Monitoring Rare Plants in Alberta's Boreal Forest

Alberta Biodiversity Monitoring Institute

Sometimes, monitoring biodiversity is a giant game of hide and seek. Some species are rare. Others are elusive. In either case, they can be extremely difficult to monitor.

The Alberta Biodiversity Monitoring Institute (ABMI)'s core biodiversity monitoring program is designed to track changes in groups of common plants and animals in order to understand how their populations might be changing over time. The program wasn't optimized for rare or elusive species. That's where the ABMI's Rare Plants project comes in.

Established in 2010, the goal of the Rare Plants project is to design protocols to monitor rare plants in northeastern Alberta. To do this, the project makes use of innovative mapping techniques that link rare plants to the habitats where they are most commonly found.

Rare Plants Project:

SURVEYING AND MAPPING RARE PLANT HABITAT IN THE LOWER ATHABASCA

One of the challenges of monitoring rare species is a lack of general knowledge on their habitat preference and geographic distribution. This project aims to bridge this gap by developing survey protocols and mapping tools to improve our understanding of rare plants' status and distribution.

The Rare Plants project has a number of goals:

UNDERSTAND
factors affecting rare plant populations

INFORM
pre-development planning and mitigation to minimize the impacts of industry on areas with high probability of rare plant occurrence.

INFORM
regional land use planning

CONTRIBUTE
information to update the conservation status of rare plants

INCREASE
efficiency in rare plant sampling and monitoring

CREATE
a central database of target rare plant occurrences in Alberta

ADAPTIVE SAMPLING METHOD:

To achieve these goals, the project team developed and tested an adaptive sampling approach. Initially, project scientists create maps that predict habitat preferences for target species in order to identify potential survey sites based on the likelihood of finding such species. Fieldwork is then used to validate and improve the habitat preference predictions. In other words, new rare plant observations are fed back into the predictions to accelerate our understanding of rare plants and their habitats over time.

This sample approach has been used since the summer of 2012, and has resulted in 51 new detections of 16 target rare plant species to date. Many of these detections were found in rich and poor fen habitats, meaning that, as a result of this approach, we now have a better understanding of rare plant habitat preferences.

By building and refining maps of rare plant habitat preferences, this project is prioritizing places that are critical for the survival of rare plant species. This is a key piece of information for land use planning.

MANAGEMENT APPLICATIONS:

Land use planning in Alberta occurs at multiple scales. The knowledge gained in this project has applications for Alberta's regional planning process, including the Biodiversity Management Framework (BMF), as well as local-lease scale planning undertaken by individual energy companies. In both of these forums, this project is providing information on priority locations for rare plants in the Lower Athabasca, to ensure their chances for survival are maximized.

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The ABMI's Rare Plants Project was originally conceived and initiated through the Ecological Monitoring Committee for the Lower Athabasca (EMCLA). The EMCLA, a consortium of oil sands companies, government ministries and agencies coordinated by the ABMI, was established in 2010 with the goal of designing protocols to monitor rare and elusive species.

Visit www.emcla.ca for more information.

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