



Wisconsin Geological and Natural History Survey

DIVISION OF EXTENSION
UNIVERSITY OF WISCONSIN-MADISON



Our Mission:

The Survey **conducts earth-science surveys, field studies, and research.**

We **provide objective scientific information** about the geology, water resources, and mineral resources of Wisconsin.

We **collect, interpret, disseminate, and archive** natural resource information.

We **communicate the results of our activities** through publications, technical talks, our website, social media, and responses to inquiries from the public.

These activities **support informed decision making** by government, industry, business, and individual residents of Wisconsin.

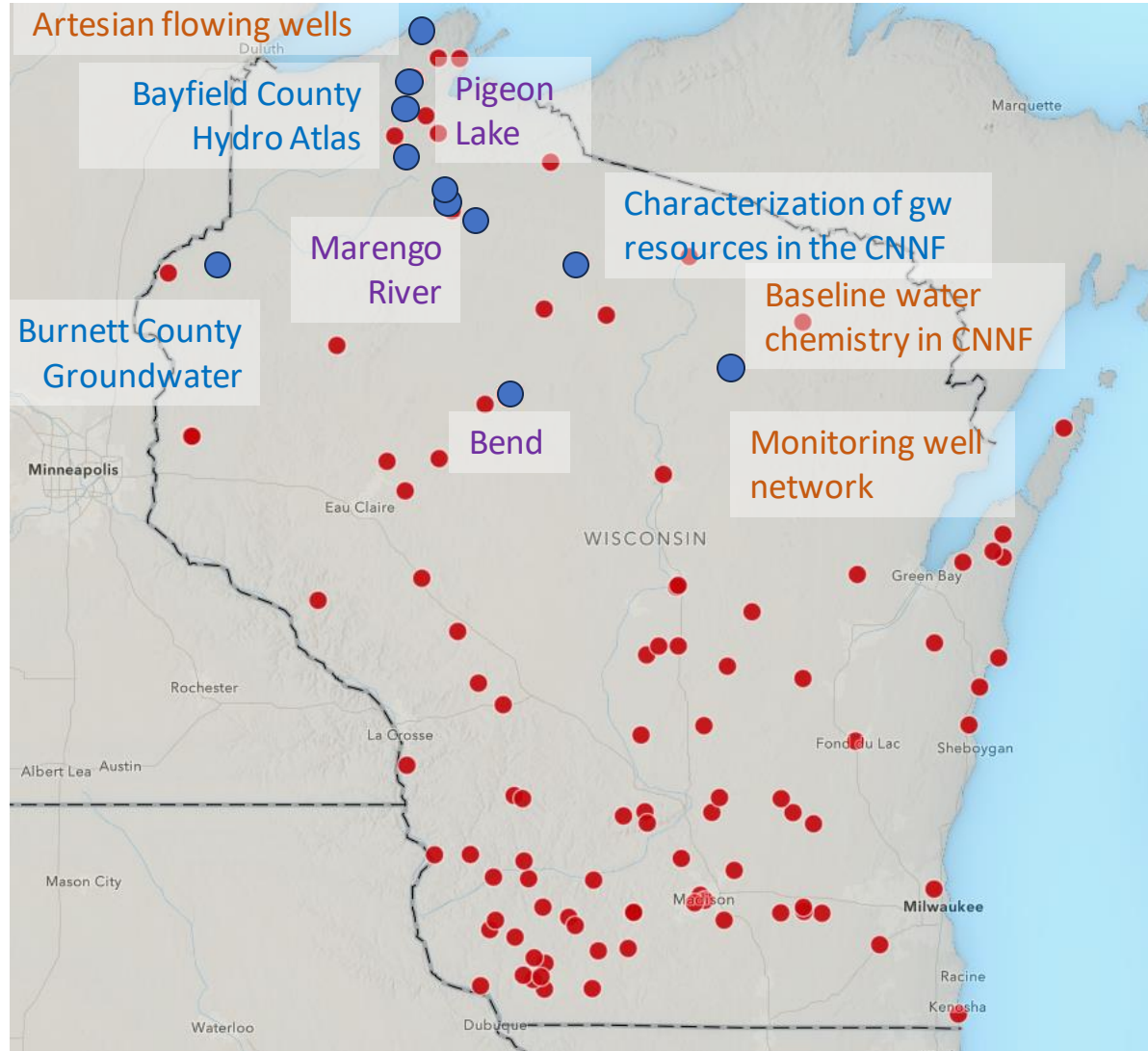


Some, but not all of us.

We are a staff of 30, plus students.



Wisconsin Geological Survey Research Projects



Examples:

Regional hydrologic mapping

Resource inventories and longterm monitoring

Case-studies

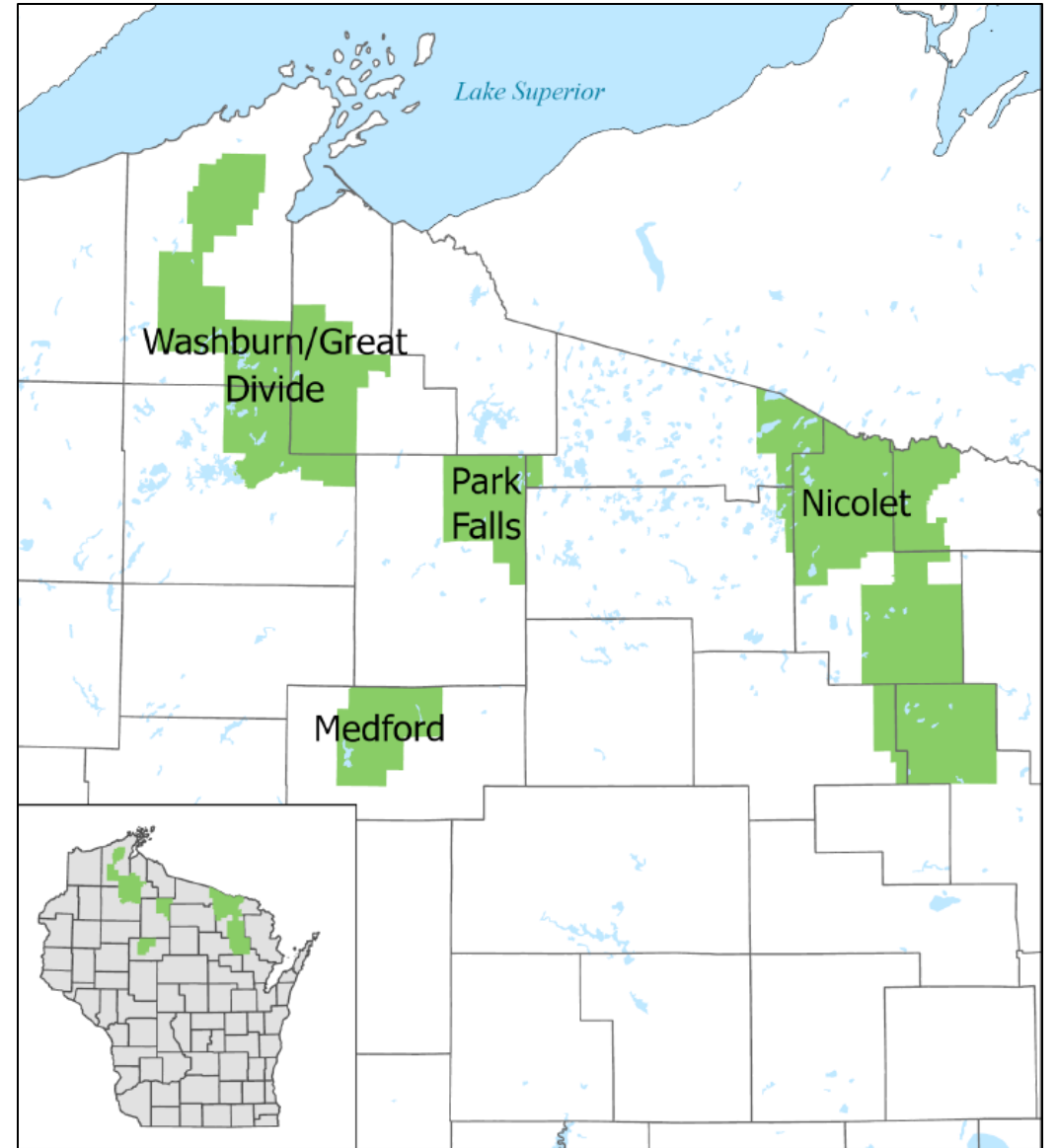
- Recent and ongoing Groundwater-related projects in the Northwoods

- In partnerships with
- Local governments
 - USFS
 - WDNR
 - GLIFWC

Learn more about our ongoing and recently completed projects in our interactive map



Chequamegon-Nicolet National Forest (CNNF)






Overview of Hydrogeology in Bayfield County

- Multiple years, multiple types of projects at different scales
- With funding from Bayfield County, USFS, and WDNR

What we know about the regional groundwater system


Sandy Uplands are the primary source of groundwater recharge for the Bayfield Peninsula.

In the northern half of the county, groundwater flows away from upland environments and towards Lake Superior.



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 DIVISION OF EARTH SCIENCES
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Hydrogeologic atlas of Bayfield County, Wisconsin



Technical Report 005 - 2019
 Grace E. Graham
 Anna C. Fehling
 Madeline B. Gorkowicz
 Kenneth R. Bradbury

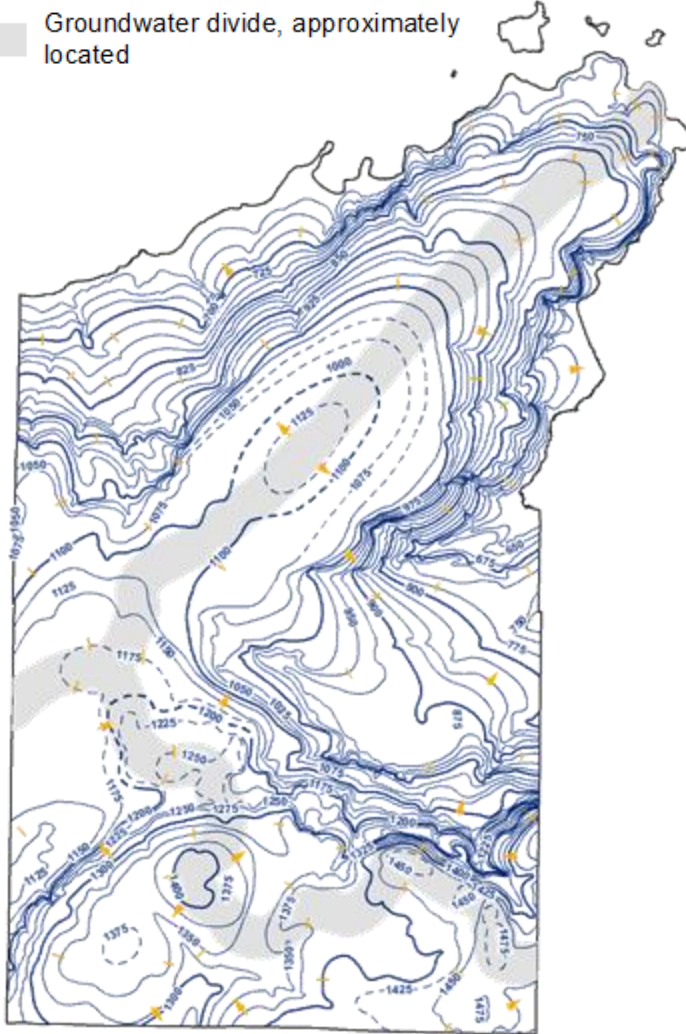
data from Bayfield Co. Hydrologic Atlas, 2019

Example Hydro Atlas Maps

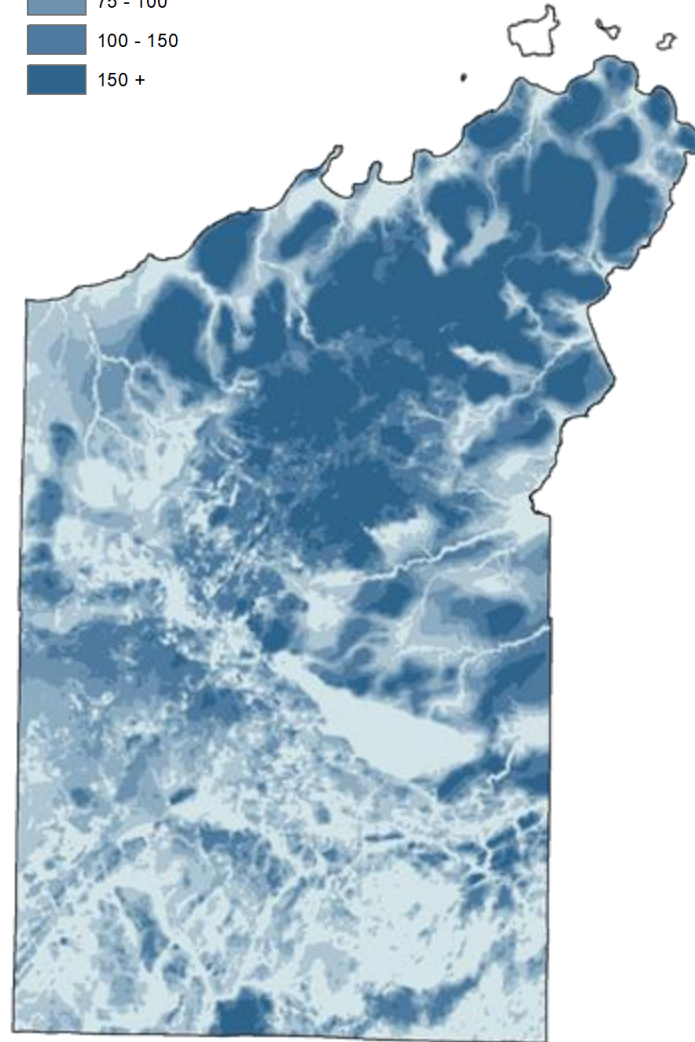
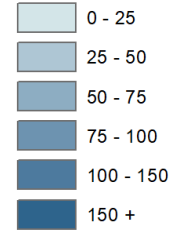
--- Water-table elevation, contour = 25 ft;
datum is sea level, dashed where inferred

→ Approximate direction of shallow
groundwater flow

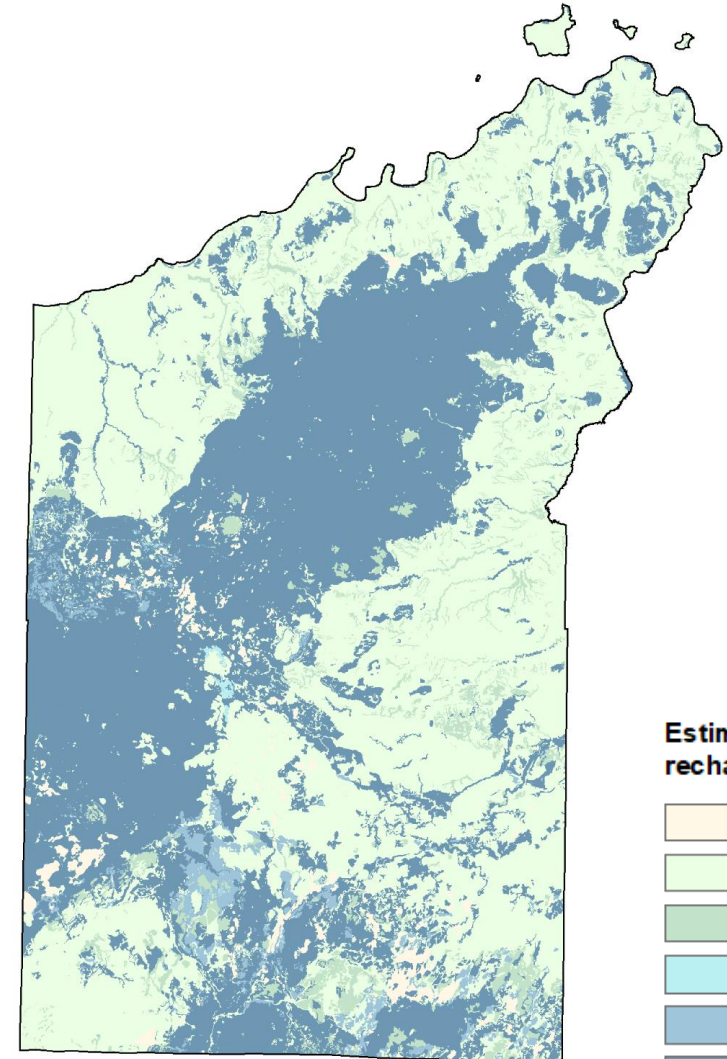
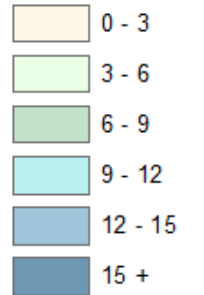
Groundwater divide, approximately
located

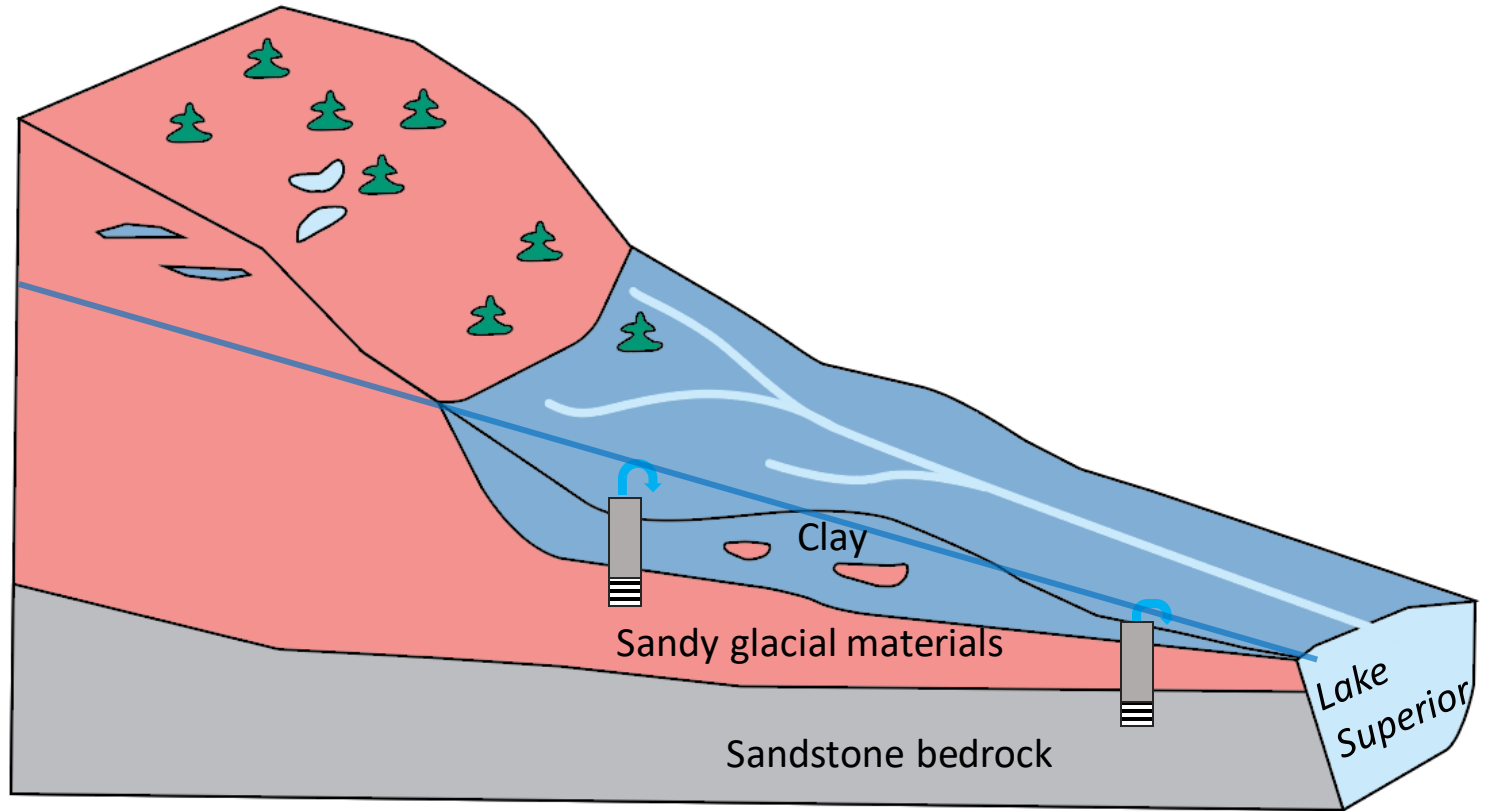
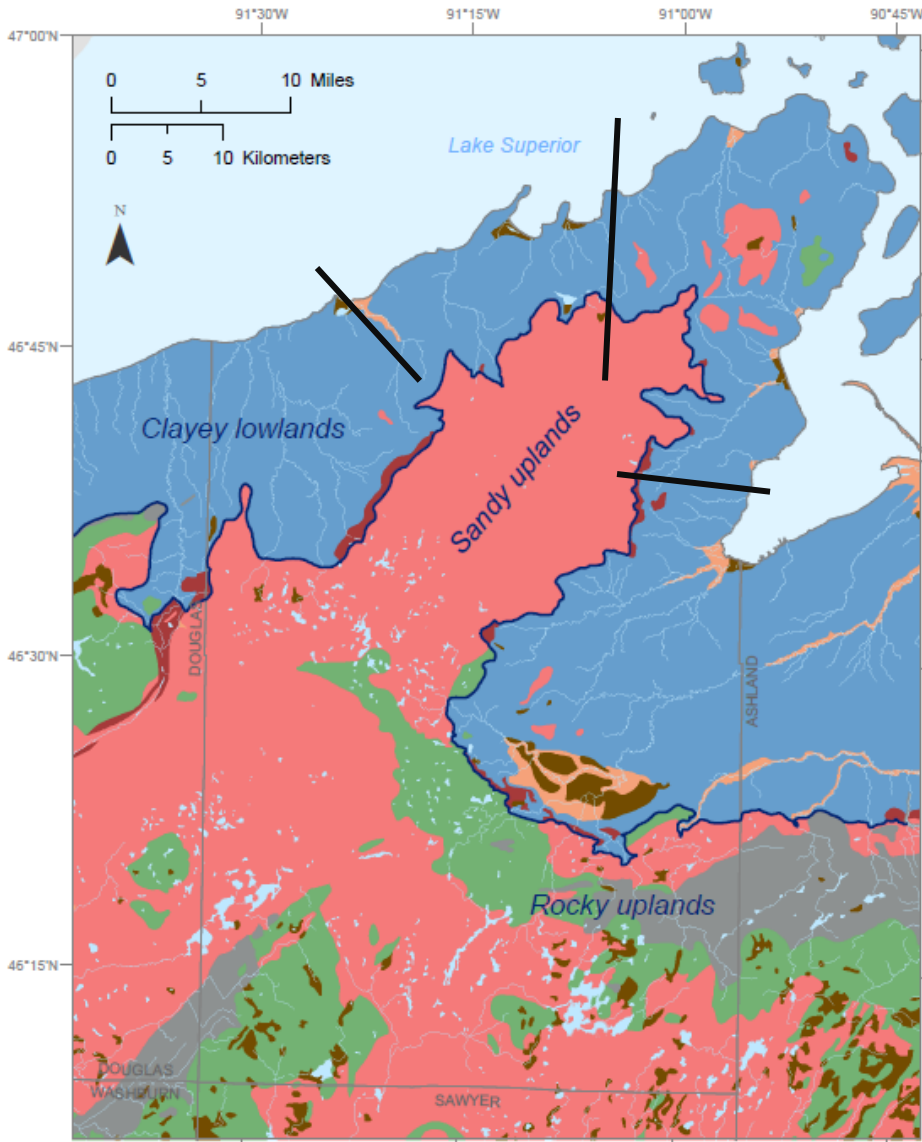


Depth to water table (ft)



Estimated annual
recharge (in/yr)





Schematic cross section from the Sandy Uplands to the Lake Superior Lowlands

Generalized surficial geologic units	
Sand and gravel (post-glacial)	Silt and clay (Miller Creek Fm.)
Peat	Sand and gravel (Copper Falls Fm.)
Sand and gravel (Miller Creek Fm.)	Clayey sand and silty sand (Copper Falls Fm.)
Bedrock	

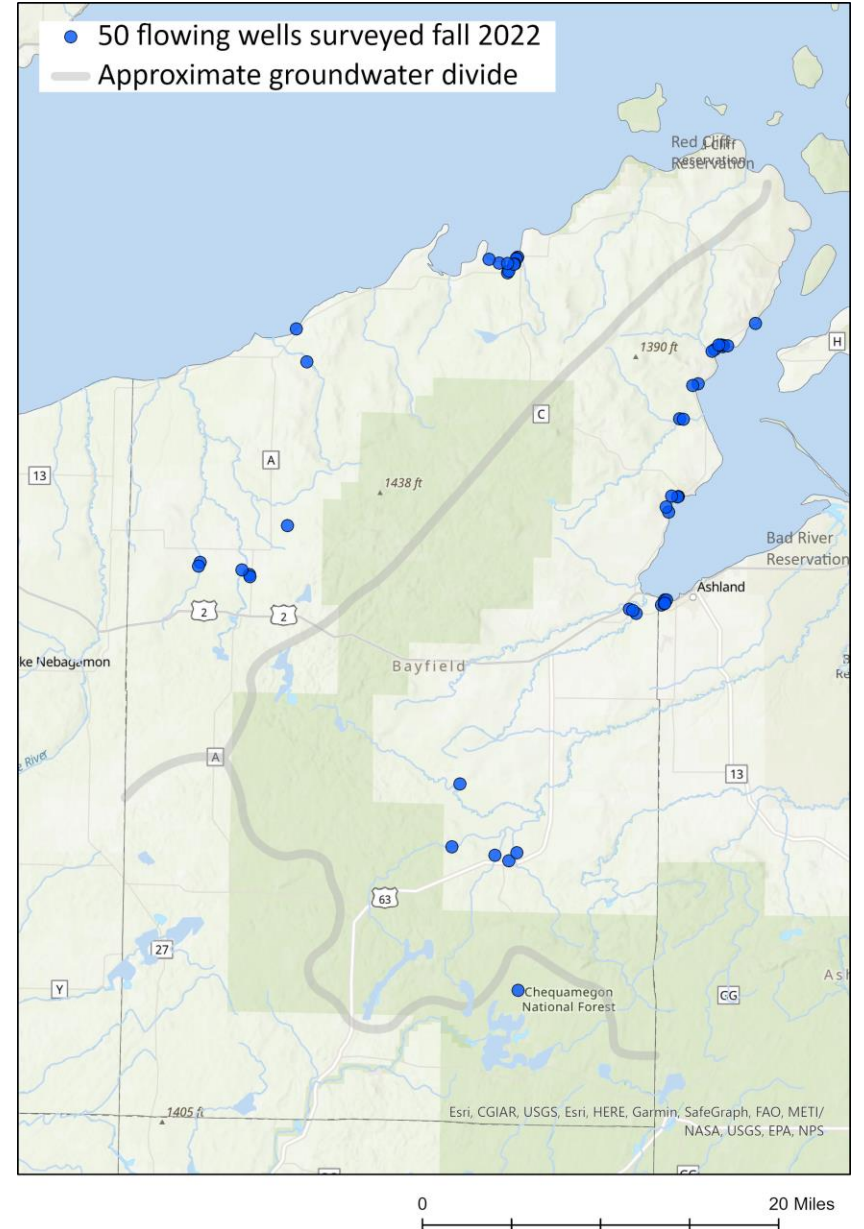
Inventory and Analysis of Flowing Artesian Wells in Bayfield County

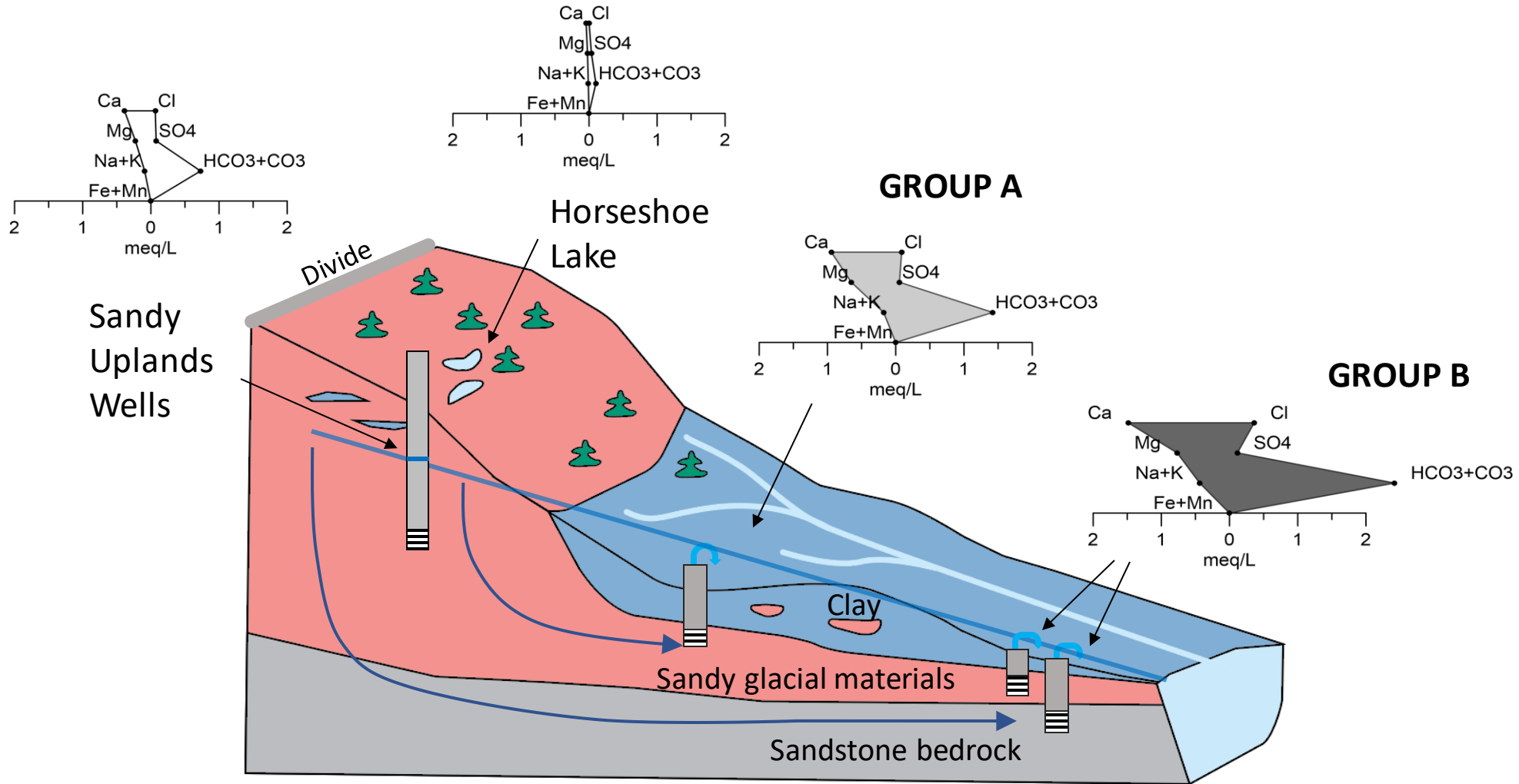


Purpose:

- Compile information about historical artesian conditions around the Bayfield Peninsula.
- Complete field surveys describing modern water chemistry and flow conditions.

The inventory is intended to support water-resource protection and management related to the Bayfield Peninsula's unique artesian aquifer.





Schematic cross section from the Sandy Uplands to the Lake Superior Lowlands.



Thank you!

Please feel free to contact me with questions:
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