

A scenic photograph of a river flowing through a forest. The water is calm, reflecting the surrounding trees and the clear blue sky. The trees on the banks are in various stages of autumn, with some showing vibrant yellow and orange leaves, while others remain green. The overall atmosphere is peaceful and natural.

# Pilot Collaborative Water Monitoring Program in Northeast BC

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# Pilot Collaborative Water Monitoring Program

Elizabeth Johnson



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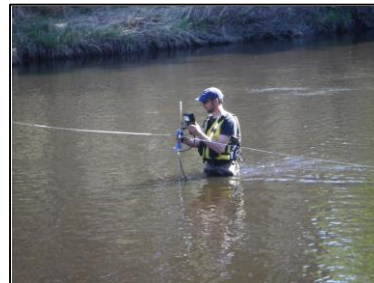
Timeline: Fall 2021- Spring 2023



# Pilot Collaborative Water Monitoring Program

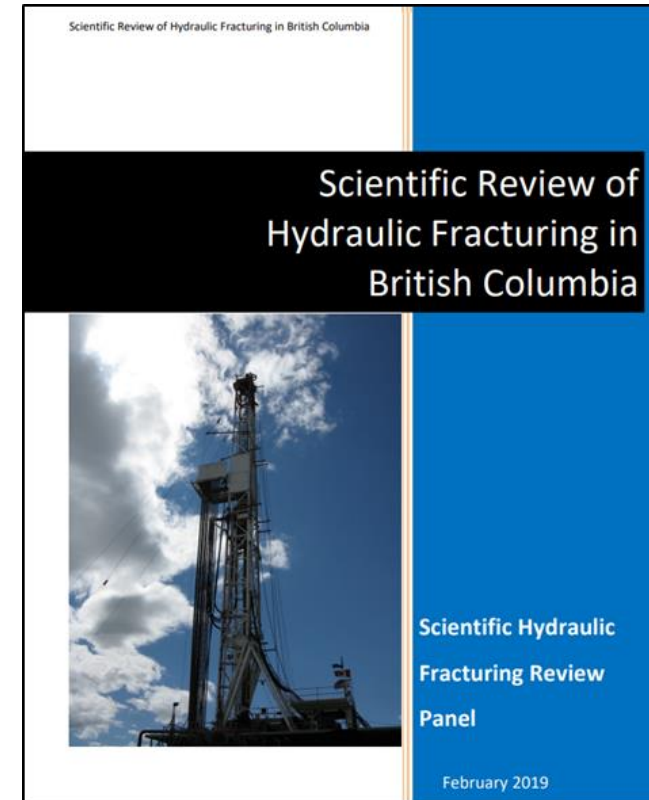
3 projects within program

- 3-4 sites (co-locate)
  - Surface water monitoring
    - Quality and quantity
  - Groundwater monitoring
    - Quality and quantity
  - Climate monitoring
- 1-2 surface water quantity monitoring sites
- Traditional Knowledge gathering



# Some SRHF Water Specific Recommendations

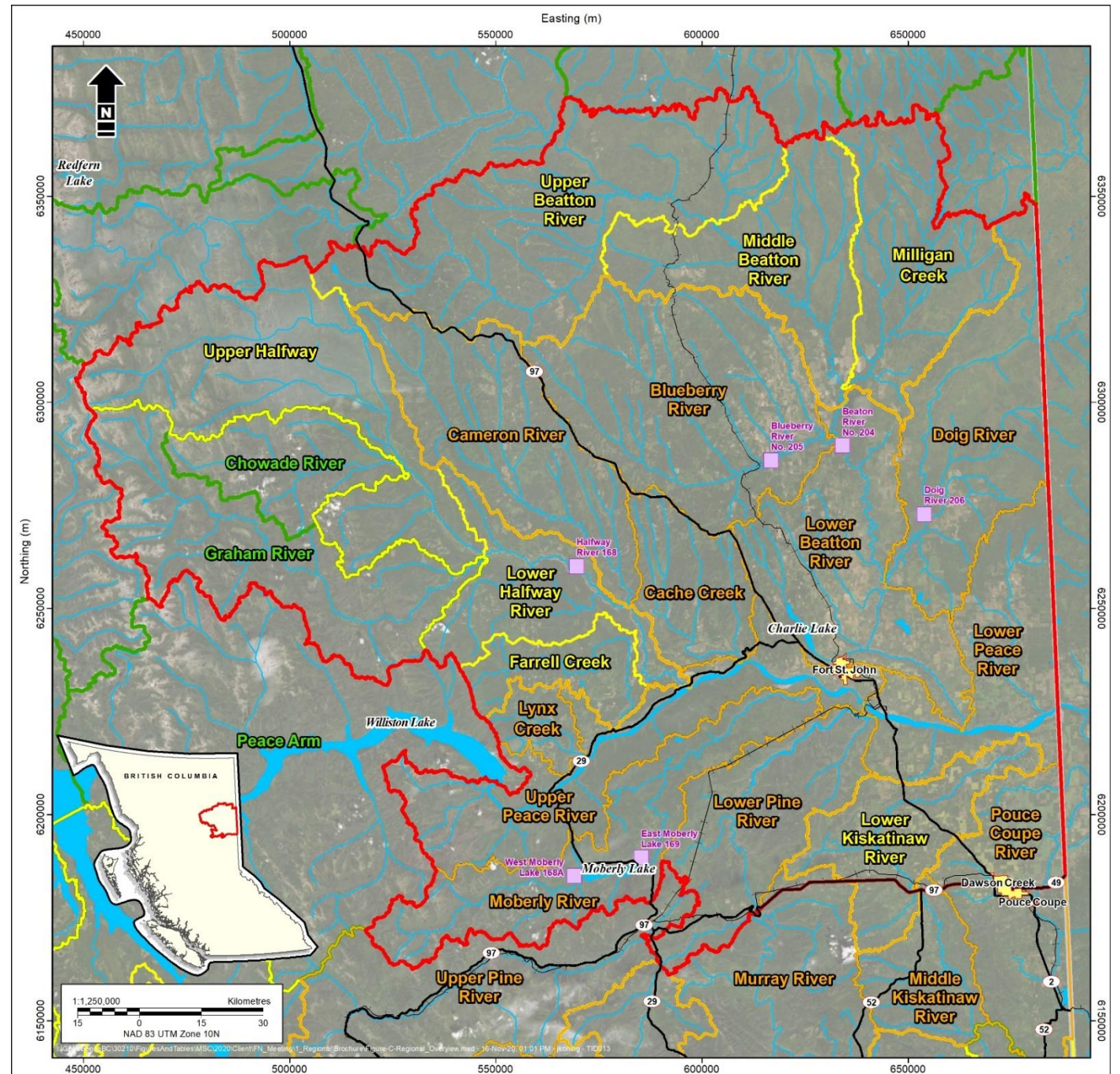
- Study interactions between surface/ground water and shallow aquifers.
- Evaluate the CE of HF on water resources.
- Establish long-term surface water quality monitoring sites.
- Conduct baseline monitoring to improve density of data and develop trends, guidelines and thresholds.
- Include TK in collecting baseline data and information, and make efforts to build trust and knowledge between First Nations, government and researchers.
- Sample surface waters in priority watersheds identified in the Regional Strategic Environmental Assessment (RSEA).
- Increase well observations and data





# Study Area

- Defined by:
  - RSEA Composite Region
  - Level of disturbance
  - Current and future water demands
  - Lack of monitoring data
  - First Nations requests for additional data



# Co-location and First Nation Partnership

- Select 1-2 community members and/or staff to participate
  - Identify monitoring site locations
  - Installation and monitoring
    - Streamflow (Hydrometric)
    - Groundwater well
    - Climate station
    - Water quality (surface and groundwater)
  - Data processing
  - Ongoing water training
- Funding covers engagement, training, equipment purchase and Traditional Knowledge sharing.





# Two-Way Knowledge Sharing

- Project Team
  - Water training / western science
    - Field methods (equipment, tools, software, etc.)
    - Standard operating procedures
    - Desktop methods (data analysis, etc.)
- First Nation Community Members
  - Site selection
  - Traditional Knowledge (TK)



# Traditional Knowledge (TK) Gathering

- **Integrate/Include Tradition Knowledge into decision making?**
- Potential disconnect between regulatory framework and TK?
  - There are scientific considerations but lack the social/spiritual considerations.
    - e.g. Water has a spiritual nature amongst First Nation people?
  - Western science is based on numbers vs. TK is based on traditional activities, experiences or values.
- We lack the capacity to understand historical considerations
  - Things once well known, now passed by Traditional Knowledge holders.





# Collaborative Water Monitoring

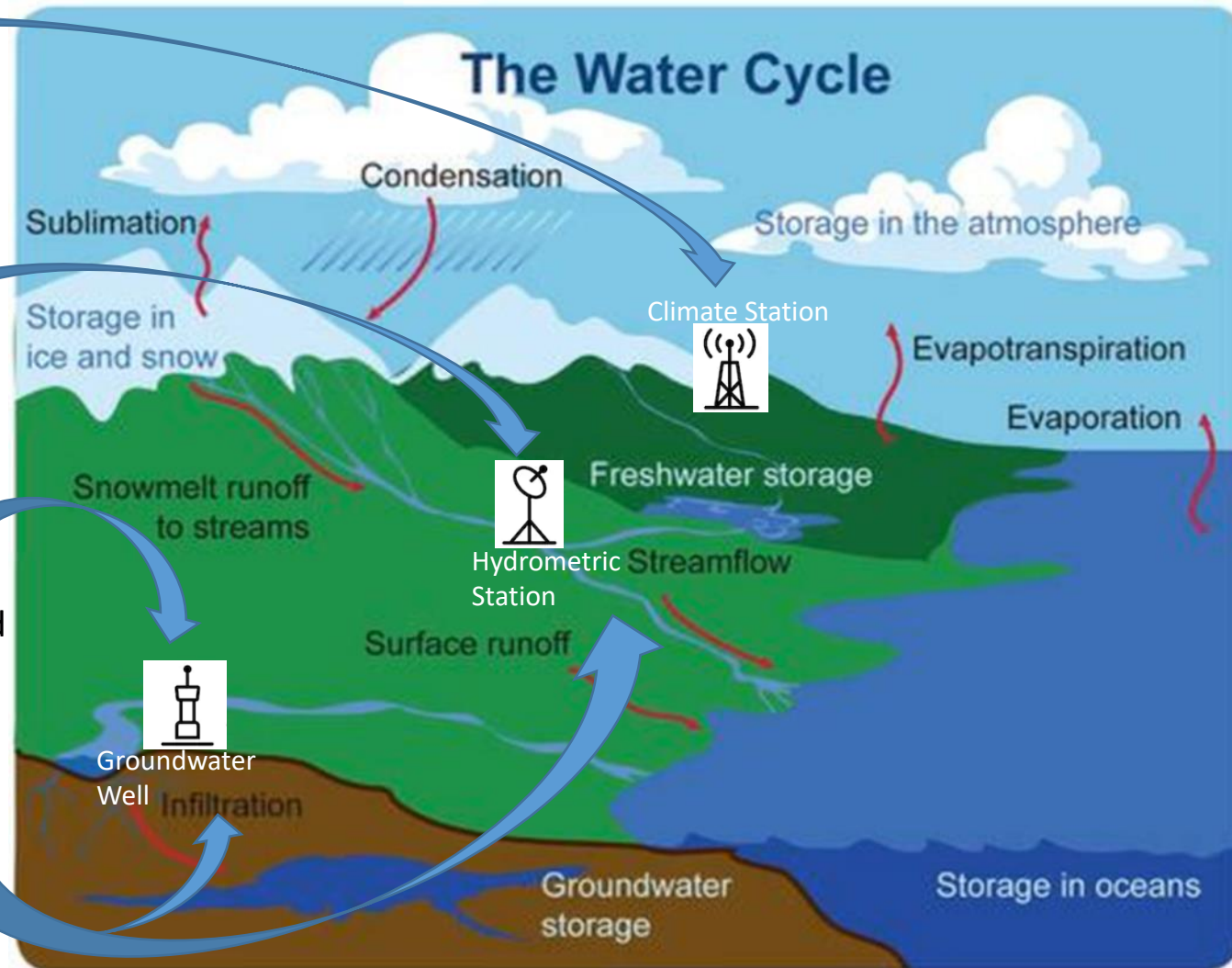
## Traditional Knowledge

**Climate monitoring**  
Measurement of water entering or leaving a watershed due to weather

**Streamflow monitoring**  
Measurement of surface water volume entering or leaving a watershed by monitoring rivers

**Groundwater monitoring**  
Measurement of water levels and flow below ground

**Water quality monitoring**  
Measurement of surface and groundwater water quality



Objective is to co-locate each station in close proximity to each other

# Project Benefits

- Expand baseline water quality and quantity monitoring across northeast B.C.
- Co-locate monitoring in collaboration with First Nations
- Two-way knowledge sharing
  - Western Science
  - Traditional Knowledge
- Improve water management decisions
- Help build sustainable resource development that considers economic, environmental and Indigenous peoples' values and rights





# How To Support This Program?

- Funding ends 2023
- Share any water information/data collected in NE BC
  - Industry
  - Regional District
  - City / Town
  - Others
- Support for long term monitoring
  - In kind
  - Financial





**Contact Suzan Lapp  
for project  
information**

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**Thank you**

