



Data Coordination Group

Annual meeting / Bogotá, 2025





Welcome to all!

Agenda



Item		Time	Length
Welcome & Intro	Ruben	09:00	00:10
Deliverable 0. DCG Meetings	Ruben	09:10	00:05
Deliverable 1. Essential Ocean Variables publication	Elizabeth	09:15	00:20
Deliverables 2 & 3. Nodes engagement survey & report	Kat & Steve	09:35	00:20
Deliverable 4. Metadata to ODIS	Pieter	09:55	00:05
Deliverable 5. eDNA publication guidelines	Saara	10:50	00:10
Deliverable 6. Long-term data archival	Dan	10:10	00:10
Taxonomy	Leen	10:20	00:10
Break	-	10:30	00:15
OBIS Vocabs	Elizabeth	10:45	00:30
Horizon scanning for 2026	Co-chairs	11:15	00:15
Break	-	11:30	00:15
Ranking Exercise and 2026 Workplan	Co-chairs	11:45	00:45

Terms of Reference DCG



- Identify, prioritise, and propose solutions for issues around the following topics:
 - Data and metadata standards and formats
 - Data QC
 - Taxonomy
 - Vocabularies
 - Methods of bringing new data into the system
- Identify **data gaps** and, in collaboration with the OBIS Nodes Coordination group, prioritise and **coordinate data mobilisation** efforts.

Terms of Reference DCG



- Ensure the **fitness of quality metrics** for assessing the current status of OBIS data (e.g. spatial and taxonomic completeness).
- Maintain the **OBIS Manual**; especially regarding standards or methods.
- **Engage** with activities of other relevant bodies (e.g. TDWG, GBIF, GOOS, SCOR) by identifying representatives who will report back to the group.

Considerations



Structure

- Coordination groups are new this year
- DCG replaced previous Project and Task Teams
 - OBIS DCG “Deliverable” sub-groups
- Plan to hold an end of year DCG meeting
 - **Assess functioning and structure of DCG**
 - Compile opinions and comments
 - Discuss structure next year

Considerations

Workplan & Deliverables

- **Node staff have limited capacity**
 - Surveys draw on Node capacity
 - Meetings must be effective

- For the DCG to function, participation should be considered a core Node contribution

- Do we need to **Under-promise, Over-deliver?**
 - Work smarter, not harder?

Table of Deliverables 2025



Outcomes <i>(add more outcomes if needed)</i>	
Outcome N° 1. Operational Data Coordination Group (DCG)	
Performance indicators <i>(list 2-5 indicators)</i> At least 5 online meetings scheduled through October 2025 SG-OBIS adopted data work plan for 2026-2027	Status <i>(completed, in progress, cancelled)</i> In Progress
Deliverables: Meeting minutes shared through a public portal via the OBIS website	In Progress

Table of Deliverables 2025



Outcome N° 2 Review, support, alignment and adoption of data standards, specifications and publication mechanisms including long-term archiving of data

Performance indicators <i>(list 2-5 indicators)</i>	Status <i>(completed, in progress, cancelled)</i>
<ol style="list-style-type: none"> 1. By end 2025, review and provide implementation guidelines to OBIS Nodes for at least 90% of existing biodiversity EOV specifications, which will support the publication of EOV data by OBIS nodes 2. Conduct a survey by mid 2025, targeting 100% of OBIS nodes, to assess their engagement in at least 5 key external data-related groups, to include GOOS, GBIF, and TDWG and present findings with recommendations to the OBIS EC 3. Ensure that by the end of 2025, we present a Register of Engagement covering 100% of OBIS Nodes to the OBIS EC and report to NCG 4. By end of 2025, achieve functional integration of OBIS data with the IOC data architecture, ensuring 100% alignment with interoperability standards, and report progress to SG-OBIS and SG-ODIS 5. Complete a review of the eDNA data extension for DwC and the eDNA FAIR checklist by end 2025, providing a final report with actionable recommendations for enhancing data interoperability and accessibility to the Joint GBIF/OBIS DNA derived data guidelines working group. 6. By end 2025, survey 100% of OBIS nodes' ability to provide long-term data archiving. Design and present model for tiered, CoreTrustSeal aligned, long-term data archiving to the NCG 	<p>In progress</p>

Table of Deliverables 2025



Deliverables	In progress
<ol style="list-style-type: none">1. Biodiversity EOV Publication Guidelines for OBIS Nodes2. OBIS Node Engagement Survey Report & Recommendations3. Register of OBIS Node Engagement	
<ol style="list-style-type: none">4. OBIS metadata published to ODIS following the latest specifications in the ODIS architecture guide https://book.odis.org/5. Update to the OBIS-GBIF DNA derived data guidelines (Publishing DNA-derived data through biodiversity data platforms, https://doi.org/10.35035/doc-vf1a-nr22)6. Long-term Data Archiving Model Proposal	

Table of Deliverables 2025



List of partners and key stakeholders. *(Indicate how partners and stakeholders contribute to the action)*

GOOS BioEco Panel, GBIF, and TDWG all are active in the setting and development of data-related standards and specifications. Liaison and alignment will strengthen the position of OBIS, and reciprocal contributions to the DCG, where appropriate will further streamline the flow in the wider data ecosystem.

Explain how the Programme Component/Programme Activity/Project is contributing to other IODE or IOC programmes and activities.

The Data Coordination Group supports the effective flow of standards-aligned data from the point of collation at the OBIS nodes, and facilitates the 'Publish once, harvest many times' paradigm. Improved flow of data from OBIS nodes increases the available evidence base which forms the foundation of derived data products, tools and services within OBIS and more widely, including the GOOS BioEco Portal. Additionally, alignment with the activities of other groups engaged in the wider biodiversity data space significantly improves interoperability and overall FAIRness of OBIS data, supporting cross-domain working and removing barriers and data silos.

Provide details on the long-term sustainability. *(including confirmed extra budgetary resources)*

The Data Coordination Group depends on in-kind contributions of OBIS nodes and partners, guided and supported by members of the secretariat. The long-term sustainability of this group depends on positive feedback, where the in-kind contributions are seen as a productive and useful contribution by OBIS nodes and partners.

The DCG does not currently have established Co-Chairs with the Co-Chairs of SG-OBIS currently acting in this capacity. The support of the wider OBIS community in taking on the DCG Co-Chair will be essential to the long term success of the group.

Risks. *(Describe the potential risk of not achieving the expected results)*

The lack of an effective DCG will reduce the availability and flow of data from the OBIS nodes. In turn this will negatively impact the available biodiversity data available to underpin assessments and associated tools, products and services developed elsewhere in OBIS and beyond. And the reputation and perceived effectiveness of the wider OBIS network.

Expected outcomes




1. 2025 Workplan deliverables - progress status
2. Design DCG workplan for 2026

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DCG D0:
Meeting minutes shared through a
public portal via the OBIS website

Ruben Perez Perez

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DCG D1: Biodiversity EOY Publication Guidelines for OBIS Nodes

Elizabeth Lawrence



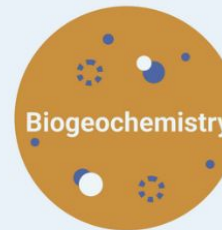
GOOS Essential Ocean Variables (EOVs)

EOVs make it easier to measure and compare ocean data from all corners of the world

EOVs focus on three main delivery areas:



EOVs are grouped by discipline and are overseen by **three** GOOS expert panels:



EOVs can be described by **three** key elements:



Basic measurements for estimating the main EOVS (e.g., counting marine turtles)

Additional measurements offering context (e.g., measuring water temperature for understanding environmental conditions affecting turtles)

Outputs calculated from the sub-variables and other relevant information (e.g., visible changes in turtle population using turtle count and water condition)

Physics



Sea state*



Ocean surface stress*



Sea ice*



Sea surface height*



Sea surface temperature*



Subsurface temperature*



Surface currents*



Subsurface currents*



Sea surface salinity*



Subsurface salinity*



Ocean surface heat flux*



Ocean bottom pressure



Turbulent diapycnal fluxes

Biogeochemistry



Oxygen*



Nutrients*



Inorganic carbon*



Transient tracers*



Particulate matter



Nitrous oxide*



Stable carbon isotopes



Dissolved organic carbon

Cross-disciplinary



Ocean sound



Ocean colour*



Marine debris

Biology & Ecosystems



Phytoplankton* biomass & diversity



Zooplankton* biomass & diversity



Fish abundance & distribution



Sea turtles abundance & distribution



Seabirds abundance & distribution



Marine mammals abundance & distribution



Hard coral* cover & composition



Seagrass* cover & composition



Macroalgal canopy* cover & composition



Mangroves* cover & composition



Invertebrates abundance & distribution



Microbes biomass & diversity

*Also identified as Essential Climate Variables (ECVs)



THE LAW OF THE SEA



Convention on Biological Diversity

Unify data collection methodologies and data sharing practices



Comparable observations



Improved understanding of ocean processes



Informed decision-making

36 Essential Ocean Variables (EOVs)

GOOS Biology and Ecosystems EOVs

BioEco EOVs are the **minimum set of ocean variables** for biology and ecosystems identified to help understand and forecast marine life.

They provide a **framework for coordinating** ocean observations, ensuring **globally comparable and combinable data**.



Phytoplankton
Diversity and
biomass



Zooplankton
Diversity and
biomass



Fish
Abundance
and distribution



Sea Turtles
Abundance
and distribution



SeaBirds
Abundance
and distribution



Marine
mammal
Abundance
and distribution



Ocean sound
Cross-disciplinary



Coral
Cover and
composition



Seagrass
Cover and
composition



Macroalgal
canopy
Cover and
composition



Mangrove
Cover and
composition



Microbe
Diversity and
biomass
(Pilot)



Benthic
invertebrates
Abundance
and distribution
(Pilot)



Ocean colour
Cross-disciplinary



Essential Ocean Variable (EOV) Specification Sheets

Background & Justification

Defines the societal & scientific drivers, pressures, & applications related to the EOV

Funders and decision makers

SDG

Applications

EOV data informs decision making to meet societal requirements

Research scientists

Phenomena to Observe

Provides examples of processes, events, or ocean properties to observe with the EOV based on societal and scientific drivers

Data Management & Information

Provides guidelines to contribute to open access data repositories that enable global knowledge

Data managers

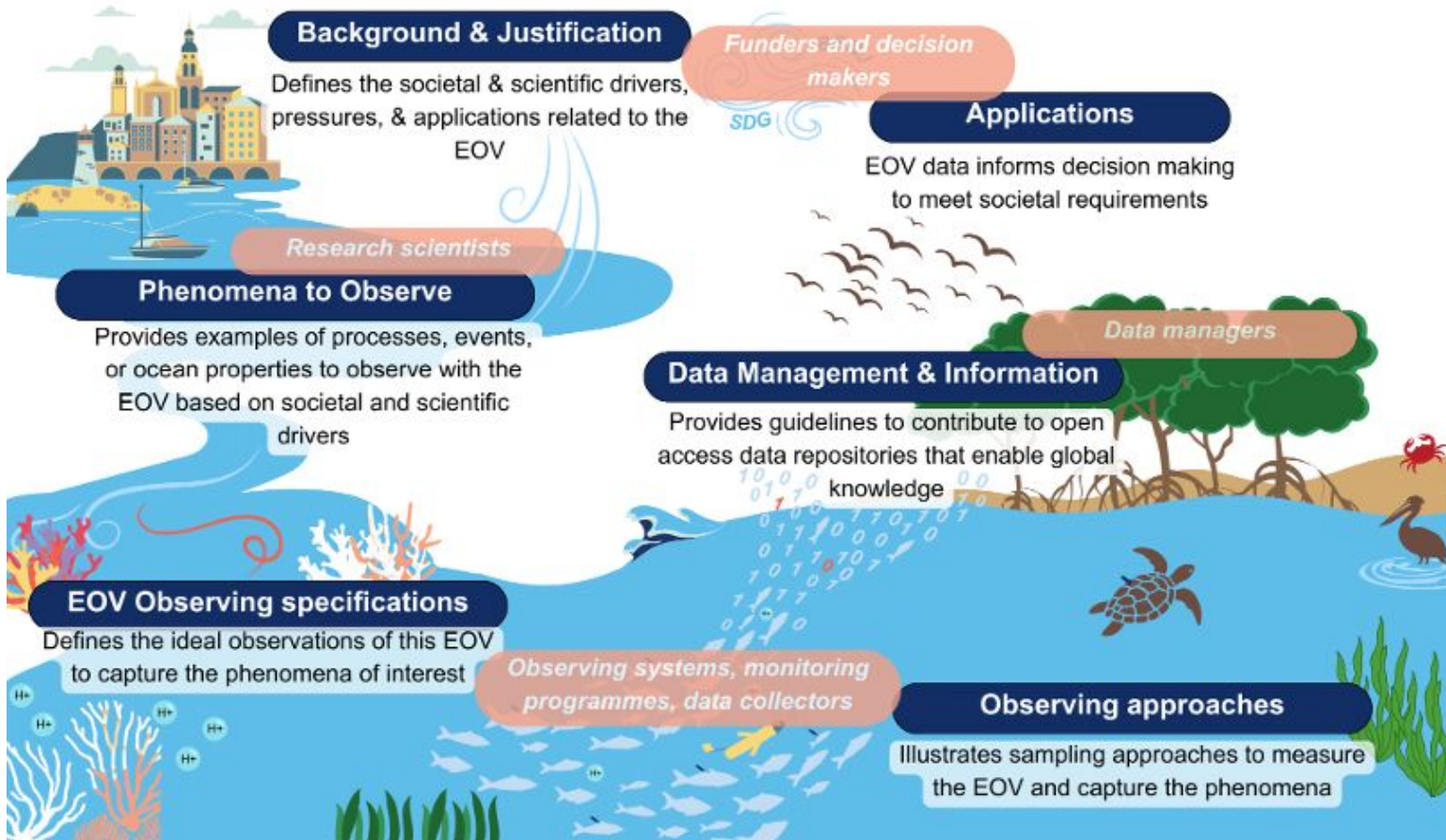
EOV Observing specifications

Defines the ideal observations of this EOV to capture the phenomena of interest

Observing systems, monitoring programmes, data collectors

Observing approaches

Illustrates sampling approaches to measure the EOV and capture the phenomena



Why is it essential, why should we care?

High level -

*Why observe this EO, environmental, economic and social benefit, e.g. “*Annual global marine fisheries landings are estimated at ~85 million t2, gross revenue of ~\$100 billion USD supporting the livelihoods of 10-12% of the world’s population.*“

*Pressures and threats

*Benefits of EO framework

Relationship with other frameworks, i.e. ECVs and EBVs

Background and justification

Monitoring fish abundance and distribution is essential to sustaining marine ecosystems, global food security, and economic stability. Fish are integral to ecosystem health maintaining the balance by consuming lower trophic levels (e.g. plankton) and serving as prey for larger marine animals. Fish are a vital food source, provide livelihoods for millions of people, and hold cultural significance across diverse societies. Annual global marine fisheries landings are estimated at ~85 million t2 with a gross revenue of ~100 billion supporting the livelihoods of 10-12% of the world’s population. Fish also provide ~20% of their animal protein needs for over 2.9 billion people (Gaines et al. 2018). However, fish face increasing threats from climate change, overfishing, and habitat disruption, making it critical to have a clear understanding of their population dynamics. Accurate and standardised data on fish abundance and distribution are key to managing fish stocks sustainably and protecting marine biodiversity. These measurements help fisheries managers and policymakers regulate fishing practices, conserving fish populations and ensuring their availability for future generations. Fisheries-dependent data, which rely on reported catches, offer some insight but can be biased or incomplete, especially for non-target species and smaller fisheries. Meanwhile, fisheries-independent data, such as scientific surveys, provide more accurate and comprehensive insights, but are costly and complex to conduct on larger scales. Supporting efforts to monitor this EO helps to create resilient marine ecosystems, ensuring the sustainability of fish resources, and preparing for climate impacts on fisheries. Contributing to this effort supports biodiversity conservation, sustainable food systems, and economic resilience, underscoring the value of reliable, wide-reaching data for the future.

Integration with Global Observation Frameworks

The Global Climate Observing System (GCOS) developed the Essential Climate Variable (ECV) framework to define necessary observations for monitoring Earth’s climate (Bojinski et al., 2014). Some EO, including ocean physics, biogeochemistry, and biology/ecosystems variables (GCOS, 2022a; GCOS, 2022b), are also ECVs.

The Essential Biodiversity Variables (EBVs) defined and curated by the Group on Earth Observations Biodiversity Observation Network (GEO BON) complement the GOOS biological and ecosystem (BioEco) EO (Muller-Karger et al., 2018; Bax et al., 2019). The EO represent the basic observations of a particular parameter or process. EBVs are time series of biodiversity observations across genes, species populations, communities, or ecosystems. Thus, EO may be seen as the building blocks for GEO BON EBVs. The EO can be used to synthesise the EBVs as time series of BioEco EO sub-variables at one location, or as time series of gridded, mapped, or modelled EO (Jetz et al., 2019).

The GOOS Biology and Ecosystems Panel collaborates with the Physics and Climate and Biogeochemistry Panels to advance EO, advocating for the need for biological observations, information management, and applications. GOOS, MBON, GEO BON, and OBIS work together to standardise guidelines and data management for EO, EBVs, and ECVs.

Current observing networks and coordination

Diverse networks and communities are collecting observations of biology and ecosystems EO at different scales and in different regions. An initial baseline survey conducted in 2019/20 identified 203 active, long-term (>5 years) observing programs systematically sampling marine life. These programs spanned about 7% of the ocean surface area, mostly concentrated in coastal regions of the United States, Canada, Europe, and Australia (Satterthwaite et al 2021). This information can be found in the GOOS BioEco Metadata Portal, which is continually updated. To consult the latest information, please visit: <https://bioeco.goosiocean.org>

Contributes to:



EBV:



SDG:



CBD:

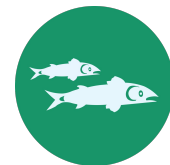


Other:

Link to BioEco Portal for up-to-date info on networks and monitoring programs

Use of clickable icons on indicators that the EO contributes towards

1. EOVS information






ESSENTIAL OCEAN VARIABLE (EOV)	Fish abundance and distribution
DEFINITION	The number of individuals of different taxa per unit volume or area of water and the spatial distribution of different taxa
EOV SUB-VARIABLES- key measurements that are used to estimate the EOVS	Number of individuals of different taxa per unit volume or area of water Fish biomass of different taxa per unit volume or area of water Spatial distribution range of different taxa
+ SUPPORTING VARIABLES- other measurements that are useful to provide scale or context to the sub-variables of the EOVS	Environmental: sea surface temperature, subsurface temperature, subsurface salinity, ocean currents, dissolved oxygen, phytoplankton biomass and productivity, zooplankton biomass and diversity, habitat type, depth range, fishery related variables EOV related: size distribution, life stage, life history traits, reproductive strategy (r or k)
DERIVED PRODUCTS- outputs calculated from the EOVS and sub-variables, often in combination with the supporting variables	Fish abundance indices Fish diversity indices Size-based indicators of fish assemblages (mean fish size & size spectra) Food web indicators, including proportion of predatory fish Fish production Fish habitat



2. Phenomena to observe - what we want to observe with this EOVS

This section presents examples of priority phenomena for GOOS that can be (partly) characterised by this EOVS's sub-variables. This list is not exhaustive but serves to provide general suggestion on how observation efforts can structure their planning and implementation to observe certain phenomena.

The GOOS application area(s) the phenomena are relevant for are depicted as follows: Climate , ocean health , operational services 

PHENOMENA TO OBSERVE		Habitat status and trends	Changes in species composition	Carbon storage and sequestration
PHENOMENA EXTENT	HORIZONTAL	Tropical and <u>sub-tropical</u> zones, regional, local	Tropical and <u>sub-tropical</u> zones, regional, local	Tropical and <u>sub-tropical</u> zones, regional, local
	VERTICAL	Intertidal	Intertidal	Intertidal
	TEMPORAL	Annual to decadal	Annual to decadal	Annual to centuries
RESOLUTION TO OBSERVE PHENOMENA	HORIZONTAL	m to km	m to km	m to km
	VERTICAL			1 – 3 m (sediment depth)
	TEMPORAL	Annual to decadal	Annual to decadal	Annual to decadal
SIGNAL TO CAPTURE		<20% change	change in species cover (gain or lost)	NA
SUB-VARIABLES NEEDED TO MEASURE		<ul style="list-style-type: none"> • Areal extent and canopy cover, species composition 	<ul style="list-style-type: none"> • Areal extent and canopy cover, species composition 	<ul style="list-style-type: none"> • Areal extent and canopy cover, species composition, tree biomass
SUPPORTING VARIABLES NEEDED		<ul style="list-style-type: none"> • Historical land use change, species zonation 	<ul style="list-style-type: none"> • Historical land use change, species zonation 	<ul style="list-style-type: none"> • Carbon and emission factors from IPCC, sediment characteristics (e.g., organic carbon, nutrient, soil type), carbon sequestration rates from the literature



3. GOOS Observing Specifications or Requirements

This section outlines ideal measurements for an optimal observing system for this Essential Ocean Variable (EOV). It offers guidance on creating a long-term system to observe key phenomena related to the EOV. These values are not mandatory, and no single system is expected to meet all requirements. Instead, the combined efforts of various observing systems should aim to meet these goals. Observations at different scales are also valuable contributions to global ocean observation if shared openly.

EOV	Macroalgal canopy cover and composition							
PHENOMENA	Status and trends in macroalgal canopy cover Severe events/population collapse/regime shift Recovery/Resilience							
EOV SUB-VARIABLE	Canopy percent cover				DEFINITION	The percent of a single sample unity covered by macroalgal canopy species.		
	Resolution			Timelines	Uncertainty Measurement	Stability	Sampling approach	References
	Spatial Horizontal	Spatial Vertical	Temporal					
IDEAL	0.25m ²	NA	Monthly	Real-time entry	±1%	10 years	Visual sampling via in-person transects, quadrats, or photo/video monitoring. For larger spatial scales, drone or aerial imagery can be useful. For surface canopies, remote sensing at a 50m ² or lower resolution.	Link to EOV SOP, PISCO, SBC, MarClim
DESIRABLE	1m ²	NA	Annual	6 months	±3%	5 years		
MINIMUM	50m ²	NA	Bi-annual	Annual	±5%	3 years		



4. Observing approach, platforms and technologies

This table provides examples of approaches and technologies used to collect this EOVS to help observe priority phenomena

APPROACH / PLATFORM	Remote sensing: acoustics	Ship-based: surveys	Ship-based: time series
EOV SUB-VARIABLE(S) MEASURED	Abundance Biomass	Abundance Biomass Species composition	Abundance Biomass Species composition
TECHNIQUE / SENSOR TYPE	Multi-frequency (e.g., 200, 120, 38 kHz) hydroacoustics, e.g., EK80, EK60	Net Collections (e.g., Bongo nets, WP2 nets, MOCNESS, Multinet, IKMT, RMT-8, Tucker Trawl, and others) eDNA	Multi-frequency hydroacoustics Net Collections (e.g., Bongo nets, WP2 nets, MOCNESS, Multinet, IKMT, RMT-8, Tucker Trawl, and others) CPR eDNA
SUGGESTED METHODS AND BEST PRACTICES	Calibration of acoustic instruments	Harris et al., 2000 Djurhuus et al. 2018 De Brauwer et al. 2023	Calibration of acoustic instruments Harris et al., 2000 Djurhuus et al. 2018 GO-SHIP CPR De Brauwer et al. 2023
SUPPORTING VARIABLES MEASURED	Some hydroacoustics can also be used to measure current velocity	Some nets have a CTD sensor attached to obtain supporting variables such as temperature, salinity, dissolved oxygen, and fluorescence.	Typically, time series also include CTD deployments and may take other measurements at each station, including nutrient concentrations, chlorophyll-a, primary productivity, etc.

EOV Data Management Guidelines



EOV Data Management

GOOS EOVS Specification Sheets

Data and Information Management for EOVS

GOOS approach to data management is aligned with open data and FAIR (Findable, Accessible, Interoperable, Reusable)¹ practices. All EOVS data and information is valuable, thus effective data management practices are essential to ensure it remains accessible and (re)usable for future generations. This section explains how you can contribute data to global ocean observing and ensure your data and information is accessible, interoperable and sustained. We include instructions for different scenarios: an individual submitting data, or existing data centres.

Please follow these practices carefully, as BioEco EOVS data FAIRness relies on compliance with the guidelines below.²

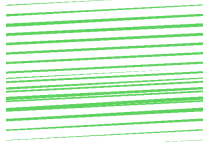
The recommendations below are aligned with the [IOC Strategic Plan for Ocean Data and Information Management \(2023–2029\)](#), the [UN Ocean Decade's original Implementation Plan](#), its subsequent [Data and Information Strategy](#), as well as the latter's upcoming Implementation Plan.

Data Coordination Group Deliverable 1

By end 2025, review and provide implementation guidelines to OBIS Nodes for at least 90% of existing biodiversity EOVS specifications, which will support the publication of EOVS data by OBIS nodes

Progress

- Surveyed BioEco Panel EOY Leads - 11 responses from 8 of 13 EOYs



Macroalgae Benthic Invertebrates



Phytoplankton



Zooplankton



Microbe



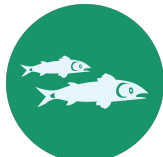
Marine Mammals



Coral



Ocean Sound



Fish



Sea turtles



Seabirds



Seagrass



Mangrove

Progress

- Creation of generic protocol to go from
 - Specification sheets → Data Schemas (data collection templates) → DwC-A file

Next Steps

- Conversion scripts from “EOV” to DwC

Discussion

To what extent do we get involved with creation of EOV data schemas (data collection templates) that do not yet exist?

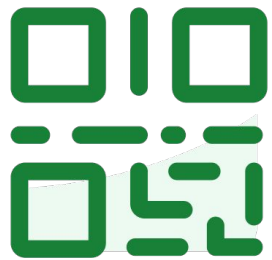
To consider: cross-EOV data collection



To what extent do we get involved with creation of EOV data schemas (data collection templates) that do not yet exist?



*Do not edit
How to change the design*



**Join at slido.com
#1389676**

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DCG D2 & D3: Node engagement survey, report and register

Katherine Tattersall, Steve Formel, Dan Lear

OBIS Node “Engagement Survey” Report and Recommendations

Conduct a survey by mid 2025, targeting 100% of OBIS nodes, to assess their engagement in at least 5 key external data-related groups, to include GOOS, GBIF, and TDWG and present findings with recommendations to the OBIS EC

- **Outcomes of survey** (download and open in browser)

https://drive.google.com/file/d/1LyUScLIKFA3NSzWAUHt6tC869sFihtvt/view?usp=drive_link

- **Follow up exercise**

<https://padlet.com/dblear/obis-node-engagement-7zdwqy71kzt0sqet>

Register of Node Engagement

Ensure that by the end of 2025, we present a Register of Engagement covering 100% of OBIS Nodes to the OBIS EC and report to NCG

- Work in progress
- Hosting for register TBD
- Update of register intended to be 12-monthly

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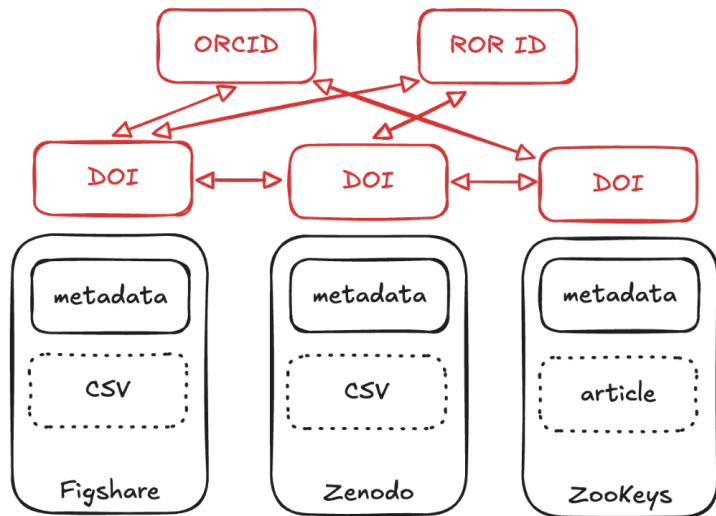


DCG D4: OBIS metadata in ODIS

Pieter Provoost

OBIS metadata published to ODIS

By end of 2025, achieve functional integration of OBIS data with the IOC data architecture, ensuring 100% alignment with interoperability standards, and report progress to SG-OBIS and SG-ODIS



Published December 19, 2022 | Version v1

Report

Open

Mobilizing animal GPS tracking data to Movebank and GBIF - Project report for the NLBIF project "MOVE2GBIF"

van der Kolk, Henk-Jan¹ ; Desmet, Peter² ; Davidson, Sarah C.³ ; Ens, Bruno J.⁴ 
Jongejans, Eelke⁵ 

Show affiliations

Movebank is a leading global platform for animal tracking and other animal-borne (a.k.a. bio-logging) sensor data (Kays et al., 2022). It is used by over 3,500 data owners to collect, manage, share, and archive >4 billion location records describing movements of 1,252 taxa in over 7,500 user-managed studies. While Movebank is well known within movement ecology and wildlife management circles, it remains less recognized as a source of general purpose occurrence data. Like most other remotely-sensed animal occurrence data, data from Movebank are not discoverable or accessible through the [Global Biodiversity Information Facility \(GBIF\)](#). This lack of integration across platforms limits the potential for interdisciplinary collaboration, and for the use of remotely-sensed species occurrence data in conservation assessments and other products that rely on GBIF.

The goal of this project was to develop an open-source workflow to make animal GPS tracking data on Movebank accessible to the GBIF community. This workflow consists of best practices and software to allow semi-automated publication of Movebank data to GBIF. We developed, refined and demonstrated this workflow by publishing a set of datasets from the Netherlands Institute of Ecology (NIOO-KNAW) and the Research Institute for Nature and Forest (INBO) that represent similar and relatively straightforward methodology and quality (avian GPS tracking). In this project, we aimed to complete three work packages:

1. Publish five NIOO-KNAW bird GPS tracking studies as open data on Movebank.
2. Create best practices and software to publish Movebank animal GPS tracking data to GBIF.
3. Publish 11 bird GPS tracking datasets from Movebank to GBIF.

We published data from five Oystercatcher GPS studies in the Netherlands as open data on Movebank and Zenodo. These datasets collectively contain 6 million GPS positions and 164 million acceleration measurements and are formatted as Frictionless Data Packages (Walsch and Pollock, 2017) to facilitate understanding and access. The datasets are described in an open-access data paper published in ZooKeys (van der Kolk et al., 2022).

709

VIEWS

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Versions

Version v1

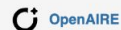
Dec 19, 2022

10.5281/zenodo.7408643

Cite all versions? You can cite all versions by using the DOI [10.5281/zenodo.7408642](https://doi.org/10.5281/zenodo.7408642). This DOI represents all versions, and will always resolve to the latest one. [Read more](#).

External resources

Indexed in



Communities

NLBIF

Related articles by TREND MD

Data Paper ZooKeys 1123: 31-45
<https://doi.org/10.3897/zookeys.1123.90623> (03 Oct 2022)

GPS tracking data of Eurasian oystercatchers (*Haematopus ostralegus*) from the Netherlands and Belgium

▼ Henk-Jan van der Kolk, Peter Desmet, Kees Oosterbeek, Andrew M. Allen, Martin J. Baptist, Roeland A. Bom, Sarah C. Davidson, Jan de Jong, Hans de Kroon, Bert Dijkstra, Rinus Dillerop, Adriaan M. Dokter, Magali Frauendorf, Tanja Milotić, Eldar Rakhimberdiev, Judy Shamoun-Baranes, Geert Spanoghe, Martijn van de Pol, Gunther Van Ryckegem, Joost Vanoverbeke, Eelke Jongejans, Bruno J. Ens

Abstract ▲

We describe six datasets that contain GPS and accelerometer data of 202 Eurasian oystercatchers (*Haematopus ostralegus*) spanning the period 2008–2021. Birds were equipped with GPS trackers in breeding and wintering areas in the Netherlands and Belgium. We used GPS trackers from the University of Amsterdam Bird Tracking System (UvA-BiTS) for several study purposes, including the study of space use during the breeding season, habitat use and foraging behaviour in the winter season, and impacts of human disturbance. To enable broader usage, all data have now been made open access. Combined, the datasets contain 6.0 million GPS positions, 164 million acceleration measurements and 7.0 million classified behaviour events (i.e., flying, walking, foraging, preening, and inactive). The datasets are deposited on the research repository Zenodo, but are also accessible on Movebank and as down-sampled occurrence datasets on the Global Biodiversity Information Facility (GBIF) and Ocean Biodiversity Information System (OBIS).

XML PDF

Contents Article Info Cite Metrics Comment Related
Figs Tabs Map Taxa Refs Cited Nanopubs

Allen A, Ens BJ, van de Pol M, Frauendorf M, van der Kolk HJ, de Kroon H, Jongejans E (2018) Cumulative Human Impacts on biRd Populations (CHIRP): A multi-tiered approach to conserving the near-threatened Eurasian Oystercatcher. 5th European Congress of Conservation Biology. <https://doi.org/10.17011/conference/eccb2018/107685>

In text citation ► [Search via ReFindit](#)

Allen AM, Jongejans E, van de Pol M, Ens BJ, Frauendorf M, van der Shuijs M, de Kroon H (2022) The demographic causes of population change vary across four decades in a long-lived shorebird. Ecology 103(4): e3615. <https://doi.org/10.1002/ecy.3615>

In text citation ► [Search via ReFindit](#)

Bakker W, Ens BJ, Dokter AM, van der Kolk HJ, Rappoldt K, van de Pol M, Troost K, van der Veer HW, Bijleveld AI, van der Meer J, Oosterbeek K, Jongejans E, Allen AM (2021) Connecting foraging and roosting areas reveals how food stocks explain shorebird numbers. Estuarine, Coastal and Shelf Science 259: 107458. <https://doi.org/10.1016/j.ecss.2021.107458>

In text citation ◄► [Search via ReFindit](#)

Bouten W, Baaij EW, Shamoun-Baranes J, Camphuysen KC (2013) A flexible GPS tracking system for studying bird behaviour at multiple scales. Journal of Ornithology 154(2): 571–580.

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Published August 28, 2025 | Version v0.4.0

Software

Open

movepub: Prepare Movebank Data for Publication

Desmet, Peter¹ ; Govaert, Sanne¹ 

Show affiliations

Movepub is an R package to prepare animal tracking data from [Movebank](#) for publication in a research repository. With movepub you can document data with metadata following the [Data Package](#) standard and transform these to [Darwin Core](#) and Ecological Metadata Language (EML) for publication to the Global Biodiversity Information Facility (GBIF) and the Ocean Biodiversity Information System (OBIS).

See the [package website](#) for more information.

Notes

Changelog

write_eml

- `write_eml()` is now a separate function from `write_dwc()` (#57).
- `write_eml()` now formats the `derived_paragraph` as DocBook (rather than HTML), a format supported by EML and the GBIF IPT (#102). The paragraph is also shorter and added at the end of the abstract (#76).
- New `html_to_docbook()` allows to convert a string or character vector from HTML to DocBook. You can use this to convert descriptions in order to have valid EML (#101).
- `write_eml()` and `write_dwc()` no longer add `[subsampled representation]` to the dataset title (#76).

write_dwc

130
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Versions

Version v0.4.0	Aug 28, 2025
10.5281/zenodo.16983597	
Version v0.3.0	Mar 13, 2025
10.5281/zenodo.15017583	

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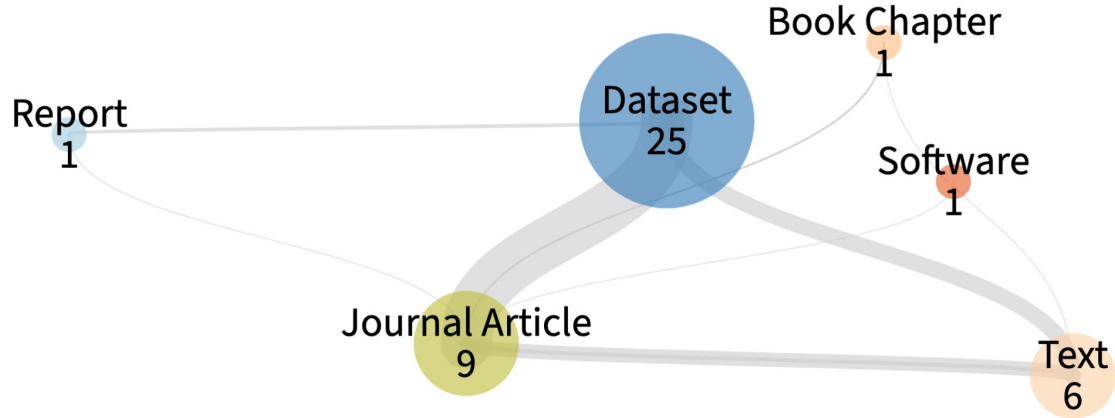
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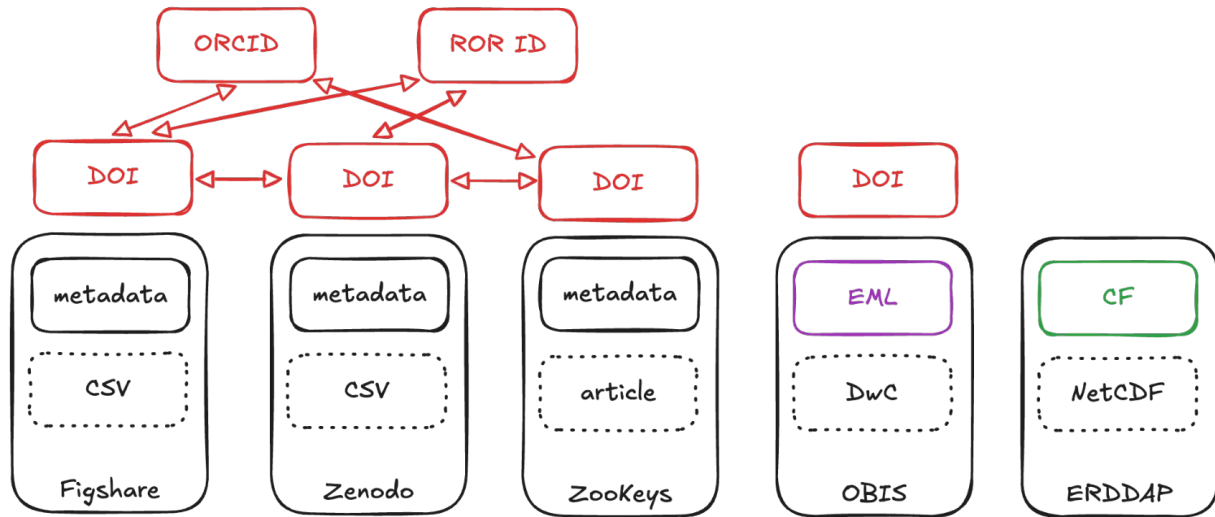
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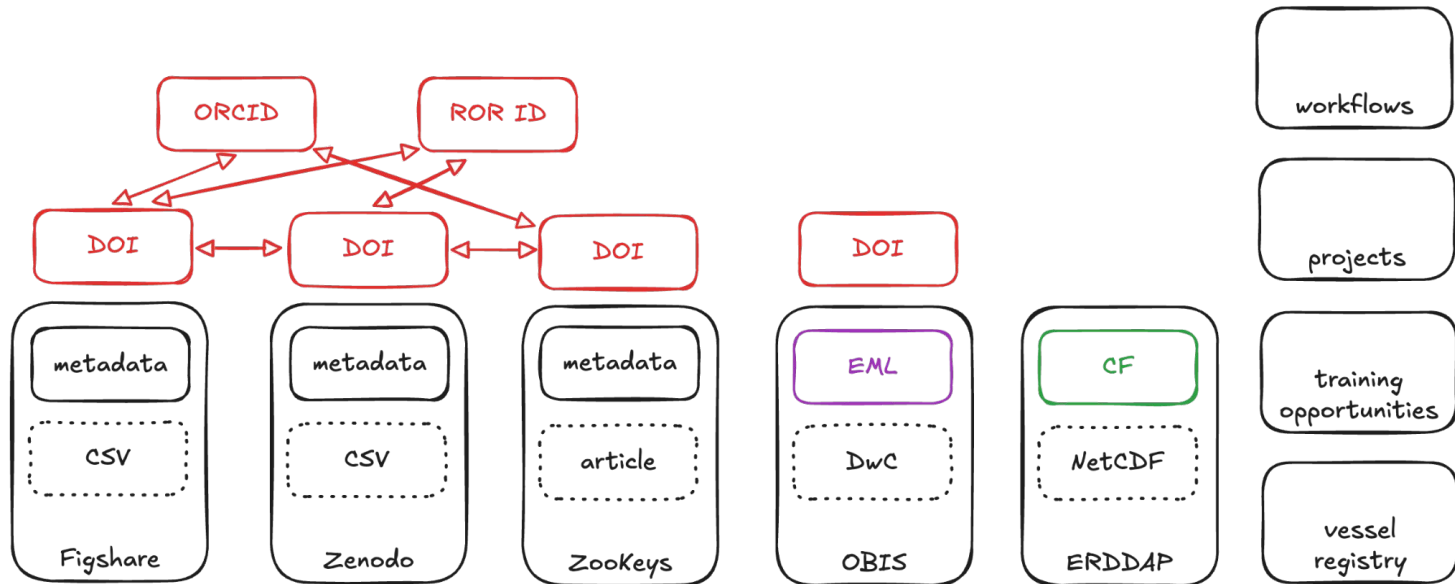
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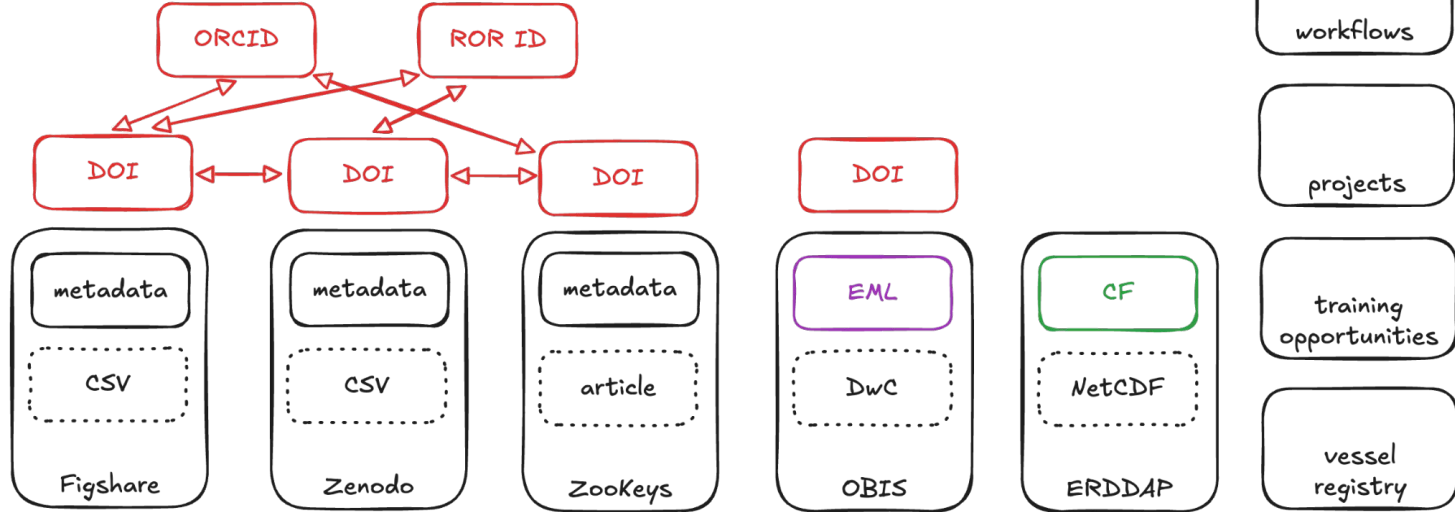
 inbo/movepub
Release: v0.4.0

Indexed in



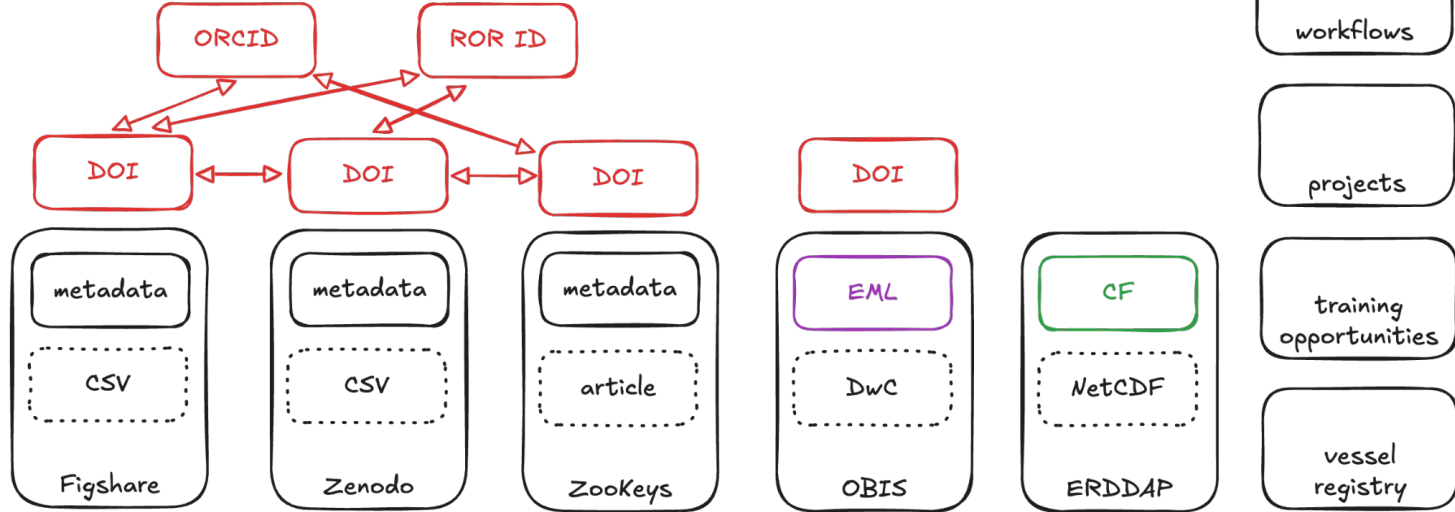






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datasetsearch.research.google.com/search?src=0&query=edna%20expeditions&docid=L2cvMTF3dHhsdjN4bg%3D%3D


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 UNESCO eDNA expedition in The Sundarbans (Bangladesh):...
search.dataone.org
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Updated Sep 16, 2025

 UNESCO eDNA expedition in Península Valdés (Argentina): July 2023

Explore at: portal.obis.org obis.org

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Unique identifier
<https://doi.org/10.25607/2kx2h8>

Dataset updated
Dec 8, 2024

Dataset provided by
[UNESCO](#)

Authors
United Nations Educational, Scientific and Cultural Organization

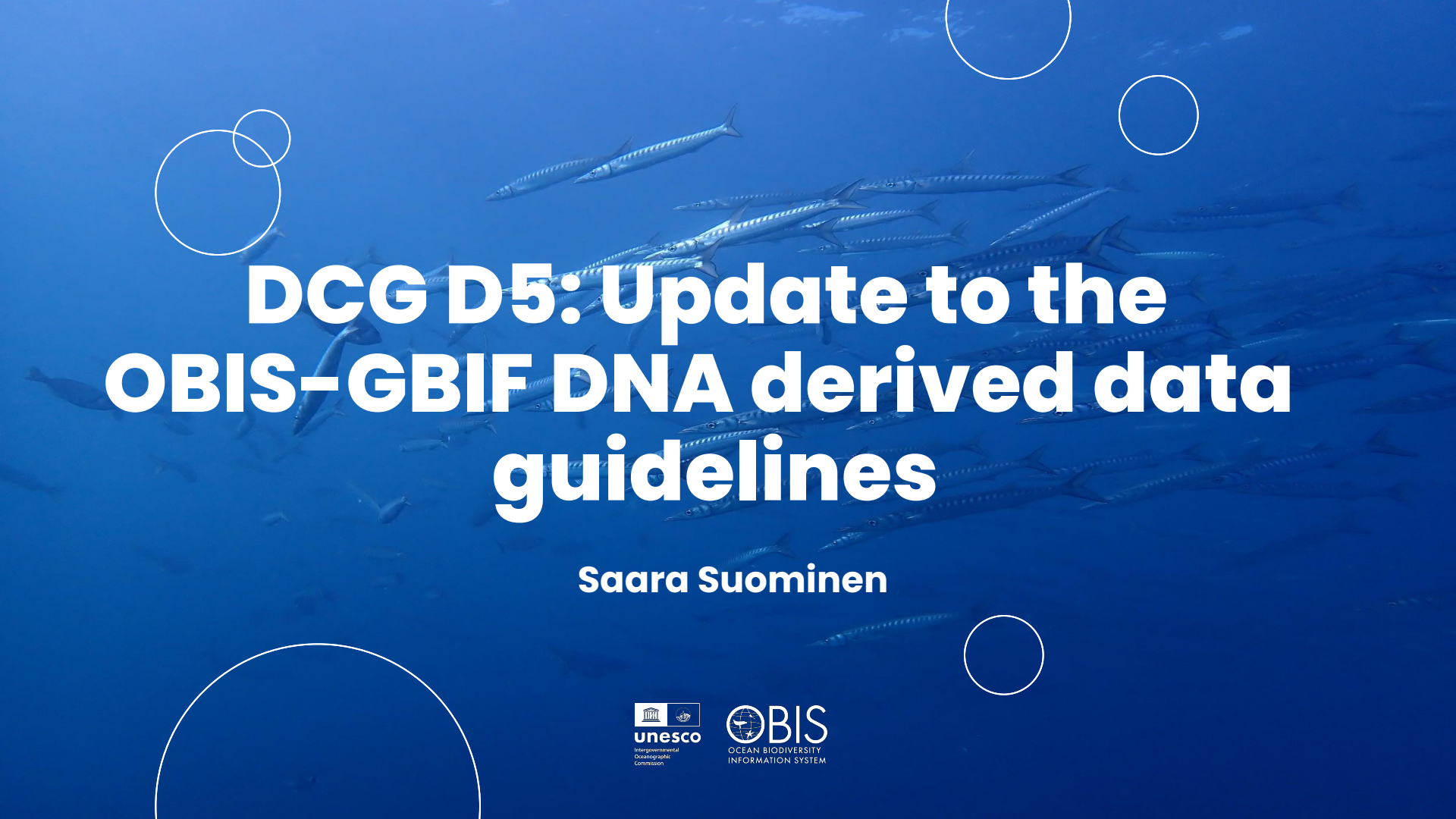
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Time period covered
2022

Agenda



Item		Time	Length
Welcome & Intro	Ruben	09:00	00:10
Deliverable 0. DCG Meetings	Ruben	09:10	00:05
Deliverable 1. Essential Ocean Variables publication	Elizabeth	09:15	00:20
Deliverables 2 & 3. Nodes engagement survey & report	Kat & Steve	09:35	00:20
Deliverable 4. Metadata to ODIS	Pieter	09:55	00:05
Deliverable 5. eDNA publication guidelines	Saara	10:00	00:10
Deliverable 6. Long-term data archival	Dan	10:10	00:10
Taxonomy	Leen	10:20	00:10
Break	-	10:30	00:15
OBIS Vocabs	Elizabeth	10:45	00:30
Horizon scanning for 2026	Co-chairs	11:15	00:15
Break	-	11:30	00:15
Ranking Exercise and 2026 Workplan	Co-chairs	11:45	00:45



DCG D5: Update to the OBIS-GBIF DNA derived data guidelines

Saara Suominen



Update to the OBIS-GBIF DNA derived data guidelines

Complete a review of the eDNA data extension for DwC and the eDNA FAIR checklist by end 2025, providing a final report with actionable recommendations for enhancing data interoperability and accessibility to the Joint GBIF/OBIS DNA derived data guidelines working group.

DNA discussion group

MOTIVATION:
Since 2020:

80 eDNA datasets

27 million occurrences

eDNA data is becoming increasingly important, but, there are still many challenges with eDNA data integration.

- Issues with the current standard
- Unclear how to deal with some specific challenges of DNA data (unknown sequences, taxonomic annotations, control samples)

Genetic data discussion group

- **Objective:**
 - Integration of advancements in eDNA standards to OBIS work
 - A community discussion forum on eDNA topics
- Review of FAIRe –project and what it means for eDNA in OBIS
- This project is currently being integrated to MiXs, TDWG, through this work it will be available for the DNA derived data extension as well
- -> Review of OBIS manual

Genetic data discussion group

- **Achievement: Update of OBIS manual on eDNA**
 - Use of event core
 - Guidelines for formatting methods (MDT, OBON training example)
 - Still to add: Darwin core data package, metagenomics, OBON-Bebop protocols, taxonomic quality control, overview of eDNA data flow.
- **Decisions:**
 - Annotations without a WoRMS-ID: Instead of adding the higher taxonomy that is available: the submitter of the data may in these cases record the known species name, in scientificName, the ID of the taxon in another database in taxonConceptID and leave scientificNameID empty.
 - Wrong use of refdb MixS terms, we will work with GBIF/FAIRe to fix this
 - Control samples

13.5.1 Quick start guide

QUICK-START GUIDE FOR PUBLISHING eDNA DATA TO OBIS

- 1. Gather all your data:** ASV/OTU table, taxonomic assignment table, all available metadata (study metadata, sample collection, laboratory bioinformatic steps, reference library, ...)
- 2. Format them into Darwin Core Archive with the following structure:**
 - **Occurrence core table:** Each row represents a single occurrence, at a specific time and location, along with its taxonomic annotation (if available)
 - **DNA Derived Data extension table:** This table captures information about the sampled DNA itself.
- 3. Make sure all columns are named with standard Darwin Core vocabulary**
- 4. Make sure you include these mandatory and recommended files**

OBIS
mandatory fields

OBIS strongly
recommended fields

DNA strongly
recommended fields

README

OBIS training for eDNA data sharing

Training documents for the OBON projects meeting in November 2024.

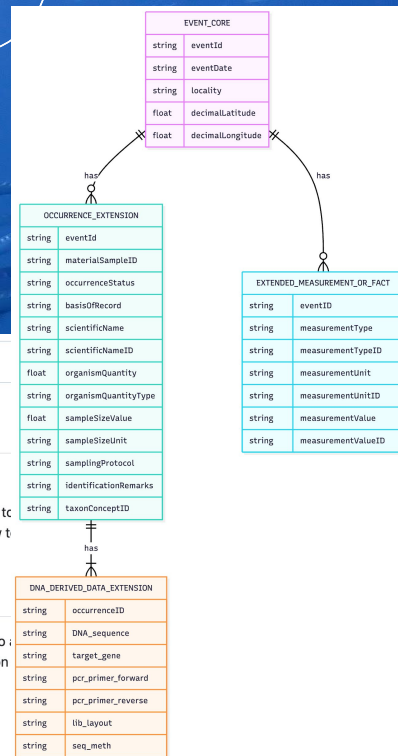
This training is meant for eDNA data providers interested in the formatting and addition of eDNA data to the Darwin Core Archive. The training runs through simple steps in adding eDNA data. In addition, we will try out how to work with eDNA data already in OBIS.

Example dataset

The example eDNA dataset is available at in the [dataset folder](#). We are going to process this dataset to the Darwin Core Archive, including all of the information available in this folder. As is typically the case for amplicon data is provided in multiple tables:

1. An otu table
2. A taxonomy table
3. A sample information table
4. A fasta file for the sequences

An example [R markdown solution](#) to the data cleaning exercise is also available. To start with your own work, you can clone the repository to your computer, and copy the solution "pieter.Rmd", to a file with your own name.



Future of genetic data in OBIS

(and discussion group topics)

- Sequence search
- eDNA data dashboard
- Automatic taxonomic curation workflows based on species distribution data
- ALSO COMING: Darwin Core Data Package (any available eDNA formatting?)
- eDNA data management training

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D6 – Long Term Archiving

Dan Lear, Ben Donnelly, Pieter Provoost



By end 2025, survey 100% of OBIS nodes' ability to provide long-term data archiving.



Design and present model for tiered, CoreTrustSeal aligned, long-term data archiving to the NCG

Survey



OBIS Nodes long-term data archiving survey

The purpose of this survey is to assess the current state of long-term data archiving across the OBIS Node network. By understanding how Nodes store, back up, and manage their data, as well as the stability of their infrastructure and funding, we can identify common needs and develop tailored support strategies to strengthen long-term data preservation within OBIS.

The information you provide will help us design capacity-building activities, develop guidance materials, and explore potential solutions for sustainable and secure data archiving.

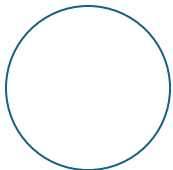
29 Responses...

Accreditation Type

Approx. Count

Summary

IODE ADU



~16–18

Most nodes have or are seeking IODE ADU accreditation.

IODE NODC

2

A small number operate as NODCs.

CoreTrustSeal / IODE QMF

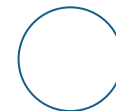
2–3

A few hold or are applying for additional certifications.

No accreditation / unsure

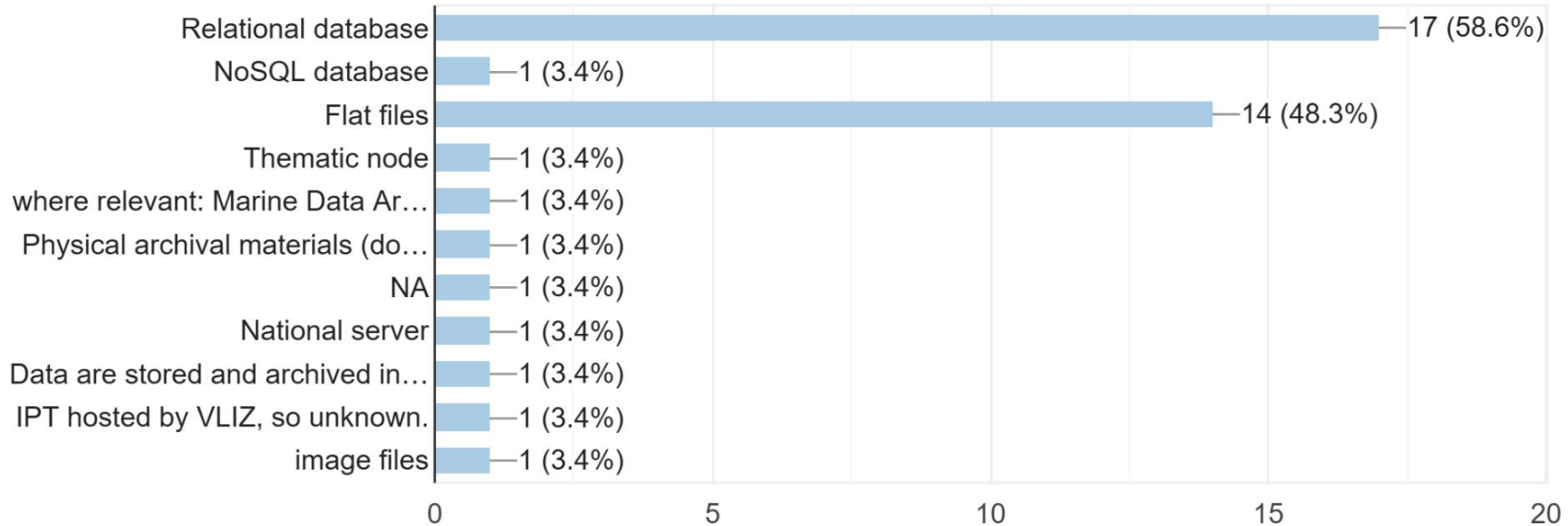
~8–9

Several nodes currently have no accreditation or are uncertain.



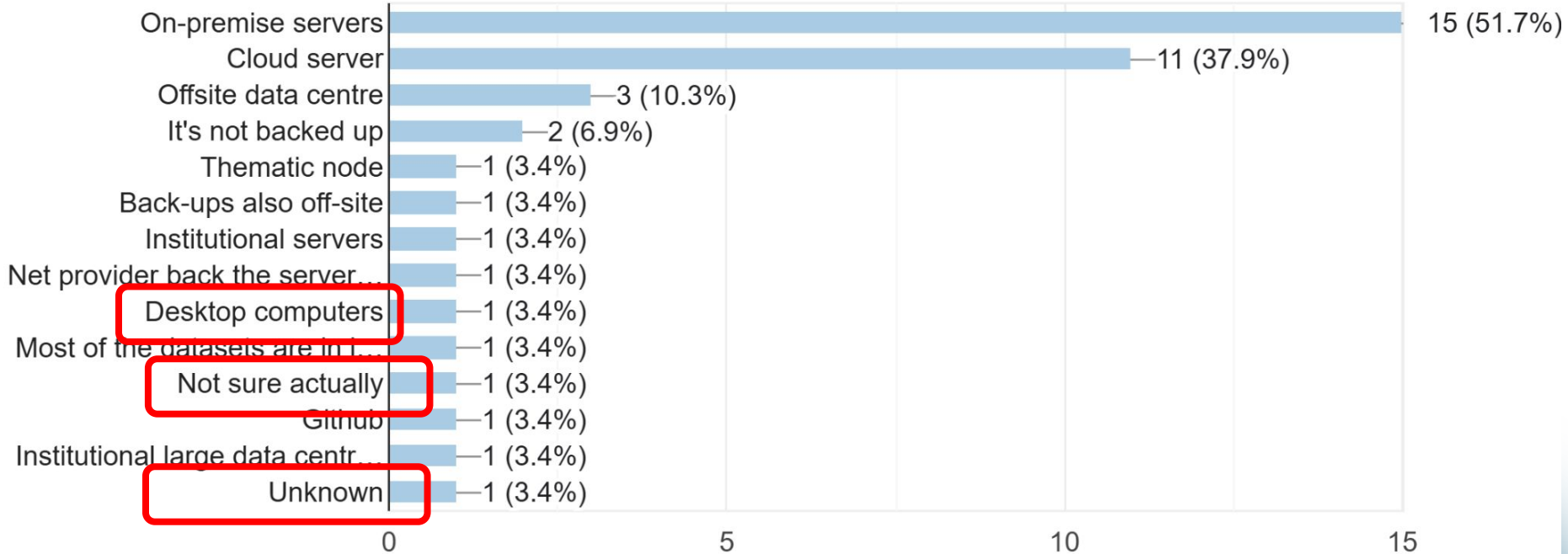
How are your data held?

29 responses



How is the data from your Node currently backed up?

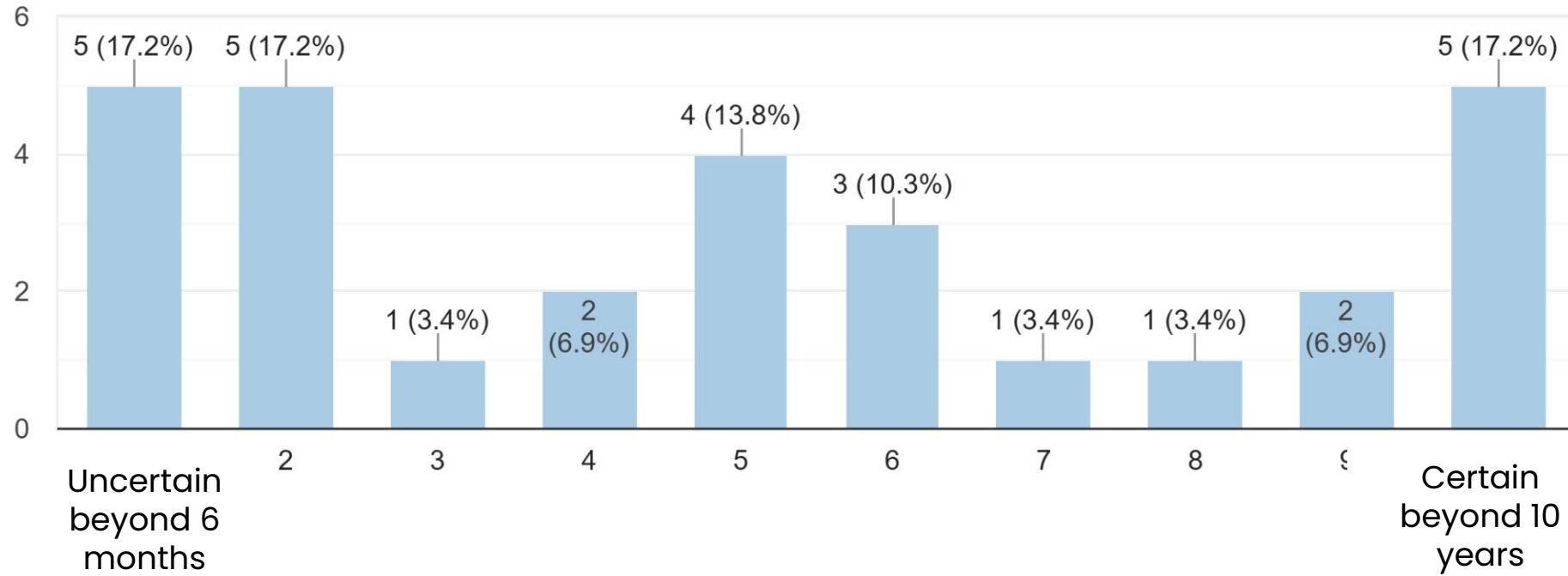
29 responses



Funding Category	Example Responses	Approx. Count	Summary
Government-funded	"Home government", "Government of Canada", etc.	~10–12	Main funding source for most nodes
Academic / Institutional support	"Academic institute", "volunteer work"	~7–8	Universities and institutes provide in-kind or time-based support
Project-based / Soft funding	"Project funding", "EU projects", "EMODnet Biology"	~5–6	Dependent on competitive, time-limited grants
International organisations	"International organisation", "IODE/UNESCO-linked"	~2–3	Supported via international frameworks
NGO / Independent institutes	"Marine Research Institute linked to Ministry"	~1–2	Minor but relevant
No funding / volunteer only	"Currently no funding", "Goodwill gesture"	~3–4	Operate without dedicated financial resources

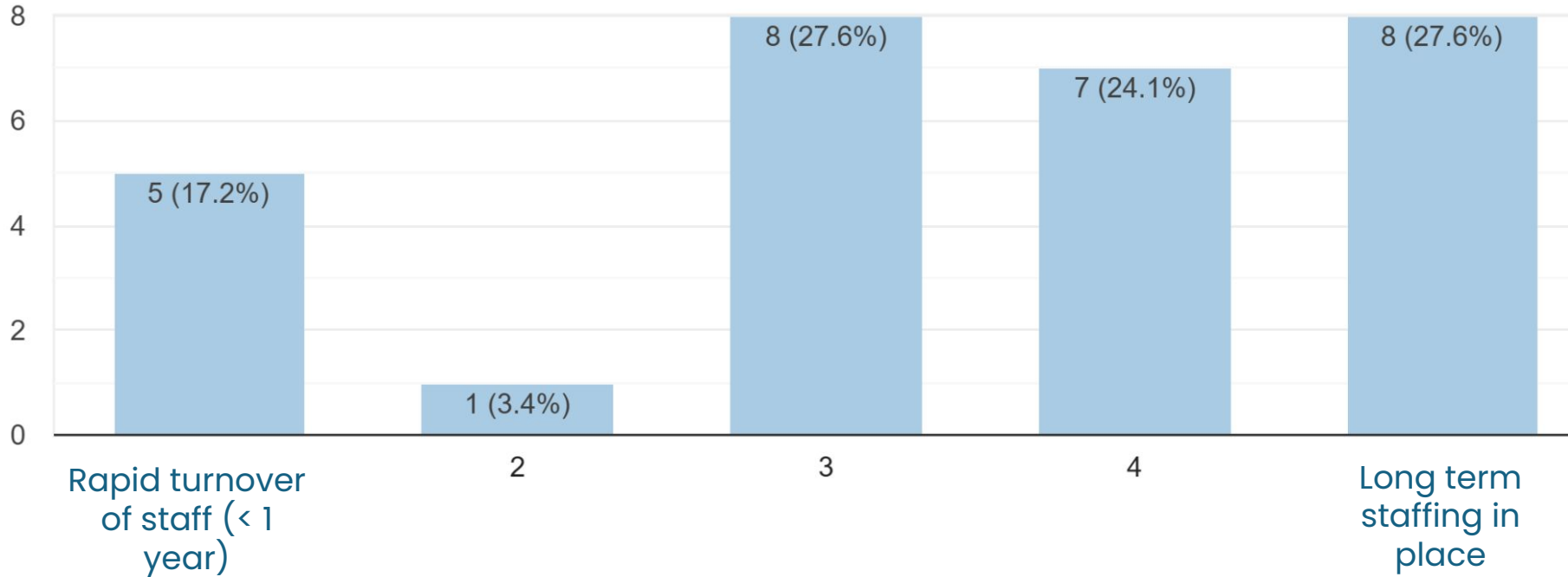
How secure is your funding currently?

29 responses



How stable is your staffing?

29 responses



Category	Frequency	Summary of Need
No support / sufficient systems	High	Most respondents feel current systems are adequate.
Storage requirements	Medium	Many unsure or needing better-defined storage strategies.
Infrastructure stability	Medium	Some need stable, reliable infrastructure.
Process robustness / governance	Medium	Desire for better policies, governance, and guidance.
Bandwidth limitations	Low–medium	Noted particularly for large data (e.g., videos/images).
Staffing / time	Low	Some lack dedicated personnel or time for backups.

Next Steps



One-to-one follow-up with key respondents

Map gaps to solutions

Explore 'centralised' vs node-led

Ensure recommendations meet minimum implementation barrier for nodes

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Taxonomy

Annual meeting / Bogotá, 2025

Leen Vandepitte



OBIS taxonomic quality control - some history

OBIS Taxonomy Task Team

- Ideally, all taxa in OBIS are linked to WoRMS, ensuring the taxonomic quality of the available occurrence records
- Numerous taxa are not linked to WoRMS, for various reasons
- List of those names provided to WoRMS DMT, for clean-up

- 2012: full list of non-matches shared with WoRMS DMT
 - Manual matching & cleaning
 - Summer students

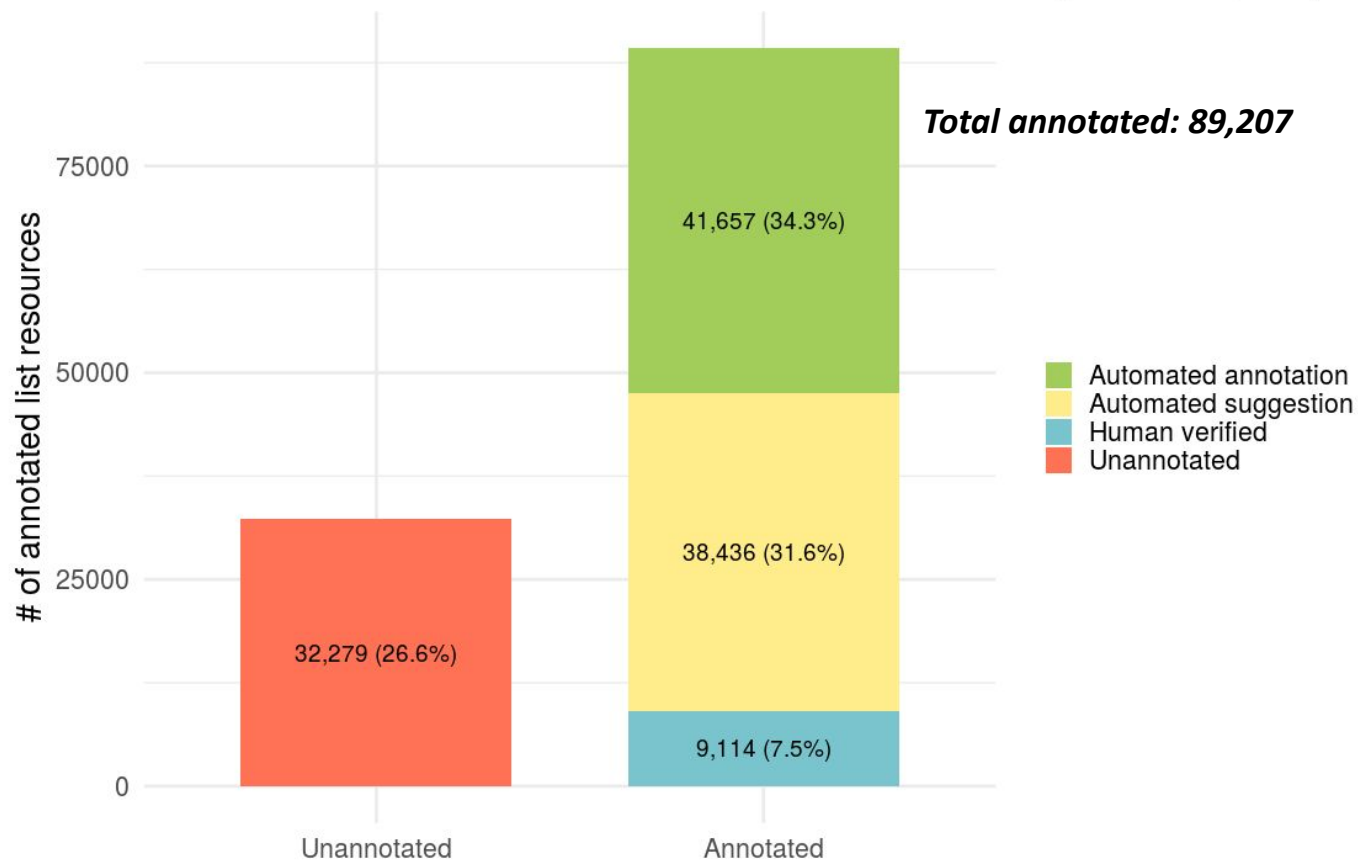
- 2016 – 2017
 - Quarterly => new non-matches shared with WoRMS DMT
 - Summer students

Current status

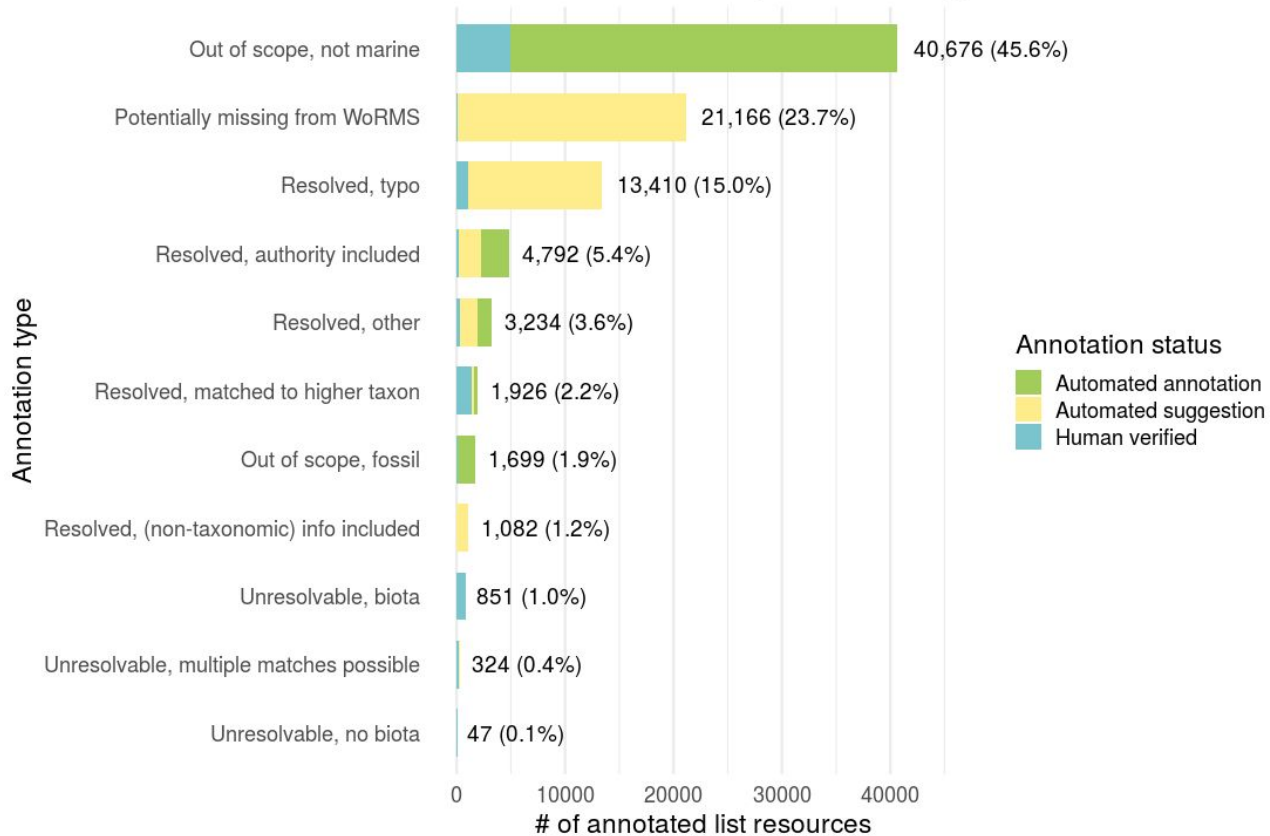
- No more Taxonomy Task Team => indirectly part of OBIS Data Coordination Group (?)
- Much improved 2024-2025 approach by WoRMS DMT:
 - Automated scripts
 - Automated annotations
 - Automated suggestions
 - Human verifications
 - Non-matches
- OBIS (Oct 2025) => 121,486 non-matching taxon names
 - = unique combinations of name, authorship & phylum
 - Without AphiaID (=WoRMS identifier) => no exact match could be found

Annotated vs unannotated taxon names

(total: 121,486)



Annotated names by annotation type



In summary

- Automated annotations
 - 41,657 taxon names
 - Need human verification of the annotation
- Automated suggestions
 - 38,436 taxon names
 - Need human verification of the suggestion
- Non-matches
 - 32,279 taxon names
 - Need a human check & annotation

=> *The non-matching taxon names are affecting almost 3M out of 165M OBIS distribution records*

 - = roughly 2% of all OBIS distribution records

<https://annotated-list.eurobis.org/>

- Login needed
- Manual
 - How to navigate the tool
 - How to annotate a non-matching entry
 - => *Flowchart*
 - How to check/confirm/correct an automated annotation / suggestion

Priorities? ... with a little help from our OBIS family...?

- Dealing with non-matches
- Verifying automated annotations / suggestions
- Tool allows several filtering options, including “OBIS node”
- Highest priority should still be to train data providers & node managers on good taxon matching BEFORE submitting data to OBIS.

Agenda



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Welcome & Intro	Ruben	09:00	00:10
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Controlled Vocabulary

Elizabeth Lawrence

Measurement Heterogeneity

- measurementType typically recorded as **free text** = heterogeneity
- Facilitates data understanding
- Enables data aggregation
- **Decreases misuse potential**

length	len
fork length	largo
fish length	mean length
	Inth
survey length	total length
	longueur
carapace length	standard length

Controlled Vocabulary

- Identifiers for each eMoF column (as applicable)
 - measurementTypeID
 - measurementValueID
 - non-numeric values
 - measurementUnitID
- Facilitates data understanding
- Enables data aggregation
- Decreases misuse potential

measurementType	measurementTypeID
length	http://vocab.nerc.ac.uk/collection/P01/current/OBSINDLX/
net diameter	http://vocab.nerc.ac.uk/collection/P01/current/DSAMPA01/

measurementUnit	measurementUnitID
cm	http://vocab.nerc.ac.uk/collection/P06/current/ULCM/
Celsius	http://vocab.nerc.ac.uk/collection/P06/current/UPAA/

measurementValue	measurementValueID
KC Denmark AS small plankton net	http://vocab.nerc.ac.uk/collection/L22/current/NETT0174/

Measurements in OBIS

Measurement types

Search

measurementType	measurementTypeID	prefLabel	records ↓
Sampling instrument name	http://vocab.nerc.ac.uk/collection/Q01/current/Q0100002/ Q01	<input type="text" value="find"/>	16,835,785
visibility			8,893,974
temperature			8,210,122
fish length			7,992,276
underwater visibility			7,992,276
Abundance	http://vocab.nerc.ac.uk/collection/P01/current/SDBIOL01/ P01	<input type="text" value="find"/>	7,851,455
surge			7,667,787
Number of species observed during time period			7,268,666

<https://mof.obis.org/>

MoF Report

r.obis.org/mof

OBIS Canada

title	records	type	value	unit	typeid	valueid	unitid	typeid_missing	valueid_missing	unitid_missing
Benthic invertebrate surveys conducted between 2009-2011 as part of the Sydney Tar Ponds Cleanup and Coke Ovens Remediation Project.	3060	0.99	1.00	0.98	0.98	0.00	0.98	0.02	1.00	0.00
British Columbia Geoduck (<i>Panopea generosa</i>) Age, Size Structure and Growth Parameters, 1993 - 2002	63628	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
CWS-EC Eastern Canada Seabirds at Sea (ECSAS)	840296	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
DFO audits of sea lice at finfish aquaculture sites	1568	1.00	1.00	0.50	0.25	0.00	0.00	0.75	1.00	1.00
DFO Gulf Region Aquatic Invasive Species Data	9392	1.00	1.00	0.88	0.44	0.00	0.75	0.56	1.00	0.14
DFO Maritimes Region Cetacean Sightings	198802	0.92	0.92	0.02	0.43	0.00	0.02	0.57	1.00	0.00

2024 SG Requests



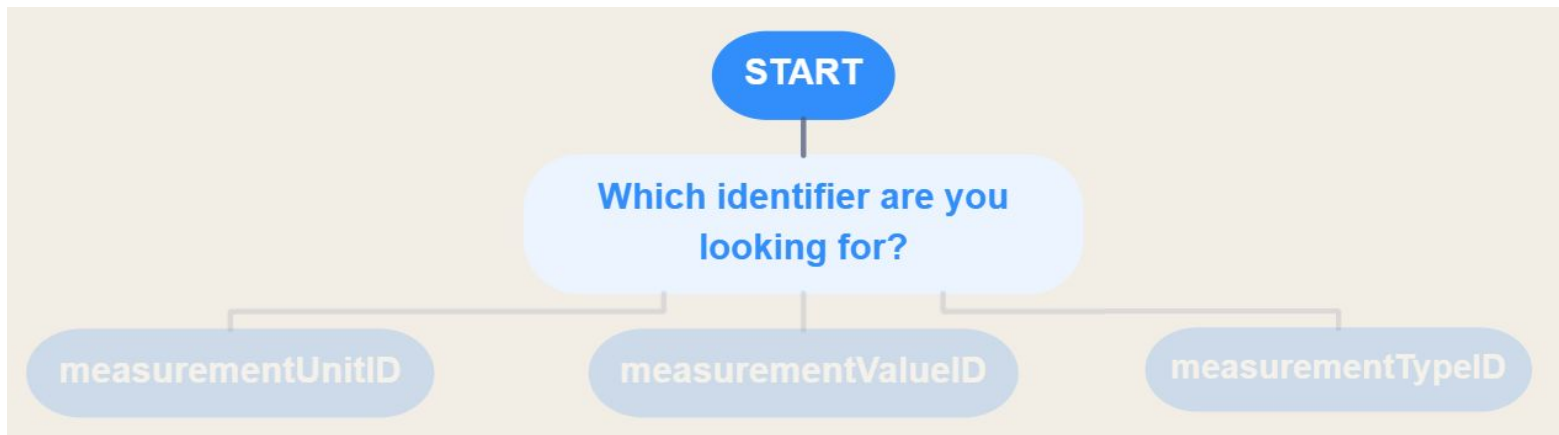
1. **Completing incomplete tasks (video tutorials on measurementValueID and measurementTypeID: sampling measurements)**
2. **A slimmed down flowchart/pathway for directing choice for researchers to help a time stretched research community and lower a perceived barrier to data publication (or much smaller choice of appropriate terms)**
 - a. Investigate if it's possible to have an **interactive version** of the decision tree
3. **Vocabulary template that data providers can provide to node managers**
4. **A list of commonly used measurementTypes with suggested measurementTypeIDs**
5. **Document and publish the reasoning behind different vocabulary term choices, to help the broader research community understand how to work with these terms**
6. **Report back at the next SG-OBIS meeting**

2024 SG Requests:

2. Improve Flowchart

- Interactive decision tree prototyped
 - Limited capacity to keep improving

**FEEDBACK
NEEDED**



iobis.github.io/vocab_decision_tree

2024 SG Requests:

3. Vocab Templates

- **Discussion:**
 - Would quickly come out of date
 - AI tools in next 1-2 years to assist mapping measurements to vocabularies
- **Suggestion:**
 - BODC vocabulary builder

P01 Biological Entity Parameter Code Builder [help](#)

Preferred label

Length (fork length) of biological entity specified elsewhere

2024 SG Requests:

4. Vocab list

● Risk:

- Proliferate incorrect vocabularies
- Capacity is not built
- Difficult to maintain

● Recommendation:

- Invest in capacity
- Determine how well current resources help
- AI tools

British Oceanographic Data Centre

Metadata Sources | File Sources

File type
 NetCDF XML TXT

Select a text file containing terms to parse. There should be one term per line.
(Max number of terms: 300)

Choose File | OBIS_measureme...ypes_nodupes.txt

Parse Text file

Showing results 1 to 300 of 300

(animal lengthtype) ABDOMEN WIDTH
(animal lengthtype) AXIAL-GIRTH
(animal lengthtype) BODY LENGTH
(animal lengthtype) CARAPACE LENGTH
(animal lengthtype) CARAPACE WIDTH
(animal lengthtype) CEPHALOTHORAX
(animal lengthtype) CHELA HEIGHT
(animal lengthtype) CLAW HEIGHT
(animal lengthtype) CLAW LENGTH
(animal lengthtype) CLAW WIDTH
(animal lengthtype) CURVED CARAPACE LENGTH MAX
(animal lengthtype) CURVED CARAPACE LENGTH MIN

Terms analysis

Restrict to vocabularies
Select...

Leave empty to select from all

Match Properties
 Identifier Preflabel Altlabel Definition
 Exclude Deprecated Terms

Analyse terms (1 to 300)

(Please note that analysis is currently limited to 300 terms max)

Terms not found - search in BioPortal and EarthPortal geoDabTerms

Document: terms

Analyser Method: terms analysis

Keywords (1419 items)

Exact Match (134 items)

Other (64 items)

Search Term	Match Concept	Match Property	Status	Vocab Categories	Method
Ammonium	ammonium	Preferred Label	Accepted		Text Match

<https://semantics.bodc.ac.uk/>

2024 SG Requests:

5. Document reasoning

- Documented in YouTube vocabulary videos
- Not (yet) written into Manual as text



Vocabulary Discussions



- **Discussion on relevant GitHub issues**
 - verbatimMeasurementType
 - parentMeasurementID
 - How to model P01 codes for sub-component data (DwC-A vs DwC-DP)
 - Maintain traditional approach e.g. “length of biological entity specified elsewhere [sub-component: shell]”
 - DwC-DP will allow for atomic capturing

Future Directions

- **Feedback on existing resources**
- **Map all mofs to a P01/vocab?**
- **Mof statistics report as a product?**
- **More frequent vocabulary mapping sessions**

Discussion

How useful are existing vocabulary resources?

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Horizon Scanning

Annual meeting / Bogotá, 2025

Ruben Perez Perez



Potential 2026 tasks

DCG internal support

- Support DCG members engaged in other initiatives
 - **Open thinking space**
- Develop instructions to maintain OBIS Engagement Catalogue

Manual

- Revise and Update OBIS Manual

Potential 2026 tasks

Data Quality

- Thematic Data Laundry mini-sessions delivered during NCG meetings for Nodes to ask data questions
- OBIS data validation tool (BDQ, obistools, Biocheck...)
- Improve interpretation of what is considered is_marine at records level
- Enhance delivery of eMoF in GBIF
- Map all MoFs to controlled vocabs

Potential 2026 tasks

New data models

- DwC-DP
 - Indexation
 - Contribution to GBIF How-to Guide
 - Workshop for Nodes and SWOT analysis

- Humboldt extension
 - Workshop
 - Indexation

Potential 2026 tasks

EOVs

- Create metrics to monitor EOV data in OBIS
- Contribute to development of Data Schemas

Potential 2026 tasks

Any other?

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Ranking Exercise & 2026 Workplan

Annual meeting / Bogotá, 2025

Ruben Perez Perez



Potential 2026 tasks

Workplan deliverables must reflect the core tasks of the group



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Thank you all!