THE MODESTE NATURAL INFRASTRUCTURE PROJECT

What is Natural Infrastructure?

Sometimes referred to as "green infrastructure" or "natural assets," natural infrastructure consists of landscape features—such as wetlands, riparian buffers and forests —that improve water quality and lower the risk of flooding and drought.

The benefits of natural infrastructure include carbon sequestration, wildlife habitat, recreation and protection from severe weather events. By retaining and filtering water, wetlands reduce overland flooding and replenish groundwater supplies.

Natural infrastructure also extends the life of built, "grey" infrastructure, such as floodways, culverts, bridges, and water-treatment plants.

Researchers have begun to financially quantify these many benefits to society, and to understand the costs when natural infrastructure is lost.

The Modeste Natural Infrastructure Project

The Modeste Natural Infrastructure Project will evaluate the financial benefits of conserving and enhancing natural infrastructure on agricultural lands in the Modeste Creek watershed in Alberta, Canada.

Experts from the University of Guelph, InnoTech Alberta, and ALUS will work with local communities to understand how restoring natural infrastructure will improve water quality and reduce the impact of flood and drought.

Using modelling, they will evaluate scenarios where natural infrastructure is restored, enhanced and conserved to meet the needs of local and downstream communities.

A cost-benefit analysis comparing different combinations of natural infrastructure with built infrastructure will help create a knowledge base and value proposition for natural infrastructure investment from the public and private sector.

The Modeste Natural Infrastructure Project will also contribute to the creation of natural infrastructure. Through the ALUS program, 263 hectares (650 acres) of wetland and riparian areas will be restored or enhanced in the Modeste watershed.

About the Project Area

The Modeste watershed is a sub-basin of the North Saskatchewan River basin, and is located upstream of Alberta's Capital Region.

The Government of Alberta has identified the Modeste watershed as a priority for flood and drought mitigation, as well as an important area affecting water quality in the province.

The Modeste was chosen for this project because of the support provided by the North Saskatchewan Watershed Alliance's Headwaters Alliance—a water-focused intermunicipal collaboration group established in 2014. Each of the five counties in the Alliance has a program to engage farmers and ranchers in the enhancement and protection of natural infrastructure: Parkland, Brazeau, Leduc and Wetaskiwin Counties administer the ALUS program, while Clearwater County administers the LandCare Program.

THE MODESTE CREEK WATERSHED
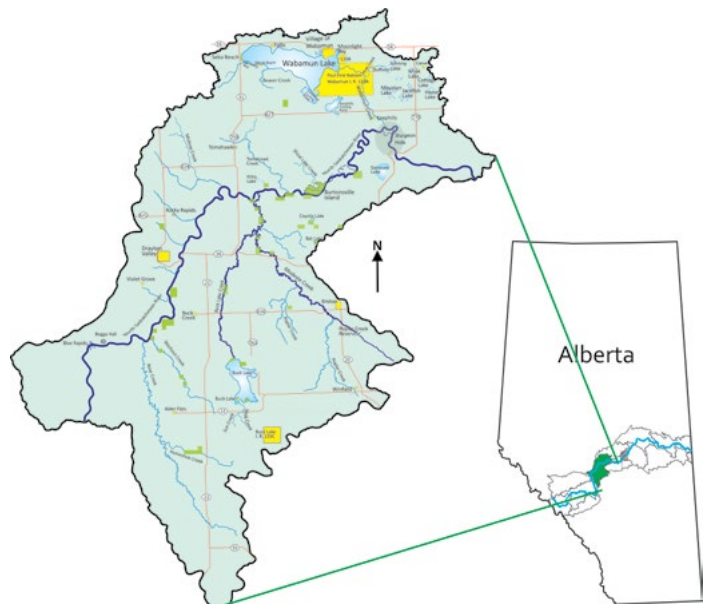
THE MODESTE NATURAL INFRASTRUCTURE PROJECT

PROJECT PARTNERS

ALUS CANADA

ALUS Canada is a federally-registered charity that partners with communities and farmers to restore and enhance natural ecosystems on agricultural lands. ALUS communities in the Modeste watershed—ALUS Wetaskiwin-Leduc, ALUS Parkland and ALUS Brazeau—will restore and enhance wetlands and riparian areas as a part of this project.

Contact: Lara Ellis, Vice-President, Policy and Partnerships: lellis@alus.ca

ALUS.CA

DEPARTMENT OF GEOGRAPHY, ENVIRONMENT AND GEOMATICS, UNIVERSITY OF GUELPH

Dr. Wanhong Yang's research program integrates economic, hydrologic, and GIS modelling to examine the cost effectiveness of agricultural conservation programs, with a mission to develop modelling tools for agricultural BMP assessment at both field and watershed scales. Modelling projects using his IMWEBs tool have taken place in Canada and the U.S.

Contact: Dr. Wanhong Yang, Professor and Chair, Department of Geography, Environment and Geomatics: wayang@uoguelph.ca

UOGUELPH.CA

INNOTECH ALBERTA

InnoTech Alberta's primary focus is to facilitate the conversion of applied research to economic, social and environmental benefits. InnoTech links basic research and commercial outcomes, in accordance with strategic directions set out by the Government of Alberta, by delivering specialized services for its government and industry clients.

Contact: Dr. Marian Weber, Principal Researcher: Marian.Weber@innotechalberta.ca

INNOTECHALBERTA.CA

NORTH SASKATCHEWAN WATERSHED ALLIANCE

As a Watershed Planning and Advisory Council, the NSWA is a multi-stakeholder organization that seeks to improve the management of water quality, water quantity and the health of aquatic ecosystems by developing and sharing knowledge and facilitating partnerships and collaborative planning processes. The NSWA will contribute watershed data and advice toward this project.

Contact: Mary Ellen Shain, Watershed Planning and Management Coordinator: Maryellen.shain@nswa.ab.ca

NSWA.AB.CA

PARKLAND COUNTY

Parkland County, located just west of the City of Edmonton, is a vibrant and robust community that is proud of its leadership toward sustainability and its long-time support of stewardship on both public and private lands.
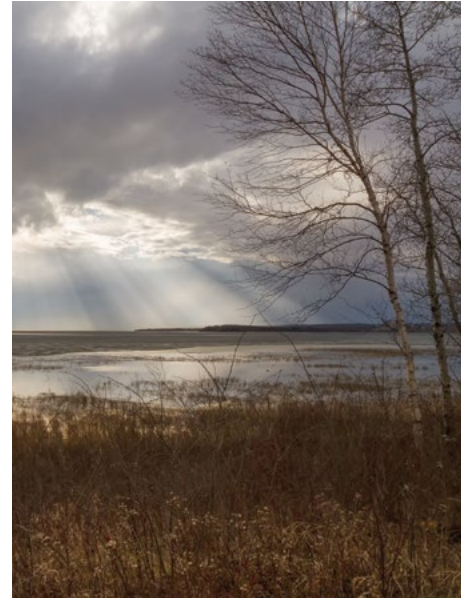
Contact: Krista Quesnel, Community Sustainability Manager: krista.quesnel@parklandcounty.com

PARKLANDCOUNTY.COM

FUNDING PARTNERS

ALUS PARTICIPANTS WILL RESTORE AND ENHANCE WETLANDS AND RIPARIAN AREAS IN THE MODESTE CREEK WATERSHED.