The Global Ocean Observing System

# GOOS BioEco Panel & OBIS
## Session 4: Mapping the current situation

**Ward Appeltans, IODE IOC/UNESCO**

**IOC IODE/GOOS Data Workshop**
**30 September - 02 October 2024, IODE Project Office/VLIZ, Ostende, Belgium**

**GEO BON/MBON – GOOS BioEco – OBIS partnership**

**Building a globally coherent, consistent and coordinated sustained global ocean observing system to assess the state of the ocean's biological resources and ecosystems**

Cooperation agreement signed on Dec 2016

Products, Indicators, Assessments

Requirements

GOOS Biology & Ecosystems

- Focus on sustained observations
- Bring selected EOVs from pilot to mature
- Link with platforms and observing systems of GOOS and GRAs

Observations

GEO BON MBON

- R&D focus
- Bring new EOVs from concept to pilot
- Assist with the establishment of national and regional BONs

Data & Products

OBIS OCEAN BIOGEOGRAPHIC INFORMATION SYSTEM

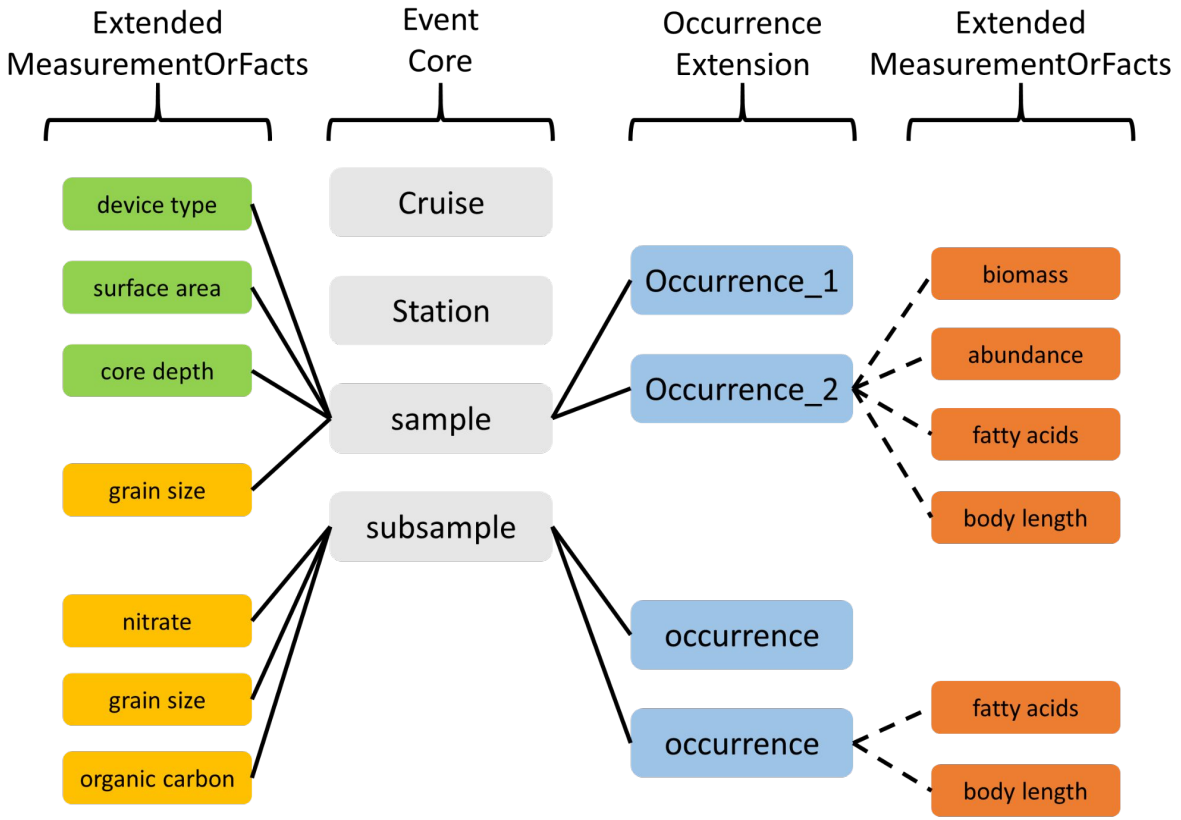
- Open data sharing
- Data integration
- Data quality control
- Data harmonization
- Tools for data exploration, visualization and analysis

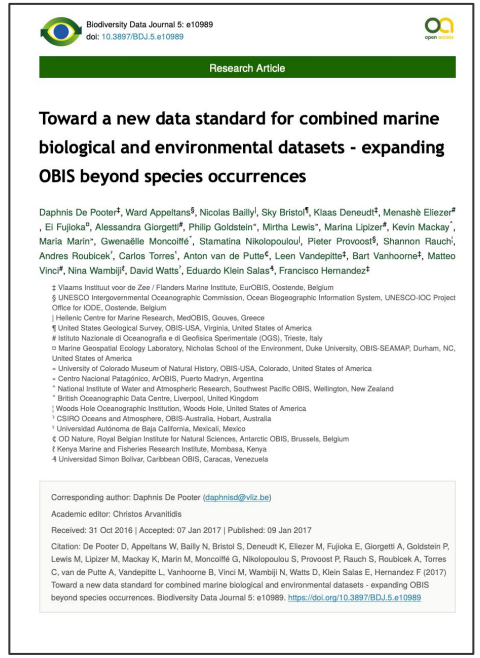
GOOS IODE

# IODE/OBIS-ENV-DATA pilot project (2015-2017)

In collaboration with EMODnet

More than species occurrences



Biodiversity Data Journal 5: e10989
doi: 10.3897/BDJ.5.e10989

Research Article

**Toward a new data standard for combined marine biological and environmental datasets - expanding OBIS beyond species occurrences**

Daphnis De Pooter‡, Ward Appeltans§, Nicolas Bailly|, Sky Bristol¶, Klaas Deneudt‡, Menashè Eliezer#, Ei Fujioka¤, Alessandra Giorgetti#, Philip Goldstein^, Mirtha Lewis^, Marina Lipizer#, Kevin Mackay^, Maria Marin^, Gwenaëlle Moncoiffé^, Stamatina Nikolopoulou|, Pieter Provoost§, Shannon Rauch|, Andres Roubicek^, Carlos Torres^, Anton van de Putte‹, Leen Vandepitte‡, Bart Vanhoorne‡, Matteo Vinci#, Nina Wambiji‹, David Watts^, Eduardo Klein Salas¶, Francisco Hernandez‡

‡ Vlaams Instituut voor de Zee / Flanders Marine Institute, EurOBIS, Oostende, Belgium
§ UNESCO Intergovernmental Oceanographic Commission, Ocean Biogeographic Information System, UNESCO-IOC Project Office for IODE, Oostende, Belgium
| Hellenic Centre for Marine Research, MedOBIS, Gouves, Greece
¶ United States Geological Survey, OBIS-USA, Virginia, United States of America
# Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Trieste, Italy
¤ Marine Geospatial Ecology Laboratory, Nicholas School of the Environment, Duke University, OBIS-SEAMAP, Durham, NC, United States of America
« University of Colorado Museum of Natural History, OBIS-USA, Colorado, United States of America
» Centro Nacional Patagónico, ArOBIS, Puerto Madryn, Argentina
^ National Institute of Water and Atmospheric Research, Southwest Pacific OBIS, Wellington, New Zealand
" British Oceanographic Data Centre, Liverpool, United Kingdom
| Woods Hole Oceanographic Institution, Woods Hole, United States of America
‹ CSIRO Oceans and Atmosphere, OBIS-Australia, Hobart, Australia
› Universidad Autónoma de Baja California, Mexicali, Mexico
¢ OD Nature, Royal Belgian Institute for Natural Sciences, Antarctic OBIS, Brussels, Belgium
£ Kenya Marine and Fisheries Research Institute, Mombasa, Kenya
¥ Universidad Simon Bolivar, Caribbean OBIS, Caracas, Venezuela

Corresponding author: Daphnis De Pooter (daphnisd@vliz.be)

Academic editor: Christos Arvanitidis

Received: 31 Oct 2016 | Accepted: 07 Jan 2017 | Published: 09 Jan 2017

Citation: De Pooter D, Appeltans W, Bailly N, Bristol S, Deneudt K, Eliezer M, Fujioka E, Giorgetti A, Goldstein P, Lewis M, Lipizer M, Mackay K, Marin M, Moncoiffé G, Nikolopoulou S, Provoost P, Rauch S, Roubicek A, Torres C, van de Putte A, Vandepitte L, Vanhoorne B, Vinci M, Wambiji N, Watts D, Klein Salas E, Hernandez F (2017) Toward a new data standard for combined marine biological and environmental datasets - expanding OBIS beyond species occurrences. Biodiversity Data Journal 5: e10989. https://doi.org/10.3897/BDJ.5.e10989

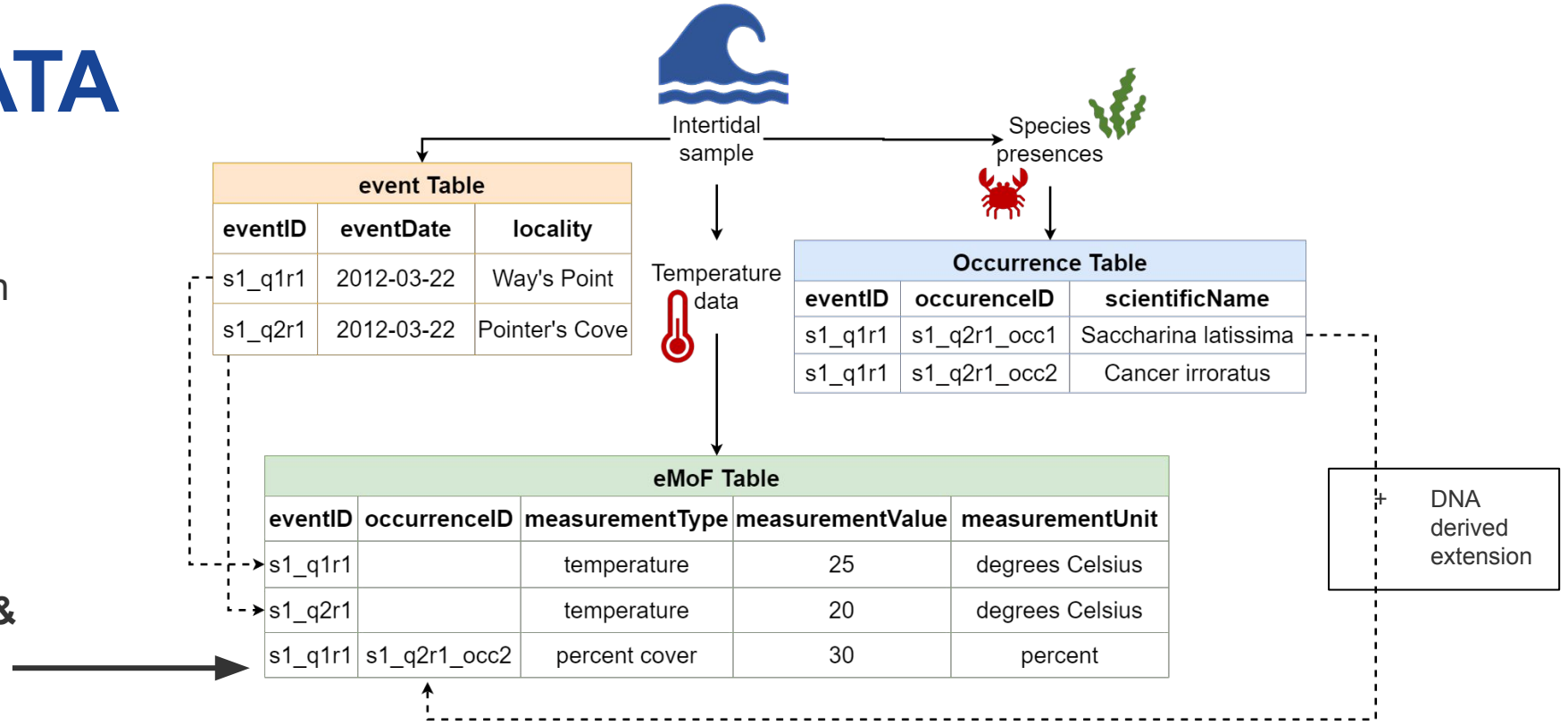
# OBIS-ENV-DATA

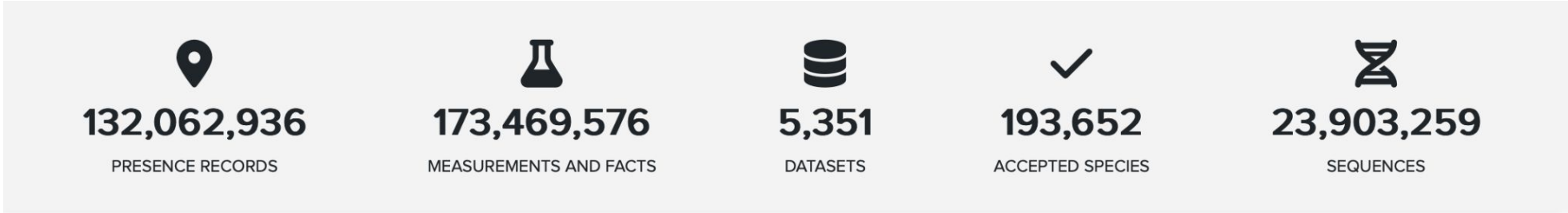
Controlled vocab developed with BODC (OBIS Vocab TT)

Development of decision trees and training resources (manual, YouTube)

**BioEco EOV subvariables & supporting variables**

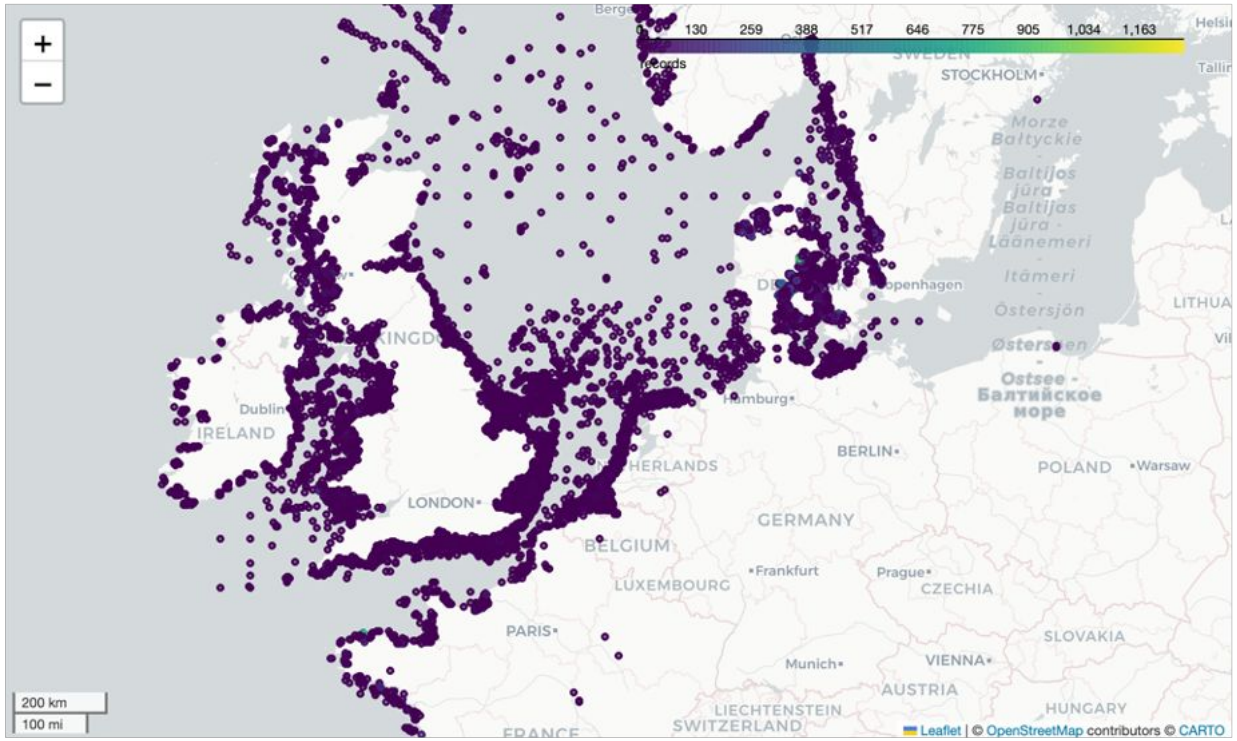
**Data section in EOV spec sheets**

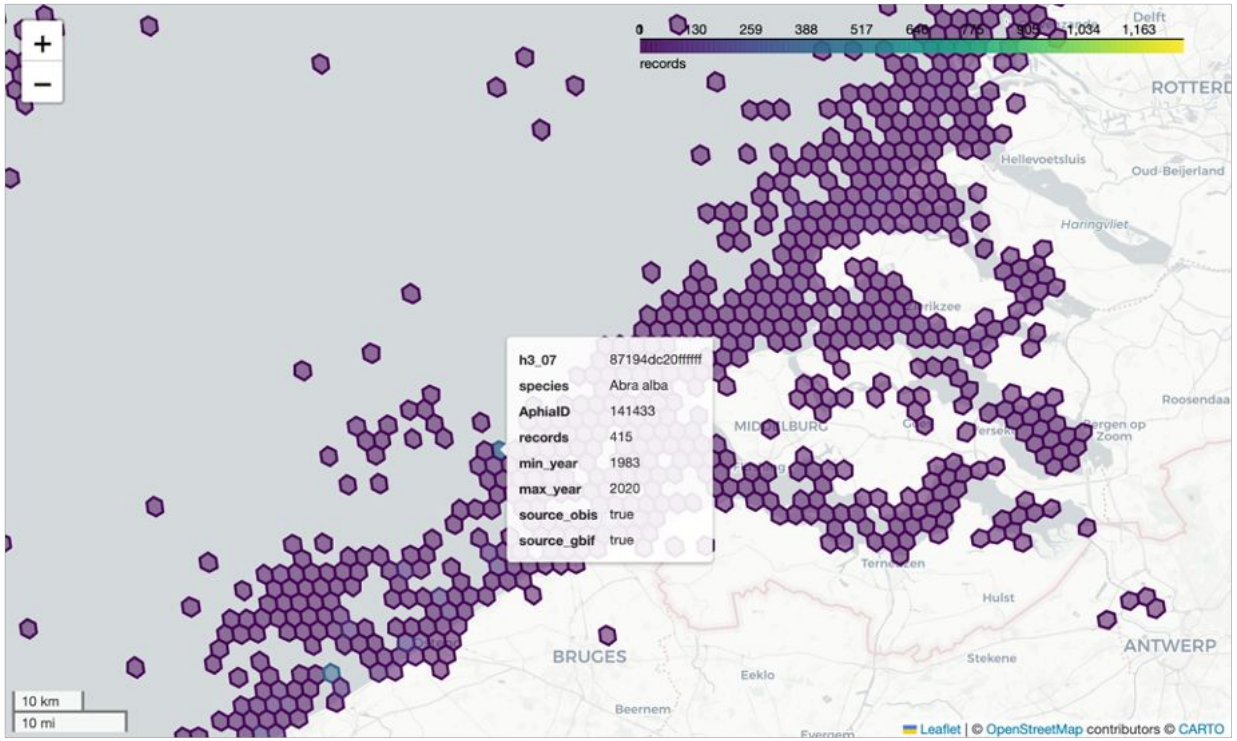


# Species grids product (speciesgrids)

- Supports H3 and geohash grids
- Source OBIS/GBIF, number of records, date range
- Lightweight GeoParquet output, partitioned by quadkey



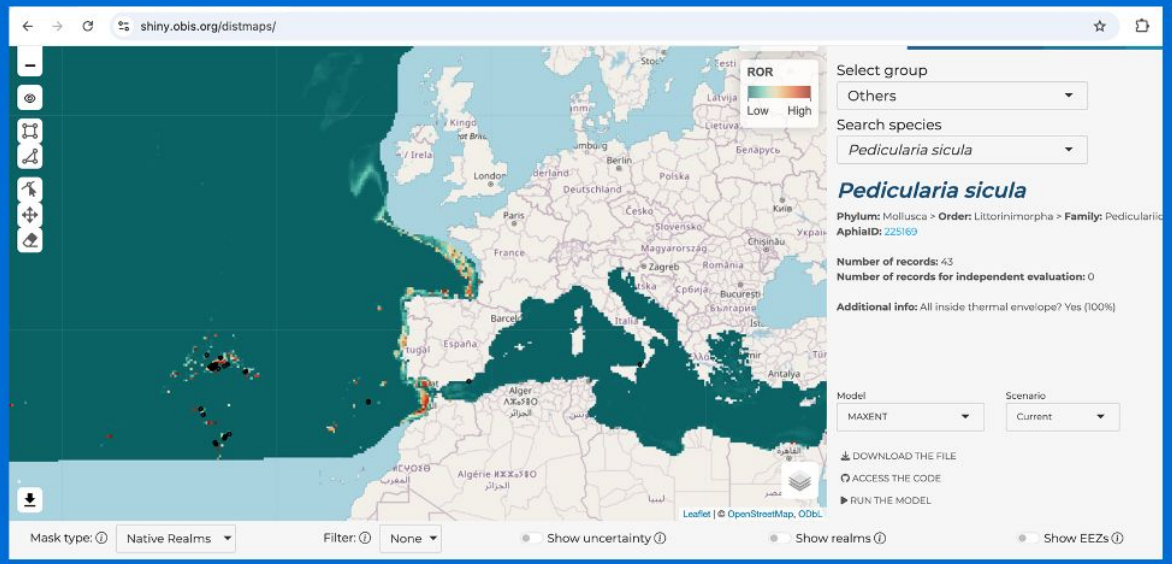
# *MAPPING* MARINE SPECIES AND HABITATS UNDER MULTIPLE SCENARIOS

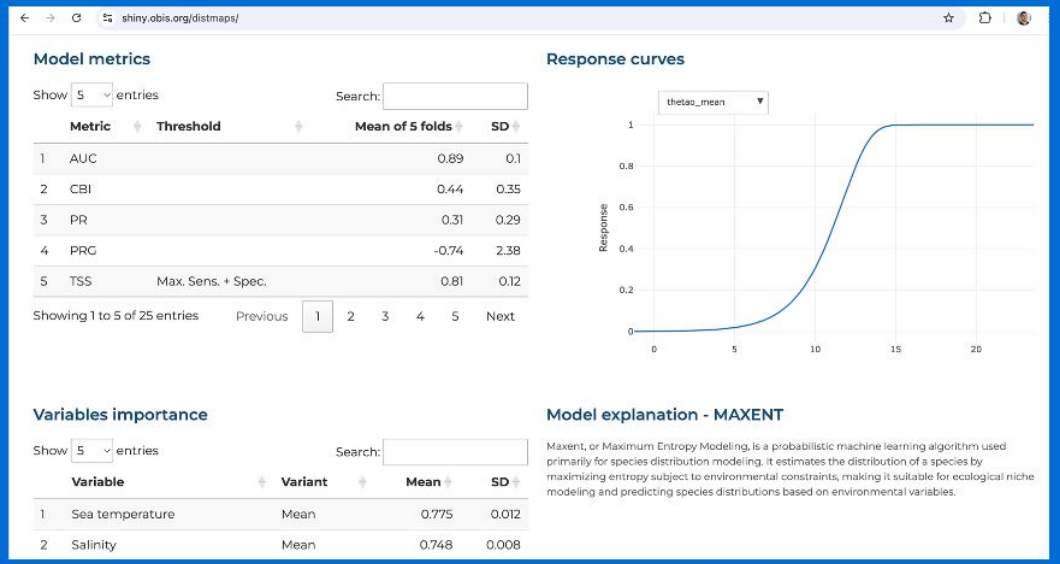
## SH distribution models and biodiversity metrics

## https://shiny.obis.org/distmaps/

https://iobis.github.io/mpaeu_docs/

Scan me!

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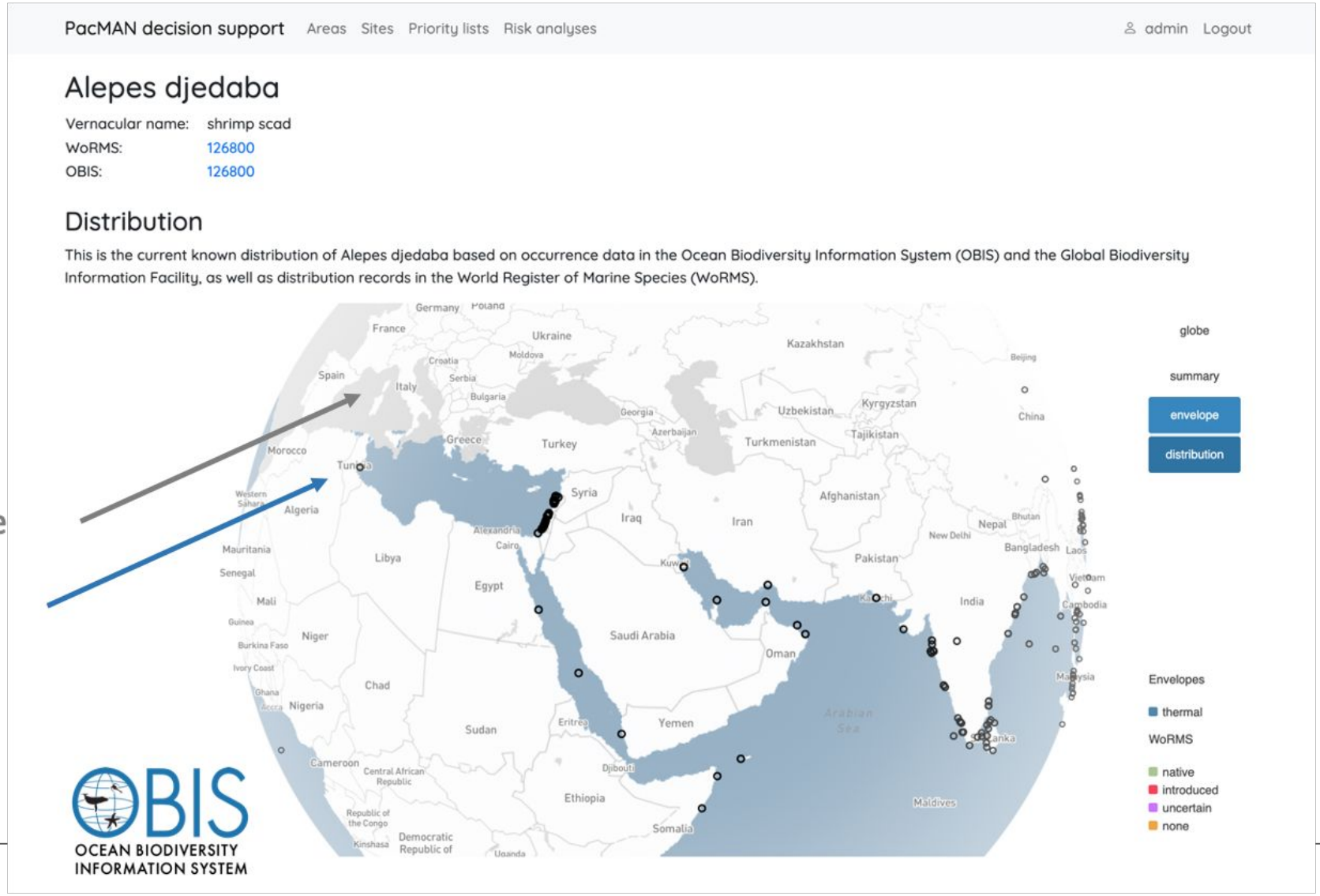
# OBIS invasive species Decision Support Tool includes risk analysis based on thermal niche modeling

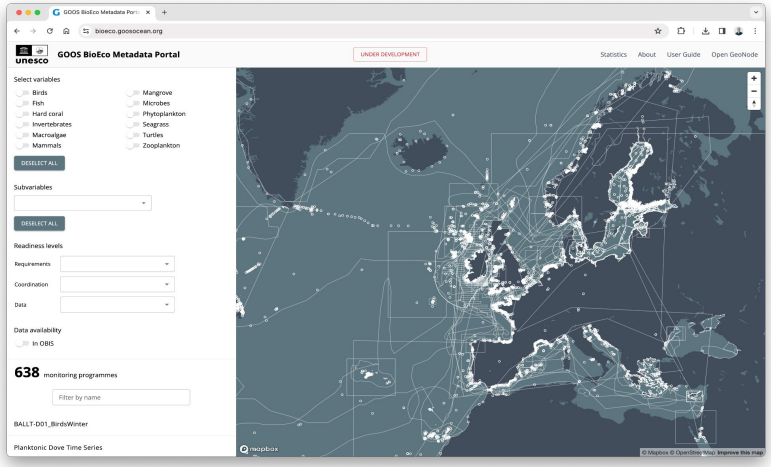
First most Western detection made by Seawatchers Marine **Citizen Science** Platform in 2012

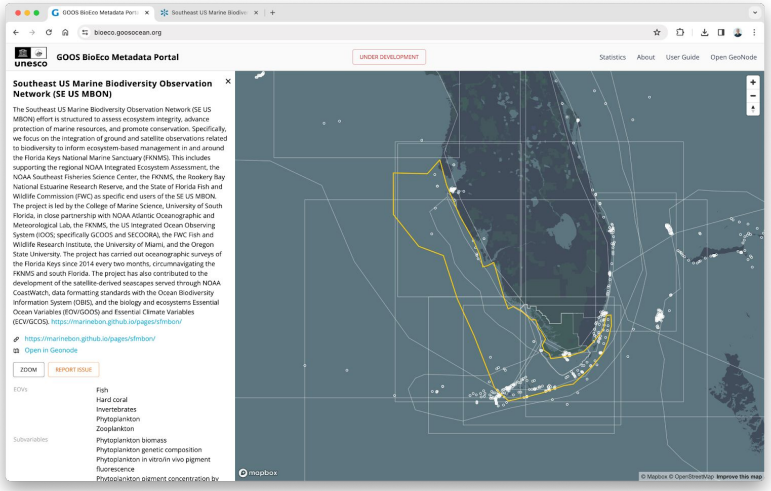
Outside thermal range

Within thermal range

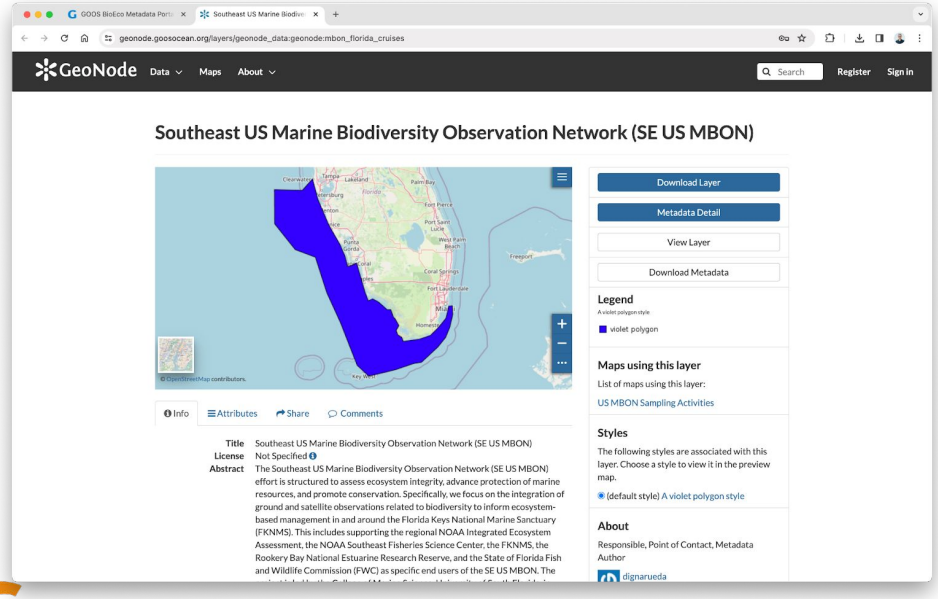


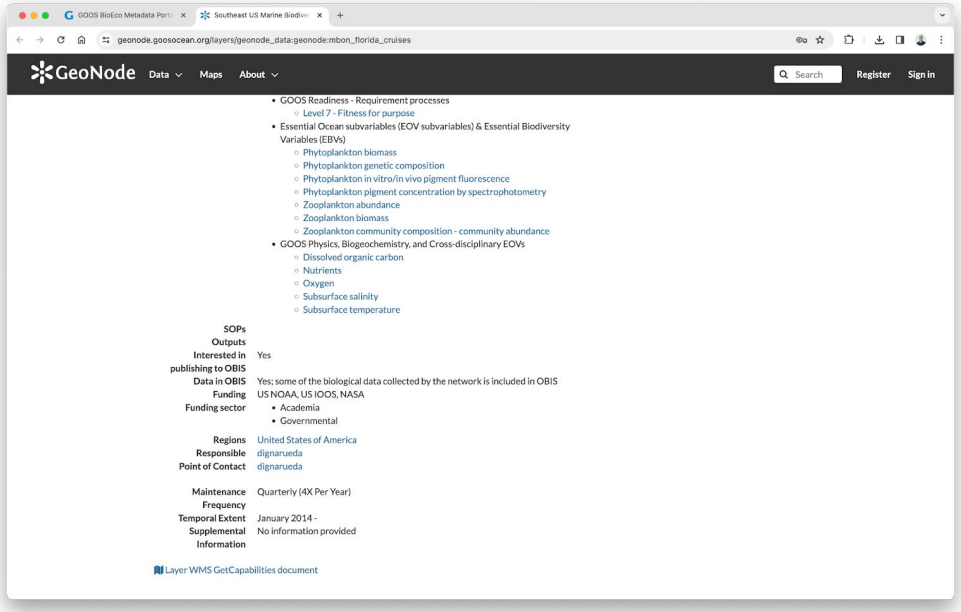
# OBIS/BioEco Portal/connections across GOOS



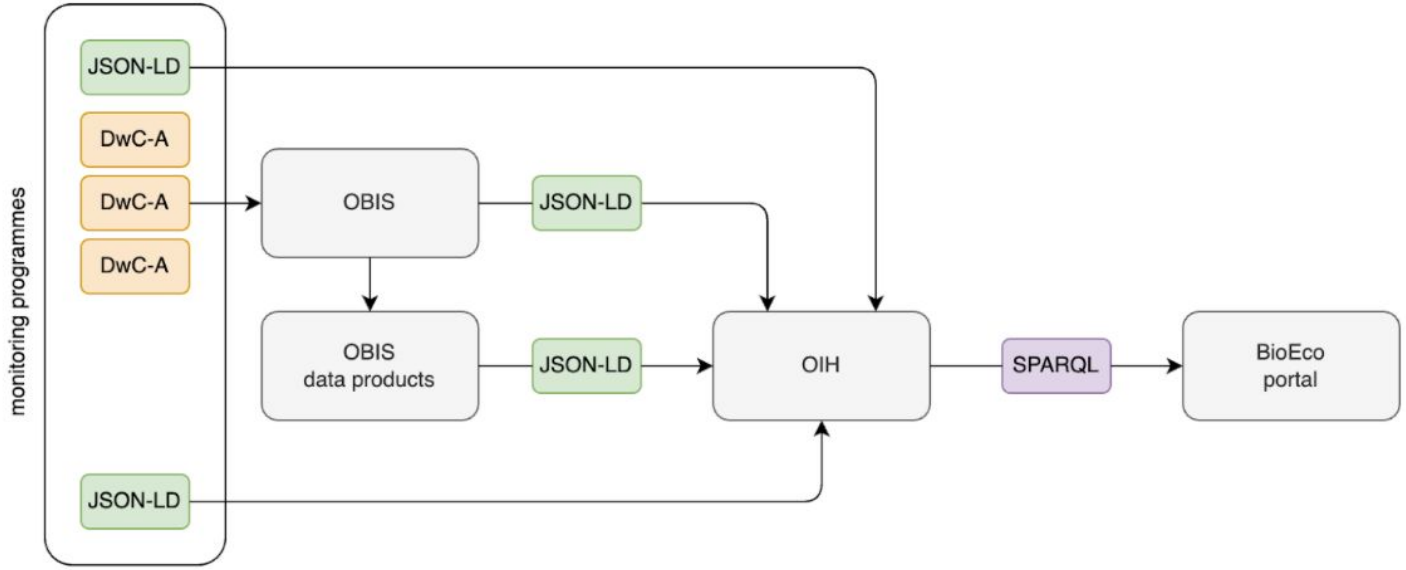

Portal allows you to discover what programmes are collecting what EOVs, where (600+ programmes)



# BioEco Portal

Planned – automated
Easy upload of metadata scripts – ensures consistency in metadata standards



Through EU funding, OBIS now has 1.5 FTE to support GOOS BioEco to develop a set of (minimum) data and metadata requirements, data schemes, data control checks and vocabularies for interoperable dataflows

MARCO-BOLO
STRENGTHENING BIODIVERSITY OBSERVATION IN SUPPORT OF DECISION MAKING

BioEcOcean

## Essential Ocean Variables for Biology and Ecosystems

### Functional Groups

- Microbes — Diversity and biomass
- Phytoplankton — Diversity and biomass
- Zooplankton — Diversity and biomass
- Benthic invertebrates — Abundance and distribution
- Fish — Abundance and distribution
- Sea turtles — Abundance and distribution
- Seabirds — Abundance and distribution
- Marine mammals — Abundance and distribution

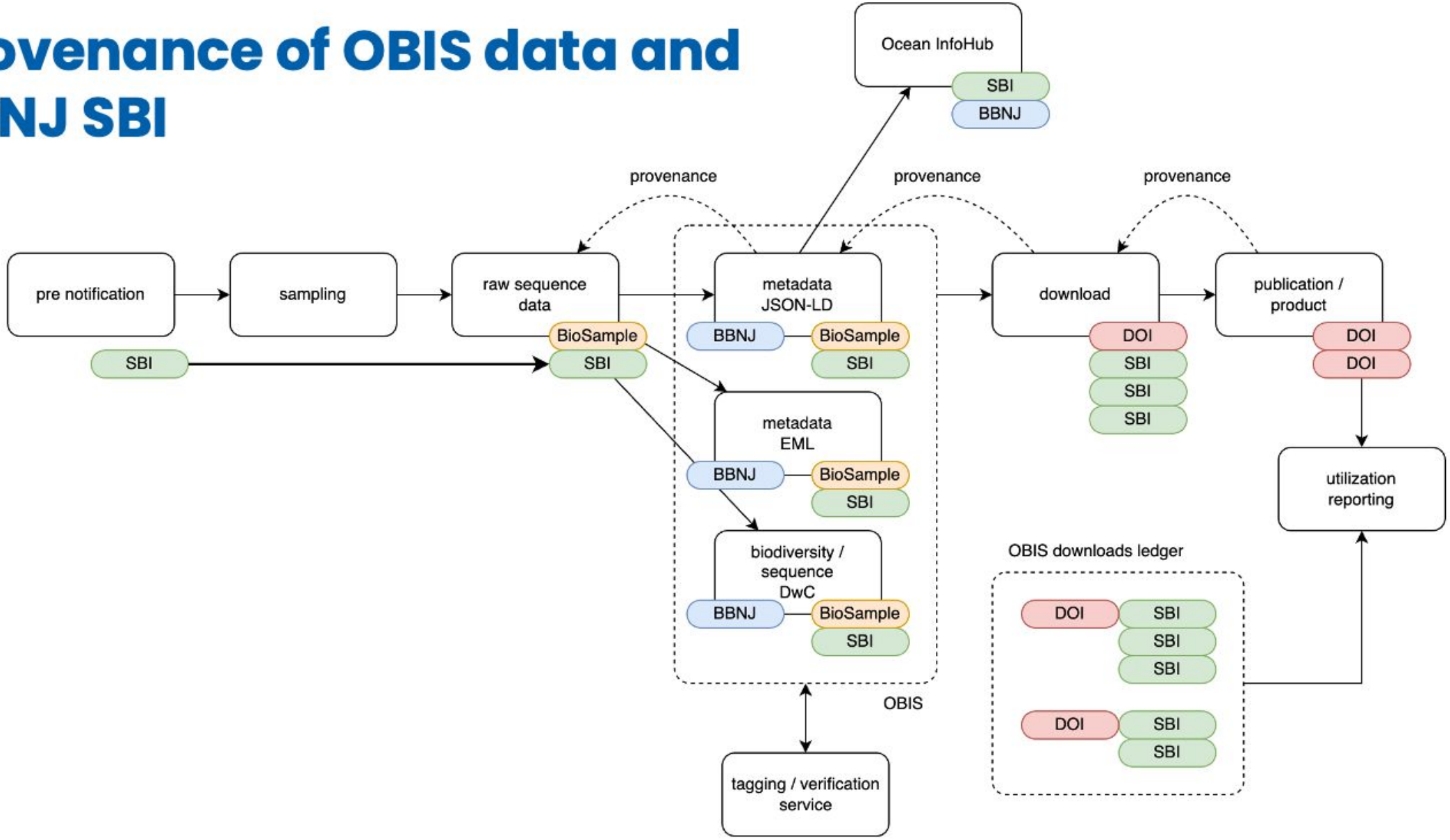
### Habitat State

- Seagrass — Cover and composition
- Macroalgae — Cover and composition
- Mangrove — Cover and composition
- Coral — Cover and composition

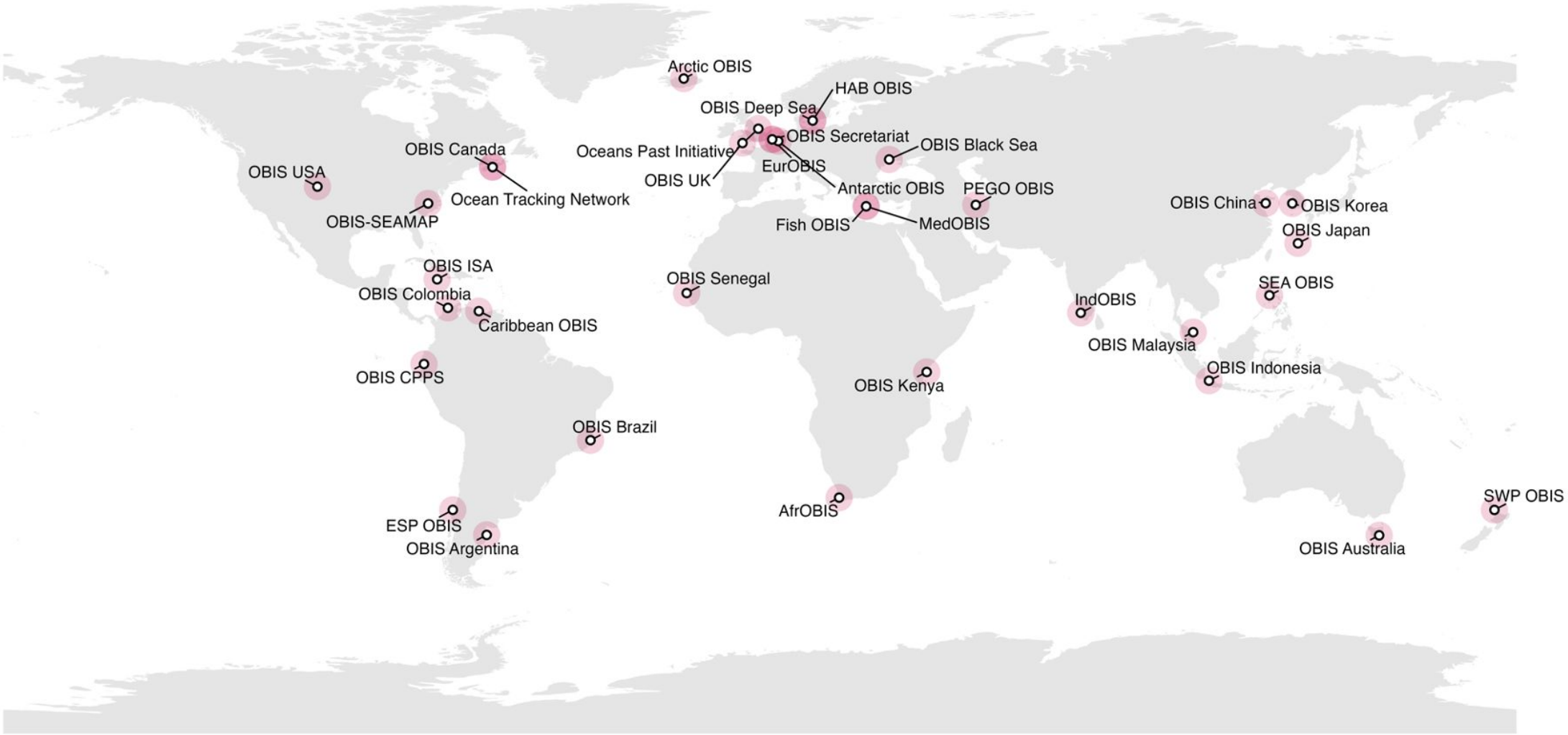
### Across discipline

- Ocean Colour
- Ocean Sound

# Provenance of OBIS data and BBNJ SBI

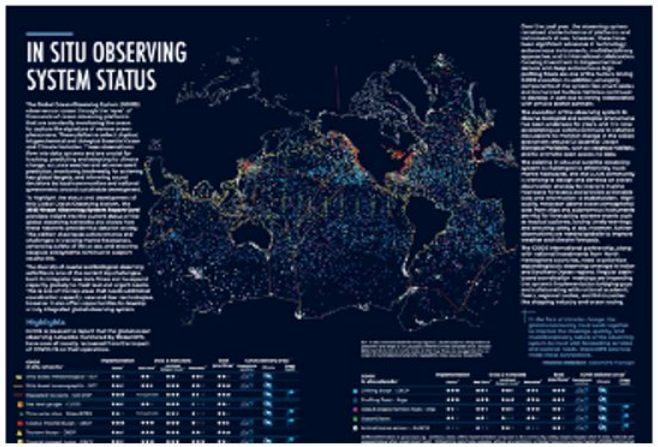


# OBIS Nodes


Arctic OBIS
HAB OBIS
OBIS Deep Sea
OBIS Secretariat
OBIS Black Sea
Oceans Past Initiative
EurOBIS
OBIS Canada
OBIS USA
OBIS UK
Antarctic OBIS
PEGO OBIS
Ocean Tracking Network
OBIS-SEAMAP
Fish OBIS
MedOBIS
OBIS China
OBIS Korea
OBIS Japan
OBIS ISA
OBIS Senegal
SEA OBIS
OBIS Colombia
IndOBIS
Caribbean OBIS
OBIS Malaysia
OBIS Indonesia
OBIS CPPS
OBIS Kenya
OBIS Brazil
SWP OBIS
AfrOBIS
ESP OBIS
OBIS Australia
OBIS Argentina

# Ocean Biodiversity Observing Monitoring System

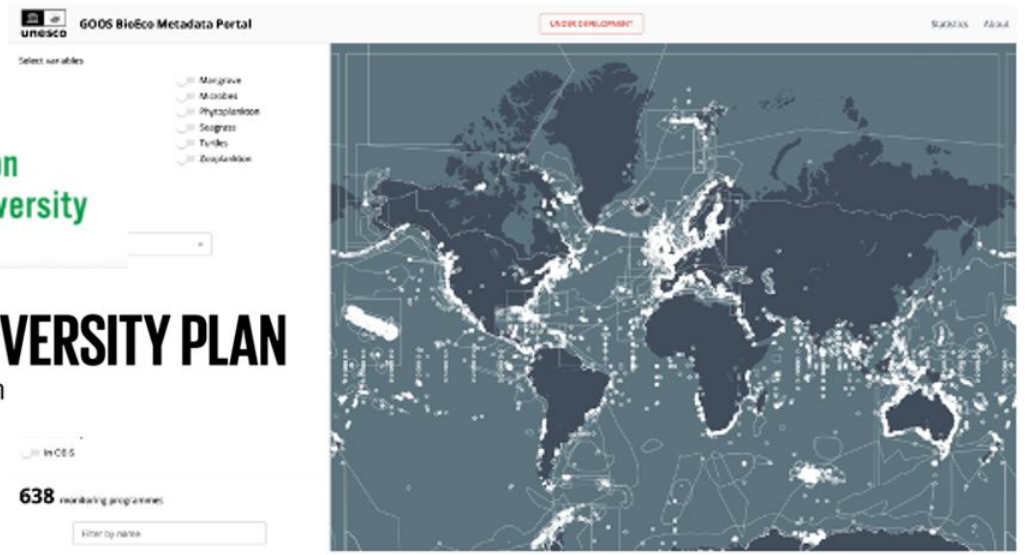
unesco
Intergovernmental Oceanographic Commission




Support monitoring the implementation of the CBD Global Biodiversity Framework

Convention on Biological Diversity

THE BIODIVERSITY PLAN
For Life on Earth




Website: bioeco.goosocean.org

# OBIS supports

**... to enable science-based decision making**

Any questions?

Reach out to me at
w.appeltans@unesco.org