

# ONC Data Policy

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## Preamble

Ocean Networks Canada (ONC) follows the Government of Canada policies on open data for all data owned by ONC. ONC also follows the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) to help guide policies on open and restricted data hosted at ONC.

The Canadian government policy defines open data as structured data that are “machine-readable, freely shared, used and built on without restrictions.” All data solely-owned by ONC are available free of charge through web services, internet downloads, special requests, and through other internet and user-based access tools. These data are provided under a Creative Commons [CC-BY 4.0 License](#), open and free for anyone to use with attribution.

Data owned or co-owned by a data partner may be subject to alternative licensing such as a Creative Commons [CC-BY-NC](#) license, or a more restrictive license, depending on the established partner agreement with ONC. In some cases, data partners may place restrictions on data they consider sensitive to the public, for which the data are assumed to have “All Rights” Reserved<sup>1</sup>. In such cases where one obtains restricted data, one must abide by the specific agreement made between data owner and user when the conditions to obtain data were met. Distribution conditions and limitations may vary. The limited amount of restricted access data that is not readily accessible may be accessible by request. Approval by data owner(s) is required, usually under an agreement, which may include an administrative fee, with timeline and approval processes at the discretion of the data owner(s). For additional information about data restrictions and process, see the [ONC Data Restrictions](#) page.

Data solely owned by ONC can be re-used and redistributed without restriction, requiring only attribution, including intermixing with other datasets. Mixed re-use of data hosted at ONC with varying open data licenses will inherit the most restrictive data license applied to the component datasets.

ONC-owned data hold no discrimination from access or use against any specific fields of endeavour or against persons or groups. ONC captures and delivers data owned by others. ONC encourages these owners to follow this ONC policy. Should other data owners wish to follow other policies, for example, restricted use, ONC will review the impacts of following other owners’ policies. Approvals of alternative data sharing approaches in ONC’s data management system will be made on a case by case basis. Approvals are made by the ONC Executive and documented in a partner agreement.

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<sup>1</sup> All Rights Reserved”: meaning the data owners can dictate whether data can be distributed, who has access to the data, what can be done with said data, and any timeframes associated with user privileges and access.

This policy is implemented within ONC following principles and best practices as described in the following sections:

- principles;
- data access and usage;
- data citation;
- standards and formats;
- data versioning and provenance;
- preservation and storage;
- metadata and data harvesting; and
- data partnerships.

This document is to be reviewed and updated regularly to ensure data management at ONC continues to follow best principles and practices as they evolve.

## Data Policy Principles

Since 2014, ONC has been a Trusted Data Repository through its [World Data System](#), and is in the review stage of its CoreTrustSeal certification. ONC strives to meet the following sets of community-developed principles through its data and stewardship practices (Table 1).

*Table 1. ONC data and stewardship practices, including sensitive or restricted data*

Principles	Application	Reference
FAIR (Findable, Accessible, Interoperable, Reuseable) Principles	Scientific datasets	Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. The FAIR Guiding Principles for scientific data management and stewardship. <i>Sci Data</i> 3, 160018 (2016). <a href="https://doi.org/10.1038/sdata.2016.18">https://doi.org/10.1038/sdata.2016.18</a>
TRUST (Transparency, Responsibility, User focus, Sustainability, Technology) Principles	Digital repositories	Lin, D., Crabtree, J., Dillo, I. et al. The TRUST Principles for digital repositories. <i>Sci Data</i> 7, 144 (2020). <a href="https://doi.org/10.1038/s41597-020-0486-7">https://doi.org/10.1038/s41597-020-0486-7</a>
CARE (Collective benefit, Authority to control, Responsibility, Ethics) Principles	Indigenous data governance	Carroll, S.R., Garba, I., Figueroa-Rodríguez, O.L., Holbrook, J., Lovett, R., Materechera, S., Parsons, M., Raseroka, K., Rodriguez-Lonebear, D., Rowe, R., Sara, R., Walker, J.D., Anderson, J. and Hudson, M., 2020. The CARE Principles for Indigenous Data Governance. <i>Data Science Journal</i> , 19(1), p.43. DOI: <a href="http://doi.org/10.5334/">http://doi.org/10.5334/</a>
OCAP® (Ownership, Control, Access, Possession) Principles	Practicing Indigenous data sovereignty and governance in Canada	“The First Nations Principles of OCAP®.” The First Nations Information Governance Centre, 2024, <a href="https://fnigc.ca/ocap-training/">fnigc.ca/ocap-training/</a> OCAP® is a registered trademark of the First Nations Information Governance Centre (FNIGC)
National Inuit Strategy on Research (NISR)	Inuit Nunangat research governance	National Inuit Strategy on Research <a href="https://itk.ca/projects/national-inuit-strategy-on-research/">https://itk.ca/projects/national-inuit-strategy-on-research/</a>

Local Contexts Notices and Labels	Expressing Indigenous data sovereignty and governance within Earth Science Data	Local Contexts – Grounding Indigenous Rights. <a href="http://localcontexts.org/">localcontexts.org/</a>
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## Data Licenses, Rights and Practices

As described in the preamble, and in principle, data collected and solely-owned by ONC are provided under a Creative Commons CC-BY 4.0 International License, ensuring this data is open and free for anyone to use with attribution. Data owned, or co-owned, by a data partner may be subject to alternative licensing, such as Creative Commons CC-BY-NC-4.0, depending on the established agreement. While ONC generally recommends all data be publicly available, there may be ethical or other sensitive reasons for restricting datasets to a specific set of users.

For a particular dataset, data licensing and use constraint details are found with dataset metadata. Datasets may be considered sensitive if they relate to Indigenous partnerships, personally identifying information, endangered or threatened species protection, military concerns or technology demonstration activities. Data may be temporarily restricted while undergoing testing and development of data products and/or verification of quality, as per [Data Product Best Practices](#). In effect, the datasets hosted at ONC are **“as open as possible, as closed as necessary.”** For the rare situations where data restrictions are imposed, the embargo may be for the entire dataset, specific subsets, or most recent data (e.g., last 4 hours). Data-delay embargoes, nominally used for threatened species protection, may not be mentioned within the dataset records and will appear open to users. Restricted datasets generally do not have an open data license as data owners also usually require “All Rights” to be reserved. ONC’s data access interfaces and services are generally designed to show the existence of datasets, even if access to the datasets requires specific permissions. Requests to access any restricted datasets will be evaluated on a case by case basis, by the data owner(s). ONC will oblige feasible requests from data owner(s) in support of Indigenous Data Sovereignty and Governance to modify licenses, rights and access restrictions associated with their datasets; this includes recalling restricted data accessed under the condition of “All Rights Reserved”.

Table 2. Commonly used open data licenses and dataset rights at ONC.

License/Right	Brief Definition	Links
CC-BY-4.0	Data are free and open to use with full attribution back to the original dataset. A dataset DOI is available to openly cite.	<a href="https://spdx.org/licenses/CC-BY-4.0.html">https://spdx.org/licenses/CC-BY-4.0.html</a>
CC-BY-NC-4.0	Data are free and open to use for non-commercial purposes. Attribution must be given back to the original dataset. A dataset DOI is available to openly cite.	<a href="https://spdx.org/licenses/CC-BY-NC-4.0.html">https://spdx.org/licenses/CC-BY-NC-4.0.html</a>
“All Rights Reserved”	Data are otherwise unavailable to the general public. Permission to use data must be granted by the data owners via ONC’s Restricted Data Access Requests.	N/A

Note: these are dataset licenses that have been implemented in Oceans 3.0 to date. Others may be added, particularly for third-party datasets, upon request from the owners. ONC multimedia products such as maps, graphics, art, books, images, etc., not hosted on Oceans 3.0 are subject to ONC’s [multimedia policy](#).

## Restricted Data Access Request and Process

In general, restricted data will be made known to the end-user by means of notifications within Oceans 3.0's access interfaces, including but not limited to Data Search, API response, Geospatial Map, etc. Within these notifications, direction will be provided on how to request access to the data. Although *data* may not be publicly available, *metadata* will often be findable and available for viewing. Metadata may be made unavailable in the rare case when a data owner deems information within as sensitive.

## Data Fitness and Use

Data fitness for use depends on the context, purpose and application, and is at the discretion of the end-user. These decisions can be based upon the metadata and data quality information accompanying their data. For any clarifications or additional information, [contact ONC for support](#). Data that has been flagged as poorer quality by ONC is still accessible, since these may be useful in some applications and for troubleshooting purposes.

ONC data are not to be used for navigation. Although these data are of high quality and useful for planning and modelling purposes, they do not meet the requirements of the Charts and Nautical Publications Regulations, 1995 under the Canada Shipping Act, 2001. [Official charts](#) and publications are available from the Canadian Hydrographic Service.

## Login Requirements

While many functionalities of Oceans 3.0 are available without registering for an account and logging in, there are some data access tools and services that do require being logged in so that ONC can:

- respond to users if we notice data access difficulties or failures;
- assist users in making custom tools, saving settings, plots, data and code;
- provide convenient access to DOIs and Query PIDs for citation purposes and reproducibility;
- automatically track usage statistics as required by our funding agencies;
- contact affected users regarding data quality and control issues, including re-calibration;
- allow users to generate tokens in order to use web services;
- provide access to restricted datasets, if permissions are applied; and
- allow users to share project ideas or participate in social networking in the spaces we provide.

ONC follows the [University of Victoria's Protection of Privacy Policy](#), and will not use or provide any personal data to individuals or organizations outside ONC without permission. Users may request account deletion at any time (all user identifiable information is deleted, usage statistics attributed to anonymous access). The minimum requirement to create an Oceans 3.0 account is a verifiable email address.

## Data Support and Access Limitations

ONC staff provide active, engaged support to facilitate scientific research on a best effort basis. The same level of support is not offered for for-profit, commercial use of data, unless under an agreement. Such an agreement may include compensation in order to develop and provide specialized data products, API or other data services not normally offered.

ONC data access speeds and volumes have practical limits. In cases where there is heavy data use, usually through the API or Data Search, ONC reserves the right to limit access speeds and volumes to ensure all users have reliable access to data. Preventative action may include measures such as IP address blocking and account suspension in extreme cases. In all cases, best efforts will be made to contact any affected users. An agreement with compensation may be arranged to assure specific access to high volumes of data for commercial users. Anonymous access to data is available for most services, such as data viewers, while anonymous access to Data Search is limited to 3 months per request, 3 day storage duration and 500 GB total storage (shared, subject to

change). Logged-in users in Data Search have less stringent limitations on data volumes, duration and number of simultaneous search requests. An account and token is required for API access. ONC staff are only able to support logged-in users.

## Real-time Access

ONC provides data in near real-time for most of the observatories and platforms. Depending on the measurement technique and latency of any transmission, the latest record may be available within seconds to minutes.

Exceptions include:

- some complex (multi-dimensional) data require time to accumulate and/or process<sup>2</sup>;
- non-networked data from autonomous instruments, expeditions, or from analysis of physical samples will be ingested as they become available;
- profile data from our Community Fishers and similar programs that are uploaded by partner organization participants;
- some instrument data such as seismic and hydrophone data are subject to screening by the Canadian and US militaries for national security reasons, and may be diverted prior to archiving (most diverted data are later returned); and
- real-time data access can be interrupted by planned and unplanned power outages or infrastructure outages.

## Data Citation

Data accessed from all ONC data portals used for publications are required to include a full citation with the dataset author, title, publisher, publication year, and digital object identifier, as well as a local query persistent identifier, when possible. For more comprehensive guidelines and details, refer to <https://wiki.oceannetworks.ca/display/DP/Data+Citations>.

## Standards and Formats

Metadata are provided using the ISO 19115 (2014) standard in an XML format with data products obtained via the Oceans 3.0 Data Search, ERDDAP data server and the CKAN Metadata Catalogue. Additional metadata are also available within Oceans 3.0 and downloaded data products. Numerous controlled vocabularies are integrated to enhance find-ability and interoperability.

Data are distributed in a wide range of standards and formats. For a given device, the standard level of service usually requires raw proprietary manufacturer formats, a derived non-proprietary community-standardized format, and data visualizations, as per our [Data Product Best Practices](#). For complete documentation regarding the data products offered by ONC, refer to our data product documentation: <https://wiki.oceannetworks.ca/x/AwAhAQ>.

## Data Versioning and Provenance

Data versioning may occur for corrective or enhancement purposes at any stage of the data processing pipeline. The ability for ONC to track and convey these changes is improving over time, particularly as the wider research data management community develops conventions and guidelines. With the introduction of

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<sup>2</sup> Data that are acquired via file transfer are ingested on a schedule and therefore are not real-time. These instruments usually have longer acquisition times or duty cycles that build up data into a file before transfer, such as a RADAR or SONAR sweep. Some data products may also require raw file archival before generation and are delayed by up to 24 hours (currently only two: Kongsberg rotary imaging sonars and BioSonics echosounders). Some value-added data products also require accumulation of data. See instrument metadata and [data product documentation](#) for more information. Data products displayed in some portals are only updated once per day, this includes [Data Preview](#) and some dashboards.

persistent identifiers for ONC datasets using [DataCite](#) Digital Object Identifiers (DOIs), more sophisticated versioning and related provenance frameworks are being applied. This advancement not only allows for better association of the versioning reasons, extent and processes, but also mints a new DOI for each major version and provides the version history to users via the dataset landing page. For more details, refer to <https://wiki.oceannetworks.ca/display/DP/Data+Citations>. For any earlier versioning history enquiries, [contact ONC for support](#).

## Preservation and Storage

ONC is committed to data preservation. Rigorous practices and workflows are documented and executed by expertly-trained staff to ensure data authenticity, data storage redundancy, digital security, technology upgrades and data format migration. Such practices are documented in business continuity plans, cybersecurity policy (set by the University of Victoria) and similar. Raw data in particular must be preserved unaltered in original formats, with two exceptions: migration to a superior lossless format from which the original may be recreated, or data reduction at or near the source where data volume exceeds feasible network or archival bandwidth. Data owners may recall data from ONC and users when under an “all rights reserved” license. Data owners may request data deletion under CARE and OCAP principles or as specified in their data agreement. ONC will retain limited, non-public, metadata of deleted datasets for internal use only, such as access logs and dataset descriptions.

## Metadata and Data Harvesting

To enhance data discovery, metadata records and data can be harvested by third party portals and applications via ONC's supported web services and catalogues. In some instances ONC directly facilitates or supports these linkages, although that is not always the case. Since it is important that these entities abide by the legal and usage constraints which accompany these datasets, ONC strives to include these limitations in standardized and machine-readable sections of the metadata records.

## Data Partnerships and Agreements

ONC has established data integration partnerships with numerous organizations in government, academic, Indigenous, non-profit, and industry sectors. Agreements stipulate attributions for credit and ownership, as well as any usage restrictions. For more information, refer to our Data Partner documentation: <https://wiki.oceannetworks.ca/x/64DhB>.