

Addressing the Decline of Boreal Caribou

Introduction

The enclosed project profile is from a nomination of this project to the 2012 Responsible Canadian Energy (RCE) Awards sponsored by the Canadian Association of Petroleum Producers (CAPP). The profile was updated in January, 2015 to reflect the extension of the project into a fifth year to conduct further analysis and communication activities.



Project Summary

The survival of caribou calves is critical to the sustainability of the boreal caribou herds of north eastern BC. Understanding the risks and areas where caribou calves spend their first few weeks has been identified as one of the most important factors in maintaining caribou populations.

Nexen, along with nine other companies, and the Science and Community Environmental Knowledge (SCEK) Fund, are championing an innovative study of the relationship between Boreal Caribou calves, their predators, and the resulting decline in Boreal Caribou populations.

The study is being undertaken by researchers from the University of Alberta and the BC Ministry of Environment in the Fort Nelson area of BC. The four year project involves placing radio collars on caribou and their prey—black bears and wolves—and then tracking their movement during calving season. The project will determine the locations and corresponding types of vegetation and topography that suits the survival of caribou calves in their first six weeks. This information can then be used to develop management guidelines for conducting oil and gas activities that protect and/or encourage the areas that support the survival of caribou calves.

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The study is completing its first year of data collection. Initial findings and guidelines are expected by the end of 2011 with further findings and guidelines coming over the next 3 years.

The Challenge

Boreal Caribou are listed as Threatened under the Federal Species at Risk Act due to population declines across much of their distribution. Habitat disturbance caused by both natural events and industrial activity have been linked to increased predation rates, which negatively affects calf recruitment rates for boreal caribou.

Addressing the Challenge

As part of the research, University of Alberta researchers are deploying GPS radio collars on Boreal Caribou, Black Bear, and Wolves, to track their movement patterns. Of specific interest is habitat selection by both caribou and predators during the caribou calving season, and characteristics of the calving sites, providing insights into the factors influencing calf recruitment and the actions that most effectively mitigate these factors relative to oil and gas development.

Research Objectives:

1. Identify site- and landscape-level characteristics of caribou calving sites.
2. Evaluate predator habitat use during caribou calving season.
3. Assess the importance of calving sites relative to calf survival.
4. Provide recommendations to guide best management practices—for reducing predation risk to caribou calves and increasing rates of calf survival.

These research objectives help to address knowledge gaps such as:

- The dynamics between Boreal Caribou calving habitat selection and the effective use and possible overlapping selection by predators.
- The spatial and temporal importance of caribou calving habitat features.
- The potential effectiveness of the interim operating practices.
- Prioritizing functional restoration areas based on refined habitat delineation related to calving, winter, and movement corridors.

Results

To date, the following initial observations provide new information that may change the way we manage and protect Boreal Caribou:

- Boreal Caribou areas—five of twenty calves born in 2011 were in sites outside of areas designated as Boreal Caribou areas. Further observations will be made over the next two years. However, this may indicate the need to analyze and revise the borders of some of the designated Boreal Caribou areas in order to protect calving areas—designating new areas while releasing other areas;
- Dispersal strategy—just prior to calving, female Boreal Caribou were observed to disperse using a “spacing out” strategy in order to distance themselves from other female Boreal Caribou and minimize predation risk. The further the female travelled to select her calving site, the higher the chance of calf survival. This indicates that the identification and protection of travel corridors prior to calving season may be important to factor into management practices; and
- Calving sites—sites selected for calving were typically treed bogs or nutrient-poor fens that are unsuitable for other ungulates such as moose and the predators that follow. This information

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will be used to confirm BC's Boreal Caribou areas and management practices to minimize or avoid disturbance to this type of habitat during calving season.

Outcomes

The findings will be used by the provincial MOU Strategic Leadership Team (MSLT), made up of government, industry, and stakeholders, to assess the effectiveness of management actions in reducing the decline in Boreal Caribou populations as per the provincial Boreal Caribou Implementation Plan. The project findings will be used to help confirm, adapt, and develop management practices that:

1. offer the most effective and efficient mitigation for Boreal Caribou;
2. provide certainty for industry proposing development in caribou areas;
3. enables economic activity balanced with the commitments of the BC Boreal Caribou Implementation Plan;
4. provide measureable actions that can be responsively adapted based on sound science.

Project Team

This project is a multi-organization team comprising stakeholders in government, industry, academia and non-government organizations. This includes the following organizations:

- Industry—Nexen and nine other members of CAPP —Canadian Natural Resources; ConocoPhillips; Devon Canada; Encana; EOG Resources Canada; Imperial Oil; Penn West Petroleum; Progress Energy Resources; and Quicksilver Resources Canada;
- Government— BC Ministry of Forests, Lands and Natural Resource Operations;
- Regulator—BC Oil and Gas Commission;
- Academia—University of Alberta;
- Non-government organizations—Canadian Wildlife Federation; and Ducks Unlimited Canada; and
- Research organizations—Science and Community Environmental Knowledge (SCEK) Fund; Petroleum Technology Alliance Canada (PTAC); and the Natural Sciences and Engineering Research Council (NSERC).

In addition, operational assistance is provided by a range of partners from the BC Ministry of Forests, Lands and Natural Resource Operations (MFLNRO), BC Oil and Gas Commission, Alberta Cooperative Conservation Research Unit (ACCRU) and Ducks Unlimited Canada.

The project is aligned with the draft research objectives of the BC Government's Boreal Caribou MSLT, designed to ensure Boreal Caribou management areas and practices are effectively achieving the goals committed to by the provincial government.

Extension

The communication of project findings is a large part of the project. Media coverage of the project includes the following television, print and conferences:

- Television—the Daily Planet, a Discovery Channel (TV) program on interesting science news and projects, covered the project in its April 18, 2011 episode. The episode can be seen at the following URL: <http://watch.discoverychannel.ca/daily-planet/april-2011/daily-planet---april-18->

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[2011/#clip453003](#). Discovery Channel plans to film and broadcast further coverage of the project in the summer of 2012;

- Print—the project was profiled and explained in the February 27, 2011 issue of the Pipeline News North publication. Pipeline News North is a monthly publication focused on industry news, environmental initiatives and progressive aspects of the oil and gas industry in northern British Columbia and northwest Alberta. More print coverage is planned over the next two years of the project; and
- Conferences—presentations at industry and environmental conferences are already underway and more will occur over the next two years. The project was presented at PTAC's 2011 Resource Access and Ecological Issues Forum. The findings will also be presented at the North American Caribou Conference in Fort St. John this coming Fall, 2012, and is part of the Foothills Research Institutes Caribou Workshop in Calgary on January 12-13th, 2012.

The project has two steering committees for external validation:

- Provincial Boreal Caribou Implementation Team— providing input and direction to ensure the findings can be used by both the BC Government in its Boreal Caribou management programs as well as industry in carrying out management practices to support the survival of Boreal Caribou calves. In 2011, the team consisted of representatives of the BC Government, CAPP's Species Management Committee and the research community; and
- Academic steering committee—the University of Alberta uses a steering committee to ensure academic integrity and validation of the approach and findings while also ensuring a focus on the scientific knowledge gap. This steering committee contains representatives from the University's wildlife biology department.

Year 5 (2015) Activities

The project has been extended into a fifth year at the recommendation of the Project Steering Committee supporting the project. The research conducted in the fifth year will provide input into the Research and Effectiveness Monitoring Board's (REMB) analysis activities. The REMB is part of the BC Government's Boreal Caribou Implementation Plan (BCIP).

Activities planned for year 5 (2015) include the following:

1. Assessing the effects of linear features on caribou predation rates: implications for line restoration within caribou range.
2. Updating predictive maps of caribou habitat.
3. Communication and extension activities on the project's findings—to BC government, industry and First Nations.