).

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

Towards the end of the previous quarter, EMODnet Biology participated in the G7 FSOI workshop (providing content/leading a breakout group). The workshop report is now published and can be accessed via the link <https://www.eu4oceanobs.eu/towards-a-global-marine-plankton-observing-network/>.

In mid-October, the thematic lot joined the EMODnet-Copernicus coordination meeting and minutes are now available via this [link](#).

On 2023-12-07 the thematic lot joined the D1C1 Incidental Bycatch meeting organised by the JRC and counting with several colleagues from other EU institutions like DG MARE and DG ENV as well as representatives of the members states, Regional Sea Conventions and ICES. A separate meeting to discuss the state of the marine biodiversity monitoring in the EU was held on 2023-11-13 with JRC and DG ENV. These are ongoing separate

discussions that will hopefully lead to a better involvement between EMODnet Biology and the EU's official monitoring data mechanisms, which could result in data (re)publication via EMODnet Biology. More updates will be given throughout the Phase as/when available.

Alongside these activities, EMODnet Biology has been actively involved in several EU funded research projects to ensure that data flows are established, clarified or maintained and provide technical support. More detailed information on these collaborations will be given in the interim report, due in May 2024.

EMODnet Biology consortium members submitted a total of five posters to the Open Conference. The abstracts can be found via the [link](#) and the links to the posters are included below:

- Poster 6: [Unlocking Ocean Secrets through FAIR biodiversity data](#) (by MBA)
- Poster 8: [“Digging up the ocean’s past”: A citizen science project for historical scientific papers](#) (by HCMR)
- Poster 9: [The Biocheck tool- Enhancing data quality in marine biodiversity research](#) (by VLIZ)
- Poster 13: [EMODnet Biology develops tools for EMODnet users](#) (by VLIZ)
- Poster 29: [Four bridges to cross – Linking PANGAEA data resources with four EMODnet themes](#) (by MARUM/Pangaea)
- Poster 39: [Text mining advances in the framework of EMODnet Biology](#) (by HCMR)
- Poster 43: [High quality data, but not the complete picture](#) (by OBIS/IOC-IODE)

Additionally, EMODnet Biology joined the Open Conference's Session 1: Opening Session “EMODnet: A unified EC marine data service and Session 6: EMODnet and the Global Ocean Data Ecosystem. The recording for Session 1 can be found via the [link](#) and for Session 6 via the [link](#). During the Jamboree EMODnet Biology lot co-led the EMODnet Citizen Science cross-thematic dialogue.

OBIS (hosted by IODE) and EuroOBIS (hosted by VLIZ) had a joint booth during the Conference days, where various information on marine biodiversity was provided and contacts established with potential data providers.

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

During the reporting period a Technical Working Group (TWG) and Steering Committee (SC) meeting took place. At the TWG, held on 2023-10-18, the thematic lot presented a status update since the previous meeting, April 2023, and the presentation and associated meeting minutes can be found in the Maritime Forum via the link https://maritime-forum.ec.europa.eu/emodnettwg14_en. The Steering Committee meeting took place on 2023-12-01 after the EMODnet Jamboree and Open Conference and was mainly used as a debrief of the events held that week.

During the reporting period, two requests for support were received and the first answer was done within 2 working days. The analysis of the GeoHealthCheck monitoring tool for the period between 2023-01-02 and 2024-01-03 reveals that the lot's webservices were within INSPIRE guidance. Figure 3, included in the Annex, is a screenshot of the monitor tool, which includes the period mentioned above.

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
1.1.1 Quarterly Progress reports	WP1	2023-07-15	Delivered	2023-07-14	
		2023-10-15	Delivered	2023-10-13	
		2024-01-15	Delivered	2023-01-15	
		2024-04-15			
		2024-07-15			
		2024-10-15			
		2024-01-15			
		2025-01-15			
		2025-04-15			
2025-07-15					
1.1.2 Interim report	WP1	2024-05-10			
1.1.3 Final Report	WP1	2025-05-09			
1.2.1 Update of EMODnet Biology data products via the EMODnet CP catalogue	WP1	2024-05-10			
		2025-05-09			
1.3.1 Monitoring user feedback via EMODnet JIRA	WP1	2023-05-10 to 2025-05-09			
1.3.2 Operation of the EMODnet CP helpdesk	WP1	2023-05-10 to 2025-05-09			
1.4.1 Minutes from the three project meetings (kick off, annual and final)	WP1	2023-06-10	Delivered	2023-06-30	
		2024-05-10			
		2025-05-09			
1.5.1 Participation in the EMODnet Steering Committee meetings	WP1	2023-05-10 to 2025-05-09	Delivered	2023-12-01	Other dates to be confirmed
1.5.2 Participation in the EMODnet Open Conference	WP1	2023-05-10 to 2025-05-09	Delivered	2023-11-29/30	Details included in task 7
1.6.1 Appropriate mechanisms and guidelines for handover	WP1	2025-05-09			
2.1.1 Maintenance of adequate mechanisms to ensure data are interoperable	WP2	2023-05-10 to 2025-05-09			
2.1.2 Report on the standardisation and integration of datasets published during the Phase	WP2	2025-05-09			
2.2.1 Summary on consortium data flows	WP2	2023-11-10	Delivered	2023-11-10	
2.3.1 Plan to optimise procedures to make restricted data available to users	WP2	2023-05-10 to 2025-05-09			

2.4.1 Workshop on use of Zooniverse for data digitisation through citizen science	WP2	2023-11-10	Delivered	2023-11-15	
2.4.2 Data training workshop for Mediterranean organisations	WP2	2023-11-10	Delivered	2023-11-13/14	
2.4.3 Report on the availability of data following the workshops	WP2	2025-03-10			
2.5.1 Guidance for data management practices applied to omics data	WP2	2023-05-10 to 2025-05-09			
3.1.1 Internal WP3 and WP4 Workshop	WP3	2023-09-10	Delivered	2023-09-11	
3.2.1 Quarterly community calls	WP3	2023-08-10 2023-12-10 2024-03-10 2024-05-10 2024-08-10 2024-12-10 2025-03-10	Delivered Delivered Delivered Delivered	2023-06-08 2023-09-14 2023-11-14 2023-12-04	
3.3.1 Liaison with external entities targeting seabird and cetacean migration outputs	WP3	2023-05-10 to 2025-05-09	Ongoing		
3.3.2 Data product creation	WP3	2023-05-10 to 2025-05-09			
4.1.1 Update connectivity maps and identification of stakeholder community	WP4	2023-09-10	Delivered	2023-09-28	
4.1.2 Informative material based 4.2.2 published in the EMODnet CP	WP4	2024-05-10			
4.1.3 Informative material based on the 4.2.3 outcomes	WP4	2024-07-10			
4.1.4 Informative material based on the 4.3.1 outcomes	WP4	2025-05-09			
4.1.5 Publication of four Use Cases	WP4	2023-11-10 2024-05-10 2024-11-10 2025-05-10	Delivered	2023-11-27	Details included in task 5
4.1.6 Publication of written documents	WP4	2023-05-10 to 2025-05-09	Ongoing		

4.2.1 Engagement plan for each RSC	WP4	2023-11-10	Delivered		
4.2.2 Questionnaire to inform about what data & products EMODnet Biology offers and to collect stakeholder needs	WP4	2023-11-10	Delivered	2023-10-04	
4.2.3 Workshop with RSCs to understand major needs	WP4	2024-05-10			
4.2.4 Report on progress for the publication of fisheries survey data	WP4	2025-05-09			
4.3.1 Workshop with representatives of major recent and current European Research Projects and initiatives to share experience and knowledge in biodiversity monitoring and assessment and in data, tools and services	WP4	2024-11-10			
4.3.2 Participation in TG DATA meetings	WP4	2023-05-10 to 2025-05-09			
4.4.1 Ensure compatibility with INSPIRE Directive (data, metadata, data products)	WP4	2023-05-10 to 2025-05-09			
4.4.2 Report on the activities to support EU Member States regarding their reporting obligations	WP4	2025-05-10			
5.1.1 Streamlining semantic interoperability	WP5	2023-05-10 to 2025-01-10			
5.1.2 Integration of omics data into the data model	WP5	2024-09-10			
5.1.3 Roadmap for marine biodiversity data	WP5	2025-05-09			
5.2.1 M2M communication plan and solutions	WP5	2023-05-10 to 2025-05-09			
5.3.1 Operational web services	WP5	2023-05-10 to 2025-05-09			
5.3.2 Technology stack upgrades	WP5	2025-05-09			
5.3.3 Technical maintenance of procedures	WP5	2023-05-10 to 2025-05-09			

for ingestion of data from the data providers					
5.3.4 Development and implementation of procedures to publish omics data	WP5	2025-05-09			
5.4.1 Synchronisation of all data and data products metadata to the EMODnet CP catalogue (GeoNetwork)	WP5	2023-05-10 to 2025-05-09	Delivered		See task 4
5.4.2 All data and products available through the EMODnet CP	WP5	2023-07-10 to 2025-05-09			
5.4.3 Participation in the EMODnet TWG meetings	WP5	2023-05-10 to 2025-05-09	Ongoing	2023-10-18	Other dates to be confirmed
5.4.4 Maintenance and development of API used to query EMODnet Biology layers available via the EMODnet CP viewer	WP5	2023-05-10 to 2025-05-09			

2. Identified issues: status and actions taken

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
Assessment of Performance (from last Phase IV QR)				
Task 2: Phase V position paper	Pending	Paper in its final drafting stages and being reviewed by the co-authors ahead of submission	QR27	
Observations in view of Section 1.7 of the Tender Specifications on Performance and Quality Requirements				
Indicator 1: What is the ratio of Caribbean/Atlantic datasets under the Atlantic EEA?	Resolved	<p>This is not an easy assessment to make as we do not separate the Caribbean from the Atlantic region. We have republished 4 datasets from the OBIS Caribbean node since this requirement was set in place. Together with other datasets that have data for this region, the number of occurrences amounts approximately to just under 150K records (note that this covers the IHO Sea Area defined for the Caribbean, whereas the work we have been developing so far has been restricted to sea areas that are part of the EU's overseas territories in the region).</p> <p>Overall, this region has roughly 0.5% of the total number of records available.</p> <p>A screenshot of the occurrences and the areas defined by EMODnet Biology is included in Figure 4 in the Annex for clarification purposes</p>	QR27	QR27
Progress solving identified issues				
EM-83 - Biology - Web Services MetadataUrl and DataUrl	Pending	Resolution is planned to take place in the second half of 2021 or early 2022		
EM-78 - Biology to report on status or plans to support INSPIRE Compliant CSW	Resolved	See Task 4		QR27
EM523: EMODnet Biology Phase IV layers for European Atlas of the Sea	Pending	Ticket created by Coordinator, was considered low priority due to centralisation work and subsequently the end of Phase IV and start of Phase V		End of Phase V

EM524: IUCN red list Near Threatened category layer	Pending	Ticket created by Coordinator, was considered low priority due to centralisation work and subsequently the end of Phase IV and start of Phase V		End of Phase V
EM577: Update of zooplankton layers in the European Atlas (if available)	Pending	Ticket created by the EMODnet Secretariat, was considered low priority due to centralisation work and subsequently the end of Phase IV and start of Phase V		End of Phase V

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
Users do not have access to absence occurrences	Ongoing	Species' absence in surveys can provide invaluable information for data product creation and overall ecosystem knowledge. Within the thematic lot, there are several datasets where data providers have reported true absences (species were looked for but not found) or derived absences (i.e a list of species was defined for the project and systematically used throughout. When a species is absent from the data submitted, we know that this is because such individuals were absent from the samples). Work is underway to allow for these data to be available to users	QR22	
Users do not have access to genomics data	Ongoing	In the Phase IV workplan it was stated that the thematic lot would endeavour efforts to implement procedures to handle and publish genomics data. This work is not meant to be done in isolation with the international community therefore most actions have been limited to accompanying the situation and internally assessing what changes need to occur in the DB so that these data can be properly managed.	Phase V	
Delays due to situation in the Ukraine	Ongoing	UkrSCES is slowly picking up the work and interacting again with the planned activities, including those related with data provision. Further updates will be given in subsequent reports		
Thematic lot metadata records not in the EMODnet catalogue	Resolved	See Task 4	QR24	QR27
Users do not have access to extended measurements and facts data	Pending	Due to centralisation users querying the EurOBIS observations layer only have access to occurrence data and no associated parameters. Technical developments are needed to ensure that the Central Portal viewer replicates the same functionalities and provides access to the same data as via the Biology portal		
Users do not have access to habitat data if the data are not linked to species occurrences	Ongoing	This is a new development that is required due to the continuous publication of Seabed Habitats point data. Technical developments will be needed as the database and associated data publication procedures are based on the assumption that all datasets have species occurrences	QR28	

3. Communication assets

A. (Co-)Authoried peer-reviewed publications in the quarter					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No
2023-12-22	paper	Olivier Beauchard, Clare Bradshaw, Stefan Bolam, Justin Tiano, Clément Garcia, Emil De Borger, Pascal Laffargue, Mats Blomqvist, Irini Tsikopoulou, Nadia Papadopoulou, Christopher Smith, Jolien Claes, Karline Soetaert and Marija Sciberras, 2023. Trawling-induced change in benthic effect trait composition -A multiple case study. <i>Front. Mar. Sci.</i> , 22 December 2023 Sec. Marine Ecosystem Ecology Volume 10 - 2023 https://doi.org/10.3389/fmars.2023.1303909		https://doi.org/10.3389/fmars.2023.1303909	Yes
2023-11-21	paper	Dos Santos A, Marques R, Pires RFT. 2023. Zooplankton biodiversity and temporal dynamics (2005–2015) in a coastal station in western Portugal (Northeastern Atlantic Ocean). <i>PeerJ</i> 11:e16387 http://doi.org/10.7717/peerj.16387		http://doi.org/10.7717/peerj.16387	Yes
2023-11-04	Report	Pires, R.F.T., Froufe, E., Secci-Petretto, G., Dos Santos A., Report on the occurrence of the hydromedusa <i>Odessia maeotica</i> (Ostroumoff, 1896) in the north-eastern Atlantic revealed by citizen science and integrative taxonomy. <i>Aquat Ecol</i> (2023). https://doi.org/10.1007/s10452-023-10071-5		https://doi.org/10.1007/s10452-023-10071-5	No

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
2023-11-29	Conference poster	Figuroa-Ashforth C, Gough C, Lear D, Paxman K; DASHH: Unlocking Ocean Secrets through FAIR biodiversity data; (2023); EMODnet Open Conference, 29-30 November, Brussels, Belgium https://emodnetconference2023.eu/media/objepk25/emodnet_openconference2023_book_of_abstracts_1-2.pdf page 10)			Yes
2023-11-29	Conference poster	Sarafidou G, Paragkamian S; (2023); Digging up the oceans' past: A Citizen Science project for Historical Scientific Papers; Digging up the oceans' past: A Citizen Science project for Historical Scientific Papers https://emodnetconference2023.eu/media/objepk25/emodnet_openconference2023_book_of_abstracts_1-2.pdf page 12)			Yes
2023-11-29	Conference poster	Perez Perez R, Vanhoorne B, Delgat L, Beja J, Vandepitte L; (2023);The Biocheck Tool: Enhancing data quality in marine biodiversity research https://emodnetconference2023.eu/media/objepk25/emodnet_openconference2023_book_of_abstracts_1-2.pdf page 13)			
2023-11-29	Conference poster	Beja J, Fernández S, Krystalli A, Salmon M, Blondel E, Webb T; (2023); EMODnet Biology develops tools for EMODnet users https://emodnetconference2023.eu/media/objepk25/emodnet_openconference2023_book_of_abstracts_1-2.pdf page 17)			Yes
2023-11-29	Conference poster	Naumann MS, Wittmann AC, Behnken A, Collart T, Damaske D, Delaney C, Felden J, Huber R, Larkin K, Schindler U, Glöcker FO (2023); Four bridges to cross– Linking PANGAEA data resources with four EMODnet themes. EMODnet Open Conference, 29-30 November, Brussels, Belgium https://emodnetconference2023.eu/media/objepk25/emodnet_openconference2023_book_of_abstracts_1-2.pdf page 33)			Yes

2023-11-29	Conference poster	Paragkamian S, Loulakaki M, Kalaitzaki L, Minadakis N, Sarafidou G, Pafilis E, Gerovasileiou V, Mavraki D; (2023); Text mining advances in the framework of EMODnet Biology (https://emodnetconference2023.eu/media/objepk25/emodnet_openconference2023_book_of_abstracts_1-2.pdf page 43)			Yes
2023-11-29	Conference poster	Principe S C, Provoost P, Appeltans W; (2023); OBIS/EMODnet biology: high quality data, but not the complete picture (https://emodnetconference2023.eu/media/objepk25/emodnet_openconference2023_book_of_abstracts_1-2.pdf page 47)			Yes
2023-10-29	Preprint	Maioli, F., Weigel, B., Lindmark, M., Manfredi, C., Zupa, W., Bitetto, I., Russo, T., Casini, M. Assessing the overlap between fishing activities and chondrichthyan distribution exposes high-risk areas for bycatch of threatened species. bioRxiv 2023.10.25.563919;		https://doi.org/10.1101/2023.10.25.563919	Yes

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

4. Monitoring indicators

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	In-house systems	Overall there was an increase of data in most sub-themes and a slight decrease in Phytoplankton and Zooplankton
What is your opinion on the data coverage within EMODnet for your thematic?		Efforts to address the regional gaps are ongoing although progress is slow and in some instances with poor outcomes. The reasons are varied, stemming from differences in available resources (Human, technical or financial) to the approach in data sharing, which is not as open as in other areas/for other countries.
B) Usage of data in this quarter	NA	There are no systems in place to collect metrics on data usage, therefore the only information we are able to provide is the total volume of data available for download (in number of records)
2. Current status and coverage of total number of data products A) Volume and coverage of available data products		There was no change since the last quarter
B) Usage of data products in this quarter	NA	There are no systems in place to collect metrics on data products usage
3. Internal and external organisations supplying/approached to supply data and data products within this quarter	In-house systems	Three partners provided data as per contractual obligations, and one provider from the EMODnet Seabed Habitats lot volunteered data. There will be an ongoing data flow from this lot to Biology. Data covered mainly the Atlantic and North Seas with a small dataset in the Mediterranean
5.1 Daily number of page views of EMODnet Thematic entry page	Europa Analytics	There isn't an identifiable trend in the number of page views throughout the reporting period. The daily number of page views was 8.6, a slight increase from the previous quarter, that amounted to 8.

<p>5.2 Quarterly total number of visitors, page views, unique page views and percentage of returning visitors</p>	<p>Europa Analytics</p>	<p>There was a ~20% increase on the number of visitors, page views and unique page views during the reporting period. The difference from the previous quarter, which had a negative trend, could be due to the fact that it was after the summer holidays and participation in a number of events, including the Jamboree and Open Conference raised visibility for the thematic lot.</p>
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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

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

Dataset title	New/Update	Phase	Organisations	License
1975 University of London Kent Ficopomatus enigmaticus collections	New	IV	Partner (MBA)	Attribution (CC BY)
2014 Marine Biological Association of the UK (MBA) Noss Mayo Yealm Estuary Transect Survey of Crassostrea gigas - Version 1.3	New	IV	Partner (MBA)	Attribution (CC BY)
2015 Marine Biological Association of the UK (MBA) Wembury South Devon Introduction to Seaweeds course sightings	New	IV	Partner (MBA)	Attribution (CC BY)
2015 Scottish Environment Protection Agency (SEPA) Eden Estuary Intertidal Seagrass Survey	New	IV	Partner (MBA)	Attribution (CC BY)
CAN-MAR: DATRAS Canadian Maritimes Trawl Survey	New	IV	Partner (ICES)	Attribution (CC BY)
Cetacean sightings of PELACUS surveys: Continental shelf of Galicia and Bay of Biscay - Database of the Spanish Institute of Oceanography (IEO-CSIC)	New	IV	Partner (IEO)	Attribution-NonCommercial I (CC BY-NC)
IE-IAMS: DATRAS Irish Anglerfish and Megrim Survey	New	IV	Partner (ICES)	Attribution (CC BY)
JNCC/Cefas Barmade Bank MCZ Verification survey (CEND0412) - Seabed Still Analyses	New	NA	Ad-hoc (JNCC)	Attribution (CC BY)
NSSS: DATRAS North Sea Sandeel Survey	New	IV	Partner (ICES)	Attribution (CC BY)
SCOROC: DATRAS Scottish Rockall Groundfish Survey	New	IV	Partner (ICES)	Attribution (CC BY)
Seabirds sightings of PELACUS surveys: Continental shelf of Galicia and Bay of Biscay - Database of the Spanish Institute of Oceanography (IEO-CSIC)	New	IV	Partner (IEO)	Attribution-NonCommercial I (CC BY-NC)
DATRAS: ICES Database of trawl surveys, survey: SCOWCGFS	New	IV	Partner (ICES)	Attribution (CC BY)

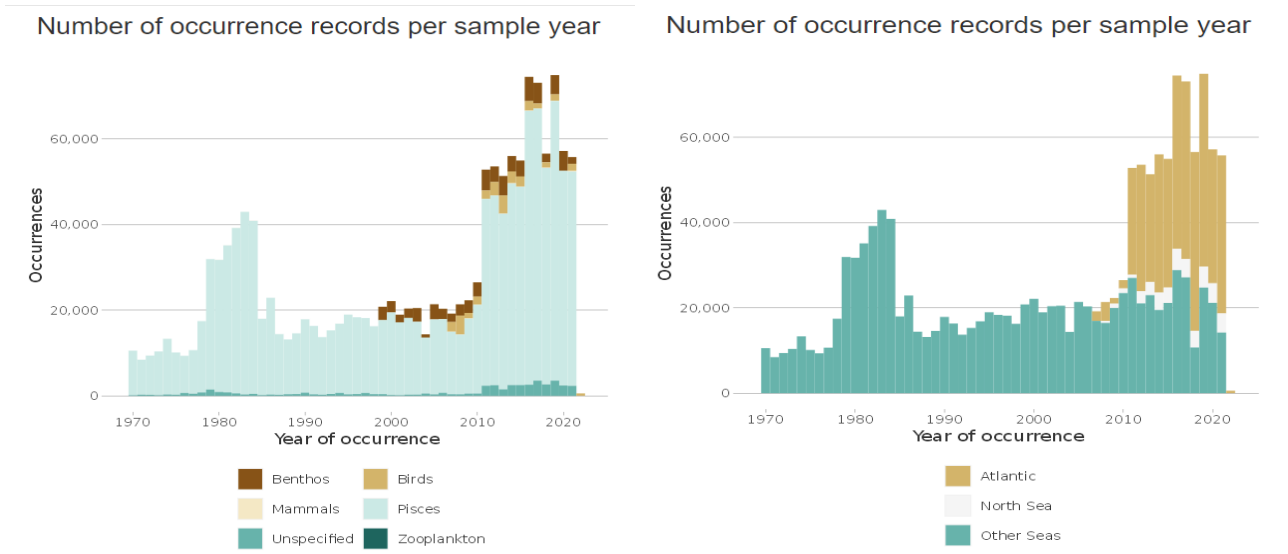


Figure 1. Occurrence distributions, for data published during the reporting period, per year of occurrence for the Functional group (Left image) and Sea region (Right image).

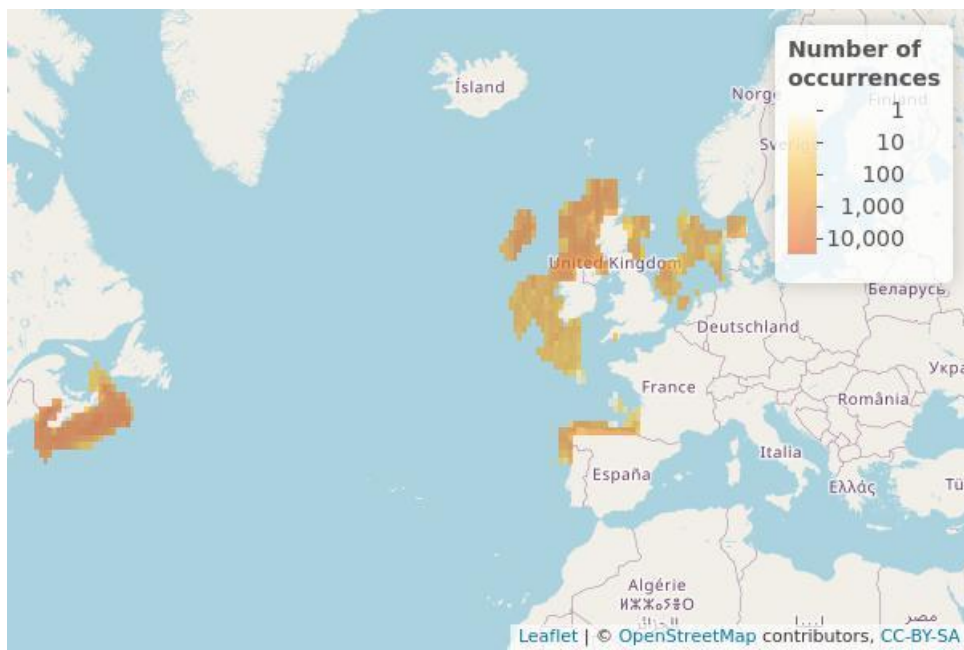


Figure 2. Occurrences distribution for data published during the reporting period.

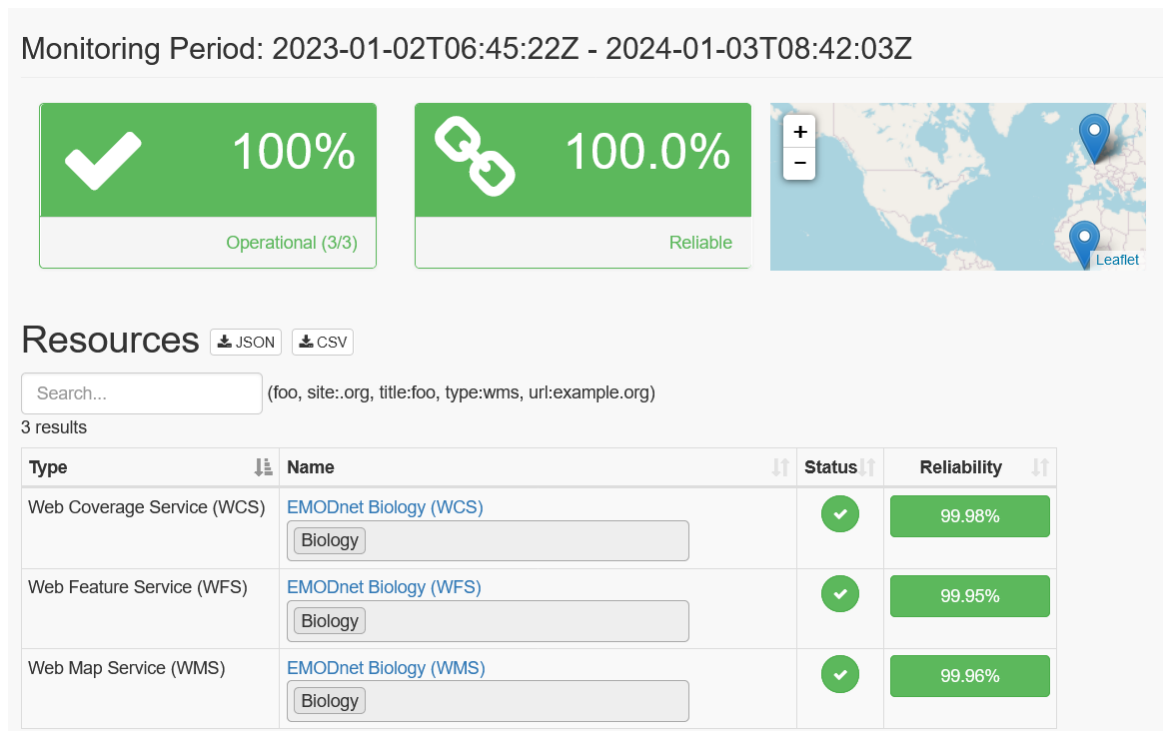
Task 8: Monitor quality/performance and deal with user feedback

Figure 3. EMODnet Biology webservices monitoring for the period between 2023-01-02 and 2024-01-03. (The image shows a period bigger than the reporting quarter as it is not possible to select specific dates)

Identified issues: status and actions taken (Table A, indicator 1)

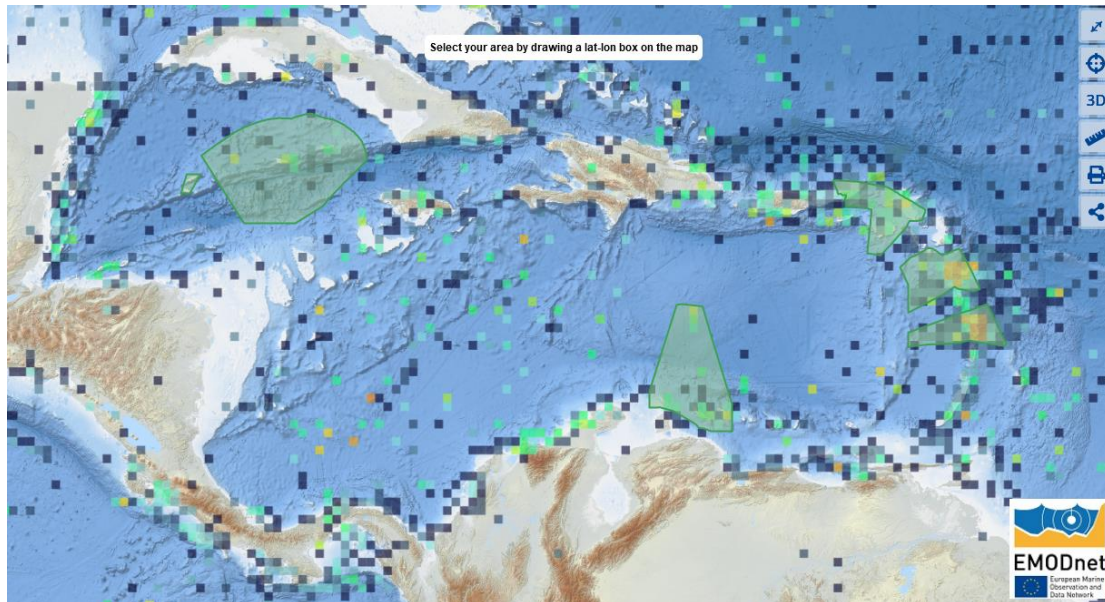


Figure 4. The shaded polygons represent the Caribbean regions that are currently being targeted by our actions to fulfil the tender requirements. They represent the EU’s overseas territories in the region. These polygons are included in the coverage reported for the Atlantic Sea.