DataStream

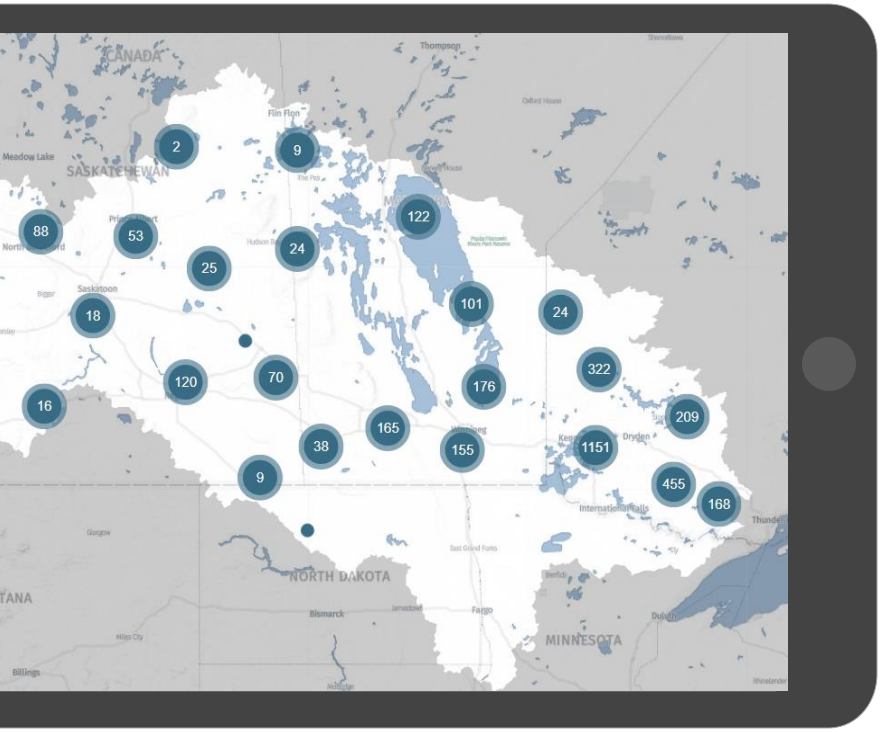
An open access hub for sharing water data

Mary Kruk
Water Data Specialist
The Gordon Foundation

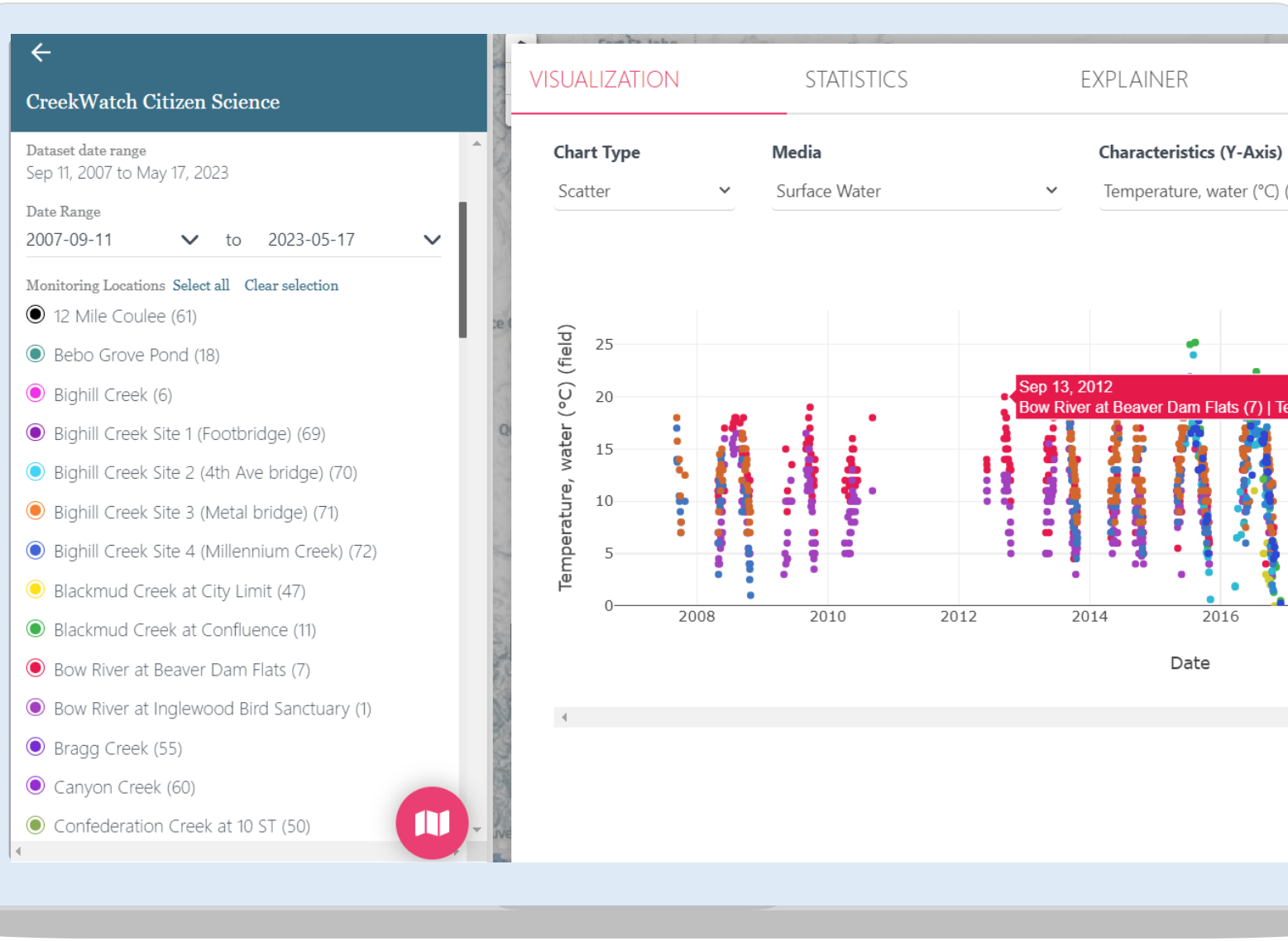
DataStream

DataStream.org

An online platform for sharing information on freshwater health



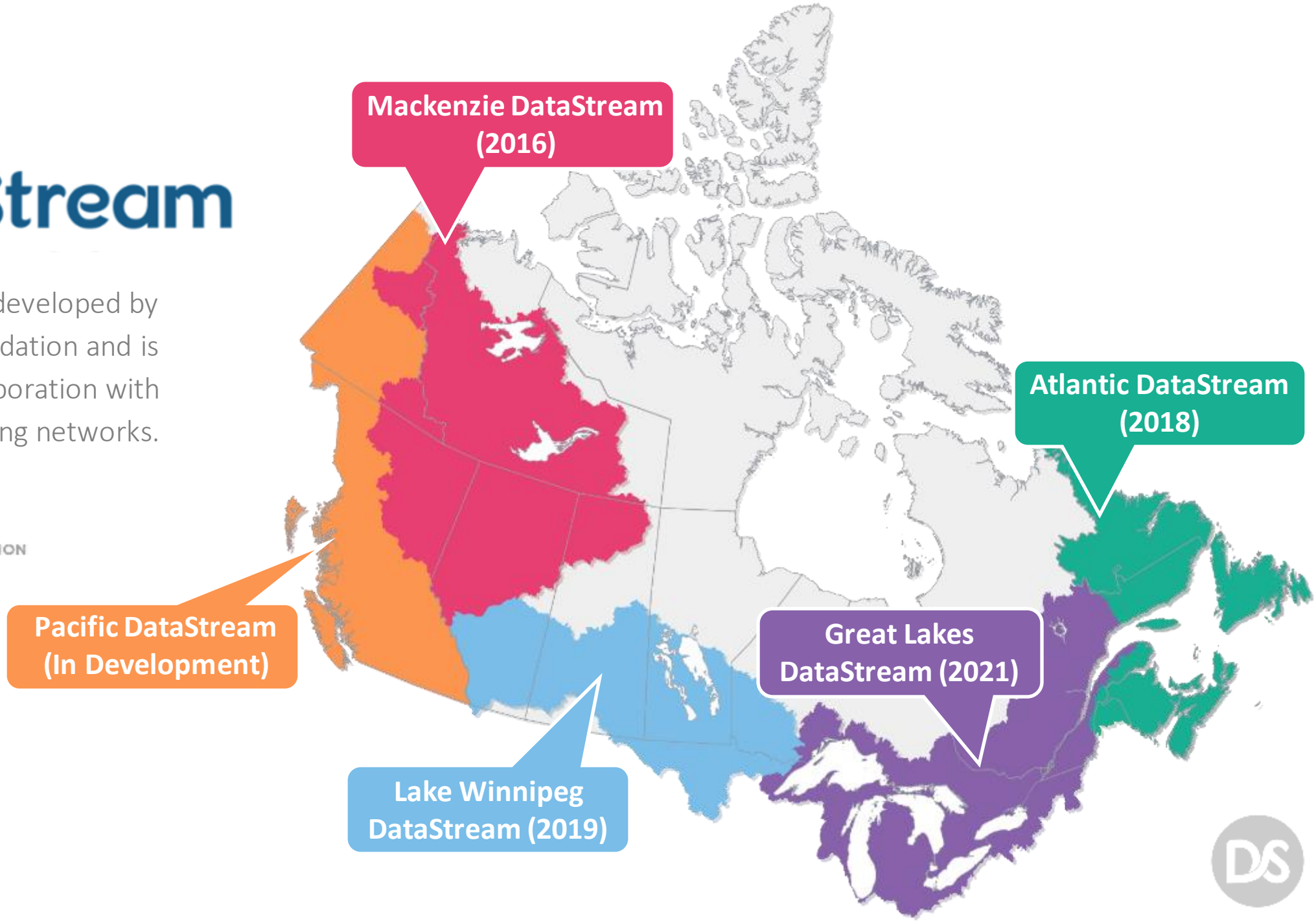
→ **Free and open for anyone to use**



DataStream

DataStream was developed by The Gordon Foundation and is delivered in collaboration with regional monitoring networks.

THE GORDON FOUNDATION



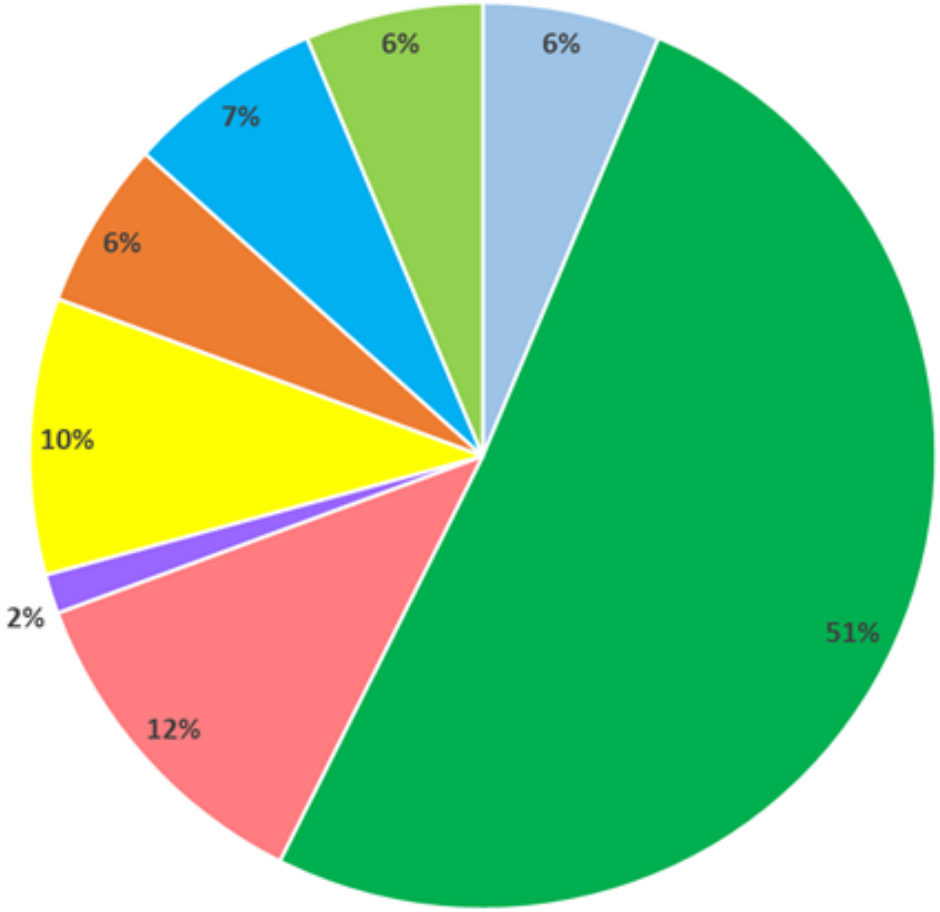
Who is sharing data on DataStream?

- Watershed organizations
- Indigenous governments and orgs
- Provincial/Territorial/Municipal Governments
- Federal Government
- Researchers

Data contributors maintain ownership of their data

Datasets on DataStream by Contributor Type

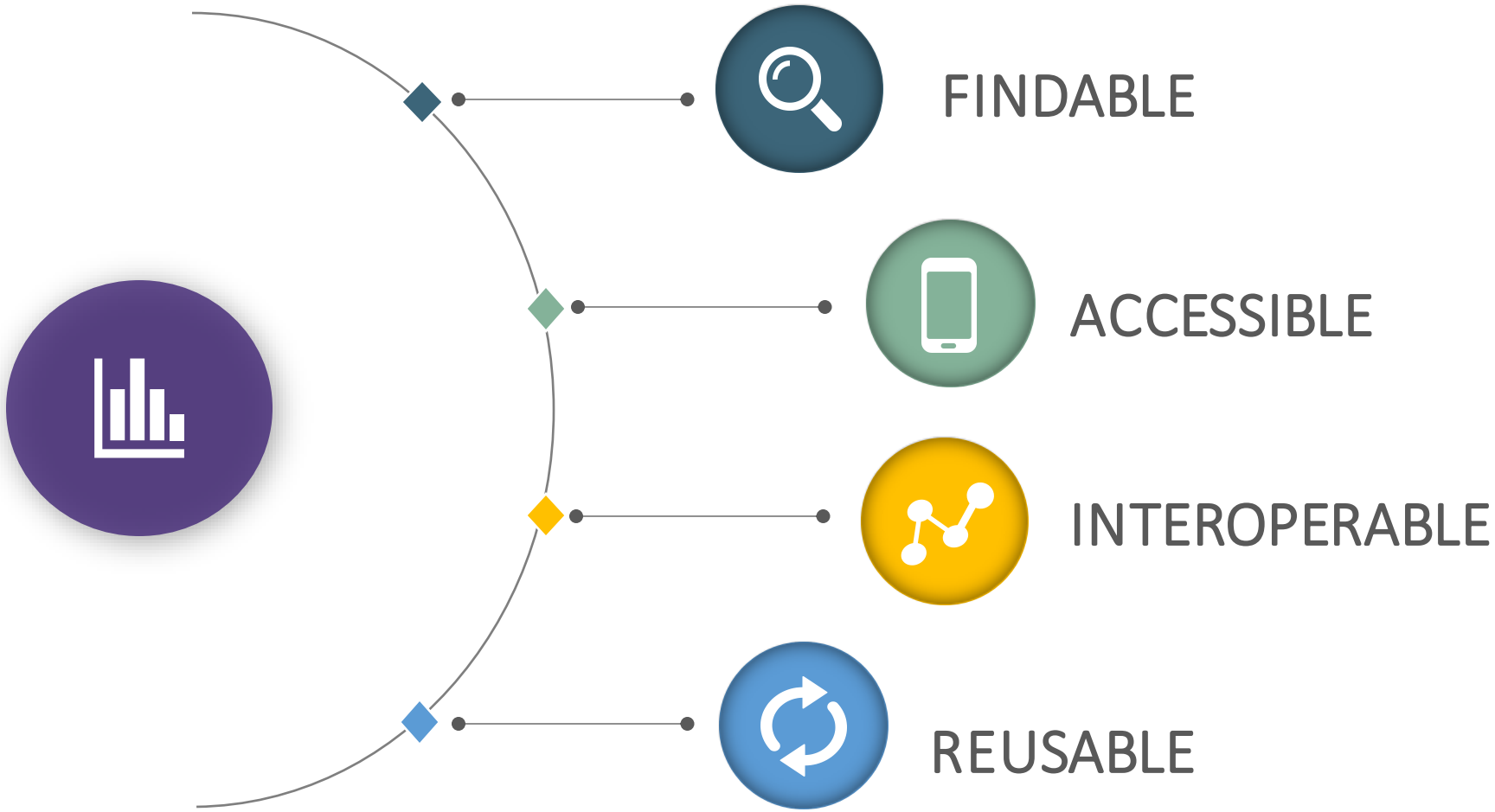
By proportion of datasets



Total Datasets: 284

- Academic and other research institutes: 18
- CBM: 145
- Collaboration: 34
- Consultant: 4
- Federal Gov: 28
- Indigenous Gov/Org: 17
- P/T/M Gov: 20
- Watershed Organization: 18

FAIR Data Principles



Mark D. Wilkinson et al. (2016). *Nature*.

Making sure all the information is there, in a consistent format

WQX
WATER QUALITY EXCHANGE

Monitoring location

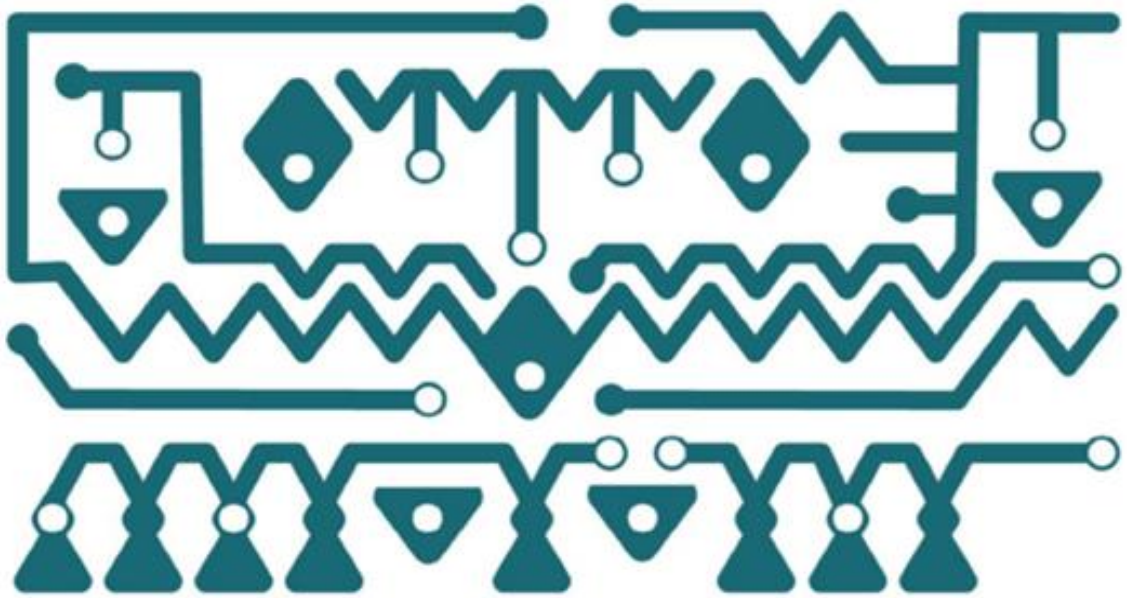
Site name, ID
Coordinates
Reference datum
Waterbody type

Sample collection

Sample type (e.g. field, lab, blank)
Date, time
Collection equipment
Activity depth

Parameter/result

Characteristic name, speciation, sample fraction
Result value, units
Analysis method, date, time
Detection limits



CARE Principles for Indigenous Data Governance

Collective Benefit

- For inclusive development and innovation
- For improved government and citizen engagement
- For equitable outcomes

Authority to Control

- Recognizing rights and interests
- Data for governance
- Governance of data

Responsibility

- For positive relationships
- For expanding capability and capacity
- For Indigenous languages and worldviews

Ethics

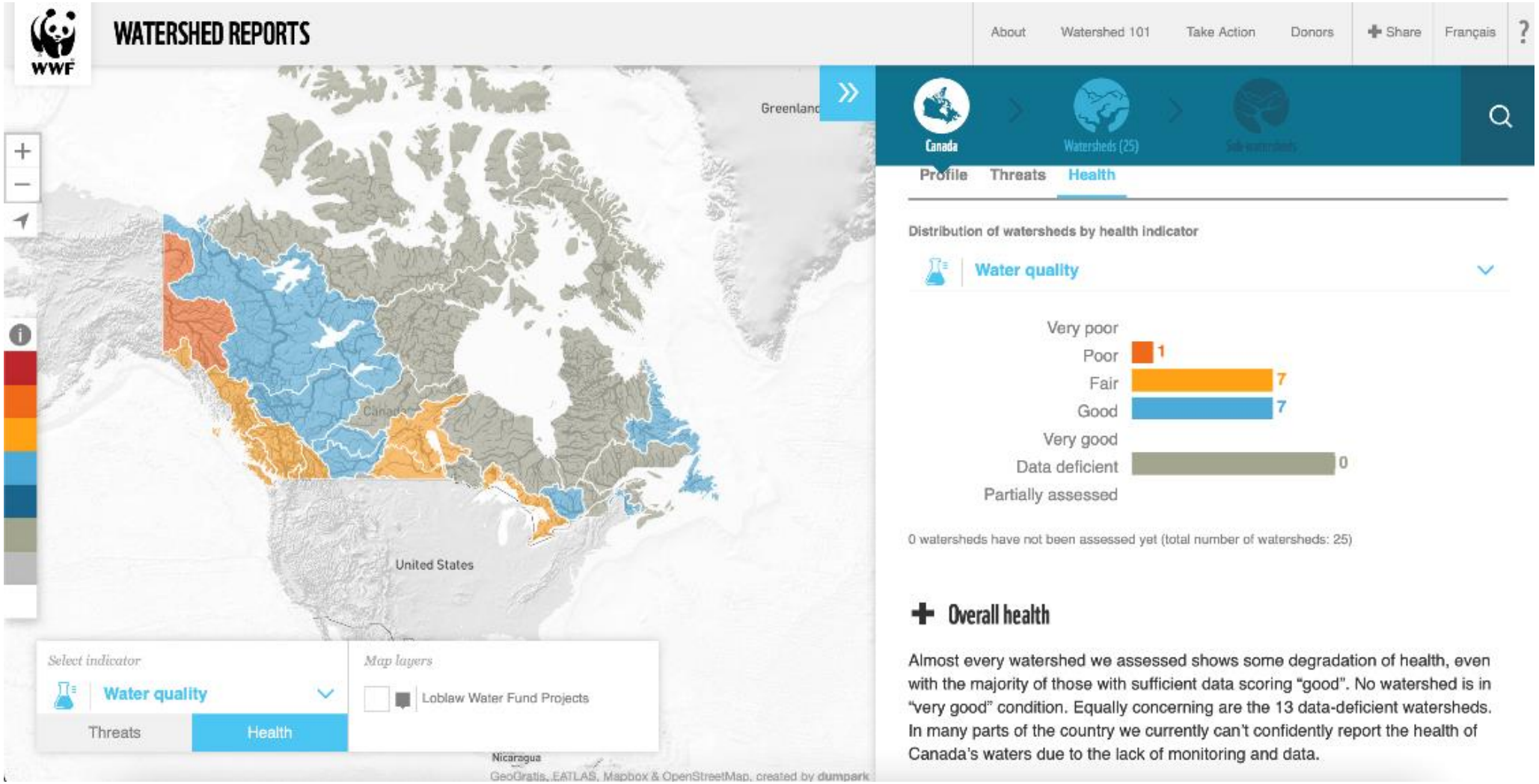
- For minimizing harm and maximizing benefit
- For justice
- For future use

The Global Indigenous Data Alliance. GIDA-global.org

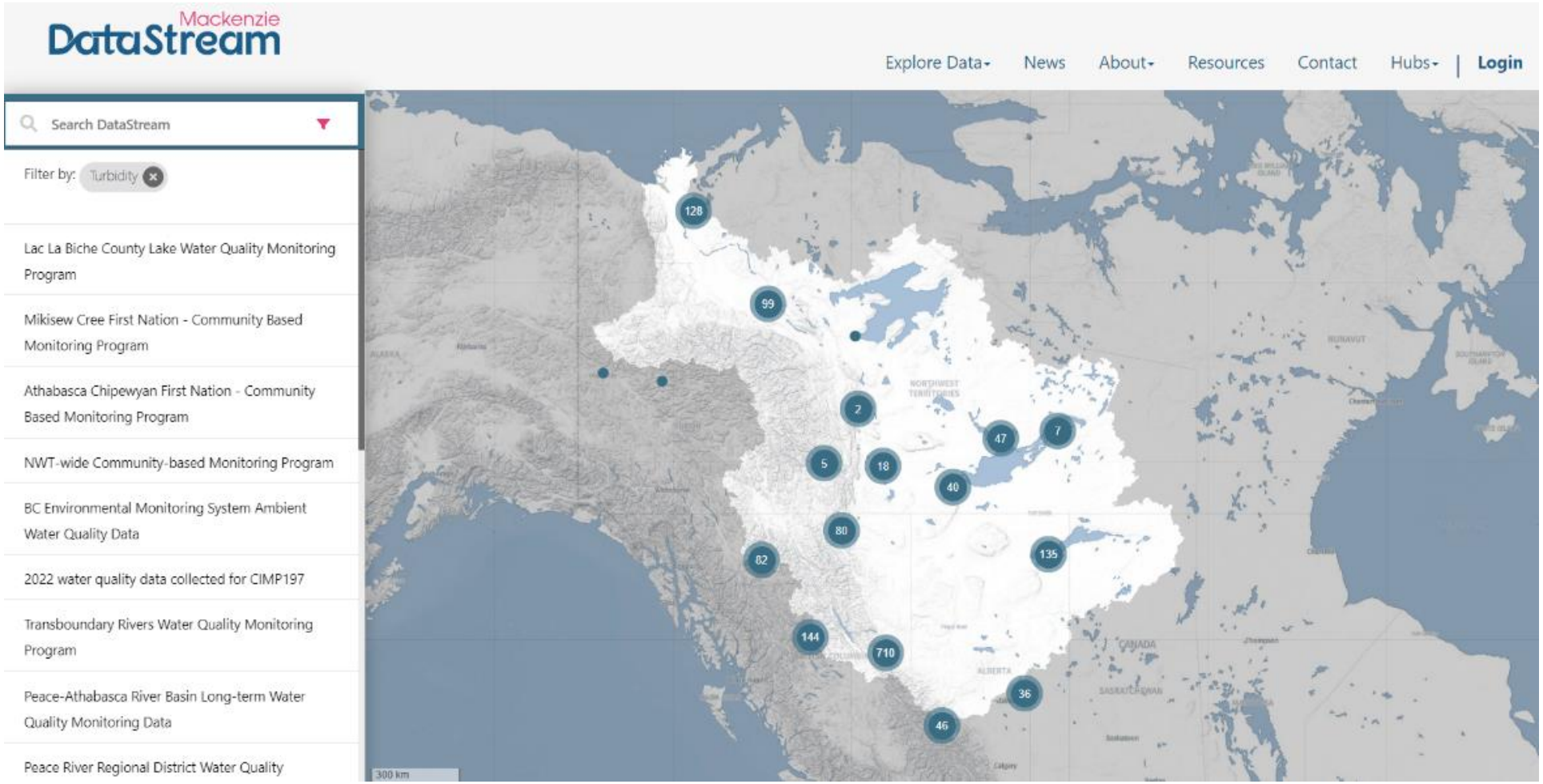
DataStream Demo

How is DataStream being used?

WWF Watershed Health Assessment Reports

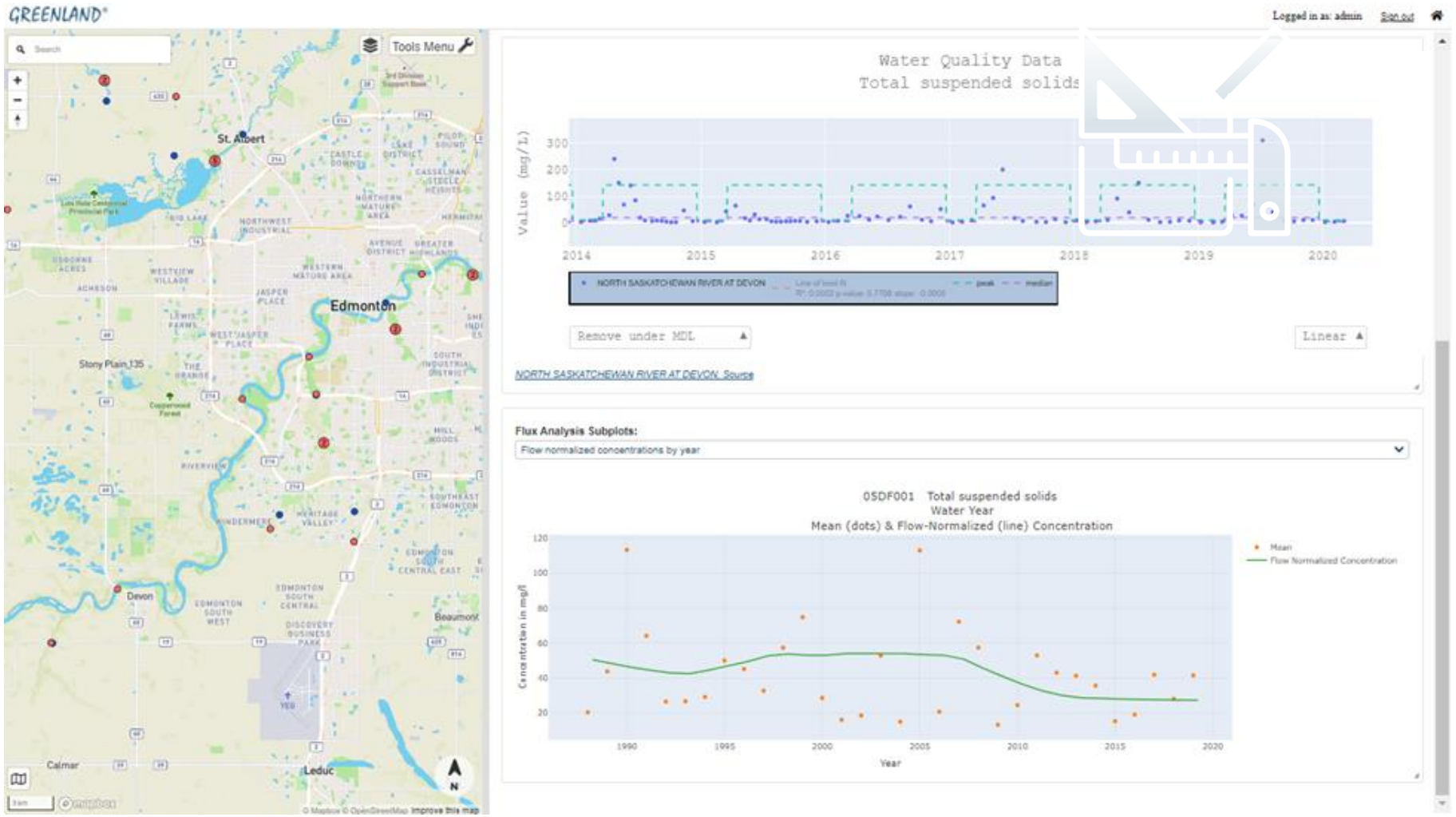


Pipeline Installation and Repair in the Northwest Territories



DEHCHO FIRST NATIONS

The Healthy River Ecosystem AssessmenT System



THREATS™
THE HEALTHY RIVER ECOSYSTEM ASSESSMENT SYSTEM

GREENLAND®
Group of Companies

Where DataStream fits in

WE DO

- Provide a place to publish data openly
- Provide support to format and upload data
- Schema validation checks

WE DO NOT

- Collect, fund or own any water monitoring data
- Analyze data and interpret results
- Fully QA/QC data

Keys to Success

- Data policy and ownership
  - DataStream Initiative (2022). DataStream Data Governance Policy. DataStream.org/data-policy
- Program not a project
- Building a community of practice (connecting people and data)
- Transboundary, “neutral home” for data

DataStream

Partners, collaborators and supporters

Regional Partners

Government of Northwest Territories / Gouvernement des Territoires du Nord-Ouest

Atlantic Water Network

LWF LAKE WINNIPEG FOUNDATION

Collaborators & Supporters

THE GORDON FOUNDATION

RBC Foundation

Digital Research Alliance of Canada | Alliance de recherche numérique du Canada

WATER RANGERS

Fondation ECHO Foundation

Environment and Climate Change Canada

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

Thank You!

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https://bit.ly/DataStreamNewsletter

Lake Winnipeg Community-based Monitoring Network

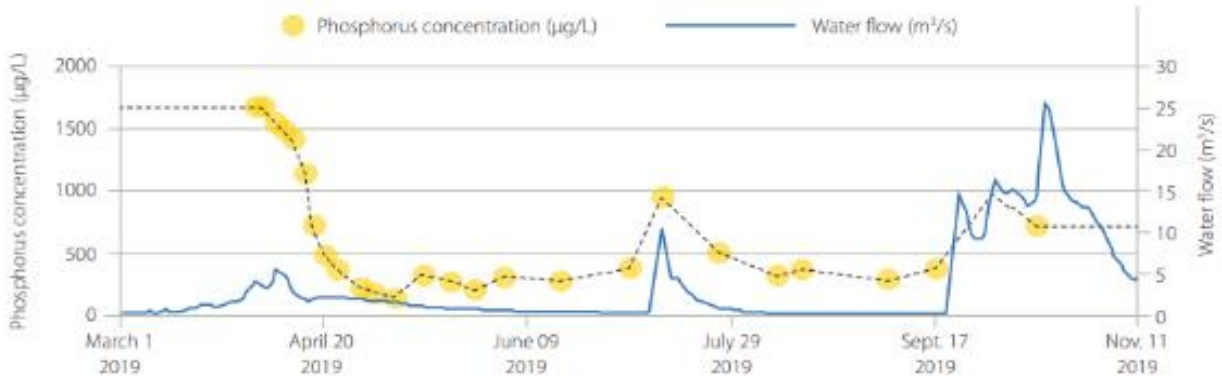
CLIMATE CHANGE AND THE FUTURE OF PHOSPHORUS LOADING

Though phosphorus hotspots in 2019 follow a similar spatial pattern to those observed in previous years, the seasonal timing of phosphorus loading was different. In 2019, at most sampling sites, the majority of phosphorus loading occurred during the fall rather than the spring.

Fall storms and flooding on the eastern side of the Red River Valley and in the Winnipeg River system resulted in high phosphorus exports, including an export of 2.29 kg/ha/y from the lower Joubert Creek. This is one of the greatest phosphorus exports ever reported by any monitoring program in Manitoba.

A new phosphorus hotspot was also identified in the lower Winnipeg River, upstream of the Pine Falls Generating Station. Again, high fall water flow was responsible for this high phosphorus export. However, with only one year of data so far, ongoing monitoring is required to learn more.

The unprecedented wet fall conditions in 2019 highlight changing weather patterns on Manitoba's Prairies. Short-lived, intense storms are expected to become more frequent as a result of climate change. Coupled with spring snowmelt, this is likely to increase phosphorus loading in southern Manitoba.



Water flow and phosphorus concentration for the lower Joubert Creek near St-Pierre-Jolys. In 2019, 70 per cent of the phosphorus load and 73 per cent of the water load occurred during the fall (Sept. 22 to Nov. 11).

LWF LAKE WINNIPEG FOUNDATION