EcoServices NETWORK

Integrated Modeling to Assess the Ecosystem Service Benefits of Agricultural BMPs
Project Summary

Background

Beneficial Management Practices (BMPs) provide an array of public ecosystem service (ES) benefits such as water quality, soil carbon and biodiversity improvements. Driven by societal demands, large companies such as Loblaws, McDonald's and Cargill are building sustainability commitments and requiring BMPs in the food supply chain in the same way food safety was built a generation earlier. Similarly, municipalities recognize the importance of BMPs for water quality, and flood and drought mitigation and the 2018 *Investing in Canada Infrastructure Program* enables Alberta municipalities to invest in natural infrastructure.

While BMPs provide many public benefits, they are costly to producers. Over the last 10 years, Alberta Agriculture and Forestry and federal partners have invested millions of dollars through Growing Forward programs to provide incentives to agricultural producers for BMP adoption. At the same time, non-government organizations such as ALUS Canada, Alberta Conservation Association, Nature Conservancy of Canada and Ducks Unlimited Canada have provided incentives to farmers for watershed restoration and biodiversity protection, while companies from a variety of sectors are exploring carbon storage in agricultural soils to address climate change. Investors recognize the need to better coordinate and leverage investments to fund BMP adoption while maintaining a competitive and sustainable agricultural sector.

Project Goal

The goal of this project is to develop an integrated assessment platform to quantify the impact and effectiveness of BMP adoption on ES including water quality and quantity, carbon storage and biodiversity.

Value Proposition

Quantifying the impact of BMP adoption on ES will help government and non-government partners target and evaluate the performance of past and current BMP programs and provide the evidence-based framework necessary to leverage and scale up private and social investment in ES on agricultural landscapes. The project will benefit producers by supporting and improving the impact of ES incentive programs and increasing producer and public awareness of BMPs and their positive benefits for society.

Project Objectives

1. Develop the Integrated Modelling for Watershed Evaluation of BMPs (IMWEBS) model to assess the impacts of BMPs on ES for two representative agricultural watersheds in Alberta.
2. Quantify the impacts of historic, current and future BMP programs on water quality and quantity and, where feasible, biodiversity and carbon for those watersheds.
3. Develop recommendations for integrating changes in stored soil carbon and biodiversity from grassland management practices in IMWEBS.
4. Link IMWEBS outputs to sustainability and traceability initiatives emerging for the livestock sector.
5. Engage producers, land managers, government, non-government and industry stakeholders through meetings, workshops and other methods to mobilize and deepen ES market opportunities.

Project Advisory Committee

A project advisory committee has been established to assist in the design and implementation of the IMWEBS project including representatives from the Agri-Environmental Partnership, Alberta Biodiversity Monitoring Institute, EPCOR Water Services, the North Saskatchewan Watershed Alliance, Bow River Basin Council, ALUS Canada, Alberta Beef Producers, TrustBix Inc., Viresco Solutions and the Canadian Grassland and Forage Association. The purpose of the committee is to support the identification of issues and opportunities that may have an impact on the IMWEBS project and intended outcomes. The committee will assist the IMWEBS project team to source data, identify case study sites and support linkages to current policy initiatives. Committee

members will also help to identify opportunities to scale up and implement project results, encourage the development of strategies for integration of decision support tools in sustainability initiatives and provide support for communication efforts to stakeholders.

Project Timeline

April 1, 2020 – March 31, 2023

Project Contact

For more information please contact the EcoServices Network admin@ecoservicesnetwork.ca. Stay connected and follow us on Facebook, Twitter and LinkedIn.