



Eagle Plains Water Baseline Assessment

Project summary

The Eagle Plains region is located in north central Yukon, about 600 kilometres north of Whitehorse.

Accessible by the Dempster Highway, the area faces current and potential development, as well as pressures from climate change. Due to interest in oil and gas development in the region and the fact that climate change is affecting permafrost distribution, drainage and water quality, an assessment was initiated to consider the baseline conditions of water in the area. The objectives of the study were to:

- Look at the baseline surface water, groundwater and sediment quality;
- Study how various factors influence surface water and groundwater water quality; and
- Consider the interaction between surface water and groundwater quality.

From 2012 to 2017, water quality, groundwater quality and sediment quality samples were taken multiple times per year at 29 monitoring sites. Samples were taken at different times of the year to determine how seasons impact water quality.



Sunset over Eagle Plains

Results

Overall, water quality varied between watersheds, and was influenced by season and streamflow. Geology impacted that major ion chemistry in surface water and groundwater. Surface and groundwater were found to be slightly acidic, and was found to be sensitive to changes in nutrient input or acidity. Surface water, groundwater and sediment was found to have variable concentrations of metals within and between watersheds. While water quality varied between watersheds, it was most affected by time of year and water level.

Research partners

The Government of Yukon led this assessment in partnership and collaboration with various other organizations contributed including:

- Vuntut Gwitchin First Nation
- Canadian High Arctic Research Station
- Golder Associates Limited
- Saskatchewan Research Council
- University of Calgary
- Natural Sciences and Engineering Research Council

What it means for you

The Eagle Plains region spans across the traditional territories of Vuntut Gwitchin First Nation, Tetlit Gwich'in, First Nation of Nacho Nyak Dun, and the Tr'ondëk Hwëch'in. The region also provides habitat and migration corridors for a variety of wildlife.

Current initiatives in the region include the newly signed Peel Watershed Regional Land Use Plan, updating of the Bilateral Water Management Agreement with Northwest Territories regarding the transboundary Peel River watershed, wildlife monitoring, and ongoing water monitoring.

Prior to the study, very little was known about water in the region. The study documented existing water conditions, especially in advance of any further development or exploration. Findings from this assessment will support stewardship and decision-making around land use.

FOR MORE INFORMATION, PLEASE CONTACT:

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