Portage Webinar

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OVERVIEW:

- Why are we here?
- CIOOS overview
- CIOOS benefits
- Data Management: the FAIR way
- Website tour
- Looking ahead
Who am I speaking with?

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a. Academic Librarian
b. Researcher
c. Data specialist
d. High performance computing
e. Other
From the West Coast, to the St. Lawrence, to the Atlantic

Source: DFO 2017; Pendleton et al. 2018; Visbek 2018; WWF 2020
A Tsunami of (Scattered) Ocean Data

Source: Santos et al. 2019
International motivation

Source: https://www.goosocean.org/index.php?option=com_content&view=article&id=83&Itemid=121
● **National collaboration** to share, discover and access ocean data
● Works **across sectors** to bridge Canada’s ocean observing community
● **National and regional data portals** provide free and easy access to ocean and coastal data and information
● Uses **internationally recognized data standards** and digital infrastructure
● Three Regional Associations in the **Pacific, St. Lawrence, and Atlantic**
- Ocean disciplinary data repository
- Dedicated Engagement Team
- Data management support tools
- CIOOS metadata standards
- CC-BY open data license increases attribution of research
- Reduce duplication, storage redundancy, wasted resources
- Support open ocean sciences and applications
What brought you to this webinar?

a. General curiosity
b. I work with or support coastal and ocean research
c. I am a coastal and ocean researcher
d. Learn about the CIOOS data management approach
e. Understand the value of a domain specific repository
CIOOS

Research Data Management

Gathering Data
Planning
Compliance
Working with Data
Archiving Data

SHARING DATA
Adopted

- **ISO 19115 series** - v1 profile in use, v2 profile underway (includes guidance for DataCite DOI, ORCID and ROR integration),
- **CKAN** - metadata catalog with customized configuration
- **ERDDAP** (OPeNDAP protocol, non-proprietary data formats such as NetCDF)
- **Controlled vocabularies:** Climate & Format Standard Names, Government of Canada Core Subject Thesaurus, SeaDataNet Device Categories, SeaVoX Device Catalogue, ICES Platform Codes, SeaVoX Platform Categories (details [here](#))

Adopting

- **ISO 19157** - intended to integrate in v3 or later, within next year
- Data policy development based on criteria in [CoreTrustSeal](#)
- Data integration from third parties planned to leverage the [DMP Assistant](#) with a customized template
- OBIS interoperability
Specific Challenges

- **Bilingual** support - limitations for automated and manual translations
- Dataset and collection **granularity** (seeking insights from RDA Task Force within Data Discovery Paradigms IG)
- Integration of data **provenance** (lineage) and **quality** information
- Compatibility with North American Profile (NAP) which is based on the ISO 19115:2003 while we are using ISO 19115:2014
- Interplay with **ERDDAP** and **CKAN** and CIOOS asset map (filtering/sorting)
- Maturity or existence of **community standards** for some data types
- Approach to **publishing profile** publicly (plus include in Ocean Best Practices repository)
- Representation from **diverse data sources** - currently focussed on instrument-based measurements, beginning to address some types of physical samples (e.g., Oxygen from water samples). Model outputs and human/machine observation/annotation based measurements are outstanding.
- **Sensitive data**: endangered species, Indigenous data, military restrictions
Diving deeper into data granularity

Poll: What are the best attributes for aggregating oceanographic datasets?

https://www.sli.do/

Event Code: 93838

Datasets are currently recommended to be one deployment of one instrument, but we need to extend guidance to recognize physical samples, models, and observation-based data sources.

Aggregation choices need to optimize (sometimes conflicting) aims of:

- **Discovery** - sufficiently unique without overwhelming users with too many similar records
- **Access** - compatibility with digital architecture and protocols.
- **Interoperability** - ability to combine data types and formats, consideration for applications harvesting data from distributed/federated repositories
- **Citability** - giving credit appropriately (as per initiatives like [http://credit.niso.org/](http://credit.niso.org/)), ability to obtain comparable data citation metrics
The Value of Open Data: F.A.I.R. Data Principles

F: metadata delivered through CKAN catalog, identifier guidance in progress, (increasingly) rich metadata available in metadata record

A: metadata and data delivery protocols are standardized

I: controlled vocabularies applied, formats are standardized and non-proprietary (ISO 19115, NetCDF)

R: recommend data licensing as CC-BY, community practices incorporated
Interoperability between repositories is key!
Website demo - cioosatlantic.ca home and Asset Map
# Website demo - CKAN dataset view

## Channel-Port Aux Basques Buoy

**A 3 metre diameter meteorological/oceanographic buoy built by AXYS Environmental Technologies of Sidney, British Columbia. The buoy is located at the approaches to Port Aux Basques Harbour in about 50 m water depth. The buoy's purpose is to monitor and transmit in near real time meteorological and oceanographic data in support of operational efficiency, safety and situational awareness for marine transportation. The buoy also provides a continuous data feed in support of the Science and R&D community. The buoy is also equipped with an Aids to Navigation Information System (ATONIS) allowing direct transmission of the buoy data to a ship's bridge.**

### Access and Use

- **License:** This data may be redistributed and used without restriction.

### Data and Resources

- [CRIDAP Data Subset Form](#)

### Dates

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### Metadata Source

- View metadata:
  - XML/JSON
  - Access full metadata here
  - Source last modified December 20, 2019, 11:46 AM (UTC-04:00)
  - Other records harvested from CIOSS Atlantic

### Additional Info

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### Spatial

- North Bounding Latitude: 47.57254669999995
- South Bounding Latitude: 47.5528487
- East Bounding Longitude: -59.12039633
- West Bounding Longitude: -59.08039299999994
- Temporal Extent: Begin: 2013-08-29 End: 2019-12-05
- Vertical Extent: Vertical
- Default Locale: English
- Citation Identifier: Code: SMA_port_aux_basques
- Version:
National Objectives

- Integrate more datasets from new and existing data providers
- OBIS and additional EOV support
- Infrastructure improvements
- Develop targeted data visualizations
- Improve data integration processes
- UI/UX and mobile experience optimization
- Outreach
  - Engagement with federal, provincial departments
  - Ocean industry, Indigenous groups, and academic providers

- Communications
  - Promotional material and social media

- National Web Presence
  - Detailed national user feedback report and improvements
  - Stakeholder engagement, communications plan

- Data Stewardship
  - Biological and genomic dataset support
  - International connections: GOOS, IOOS, MarineGeo, OBIS
Regional Objectives

- **Atlantic**
  - Integration of new providers and two provider workshops
  - Working closely with Indigenous data providers
  - Integration of glider data

- **St. Lawrence**
  - Extensive biological EOV support
  - Development of specialized visualization interfaces.

- **Pacific**
  - Ten site visits with data providers and users
  - Five data provider workshops
  - Integrate ocean model outputs and additional EOVs
What support tools would improve your chances of using or referring CIOOS?

a. Tools that support data integration into CIOOS data standards
b. Tools that support data management
c. Tools for authoring metadata
d. Tools that support visualization
e. Tools for long-term storage
We look forward to answering your questions

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