RIPARIAN RESTORATION

2021

MORICE WATERSHED MONITORING TRUST

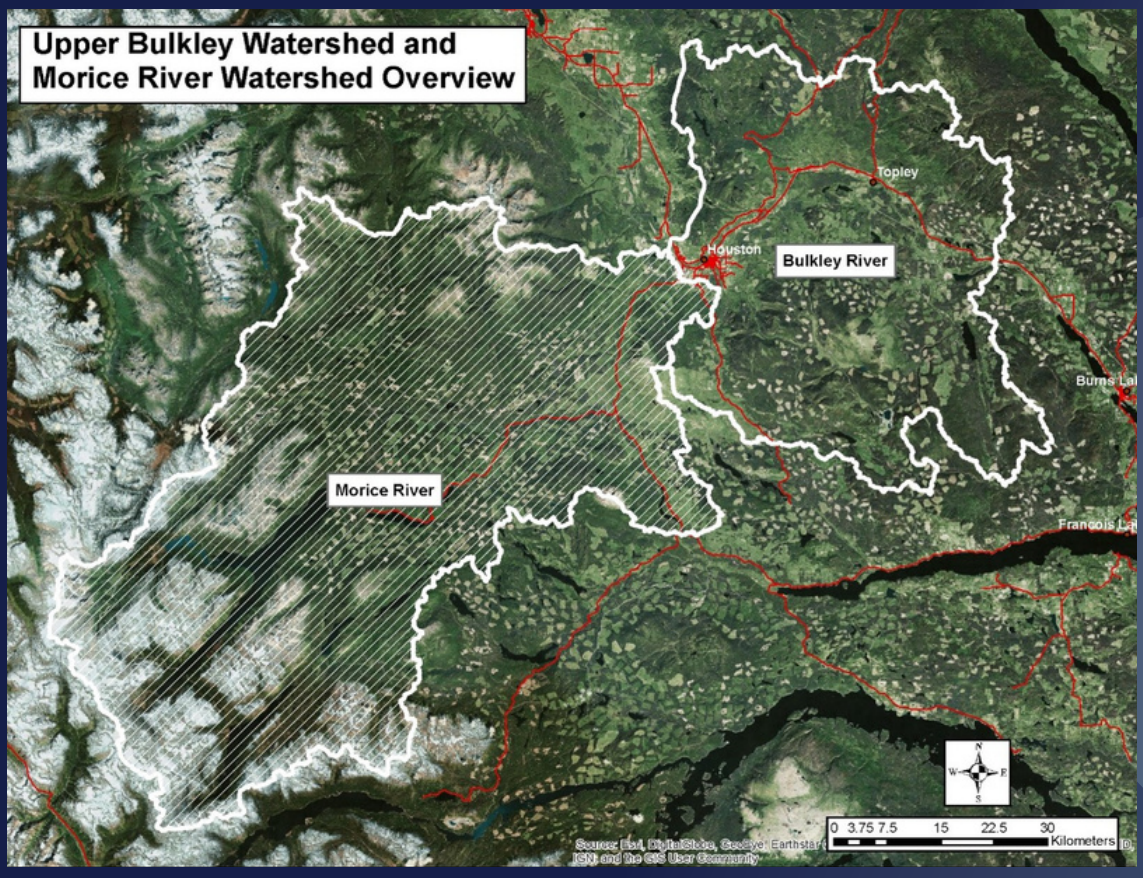
Who We Are

The Morice Water Monitoring Trust (MWMT) was established in 2012 for long-term watershed monitoring and management within the Morice Watershed Management Area (MWMA).

Northwest Research and Monitoring (NWRM) is a community-based research and monitoring agency that works at the intersection between industrial proponents, research, First Nations and communities.

The 2021 Healthy Watersheds Initiative (HWI) was a Watersheds BC and Real Estate Foundation of BC program investing in watershed conservation and restoration projects, while strengthening relationships with First Nations and Indigenous-led organizations.

The Area



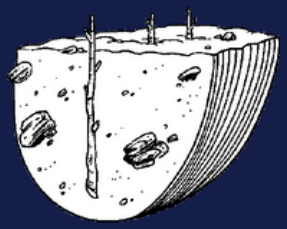
The Upper Bulkley watershed is within the larger Skeena River watershed with one of only two rivers in the world that still supports wild steelhead. The Pacific Salmon Foundation found significant land-use impacts within this high-valued habitat .

Objectives

- Conduct a multi-year program of riparian restoration in the Upper Bulkley Watershed
- Begin developing a long-term vision for the Upper Bulkley and Morice basins with partners
- Provide Indigenous training and employment
- Engage in outreach and communications to the communities

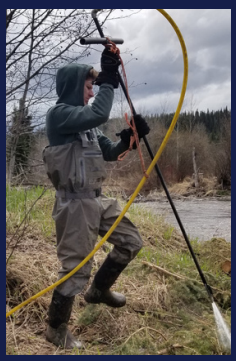
Low-Tech Restoration

Ecological restoration is the process of helping places recover that have been damaged, degraded or destroyed. Low-tech, process-based restoration copies nature, uses locally sourced materials and utilizes river processes such as sediment deposition to aid the work.



Live-Staking
A healthy stream bank has dense stands of riparian vegetation. Live stakes of Willows and some Cottonwood were harvested to plant and restore the riparian zone.

Waterjet Stinger
Pressurized water is pumped through the center pole to hydrodrill a hole 1-2 meters into the ground for planting live-stakes. Deep roots are better at preventing erosion.



Bank Stabilization
In quickly eroding areas, banks were re-sloped, stems were "pegboarded" (pounded vertically into the bank) at ~1 m spacing with Willow wattle fencing woven between to stabilize banks long enough for vegetation growth.

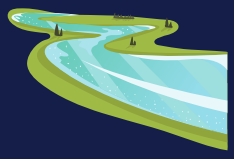
Restoration Completed

Streambank Stabilization

5 Sites

335 m of riverbank

2680 m3 of riparian area

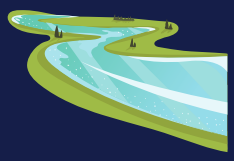


Riparian Planting

10 Sites

840 m of riverbank

5265 m3 of riparian area



Benefits

Promoting a river corridor to provide increased aquatic resilience

1. Space for the river to move
2. Flood and bank protection
3. Shading and temperature control
4. Drought protection

Uniting communities

1. Including local knowledge and assistance
2. Working at the interface of flood impacts to ranchers/farmers/private landowners (losing land to floods) and fish-friendly restoration designs
3. Promoting co-management of watersheds

Long-Range Planning

Year one of this project included the analysis of historical air photos to identify the location and magnitude of changes in channel morphology since 1955 within the lower 10 km of Maxan Creek and the upper 10 km of Bulkley River in the vicinity of Bulkley Lake.

This analysis provides a basis for locating sites of interest where ground studies might be undertaken, facilitating discussions with land owners and developing potential restoration strategies.

Over twenty landowners have been identified and many sites assessed for future restoration work.

Project Participants, Advisors and Collaborators

Northwest Research and Monitoring Ltd., Office of the Wet'suwet'en, Adam Wrench (Environmental Contracting), Geomorphic Environmental Services, A Rocha, Whanau Forestry, LM Forest Resources Solutions, Mike Miles and Associates Ltd., Terra Remote, Polster Environmental Services, Woodmere Nursery

BC Cattlemen's Association (Farmland-Riparian Interface Stewardship Program), Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Fisheries and Oceans Canada, University of Northern BC, Skeena Knowledge Trust, Bulkley Valley Naturalists, Dze L K'ant Friendship Centre.

Thank you to the landowners in the Upper Bulkley Basin:
Roger Groot, Martin Strimbold, Steve Wilson, Adrienne Dickson