

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE WANT

10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)

The Data we need for the Ocean we care for

9th April 2024, 17.00-18.30
World Trade Center, Room S9+S10

WELCOME
We start at
17:00 CEST



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2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development

The Data we need for the Ocean we care for

Data collection, analysis and application are key enablers for ocean data innovation. Data integration/ interoperability is needed.

Today we will deep dive into cases of success in data sharing practices from European research infrastructures, and how to maximise this potential at global level for contributing to the SDGs and the Digital Twins of the Ocean programmes.



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Keynote



Andreea Strachinescu

Head of Unit, Directorate-General for Maritime Affairs and Fisheries, European Commission

Data Management for achieving UN SDGs



Dick Shaap

MARIS, Blue-Cloud Technical Coordinator



Oriol Prat Bayarri

Universitat Politècnica de Catalunya (UPC)

Best practices and training opportunities for global ocean research



Rebecca Zitoun

OBPS UN Ocean Decade Programme



Ana Carolina Mazzucco

OTGA Secretariat, UNESCO IOC Programme Office for IODE

Towards Digital Twins of Oceans



Alain Arnaud

Digital Ocean Department, Mercator Ocean International



Fei Chai

Xiamen University, China



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EU Research and innovation in support of blue economy

Keynote speech

Andreea Strachinescu

Head of Unit, Directorate-General for Maritime Affairs and Fisheries, A1: Maritime Innovation, Marine Knowledge and Investment - European Commission



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Topic 1: Data Management for achieving UN SDGs

Dick Schaap, MARIS and Blue-Cloud 2026 Technical Coordinator
Oriol Prat, Universitat Politècnica de Catalunya (UPC) and OBSEA



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Zoo and Phytoplankton EOV Products Virtual Lab

Developed by the [Flanders Marine Institute](#), in collaboration with the [Faculty of Science and Engineering at Sorbonne University](#) and [GeoHydrodynamics and Environment Research at the University of Liège](#).

[Access the VLab](#)

Zoo & Phytoplankton Essential Ocean Variable products

A description of the current state of the plankton communities to forecast their evolution. 3 services to generate:

- **zooplankton products** based on in situ observations in the North-East Atlantic;
- global ocean three-dimensional (3D) key phytoplankton products of **chlorophyll-a (Chla) concentration**;
- a mechanistic **model of phyto & zooplankton interactions** using near real-time data

It is useful for:

- **Fisheries advisory organisations** to study the availability of food resources for fish stocks
- **Marine policy officers** to address threats such as food insecurity
- **Fundamental research** contributing to the understanding of the environmental conditions and top-down factors at new scales of observations



Fish detection and classification at OBSEA

Oriol Prat, Pol Baños and Enoc Martínez

Universitat Politècnica de Catalunya (UPC) and OBSEA
iImagine



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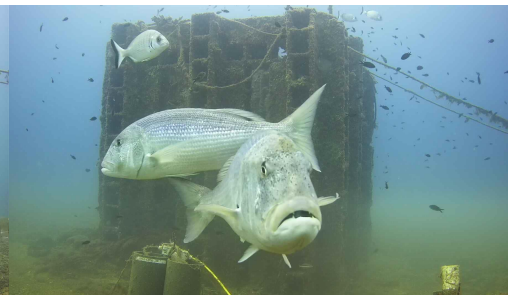
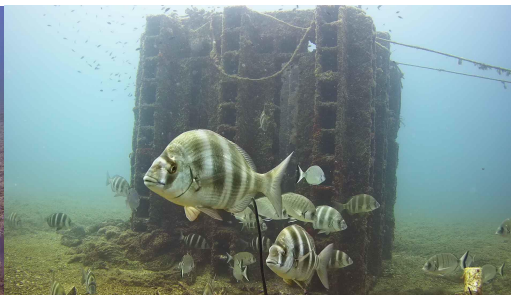
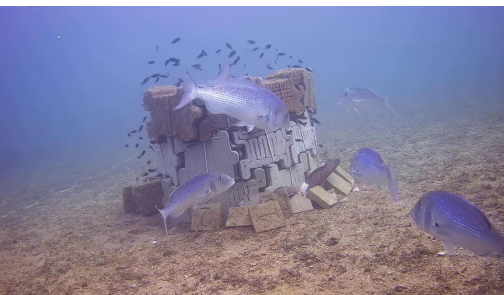
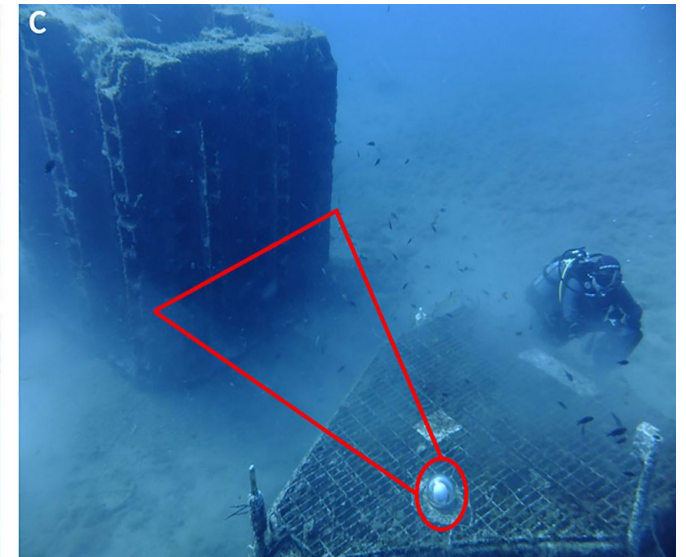
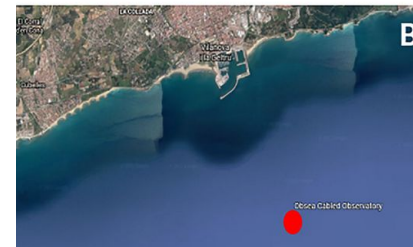
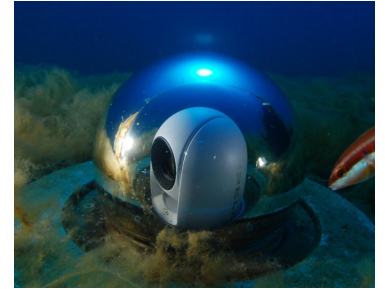
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OBSEA Seafloor Observatory

- Underwater cabled observatory
- Multiparametric data
- Located at NW Mediterranean Sea
- Shallow waters (20 m depth)
- Image archive since 2011
- Fish abundance & behaviour studies



Traditional Ecological Monitoring

Underwater pictures

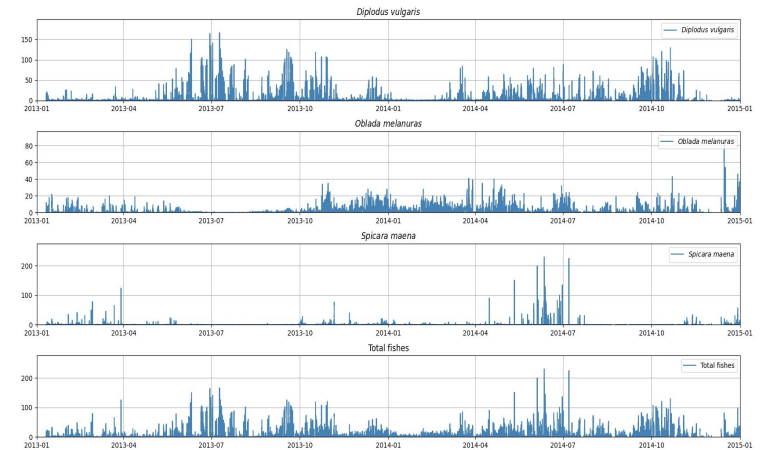


Manual fish counts

Screenshot of a spreadsheet titled "obaa_fish_counts_2013_14.xlsx" in LibreOffice Calc. The spreadsheet shows a table with columns for Date/Time and various fish species. The data is as follows:

Date/Time	D. vulgaris [I]	D. sarus [I]	D. pinnace [I]	D. cervinus [I]	D. annularis [I]	O. melanura [I]	D. dentex [I]	S. aurata [I]
2013-01-10T15:00:29	6	3	0	0	0	0	0	0
2013-01-10T15:30:31	10	1	0	0	0	0	0	0
2013-01-10T16:00:29	1	0	0	0	0	0	0	0
2013-01-10T16:30:25	1	0	0	0	0	0	0	0
2013-01-10T17:00:24	0	0	0	0	0	2	0	0
2013-01-10T17:30:25	0	0	0	0	0	0	0	0
2013-01-10T18:00:28	0	0	0	0	0	0	0	0
2013-01-10T18:30:24	0	0	0	0	0	0	0	0
2013-01-10T19:00:28	0	0	0	0	0	0	0	0
2013-01-10T19:30:26	0	0	0	0	0	0	0	0
2013-01-10T20:00:33	0	0	0	0	0	0	0	0
2013-01-10T20:30:25	0	0	0	0	0	0	0	0
2013-01-10T21:00:25	0	0	0	0	0	0	0	0
2013-01-10T21:30:25	0	0	0	0	0	0	0	0
2013-01-10T22:00:25	0	0	0	0	0	0	0	0
2013-01-10T22:30:24	0	0	0	0	0	0	0	0
2013-01-10T23:00:25	0	0	0	0	0	0	0	0
2013-01-10T23:30:25	0	0	0	0	0	0	0	0
2013-01-11T00:00:25	0	0	0	0	0	0	0	0
2013-01-11T00:30:25	0	0	0	0	0	0	0	0
2013-01-11T01:00:24	0	0	0	0	0	0	0	0
2013-01-11T01:30:25	0	0	0	0	0	0	0	0
2013-01-11T02:00:25	0	0	0	0	0	0	0	0
2013-01-11T02:30:24	0	0	0	0	0	0	0	0
2013-01-11T03:00:25	0	0	0	0	0	0	0	0
2013-01-11T03:30:25	0	0	0	0	0	0	0	0
2013-01-11T04:00:24	0	0	0	0	0	0	0	0
2013-01-11T04:30:25	0	0	0	0	0	0	0	0
2013-01-11T05:00:24	0	0	0	0	0	0	0	0
2013-01-11T05:30:25	0	0	0	0	0	0	0	0
2013-01-11T06:00:25	0	0	0	0	0	0	0	0
2013-01-11T06:30:25	0	0	0	0	0	0	0	0

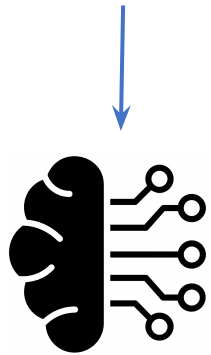
Spreadsheet with counts



Abundance time-series

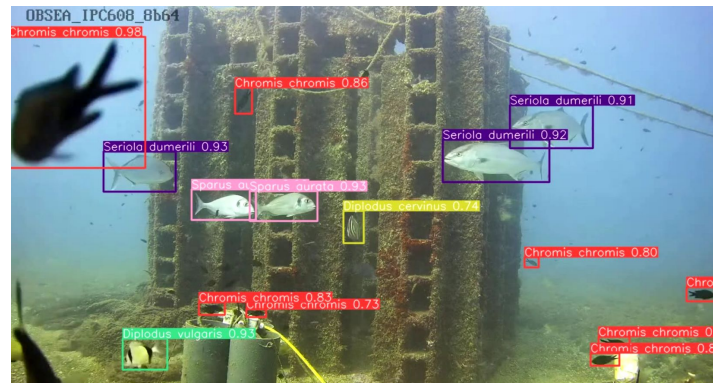
AI-based Ecological Monitoring

Underwater pictures

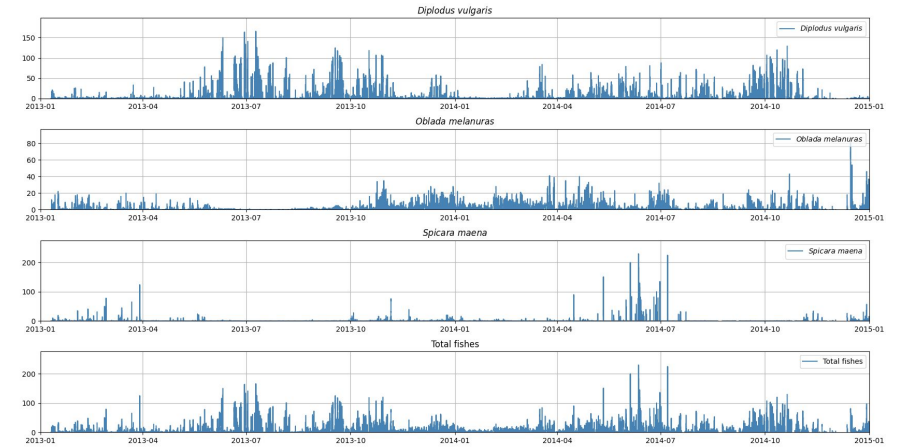


AI model (object detection)

Store predictions



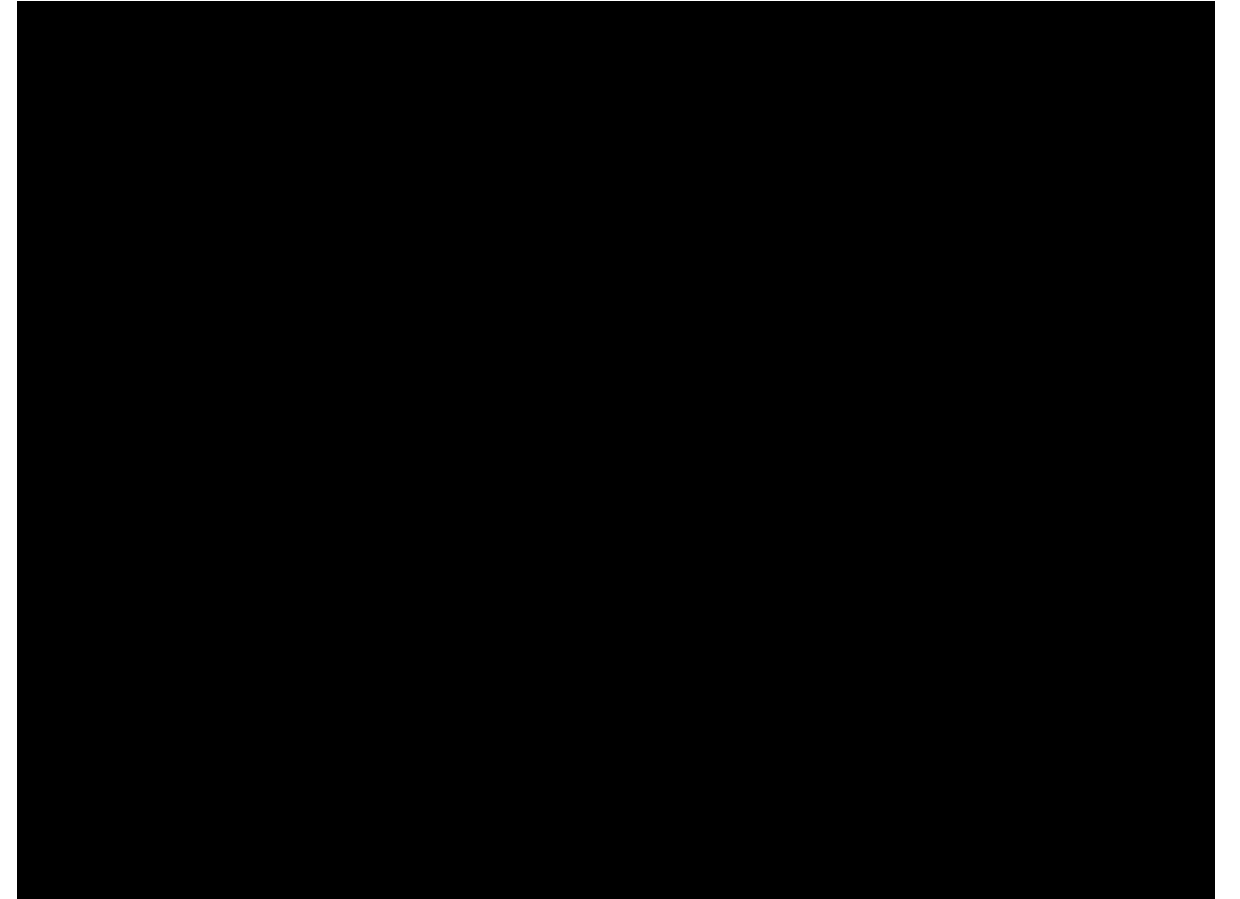
Detections



Abundance time-series

Let scientist do science, not count fish!

Some Results



SCAN ME



AI Applications for SDN

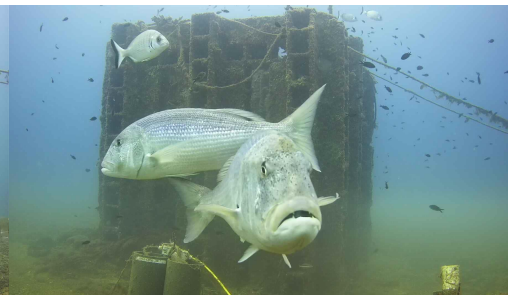
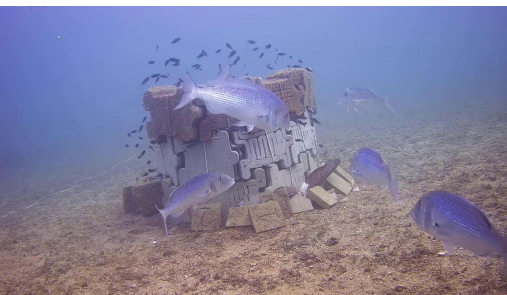


SDN 13: "Take urgent action to combat climate change and its impacts"

- Detect fish community changes due to Climate Change

SDN 14: "Conserve and sustainably use the oceans, seas and marine resources for sustainable development"

- Monitor biodiversity to assess ecosystem health
- Impact of Marine Protected Areas (MPAs)



Topic 2: Best practices and training opportunities for global ocean research

Rebecca Zitoun, Coordinator, OBPS UN Ocean Decade Programme: 'Ocean Practices for the Decade'

Ana Carolina Mazzuco, OTGA Secretariat, UNESCO IOC Programme Office for IODE



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OCEAN TEACHER GLOBAL ACADEMY

Delivering IOC capacity development
for the ocean we need for the future we want

“Expand, empower, and mobilize global communities to advance and maintain the ocean digital ecosystem” require big waves of knowledge sharing, guidance, and high-quality learning opportunities.



OTGA TRAINING COURSES



Topic 3: Towards Digital Twins of Oceans

Alain Arnaud, Digital Ocean Department, Mercator Ocean
International

Fei Chai, Xiamen University, China

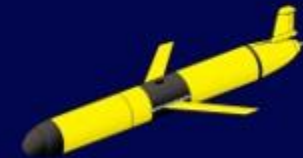
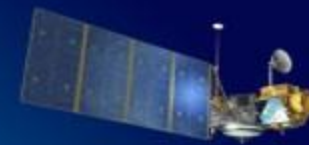


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Digital Twin of Xiamen Bay (Preliminary Version)



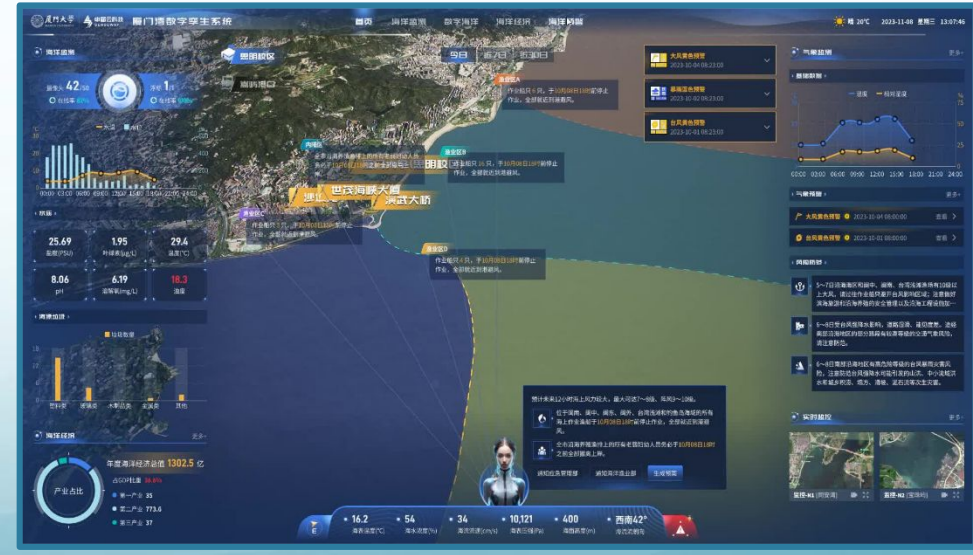
Port Operation Module



Garbage Drifter Prediction Module



Intelligent Prewarning Module



Any questions?



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THE END 😊
Thank you for
joining us!

Cocktail starting at
18:30