



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot n°6 – Biology

EMFF/2019/1.3.1.9/Lot 6/SI2.837974 -EMODnet -Biology

Start date of the project: 18/04/2021 - (24 months)

Centralisation Phase

Quarterly Progress Report (QR21)

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



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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 this reporting phase, 6 new datasets and 5 updated datasets were made available, representing an addition of 49.834 occurrence records to EMODnet Biology. Maps of the geographic and functional group spread and dataset details are included in the Annexes (Figures 1 to 3). The data covered two marine regions, the Atlantic Ocean and Black Seas.

A proposal of the Feasibility study (according to the D2.5) on Ecological Traits and sampling devices/methodologies identification with text mining was finalised and we are in the process of searching for collaborators that can fulfil this task. A call for external collaborators was sent, in late June, to a list of possible collaborators as well as to the community of trait-based researchers via <https://github.com/open-traits-network/open-traits-network.github.io/issues/178>. The deadline for expression of interest is the end of July.

Regarding the D2.3 “Report on efforts undertaken in rescuing historical data through citizen science” the project in Zooniverse platform - as described in the previous quarterly report - is being finalised and is about to be submitted for review to the technical Zooniverse team. The next step will be the open advertisement to Citizen Scientists. In parallel, the collaboration with the team at Meise Botanic Garden on preparing a similar project on the DoeDat platform is reaching its final stages ahead of launch, which is estimated to happen over the Summer for a first test-case. This first DoeDat project will focus on the digitisation of one of the Mercator training ship expedition data reports, published in 1941.

Work on the historical dataset entitled “The marine algae of Alexandria. II. A study of the occurrence of some marine algae on the Egyptian Mediterranean Coast (with 6 figures) by A. H. Nasr (1940). Notes and Memoirs No. 37” was finalised and is pending publication via EMODnet Biology, which should happen in the coming months.

In addition, the below mentioned historical datasets are in progress:

- Forbes, E. (1843). On the Radiata of Eastern Mediterranean. I. Ophiuridae. Transactions of the Linnean Society of London 19: 143-153.
- Forbes, E. (1843). On the species of Ophiura inhabiting the Aegean Sea. Proceedings of the Linnean Society of London 1: 174-177

During the annual meeting, all partners presented an update of the progress of their tasks within WP2. Individual meetings with a number of partners were held in order to gather detailed information on the datasets and clarify any questions or resolve any data related constraints.

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

All partners presented progress on product development at the Biology Annual Meeting in May. Breakout sessions during this meeting allowed more focussed discussion of product

development and future plans. Products under development to address this task include both broad-scale community level summaries (e.g. of temporal trends in benthos) and individual species-level trends for key species (e.g. *Calanus* zooplankton species). Timelines for product completion were discussed and will be finalised at the next WP3 quarterly call, scheduled for July 2022.

Development of the ows4r R package has now been completed, which is the foundation required for accessing EMODnet raster data in R via WCS services. This functionality will be developed in a new EMODnet R package over the remainder of this phase, which will greatly increase the scope for developing products that link data across lots.

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

During the reporting period, updates to the relational database system, that is the backbone of the OGC webservices, began. The new version will be PostgreSQL 14 with a PostGIS (3.2.2) extension. Migration of the data will be happen during the next quarter.

The latest Integrated Publishing Toolkit (version 2.5.8) on <http://ipt.vliz.be> was installed and is fully operational. The server's Operating System was updated and the latest Tomcat 9 version was installed, including all security patches.

First tests with newest Geoserver (2.21) were done, task will continue throughout the next quarter.

A dedicated ERDDAP instance was set up as a Proof of Concept to share Darwin Core compatible CSV files per dataset (<http://erddap.eurobis.org>). This work was developed within the context of a different project, but its outcomes will be explored by EMODnet Biology in terms of whether the data can be made available to the Central Portal as one netCDF dataset (in addition to the existing OGC standards) that users will be able to query and filter for the information they are looking for.

In order to harvest and publish new data types, new fields were introduced in the EurOBIS harvesting table, so that compatibility with the data formats is ensured. DarwinCore files containing these new fields were harvested successfully in the development environment. Further tests and development work is needed in order to make these new fields available in the production environment, which is scheduled to happen in the coming weeks.

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

All static content work has been finalised and will be reviewed by DG COMM ahead of centralisation. No changes in the portal, except deliverable and news publication, will be made until this process is complete. Phase IV data products are in development; therefore, no changes have been made during the reporting period.

Task 5: Contributing content to dedicated spaces in Central Portal

The thematic lot provided content for the April, May and June newsletters. Aside from this, an event page was also created, in the Central Portal (CP), to highlight the participation at the UN meeting (see section 4 for details). This page can be accessed via the link <https://emodnet.ec.europa.eu/en/emodnet-biology-panelist-22nd-un-open-ended-informal-consultative-process-oceans-and-law-sea>.

With the ongoing work towards centralisation, one meeting was held with the CP team. A second meeting was postponed to mid-July due to travel and holidays not allowing the presence of essential people in this meeting. The static content is now considered at its final state before centralisation happens and will undergo review by DG COMM over the coming weeks/months (See Task 4).

Task 6: Ensure the involvement of regional sea convention

Following the EMODnet partners meeting, we progressed the engagement with Regional Sea Conventions (RSCs) through a targeted, individual-led approach. Leveraging existing engagement and pre-established networks we have initiated contact with each of the RSCs to ensure an appropriate level of engagement depending on their data requirements and technological capacity. This will feed into the future development of EMODnet Biology products and support highly relevant data and products are available in easily ingestible formats for rapid integration and analysis.

During the annual meeting WP4 partners had a breakout session to discuss the best engagement approach and how to best coordinate the EMODnet Biology message that should be shared with each of the RSCs.

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

EMODnet Biology contributed to the OSPAR North Atlantic Current and Evlanov Sea basin MPA workshop, highlighting EMODnet Biology data and products that could be utilised and additionally highlighting future plans and dataflows, including those from other EMODnet thematic lots. Details are included in Section 4.

Various partners are also involved with other open data initiatives, like OBIS. Within the this community, several partners are involved in various teams that will improve coordination between both initiatives as well as a common approach to similar constraints. Examples of these teams are:

- VLIZ is represented in the [Taxonomy Task Team](#), which aims to maximise the taxonomic precision, reliability and usability of OBIS data, the [Vocabulary Infrastructure Project Team](#), which aims to provide guidance and support for vocabulary/ontology issues, the [Data Quality Assessment and Enhancement Project Team](#) which aims to finalise work on documenting the logical data flow through the OBIS system with a focus on the data

processing pipeline and the [OBIS Grant Unified Data Model Project Team](#) which aims to explore the adoption of new GBIF data model to assess its implementation within the OBIS community

- HCMR joined the OBIS Historical Data Project Team which aims to a) address the unique issues that confront researchers working with historical data and datasets; b) share methodologies and experiences such as those developed by TDWG and c) feed information back to the wider OBIS community about historical data developments
- MBA is involved in the Vocabulary Infrastructure Project Team
- UkrSCES is involved in the [Capacity Development Task Team](#), which is responsible for the OBIS manual and organising training courses

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

User monitoring is done, in a continuous manner, through Matomo. For the period in question, 2.945 visits were made to the portal with an average 3:25 min spent on navigation. Figure 4- Visits over time it is possible to see the visits' variation through the quarter and a summary and Figure 5- Visits overview the summary of the quarter. Both Figures are included in the Annex under Task 8.

The analysis of the output given by the GeoHealthCheck monitoring tool (Figure 6 in the Annexes) includes the period from 2021-06-30 to 2022-07-01 and it is possible to conclude that the portal had an operability of 100% and a reliability of 99.5%, within INSPIRE guidance.

During the reporting period, five users contacted the thematic lot to either request assistance or provide feedback. Details are included in section 3 of this document.

Task 9: Maintain the existing thematic web portal for a maximum of six months from the start of the projects

This is an ongoing task until such time the Commission decides to shut down the portal. No specific actions were taken during the reporting period.

Status of the Milestones and Deliverables listed in the workplan					
Milestone/Deliverable	WP	Date due	Status (Delivered/Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
D1.1: Help desk operational and contact details published online (M3)	WP1	QR17 (30 Jun 2021)	Delivered	30/06/2021	
D1.2 Quarterly progress reports (scheduled defined in the tender) (M3-M24)	WP1	QR17 (15 Jul 2021) QR18 (15 Oct 2021) QR19 (15 Jan 2022) QR20 (15 Apr 2022) QR21 (15 Jul 2022) QR22 (15 Oct 2022) QR23 (15 Jan 2023) QR24 (15 Apr 2023)	Delivered Delivered Delivered Delivered Delivered	15/07/2021 15/10/2021 15/01/2022 15/04/2022 15/07/2022	
D1.3 First interim report after phase (M12)	WP1	19/04/2022	Delivered	17/06/2022	A two month extension was allowed to submit this report
D1.4 Final report (M24)	WP1	19/04/2023			
D1.5 Attend Steering Committee and Technical Working Group meetings (M0-M24)	WP1	Sep 2021 Apr 2022 Sep and Oct 2022 TBC 2023	Delivered Delivered	08/09/2021 26-28/04/2022	
D2.1 Inventory of possible historical data resources within the consortium (M6)	WP2	29/10/2021	Delivered	18/11/2021	
D2.2 Technical implementation of data	WP2	29/10/2021	Delivered	18/11/2021	

flows for the new project partner (M6)					
D2.3 Report on efforts undertaken in rescuing historical data through citizen science (M18)	WP2	15/10/2022			
D2.4 At least 3 linkages with initiatives outside of the original Consortium, resulting in extra data/information available via the Portal (M20)	WP2	31/12/2022			
D2.5 Feasibility study for recognition of specific ecological traits and/or sampling devices/methodologies in text (M22)	WP2	25/02/2023			
D2.6 Report on the standardisation and integration of the proposed new and updated datasets (M24)	WP2	19/04/2023			
D3.1 Quarterly WP3 community calls; call leader or other nominated team member to produce summary report of each call for publication on EMODnet website (M3-M24)	WP3	Call QR17 (30 Jun 2021) Call QR18 (30 Sep 2021) Call QR19 (31 Dec 2021) Call QR20 (31 Mar 2022) Call QR21 (30 Jun 2022) Call QR22 (30 Sep 2022) Call QR23 (31 Dec 2022) Call QR24 (31 Mar 2023)	Delivered Delivered Delivered Delivered Delivered	18-19/05/2021 22/09/2021 10/12/2021 Week of 28/02/2022 Week of 02/05/2022	

D3.2 Annual intensive workshops, in person with online participation options. Workshops involve collaborative product development on one or more targeted themes derived from WP4 user needs questionnaire (M12-M22)	WP3	Workshop 1 (19 Apr 2022) Workshop 2 (28 Feb 2023)	Delivered	Week of 28/02/2022	
D3.3 Publish R package to link EMODnet biology data with data from other EMODnet sources (M12)	WP3	19/04/2022	Delivered		
D3.4 Develop method to use Phase III presence-absence maps to display time series of distribution change (M12)	WP3	19/04/2022	In progress		
D3.5 Produce position paper outlining questions that can be addressed using EMODnet data, together with remaining gaps, and strategies for filling these (M24)	WP3	19/04/2023			
D3.6 Add/update data product metadata in the EMODnet Biology catalogue (M24)	WP3	19/04/2023			
D4.1: Questionnaire to inform cross-lot product development (M3)	WP4	30/07/2021	Delivered	06/09/2021	
D4.2: EMODnet Biology connectivity 'map' of projects, institutes, initiatives and networks to inform targeted engagement (M12)	WP4	19/04/2022			

D4.3 EMODnet Biology participation in each of the RSCs to inform and advise of available data products and mechanisms to access and influence the development of data, products, tools and services (M12)	WP4	19/04/2022	Ongoing		See Task 6 and section4 for more details
D4.4 “Launch” of the European MBON node (M24)	WP4	19/04/2023			
D4.5 Creation of engaging and informative use-cases for EMODnet Biology to illustrate uptake and utility of data products across a range of stakeholders across the quadruple helix of engagement (M6, M12, M18, M24)	WP4	Use case 1 (29 Oct 2021) Use case 2 (19 Apr 2022) Use case 3 (15 Oct 2022) Use case 4 (19 Apr 2023)	Delivered	31/01/2022	
D5.1 User portal operation and maintenance (M0-M6)	WP5	19/10/2021	Delivered		
D5.2 Webservices operation and maintenance (M0-M24)	WP5	19/04/2023			
D5.3 Technology stack upgraded (M12)	WP5	19/04/2022	Delivered		
D5.4 Evaluation and implementation of bulk data transfer technologies (M24)	WP5	19/04/2023			

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
Including in metadata records online resources	Pending	More information from the Secretariat is needed on what the expected result should be		
Including data and metadata URL in web services of data products	Ongoing	No changes since the last QR	QR18	
Assessment of performance				
The Secretariat is wondering if those tutorials will be made available online on the Biology/Central Portal website as it could be of interest for other thematic lots but also data providers.	Resolved	It is not envisaged that these tutorials will be shared publicly as they were designed for internal use and using the guidance and documentation the thematic lot has in place when creating products.	QR21	QR21
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	Ongoing	Customised GeoNetwork (DCAT and INSPIRE compliant) upgrade in progress. Fixing and debugging is almost complete, however the Log4j bug that was identified worldwide at the end of 2021 also needs to be addressed for this piece of software		

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	
Delays due to situation in the Ukraine	Ongoing	The partner in questions, UkrSCES is based in Odessa and contributes to WP2. Situation is being followed up within the project. The ongoing conflict might mean that the partner is unable to supply the data within the project's deadlines, as initially agreed		
Updates to Webservices to allow users to download habitat data that are not linked to biological occurrences	Resolved	The inclusion of ingestion of habitats data, that resulted from a collaboration between Seabed Habitats and Biology, was successful. A constraint in accessing the data was identified for those records that are not linked to biological records. Changes to data publication procedures have been implemented and it is confirmed that habitat data linked to species occurrences can now be downloaded via the EMODnet Biology toolbox and webservices.	QR22	QR21
EMODnet Biology products added to CP viewer	Ongoing	The complexity of the Biology product structure needs special attention not only from the thematic lot (i.e. assess and implement the best way to structure the product files) but also on the CP technical team as, from initial tests, it is not clear that Biology products will be made available in the same way as for the other lots	QR24	

3. User feedback

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
05-04-2022	SLIIT (Sri Lanka Institute of Information Technology)	Requesting Information for University Research Project (Nematode images)	email	Within 1 working day	Resolved	Directed user to Nemys, the world database of Nematodes and to WoRMS (World Register of Marine Species) where some Nematode images can also be found	
15-04-2022	NA/Private	Data Request: Phosphorus/Nitrate/Chlorophyll-a/Silicate Mediterranean/Adriatic/Ionian Sea	email	Within 3 working days	Resolved	Directed user to EMODnet Chemistry for the chemical data and to the Biology download toolbox to search for specific taxa	
27-04-2022	University of Lagos	Request for a host supervisor (POGO SCOR fellowship 2022 programme)	email	Within 5 working days	Resolved	Directed user to general jobs email at VLIZ as any internship request is processed via that route, rather than directly by the thematic lot	
17-06-2022	Wavec	Download data (polygon made by the user)	Website form	Within 1 working day	Resolved	Directed user to EMODnet Biology download toolbox and clarified how a bounding box could be drawn to select an area of interest	

17-06-2022	University of Edinburgh	OSPAR Workshop - NACES - Sponge Datasets	email	Within 2 working days	Resolved	Provided additional information as shared during the workshop. Directed user to the SponGES metadata record and SponGIS website	
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4. Meetings/events held/attended & planned

A. Meetings/events organised and attended in the quarter					
Date	Location	Type event (internal or external meeting; training/ workshop)	Was a presentation given? (yes/no + short description)	Meeting attended (A) / organised (O)	Short description and main results (# participants, agreements made, etc.)
05-04-2022	Online	External Workshop	No	A	EATiP-OBPS Best Practises in Aquaculture workshop Report published in Best Practices in Aquaculture, EATIP-OBPS Workshop, Tuesday, 05 April 2022, 11.00 - 14.30 UTC (Online), Proceedings. (oceanbestpractices.org) and workshop presentations are available via Best Practice in Aquaculture - 5 April 2022: Presentations (basecamp.com)
11-04-2022	Online	External Webinar	Yes Presentation: https://www.nck-web.org/content/documents/2022/Theme_Day_Measurements/pitch9_EMODnet_Biology_JoanaBeja_VLIZ.pdf High level overview about EMODnet Biology's activities and services	A	NCK Data Day: https://www.nck-web.org/upcoming-events/108-the-value-of-measurements-and-monitoring # Participants: ~50 Recording: https://www.nck-web.org/past-events/all-events/108-the-value-of-measurements-and-monitoring

					Session dedicated to the topic “The value of measurements and monitoring”
11 and 22-04-2022	online	External workshop	No	A	Workshops on data management for new Dutch North Sea Research program. Represented EMODnet, agreements on standards to facilitate transfer to EMODnet Biology and other lots.
20 to 21-04-2022	Hybrid/Paris	External Conference	No	A	Digital Ocean Forum High level event organised by Copernicus as a response to the EU Mission “Restore our Oceans and Seas by 2030” and to the call made at the One Ocean Summit on 11 February 2022 in Brest (France) towards the construction of the European Digital Twin Ocean (DTO) based on European Assets such as Copernicus and EMODnet Agenda: https://www.mercator-ocean.eu/wp-content/uploads/2022/04/DOF-21.04.pdf
26 to 28-04-2022	Hybrid/Oostende	External Meeting	Yes	A/O	EMODnet Steering Committee and Technical Working Group Meetings EMODnet thematic lots’ status updates, centralisation overview and progress so far. Minutes: https://webgate.ec.europa.eu/maritimeforum/en/node/7141 and

					https://webgate.ec.europa.eu/maritimeforum/en/node/7266
04 to 05-05-2022	Hybrid/Ostende	Internal Meeting	Yes	O	Annual project meeting # Participants: ~40 Status of the project given via WP leaders presentations and partners pitch presentations. WP2, WP3 and WP4 had breakout sessions where specific topics related to the workplan could be discussed and further progressed Partner and WP presentations can be found via https://www.emodnet-biology.eu/documents (under EMODnet_Biology_IV/Meetings folder)
09 to 13-05-2022	Sardinia, Italy	External	No	O	ICES Benthos Ecology Working Group Discussion on Benthic work (e.g. invasives) and benthic time series applications
19 to 20-05-2022	Ravenna, Italy	External Conference	No	A	European Maritime Day EMODnet Biology attended as an invited panellist to the session EMD WS n°9 - Ocean observations, marine data and services for the European Green Deal. The video recording is available via the link https://vimeo.com/714099133

06 to 10-06-2022	New York, USA	External Meeting	Yes	A	<p>22nd meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea</p> <p>EMODnet Biology was invited to present the European perspective on “Strengthening ocean observation value chain through regional cooperation: lessons from EMODnet Biology”</p> <p>A slide with the data flow (including EMODnet Ingestion was presented)</p> <p>The session video is available via https://media.un.org/en/asset/k1o/k1oa2bkp5t</p>
13-06-2022	Online	External Workshop	No	A	<p>NACES workshop</p> <p>This was an expert workshop on the Roadmap for further work on the North Atlantic Current and Evlanov Sea basin MPA. EMODnet Biology participated and highlighted that the data included in the report (made available ahead of the event) was in fact published by EMODnet Biology (data were retrieved via OBIS). It was also noted some datasets that are not yet published could be relevant for this work.</p>
14 to 16-06-2022		External Meeting	Yes	A	OSPAR ICG-COBAM meeting

			EMODnet & regional sea conventions: strengthen co-operation		<p>Overview of EMODnet and how can EMODnet Biology support OSPAR's activities, more specifically:</p> <ul style="list-style-type: none"> • What can EMODnet mean for the OSPAR groups and vice-versa? • Which EMODnet data/services used for current QSR2023? • QSR 2023: knowledge gap section! Any topics wherefore EMODnet can give support?
20-06-2022	Online	External training	No	A	<p>Infosession "How to make a site compliant"</p> <p>Training session organised by DG COMM for EMODnet thematic lots covering the requirements pertaining to the repatriation to the Europa domain</p>
21-06-2022	Online	External Meeting	No	A	<p>EMANEDS</p> <p>Meeting with TransEuropeMarinas and European Boating Industry as well as other EMODnet thematic lots to discuss possible ways of engaging marina users through data collection activities. First expected output is a concept paper of the relevance of this line of work and a high-level overview of how it could be implemented</p>
22-06-2022	Online	External Meeting	No	A	EMODnet Vision for the future, governance and business model

					Meeting organised by the EMODnet Secretariat to gather feedback from the various thematic lots on how the centralisation changes can help shape the future of EMODnet
SUM				O	Total # of meetings organised = 3
SUM				A	Total # of meetings attended = 12

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
01-07-2022	Online	Meeting	A	Planning for OSL3
07-07-2022	Online	Meeting	A	European Glider Data Management Workshop
18-07-2022		Meting	A	EMODnet centralisation with DG MARE

5. Communication assets

A. Communication products developed				
Date	Communication material	Short description (of the material, title, ...) of the asset	Main results	Name of event at which material was disseminated (if applicable)
QR21	Tweets	42 tweets on published datasets and activities by the EMODnet Biology team	Increase exposure to activities and outputs Outreach	NA
QR21	News 06-04-2022 28-04-2022	https://www.emodnet-biology.eu/news?p=show&id=9006 https://www.emodnet-biology.eu/news?p=show&id=9017	Increase exposure to activities and outputs Outreach	NA
QR21	Event page	https://emodnet.ec.europa.eu/en/emodnet-biology-panelist-22nd-un-open-ended-informal-consultative-process-oceans-and-law-sea	Increase exposure to activities	NA

During the reporting period, Impressions and Engagement rate from Twitter analytics for the @EUROBIS_VLIZ account were collected and are shown in the Figures below.

Your Tweets earned **19.5K impressions** over this **91 day** period

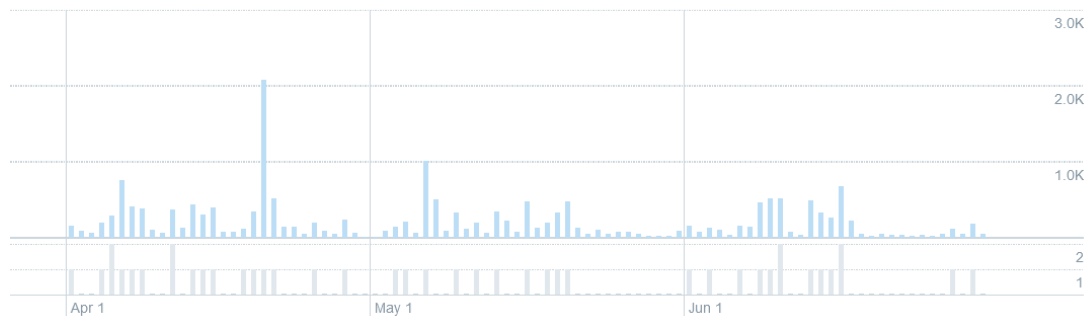


Figure 7. Twitter analytics' Impressions of the @EUROBIS_VLIZ account during the reporting period

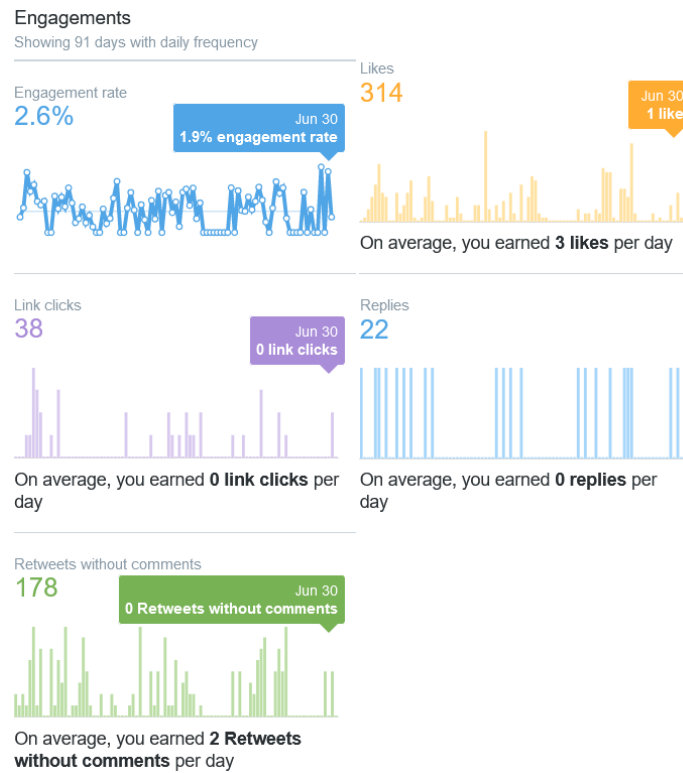


Figure 8. Twitter analytics' Engagements of the @EUROBIS_VLIZ account during the reporting period

B. Planned communication products			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected
QR22	Tweets	Published datasets and team's activities	Increase exposure to activities Outreach
QR22	News	Published documents/deliverables	Increase exposure to activities Outreach

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

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

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

6. 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	Internal tool	The increase in data was quite small as during the reporting period only one data harvest was completed and it consisted of few and small datasets covering the Atlantic and the Black Sea.
What is your opinion on the data coverage within EMODnet for your thematic?	NA	The data gaps are well identified within the thematic lot (e.g. Black Sea) and work is ongoing to publish more data from this region, however the war has prevented one of our regional partners from fulfilling their tasks. The gaps in functional groups (e.g. macroalgae, birds) are also well identified within the thematic lot and work is ongoing to publish more data. COVID is still causing constraints to a number of partners and ad-hoc providers when it comes to data submission
B) Usage of data in this quarter	Internal tool	There was a negative trend in the number of data records downloaded. It is worth noting that 64 requests resulted in errors (either the user cancelled the request or there was a glitch in the system that prevented the request from being completed). These errors, as well as VLIZ test requests are not included in the total number of manual downloads
2. Current status and coverage of total number of data products A) Volume and coverage of available data products	Internal tool	There were no changes to product volume and coverage since the last QR
B) Usage of data products in this quarter	Matomo	Product uptake is very low, possibly because our products are complex by nature or users (mostly academics and business professionals) don't rely on them for their work

3. Internal and external organisations supplying/approached to supply data and data products within this quarter	Internal data collection	The data published originated from three partners and two organisations external to the consortium. The NBDC data resulted from citizen science observations
4. Online 'Web' interfaces to access or view data	NA	No changes since the last quarterly report
5. Statistics on information volunteered through download forms	Internal tool	The data were collected from 191 successful downloads. The majority of which were users from academia/research background, which remain the bulk of EMODnet Biology users. Business and NGOs/private citizens are the second type of users downloading the data. As expected, the majority of users are from a European country, with the remaining world users contributing to about 14% of the data downloads
6. Published use cases	Matomo	No use cases were downloaded during the reporting period
8.1. Technical monitoring	Matomo	Response time is within the specified guidance and uptime is stable at 100%, meaning the portal was always operational
9. Visibility & Analytics for web pages	Matomo	Most indicators indicate a slight decrease of pageviews when compared with the previous quarter. This is in line with the negative trend in users visiting and downloading data from the portal
10. Visibility & Analytics for web sections	Matomo	Most indicators indicate a slight decrease of pageviews when compared with the previous quarter. This is in line with the negative trend in users visiting and downloading data from the portal
11. Average visit duration for web pages	Matomo	The quarterly visit duration had substantially decreased for a number of pages since the last quarter, which could mean that users find what they are looking for more quickly

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

7. Annex: Other documentation attached

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

Dataset	New/ Update	Phase	Organisation	License
Annual wrack biomass of the northern Portugal sandy beaches	New	Phase IV	CIIMAR	CC-0
CETUS: Cetacean monitoring surveys in the Eastern North Atlantic	Update	Phase IV	CIIMAR-UP	CC-BY
Explore Your Shore	New	ad hoc	National Biodiversity Data Centre (NBDC), Ireland	CC-BY
Littoral Monitoring Network of Cantabria (Invertebrates)	New	Phase IV	IH Cantabria	CC-BY-NC
Littoral Monitoring Network of Cantabria (Phytoplankton)	New	Phase IV	IH Cantabria	CC-BY-NC
Natura 2000 Network (Saltmarshes vegetation)	New	Phase IV	IH Cantabria	CC-BY-NC
SHARK - National environmental monitoring of Grey seal in Sweden since 1989	Update	Phase IV	SMHI	CC-0
SHARK - National environmental monitoring of Harbour seal in Sweden since 1988	Update	Phase IV	SMHI	CC-0
SHARK - National marine environmental monitoring of zooplankton in Sweden since 1979	Update	Phase IV	SMHI	CC-0
Zooplankton data collected in the Romanian Black Sea waters between 1973 and 1980	New	Phase III	NIMRD	CC-0
Type locality distributions from the World Register of Marine Species	Update	Phase IV	VLIZ	CC-BY



Figure 1. Map of gridded occurrences published by EMODnet Biology during the reporting period

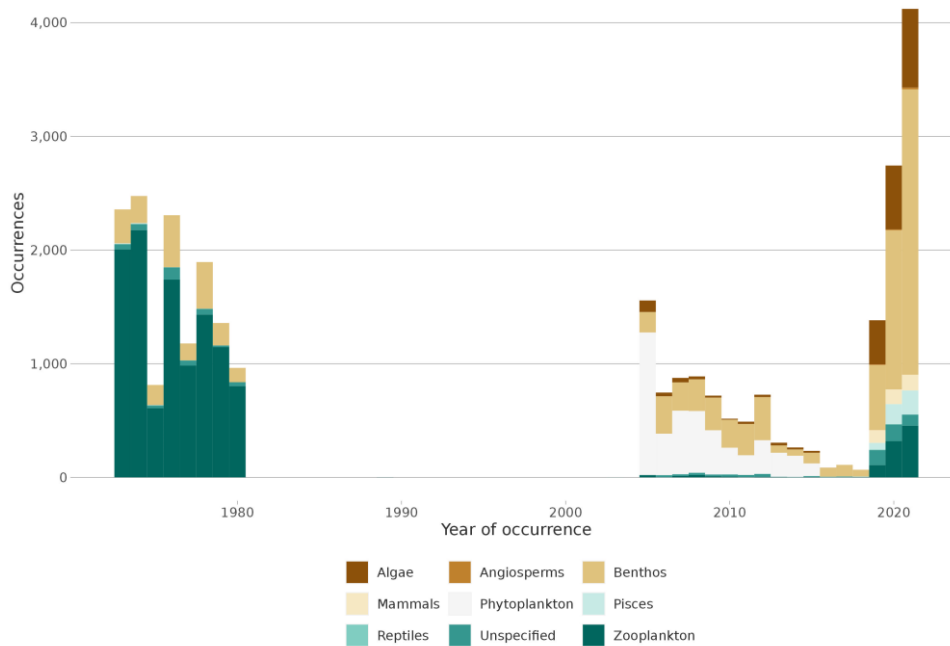


Figure 2. Number of occurrences, per year of sample and sub-theme, published by EMODnet Biology during the reporting period

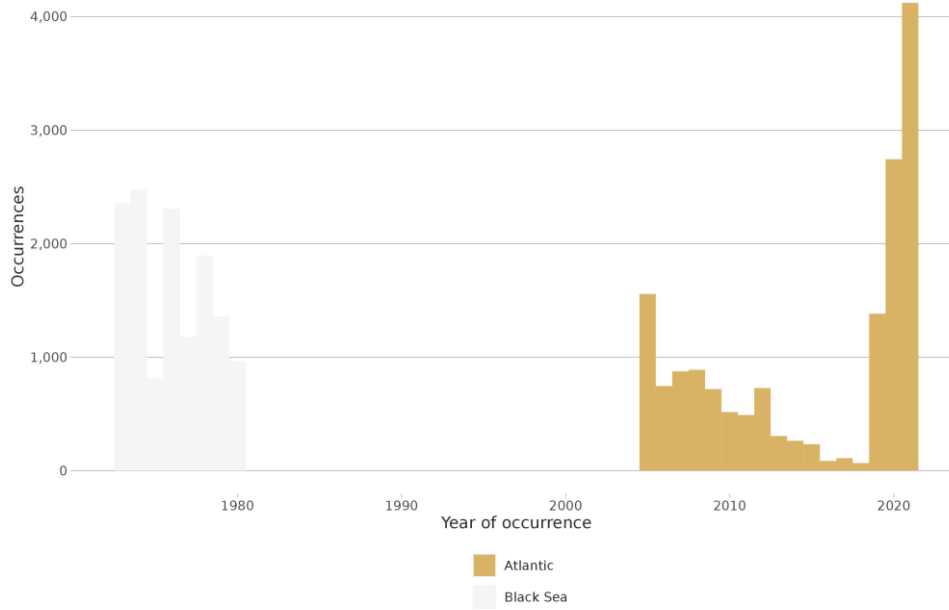


Figure 3. Number of occurrences, per sample year and marine region, published by EMODnet Biology during the reporting period

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

Visits Over Time

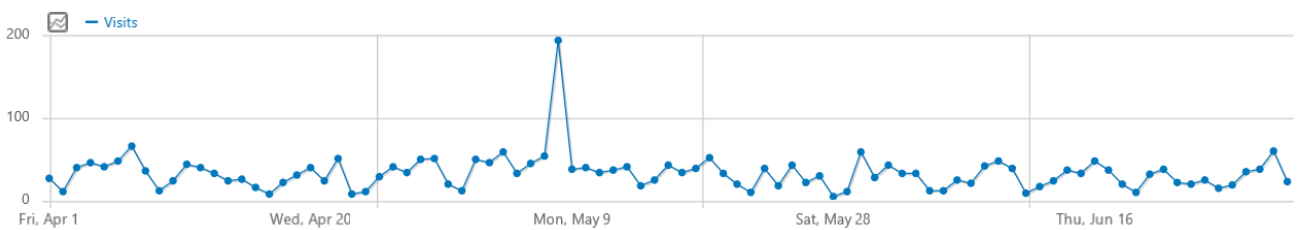


Figure 4. Visits over time during the reporting period (collected via Matomo)

Visits Overview

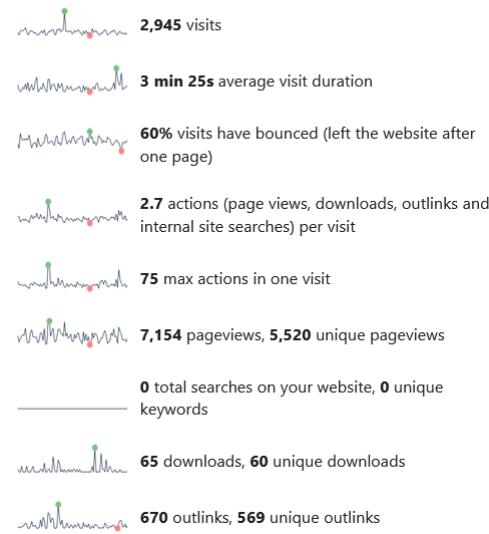


Figure 5. Visits overview during the reporting period (collected via Matomo)

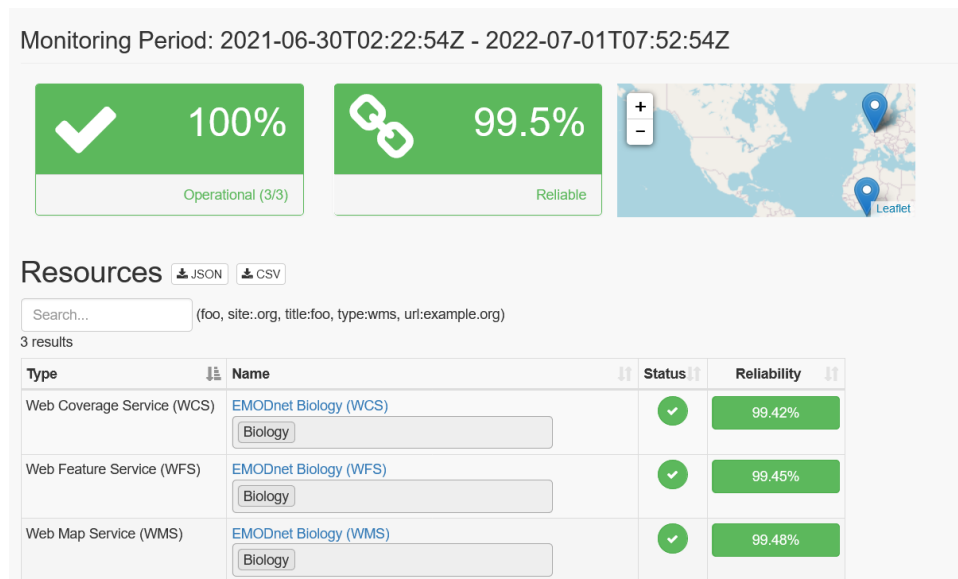


Figure 6. GeoHealthCheck monitoring dashboard for EMODnet Biology web services (Note the tool provides information from 2021-06-30 to 2022-07-01)