

# WEST PRAIRIE RIVER RIPARIAN INTACTNESS & RISK ASSESSMENT SUMMARY

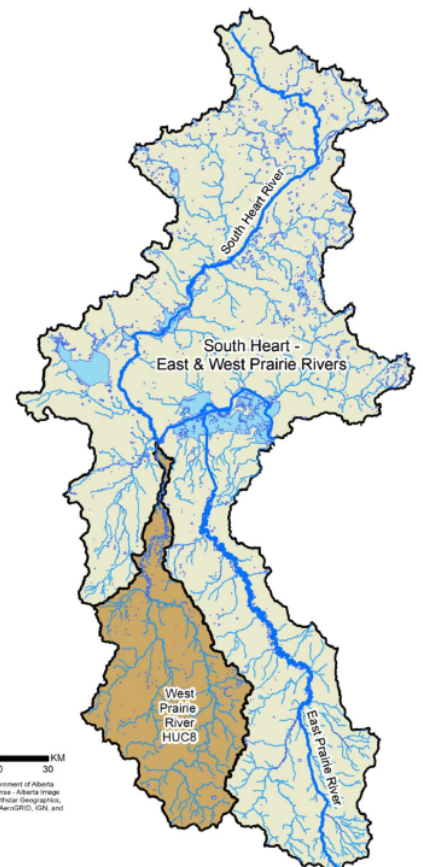


## THE REPORT: BACKGROUND, GOALS & OBJECTIVES

Riparian areas are important lands immediately surrounding waterbodies that have ecological, economic and social importance. Riparian areas help to stabilize banks, are important habitat areas for about 80% of species in Alberta, improve water quality, help manage high water volumes and velocities and improve surrounding lands' ability to manage flooding. Ongoing support of these important areas is vital for the health and for the function of our aquatic ecosystems.

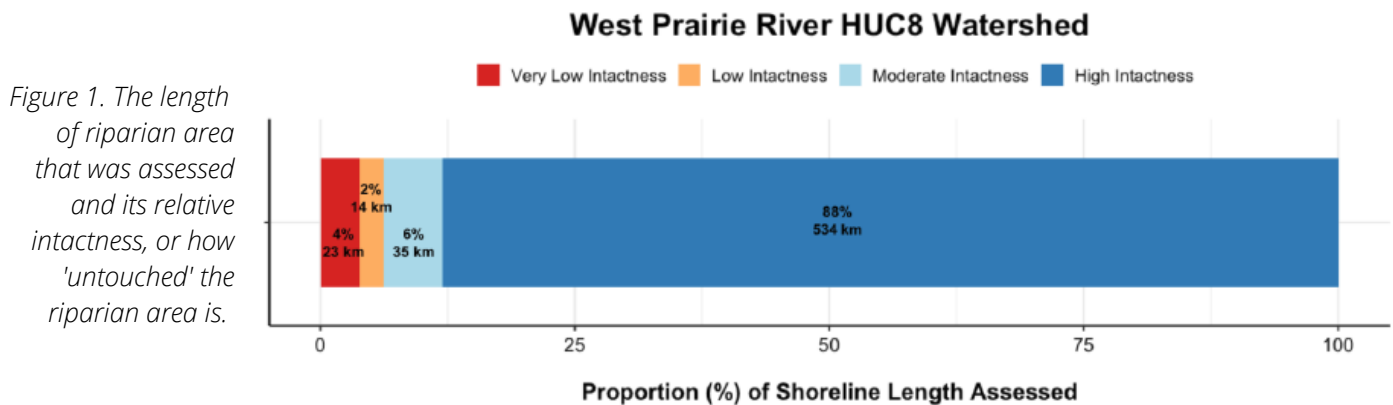
The West Prairie River is the source water for the Town of High Prairie and part of Big Lakes County. Water quality monitoring between 2017-2020 has shown high fecal coliform counts, and high suspended sediment loads in the West Prairie River. Protecting source water, and maintaining water quality in the tributaries that flow into Lesser Slave Lake are priorities for the LSWC and our local partners. In 2020, the LSWC hired Fiera Biological Consulting (FBC) to assess about 600km of riparian habitat in the West Prairie River sub-watershed, including McGowan Creek, Golden Creek and the West Prairie River. FBC used satellite imagery and LiDAR data, to analyze the health of the riparian area. The study measured the relative intactness of the riparian areas, which was graded on a scale measuring how natural the area was and the potential pressures these areas face to determine the health of the riparian area. Many of the pressures identified were human related, like agriculture, well sites, and roadways, but also included things like barren land.

Through this assessment, we obtained information to better inform management decisions in this sub basin of the Lesser Slave Watershed. Information such as where riparian land is thriving vs. where it is struggling will help us target areas for on the ground restoration projects, or identify conservation areas.



## THE RESULTS: A GRAPHIC OVERVIEW

Using the imagery and LiDAR gathered of the nearly 600km of riparian area along the West Prairie River sub-watershed, it was determined that the majority of the riparian area was in good condition (88% or 534km), 6% (or 35km) had moderate intactness, 2% (or 14km) had low intactness and 4% (or 23km) had very low intactness.



23km) had very low intactness. The measure of 'intactness' refers to how much disturbance from human activities or natural events that an area has experienced and how intact the riparian vegetation is. Having a high intactness score indicates good riparian health and function, where as a low score indicates there are issues like erosion, loss of natural vegetation, or bare ground.



Figure 2 is an example of a low-intactness riparian area along the West Prairie River, located just outside the town of High Prairie. In areas like these, there is little to no vegetation present to trap and hold the sediment from eroding away the banks and to prevent the addition of sediment into the river water. The bank is slowly being washed away, and the land adjacent to the river is being reduced away as the river meanders over time (or slithers like a snake across the landscape). In figure 3, there is a diversity of riparian vegetation to stabilize the bank. More animal species are able to use this site as habitat, and the river channel experiences much less meander. The vegetation is able to hold the soil and sediment along the banks and prevent erosion.



*Figure 2 (above).  
A section of the West Prairie River with low-intactness, just outside of High Prairie. Image: Google Earth satellite imagery.*

*Figure 3 (left).  
A section of the West Prairie River with high-intactness south of High Prairie. Image: Google Earth satellite imagery.*

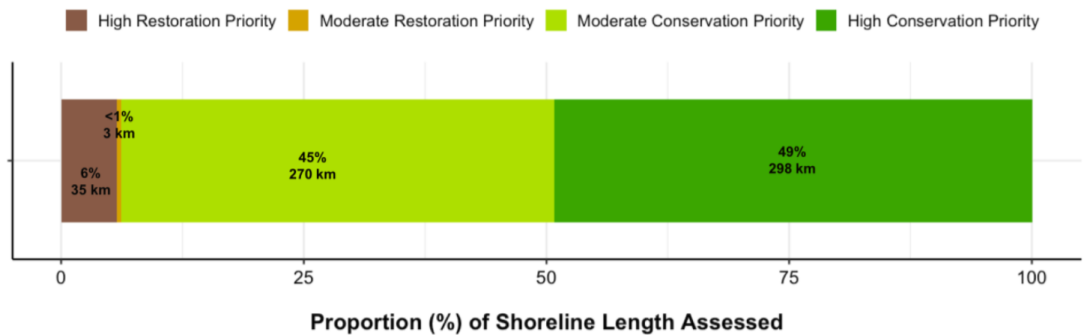
The relative intactness of the riparian area is related to different pressures from the surrounding area. In figure 2, agricultural practices have impacted the riparian area, and there has been a loss of vegetative cover. In figure 3, where there are fewer pressures from the surrounding landscape, the riparian hear is vegetated and natural, allowing many plant and animal species to thrive.

## RECOMMENDATIONS AND NEXT STEPS

Considering the intactness scores and the proportion of riparian area in need of restoration and conservation, FBC suggests three objectives to protect and conserve our riparian area that would make a positive impact on our watershed as a whole.

1. Maintain and improve watershed resilience by conserving high quality riparian habitat.
2. Reduce flood risk by restoring riparian habitats that have been impacted or impaired.
3. Manage external pressures on riparian system function.

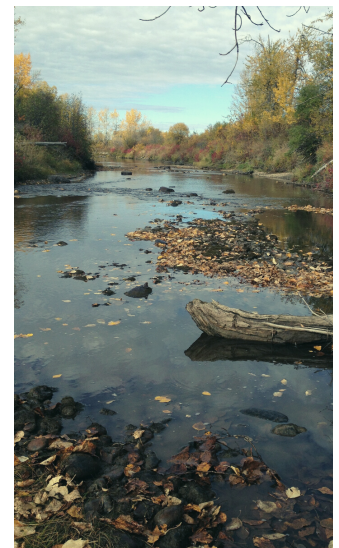
Figure 4. The proportion of riparian area that should be conserved or restored in an attempt to maintain healthy riparian habitat and improve watershed health and resilience.



Using the data collected, FBC created this graphic, which shows 49% (or 298km) of shoreline assessed is virtually untouched and should be a high conservation priority, 45% (or 270km) of shoreline is of good quality and has a moderate conservation priority, <1% (or 3km) of shoreline has a moderate restoration priority, and 6% (or 35km) of shoreline is of high restoration priority.

High conservation priority means that efforts should be focused on keeping the areas natural and intact, preventing a need for restoration work, and aligning with objective 1. High restoration priority means that the riparian area assessed in poor condition and needs help to re-establish through restoration work (like tree planting, riparian fencing, and other bank stabilization efforts), which tackles objective 2, to reduce or mitigate flooding.

The LSWC is actively working to engage with land owners in the West Prairie watershed to support projects that will lead to improved riparian health and function. With funds from the Provincial WRRP program and Big Lakes County, we provide support for project planning through to implementation, and cost share project expenses with landowners.



CHECK OUT OUR WEBSITE: [HTTPS://WWW.LSWC.CA/RIPARIAN AREA ASSESSMENTS](https://www.lswc.ca/riparian_area_assessments) FOR THE FULL REPORT OR VISIT OUR YOUTUBE PAGE: [HTTPS://WWW.YOUTUBE.COM/WATCH?V=R WEH591DYI&T=5S](https://www.youtube.com/watch?v=RWEH591DYI&T=5S) FOR A PRESENTATION ABOUT THIS PROJECT FROM DR. SHARI CLAIRE WITH FIERA BIOLOGICAL.

### FINANCIAL SUPPORTERS:



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