



**EMODnet**



European Marine  
Observation and  
Data Network

# **EMODnet Thematic Lot n° V – Biology**

**CINEA/EMFAF/2022/3.5.2/SI2.895681**

**Start date of the project: 10/05/2025 (24 months)**

**Operational Phase**

**Quarterly Progress Report (QR36)**

**Reporting Period: 01/01/2026 – 31/03/2026**



## Contents

1. Highlights in this quarter .....	3
2. Identified issues: status and actions taken.....	11
3. Communication assets .....	13
4. Monitoring indicators.....	14
5. Annex: Other documentation attached .....	16

### Disclaimer

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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 third data harvest of Phase V extension period and first of 2026 was carried out, and included a total of 13 datasets into, from which 10 were new and 4 updated. The data originated from partners, ad-hoc data providers, from European Union funded projects or were submitted via the EMODnet Data Ingestion service. This data harvest increased the EMODnet Biology occurrence data holdings in 313,924 records distributed around the Atlantic, Mediterranean, Baltic and Black Seas as well as other seas. The temporal coverage ranging between 1956 and 2025 and covering all EMODnet Biology defined functional groups except angiosperms and birds. The total number of occurrences available is now more than 52.2 million, with more than 210 million extended measurements or facts originating from a total of 1487 datasets.

During this reporting period, additional improvements were made to the EMODnet Biology data publication infrastructure to support the inclusion of absence data. For the first time, reported (real) absence records are now exposed through the EMODnet Biology services, representing an important step towards more complete biodiversity data provision. This was achieved through coordinated developments across the data pipeline and web services (Task 3), including updates to indexing processes and GeoServer configurations. The total number of absent records amounts to more than 13.75 million occurrences. This development improves interoperability and aligns EMODnet Biology with best practices for biodiversity data standards, while laying the groundwork for future implementation of more complex absence types. Following from this development, a new filter will be made available in the EMODnet viewer (Biodiversity records layer) for users to select whether they want to include the absences in their data downloads or not, these data are however already available for download through webservice.

Ongoing efforts are in place to mobilise relevant data from the OBIS (Ocean Biodiversity Information System) and GBIF (Global Biodiversity Information Facility) and make it available in EMODnet Biology, alongside with frequent contacts with various OBIS and GBIF nodes. These actions aim to ensure that the data across the different services are consistent and best practices applied so interoperability and quality is sustained.

A list of the published datasets and their details is available in the Annex and the graphs with the distribution per functional group and sea region of all occurrences published during the reporting period are included in Figures 2 and 3, also in the Annex.

It should be noted that the numbers included in the sheet 'Data' of the indicators spreadsheet that accompanies this report, include only those data that can be mapped against the various sub-themes used for reporting, (macro)Algae, Angiosperms, Benthos, Birds, Fish, Mammals, Phytoplankton, Reptiles and Zooplankton, and excludes data from other groups, e.g. bacteria or viruses that are not used for reporting, the numbers presented are therefore approximate.

### 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 reporting period, WP3 continued to advance the development of data products and related community support activities.

A new Community Call provided an opportunity to review progress on ongoing data product development and exchange updates across partners. The meeting confirmed that product development is progressing according to plan and helped maintain alignment on current priorities and next steps.

A key activity during this quarter was the continuation of liaison efforts with external expert groups to explore the potential integration of migration route data into EMODnet Biology products. Contacts were initiated with several relevant initiatives, including *Migratory Connectivity in the Ocean (MiCO)*, the *European Breeding Bird Atlas (EBBA2)*, and the *EuroBird Portal (EBP)*. Although these contacts did not yet lead to active engagement during the reporting period, they represent an important first step toward strengthening links with external expert communities and assessing the feasibility of incorporating migration-related data into future product development and/or external product hosting.

In parallel, the EMODnet R geospatial tutorial series progressed further. Three of the four planned tutorials are now reaching its conclusion, and subsequent publication, and demonstrate how to access and analyse marine biological and environmental data using the `emodnet.wfs` and `emodnet.wcs` R packages. These tutorials provide practical and reproducible workflows for EMODnet Web Feature Services (WFS) and Web Coverage Services (WCS) and are intended to support a broad range of EMODnet data users. Further information on how to access the tutorials will be shared in future reports.

### **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**

Several developments took place during the reporting period that continued to address the improvement of the data publication efficiency, as mentioned in previous reports. The work done so far will allow for quicker data publications that can happen as soon as a dataset is ready, rather than at a publication each quarter, which is still in place. Further updates will be given in future reports, but the technical and data management work done has the main objective to ensure that fewer barriers are in place for both the data providers and the data management team.

Work is ongoing to cleanup the data layers available in GeoServer, which will improve the experience for users, alongside these changes, technical changes were put in place to allow for the publication of (real) absence records, as described in Task 1 and work is ongoing to harmonise sampling event dates in both the database but also on the data output, further updates will be provided in subsequent reports.

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

As mentioned in Task 1, the data from the quarterly harvest has been published via the webservices but also through the biodiversity records layer in the EMODnet viewer.

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

During the reporting period, several news items on EMODnet Biology activities were published, focusing on collaborations and project developments. In January 2026, two articles highlighted the [eDNA Expeditions project](#) and [ASTRA's contribution to Black Sea biodiversity data](#). In February 2026, additional communications covered participation in scientific networks and international collaborations. These included the [CS-Mach1 meeting](#), collaboration with MedOBIS, and [involvement in EBOCC](#).

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

To facilitate data sharing with the RSC, several actions have been taken, more specifically for OSPAR, an inventory of biodiversity data within ODIMS-OSPAR has been carried out and will be compiled into the Deliverable expected in May 2026.

Dialogue between EMODnet and Regional Sea Conventions has been strengthened through meetings and ongoing technical exchanges, particularly with INFO/RAC and OSPAR. Engagement with HELCOM includes participation in BaBiDaPi activities and upcoming BioDiv meetings, supporting data flow and collaboration. Initial contact has also been established with the Black Sea Commission, with a first meeting planned in the coming months to follow up on previous email exchanges and collaboration opportunities.

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

A questionnaire on data availability in CINEA has been completed, with feedback collection still ongoing. An inventory of marine data collected within the LIFE programme funded projects took place. From a total of 385 identified projects covering a period from 1992 to 2020, 61 were deemed to focus on marine biodiversity and therefore contacted via email to provide feedback through the EMODnet Biology survey (see [QR35](#)). From these, feedback from 8 projects were received and will be assessed so that a follow up can be done, with an objective of (re)publishing the collected data in EMODnet Biology. From these eight projects, half stated that the data were published and provided the URLs where they could be found, the data management team will assess the state of these data and create a plan to (re)publish it through EMODnet Biology, for the non-published data, contacts will be established with the PIs to offer support and encourage submission.

An ongoing inventory of marine biological datasets in external repositories has identified key sources, e.g Zenodo and BSIS among others, is in progress to expand the dataset coverage, particularly for the Black Sea, which is one of the regions where we not much data are available. Preparations for the workshop targeting EU-funded projects is ongoing, with the workshop planned for autumn 2026, and 24 relevant projects identified for potential participation.

Another important milestone this quarter was the kick-off of the EDITO Community Expert Group, in which both the WP3 lead and the EMODnet Biology coordinator participate.

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

Two user requests were received during the reporting period and were first answered within two day, one user did not follow up upon a first contact, and the other enquiry was followed up via email due to its complexity.

Webservices performance is continuously monitored by the GeoHealthCheck tool, an image covering the reporting period is included in Figure 1. EMODnet Biology's services were fully compliant with INSPIRE operationality and responsiveness guidance. No breaches in compliance were detected during the reporting period.

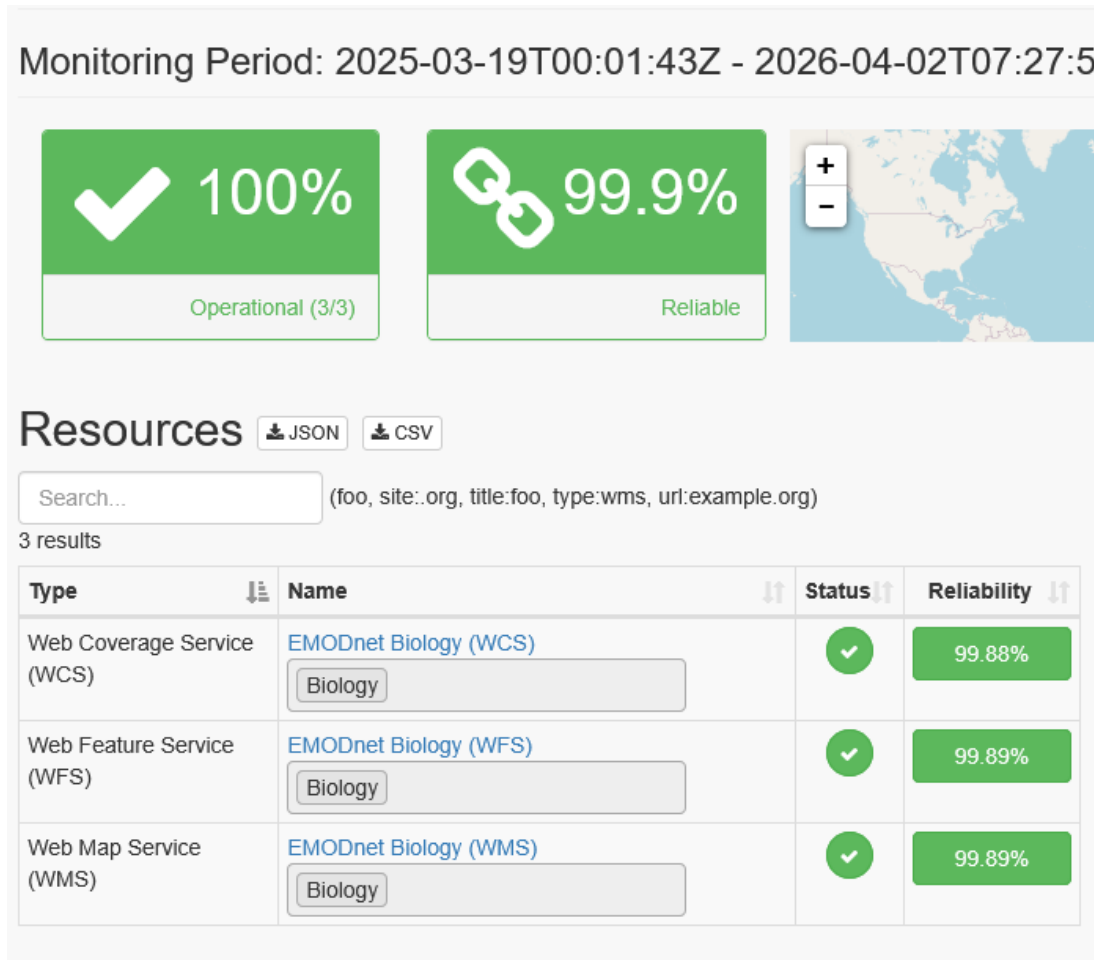


Figure 1. GeoHealthCheck monitoring output covering the reporting period. Note that it is not possible to select specific periods, therefore the period summarised ranges from 2025-03-19 to 2026-04-02

#### Task 9: Dedicate specific resources to the EMODnet Central Portal Task Force

Technical interventions were done in the various systems used by the EMODnet portal, more specifically, in metaGIS, which manages the layers in the viewer, an upgrade to v 2.28.3 of GeoServer and a Kibana 8.19.10, 9.1.10, 9.2.4 Security Update (ESA-2026-05) necessary to keep the EMODnet GeoNetwork safe from server-side request forgery.

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
<b>1.1.1 Quarterly Progress reports</b>	WP1	2025-07-15	Delivered	2025-07-15	
		2025-10-15	Delivered	2025-10-15	
		2026-01-15	Delivered	2026-01-15	
		2026-04-15	Delivered	2026-04-15	
		2026-07-15			
		2026-10-15			
		2027-01-15			
		2027-01-15			
		2027-04-15			
2027-07-15					
<b>1.1.2 Interim report</b>	WP1	2026-05-09			
<b>1.1.3 Final Report</b>	WP1	2027-05-09			
<b>1.2.1 Update of EMODnet Biology data products via the EMODnet CP catalogue</b>	WP1	2026-05-09			
		2027-05-09			
<b>1.3.1 Monitoring user feedback via EMODnet JIRA</b>	WP1	2025-05-10 to			
		2027-05-09			
<b>1.3.2 Operation of the EMODnet CP helpdesk</b>	WP1	2025-05-10 to			
		2027-05-09			
<b>1.4.1 Minutes from the three project meetings (kick off, annual and final)</b>	WP1	2025-06-10	Delivered	2025-06-03	
		2026-05-09			
		2027-05-09			
<b>1.5.1 Participation in the EMODnet Steering Committee meetings</b>	WP1	2025-05-10 to	Delivered	2025-12-11	
		2027-05-09			
<b>1.5.2 Participation in the EMODnet Open Conference</b>	WP1	2025-05-10 to	Delivered	2025-11-25 to 2025-11-26	
		2027-05-09			
<b>1.6.1 Appropriate mechanisms and guidelines for handover</b>	WP1	2027-05-09			

<b>2.1.1 Maintenance of adequate mechanisms to ensure data are interoperable</b>	WP2	2025-05-10 to 2027-05-09			
<b>2.1.2 Report on the standardisation and integration of datasets published during the Phase</b>	WP2	2027-05-09			
<b>2.2.1 Summary on consortium data flows</b>	WP2	2025-11-09	Delivered	2025-11-12	
<b>2.3.1 Plan to optimise procedures to make restricted data available to users</b>	WP2	2025-05-10 to 2027-05-09			
<b>2.4.1 Workshop on use of Zooniverse for data digitisation through citizen science</b>	WP2	2027-05-09			
<b>2.4.2 Data training workshop for Mediterranean organisations</b>	WP2	2026-10-31			
<b>2.4.3 Report on the availability of data following the workshops</b>	WP2	2027-05-09			
<b>2.5.1 Guidance for data management practices applied to omics data</b>	WP2	2025-05-10 to 2027-05-09			
<b>3.1.1 Internal WP3 and WP4 Workshop</b>	WP3	2027-05-09			
<b>3.2.1 Quarterly community calls</b>	WP3	2025-08-10 2025-12-10 2026-03-10 2026-05-10 2026-08-10 2026-12-10 2027-03-10	Delivered Delivered Delivered	2025-07-23 2025-10-06 2026-01-14	
<b>3.3.1 Liaison with external entities targeting seabird and cetacean migration outputs</b>	WP3	2025-05-10 to 2027-05-09			
<b>3.3.2 Data product creation</b>	WP3	2025-05-10 to 2027-05-09			
<b>4.1.1 Update connectivity maps and identification of stakeholder community</b>	WP4	2025-11-10	Delivered	2025-11-12	

4.1.2 Informative material based 4.2.2 published in the EMODnet CP	WP4	2027-05-09			
4.1.3 Informative material based on the 4.2.3 outcomes	WP4	2027-07-09			
4.1.4 Informative material based on the 4.3.1 outcomes	WP4	2027-05-09			
4.1.5 Publication of four Use Cases	WP4	2025-11-10 2026-05-10 2026-11-10 2027-05-10	Pending		
4.1.6 Publication of written documents	WP4	2025-05-10 to 2027-05-09			
4.2.1 Engagement plan for each RSC	WP4	2027-05-09			
4.2.2 Questionnaire to inform about what data & products EMODnet Biology offers and to collect stakeholder needs	WP4	2025-11-09	Delivered	2025-10-27	See Task 7
4.2.3 Workshop with RSCs to understand major needs	WP4	2027-05-09	Ongoing	2026-03-30	
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	2026-09-30			
4.3.2 Participation in TG DATA meetings	WP4	2025-05-10 to 2027-05-09	Delivered Delivered	2025-10-07 2026-02-26	
4.4.1 Ensure compatibility with INSPIRE Directive (data, metadata, data products)	WP4	2025-05-10 to 2027-05-09			
4.4.2 Report on the activities to support EU Member States regarding their reporting obligations	WP4	2027-05-09			
5.1.1 Streamlining semantic interoperability	WP5	2025-05-10 to 2027-01-09			

<b>5.1.2 Integration of omics data into the data model</b>	WP5	2027-05-09			
<b>5.1.3 Roadmap for marine biodiversity data</b>	WP5	2027-05-09			
<b>5.2.1 M2M communication plan and solutions</b>	WP5	2025-05-10 to 2027-05-09			
<b>5.3.1 Operational web services</b>	WP5	2025-05-10 to 2027-05-09			
<b>5.3.2 Technology stack upgrades</b>	WP5	2027-05-09			
<b>5.3.3 Technical maintenance of procedures for ingestion of data from the data providers</b>	WP5	2025-05-10 to 2027-05-09			
<b>5.3.4 Development and implementation of procedures to publish omics data</b>	WP5	2027-05-09			
<b>5.4.1 Synchronisation of all data and data products metadata to the EMODnet CP catalogue (GeoNetwork)</b>	WP5	2025-05-10 to 2027-05-09			
<b>5.4.2 All data and products available through the EMODnet CP</b>	WP5	2025-05-10 to 2027-05-09			
<b>5.4.3 Participation in the EMODnet TWG meetings</b>	WP5	2025-05-10 to 2027-05-09	Delivered	2025-10-14/15	
<b>5.4.4 Maintenance and development of API used to query EMODnet Biology layers available via the EMODnet CP viewer</b>	WP5	2025-05-10 to 2027-05-09			

## 2. Identified issues: status and actions taken

A. Priority issue(s) identified and communicated by CINEA/ DG MARE/ SECRETARIAT				
Priority issue	Status (Pending/ Resolved)	Action(s) taken/ remaining actions planned	Date due	Date resolved
EM523: EMODnet Biology Phase IV layers for European Atlas of the Sea	Pending	Ticket created by Coordinator, was considered low priority due to centralisation work and subsequently the end of Phase IV and start of Phase V		End of Phase V
EM524: IUCN red list Near Threatened category layer	Pending	Ticket created by Coordinator, was considered low priority due to centralisation work and subsequently the end of Phase IV and start of Phase V		End of Phase V
EM577: Update of zooplankton layers in the European Atlas (if available)	Pending	Ticket created by the EMODnet Secretariat, was considered low priority due to centralisation work and subsequently the end of Phase IV and start of Phase V		End of Phase V
EM-864: TWG13 Biology to contact each of the lots, to gather which portals want to publish an R Package in the -Universe	Resolved	Ticket closed		
EM-989: Publishing Biology data statistics in the Biology static page	Pending	Ticket created by the Coordinator, slow progress as connection to internal VLIZ systems is needed to provide dynamic stats		
EM-1005: Biology to review the guidelines document on metadata harmonization	Ongoing	Updates done and input requested to the EMODnet Secretariat for the distribution formats that are not currently possible to map using INSPIRE or BODC NVS2 vocabularies		
EM-1196: Review Data/product level description	Ongoing	Input provided in the relevant GitHub issue. Review to be done in the next TWG		

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	Resolved	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	QR22	QR36

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
		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). Database work is complete and changes to the EMODnet Biology filter options will be put in place to allow users to include/exclude absences from their selection		
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		
Issue detected with the export of timestamps associated to specific data	Ongoing	Issue identified in early October and resolution is in progress.	QR36	

### 3. Communication assets

A. (Co-)Authoried peer-reviewed publications in the quarter					
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No

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

## 4. Monitoring indicators

Comments on the progress indicators in the indicators spreadsheet		
Progress indicator	Means of collecting figures	Comment
1. Current status and coverage of total available thematic data A) Volume and coverage of available data	<i>Internal systems, expertise</i>	There was a significant increase in data availability for fish but not the remaining functional groups that either saw a slight increase or a decrease in occurrence records, for example in angiosperms. This decrease can be justified by updates to existing datasets where records were removed or merged as they taxonomic classification was improved, allowing for a better data quality.
What is your opinion on the data coverage within EMODnet for your thematic?	<i>Expertise</i>	The approach to the data gaps (Arctic, Black Sea and Mediterranean) has not changed from what was reported previously. The majority of data originating from these regions are submitted by consortium members. Other mechanisms to encourage data providers from the Black and Mediterranean Seas to submit data are being pursued, either through Mission Ocean project, data grants or data training workshops targeting data providers from these regions
B) Usage of data in this quarter	<i>NA</i>	There have been no developments to the tool that captures data usage, and experimental data collection period ended did not include the reporting period covered in this report
2. Current status and coverage of total number of data products A) Volume and coverage of available data products	<i>Internal systems, expertise</i>	There has been no change in the number of products published or their coverage during the reporting period
B) Usage of data products in this quarter	<i>NA</i>	There have been no developments to the tool that captures data usage, and experimental data collection period ended did not include the reporting period covered in this report

Comments on the progress indicators in the indicators spreadsheet		
Progress indicator	Means of collecting figures	Comment
3. Internal and external organisations supplying/approached to supply data and data products within this quarter	<i>Internal system</i>	Most providers are part of the EMODnet Biology consortium, one external organisation volunteered their data and another one was approached. All data were submitted directly and they cover most basins, with two datasets covering data from the global ocean.
5.1 Daily number of page views of EMODnet Thematic entry page	Europa Analytics	There has been no significant change in the page views when compared with the previous quarter. It is not possible to identify a trend
5.2 Quarterly total number of visitors, page views, unique page views and percentage of returning visitors	Europa Analytics	There is no visible trend in the page visualisations however some peaks are easily identified and despite not all being possible to connect to specific events, it is clear that during the EMODnet conference, there was an increase in visualisations and visitors.

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

## 5. Annex: Other documentation attached

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

Dataset title	New/ Update	Organisation	License
<u>Biological samples from the french oceanographic fleet's deep-sea cruises</u>	New	IFREMER	CC-BY 4.0
<u>Cartography of Gelidium fields in Cantabria (N Spain)</u>	New	IHCantabria	CC-BY-NC 4.0
<u>Cover of Intertidal Macroalgae along the N and NW Coast of the Iberian Peninsula</u>	Update	IHCantabria	CC-BY-NC 4.0
<u>Finnish Baltic Sea benthic monitoring, POHJE database</u>	Update	Syke	CC-BY 4.0
<u>Finnish Baltic Sea zooplankton monitoring</u>	Update	Syke	CC-BY 4.0
<u>Global scale surface meso-plankton dataset collected with Deck Net and imaged with Flowcam during the Tara Pacific Expedition</u>	New	EcoTaxa	CC-BY-NC 4.0
<u>Global scale surface meso-plankton dataset collected with High-Speed Net and imaged with ZooScan during the Tara Pacific Expedition</u>	New	EcoTaxa	CC-BY 4.0
<u>Global scale surface meso-plankton dataset collected with Manta Net and imaged with ZooScan during the Tara Pacific Expedition</u>	New	EcoTaxa	CC-BY-NC 4.0
<u>ICATMAR bottom trawl survey data in the NW Mediterranean (commercial and bycatch species)</u>	New	ICATMAR	CC-BY 4.0
<u>Mollusk death assemblages collected from Cuba in the Gulf of Guanahacabibes (2014) and the Gulf of Batabanó (2015)</u>	New	UNAM	CC-BY-NC 4.0
<u>Natura 2000 network estuaries in Cantabria (Invertebrates)</u>	New	IHCantabria	CC-BY-NC 4.0
<u>Occurrences of planktonic organisms imaged by an Underwater Vision Profiler 6 on a SeaExplorer glider during the 2021 spring bloom in the North Western Mediterranean Sea</u>	New	EcoTaxa	CC-BY 4.0
<u>Oyambre estuary restoration (N Spain)</u>	New	IHCantabria	CC-BY-NC 4.0
<u>Romanian Black Sea Phytoplankton data from 2006 to 2015</u>	New	NIMRD	CC-BY-NC 4.0

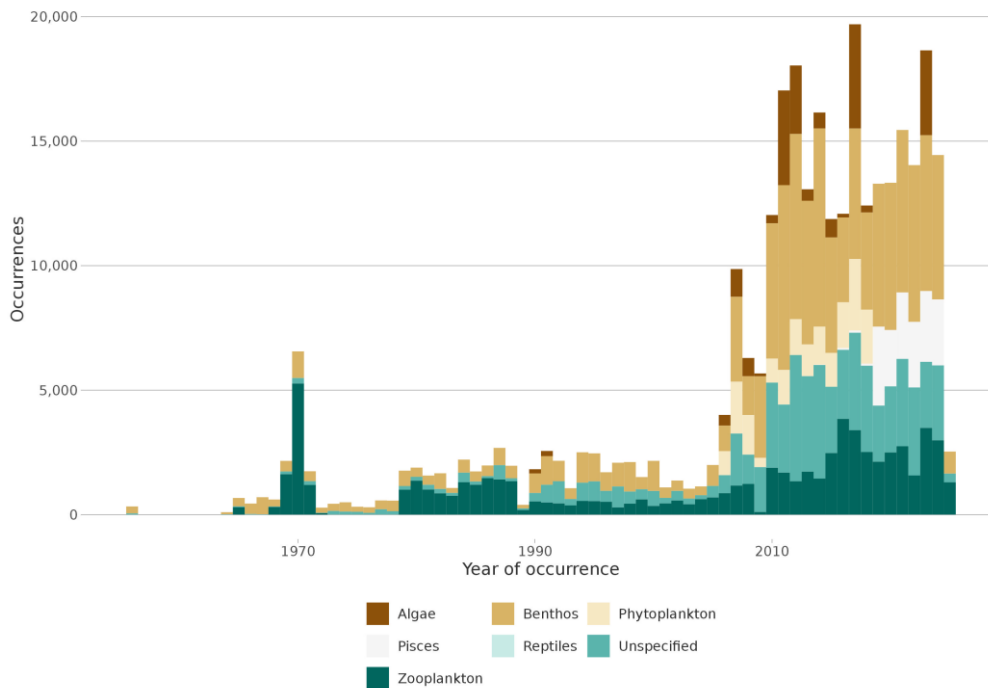


Figure 2: Temporal distribution of occurrence records, for data published during the reporting period (01/01/2026 – 31/03/2026), per year of occurrence per functional group.

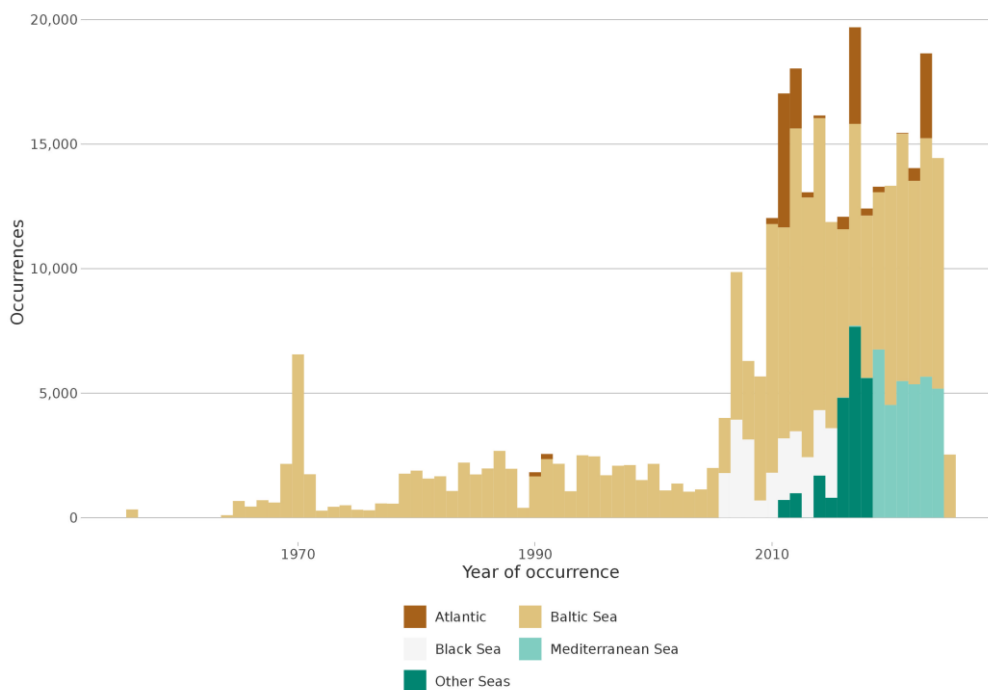


Figure 3. Temporal distribution of occurrence records, for data published during the reporting period (01/01/2026 – 31/03/2026), per year of occurrence of the Sea region.