



EMODnet Thematic Lot n° V - Biology

CINEA/EMFAF/2022/3.5.2/SI2.895681

Start date of the project: 10/05/2023 (24 months)

Centralisation Phase

Quarterly Progress Report (QR28)

Reporting Period: 01/01/2024 – 31/03/2024

Contents

1. Highlights in this quarter	3
2. Identified issues: status and actions taken	10
3. Communication assets	13
4. Monitoring indicators	14
5. Annex: Other documentation attached	16

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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, the first data harvest of 2024 was carried out, which resulted in 17 new datasets and 10 updates from partners and ad-hoc dataset submissions into EMODnet Biology. This data harvest increased the EMODnet Biology occurrence data holdings by approximately 100 thousand new records, making the total holdings pass the 40 million biodiversity occurrence records threshold.

Content-wise, this data harvest has been very heterogeneous, the temporal coverage spans for 20 years of occurrences data, ranging from 2003 to 2023 spread across the Atlantic Ocean and the Mediterranean, Baltic, Black and North Seas.

In terms of taxonomy and functional groups we published occurrence records of Algae, Benthos, Birds, Mammals, Pisces, Reptiles and Zooplankton. These occurrence records have been collected using several techniques such as passive acoustics, aerial surveys, citizen science programmes and traditional data collections. Presence/absence data was accompanied by the collection of abundance, biomass, biometrics, behaviour, habitat, environmental and methodological sampling data.

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.

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

During this quarter WP3 hosted a follow up meeting (22.01.2024) between Seabed Habitats and Biology for initiating concrete steps towards the planned cross-thematic lot data product development. During this meeting, the initial idea of building on the previously developed benthos presence/absence product and linking it to European seabed habitat maps was confirmed and assessed as feasible. The resulting product will enable the creation of benthic species lists for each individual habitat polygon as well as summaries of species for different habitat types. The leading partner for this product, presented potential data output types, and both lots discussed possibilities on how to implement them into the EMODnet map viewer for a finished product. The cross-thematic lot meeting ended with a roadmap to achieve this product within phase V.

As a result from initial discussions during the EMODnet Jamboree in November 2023, WP3 has also followed up with the Geology lot about possible future avenues for cross-lot collaboration leading to joint data product developments during the next phase. An initial discussion meeting for formulating product ideas has been scheduled for the coming quarter and will be hosted by WP3.

Furthermore, in this quarter, WP3 has held their fourth community call (04.03.2024), where all progress on ongoing data products has been presented and discussed internally. Some of the progress highlights include: work started on the process to get the [EMODnetWFF R package](#) reviewed by RopenScience with the aim to having it published on CRAN. Other partner product developments have progressed to a stage of being reviewed and tested, before being considered final. The documentation and translation (from Julia to R) required to implement usage of [DIVAnd in R](#) has progressed significantly, now being ready to perform simple 1D and 2D interpolations as well as a density map from observations. However, some library compatibility issues arose concerning the implementation on different operating systems. Currently DIVAnd in R works only on windows and effort is underway to fix the implementation also on Linux. Remaining data products are on track and still in their data quality check and development stage. During the community call, WP3 discussed

one new product possibility, i.e. using EUROSTAT data to produce fishery catches distribution maps highlighting differences in catches between 1950 and 2023. Initial checks for its implementation are underway.

A positive contact was established with a team that developed a product on loggerhead modelled density for the Mediterranean, however upon close inspection it was clear that the projection used by the originators could not be implemented in the CP due to it distorting the original output. Further communication ensued to assess the possibilities of reprojecting the product so it can be republished and feedback is pending. Further updates will be given in future reports.

In addition, metadata records for published Biology data products from previous phases have been included in the [EMODnet Central Portal catalogue](#). Updates are still being done to ensure the information is appropriately displayed and made available to users (see Task 4).

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

Various technical updates were implemented during the reporting period, more specifically:

- The infrastructure that delivers information to the Central Portal filter view and download options (dataportal download toolbox) was upgraded to the latest PHP Symfony 6 framework
- The dataportal automated test framework was reactivated to assure all Geoserver calls are correctly formatted and providing (the correct) results
- A download queue monitor service was implemented to get notifications on stuck or slow downloads
- To better follow up the history of changes and easier rollbacks, all (MS SQL Server) stored procedures have now been added to a git code repository
- A multitude of query optimisations were performed. Together with the above technology updates, the execution time of the SQL server data migration procedure (to PostgreSQL) was decrease with another 2-3 hours.
- Further work on the fitness for use labels was done. The “label outcome” for some test datasets was evaluated and logic/code changes were made. The work is still in progress at a slower pace, due to the complex nature of the problem and the multiple interactions needed.
- Geoserver was upgraded to the latest version (2.24.2)
- The PHP version of the webserver cluster was upgraded from 7.4 to 8.2, since the former reached the end of life at the end of 2023
- The Central Portal Geoserver virtual machine (which also hosts Biology products) was upgraded from Ubuntu 20.04 to 22.04 to be able to upgrade Tomcat and thus deal with a security issue (CVE-2023-46589)
- The subtask on semantic alignment has agreed on a scope and draft plan during regular progress meetings. This resulted in the first milestone: making the LDES feed on top of the NVS SKOS terms available per collection.

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

The following points describe the work done to address this task:

- The metadata of the EMODnet Biology products hosted on the Central Portal (CP) GeoServer are now properly ingested into the CP metadata catalogue (previously, this was only the case for the VLIZ Geoserver instance). This was done via an automated way (auto sync) and with the INSPIRE required

fields. GeoServer is constrained in the metadata it can support, work is in place to improve how this information is exposed to CP catalogue users

- In the light of making the Biology services more FAIR and in line with the Blue Cloud 2026 project, work has started to describe the EMODnet Biology download and subsetting service in DCAT (Data Catalogue Vocabulary)
- Technical changes were implemented to allow for the possibility to deal with datasets without “true taxa” (in Occurrence records). These changes, which are required to publish EMODnet Seabed Habitats data, were added in all components (harvester, indexing scripts, stored procedures, output/export, dataportal, Geoserver, ...)

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

During the first quarter of 2024 we have published a new use case, [Facts and figures on the importance of UNESCO World Heritage Marine Sites for marine biodiversity](#). We have also shared details about three events, one organised by the consortium and the two others by one of our partners. The events are:

- Event held in March: [Introduction to Programming in R course between 19-21 March 2024, Early Bird Prices available until the end of January](#)
- Event to be held in April: [EMODnet Biology workshop for the Regional Sea Conventions](#)
- Event to be held in early May: [Managing your Scientific Code using Git and GitHub Course](#)

The thematic lot has requested the publication of informative material concerning the areas covered by the four regional Sea Conventions (4 leaflets showing our data, products and other information). This work is pending assessment and a decision by the EMODnet Secretariat as it will be jointly addressed with material from the other thematic lots and will be completed during the next quarter.

In addition to the work highlighted above, we have published the guidance drafted to assist our partners in the creation of data products ready to be implemented in the CP viewer. This guidance was already available via the EMODnet GitHub but it is now also referenced in the Biology static page under the ‘Data Product development’ section.

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

Several actions have been ongoing to stimulate engagement of Regional Sea Conventions, to obtain feedback on EMODnet Biology data and products and to collect information of RSC needs for environmental status assessment. Results on EMODnet Biology questionnaire designed and shared with the stakeholder community in the last quarter of 2023 have been analysed and presented within the partnership, in order to identify the main requirements and opportunities for EMODnet Biology. The EMODnet partnership has been involved in the organisation of a workshop dedicated to RSC involvement to be held back-to-back with the annual project meeting. Representatives of all RSC have been contacted and invited to the workshop to present the major needs in terms of data, products and tools for the assessment of environmental quality at regional sea basin scale.

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

Aside from permanent and frequent communication with JRC and DG ENV colleagues regarding not only the Bycatch thresholds meetings but also in providing feedback to a recently started study on biodiversity monitoring, we were also involved in a meeting with Eurostat and EMODnet Human Activities where the main topics of discussion were centered on what is the usage of these data and the support that we can provide to

the Eurostat colleagues. Initial discussions identified a need for support from the WoRMS (World Register of Marine Species) team, hosted at VLIZ, and in the thematic lot, we are looking into creating a new product with the annual fish catches. Our plan is to assess whether distribution maps of the fish species over time and FAO areas can be created. This product will be complementary to the existing EMODnet Human Activities output available in the viewer under the sub-theme 'Fish Catches by FAO Areas'. Further updates will be given in future reports.

Aligning with the work done in tasks 2 and 3, efforts are being made to improve INSPIRE compliance for the data products metadata records. This action is being supported by the EMODnet Secretariat, through their frequent checks as included in EM-83 (Table A Priority issue(s) identified and communicated by CINEA/ DG MARE/ SECRETARIAT).

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

Users have access to the EMODnet Biology helpdesk via either the Central Portal website or direct email. The reporting period has had only one user requesting assistance, which was handled within 1 day of being assigned to the thematic lot.

Continuous monitoring of the thematic lot's webservices is done via the GeoHealthCheck maintained by the Central Portal. During the reporting period, the webservices were compliant with INSPIRE guidance, as can be seen in Figure 3 in the Annexes.

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	Delivered	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 and 2025-05-09	Delivered	2024-03-27	See tasks 2 and 4
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	
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 Delivered Delivered	2023-06-08 2023-09-14 2023-11-14 2023-12-04 2024-01-22 2024-03-04	
3.3.1 Liaison with external entities targeting seabird	WP3	2023-05-10 to	Ongoing		

and cetacean migration outputs		2025-05-09			
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	Ongoing		Details included in task 5
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			
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	WP4	2023-05-10 to			See task 4

(data, metadata, data products)		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 for ingestion of data from the data providers	WP5	2023-05-10 to 2025-05-09			
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	2 meetings held	2023-10-18 2024-03-12	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			

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	
Assessment of Performance- Tasks specified in section 1.4.1				
Task 2: Could Biology explain why it is not feasible to publish the products from the groups/initiatives (that may produce products on migrating species) via the Central Portal?	Resolved	As stated in the text, the various initiatives, groups contacted do not have outputs in a format that is suitable for publication. In some instances there are no outputs yet (e.g if the group is recently formed), in other instances, the outputs are in the form of an image, e.g like a map in the form of a poster.		QR28
Task 2: A questionnaire was released to capture feedback from, among others RSC and ICES. Please clarify what specific feedback will be captured, and what is the objective	Resolved	This is described in Task 6. The answers to the questionnaire form the base that we will use to plan our workshop with the RSC. A workshop report, which will include the questionnaire results will be published in due time		QR28
Observations in view of Section 1.7 of the Tender Specifications on Performance and Quality Requirements				
Progress solving identified issues				
EM-83 - Biology - Web Services MetadataUrl and DataUrl	Resolved	MetadataURL and DataURL were added to all products as identified in the JIRA ticket		QR28
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		End of Phase V

		due to centralisation work and subsequently the end of Phase IV and start 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

A. 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		
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		

<p>Users do not have access to habitat data if the data are not linked to species occurrences</p>	<p>Resolved</p>	<p>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</p>	<p>QR28</p>	<p>QR28 See Task 4</p>
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Communication assets

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
	e.g. paper; conference proceedings; book chapter; ...				

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 proceedings; book chapter; ...				

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

Monitoring indicators

Comments on the progress indicators in the indicators spreadsheet		
Progress indicator	Means of collecting figures	Comment
<p>1. Current status and coverage of total available thematic data</p> <p>A) Volume and coverage of available data</p>	In house systems	Even though more data are available , when compared to the last quarter, there was an overall decrease in the number of available records for most sub-themes, with the exception of Algae which had an increase in the number of available records. These negative trends are due to updates in existing datasets, where providers were able to gather more accurate information that led to the removal of several records that had been previously published. Despite the negative trends, there was an increase of available records in the Atlantic (includes the Caribbean region), the Baltic, Black and North Seas. Other seas include all the non-European seas and on land records (can be related to museum collections or historical data where the position was recorded as the institute/museum position rather than where the data were collected/observed).
What is your opinion on the data coverage within EMODnet for your thematic?	Expert knowledge	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)
<p>2. Current status and coverage of total number of data products</p> <p>A) Volume and coverage of available data products</p>	In house inventory	There was no change since the last quarter. Note that the number of available product metadata records in the CP catalogue is 53, however several of those records refer to the same product. In fact all products created/published by the thematic lot are listed in the table. There have been no changes since the previous 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 inventory	Alongside the partner organisations, 4 others volunteered or were approached to (re)publish their data. One organisation submitted the data via EMODnet Ingestion and all others directly via either webservice or as a digital file. The data were supplied not only by government organisations, but also academia/research institutions and one NGO
5.1 Daily number of page views of EMODnet Thematic entry page	Europa Analytics	There are no obvious trends detected during the reporting period or when compared with the previous period.
5.2 Quarterly total number of visitors, page views, unique page views and percentage of returning visitors	Europa Analytics	There was an increase in the number of visitors and pagew views but a decrease on the number of returning visitors

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

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
1999-2001 University Marine Biological Station Millport (UMBSM) Clyde Sea Rapid Methodologies Survey	New	IV	Partner (MBA)	Attribution (CC BY)
Belgian recreational fisheries monitoring	Update	V	Partner (VLIZ)	Attribution (CC BY)
Biodiversity of the upper-mesophotic octocoral habitats at Sporades Archipelago (Aegean Sea)	New	V	Partner (HCMR)	Attribution (CC BY)
Bird observations at Borsele off shore wind farm	New	NA	Ad-hoc (Ingestion)	Attribution (CC BY)
FAMOSO Zooplankton	New	V	Partner (IEO)	Attribution (CC BY)
Finnish Baltic Sea benthic monitoring, POHJE database	Update	V	Partner (SYKE)	Attribution (CC BY)
Finnish Baltic Sea zooplankton monitoring	Update	V	Partner (SYKE)	Attribution (CC BY)
Green Turtles in Syria (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)
JNCC/Cefas Barmade Bank MCZ Verification survey (CEND0412) - Seabed Still Analyses	Update	NA	Ad-hoc (JNCC)	Attribution (CC BY)
Kongsfjorden/Spitsbergen - soft bottom fauna	Update	NA	Partner (VLIZ)	Attribution-NonCommercial (CC BY-NC)
LifeWatch observatory data: Permanent Cetacean passive acoustic sensor network in the Belgian Part of the North Sea	Update	V	Partner (VLIZ)	Attribution (CC BY)
LifeWatch observatory data: phytoplankton observations by imaging flow cytometry (FlowCam) in the Belgian Part of the North Sea	Update	V	Partner (VLIZ)	Attribution (CC BY)
List of marine species observed during diving in Monastir area, Tunisia, 2023	New	V	Partner (HCMR)	Attribution (CC BY)
Manx Basking Shark Watch 2017-2018 (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)
Migration and foraging ecology of Greater Shearwater (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)
Movements and distribution of loggerheads from Amvrakikos Gulf, Greece 2013 (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)
North Cyprus 2017 (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)

Northern Cyprus 2009 (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)
Polychaetes from major ports in Greece in 2020-2021	Update	IV	Partner (HCMR)	Attribution (CC BY)
RADIALES NW Spain Zooplankton	Update	V	Partner (IEO)	Attribution (CC BY)
Rethymno Nesting Turtle (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)
SHARK - National and regional marine environmental monitoring of Picoplankton in Sweden since 2002	Update	V	Partner (SMHI)	CC 0 (No Rights Reserved)
SHARK - National marine environmental monitoring of jellyfish in Sweden since 2007	New	V	Partner (SMHI)	CC 0 (No Rights Reserved)
Soft-bottom macrozoobenthos from the coastal Bulgarian Black Sea collected in 2022 by IBER-BAS, BRIDGE-BS project	New	NA	Ad-hoc (BAS)	Attribution-NonCommercial (CC BY-NC)
TARTACare Calabria: monitoring and conservation of the loggerhead turtle nesting activity along the Ionian coast of Calabria (Southern Italy) (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)
Telemetry of loggeread turtles in Amvrakikos Bay (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)
Zakynthos Nesting Turtles (aggregated per 1-degree cell)	New	NA	Ad-hoc (OBIS-SEAMAP)	Attribution-NonCommercial (CC BY-NC)

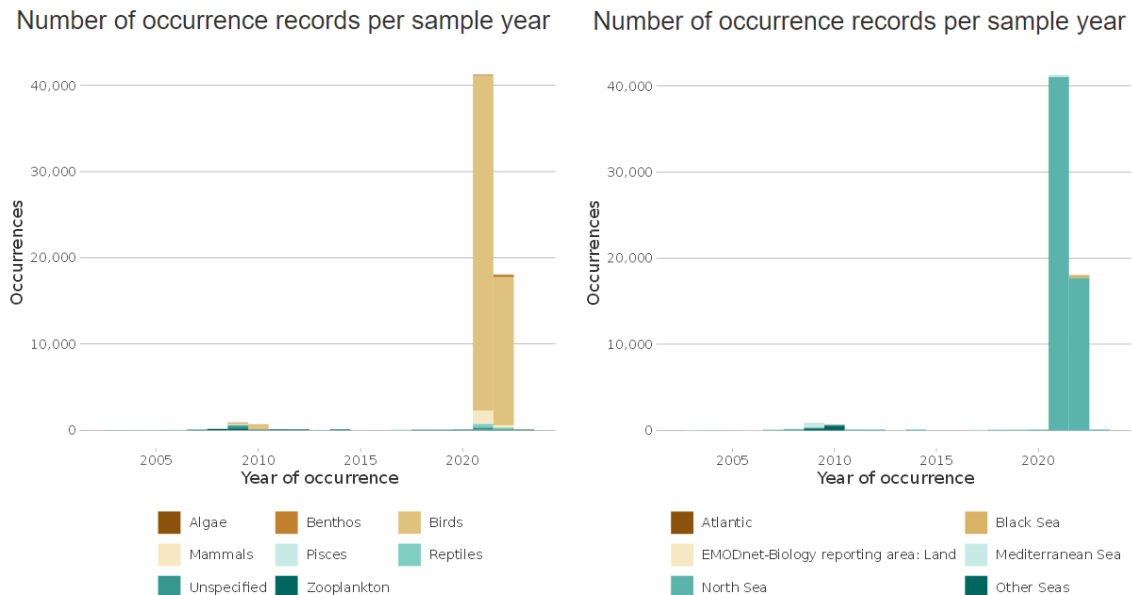



Figure 1. Occurrence distributions, for data published during the reporting period, per year of occurrence for the Functional group (Left image) and Sea region (Right image).




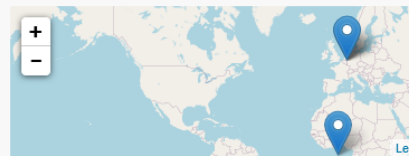
Figure 2. Occurrences distribution for data published during the reporting period (left image is the full extent of the data and right image is a zoom for the European Seas).

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

Monitoring Period: 2023-04-02T07:46:08Z - 2024-04-02T07:53:20Z


100%
 Operational (3/3)


99.9%
 Reliable



Resources [JSON](#) [CSV](#)

Search... (foo, site:.org, title:foo, type:wms, url:example.org)

3 results

Type	Name	Status	Reliability
Web Coverage Service (WCS)	EMODnet Biology (WCS) Biology	✓	99.96%
Web Feature Service (WFS)	EMODnet Biology (WFS) Biology	✓	99.94%
Web Map Service (WMS)	EMODnet Biology (WMS) Biology	✓	99.94%

Figure 3. EMODnet Biology's webservices monitoring during the reporting period (Note that due to a limitation in the monitor tool, we can only show the period from 2023-04-02 to 2024-04-02).