EMODnet

European Marine Observation and Data Network

EMODnet Thematic Lot nº V Biology

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EMODnet Phase III

EMODnet Biology Transatlantic Data Product Workshop

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Disclaimer

Document info

Title [ref]*	D5.5 EMODnet Biology Transatlantic Data Product Workshop
WP title [ref]*	WP5- Uptake and Outreach
Task [ref]*	
Authors [affiliation]	Dan Lear (MBA), reviewed by workshop participants
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*[ref] refers to the corresponding abbreviated name of the Deliverable (or WP, or Task...), if appropriate

Contents

Summary

Due to the ongoing COVID-19 global pandemic, this EMODnet Biology Work Package 5 meeting was reorganised as an online event. Bringing together key organisations involved in the creation, curation and publication of biodiversity datasets in the North Western Atlantic and the EMODnet Biology partnership, the event aimed to build and strengthen the engagement across the Atlantic and investigate the potential for the co-development of data products, tools and services.

The discussions were framed around the existing data products aligned with a subset of Essential Ocean Variables and with an aim to support the expansion of the Marine Biodiversity Observation Network (MBON) community and in the meeting, the aims of the UN Decade of Ocean Science for Sustainable Development (https://www.oceandecade.org/) were also discussed.

1 Participating Organisations

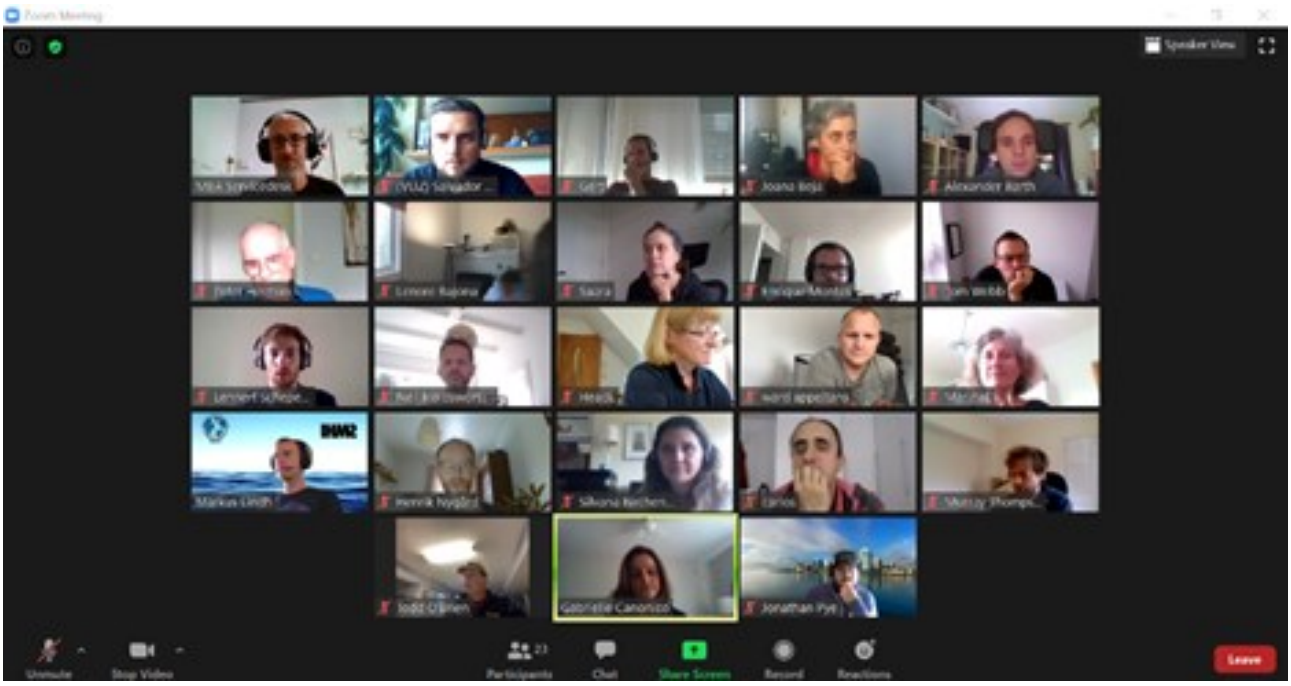

Figure 2. Workshop participants picture

2 Introduction

The third phase of the biological component of the European Marine Observation and Data Network (EMODnet) began in May 2017, following previously successful phases. The work continues to harmonise access to marine biological data, with special focus on areas where access to existing data is poor, and in the development of products that meet the requirements of the broad range of EMODnet stakeholders and the wider community.

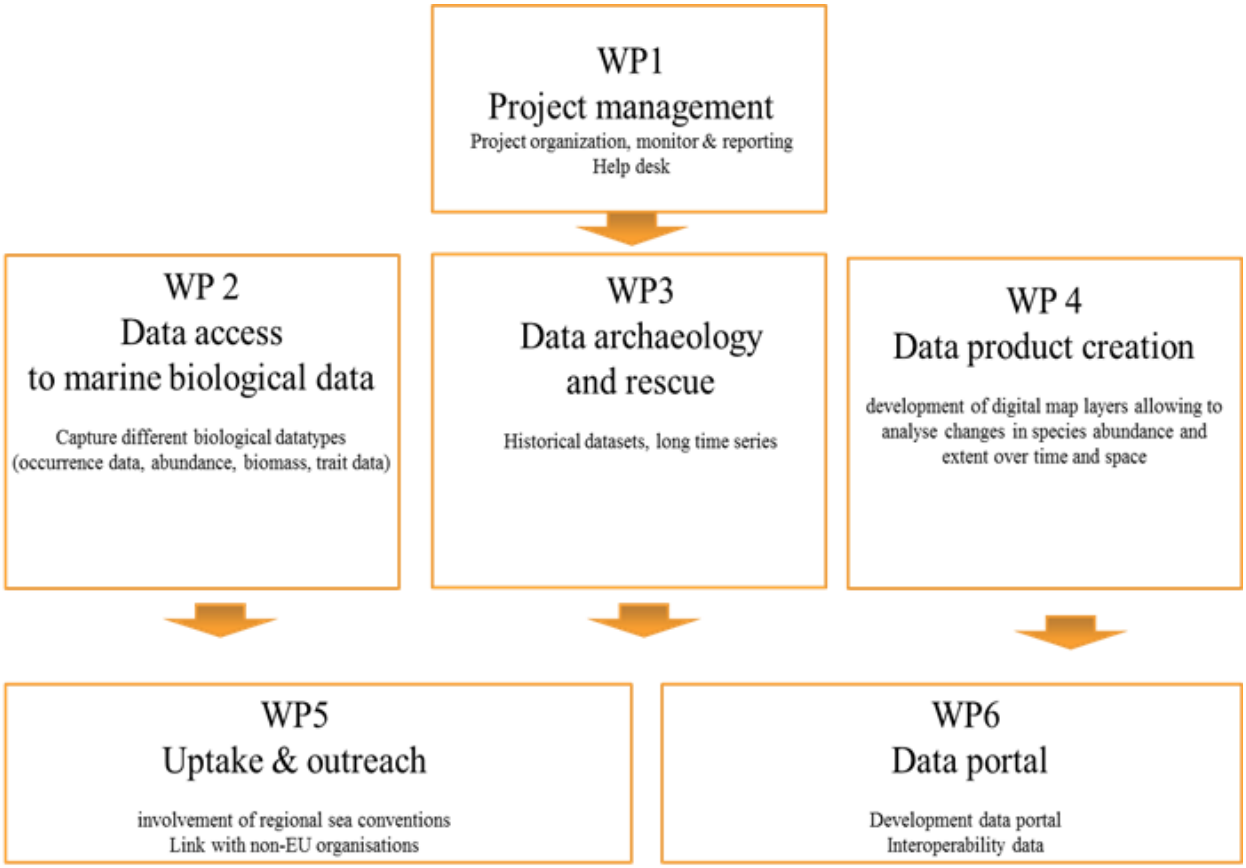

Figure 2. The EMODnet Biology Phase 3 Work Package Structure

Work package 5 of EMODnet Biology has been established to ensure the highest level of utility of those products created with Work Package 4 and the underlying data resources accessible through Work Package 6. By liaison with key stakeholders and users of marine biological data across Europe and globally, we will ensure that the data products fit the operational requirements essential for the management of Europe's marine waters and ensure interoperability with transatlantic and global initiatives.

Following successful, but Euro-centric, workshops held in London in 2017 and Lisbon in 2019 it was considered timely to broaden the engagement and seek to develop a wider community across the Atlantic. This approach also had the potential to enable the testing of the 'FAIR-ness' of existing EMODnet Data Products. Could the current processes and workflows be utilised with alternative, comparable datasets? The original aim was to run a code-sprint style event, bringing together the EMODnet product developers with their counterparts from data-holding institutes in the USA and Canada. Due to the travel restrictions brought about by the COVID19 pandemic, the meeting delivery was moved to an online format and the approach modified to better fit a group of dispersed participants.

3 The Workshop

Following introductions from each of the participants and an overview of the aims of the meeting, a general presentation on the scope and achievements to date of EMODnet Biology was given. Following this a subset of four of the existing suite of data products was presented, covering the background to selection, data sources utilised and the challenges faced in the initial data product creation.

In line with the EOV-based approach, and the potential for equivalent Western Atlantic data sources being available, the following four products categories were selected:

a) macrobenthos[1]
b) zooplankton[2]
c) birds & mammals[3]
d) non-natives[4]

After each presentation there was opportunity for discussion, including both directly related technical and process-based questions, along with broader discussions around the applicability of existing datasets related to each category.

Across all the presentations there was a recognition that whilst data products should be based on open data, this is not always currently possible. Concerns around attribution, perceived commercial benefits and challenges around the resources needed to reformat and publish data are routinely given as reasons not to make data available and compliant with the FAIR principles[5]. However, studies have shown that provided adherence to standards and the appropriate consideration is given at the start of a project or data collection activity then the typical cost of FAIR compliance is only around 5% of the total budget[6].

Further discussion highlighted a number of relevant, key datasets that are not actively managed due to funding priorities. The aim is to ensure these data are progressed firstly to national data repositories and relevant OBIS nodes. Through the supply of data to OBIS, data providers ensure their data are fully FAIR whilst allowing the use of Digital Object Identifiers (DOI's) to facilitate citation and attribution. More work is needed to embed the global standards promoted through the Ocean Best Practices System (https://www.oceanbestpractices.org/) in every stage of the data lifecycle and at all geographic scales. In doing so, accessibility and interoperability are inherent within the data, resulting in significant cost savings over time.

Discussion also took place around recent technical developments and emerging streams of occurrence data, including those resulting from eDNA and bar-coding initiatives. OBIS is well placed within projects including PacMAN (https://pacman.obis.org) and AtlantECO (https://www.atlanteco.eu/) to ensure that standards-based data pipelines are in place and such data can be integrated within the existing global infrastructures. However, it is vital that the recommendations and outcomes from such projects are communicated with key stakeholders

[1] https://github.com/EMODnet/EMODnet-Biology-fish-benthos-traits

[2] https://github.com/EMODnet/EMODnet-Biology-Zooplankton-Baltic

[3] emodnet-biology.eu/abundance-maps-marine-birds-and-mammals-north-sea

[4] https://github.com/EMODnet/EMODnet-Biology-Harbour-invasives

[5] https://www.go-fair.org/fair-principles/

[6] https://www.scienceeurope.org/wp-content/uploads/2016/05/SE-KE_Briefing_Paper_Funding_RDM.pdf

and data curators. The molecular biology community has a longer, more established track record in the sharing and publication of data and associated analyses, which should facilitate this engagement.

4 Next Steps

All parties welcomed the inclusive approach promoted through EMODnet Biology and the potential to promote open standards and accessible data more widely. The upcoming UN Decade of Ocean Science for Sustainable Development provides an ideal platform for continuing this collaboration to ensure the widest possible engagement with the scientific and end-user communities.

One specific area for future collaboration was identified through the US Integrated Ocean Observing System (US IOOS - https://ioos.noaa.gov/) and the Canadian Integrated Ocean Observing System (CIOOS - https://cioos.ca/) and the potential to organise a shared code-sprint between US IOOS, CIOOS, MBON and EMODnet Biology. Such a sprint would build upon the existing communities whilst furthering the original aims of this meeting to apply alternative data sources to the Essential Ocean Variable-based data products. EMODnet Biology will explore this opportunity as part of the ongoing engagement and outreach activities.

It was also highlighted that the GOOS Biology and Ecosystems panel is developing a global registry of monitoring programs. This metadata catalogue should be available by the end of 2020. Identifying and cataloguing the monitoring activities however, is only the first step in harmonising access to monitoring data. Many programs do not yet contribute data to OBIS, or are at risk due to funding or operational challenges. Understanding the landscape and the challenges facing these programs is key to ensuring ongoing data available. All workshop participants were encouraged to contribute to the developing catalogue.

Whilst the global COVID pandemic necessitated significant changes to the structure and outcomes of this event, there are tangible benefits. The increased participation made possible by an online-only meeting facilitated wider engagement and broadened the viewpoints presented. Only by ensuring open communication with all sectors and groups can we ensure that the positive outcomes associated with the adoption of open data standards are understood and appreciated. This approach has been exemplified by EMODnet Biology thus far and will continue to shape and steer future engagement.

5 Appendix I- Meeting Agenda

Transatlantic Biological Data Products Virtual Workshop

13:00 UTC / 14:00 BST / 15:00 CEST / 09:00 EDT

Expected Duration ~ 3hrs

1. Welcome, Introductions & Meeting Aims (Dan Lear 10')
2. EMODnet Biology - Background (Jo Beja 10')
3. Data Products - Rationale, Current state of development, Equivalent W Atlantic Data? (Peter Herman + All 30' per product)

   For this part of the meeting we will present the development of 4 key data products to date, and investigate opportunities and feasibility of joint product development. Links to the 4 specific data products can be found in the footnote of this agenda.

   a) macrobenthos[1]
   b) zooplankton[2]
   c) birds & mammals[3]
   d) non-natives[4]

4. Next Steps (All 30')
5. Meeting Close

[1] https://github.com/EMODnet/EMODnet-Biology-fish-benthos-traits

[2] https://github.com/EMODnet/EMODnet-Biology-Zooplankton-Baltic

[3] https://www.emodnet-biology.eu/abundance-maps-marine-birds-and-mammals-north-sea

[4] https://github.com/EMODnet/EMODnet-Biology-Harbour-invasives

6 Appendix II- Participants

Ward Appeltans	OBIS
Lenora Bajona	OTN
Alexander Barth	University of Liege
Joana Beja	VLIZ
Silvana Birchenough	Cefas
Gabrielle Canonico	NOAA
Salvador Fernandez	VLIZ
Peter Herman	Deltares
Neil Holdsworth	ICES
Dan Lear	MBA
Markus Lindh	SMHI
Marina Lipizer	OGS
Enrique Montes	University of South Florida
Henrik Nygård	Finnish Environment Institute
Todd O'Brien	NOAA
Carlos Pinto	ICES
Jonathan Pye	OTN
Lennert Schepers	VLIZ
Saara Suominem	OBIS
Murray Thompson	Cefas
Leen Vandepitte	VLIZ
Gert Van Hoey	ILVO
Tom Webb	University of Sheffield