

CLEAN RESOURCES

ENVIRONMENTAL INNOVATION

LAND & BIODIVERSITY PROGRAM

FUNDING DETAILS

Advancing native habitat recovery and improving carbon sequestration through harnessing soil microbial resources in Alberta's Prairie landscape

Grasslands, invaluable for ecological, agricultural, and socio-cultural reasons, are threatened by invasive species and climate change. Current restoration efforts usually focus on planting native Prairie grasses, forbs, and shrubs, controlling invasives, and monitoring sites. However, this approach can be costly when plant establishment is low, thus requiring new techniques to ensure better plant establishment and long-term restoration success. This project aims to utilize soil microbial interactions with native plants to shape above-ground ecosystem dynamics, augmenting conventional methods with ecologically informed strategies for sustainable land management.



RECIPIENT:

**Lethbridge
Polytechnique
(Dr. Adriana Morrell)**



PARTNERS:

**Nature
Conservancy of
Canada, Athabasca
University**



TOTAL BUDGET:

\$552,594



AI FUNDING:

\$249,995



PROJECT DATES:

JUN 2024 –

MAY 2028

APPLICATION

The project will employ microbial amendments to leverage soil biological resources, enhancing the recovery of native plants in post-disturbance scenarios like coal mining. Additionally, it expands the purview to analyze their effect on carbon sequestration in Alberta's grasslands.



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PROJECT GOALS

Microbially leveraged nature-based solution for restoring coal mining-affected grasslands by:

1. Testing the effectiveness of AMF amendments for efficient grassland restoration and
2. Measuring the influence of amendments on restoration through multi-dimensional soil assessment metrics.

BENEFITS TO ALBERTA

Project directly benefits reclamation efforts by the Nature Conservancy of Canada and others to reclaim land in southern Alberta disturbed by coal mining. More broadly, research outcomes will contribute to knowledge and methods of practice for restoring ecosystem function in grasslands and other areas. It also contributes to a growing body of knowledge related to optimizing land management practices with the goal of maximizing carbon sequestration.



**1 New Practice
Informed**



3 Publications



**9 Students
Trained**

**CURRENT
STATUS**

JUN 2024

Project initiated in June 2024.