

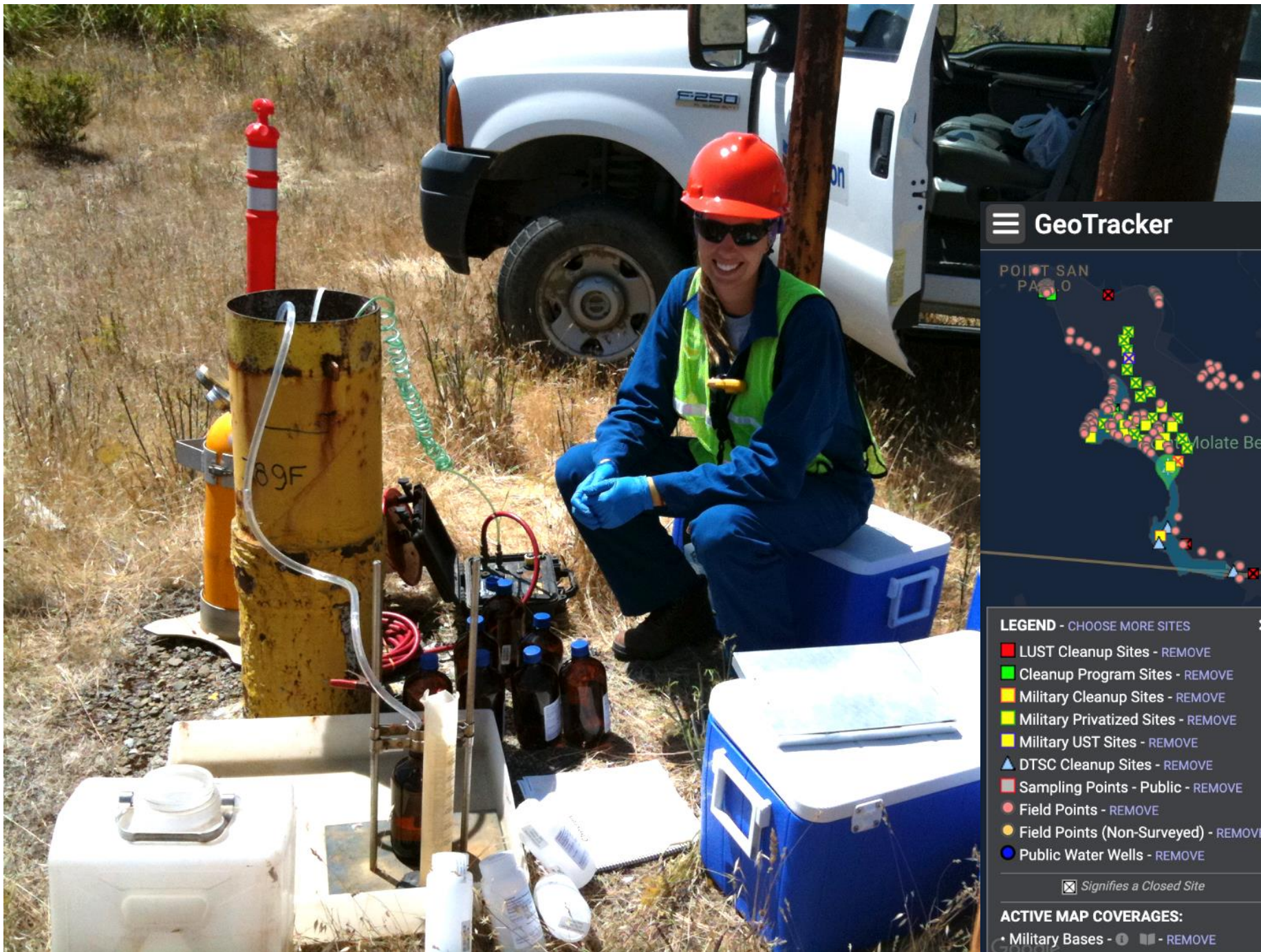


FROM SEA TO SEA TO SEA: BUT WHAT LIES BENEATH?

Making room for groundwater in a surface water-centric Canada



Cynthia McClain, Brendan Mulligan, Randy Stotler,
Jonathan Keizer, Cathy Ryan, Reginald Somera, Mike Wei







A microcosm...

THE YUKON

- Fastest growing jurisdiction in Canada (per capita)
- 97% dependent on groundwater as a potable water source
- 14 First Nations, all dependent on groundwater
- Climate change significantly impacting water resources
- Limited capacity to effectively manage our groundwater



WHEN GOVERNMENTS
TREAT GROUNDWATER
NOT JUST AS A CRISIS ISSUE
BUT MORE **AS A VALUABLE RESOURCE**
—I.E., AS A SUSTAINED PRIORITY—
TRUST, RECONCILIATION AND
SUSTAINABLE DEVELOPMENT WILL FOLLOW.

—**MIKE WEI** to the HOUSE OF COMMONS STANDING COMMITTEE
on ENVIRONMENT AND SUSTAINABLE DEVELOPMENT



BACKGROUND

Who are we and what are we doing here?

A person's hands are shown operating a manual hand pump. Water is being drawn up and is spraying out of the pump's spout in a powerful, vertical jet. The background is a blurred green field, suggesting a rural setting. The text is overlaid on the image in a white, sans-serif font.

At least 30% of Canadians rely solely and directly on groundwater as a domestic water supply.

Close to 80% of the country's rural population relies on groundwater for domestic uses.

More than half of the water systems supplying First Nations rely on groundwater.

DONE LIST



- ☒ Committee struck
- ☒ Structured conversations with experts
- ☒ Met with hydrogeologists from nearly all provincial and territorial governments
- ☒ Submitted brief to "ENVI"
- ☒ Appeared before "ENVI"
- ☒ Presented at CWRA
- ☒ Volunteers engaging MPs



RECOMMENDATIONS

How do we meaningfully integrate hydrogeology into freshwater management?

IAH-CNC's Recommendations

to integrate hydrogeology into freshwater management

1

Terminology



2

Monitoring



3

Reporting



4

Inclusive Forums



5

Education



1

Be clear: “water” includes
“groundwater”.

TERMINOLOGY

Clarify terminology in federal government
communications to include groundwater.





“

The words we choose and the language we use have the power to affect the people and the world around us.

—AMY AGARWAL,
Principal Writer and Editor

Review press releases/conferences, RFPs, websites, legislation, strategies, agendas, etc.

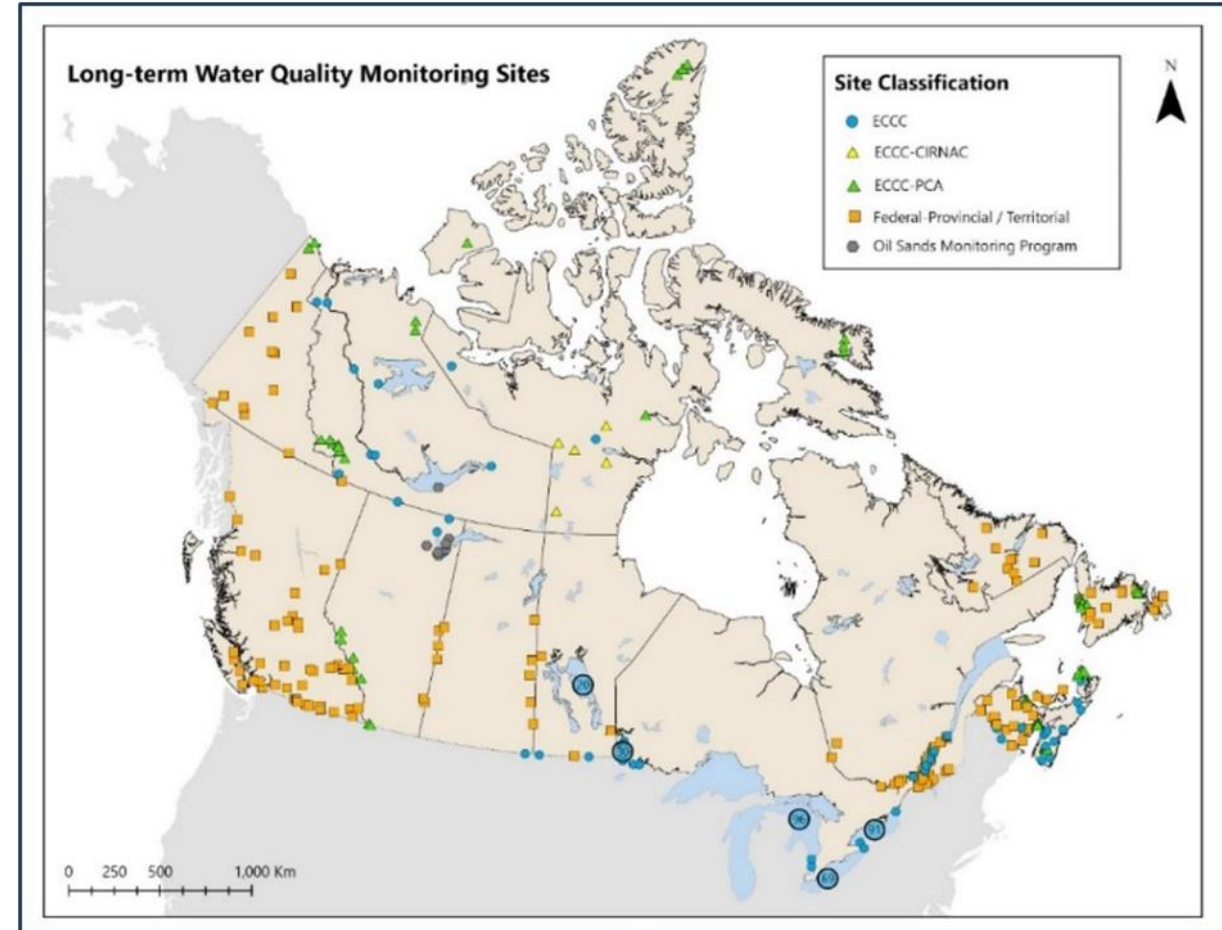
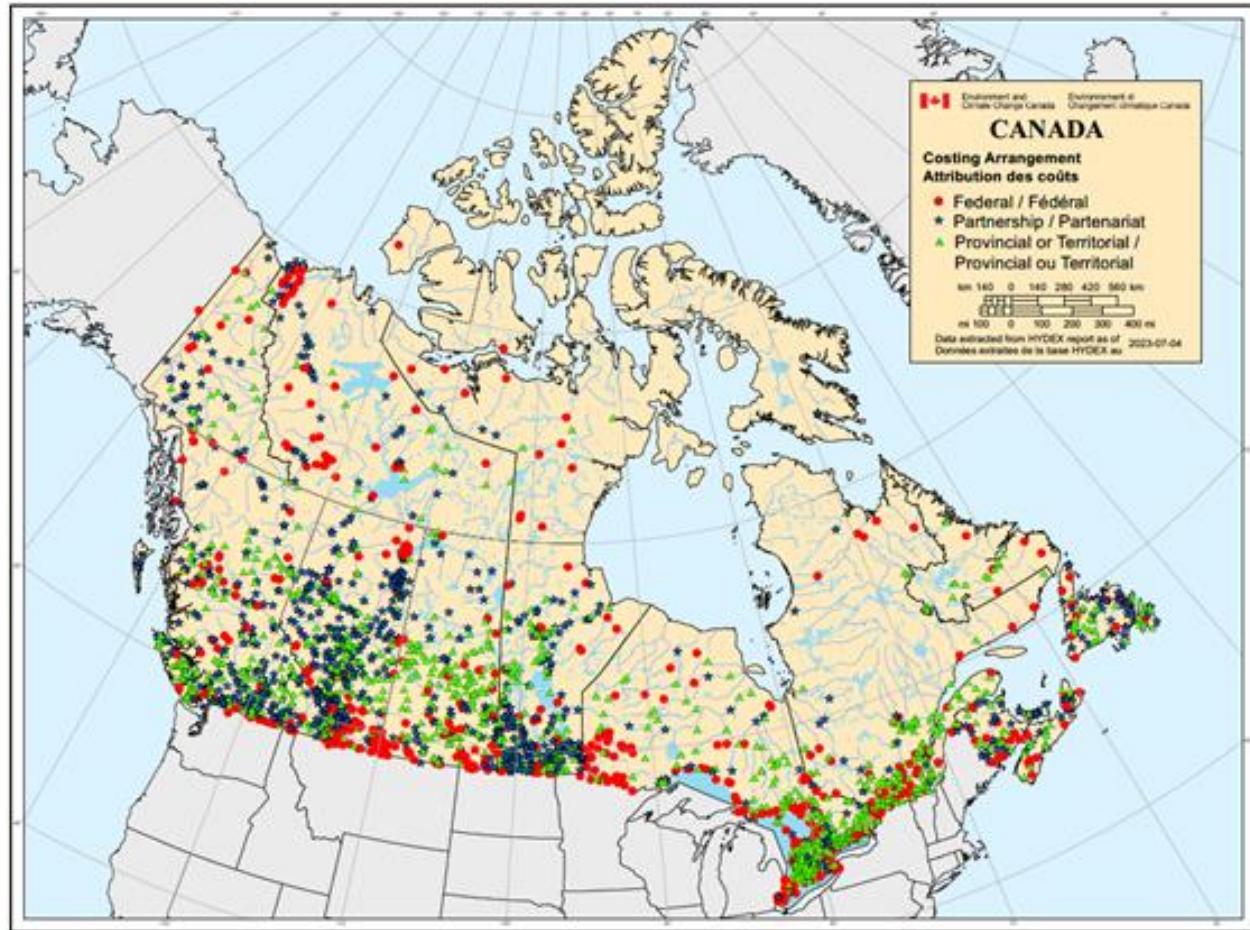


2

Establish groundwater monitoring under the *Canada Water Act*.

MONITORING

Increase federal funding and staffing for national, long-term groundwater monitoring and assessment commensurate with its strategic value to water security and meaningfully connected to surface water monitoring.



"Groundwater research, monitoring and modeling benefits from data gathered through monitoring activities conducted pursuant to hydrometric agreements concluded under the Canada Water Act."

3

Conduct nationwide groundwater reporting.

REPORTING

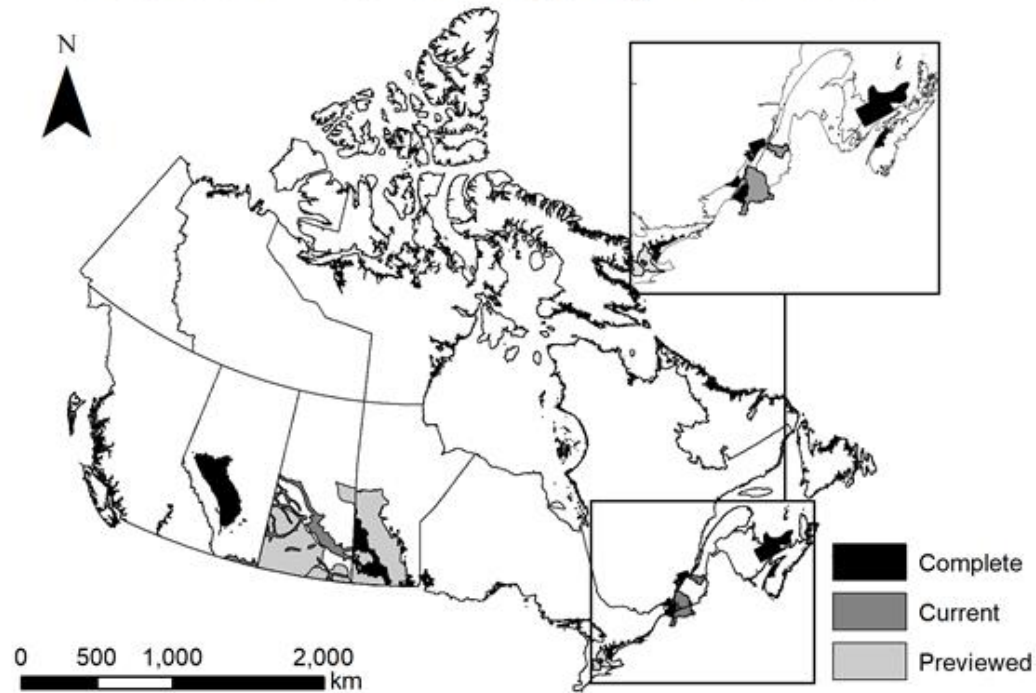
Lead initiatives to regularly report on groundwater quality and quantity trends.



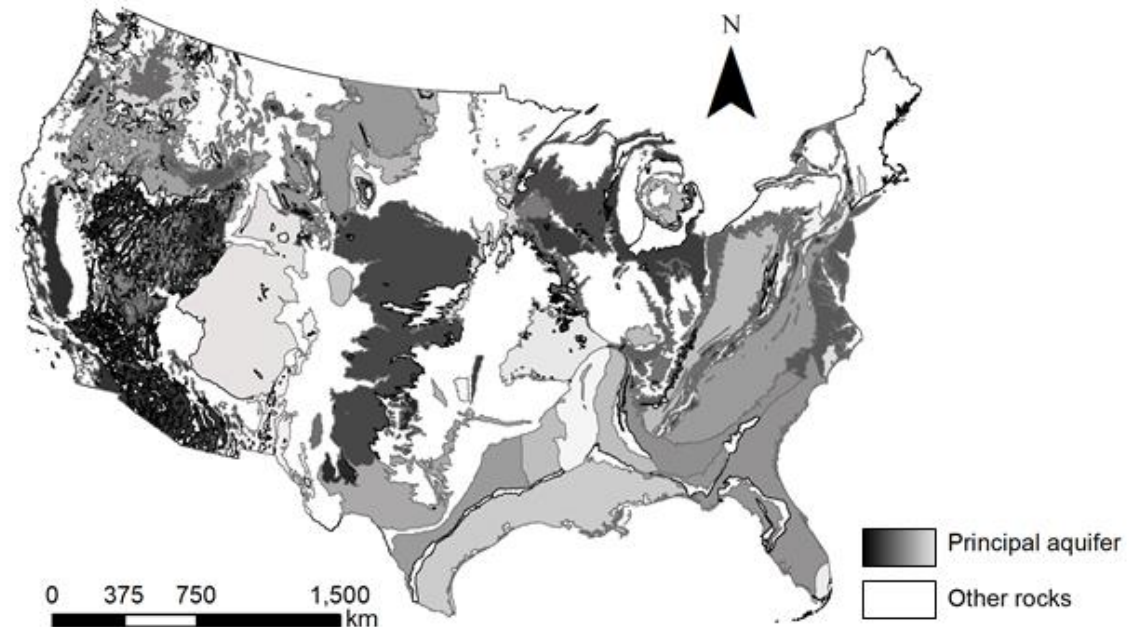
We lack a comprehensive understanding of the quantity, location, and quality of Canada's groundwater.

—DataStream brief to the
HOUSE OF COMMONS STANDING COMMITTEE on
ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

The Status of Aquifer Mapping in Canada

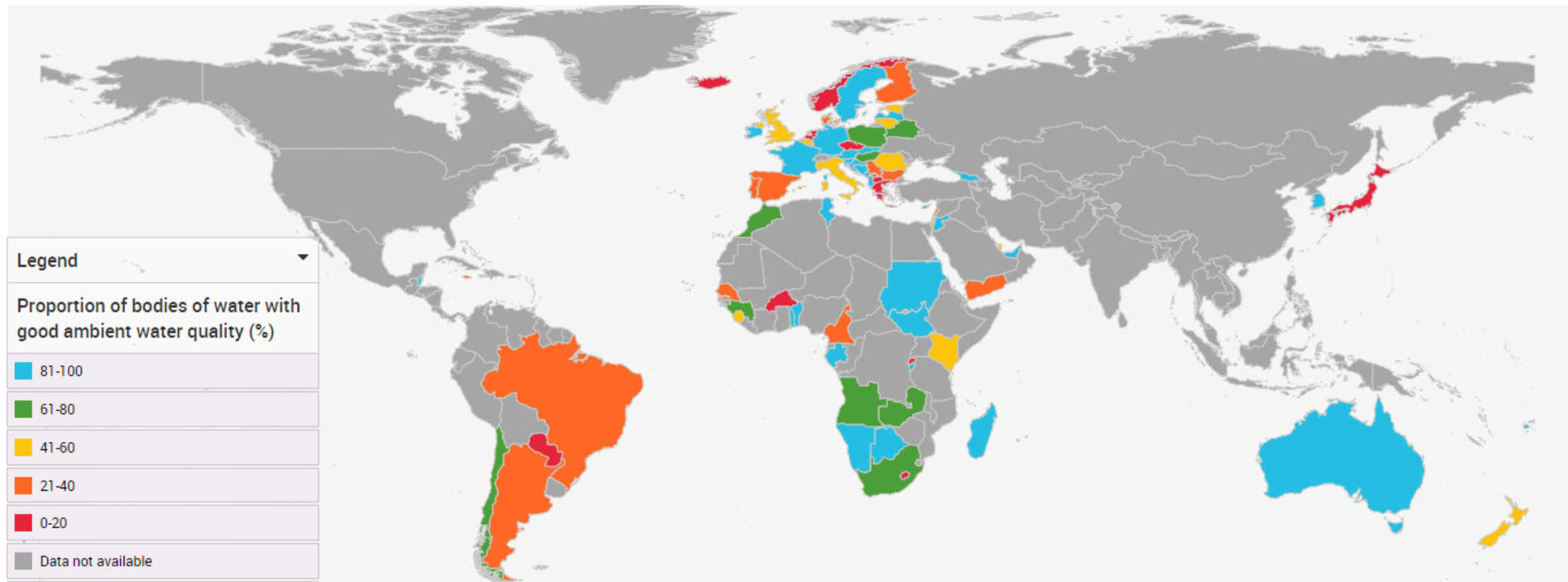


The Status of Aquifer Mapping in the USA



*"Monitoring data falling outside of the key **Canadian aquifers** [which cover a small part of the country] **have not been included** in the analysis."*

UN-IGRAC, State of Global Water Resources Report: Quantitative Status of Groundwater, 2023

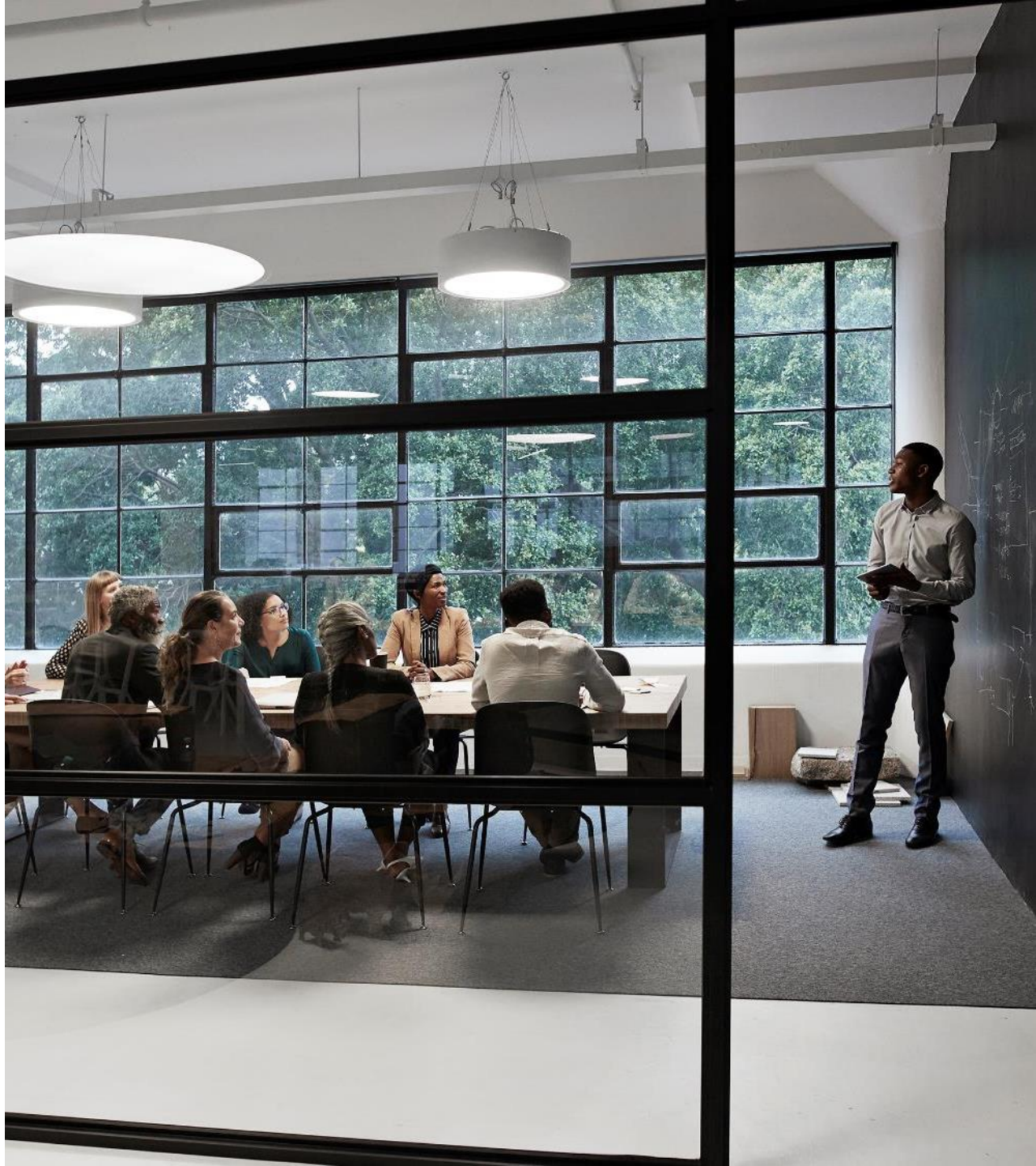


4

Bring groundwater experts to the freshwater table.

INCLUSIVE FORUMS

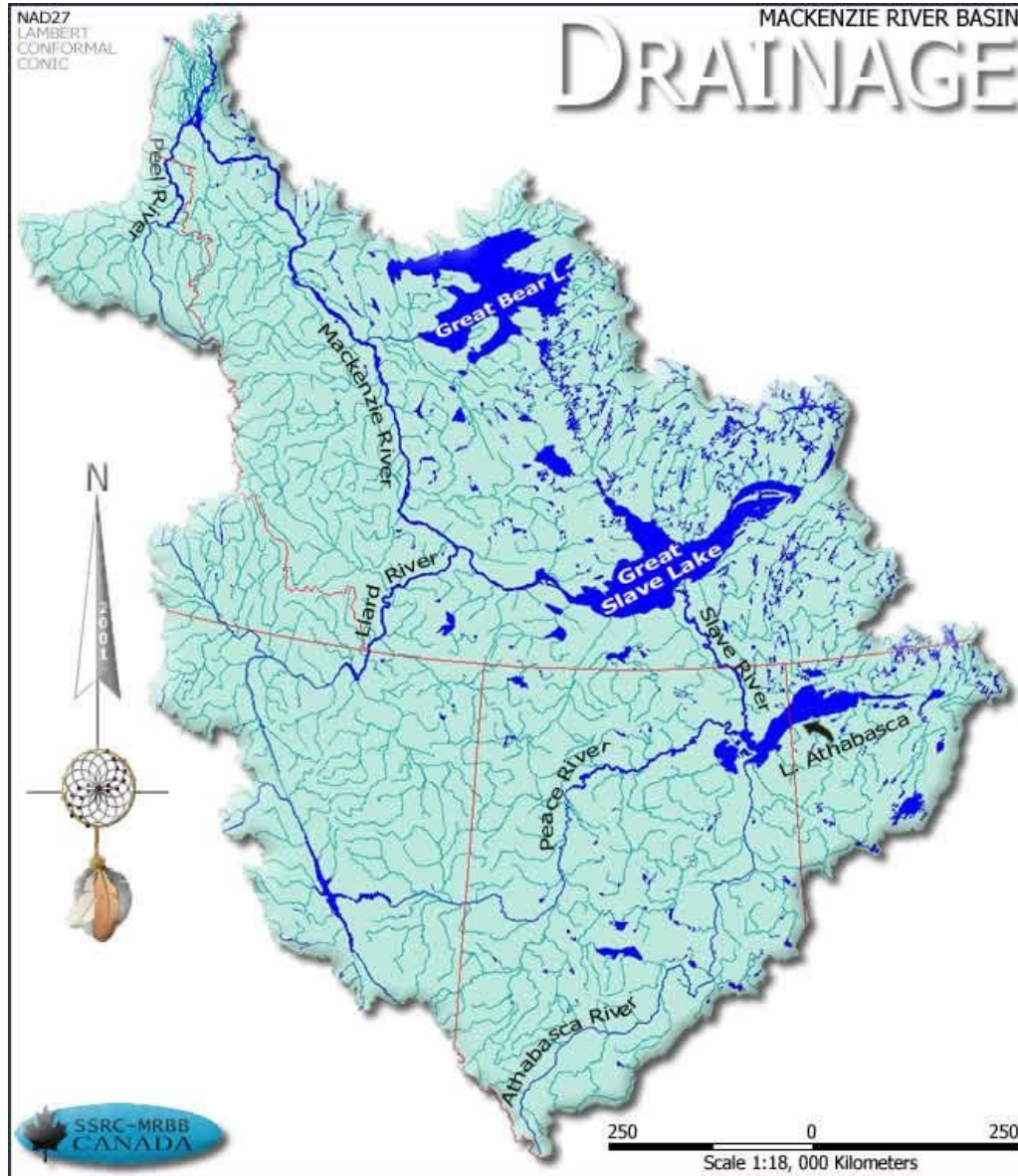
Ensure that groundwater experts are integrated at every stage of freshwater research and decision-making.





Despite the **critical importance of groundwater** for the environment and society, it is **undervalued, misunderstood, mismanaged and often ignored** at the policy level.

—**Beth Parker** to the HOUSE OF COMMONS STANDING COMMITTEE
on ENVIRONMENT AND SUSTAINABLE DEVELOPMENT



"Water Resources" means the Mackenzie River and any order tributary to the Mackenzie River including deltas, tributaries of deltas, wetlands and lakes which contribute water to the Mackenzie River, whether in a liquid or frozen state, excluding groundwater except where the Parties to a Bilateral Water Management Agreement agree to its inclusion.

Bilateral Water Management Agreements all have parallel structures and include sections on surface water quantity, surface water quality, **groundwater**, and the biological component of the aquatic ecosystem.



We've been contacted by CWA asking
NRCan to help them with the **inclusion of
groundwater** in all their research topics...
We think your work has been instrumental into
raising the profile of groundwater at CWA.

—Eric Boisvert, Geological Survey of Canada



5

Educate about groundwater.

EDUCATION

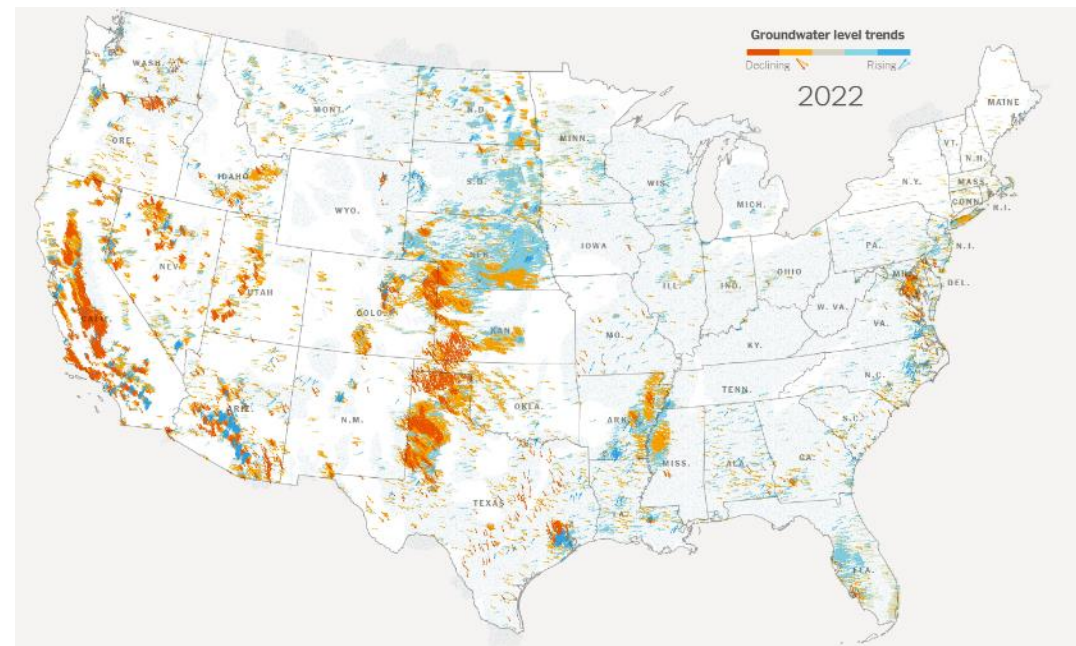
Educate the public and decision-makers about the importance of groundwater in Canada and the role of groundwater in our changing climate.

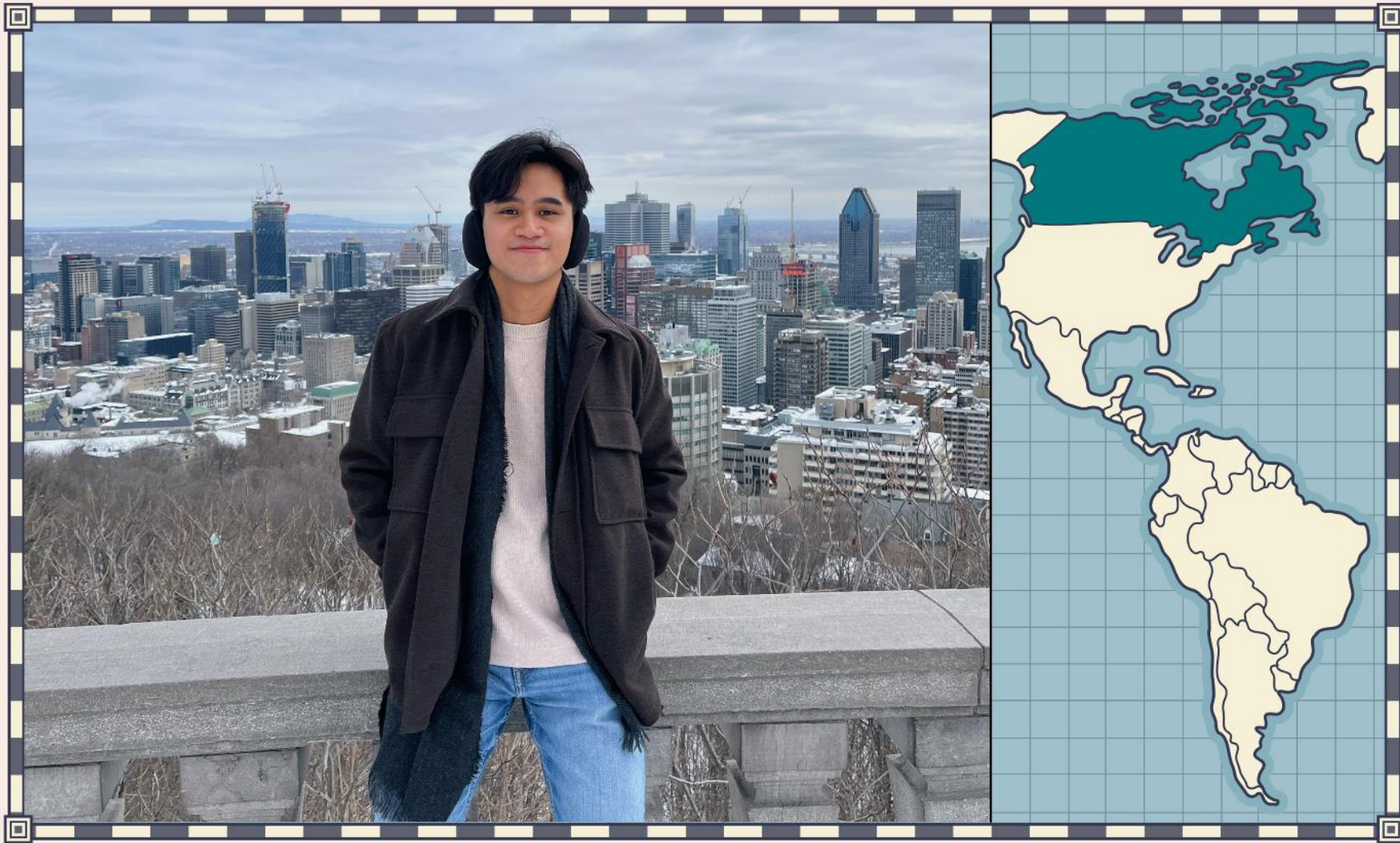


The only people who want to
talk about groundwater
are groundwater scientists.

—**Anonymous** Canadian Groundwater Expert

The New York Times





Reginald Somera

Groundwater Correspondent **CANADA** (2024-2026)





NEXT STEPS

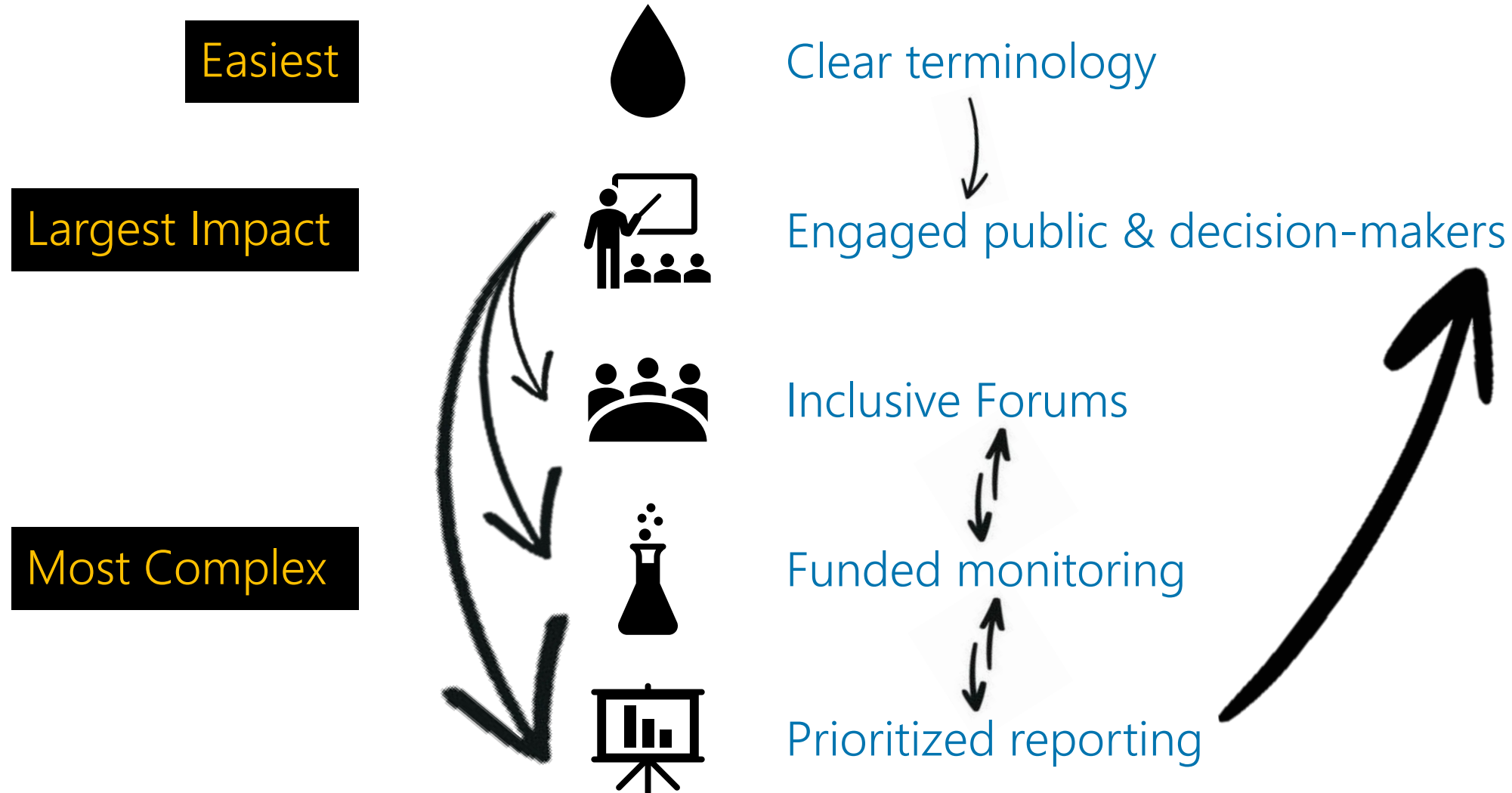
What can you do to meaningfully integrate hydrogeology into freshwater management?



TO-DO LIST

- ☐ Engagement with CWA on development of their National Freshwater Data Strategy
- ☐ Engagement with ECCC on development of their National Freshwater Science Agenda
- ☐ Drafting a review paper
- ☐ Co-hosting a joint meeting with CWRA
- ☐ Considering your input...

Outcomes & where to start



THANK YOU



Read our brief



Enjoy our
modern logo



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