ALBERTA INNOVATES

CLEAN RESOURCES

ENVIRONMENTAL INNOVATION

WATER INNOVATION

FUNDING DETAILS

In Situ Influence on Wetland Ecosystem Processes

The project aims to understand how the presence of resource-access roads and well pads associated with in situ oil sands development affects the way that water moves through the environment and what any changes in water movement mean for wetland function.

RECIPIENT:

Athabasca University

PARTNERS:

Imperial Oil, Ducks Unlimited, NSERC

TOTAL BUDGET:

$2,306,600

AI FUNDING:

$447,856

PROJECT DATES:

MAY 2024 – APR 2027

PROJECT TRL:

Start: 2

End: 4

APPLICATION

The project will determine if changes are occurring in wetlands as a result of access road and well pad development, how long it takes for effects to emerge and understand risks posed to ecological function and habitats. A combination of remote sensing techniques and ground-based hydrological and carbon measurements (including eddy covariance) will be applied to evaluate surface changes in water movement relative to the road and regional flow direction.

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PROJECT GOALS

The key goals of the project are to:

- Determine the effect of in situ infrastructure, including roads, culverts and well pads, on wetland hydrology, how this varies among wetland types and the impacts to small local water bodies.
- Relate the observed hydrological changes to wetland carbon dynamics and plant community composition, productivity and peat accumulation rates.
- Evaluate the timing of the ecohydrological response to infrastructure construction and apply this knowledge to inform best management practices.
- Determine best management practices for stockpiled peat and the effect of vegetation management practices on greenhouse gas (GHG) emissions.

BENEFITS TO ALBERTA

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2 Management Practices Informed

27 Publications

159 Knowledge Mobilization Events

18 HQP Trained

CURRENT STATUS

JUN 2024

The project has kicked-off and work activities are underway.