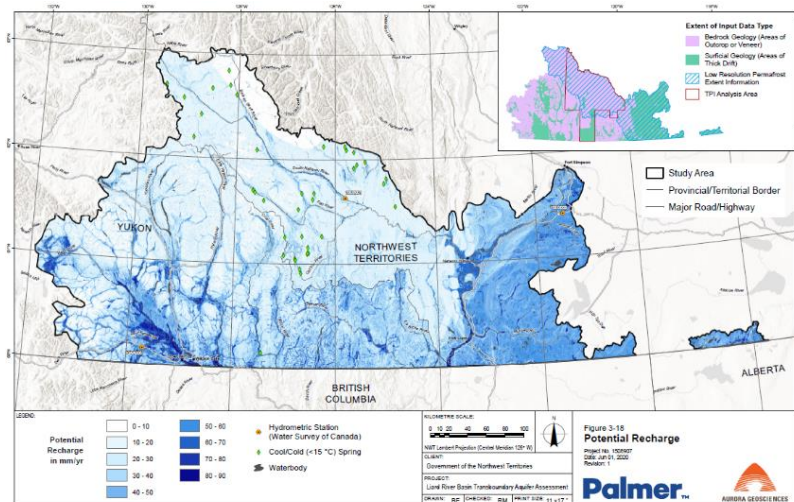




Liard River Basin Transboundary Aquifer Assessment

Background

The Yukon-Northwest Territories Transboundary Water Management Agreement (2002), under the Mackenzie River Basin Transboundary Waters Master Agreement (1997), prioritizes the protection and management of groundwater resources of the Liard River basin. Prior to this study, there was little information on the types, distribution and characteristics of aquifers within the region. This study was completed by Palmer in association with Aurora Geosciences through a partnership between the Governments of Yukon and the Northwest Territories (NWT). It involved a desktop-based transboundary assessment of potential aquifers in the portions of the Liard River basin in Yukon and the NWT. The approach aligns with a similar assessment of the portion of the Liard River basin in British Columbia, which was completed in 2018.



Potential groundwater recharge in the portions of the Liard River basin in Yukon and the NWT. For a high-resolution version of this image, please see the full Assessment

Key Findings

- Relatively little direct transboundary groundwater flow likely occurs between Yukon and the NWT due to our shared territorial border that largely follows following the topographic and rough groundwater divide between the Liard River and South Nahanni River watersheds.
- The most vulnerable aquifers are in the sub-basin that contains the community of Watson Lake.
- Most groundwater recharge appears to occur in the southern half of the study area, **where permeable materials are more widespread, slopes are gentler and permafrost is less likely to occur** (see image and/or full report).
- There remain key data gaps in the study area. In particular, mapping of surficial geology and permafrost is limited.

Recommendations

- This assessment contributes to the preliminary understanding of groundwater in the Liard River basin. Further research and collaboration is envisioned to learn about groundwater in the region.
- Incorporation of traditional knowledge into groundwater studies
- Preparation of better-resolution surficial geology mapping
- Improved storage of, and accessibility to, water well data
- Improvement and updates to land use activity/disturbance mapping
- Groundwater stress analysis
- Refinement of the preliminary water budget

Project Partners

- Government of Yukon (WRB & YGS)
- Government of NWT (ENR & NTGS)
- Geological Survey of Canada
- Palmer
- Aurora Geosciences

FOR MORE INFORMATION, PLEASE CONTACT:

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