

Estimation of the water budget, monitoring indicators of wetland dynamics, and hydrologic function of Coles Lake, northeastern BC

RESEARCHER: Sina Abadzadesahraei; PhD Candidate at the University of Northern British Columbia

SUPERVISOR: Stephen Déry; Associate Professor at UNBC and Canada Research Chair in Northern Hydrometeorology

When oil and gas industries come to explore and develop in small communities such as Fort Nelson in northeastern BC, they create a large industrial demand for surface freshwater. The town of Fort Nelson has had considerable experience with large oil and gas industrial projects as this industry has been a major contributor to region's economy. Rapidly increasing oil and gas development has created a greater interest in developing a comprehensive water management plan for the Coles Lake watershed, the site of operations for the oil and gas company Quicksilver. Since there is limited data to support detailed hydrologic modeling or to assess potential risks, the overarching goal of this project is to quantify the water balance of the Coles Lake watershed. This will require quantification of the input/outputs of freshwater to Coles Lake as well as the amounts of water being stored. This research will additionally provide valuable knowledge concerning the boreal wetland dynamics within this region.



Fig 1a. Oil and Gas Facilities at Quick Silver



Fig 1b. Oil and Gas Facilities at Quick Silver



Fig 2a. Coles Lake



Fig 2b. Coles Lake



Fig 2c. Coles Lake



Fig 2d. Coles Lake