



# **EMODnet Thematic Lot n° VI – 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 (QR22)**

**Reporting Period: 01/07/2022 – 30/09/2022**



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# 1. Highlights in this quarter

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

Work towards Deliverable D2.5 “Feasibility study for recognition of specific ecological traits and/or sampling devices/methodologies in text” is underway. Following the publication of the proposed work and an expression of interest from external parties, the most appropriate candidate was selected based on criteria such as: working experience in European projects, understanding the challenges of the Feasibility Study, educational background of the team.

Further progress has been had for Deliverable D2.3 “Report on efforts undertaken in rescuing historical data through citizen science” throughout the summer, with the launch of two online Citizen Science (CS) projects. The project “[Mercator opleidingschip expeditie data - Pisces \(vissen\)](#)” was published in July on the DoeDat platform and the document was digitised in a matter of weeks and after undergoing quality control procedures, it was published in early September and included in this report. The second CS project, “[Digging up the oceans' past](#)” was published in August via the Zooniverse platform and complete digitisation and subsequent data publication is expected during the next few months.

Several actions towards the dissemination of both projects have taken place, via social media, various mailing lists and news items.

During the reporting period, 14 datasets were published, 12 were new submissions, both from partners and from ad-hoc data providers two were updates. This harvest brought in an additional 180.611 occurrence records, bringing the total number of records to over 29,9M, resulting from a total of 1233 datasets with published data. More detailed information on the datasets and maps of the geographic distribution and split across sea regions and functional groups are included in the Annexes.

## **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**

Further work continued on developing a range of products relevant to this task, which are targeted for publication towards the end of 2022 and first quarter of 2023. This includes new monthly and yearly maps of two key zooplankton species, *Calanus finmarchicus* and *Calanus helgolandicus*, which have been created as netCDF files with all the necessary metadata, GeoTIFF outputs will also be produced. Multivariate analysis has also been added to DIVAnd code, allowing use of a temperature field as a co-variable to interpolate maps for the two *Calanus* species. Other product development has included temporal changes in the distribution of benthic macroinvertebrates and macroalgae. As previously reported, creating products covering some priority taxa, especially marine mammals and seabirds, is challenging using the available data. Promising developments here include liaising with other researchers to host their existing products showing monthly maps of the distributions of key marine mammal and seabird

species, which we expect to be able to report more fully over the next quarter. The new Joint Cetacean Data Programme <https://jncc.gov.uk/our-work/joint-cetacean-data-programme/>, run by ICES and JNCC, will promote and facilitate cetacean data standardisation and maximise value through collation and enabling of universal access, thus sharing similar values to EMODnet but with a clear focus on high quality data for these taxa. The other significant development this quarter has been in the creation of new tools. After development of the EMODnetWFS package for accessing EMODnet vector data, we have now additionally developed a new R package, EMODnetWCS (<https://github.com/EMODnet/EMODnetWCS>), which allows users to access metadata and coverage (raster) data from all available EMODnet WCS endpoints through R. This now makes accessing and working with EMODnet spatial data available through web service much easier through R.

### **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**

Due to the need to filter for species names, a customised filter was developed for Biology layers (both data and products), allowing users to search, in the first instance, for specific taxon names. This filter uses the existing EMODnet Biology download toolbox API for the data and a combination of the ERDDAP API and Aphia/WoRMS database queries for the products (in order to match the AphiaID to the taxon name). Further API development will be required to ensure that other relevant filters, e.g species traits, data precision, parameters, etc, can also be searchable in the CP viewer, thus taking advantage of the interoperability work that is routinely done by the Data management team and extended partnership. This work is expected to take place in the next quarter, in time for centralisation and the switch off of the thematic portal.

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

In order to comply with centralisation requirements and have data products available for visualisation and download via the Central Portal viewer, work had to be done to transform the original files so they could be served by GeoServer (for WMS services) and ERDDAP (for the data sub-setting and download) and presented as a single layer per product. The work developed resulted in the reformatting of six Phase III products to netCDF. The files comply with Climate and Forecast (CF) guidance for biological data (<https://cfconventions.org/cf-conventions/cf-conventions.html#taxon-names-and-identifiers>) and were successfully uploaded to both systems.

The CP viewer now includes Phase III products created between 2019 and 2021 and also a layer for the occurrence data, where a customised filter (as explained in Task 3) was implemented. As mentioned above, future expansion of the filter is foreseen in the coming months, as well the addition of Phase IV products and any external products submitted to the thematic lot.

### **Task 5: Contributing content to dedicated spaces in Central Portal**

EMODnet Biology has submitted various items to the July, August and September newsletters. Additionally, it has also published three news items on the EMODnet portal, more specifically:

- On 2022-06-16 - [EMODnet Biology at the 22nd UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea meeting](#)
- 2022-07-14- [Support the rescue of historical marine biological data from the Mercator expeditions through the DoeDat Platform](#) and
- 2022-08-30- [Digging up the oceans' past](#)

A meeting held with the EMODnet CP technical team highlighted some left-over issues with the static content (typos, formatting) which were subsequently addressed by the technical team and resolved. A request to include details about the WCS R package published during the summer, on the tools and guidelines page, was done and included by the Secretariat shortly after. It was also highlighted by the thematic portal that the HighCharts map of the Biology network connections (Deliverable 4.2) was not working as expected. This is a pending issue to be resolved by the secretariat team responsible for the static content.

### **Task 6: Ensure the involvement of regional sea convention**

Work has continued with the coordinated engagement with the Regional Sea Conventions from specific, relevant EMODnet Biology Consortium members. Engagement activities have occurred for the OSPAR and HELCOM regions. For UNEP-MAP a detailed plan is currently under development. The Black Sea Commission engagement has been more problematic with the ongoing situation in Crimea and Ukraine meaning that the BSC Advisory Groups, including the Biodiversity Group, have not met for more than 2 years, not even online. However this has not prevented a planned list of potential engagement opportunities and high level objectives for the Black Sea Commission being developed, including liaison with the BRIDGE-BS Horizon2020 project (<http://bridgeblacksea.org/>) in lieu of a scheduled BSC meeting.

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

Additionally following the development of the EMODnet Data Product Definitions within a previous EMODnet Biology Deliverable (<https://doi.org/10.1016/j.marpol.2020.103958>), a national coordinating framework (the UK Marine Environmental Data and Information Network - MEDIN) has expressed interest in working with EMODnet Biology and the wider EMODnet network and Secretariat in formalising these definitions as a controlled vocabulary within the NERC Vocab Server (NVS). The NVS is used globally, supporting the activities and standards promoted through SeaDataNet and the IODE coordinated Ocean Biodiversity Information System (OBIS).

EMODnet Biology also contributes to the development of wider biodiversity initiatives, like GBIF, by providing useful feedback and use cases that will be used by GBIF in the continuous development of their new data model.

Through the participation in various joint events with Copernicus, it is acknowledged that there is room for further collaboration between the two initiatives. Further developments in this area will be included in future reports as and when they take place.

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

The thematic lot has procedures that continuously perform user monitoring through Matomo. For the period in question, the portal had 2.381 visits with users spending an average 2:35 min in each visit. In Figure 6 the visit variation over the reporting period is given. Figure 7 displays the visits overview for the reporting period. Both Figures are included in the Annexes under Task 8.

The thematic lot's webservices are also continuously monitored by the GeoHealthCheck tool. Figure 8 includes the period from 2021-10-04 to 2022-10-05 as it is not possible to configure the output for a specific date range. An analysis indicates that the portal was always operational and had an average of 99.3% reliability rate.

Four users contacted the thematic lot to enquire about data holdings or how to search and download the data. 75% of those enquiries were dealt with within 1 working day. Details of these enquiries 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**

There have been no changes to this task since the last report. The portal remains operational, and the only changes relate with the publication of news items, documents and updates to the statistics information given under Data & Data product >Data catalogue> Statistics tab.

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
<b>D1.1: Help desk operational and contact details published online (M3)</b>	WP1	QR17 (30 Jun 2021)	Delivered	30/06/2021	
<b>D1.2 Quarterly progress reports (scheduled defined in the tender) (M3-M24)</b>	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 Delivered Delivered Delivered	15/07/2021 15/10/2021 15/01/2022 15/04/2022 15/07/2022 14/10/2022	
<b>D1.3 First interim report after phase (M12)</b>	WP1	19/04/2022	Delivered	17/06/2022	
<b>D1.4 Final report (M24)</b>	WP1	19/04/2023			
<b>D1.5 Attend Steering Committee and Technical Working Group meetings (M0-M24)</b>	WP1	Sep 2021 Apr 2022 Sep 2022 Nov 2022 TBC 2023	Delivered Delivered Delivered	08/09/2021 26-28/04/2022 21-22/09/2022 07-08/11/2022	
<b>D2.1 Inventory of possible historical data resources within the consortium (M6)</b>	WP2	29/10/2021	Delivered	18/11/2021	
<b>D2.2 Technical implementation of</b>	WP2	29/10/2021	Delivered	18/11/2021	

<b>data flows for the new project partner (M6)</b>					
<b>D2.3 Report on efforts undertaken in rescuing historical data through citizen science (M18)</b>	WP2	15/10/2022			
<b>D2.4 At least 3 linkages with initiatives outside of the original Consortium, resulting in extra data/information available via the Portal (M20)</b>	WP2	31/12/2022			
<b>D2.5 Feasibility study for recognition of specific ecological traits and/or sampling devices/methodologies in text (M22)</b>	WP2	25/02/2023			
<b>D2.6 Report on the standardisation and integration of the proposed new and updated datasets (M24)</b>	WP2	19/04/2023			



<b>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)</b>	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  Delayed	18-19/05/2021  22/09/2021  10/12/2021  Week of 28/02/2022  Week of 02/05/2022 + 18/07/2022  20/10/2022	
<b>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)</b>	WP3	Workshop 1 (19 Apr 2022)  Workshop 2 (28 Feb 2023)	Delivered	Week of 28/02/2022	
<b>D3.3 Publish R package to link EMODnet biology data with data from other EMODnet sources (M12)</b>	WP3	19/04/2022	Delivered		
<b>D3.4 Develop method to use Phase III presence-absence maps to display time series of distribution change (M12)</b>	WP3	19/04/2022	In progress		

<b>D3.5 Produce position paper outlining questions that can be addressed using EMODnet data, together with remaining gaps, and strategies for filling these (M24)</b>	WP3	19/04/2023			
<b>D3.6 Add/update data product metadata in the EMODnet Biology catalogue (M24)</b>	WP3	19/04/2023			
<b>D4.1: Questionnaire to inform cross-lot product development (M3)</b>	WP4	30/07/2021	Delivered	06/09/2021	
<b>D4.2: EMODnet Biology connectivity 'map' of projects, institutes, initiatives and networks to inform targeted engagement (M12)</b>	WP4	19/04/2022	Delivered		
<b>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)</b>	WP4	19/04/2022	Delivered		
<b>D4.4 "Launch" of the European MBON node (M24)</b>	WP4	19/04/2023			

<b>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)</b>	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  Delivered	31/01/2022  01/04/2022	
<b>D5.1 User portal operation and maintenance (M0-M6)</b>	WP5	19/10/2021	Delivered		
<b>D5.2 Webservices operation and maintenance (M0-M24)</b>	WP5	19/04/2023			
<b>D5.3 Technology stack upgraded (M12)</b>	WP5	19/04/2022	Delivered		
<b>D5.4 Evaluation and implementation of bulk data transfer technologies (M24)</b>	WP5	19/04/2023			

## 2. Identified issues: status and actions taken

<b>A. Priority issue(s) identified and communicated by CINEA/ DG MARE/ SECRETARIAT</b>				
Priority issue	Status (Pending/ Resolved)	Action(s) taken/ remaining actions planned	Date due	Date resolved
Including in metadata records online resources (This will be provided as part of the comprehensive metadata review, planned for end 2022. This will however require a CSW service that provided access to the Portal's metadata records)	Pending	No changes since the last QR	QR24	
Including data and metadata URL in web services of data products	Ongoing	No changes since the last QR	QR18	
<b>Assessment of performance</b>				
Task 6: Ensure the involvement of regional sea convention: it could be useful to share insights on the high-level messages shared with the RSCs and outcomes of discussions/meetings with each of the RSCs	Resolved	High level summary of is provided in the meetings attended section		
<b>Progress solving identified issues</b>				
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>Observations in view of Section 1.7 of the Tender Specifications on Performance and Quality Requirements</b>				

<b>What is the portal's plan regarding data collection from the Caribbean Sea?</b>	Ongoing	Partners have been requested to assess if they have any data in the region and if possible to submit it  Ongoing communication with Caribbean OBIS to incorporate their data our holdings.	QR24	
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### 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
<b>Users do not have access to absence occurrences</b>	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	
<b>Delays due to situation in the Ukraine</b>	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		
<b>EMODnet Biology products added to CP viewer</b>	Resolved	Biology products are being made available to the CP either via ERDDAP or GeoServer. The NetCDF structure complies with CF guidance for Biological data	QR24	QR22

### 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
17/06/2022	University Edinburgh	OSPAR Workshop - NACES - Sponge Datasets	Email	Within 1 working day	Resolved	Enquiry about the availability of the SponGES dataset. Informed user that clarification from provider was pending before the data could be published. Data published in Sep 2022. Workshop participants informed	
17/06/2022	Wavec	Download data (polygon made by the user)	Portal submission form	Within 1 working day	Resolved	Informed user on how to select a specific area to apply as a filter ahead of data downloading	
27/07/2022	Deep Wind Offshore	Access to bird data in the Baltic Sea, north of Upsala	EMODnet helpdesk	Within 1 working day	Resolved	Informed user that holdings for that specific group and area is very scarce but that we should have more data within the coming months. Directed user to other possible sources of data.	

24/09/2022	Commercial company (undisclosed)	Enquiry on whether advertisements could be posted/linked to the portal	Portal contact form+email	Within 2 working days	Resolved	Advised user that none of the VLIZ maintained/hosted websites allow for links or any type of advertisements	
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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.)
Various dates	Online	Hackathon planning	No	A	Open sea Lab 3 Hackathon planning Core team composed of EMODnet Biology and EMODnet Secretariat colleagues to define the OSL3 overall structure
07/07/2022	Online	External workshop	No	A	How to expand the GROOM RI data management capacity to the “new” data type collected by Gliders in Europe? Organised by EuroSea and EuroGOOS the workshop aimed at discussing new data types, assessing the possible data flows, constraints, existing infrastructures. One such data type is imaging data from instrumentation installed on gliders, for which EMODnet Biology has some experience. More details about the workshop can be found via <a href="https://www.groom-ri.eu/european-glider-data-management-workshop-agenda-2/">https://www.groom-ri.eu/european-glider-data-management-workshop-agenda-2/</a>
20-21/09/2022	Online	External workshop	No	A	EMODnet for Business Workshops – Marine Data for and from the Offshore energy sector in the Northeast Atlantic, North Sea and Baltic Sea areas Event details, including an agenda are found in <a href="https://webgate.ec.europa.eu/maritimeforum/en/node/7382">https://webgate.ec.europa.eu/maritimeforum/en/node/7382</a>



					More than 65 participants joined the two-half day event
21-22/09/2022	Brussels	External meeting	Yes	A	EMODnet Technical Working Group Hybrid meeting where each thematic lot presented the work since the last meeting and an update of the centralisation process was given by the Central Portal Technical Team
22/09/2022	Brussels	External meeting	Yes	A	2 <sup>nd</sup> EMODnet-Copernicus Marine Service coastal workshop Details of this event, including a provisional agenda can be found in <a href="https://webgate.ec.europa.eu/maritimeforum/en/node/7390">https://webgate.ec.europa.eu/maritimeforum/en/node/7390</a> The event was focused on dialogue between the two EU marine data services EMODnet and Copernicus Marine Service with a specific focus on the coastal are
15/09/2022	Online	External meeting	No	A	The Historical Data Project Team, which was established at the 10th OBIS Steering group meeting in 2022, was presented in the joint meeting of OBIS Historical Data & Data Quality Control Project Teams. Communication between MedOBIS and OPI is ongoing for future activities.
19-23/09/2022	Gdansk	Conference	yes	A	Presentation on EurOBIS & EMODnet Biology on the European Marine Biology Symposium (EMBS), reaching several potential data providers and explaining the need of FAIR data and sharing data with initiatives such as EMODnet Biology.
<b>SUM</b>				<b>O</b>	<b>Total # of meetings organised = 0</b>
<b>SUM</b>				<b>A</b>	<b>Total # of meetings attended = 6</b>



<b>B. Meetings/events planned in the future</b>				
Date	Location	Type event (meeting, training (workshop), etc.)	Meeting to be attended (A) / organised (O)	Short description and main expected outcomes
03-04/10/2022	Brussels	External meeting	A	EU-Canada Ocean Partnership Forum
11-12/10/2022	Online	External meeting	A	Copernicus workshop on “Biodiversity and coastal ecosystems”
12-15/10/2022	Mytilini, Lesvos	Conference	A	15 <sup>th</sup> ICZEGAR (International Congress on the Zoogeography and Ecology of Greece and Adjacent Regions)
20-21/10/2022	Online	External meeting	A	EMODnet for Business Workshops – Marine Data for and from the Offshore energy sector - Mediterranean Sea and Black Sea
04/11/2022	Online	External meeting	A	SEArca event on Biodiversity Conservation in the Mediterranean
07-08/11/2022	Brussels	External meeting	A	EMODnet Steering Committee

## 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)
QR22	Tweets	29 tweets on published datasets and activities by the EMODnet Biology team	Increase exposure to activities and outputs Outreach	NA
QR22	News on the Biology portal 2022-07-13  2022-07-14  2022-08-25  2022-09-24	<a href="#">Support the rescue of historical marine biological data from the Mercator expeditions through the DoeDat Platform</a> <a href="#">EMODnet Biology Quarterly Report 20 is now published</a>  <a href="#">Digging up the oceans' past</a>  <a href="#">How do you use marine data hosted in Flanders?</a>	Increase exposure to activities and outputs Outreach	NA

The Impressions and Engagement details were extracted from Twitter analytics for the @EUROBIZ\_VLIZ account for the reporting period and are included in the Figures below.

Your Tweets earned **12.5K impressions** over this **91 day** period

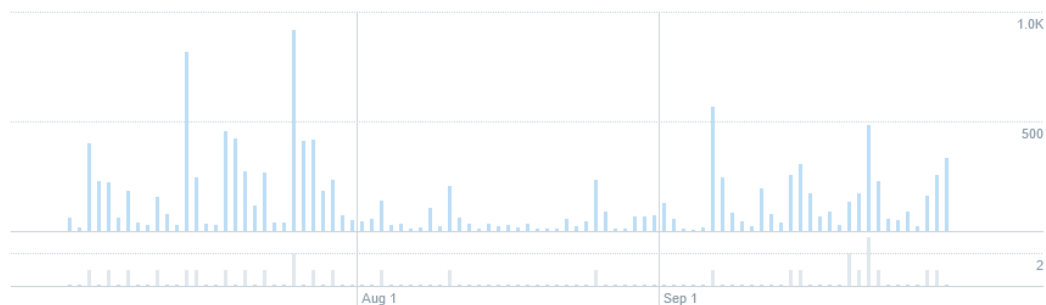


Figure 1. Twitter analytics' Impressions of the @EUROBIS\_VLIZ account during the reporting period

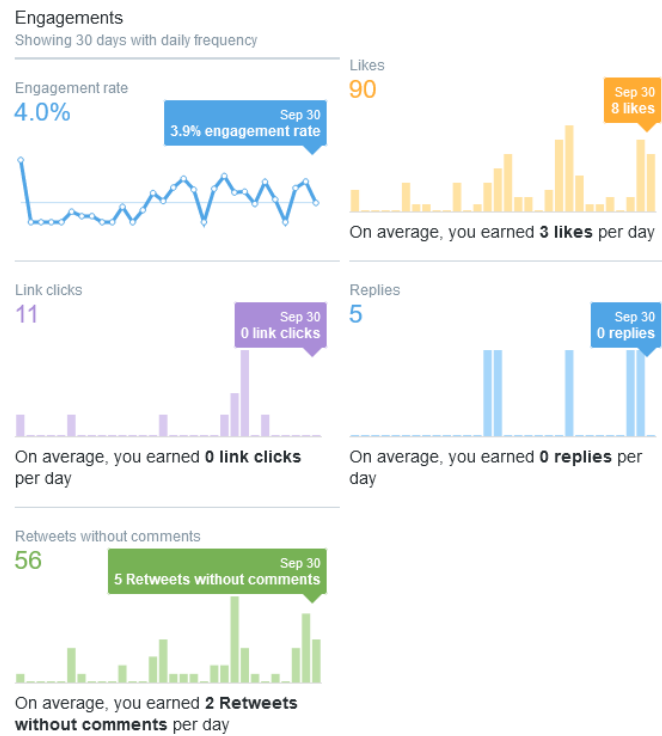


Figure 2. Twitter analytics' Engagements of the @EUROBIS\_VLIZ account during the reporting period

B. Planned communication products			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected
QR23	Tweets	Published datasets and team's activities as well as data management tips	Increase exposure to activities Outreach
QR23	News	Updates on the project, product releases, team activities	Increase exposure to activities Outreach
QR23	Use case	Not yet defined	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
22/07/2022	Journal	Automating the Curation Process of Historical Literature on Marine Biodiversity using text mining: The DECO Workflow	NA	<a href="https://doi.org/10.3389/fmars.2022.94084">https://doi.org/10.3389/fmars.2022.94084</a>	YES

B. Other/non-peer reviewed types of publications (co-)authored in the quarter					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No
<b>07/09/2022</b>	Conference abstract	Martin-Cabrera P, Perez Perez R, Irrison J-O, Lombard F, Ove Möller K, Rühl S, Creach V, Lindh M, Stemmann L, Schepers L (2022) Establishing Plankton Imagery Dataflows Towards International Biodiversity Data Aggregators. Biodiversity Information Science and Standards 6: e94196		<a href="https://doi.org/10.3897/biss.6.94196">https://doi.org/10.3897/biss.6.94196</a>	Yes
<b>19/09/2022</b>	Conference abstract	Perez-Perez R, Vandepitte L., Beja J., Vanhoorne B., Leclercq F., Tyberghein L. (2022) The European Ocean Biodiversity Information System (EurOBIS): your gateway to quality controlled marine biodiversity data ( <a href="https://embs55.ug.edu.pl/wp-content/uploads/2022/09/Book_of_abstract.pdf">https://embs55.ug.edu.pl/wp-content/uploads/2022/09/Book_of_abstract.pdf</a> )			Yes

*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 monitoring system	Within the reporting period a data harvest allowed for the increase in the number of available data. Phytoplankton was the theme with the highest percentual increase of data. The data covered all reporting regions and most themes. The trends are positive as the data publication comprise mainly of new data, and any updates allowed for an increase of records, rather than removal (due to stricter QC procedures and data harmonisation). No data reported specifically for the Caribbean region as any data published will be included in the Atlantic, as per tender.
What is your opinion on the data coverage within EMODnet for your thematic?		The thematic lot is constantly looking for other potential sources of data that could help fill the data poor regions. This process is, however, not a quick one as sometimes a lot of work needs to be done by the Data Management team to get the data ready for publication.
B) Usage of data in this quarter	Internal monitoring system	There was an increase in the data usage when compared with the previous quarter. It is expected that centralisation might have as a consequence an even bigger increase of users. Note that data are also re-published by OBIS and the majority of marine biodiversity data users use that platform instead as they have access to not data from the whole world. Note that the information given in table 1B refers to individual records downloaded, from a total of 29914847, more than 110k records were downloaded, amounting to 3.73GB of data. Note that the increase in the number of manual/individual downloads (as given in 'trend number of downloads column') does not directly reflect the volume and number of records downloaded, i.e. a manual download can include very few or quite a considerable number of records.
2. Current status and coverage of total number of data products	Internal monitoring system	The number of products has increase however that is due to the launch of a new R package, focusing on using EMODnet's WCS webservices to download data. The coverage therefore has not changed



A) Volume and coverage of available data products		
B) Usage of data products in this quarter	Matomo	Product uptake is quite low and it is hoped that the centralisation will see a boost in the uptake of the Biology products
3. Internal and external organisations supplying/approached to supply data and data products within this quarter	Internal monitoring system	A mix of organisations supplied data, from partners to Phase III data grant holders. As part of our activities we also publish data from ad-hoc providers. To note that publication of a dataset that was rescued due to the citizen science digitisation activities
4. Online 'Web' interfaces to access or view data	Internal monitoring system	No change since the last report
5. Statistics on information volunteered through download forms	Internal monitoring system	Information obtained through the form available ahead of data download. Most users are from a research/academia background, with the second most significant user base being industry/business. The main data usage is research followed by GIS analysis. In terms of geographical distribution, more than half of the users were from European countries while the remaining were mostly from Asian countries
6. Published use cases	Matomo	Number of use cases has not changed since the last report. A new use case is due in the next quarter. There was no data reported for the number of use cases downloaded for the reporting period, so the numbers presented include the total of downloads since 2018
8.1. Technical monitoring	Matomo	Monitoring indicates that there was a 100% uptake time during the reporting period and that the response times are within INSPIRE guidance
9. Visibility & Analytics for web pages	Matomo	Most indicators indicate a slight decrease of pageviews when compared with the previous quarter.
10. Visibility & Analytics for web sections	Matomo	Most indicators indicate a slight decrease of pageviews when compared with the previous quarter.

11. Average visit duration for web pages	Matomo	As with previous indicators, there was a slight decrease in visit duration time during the reporting period, which could mean that users find what they are looking for more quickly. Specific pages show an increase in visit duration, but it could reflect users leaving the page open after searching for the information they require.
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*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
<a href="#">Danube Mouths Zoobenthos data from 2011 to 2015</a>	New	IV	Partner (NIMRD)	CC-BY-NC
<a href="#">Data from the 1935-1936 cruises of the Belgian training ship Mercator 3 Pisces collection</a>	New	IV	Partner (VLIZ)	CC-BY
<a href="#">Data from: Rehabilitating the cyanobacteria &amp; niche partitioning, resource use efficiency, and phytoplankton community structure during diazotrophic cyanobacterial blooms</a>	New	IV	Ad-hoc	CC-0
<a href="#">Distribution of deep-sea sponges in the North Atlantic</a>	New	IV	Ad-hoc	CC-0
<a href="#">Larvae of decapods off Portuguese coast from 1986 to 1994</a>	New	IV	Partner (IPMA)	CC-BY-NC
<a href="#">Macrozoobenthos from the Belgian Continental Shelf, collected in 2000</a>	Update	IV	Partner (ILVO)	CC-BY
<a href="#">Observation of marine vulnerable mobile species in Sicilian waters, Ionian Sea (surveys 2015-2019)</a>	New	IV	Partner (IPMA)	CC-BY-NC
<a href="#">Occurrence of Eukaryotes in the size fraction 20-180 micrometres, collected worldwide during the Tara Oceans expedition (2009-2013) using a ring net and analysed by environmental High Content Fluorescence Microscopy (e-HCFM)</a>	New	III	Data grant holder (Roscoff)	CC-BY
<a href="#">Occurrence of Eukaryotes in the size fraction 5-20 micrometres, collected worldwide during the Tara Oceans expedition (2009-2013) using a ring net and analysed by environmental High Content Fluorescence Microscopy (e-HCFM)</a>	New	III	Data grant holder (Roscoff)	CC-BY
<a href="#">Plankton Production season off Portuguese coast from 1986 to 1987</a>	New	IV	Partner (IPMA)	CC-BY-NC
<a href="#">Presence of cetaceans and sea turtles in the Gulf of Catania, Eastern Sicily, Ionian Sea (surveys 2015-2019)v</a>	New	III	Data grant holder (MareCamp)	CC-BY

Dataset	New/Update	Phase	Organisation	License
<a href="#">Romanian Black Sea Phytoplankton data from 1991 to 2000</a>	New	IV	Partner (NIMRD)	CC-BY-NC
<a href="#">Zooplankton of the South and South-Western Portuguese Coast in Winter 2006-07</a>	New	IV	Partner (IPMA)	CC-BY-NC
<a href="#">Type locality distributions from the World Register of Marine Species</a>	Update	IV	Partner (VLIZ)	CC-BY

Table 1. Overview of new/updated datasets in the reporting period

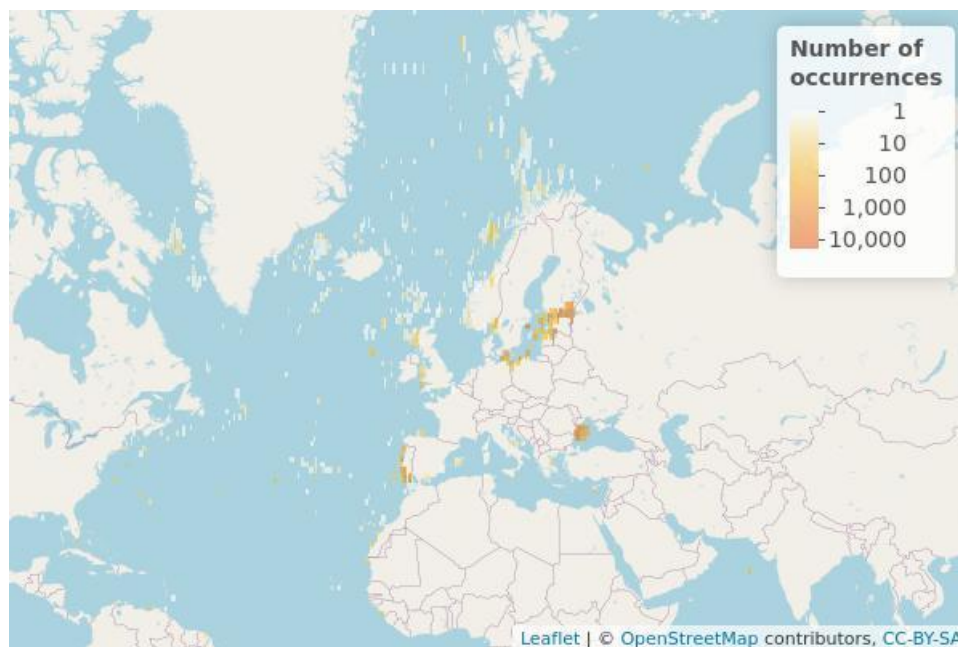


Figure 3. Map of gridded occurrences published by EMODnet Biology during the reporting period

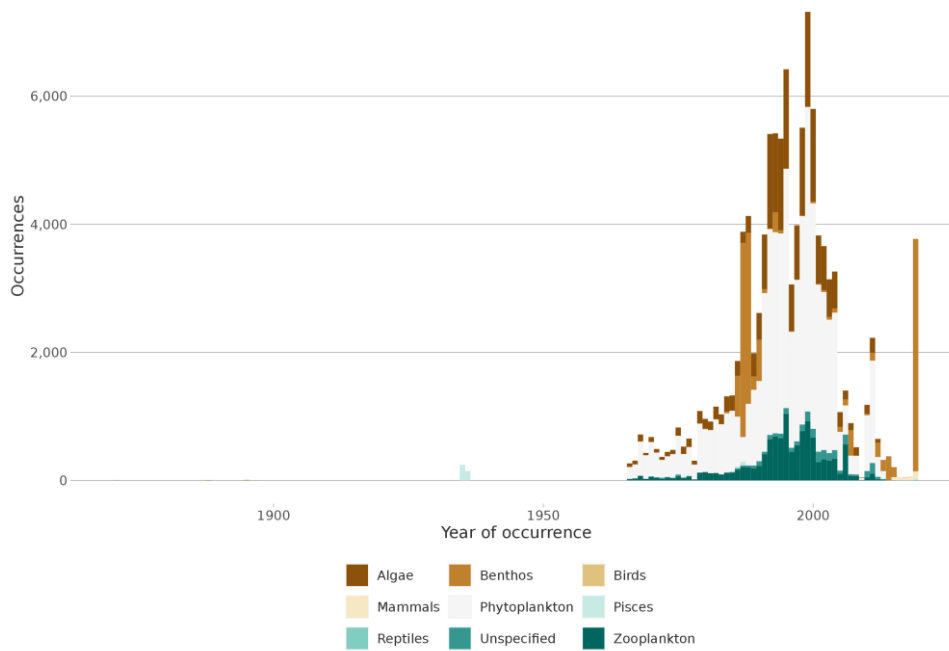


Figure 4. Number of occurrences, per year of sample and sub-theme, published by EMODnet Biology during the reporting period

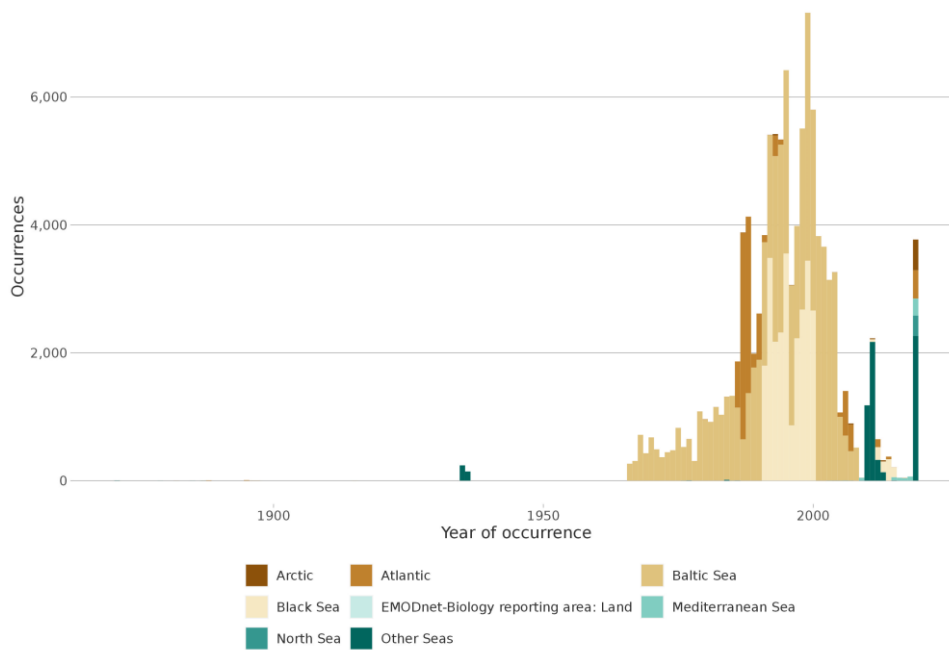


Figure 5. Number of occurrences, per sample year and marine region, published by EMODnet Biology during the reporting period

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

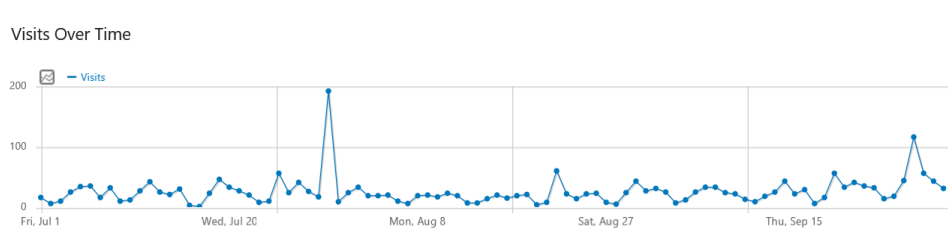


Figure 6. Visits over time during the reporting period (Collated by Matomo)

### Visits Overview

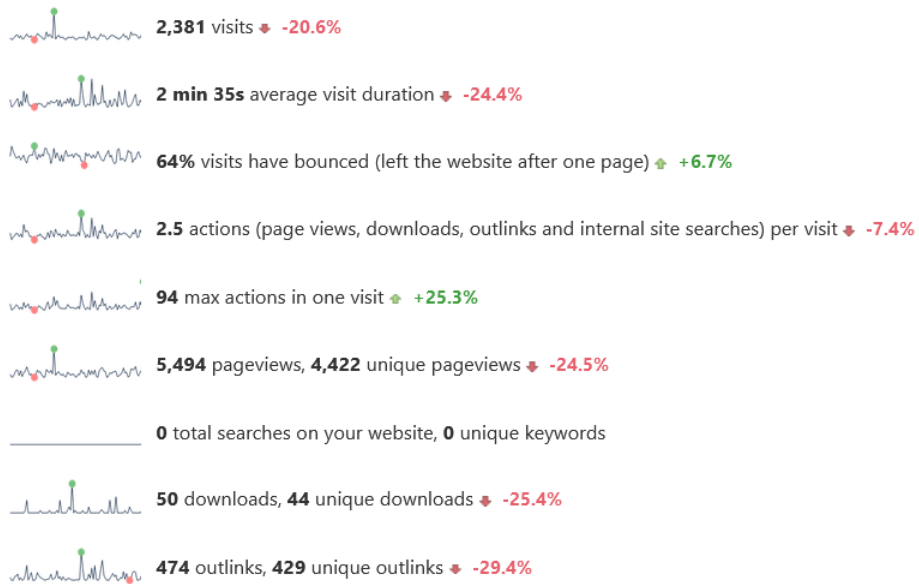


Figure 7. Visits overview during the reporting period (Collated by Matomo)

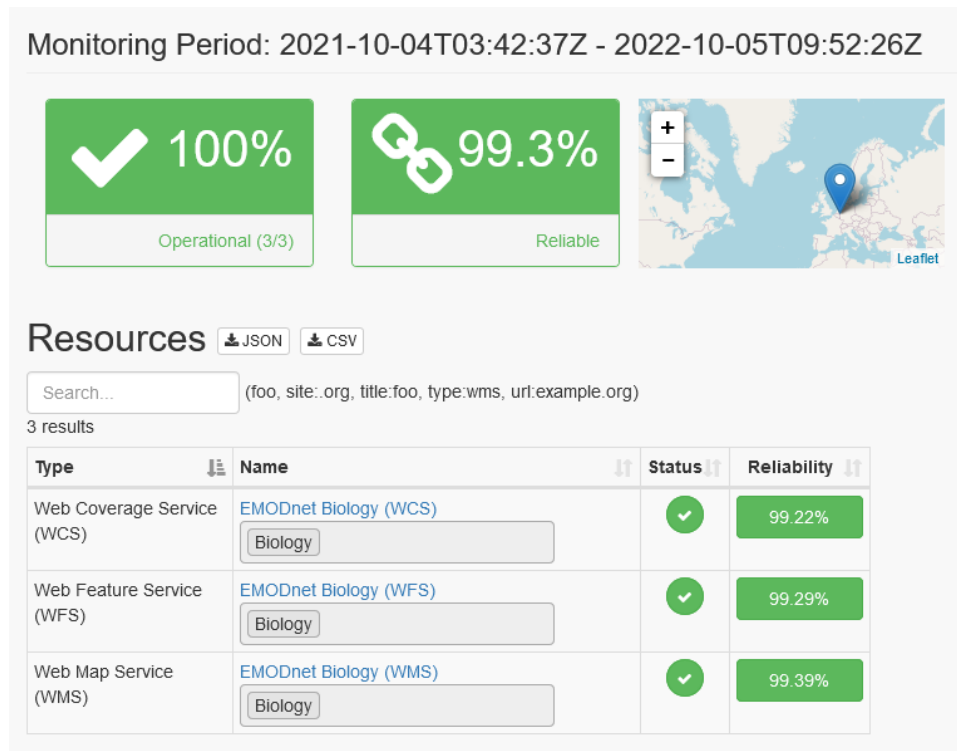


Figure 8. GeoHealth check screenshot covering the period from 2021-10-04 to 2022-10-05