

A Wetland Inventory That Blends Western Science and Traditional Values



Wetlands are a vital part of the diverse landscapes of the Blood Reserve in southern Alberta. So, the Blood Tribe Land Management (BTLM) is working on an inventory of these wetlands to guide their community-based wetland conservation efforts.

“We have quite a few wetlands here on the Blood Reserve, but we hadn’t done any survey or monitoring work on them. And we were thinking about how we were already working on [sustainable management strategies for] our grasslands and our timber limits in our forested area,” explains Kansie Fox, BTLM’s Environmental Protection Manager.

“So, we wanted to include that wetland health piece as part of an all-inclusive plan for ecosystem protection and conservation on the reserve.”



BTLM’s wetland inventory involves mapping and describing each wetland on the reserve, including information about the wetland’s ecosystem services – such as flood control, cultural values, wildlife habitat, water quality, and so on.

The inventory will help in developing and achieving wetland conservation goals. For instance, it will help BTLM to identify threats to wetland health and to develop strategies for addressing these threats.

Conducting a wetland inventory on this large reserve, which covers about 352,000 acres, is a huge task. The reserve’s wetlands and creeks are in three different watersheds: the Belly, Oldman and St. Mary. Those major rivers form the reserve’s boundaries.

Land uses on the Blood Reserve range from grasslands and forests, to cropped fields and people’s homes. “Over 60 per cent of our reserve is farmed, and wetlands are in those areas where the crops are grown,” she notes. “So, we want to see how healthy our wetlands are, comparing those in the natural areas with those in the cropped lands.”



Laying a foundation for wetland health

The Alberta NAWMP Partnership’s Science Fund provided funding in 2019-20 to help BTLM get started on the wetland inventory. BTLM’s approach to wetlands combines western scientific methods and traditional knowledge. In 2019-20, they worked on both aspects.

Much of the western science activities focused on capacity building, such as providing staff training and acquiring the necessary equipment. In particular, the Alberta Biodiversity Monitoring Institute (ABMI) provided training to BTLM staff in methods for conducting wetland inventories, water quality sampling, vegetation monitoring and wildlife monitoring.

For instance, staff were trained in using trail cameras and bioacoustic automated recording units (ARUs) for wildlife monitoring. “ABMI has protocols that they shared with us and got us going on their WildTrax [an online platform for biological data from camera imagery and audio recordings],” Fox explains.

“We have purchased and installed some trail cameras and ARUs – maybe not as many as we want in the long run, but we have made a good start. And we have started collecting acoustic and trail camera data.”

In addition, Cows and Fish conducted riparian health assessment courses, training staff in evaluating the health of the zones along the edges of wetlands, creeks and rivers. And Tannas Conservation Services trained staff in techniques like using satellite imagery to delineate wetland boundaries.



Just as important, BTLM has started tapping into traditional ecological knowledge on the reserve. Fox says, “We have done a few interviews with our knowledge holders, and we are planning to do more interviews, so we can balance traditional knowledge with the western science piece.”

The wetland inventory also offers a great opportunity to start engaging everyone on the reserve in wetland conservation and stewardship. “We hosted community wetland workshops to tell people about the project, identify any concerns and pick out some cultural ecological indicators to put into our plan. For instance, beavers are a very important part of our society and our ceremonies, and where a lot of our renewals with the land come from.”

BTLM hopes to continue this wetland conservation initiative in 2020-21. Their plans include conducting further staff training, assessing more wetlands, identifying wetland health concerns, and moving towards a full wetland monitoring program.

“We also want to continue to grow wetland awareness within our community,” says Fox. “The people at our workshops were very interested and wanted to be a part of whatever we’ll be doing. But we have a large population of about 13,000 Blood Tribe members. So, we’re working on building a lot more awareness.”

BTLM’s wetland inventory is a key element in their work to protect and enhance wetland health on the reserve.