



CIOOS
CANADIAN INTEGRATED
OCEAN OBSERVING SYSTEM

Biological Data across CIOOS

US-IOOS Advancing Marine Life Data Management

Jon Pye

Director of Data Operations - Ocean Tracking Network

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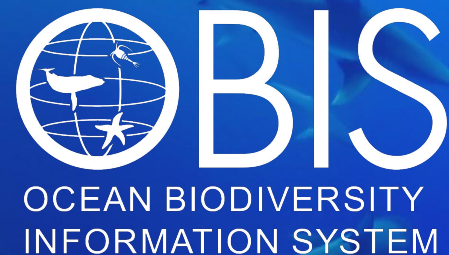
June 16th, 2021

Funded by :



Fisheries and Oceans
Canada

Pêches et Océans
Canada



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CIOOS and its Regional Associations



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Fisheries and Oceans Canada
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Hakai



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SLGO

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MARINE INSTITUTE

COINAtlantic
COASTAL AND OCEAN INFORMATION NETWORK



Memorial
University of Newfoundland

OCEAN
TRACKING NETWORK

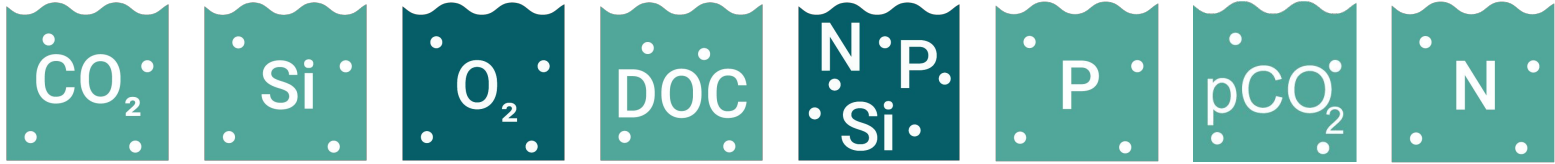
OCEAN
FRONTIER INSTITUTE



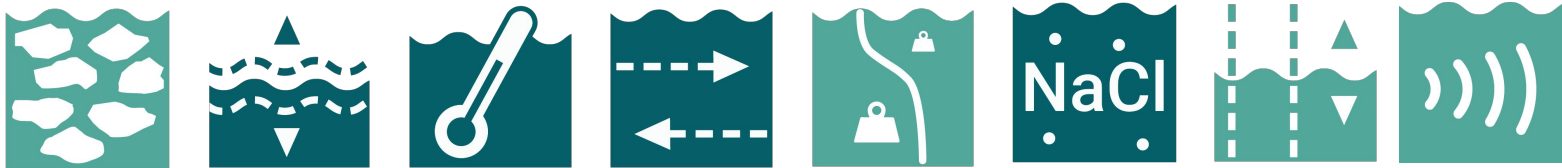
DALHOUSIE
UNIVERSITY

Essential Ocean Variables (EOVs) in CIOOS Phase II (2020)

Biochemical



Physical



Biological (Coming Soon)

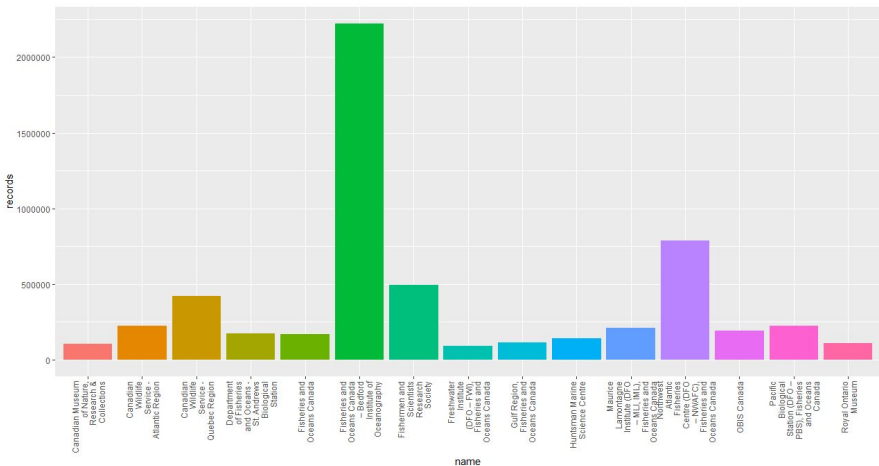


CIOOS, OBIS Canada, and OBIS

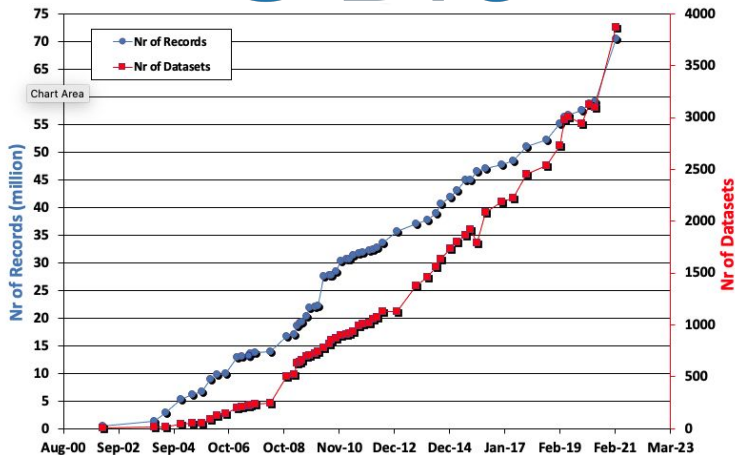


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 **OBIS Canada**



 **OBIS**



OBIS as a conduit for partnerships

- Across OBIS nodes and themes
 - Global perspectives and resource-sharing
- Task teams and working groups
 - Contribution creates opportunity to express needs for our regions and have them addressed.
- Leverage OBIS / IODE / IOC partnerships
 - GBIF
 - TDWG Data Quality IG
 - GOOS BioEco / GEOBON MBON



This collaboration between GOOS BioEco, OBIS and GEOBON MBON will build a unified and globally consistent observing system that will: strengthen the three initiatives; make use of the best available resources; share expertise; and ensure compatibility between outputs and advice from the three initiatives.

Letter of Agreement which recognizes IUL-UNESCO as a GBIF Affiliate.

OBIS/GBIF: <https://bit.ly/3iEFa9s>
OBIS/GOOS/GEOBON: <https://bit.ly/2RZbXLv>

Contributions to international standardization efforts

- The Standardizing Marine Biological Data group
 - Meetings and collaborative support
 - Guest lecturers
 - the IOOS Bio Data Guide https://ioos.github.io/bio_data_guide/intro.html
https://github.com/ioos/bio_data_guide
- Metadata standard-building initiatives for new or nascent data collection methods
 - TDWG Machine Observation Interest Group <https://www.tdwg.org/community/mobs/>
 - OBIS genetic data project team: <https://github.com/iobis/Project-team-Genetic-Data>
- Participation in designing data pipelines
 - GOOS emerging network for animal-borne ocean sensors <https://anibos.com/>



Beyond OBIS Biological Data

Instrument-data that supports EOVs, such as

- Chlorophyll measurements from fluorometers
 - this type of time series data already fits well within our data infrastructure although key words need some additional effort. Example: https://catalogue.cioospacific.ca/dataset/mobilesurface_1195884
- Bio-acoustic echosounders (e.g., ASL AZFPs, BioSonics Echosounder)
 - high-volume data, ERDDAP suitability to be evaluated
 - perhaps some inspiration from Australian efforts
 - https://imos.org.au/fileadmin/user_upload/shared/SOOP/BASOOP/SOOP-BA_NetCDF_Conventions_Version_2.2.pdf
 - <https://portal.aodn.org.au/search?uuid=8edf509b-1481-48fd-b9c5-b95b42247f82>
- Hydrophones
 - high volume, not ideally suited for ERDDAP
 - Ocean Sound EOV Implementation Committee - spec sheet published
 - Cues on data pipeline design and data delivery to take from SanctSound?



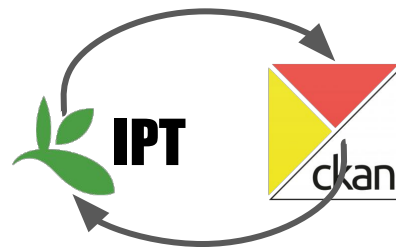
Near-term technical goals

What we've been doing

- CIOOS technical staff completed OBIS training alongside the 2020 DFO cohort
 - ongoing collaboration with SMBD group and OBIS task teams
 - Learning to apply libraries for data transformation into OBIS format and QC of biological datasets from regional providers
- Reps from each region on the CIOOS Metadata Task Team designed and profiled a broad range of use cases for ingestion by CIOOS

What we want to do next

- Better interactivity between the IPT system and the CIOOS stack
 - Making IPT-expressed data discoverable with the CIOOS CKAN
 - Mapping CIOOS Metadata Profile into EML (and back)
- Multilingual support throughout the metadata collected/expressed by CIOOS and OBIS Canada
- Development IPTs at DSN and Regional Associations
- Linking of OBIS datasets in CIOOS catalogue
 - Related assets that aren't storeable in OBIS can be linked to CIOOS records





SLGO ^{oca}
**St. Lawrence
 Global Observatory**

Active members (data providers)



Pêches et Océans Canada
 Fisheries and Oceans Canada



Environnement et
 Changement climatique Canada
 Environment and
 Climate Change Canada



COMITÉ PERMANENT
 SUR LA SÉCURITÉ DES BATEAUX
 DE PÊCHE DU QUÉBEC





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Associate and observer members (data users/supporters)



centre de recherche sur les biotechnologies marines



Cégep de Rimouski



Integrated Ocean Observing System



OrganicOcean



Agence spatiale canadienne

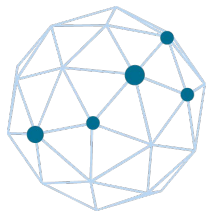
Canadian Space Agency



Développement économique Canada
 Canada

Canada Economic Development





CIOOS PACIFIC

REGIONAL ASSOCIATION OF THE
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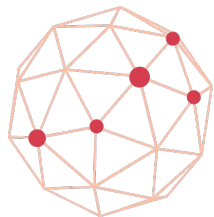
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CIOOS ATLANTIC

REGIONAL ASSOCIATION OF THE
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Preparing for the future

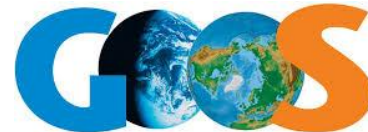


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IOOS
Integrated Ocean
Observing System



The Global Ocean
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Thank You

Questions?



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