

PIM

INTERDISCIPLINARY PROJECTS



Projects created with local professionals and stakeholders around cross-cutting issues.

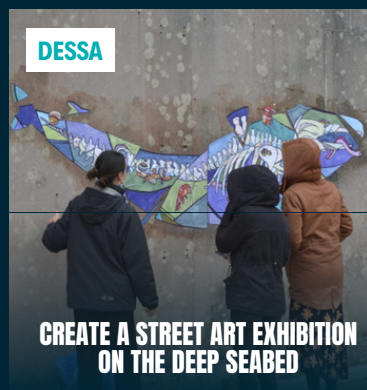


Groups of 12 marine science and engineering students come together for 1 week to carry out projects.



Active teaching and a cooperative approach to help them develop cross-disciplinary skills and an interdisciplinary culture.

EXEMPLES

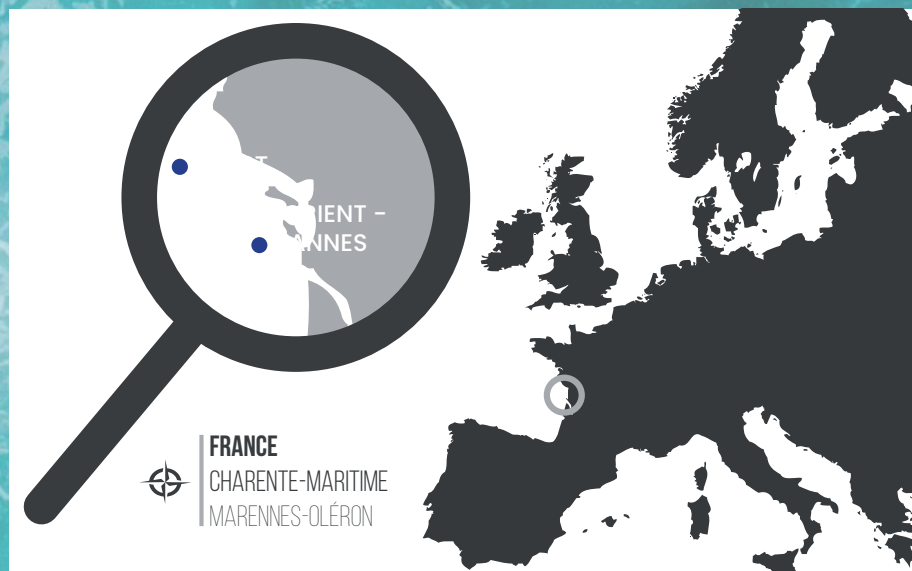


SCAN QR CODE

TO KNOW MORE ABOUT THESE PROJECTS AND DISCOVER MORE
OR GO TO [HTTPS://ISBLUE.FR/EN/TRAINING-WITH-ISBLUE/PIM-INTERDISCIPLINARY-PROJECTS/](https://isblue.fr/en/training-with-isblue/pim-interdisciplinary-projects/)

CONTACT US

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13 RESEARCH UNITS

Amure
CENTRE DE DROIT ET D'ÉCONOMIE DE LA MER

Management of uses of resources and marine and coastal areas

Ifremer
DYNECO
Dynamiques des Écosystèmes Côtiers

Coastal Ecosystem Dynamics

geo-ocean
CNRS | Ifremer | UBO | UBS

Marine Geosciences (Ifremer - UBO - UBS)

IRDIL
Institut de Recherche Dupuy de Lôme

Mechanical systems in marine environments

IRENAV

The French Naval Academy Research Institute

Lab-STICC

Science and Technology and Techniques of information, communication and Knowledge

LBCM
Laboratoire de Biotechnologie et Chimie Marines

Marine Biotechnology and Chemistry

beep
Biologie et Écologie des Écosystèmes marins Profonds

Biology and Ecology of Deep Sea Ecosystems

LEMAR
laboratoire des sciences de l'environnement marin
UBO | CNRS | IRD | Ifremer

Marine Environmental Science

LETG
Coastal, Environment, Remote sensing, Geomatics

Ifremer
Recherches et Développements Technologiques

Technology R & D

LOPS

Ocean Physics and Satellite remote sensing

Ifremer
Unité HALGO

Fisheries Science and Technology

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The interdisciplinary
graduate school
for the blue planet

www.isblue.fr



To join the mailing list or for any other questions,
contact the team at contact.isblue@univ-brest.fr

INTRODUCTION

ISblue, « the Interdisciplinary graduate School for the Blue planet » is the only *École Universitaire de Recherche (EUR)* in France specialised in marine science and technology that is dedicated to train a new generation of researchers, engineers and managers.

This graduate school is funded within the framework of the French government's programme «Investing for the Future» and is based on close collaboration with international research organisations and economic actors.

ISblue represents nine institutional partners and fifteen research units cooperating with the same ambition to address global issues related to the ocean.

This innovative project confirms the leadership of higher education in western Brittany and gives it the means to expand its international outreach.

KEY FIGURES



21,8M€ / 10 years

FUNDING PROGRAMME :
INVESTING FOR THE FUTURE
(PIA)



190
RESEARCHERS

200
LECTURER -
RESEARCHERS



230

PhD
STUDENTS



400

MASTER'S &
ENGINEERING STUDENTS

RESEARCH THEMES

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1

Ocean and climate
regulation

Ocean-Earth interactions

2



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© Frédérique Le Mouillour

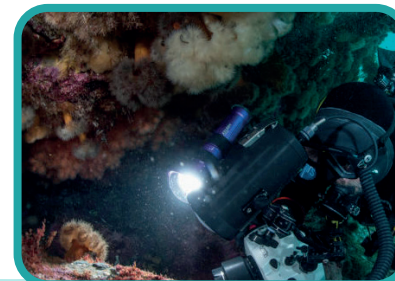


3

Sustainable
coastal systems

The living ocean
and ecosystem services

4



© Erwan Amice - CNRS

© Sébastien Hervé - UBO



5

Long term observing
systems
for ocean knowledge

CALLS FOR PROJECTS

TRAINING

- Masters mobility
- PhD student mobility
- PhD's
- Training projects
- Workshops
- Scientific mediation
- Innovative methods

RESEARCH

- Research at sea
- Flagship projects
- Emergence of innovative projects
- Proposal for research themes
- International post-docs
- Invited professors

TRAINING

Capitalise on the pedagogical expertise of ISblue partners

- 1. Opening up** to the international scene through the mobility of students, young researchers and support for thesis co-supervision.
- 2. Innovate** in teaching by integrating, through research, active pedagogical practices by associating interdisciplinarity and taking into account societal issues.
- 3. Develop** digital technology by offering open online training (MOOC, SPOC) and innovative devices such as virtual reality for training courses.
- 4. Promote** scientific mediation initiatives to raise awareness to ocean science through thematic schools for various audiences.

HUB

Talent connector and catalyst for innovation.

- 1. Linking socio-economic partners with academic excellence and research.** Through an open approach to diversity, we strengthen the professionalisation of students by offering a unique learning and experimentation space, a source of scientific dynamism and value creation.
- 2. Exploring the possibilities to meet the needs of a sustainable, inclusive and blue growth.** In a world of transitions (ecological, energetic, digital and societal), the Hub federates the actors of change and mobilises collective and participative intelligence in order to imagine solutions in response to the challenges of ocean innovation.

SeaTube

Watch, annotate, and share ocean video data

SeaTube offers visitors a window to a subsea world, and is easily accessible from the Ocean Networks Canada (ONC) website. SeaTube is an open-access, web-based video archive and annotation tool designed for researchers, educators, and the public to discover, describe, and share underwater video data.

Live dives and historic videos recorded by remotely operated vehicles (ROVs), subsea, and shore cameras are streamed, archived, and synchronized with associated sensor data and annotations, providing a centralized platform that transforms raw video data into a rich repository benefitting science, society, and industry.

SeaTube's telepresence capacity enable real-time remote participation, allowing authorized users to annotate collaboratively from anywhere in the world.

Who can use SeaTube?

Expedition participants (at-sea and on-shore): annotate live ROV videos in real-time with collated taxonomy-referenced contributions.

Researchers: access annotated video data that is structured, searchable, and downloadable in various formats.

Educators and students: curate custom playlists from ROV dive footage and ONC's suite of fixed underwater and shore cameras.

Ocean fans: explore vast underwater video archives from the National Oceanic and Atmospheric Administration (NOAA), Fisheries and Oceans Canada (DFO), and ONC expeditions.

Key Features



Web-based No software installation required and accessible from any browser.



Telepresence Authorized users can participate in data annotation in real-time or post-expedition, from anywhere.



Annotations Structured entries with taxons, attributes, and free-form comments.



Context ROV video playback is accompanied by maps showing location and readings from connected sensors including temperature, salinity, and oxygen.



Searchability Filter, search, bookmark, and export data in multiple formats.



Customizable user interface Customizable layout to optimize user experience.



Shareable Curate and download custom playlists for research, education, and outreach.



Compatibility Supports all modern video formats and streaming sources and enables synchronization of remote streams from any location.

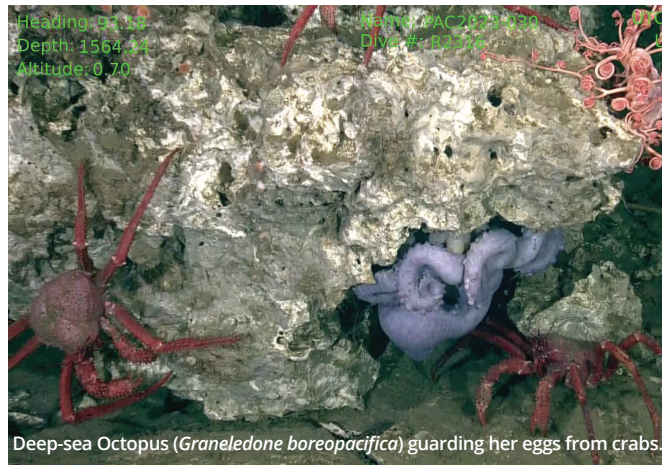


Offline mode Operates as a fully functional stand-alone "on-ship" system and synchronizes data, metadata, video, and annotations to an "onshore" system when internet connectivity is available.

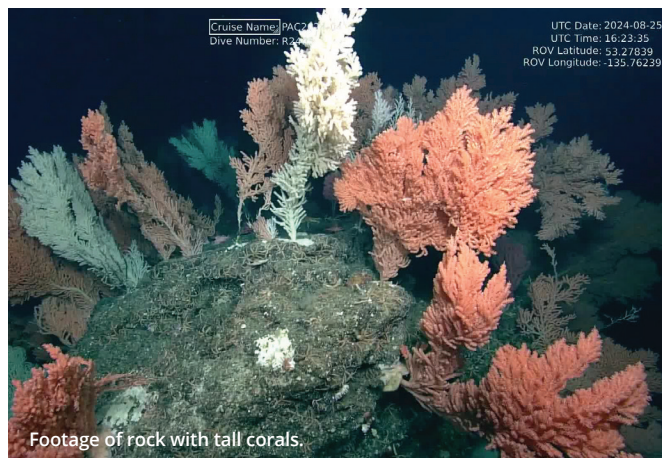
Explore existing video collections on SeaTube

National Collaborations

The decision to establish the Tang.gwan – ȥačxwĩqak – Tsigis Marine Protected Area (TȥT MPA) in 2024, was informed by valuable data including those collected during DFO Pacific Seamount Expeditions. Since 2016, ONC has supported these exploration efforts, archiving video, sensor data, and annotations on SeaTube, where they remain accessible for ongoing research and conservation initiatives.



SeaTube has also been integrated into expeditions led by the NorthEast Pacific Deep-sea Exploration Project (NEPDEP), a United Nations Ocean Decade and Challenger 150 endorsed project. NEPDEP is a collective of scientists, communicators, and marine planning professionals from federal and Indigenous governments, non-profit institutions, and academia.

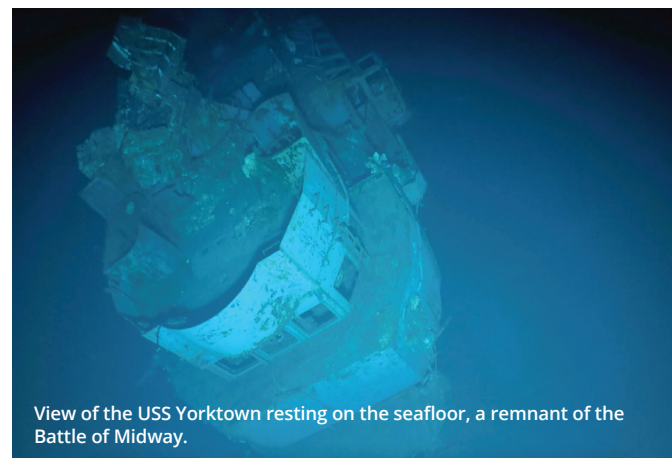


International Collaborations

SeaTube has archived more than 4,500 hours of ROV dive footage and over 300,000 annotations from NOAA Ocean Exploration expeditions. This includes the integration of all ROV *Deep Discoverer* exploration expeditions aboard the E/V *Okeanos Explorer* since 2016.



SeaTube is also helping to drive a collaborative global understanding of subsea maritime cultural heritage, including rare glimpses at underwater archeological sites from World War II. In partnership with the NOAA and Ocean Exploration Trust (OET), 73 hours of visual surveys of historic shipwrecks from the Battle of Midway in the Central Pacific Ocean are now available on SeaTube. The platform's built-in features enables the public to explore these deep sea sites, and for the international archeological community to collaboratively annotate these important historical records.



Scan the QR code to access SeaTube!

#KnowTheOcean | oceannetworks.ca | [f](#) [@](#) [in](#) [X](#) [®](#) [v](#)

ONC is one of Canada's Major Research Facilities and is an initiative of the University of Victoria.

Ocean Data Exploration Tools

Browse, hear, plot, and download new real-time data from the near-shore to deep-sea with Oceans 3.0

Use Oceans 3.0 to find, visualize and download high-quality data from thousands of scientific instruments deployed in the deep sea and coastal waters of the Pacific, Atlantic, Arctic coasts of Canada and the Southern Ocean, by Ocean Networks Canada (ONC).

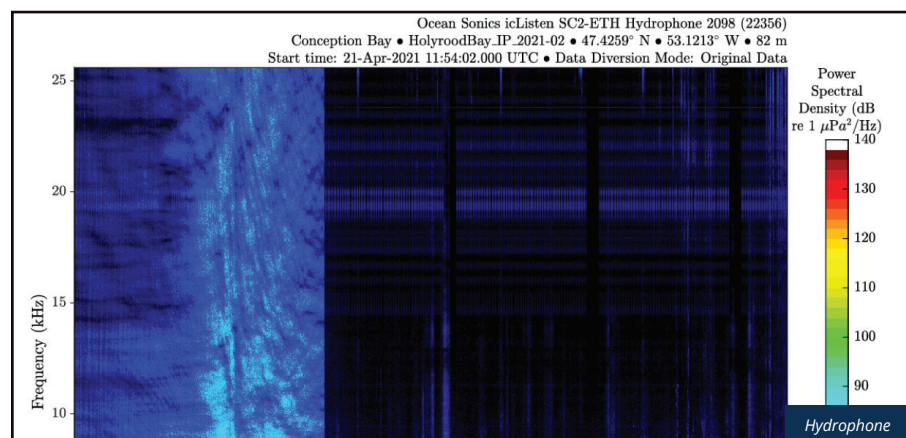
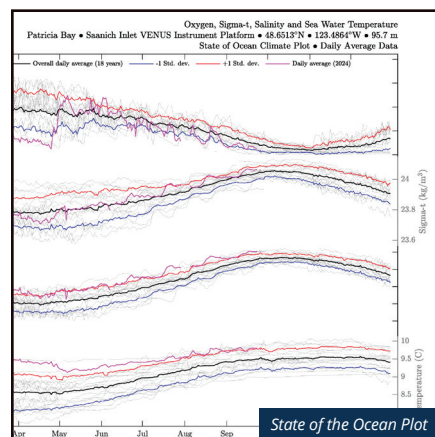
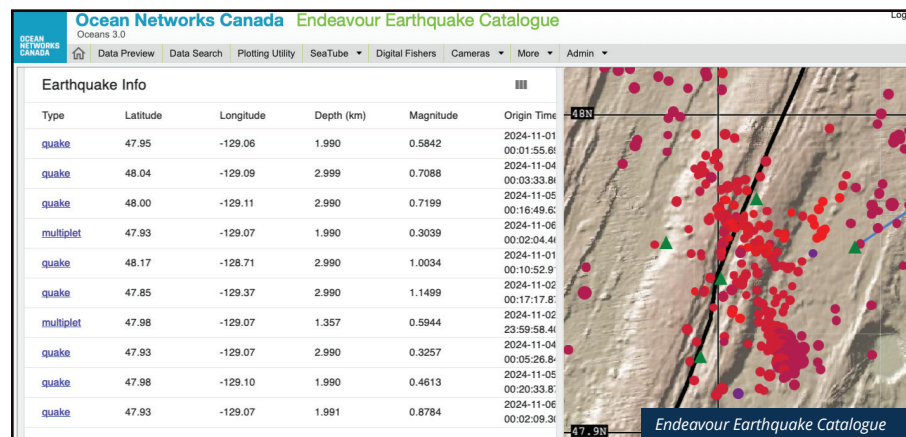
ONC's world-leading ocean observatories generate 'big data' in the form of high-resolution sensor measurements, video, and underwater sound

recordings. This ocean data is freely available and accessible from anywhere in the world via ONC's data management portal, Oceans 3.0.

Discover what is happening beneath the surface in near real time, and compare the latest conditions with long-term time series data.

All Kinds of Data

Oceans 3.0 provides 400 data formats, many with custom processing options.



By the numbers

- 12000+ active sensors
- 10000+ pre-generated plots produced daily
- 10500+ average daily data requests
- 410 GB average volume of uncompressed data archived per day
- 1.7 PB total uncompressed volume of archived data

Your Ocean Data Workbench

Data Preview: one-click access to 10,000+ pregenerated plots, updated daily.

Data Search: browse, process and download data products from instruments and time series throughout the entire 1.7 PB archive.

Plotting Utility: interactively visualize readings from thousands of instruments over time.

SeaTube: a video window to a subsea world, with underwater recordings from dozens of seafloor cameras and over 45,000 hours of expedition dive footage recorded by remotely operated vehicles.

Hydrophone Viewer: displays thumbnail spectrograms of archived recordings from ONC's 180+ hydrophones.

Community Fishers Map: browse, preview, and download data from thousands of vertical casts in Canada's coastal Pacific, Arctic and Atlantic regions.

Dashboards: integrate data from different instruments into a single dynamic display.

ERDDAP Server: a simple, consistent way to download subsets of scientific datasets in common file formats, enabling interoperability.

Oceans 3.0 Open API: helps you form web service queries to request and access data from your own code or through our client libraries.

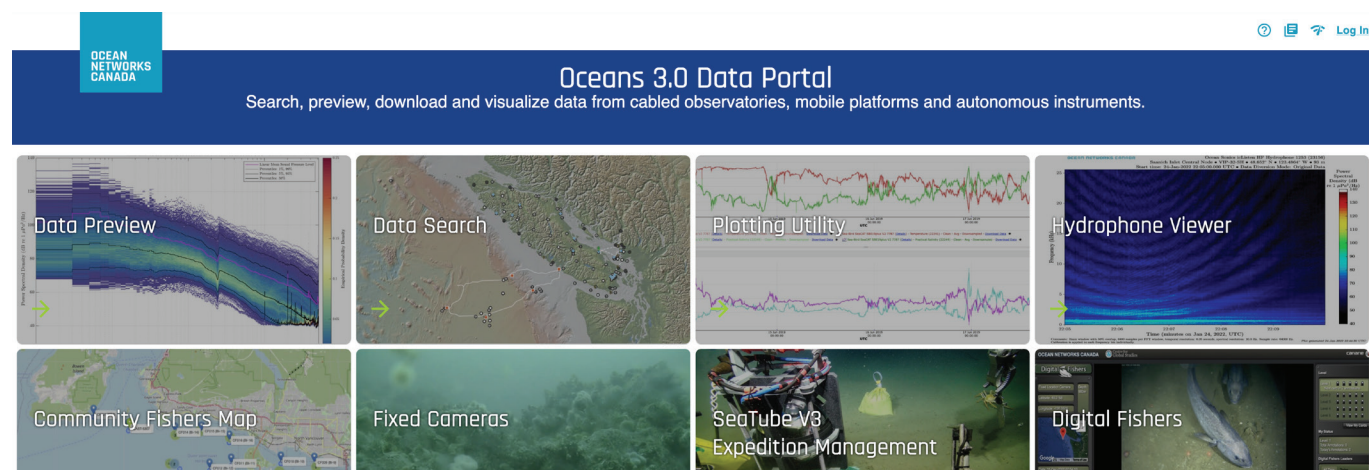
Data Citations: cite specific Oceans 3.0 datasets with a persistent identifier (DOI), enabling reproducibility and transparency.



Carefully Managed Metadata

The full data lifecycle is represented in Oceans 3.0, including all information about locations and instrumentation – collectively known as metadata. Metadata accompanies all data products and viewers and users contribute metadata through annotations.

Oceans 3.0 also integrates automated and manual quality assurance and quality control features.



Dive in...

Visit data.oceannetworks.ca or scan the QR code to access Oceans 3.0. For more information, demos and help, visit <https://wiki.oceannetworks.ca/display/O2KB>

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