The Federated Research Data Repository

Now Available in Full Production!

Lee Wilson, Service Manager
Kelly Stathis, Discovery & Metadata Coordinator
Erin Clary, Curation Coordinator
Beth Knazook, Preservation Coordinator

February 3, 2021

FRDR: A Collaborative Effort

A collaboration among libraries, institutions, and federal organizations, involving many stakeholders across the RDM & ARC spheres

FRDR = Federated Research Data Repository (DFDR en français)

https://www.frdr -dfdr.ca/

A scalable, federated platform for digital research data management and the discovery of Canadian research data

Discovery
Preservation

Deposit

Why Use FRDR?

- Publish research data openly in a Canadian -owned, bilingual national repository option
- Support for medium-to-large sized datasets via Globus
- Secure repository storage, distributed geographically across multiple Compute Canada Federation hosting sites
- Data curation support provided by Portage
- You can work with multiple collaborators on a single submission
- Your data will be discoverable alongside other Canadian collections in the FRDR Discovery Portal

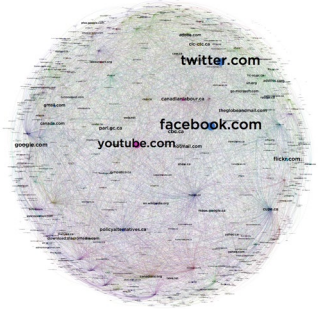
FRDR Uptake in Limited Production

MERIDIAN

"Big data solutions for the marine acoustic community"

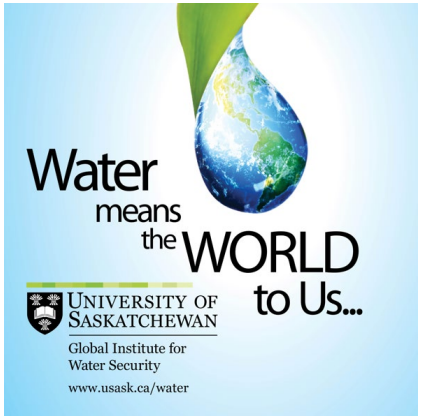
Dalhousie University

Web Archives for Longitudinal Knowledge



SUPERDARN CANADA

UBC Dynamic Brain Circuits in Health and Disease



MOUNTAIN LEGACY PROJECT

"Capturing Change in Canada's Mountains"

U. Victoria

CIOOS ATLANTIC
REGIONAL ASSOCIATION OF THE CANADIAN INTEGRATED OCEAN OBSERVING SYSTEM

SIOOC ATLANTIQUE
SYSTÈME INTÉGRÉ D'OBSERVATION DES OCÉANS DU CANADA

the water INSTITUTE University of Waterloo — The Water Institute U. Of Waterloo

"Breaking boundaries in water research"

UNIVERSITY OF SASKATCHEWAN

GWF GLOBAL WATER FUTURES

S.D.S. STONE TOOLS, DIET, AND SOCIALITY

U. Calgary

FRDR Uptake in Limited Production

SUPERDARN CANADA

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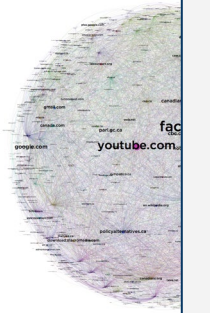

Users: 320

Datasets: 152

Volume: 24 TB

MOUNTAIN LEGACY PROJECT

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U. Calgary

Architecture, Governance, & Support

- Dedicated storage and compute at two national CCF hosting sites (Cedar & Graham)
  - Storage geo-replicated on disk and tape across two sites
  - Archival copies maintained at a third site
- Governance provided by FRDR Steering Committee
  - Establishing a User Advisory Committee post launch
- 14 person development and operations team distributed across Canada
- Team includes 3 new Curation Officer positions added in Oct 2020

How can I use it?

- Who can use FRDR?
  - Anyone can use FRDR to search for and download data across Canadian repositories
- Who can deposit data in FRDR?
  - Faculty members, or their designates, from Tri-Agency funding eligible Canadian institutions or organizations can deposit
- How much storage will be available to FRDR users?
  - Eligible depositors will have access to a default allocation of **1 TB** provided at no cost
  - Additional storage may be provisioned as needed, with some justification provided
  - Requests that far exceed the default allocation will need to undergo a review process

UNIVERSITY OF SASKATCHEWAN

GWF GLOBAL WATER FUTURES

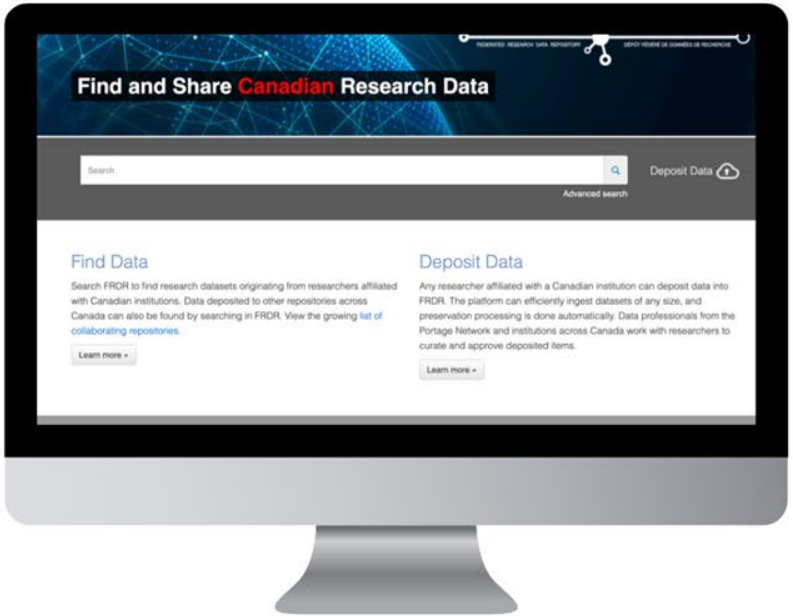
Global Water Futures

Global Water Futures: Solutions to Water Threats in an Era of Global Change (GWF) is a University of Saskatchewan-led research program to deliver risk management solutions--informed by leading-edge water science and supported by innovative decision-making tools--to manage water futures in Canada and other cold regions where global warming is changing landscapes, ecosystems, and the water environment. The GWF program aims to position Canada as a global leader in water science for cold regions and will address the strategic needs of the Canadian economy in adapting to change and managing risks of uncertain water futures and extreme events.

Approved Date	Title	Author(s)
28-Oct-2020	Hydrometeorological observations at three boreal forest sites (aspen, jack pine, and black spruce) located in central Saskatchewan, Canada	*Ahmed, Hafiz Faizan; Helgason, Warren; Barr, Alan G.; Black, T. Andrew*
13-Oct-2020	Warm-air entrainment and advection during alpine blowing snow events	*Aksamit, Nikolas; Pomeroy, John*
8-Oct-2020	EMDNA: Ensemble Meteorological Dataset for North America	*Tang, Guoqiang; Clark, Martyn P.; Papalexiou, Simon Michael; Newman, Andrew J.; Wood, Andrew W.; Brunet, Dominique; Whitfield, Paul H.*
23-Sep-2020	Atmospheric boundary layer measurements from Athabasca Glacier field campaign, June 2015	*Conway, Jono; Helgason, Warren; Pomeroy, John; Sicart, Jean-Emmanuel; Johnson, Bruce*
12-Aug-2020	Hydrometeorological, glaciological and geospatial research data from the Peyto Glacier Research Basin in the Canadian Rockies	*Pradhananga, Dhiraj; Pomeroy, John; Aubry-Wake, Caroline; Munro, D. Scott; Shea, Joseph; Demuth, Michael N.; Kirat, Nammy Hang; Menounos, Brian; Mukherjee, Kriti*
8-Jul-2020	Impacts of the Husky oil spill on gut microbiota of native fish species to the North Saskatchewan River	*DeBofsky, Abigail; Xie, Yuwei; Jardine, Tim; Jones, Paul; Giesy, John*
26-May-2020	Responses of juvenile fathead minnow (Pimephales promelas) gut microbiota to a chronic dietary exposure of benzo[a]pyrene	*DeBofsky, Abigail; Xie, Yuwei; Challis, Jonathan; Brinkmann, Markus; Hecker, Markus; Giesy, John*

Getting an Account

www.frdr-dfdr.ca



Feedback
Log In
Help
About
EN
Have an account?
» Log In
New to FRD
» Start here
FRDR
FEDERATED RESEARCH DATA REPOSITORY
ch Data

globus

Log in to use FRDR-DFDR Prod

Use your existing organizational login

e.g., university, national lab, facility, project

Compute Canada

Didn't find your organization? Then use **Globus ID** to sign in. (What's this?)

Continue

Or

Sign in with Google

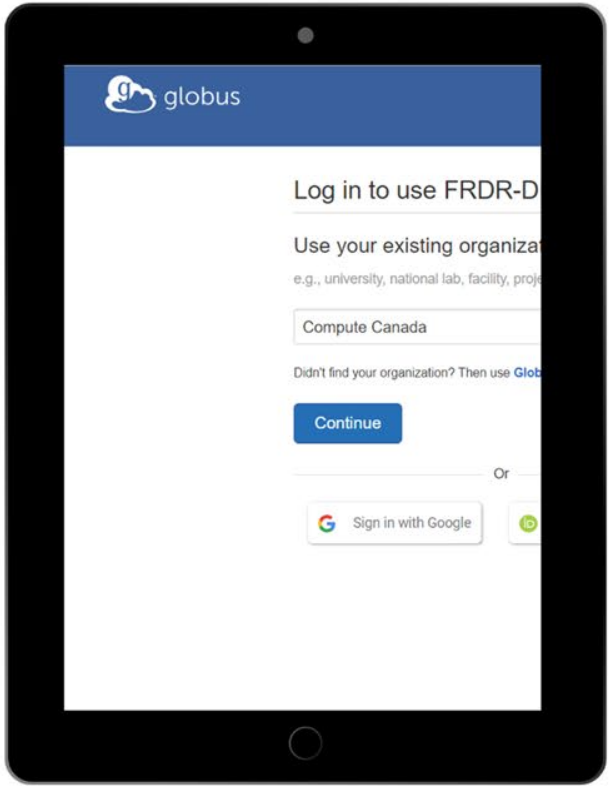
Sign in with ORCiD iD

Institutional Login

compute canada | calcul canada

ORCID

globus



Applying for Deposit

Apply for Deposit

Anyone can use FRDR to search for and download data; however, only faculty members and their designates-such as students, research assistants, or postdocs-from eligible Canadian post-secondary institutions can deposit data in FRDR. To apply for permission to deposit, please fill out the form below:

Preferred Language English

Institution* Choose...

Department

Institutional Email* lee.wilson@dal.ca

If you do not have an institutional email, please explain why below.

Applying for Deposit

Role*

- ○ Faculty
- ○ Government Researcher
- ○ Librarian
- ○ Not-for-profit Researcher

Sponsored User

- ○ Undergraduate Student
- ○ Master's Student
- ◉ Doctoral Student
- ○ Postdoctoral Fellow
- ○ External Collaborator
- ○ Support Staff

- ○ Other

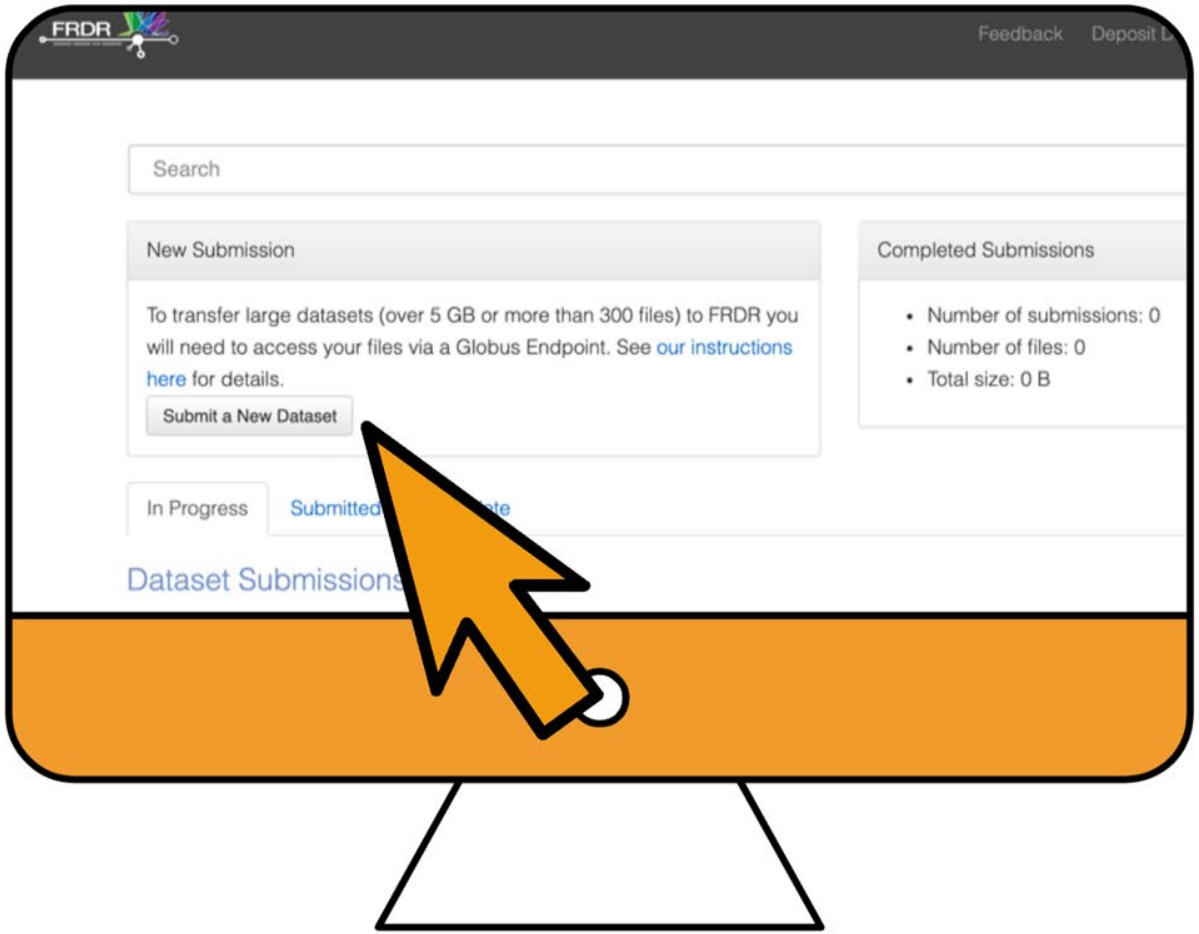
Sponsor

First Name* _____ **Last Name*** _____

Sponsor Email* _____

Apply

Starting a Submission

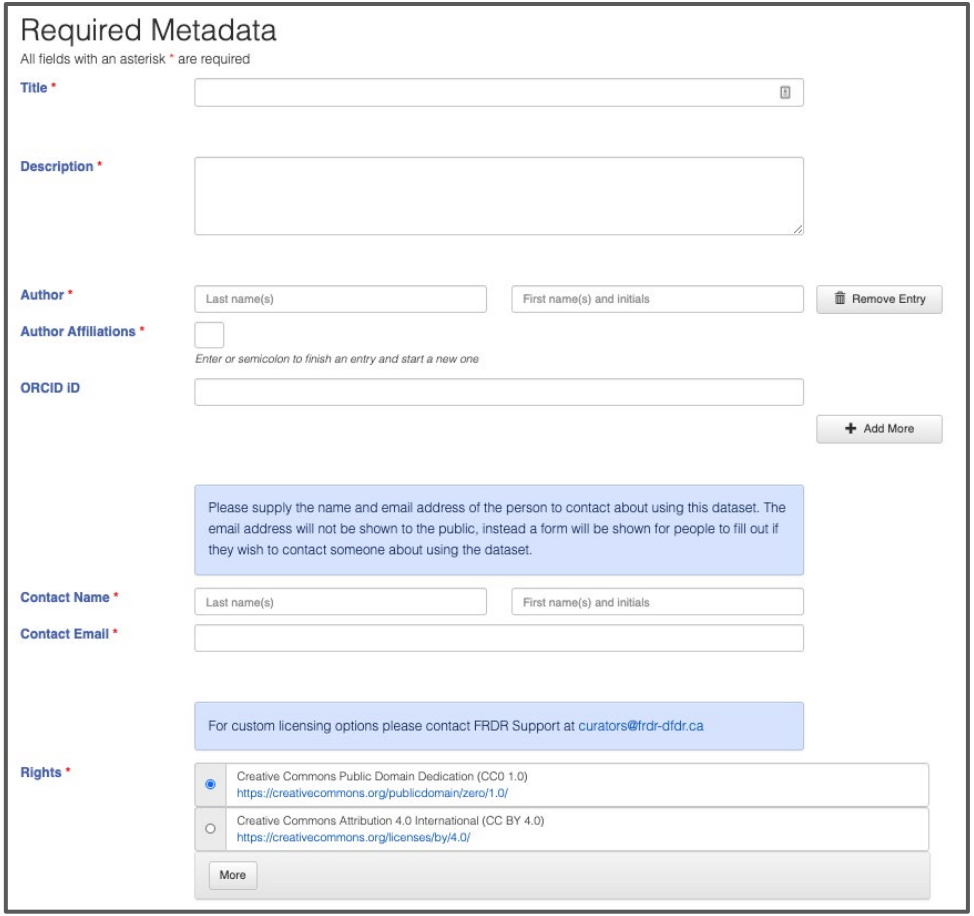


Adding Metadata

- Metadata = descriptive information about your dataset
- Robust metadata help make your data FAIR: Findable, Accessible, Interoperable, and Reusable
- Three sections:
  - Required Metadata
  - Recommended Metadata
  - Geographical Metadata
- For detailed guidance, see https://www.frdr-dfdr.ca/docs/en/describing_your_data/

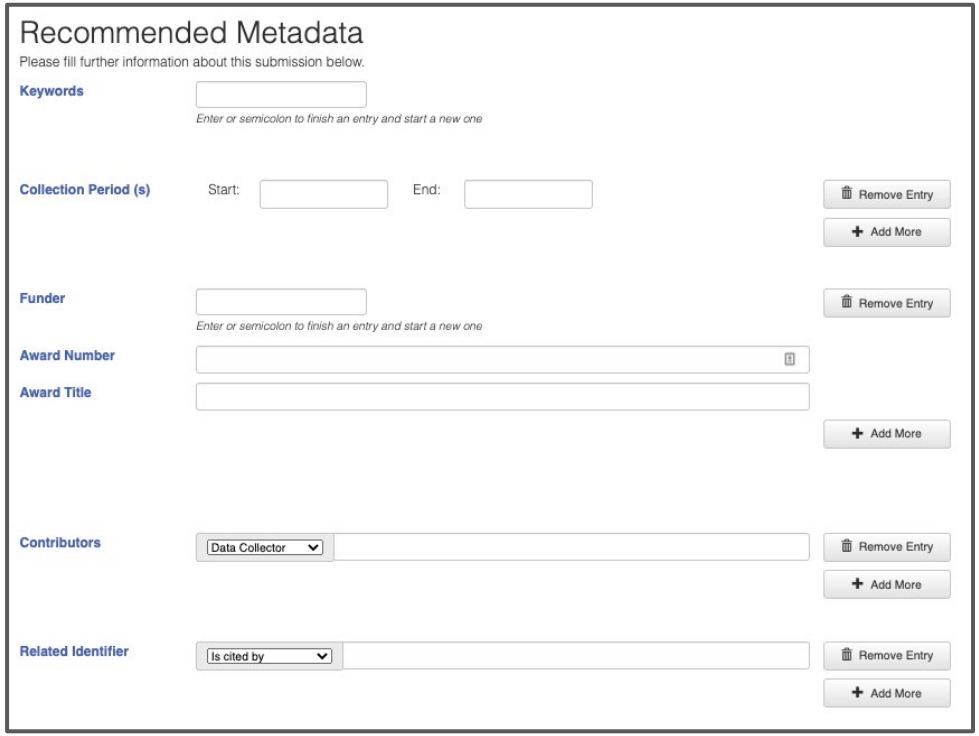
Required Metadata

- Title
- Description
  - an abstract for your dataset
- Author(s)
  - Author Affiliations
  - ORCID iD (optional)
- Contact Name
- Contact Email
- Rights
  - license—CC0, CC BY, etc.



Recommended Metadata

- Keywords
- Collection Period
- Funder
  - Award Number
  - Award Title
- Contributors
  - e.g. Data Collector, Data Manager, Research Group, Supervisor
- Related Identifier
  - e.g. publications the dataset “is cited by”



Geographical Metadata

- **Geolocation Place**
  - place name, e.g. “Stanley Park, Vancouver, BC, Canada”
- **Geolocation Point (Lat Lon)**
- **Geolocation Box (S W N E)**

where was the data gathered?

what place is the data focused on?

Persistent Identifiers

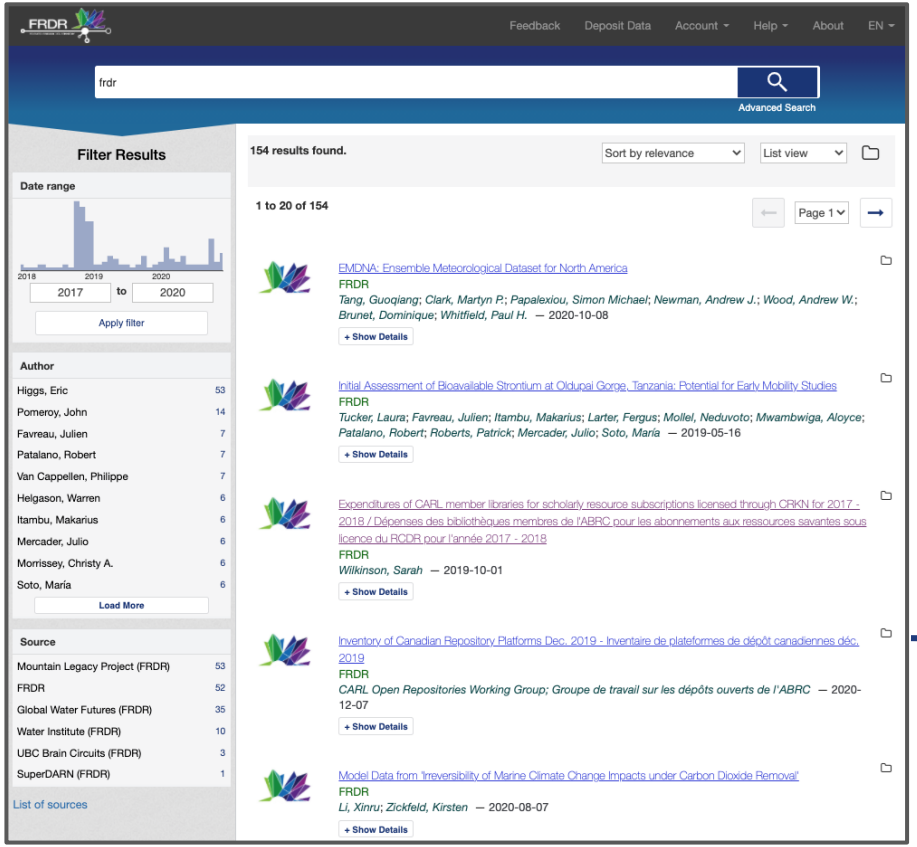
- Persistent Identifiers (PIDs) are ongoing, long -lasting references to specific entities —publications, datasets, people, organizations, and more
  - DOI = Digital Object Identifier
  - ORCID iD = Open Researcher and Contributor ID
- FRDR accepts **ORCID iDs** to uniquely identify dataset authors
- We encourage **DOIs** and other persistent identifiers in the “Related Identifier” field
- Upon approval of your dataset, FRDR will generate a **DOI**

Controlled Vocabularies and Registries

FRDR plans to implement the following vocabularies and registries:

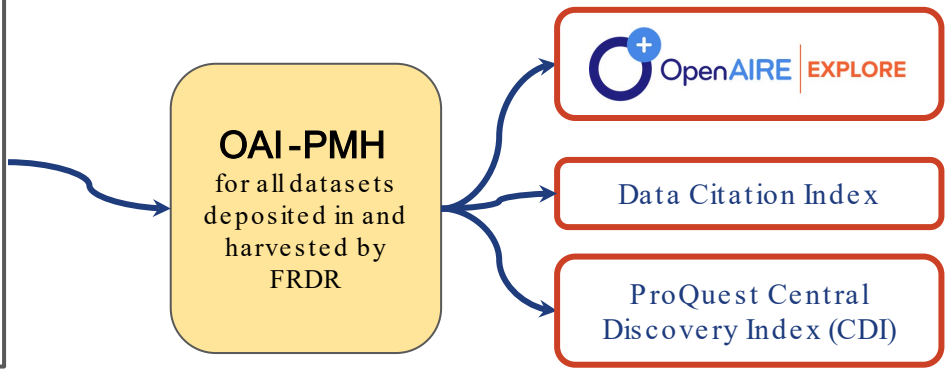
- Canadian Research and Development Classification (CRDC)
  - Controlled values for Field(s) of Research
  - Each field has a unique code and names in English and French
- Research Organization Registry (ROR)
  - Suggested values for author affiliations
  - Each research organization has a ROR ID for persistent identification
- Crossref Funder Registry
  - Suggested values for funder names
  - Each funder has an associated DOI for persistent identification

Data Discovery

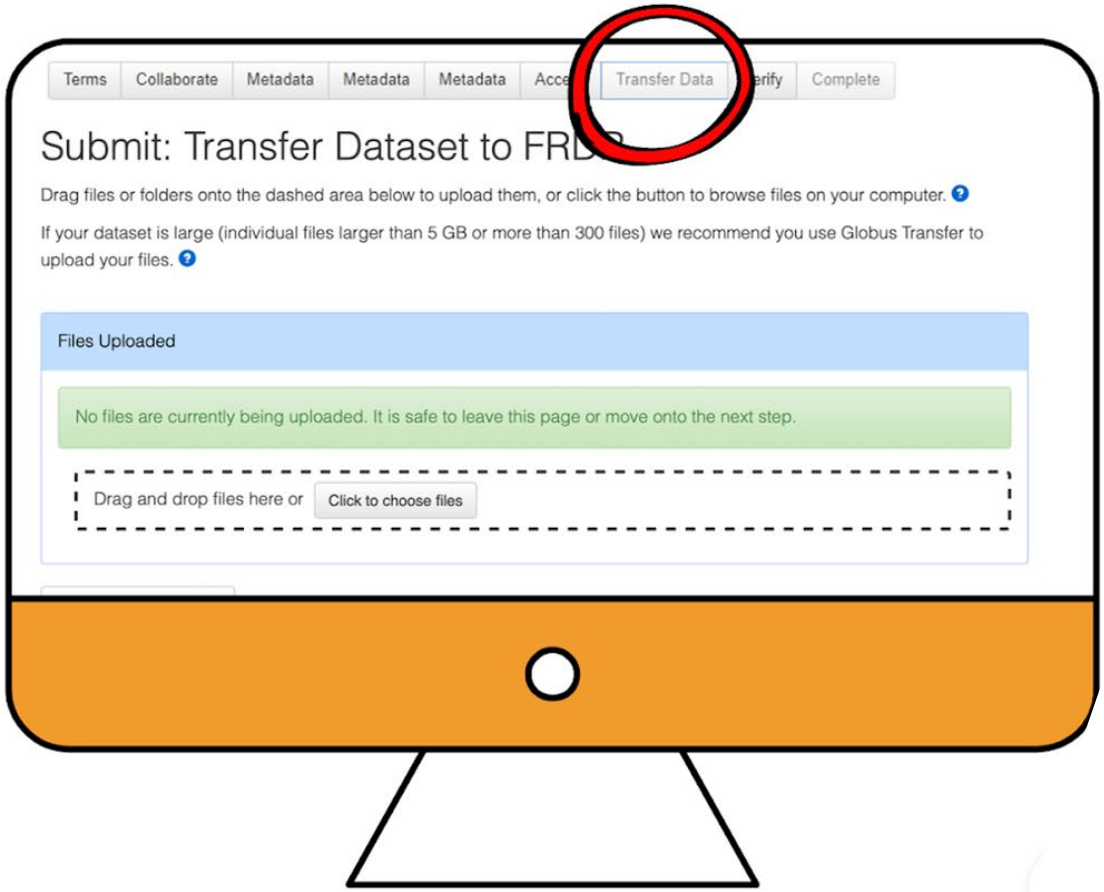


FRDR Discovery Service

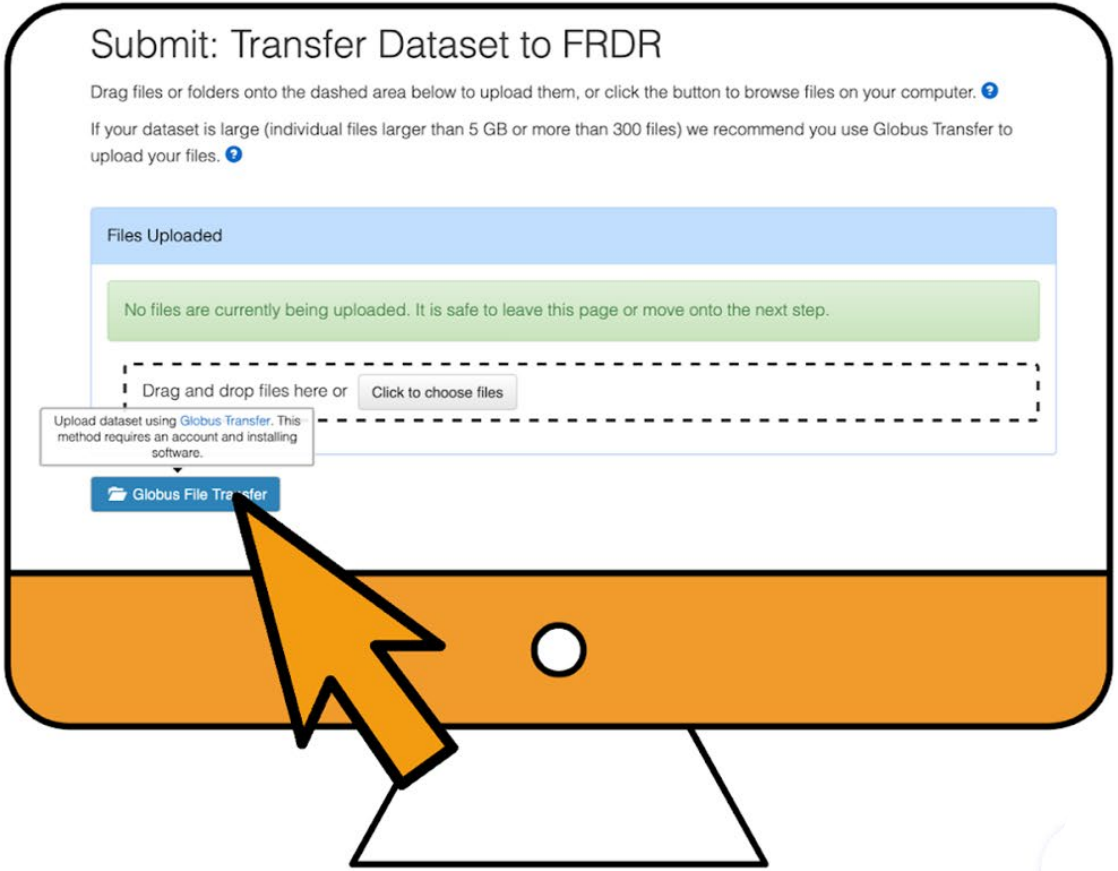
- Data deposits are searchable alongside data from over 70 Canadian repositories
- Exposed to several data aggregators via OAI-PMH feed



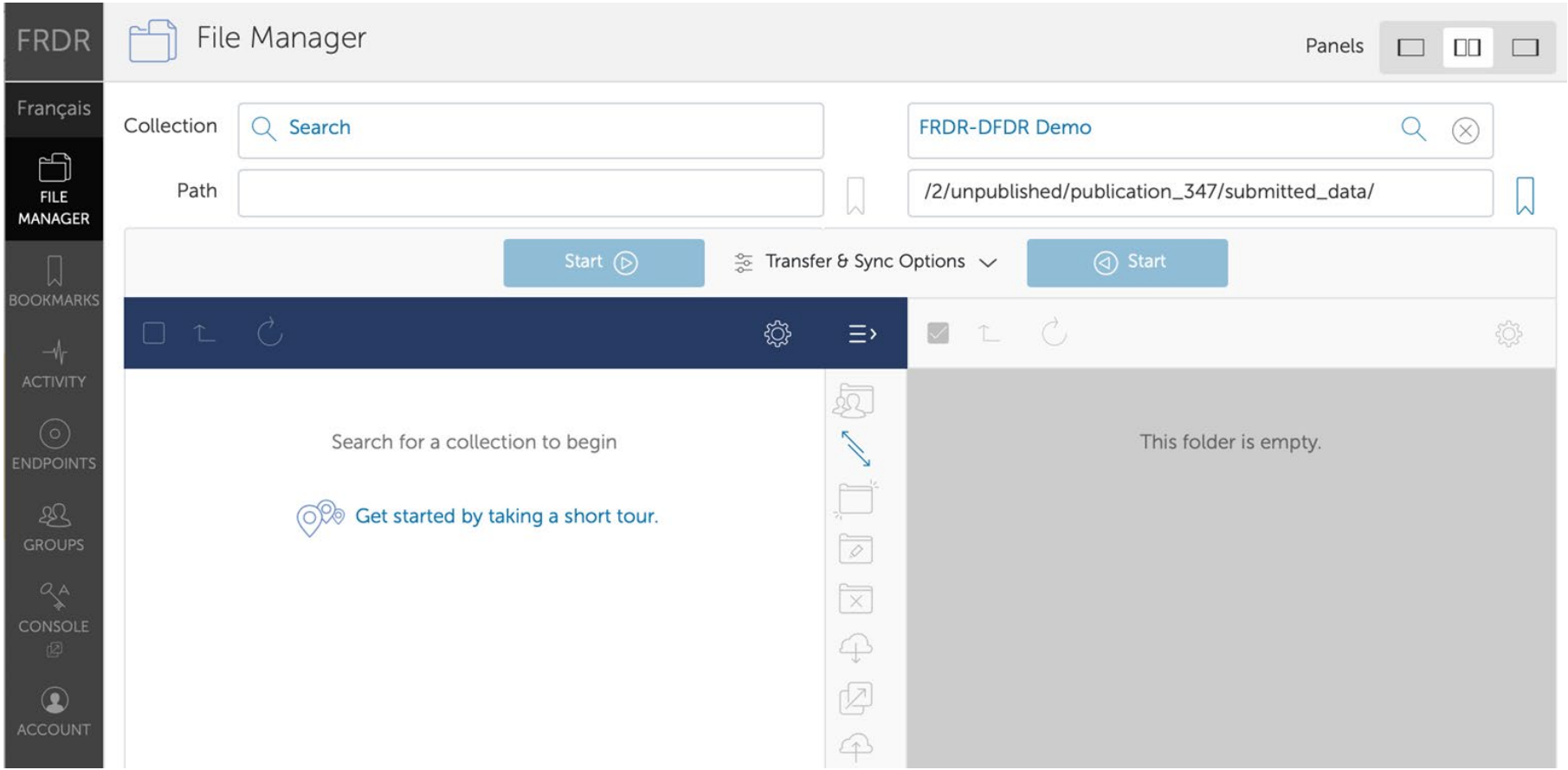
Transferring Data



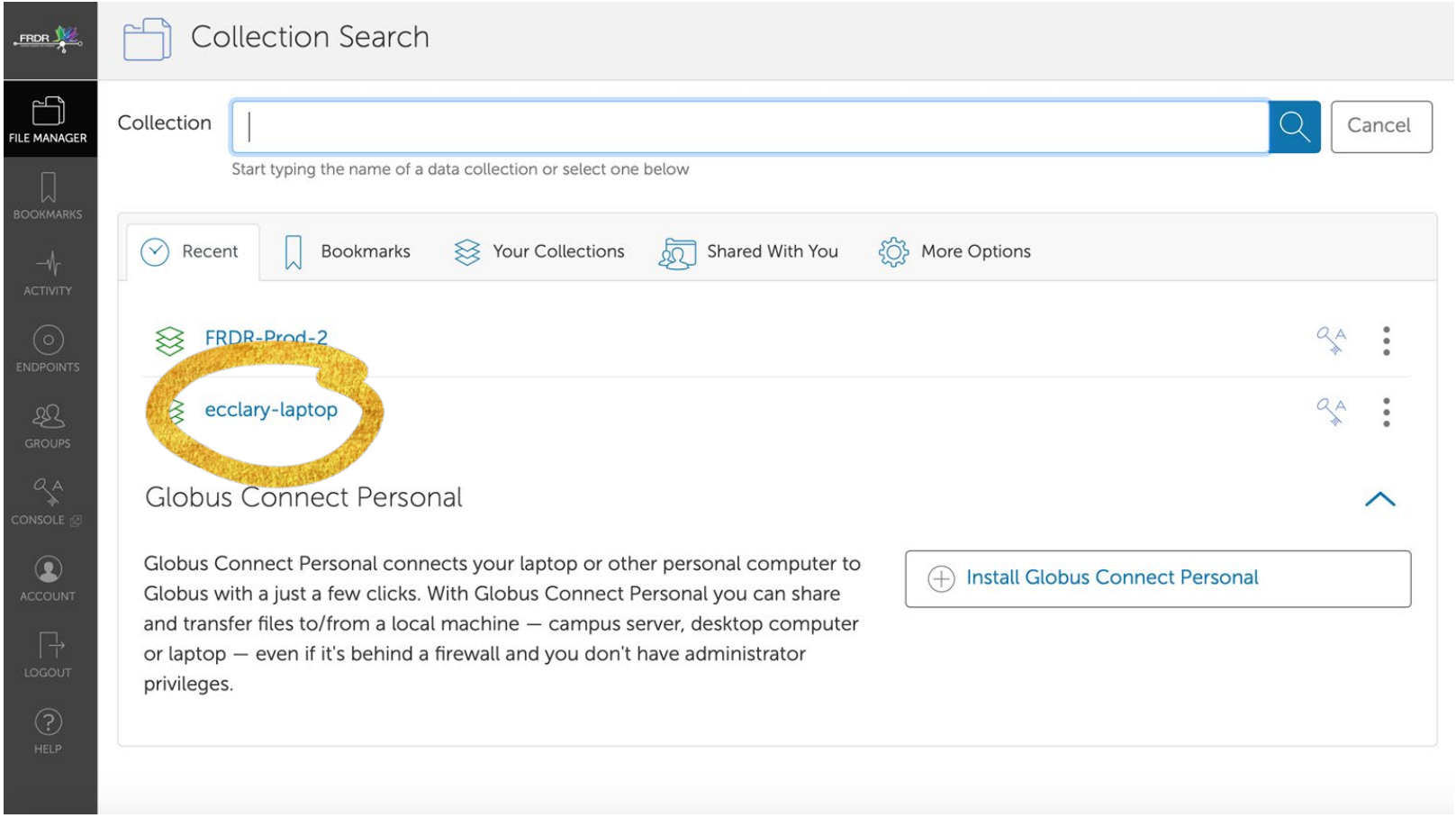
Transferring Data: Large Submission



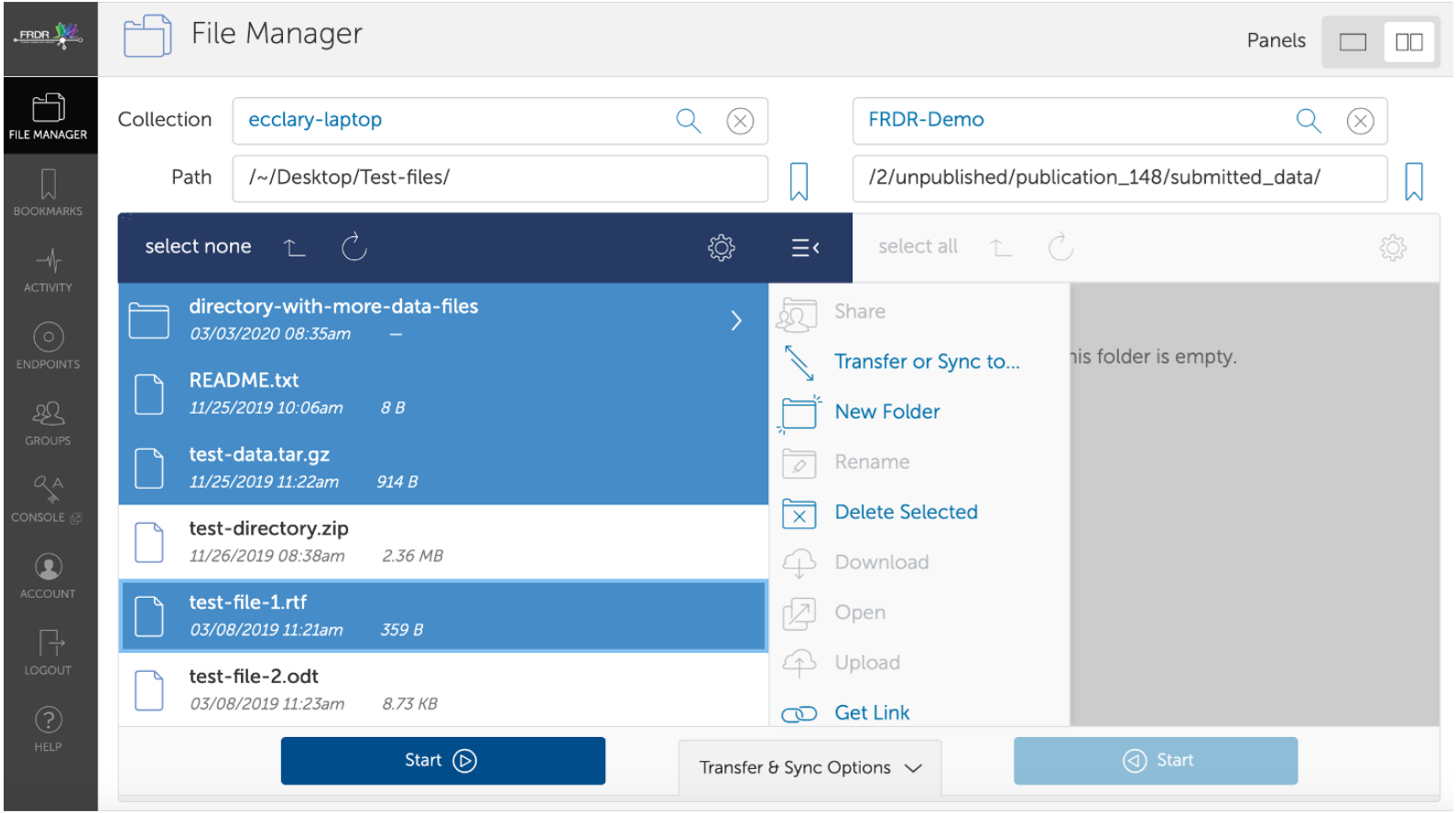
Globus: File Manager



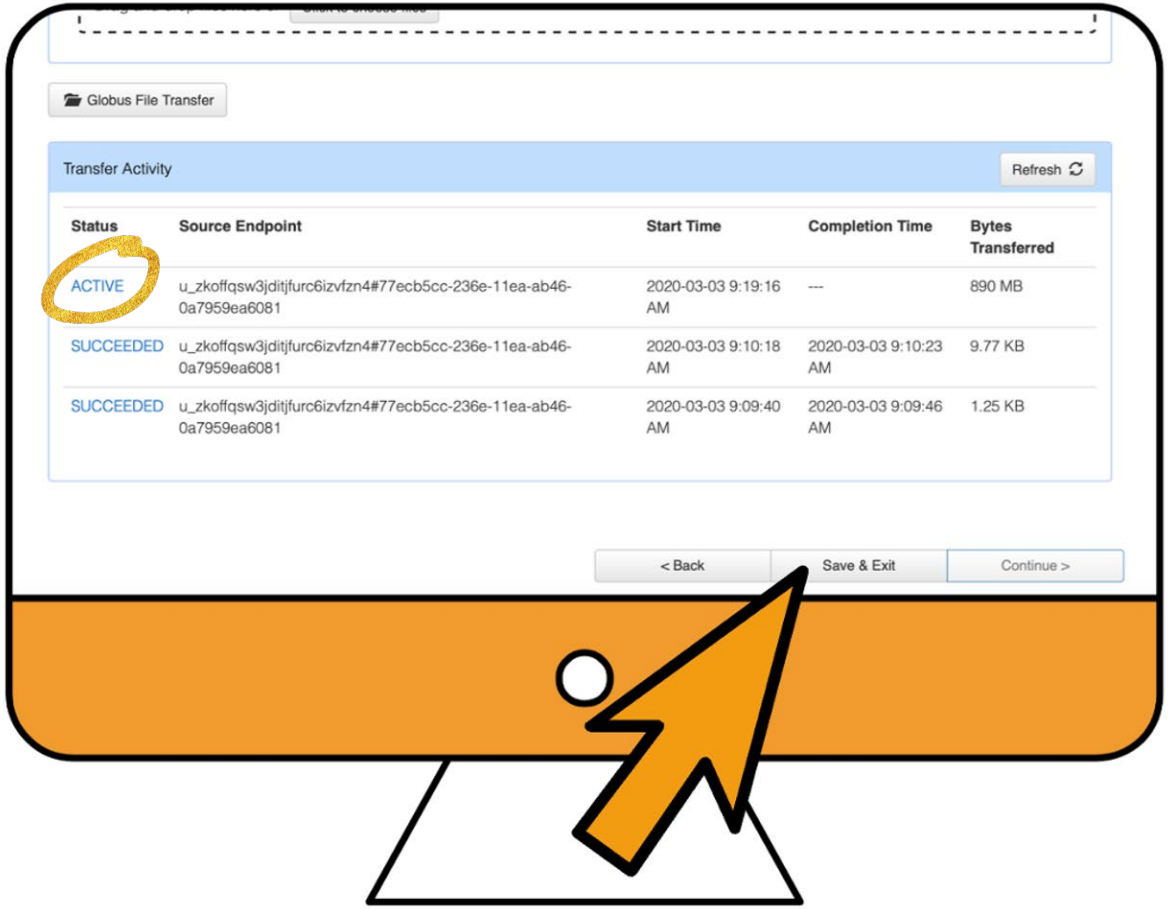
Globus: Collection Search



Globus: Selecting Files

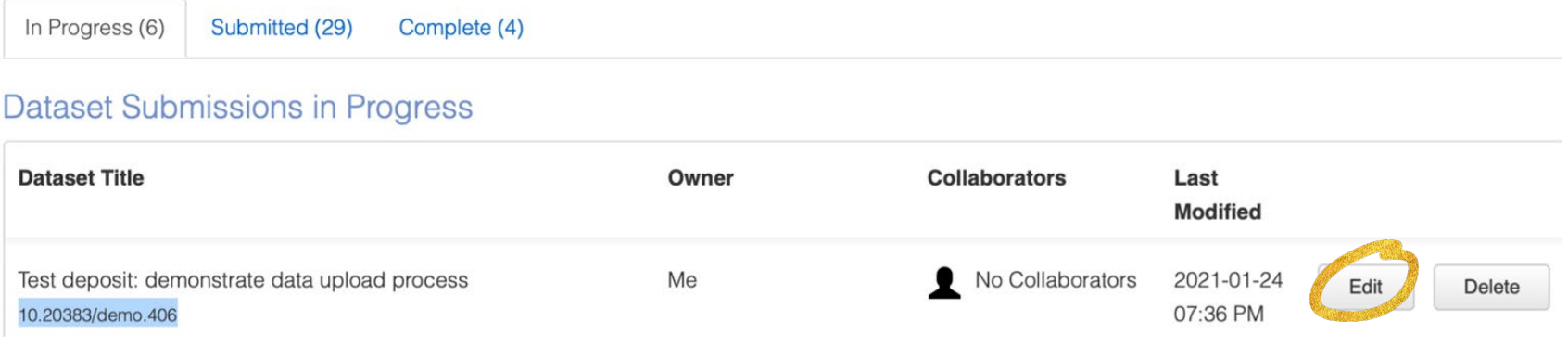


Transferring Data: Transfer in Process

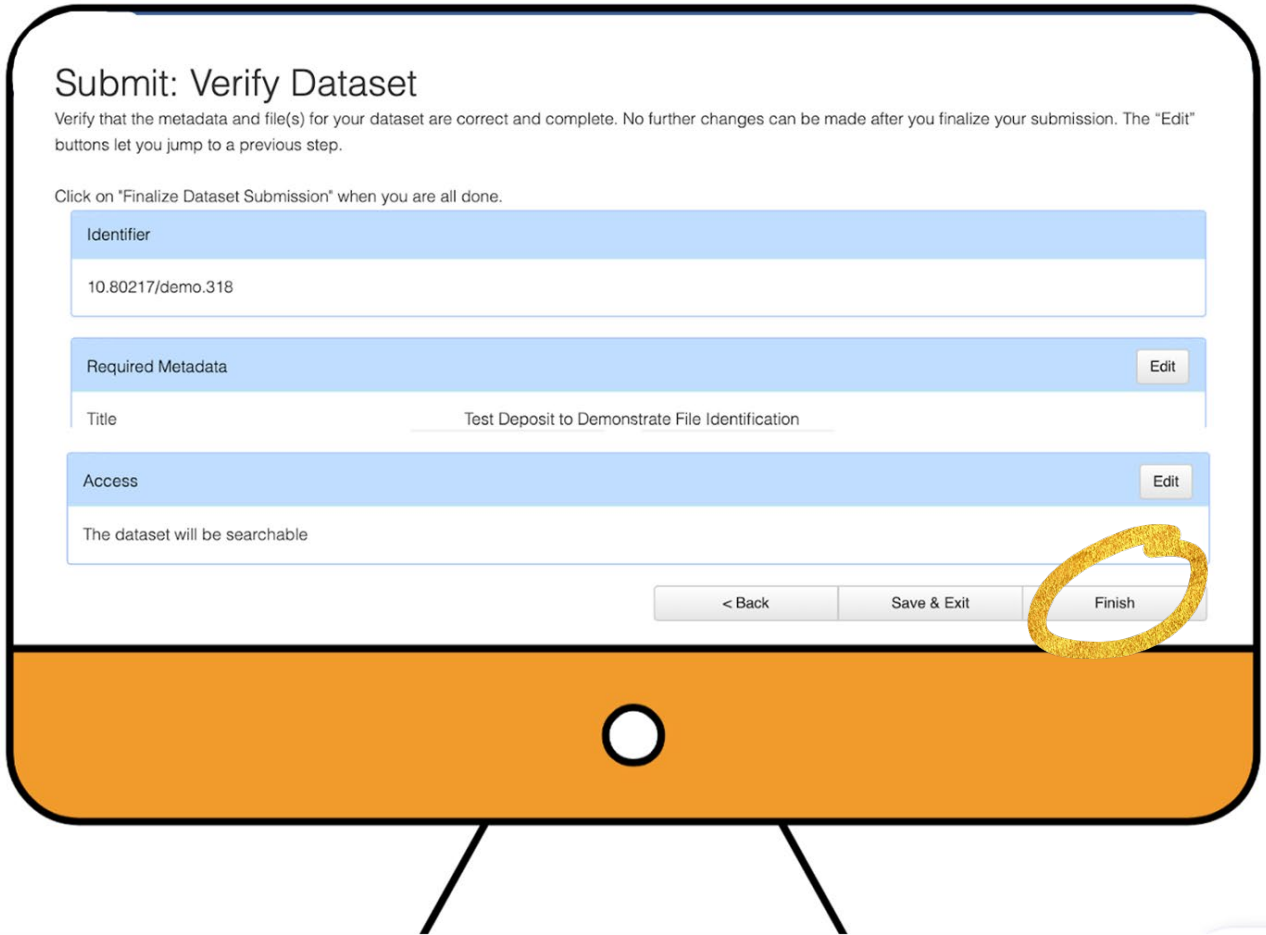


Accessing Submission in Progress

- Click “Edit” next to an existing submission to modify it, or when you are ready to finalize and submit
- Your DOI is available, but please note:
  - It will not be registered or functional until your data are reviewed and published online
  - If you need to share your DOI sooner, our curation team can spot check files to let you know if we foresee any issue that might prevent publication



Finalizing and Submitting



FRDR Curation Process

Adapted from the Data Curation Network (DCN) CURATED steps at https://datacurationnetwork.org/outputs/workflows/

Dataset publication

Newfoundland and Labrador climate index

Contact Dataset Administrator

Description:	The Newfoundland and Labrador (NL) climate index aims to describe the environmental conditions on the NL shelf and in the Northwest Atlantic as a whole. It consists of annual normalized anomalies of 10 subindices with equal contribution: Winter North Atlantic Oscillation, air temperature, sea ice, icebergs, sea surface temperature, vertically-averaged temperature and salinity at Station~27, cold intermediate layer (CIL) core temperature at Station~27, CIL area on 3 hydrographic sections and bottom temperature on the NL shelf. This index runs from 1951 to 2019 and will be updated annually. Data associated with Cyr, F. & Galbraith, P.S., A climate index for the Newfoundland and Labrador shelf, Earth System Science Data [submitted]
Authors:	Cyr, Frédéric; Fisheries and Oceans Canada; Memorial University of Newfoundland; https://orcid.org/0000-0002-1581-7502 Galbraith, Peter S.; Fisheries and Oceans Canada; https://orcid.org/0000-0002-5587-6881
Keywords:	Newfoundland and Labrador Climate Physical Oceanography Ocean Atmosphere Environmental index Ecosystem studies
Date:	16-Nov-2020
Publisher:	Federated Research Data Repository / dépôt fédéré de données de recherche
URI:	https://doi.org/10.20383/101.0301

Files in Dataset - Total Size - 28.42 KB

frdr-checksums-and-filetypes.md	1.18 KB
LICENSE.txt	13 KB
NL_climate_index_all_fields_natural_signs.csv	3.79 KB
NL_climate_index_all_fields.csv	3.75 KB
NL_climate_index.csv	0.72 KB
README.txt	5.98 KB

Download Dataset

Preservation Activities

Keeping data accessible over time

Archival Information Package (AIP)

Context metadata

Preservation metadata

Fixity information

Original files

Preservation copies

Appraise: Review and designate datasets for long-term preservation

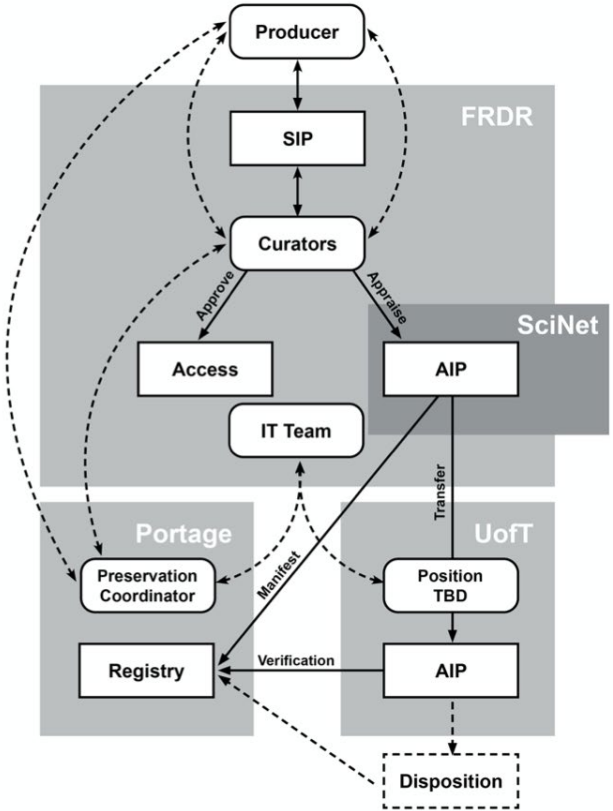
Monitor: Perform fixity checks to verify the authenticity and integrity of the data

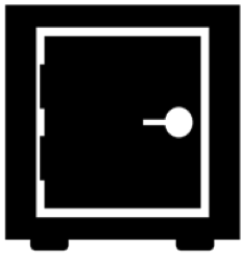
Migrate: Update file formats to guard against obsolescence

Replicate: Keep more than one copy of the data in different geographic locations

Continuation of care: Preserve the files within a network of preservation partners

FRDR Preservation Pipeline Project





Data is monitored

Data is geographically distributed

Tips for Researchers Preparing Datasets for Preservation

Want to learn more?

- FRDR **informational and training videos** are now available on CARL's YouTube Channel:
  - https://youtube.com/playlist?list=PLX9EpizS4A0suoSV2N0nn9parl96xHPkz
- Additional **training materials** are available on Portage's Zenodo:
  - https://zenodo.org/communities/portage-network/?page=1&size=20
- **Documentation** is available on the FRDR website:
  - https://www.frdr-dfdr.ca/docs/en/about/

Thanks! Questions?

FRDR DFDR
FEDERATED RESEARCH DATA REPOSITORY
DÉPÔT FÉDÉRÉ DE DONNÉES DE RECHERCHE

Lee Wilson , Service Manager
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support@frdr -dfdr.ca

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CARL ABRC
CANADIAN ASSOCIATION OF RESEARCH LIBRARIES | ASSOCIATION DES BIBLIOTHÈQUES DE RECHERCHE DU CANADA

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SERVICES PARTAGÉS POUR LES DONNÉES DE RECHERCHE
SHARED STEWARDSHIP OF RESEARCH DATA

Innovation, Science and Economic Development Canada
Innovation, Sciences et Développement économique Canada

NDRIO | NOIRN
New Digital Research Infrastructure Organization
Nouvelle organisation d'infrastructure de recherche numérique