Pathways Alliance

Biodiversity

Biodiversity describes the variety and number of living things that make up a healthy ecosystem. Canada's oil sands industry aspires to be a world leader in land management, restoring the land and preserving biodiversity of plants and animals.

Sustainable development

Pathways Alliance members are committed to responsible, sustainable development. We're working hard to reduce the environmental footprint of oil sands operations—efforts that have resulted in globally significant reclamation and restoration work in Alberta's boreal forest.

Canadian Natural

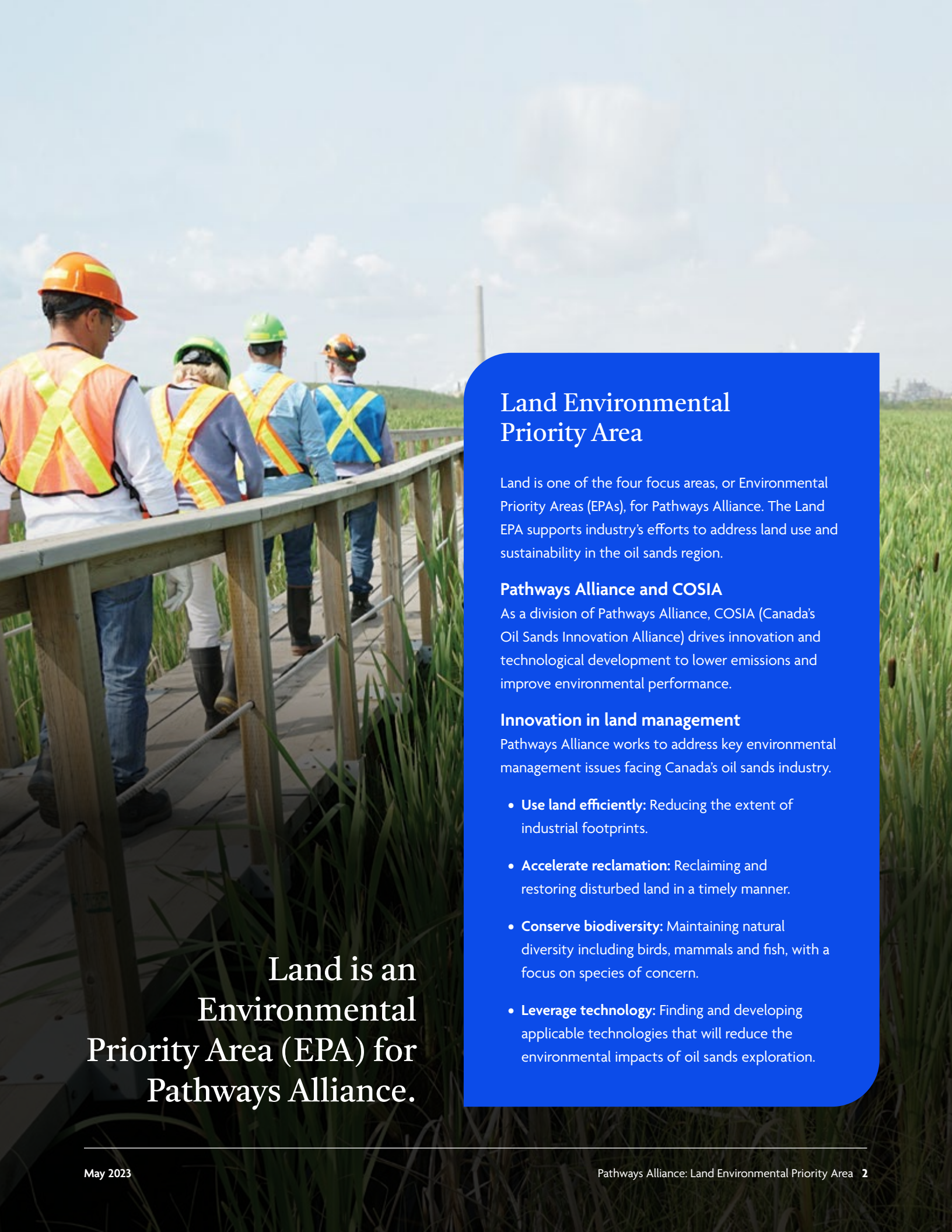
cenovus ENERGY

ConocoPhillips Canada

Imperial

MEG Energy

Suncor



Land is an Environmental Priority Area (EPA) for Pathways Alliance.

Land Environmental Priority Area

Land is one of the four focus areas, or Environmental Priority Areas (EPAs), for Pathways Alliance. The Land EPA supports industry's efforts to address land use and sustainability in the oil sands region.

Pathways Alliance and COSIA

As a division of Pathways Alliance, COSIA (Canada's Oil Sands Innovation Alliance) drives innovation and technological development to lower emissions and improve environmental performance.

Innovation in land management

Pathways Alliance works to address key environmental management issues facing Canada's oil sands industry.

- **Use land efficiently:** Reducing the extent of industrial footprints.
- **Accelerate reclamation:** Reclaiming and restoring disturbed land in a timely manner.
- **Conserve biodiversity:** Maintaining natural diversity including birds, mammals and fish, with a focus on species of concern.
- **Leverage technology:** Finding and developing applicable technologies that will reduce the environmental impacts of oil sands exploration.

Academic research programs

Pathways Alliance collaborates with universities and other research organizations to address complex issues related to land management in Alberta's boreal forests.

Alberta Biodiversity Conservation Program

Addressing a set of complementary themes related to conservation and management of biodiversity in the oil sands region.

University of Alberta (2023-2027)

Boreal Wetland Reclamation and Assessment Program (BWRAP)

Developing methods of assessing the effectiveness of wetland construction in relation to reclamation targets.

University of Calgary (2021-2026)

Caribou Detection in Boreal Forest Environments

Developing methods to inventory wildlife in the boreal forest using machine learning and optical sensors.

University of Saskatchewan (2022-2026)

Enhanced Germination of Native Seed using Carbon Nanotubes

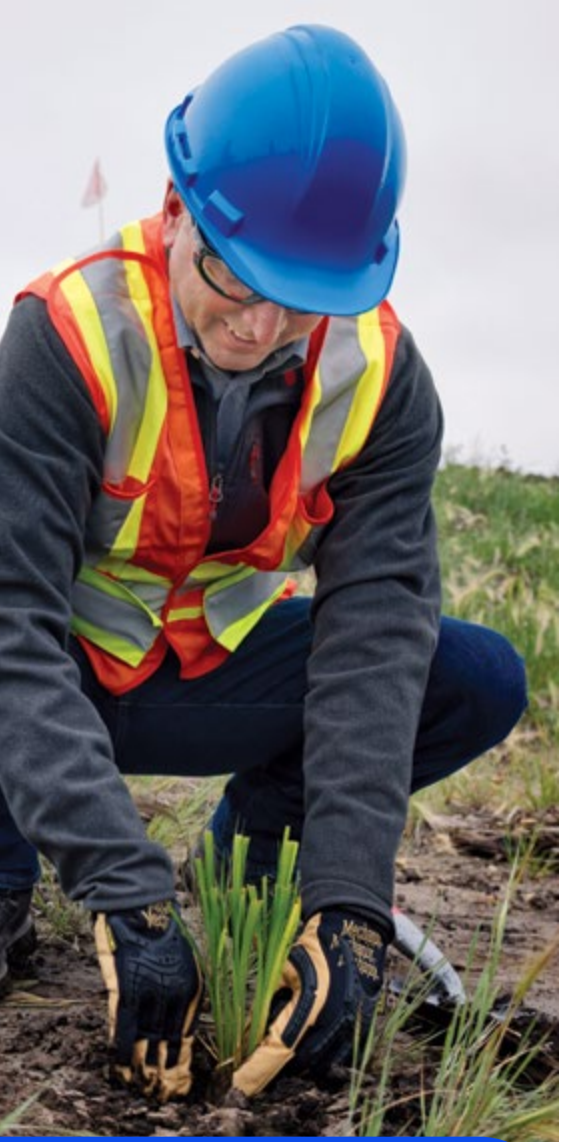
Overcoming problematic germination will help to provide a wider diversity of native species for planting in reclamation programs.

Northern Alberta Institute of Technology (NAIT) Centre for Boreal Research (2021-2024)

Boreal Ecosystem Recovery and Assessment Phase 2

Understanding the effects of industrial disturbance on natural ecosystems in the boreal forest and developing strategies for restoring disturbed landscapes.

University of Calgary, University of Alberta, University of Waterloo (2021-2025)



Scan the QR code to read the *Mine & In Situ Research Report*

Learn more about the Land EPA at COSIA.ca/initiatives/land

See our plan of action at PathwaysAlliance.ca or reach us at contact@pathwaysalliance.ca

Highlights

Collaborating and sharing research and resources has allowed us to make an impact in several key areas, which no one company could achieve alone.

Collaboration to protect the boreal forest

In 2018, Indigenous communities, energy companies and federal and provincial governments agreed to set aside more than 160,000 hectares of boreal forest for conservation. This Biodiversity Stewardship Area went on to become the Kitaskino Nuwenëné Wildland Provincial Park in March 2019. Industry partners voluntarily relinquished oil sands leases in support of the first phase of this initiative that protects habitat for caribou, wood bison and other wildlife.

We can build wetlands, now what?

Our wetland research chair at the University of Calgary is helping industry measure the success of wetland reclamation strategies. Leading scientist and Research Chair Jan Ciborowski is studying and measuring the function and ecological health of wetlands in order to determine whether or not newly created wetlands will be sustainable over the long term.

OSVC is a living example of successful collaboration

The Oil Sands Vegetation Cooperative (OSVC) is a long-term collaborative initiative that harvests and banks native boreal forest species to support reforestation strategies. By 2021, it had been operating for 11 years. During that time, it collected 246 million seeds from 51 native species, generating about 31.6 million seedlings.

Temporary forests flourish faster

This field trial demonstrated that growing a temporary forest helped to accelerate natural recovery at the final reclamation stage. Trees take root earlier and canopy closure may occur sooner because of increased density of trees and shrubs, which slows weed growth allowing other native plants to establish.

Restoring woodland caribou habitat

A $40-million, decade-long project to reduce forest fragmentation in Woodland Caribou habitat is helping to conserve caribou herds. About 4,000 kilometres of old forest corridors are being restored using a number of recovery techniques. It's the largest caribou habitat restoration project undertaken by any organization anywhere in the world.

Reclaiming land the best possible way

Hundreds of users access a unique online toolkit, which builds capacity among operators working in reclamation and leads to better outcomes in the field. Created in collaboration with Natural Resources Canada, the site demonstrates successful progressive restoration and reclamation practices on oil sands sites and shows how to apply techniques to other operations. See the toolkit* at **360tours.cosia.ca**.

*English language only.