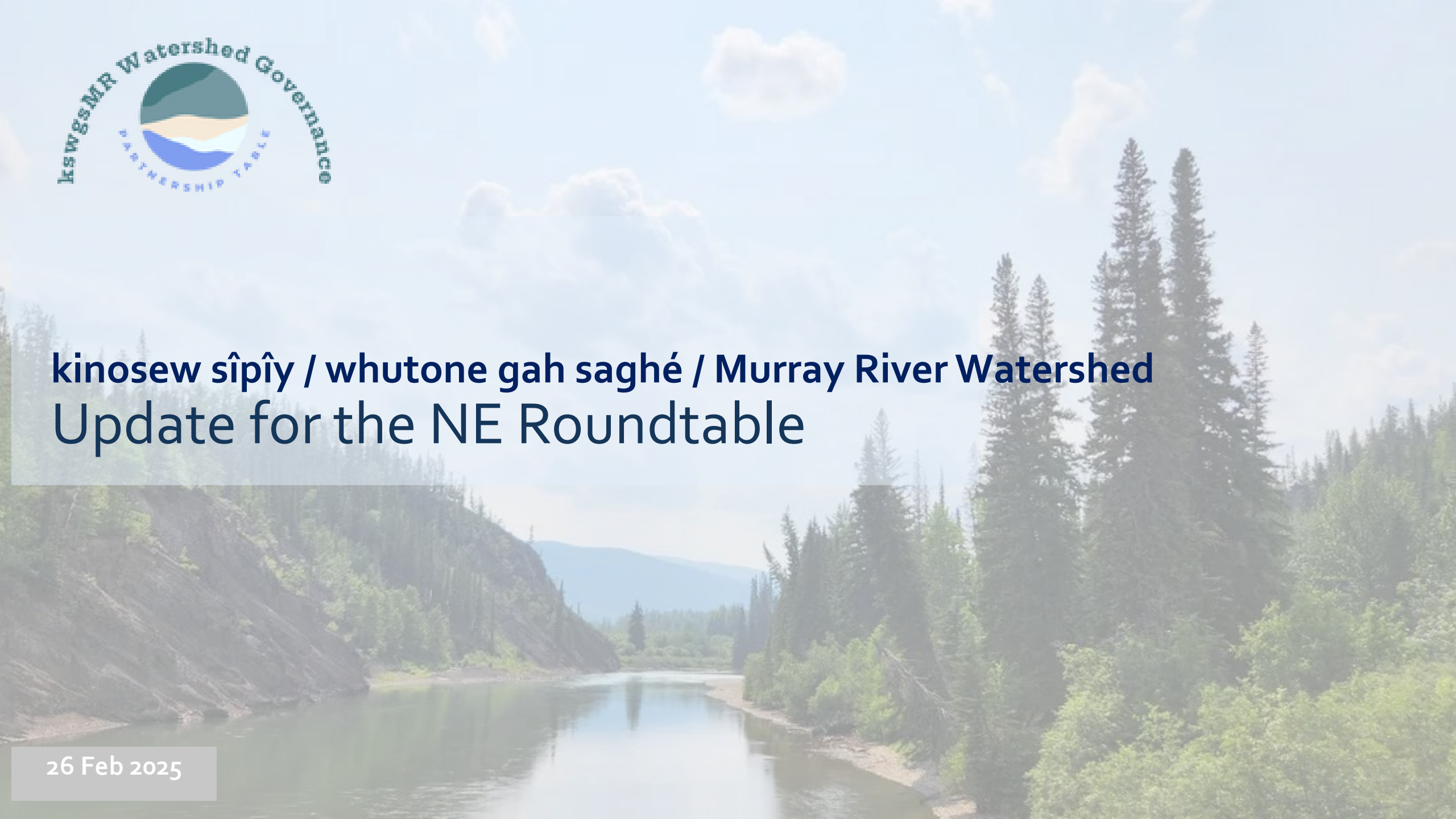


kinosew sîpîy / whutone gah saghé / Murray River Watershed

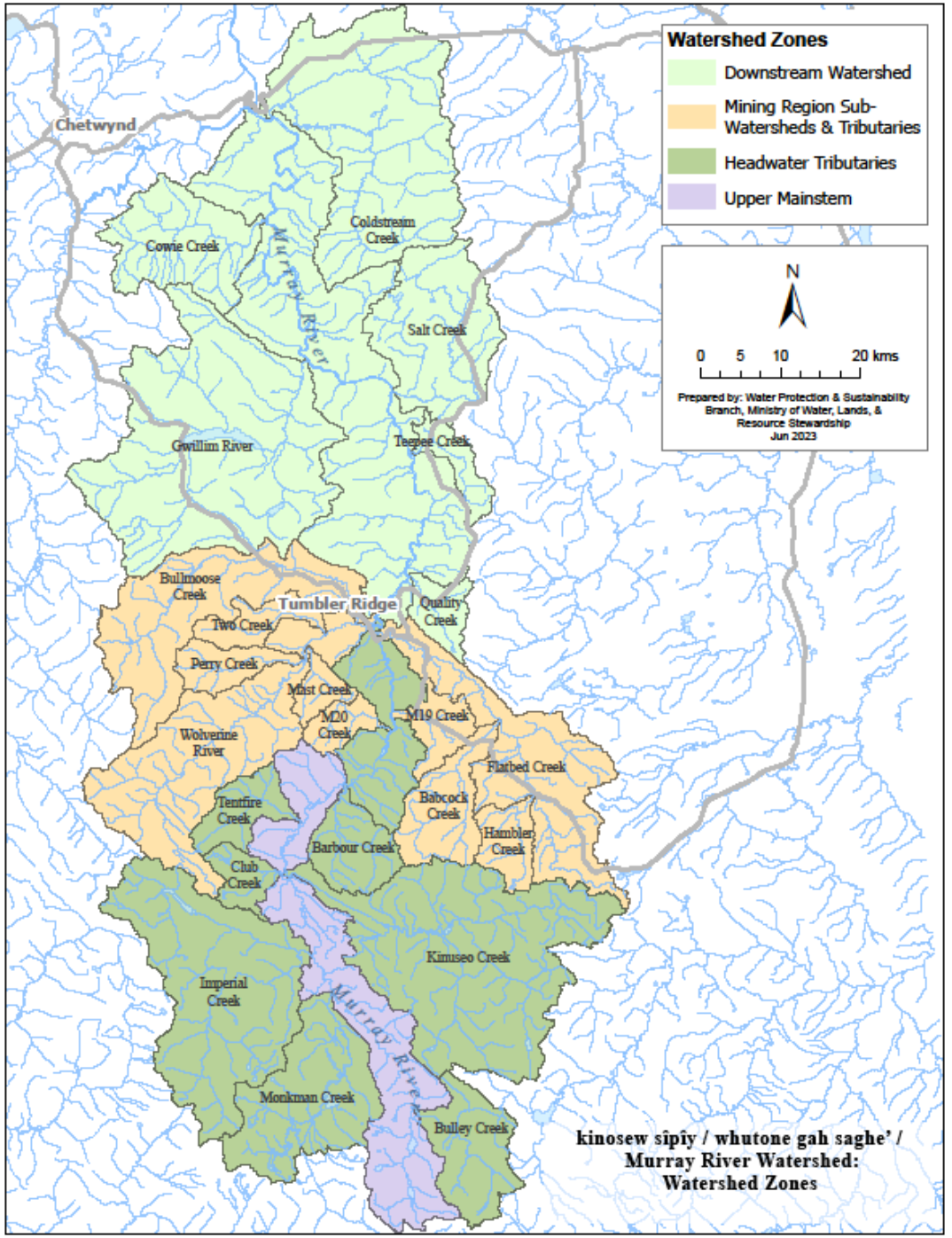
Update for the NE Roundtable

26 Feb 2025

Outline

- Updates and Sharing
  - Water Quality Objectives
  - Newly established Watershed Governance Partnership Table
  - Draft Watershed Health Assessment
- Questions

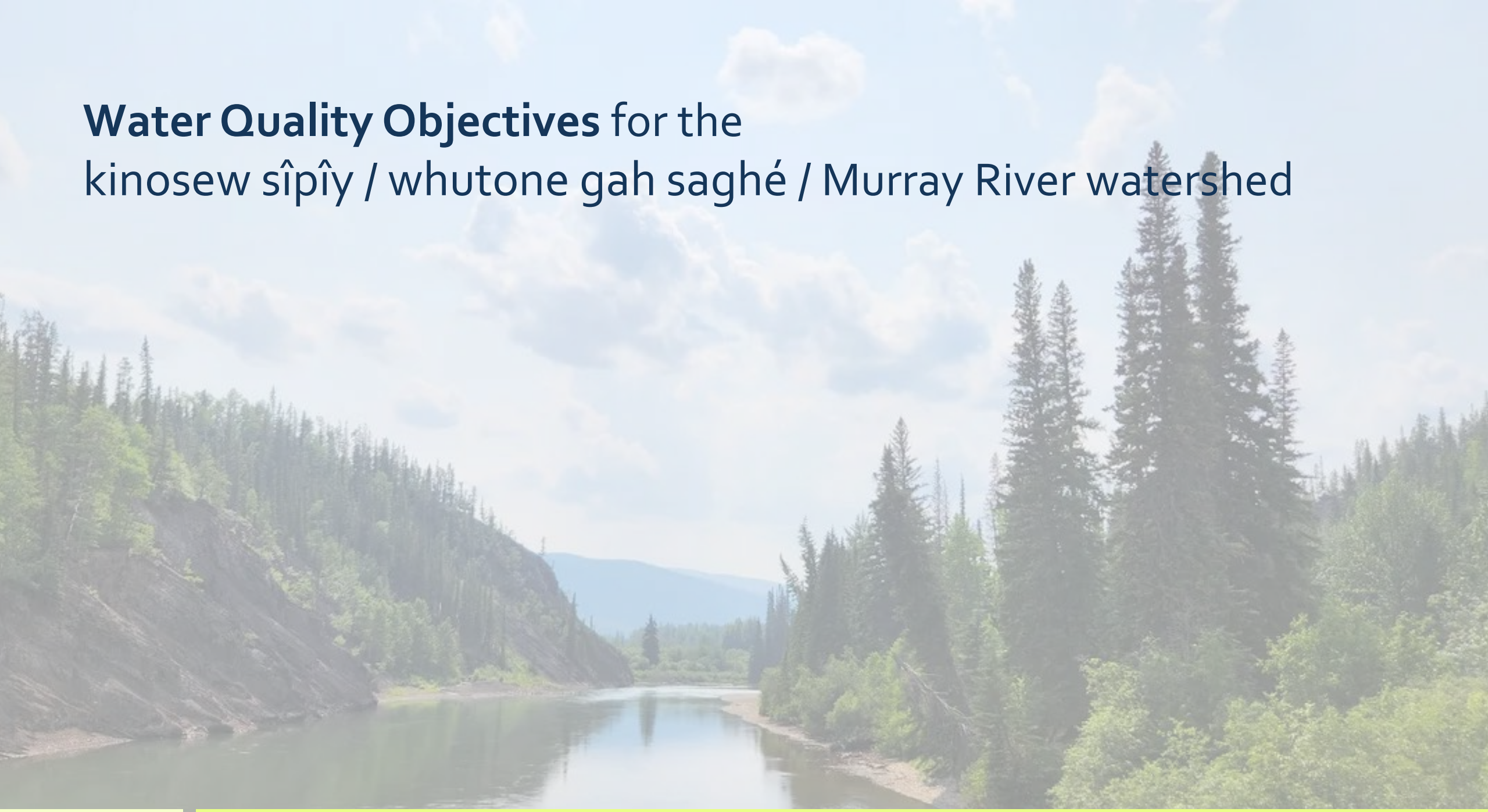
Watershed Zones



Background Refresher

- 2013 / 2014 BC and Industry formed the *Murray River Aquatic Cumulative Effects Framework Steering Committee*
- Focussed on water quality in the mainstem & mains tribs (no riparian or wetland areas)
  - Thorough data collection and analysis
- 2019/2020 BC invited First Nations back to the table to work collaboratively
- 2022 Government to government collaboration to include Indigenous knowledge and values, and finalize WQOs
- 2024 WQOs finalized
- 2025 WQOs published

Water Quality Objectives for the kinosew sîpîy / whutone gah saghé / Murray River watershed



What are Water Quality Objectives?

- Waterbody-specific benchmarks that represent conditions considered to be low risk for water uses and values
- Based on best available science and Indigenous Knowledge
- Starting point for water quality assessments and management decisions
- Collaborative work with BC and Indigenous Nations
- Derivation of WQOs is flexible to allow the weaving of Indigenous knowledge and western science
- Must be considered in ENV decisions affecting water quality
- The participating Treaty 8 First Nations will use these WQOs in decision making affecting water

Narrative Objectives

- Narrative objectives were developed to ensure Indigenous values and knowing are also included in the assessment of the health of the watershed
- Indigenous Knowledge informs Indigenous peoples' ability to use the land to exercise Treaty rights
- Indigenous Knowers can identify the expected, safe water conditions throughout the watershed
- These narrative objectives cannot be replaced by western scientific objectives but are complementary and essential

WATER QUALITY NARRATIVE OBJECTIVES

Water Quality – Narrative Objectives	
Objective	**Applicable to Entire Watershed**
Expected Local Visual Appearance	**Meet expected or work towards meeting expected conditions or quality based on Indigenous Knowledge.**
Expected Temperature	**Meet expected or work towards meeting expected conditions or quality based on Indigenous Knowledge.**
Expected Local Taste	**Meet expected or work towards meeting expected conditions or quality based on Indigenous Knowledge.**
Expected Local Odour	**Meet expected or work towards meeting expected conditions or quality based on Indigenous Knowledge.**

WQOs FOR WATER QUALITY AND FISH TISSUE

Water Quality - Key Mining Related Potential Contaminants of Concern			
Parameter	**Upper Mainstem DO NO HARM**	**Downstream Watershed and Headwater Tributaries DO NO MORE HARM 1**	**Wolverine Sub-watershed, Flatbed Sub-watershed, M19 / M20 Creeks DO NO MORE HARM 2**
Total Selenium (µg/L)	0.5	1	2
Nitrate (mg/L)	0.2	0.5	3
Sulphate (mg/L)	25	100	BC WQG Aquatic Life[1]
Fish Tissue Quality – Parameters of Concern			
Mercury	0.14 µg/g dry weight / 0.035 µg/g wet weight[5]		
Selenium	4.0 µg/g dry weight / 1.0 µg/g wet weight[5]		

Notes: [1]toxicity modifying factors referenced in water quality guideline define the upper and lower limits for calculations; [2]TCU = total colour unit; [3]CFU = colony forming units; [4]NTU = nephelometric turbidity unit; [5]assumes 75% moisture content

WQOs FOR WATER QUALITY – OTHER PARAMETERS

Parameter	Upper Mainstem, Headwater Tributaries, Downstream Watershed DO NO HARM	Mining Region and Tributaries (Wolverine Sub-watershed, Flatbed Sub-watershed, M19 / M20 Creeks) DO NO MORE HARM 1
Total Aluminum (µg/L)	BC WQG for Aquatic Life[1]	
Total Beryllium (µg/L)	No detection, this may change if and when lower detection limits are available	0.13
Total Chromium (µg/L)	1.0	1.0
Dissolved Copper (µg/L)	1.0	BC WQG for Aquatic Life[1]
True Colour (TCU)[2]	15	BC WQG for Aquatic Life
E. Coli (CFU/100mL)[3]	No *E. coli* from anthropogenic sources	
Total Iron (mg/L)	0.3 (July – March)	
Dissolved Iron (mg/L)	0.05	0.35
Total Manganese (mg/L)	20	
Total Mercury (µg/L)	0.01	
Nitrite (mg/L)	0.01	0.02
Total Silver (µg/L)	0.05	0.1
TSS (mg/L)	BC WQG Aquatic Life	
Turbidity (NTU)[4]	BC WQG Aquatic Life	
Total Uranium (µg/L)	0.5	4.5 *8.5 for Wolverine River and Mast Creek
Dissolved Zinc (µg/L)	5	BC WQG Aquatic Life[1]

Notes: [1]toxicity modifying factors referenced in water quality guideline define the upper and lower limits for calculations; [2]TCU = total colour unit; [3]CFU = colony forming units; [4]NTU = nephelometric turbidity unit; [5]assumes 75% moisture content

2024

- Convened governance partnership table with Treaty 8 First Nations, Canada (Transport Canada), BC (WLRS, ENV etc), PRRD, and Districts of Tumbler Ridge and Chetwynd
- Completed draft Vision for the table and priority values
- Initiated Watershed Health Assessment taking “whole of watershed” approach

2025 and beyond

- Terms of Reference for the table to be finalized
- Publish Watershed Health Assessment
- Prioritize and Initiate Implementation Actions

- First Nation led monitoring for Water Quality Objectives

Draft Watershed Health Assessment

- First draft completed late November
- Revisions made through December and January
- Thorough assessment of values
- Most Values were identified as being severely at risk
- Implementation / Action Items identified

Values Assessed

Recovering and Protecting Treaty Rights

- Peaceful Enjoyment of Treaty Rights

Healthy Water

- Water Safety (Quality)
- Water Availability (Quantity)

Healthy Habitats

- Aquatic Habitat Health
- Wetland and Riparian Habitat Health
- Terrestrial Habitat Health

Food Security

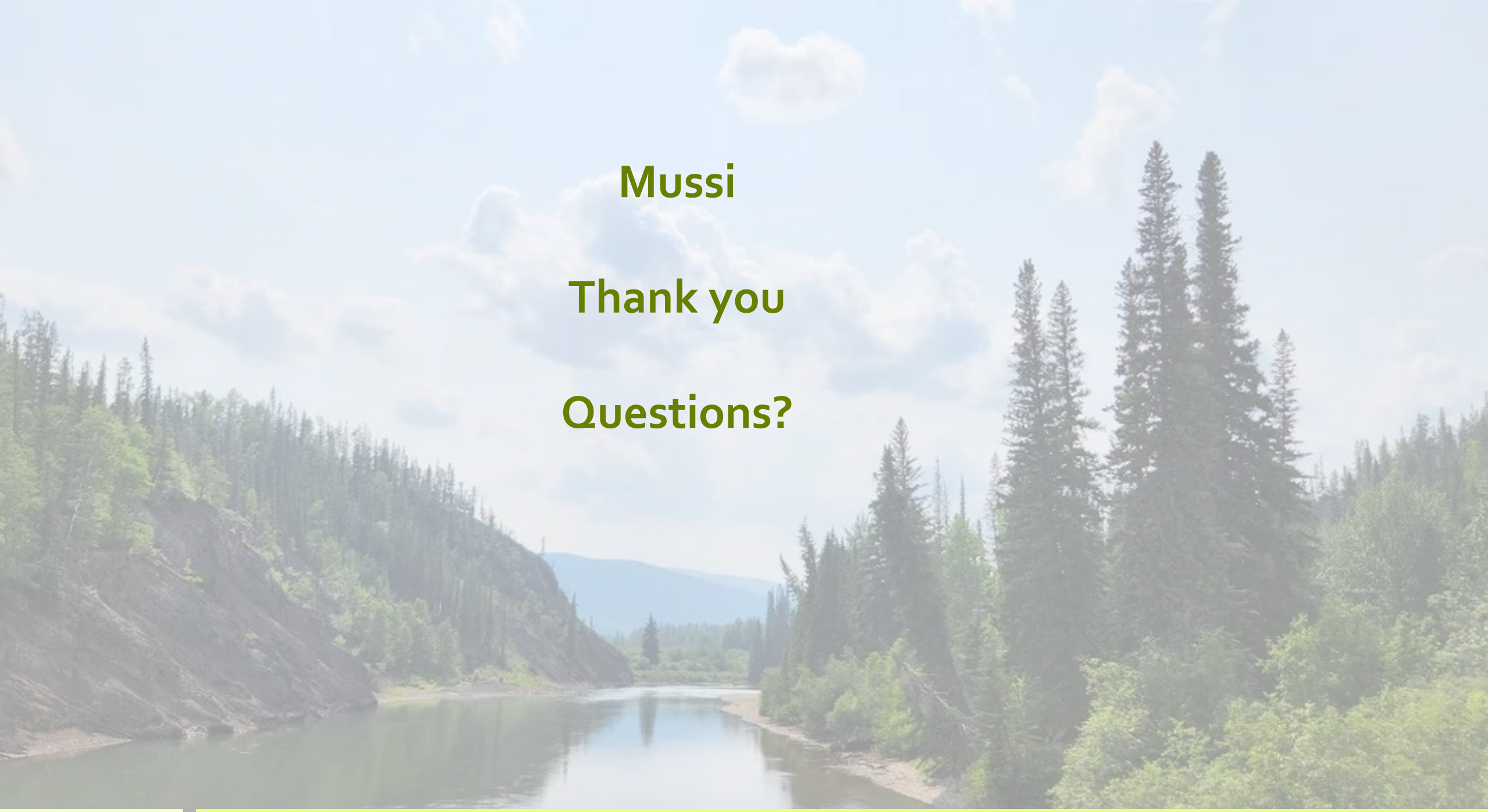
- Bull Trout
- Moose

Culturally Important Species

- Caribou

Healthy Food / Food Security

High Order Values/Objectives	Values	Priority actions
Healthy Food/Food Security	Bull Trout	Consider streams identified as Protect Priority 1 for future protection measures in tandem with other aquatic priorities in the watershed
		Implement watershed level monitoring of Bull Trout populations using novel techniques such as eDNA
	Moose	Maintain or enhance protection for areas with core effective winter thermal and forage habitat (e.g., south facing slopes, dry ridge tops and crests, low elevation riparian corridors and floodplain sites), for example through the designation of a Wildlife Habitat Area
		Consider access management measures or road deactivation to reduce road disturbance and mortality risk (from hunting and collisions) in areas with high value habitat



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Thank you

Questions?