ALBERTA INNOVATES

CLEAN RESOURCES

ENVIRONMENTAL INNOVATION

WATER INNOVATION PROGRAM

Working with Beavers for Healthy Aquatic Ecosystems

Nature-based solutions are needed for climate adaptability, flood and drought resiliency, and secure water supplies. It is increasingly recognized that nature-based solutions (NBS) have a higher resilience to changing climates than traditional grey engineering approaches while reducing upfront capital costs maintenance costs.

One such NBS is coexistence with beavers. Beavers have typically been seen as a problem in human landscapes but are increasingly being recognized as a nature-based mechanism to provide cleaner, more stable water supplies. Through a collaborative effort this project will enable the realization of positive watershed outcomes including restored and enhanced wetland function.

FUNDING DETAILS

RECIPIENT:
Miistakis Institute

PARTNERS:
Cows & Fish, Government of Alberta

TOTAL BUDGET:
$753,000

AI FUNDING:
$327,000

PROJECT DATES:
NOV 2022 – MAR 2025

APPLICATION

Nature based solutions are increasingly being recognized as alternatives to traditional approaches to address climate change and biodiversity loss for their cost-effectiveness and value-added benefits that include social, economic, and environmental benefits. Natural solutions also provide spiritual and recreational benefits for many people and are cost-effective compared to many man-made/engineered solutions.

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PROJECT GOALS

The overarching objective of this project is to restore and enhance wetland function. Specific objectives include:

1. increase knowledge of beavers and coexistence tools;
2. enhance coexistence;
3. use Beaver Dam Analogs (BDAs) to enhance wetland function.

BENEFITS TO ALBERTA

- cost savings resulting from the implementation of coexistence devices compared to traditional beaver management techniques, and job retention.
- watershed resiliency and resulting ecosystem services provided by enhanced coexistence with beavers.
- wetland creation. Beaver dams act as speed bumps, allowing water to gather behind each dam, create a wetland, and percolate into the soil. This percolation and reduction in stream speed allows for reduced erosion and a decrease in the amount of sediment in the flowing water.
- carbon storage. In rivers with beavers present, the beaver meadow stores 23% of the landscape's terrestrial carbon.

2 Publications

4 Students Trained

2 Project Jobs

CURRENT STATUS

MAR 2024

A diverse approach to enhancing coexistence with beavers to enhance watershed function has included establishing a working relationship with both Piikani Lands Department and Blood Tribe Land Management and implementing a citizen science program (Beavers from Space) which will be used with the Beaver Restoration Assessment Tool (BRAT) modelling results to support the identification of restoration sites. More than 1900 citizen scientists participated in the Beavers from Space program in April 2023. Work has also included installation of 2 BDAs and 2 coexistence sites with monitoring protocols. Additionally, Miistakis hosted a two-day symposium attracting 60 practitioners and created a Best Management Practices document to support beaver coexistence in Alberta.