

A COOPERATIVE GOVERNMENT-INDUSTRY WOODLAND CARIBOU RESEARCH PROGRAM IN NORTHEASTERN ALBERTA

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ABSTRACT

Rapid development of large scale logging and increasingly intensive petroleum exploration and development in boreal mixed-wood forest of northeastern Alberta resulted in land use conflicts on caribou (*Rangifer tarandus caribou*) range. Attempts to resolve these conflicts resulted in the formation of a unique government/industry cooperative to jointly develop land use guidelines and to fund research programs to investigate various aspects of caribou ecology. The Northeast Region Standing Committee on Woodland Caribou (NERSC) was formed with the goal to develop an effective plan that will ensure the long term survival of caribou while allowing for renewable and non-renewable resource development. NERSC membership is diverse. The committee is comprised of representatives from 24 petroleum companies, two forest companies, two peat moss companies, and representatives of the aboriginal community, Alberta Environmental Protection, Alberta Energy, and Alberta Energy and Utilities Board.

This paper describes the mandate, structure and functioning of NERSC, and outlines the objectives and design of the caribou research program. The paper also describes how research findings were applied in recommending modified industrial land use guidelines to more effectively integrate caribou protection needs with industrial resource development objectives. It concludes with a discussion of this new process of cooperative land use management.

INTRODUCTION

In the 1970's, there was considerable concern across North America about declining woodland caribou (*Rangifer tarandus caribou*) numbers and distribution. Human settlement, agricultural

and industrial encroachment, over hunting and disease gradually reduced caribou distribution in the northeastern United States and in Canada along the southern boreal forest fringe westward to the Rockies (Bergerud, 1974).

Since the turn of the century, Alberta's woodland caribou range underwent shrinkage from agricultural encroachment. Caribou studies in the 1980s indicated that caribou numbers had declined (Edmonds, 1986). Recent large scale commitments to industry of wood fiber, petroleum and peat have brought the woodland caribou issue to the forefront.

Woodland caribou status in Alberta was scantily documented in the early 1980s. Concern about a population decline cited in studies in the west-central part of the province (Edmonds, 1986) resulted in the species being listed in the regulations as "endangered". As a result, recreational hunting of caribou was suspended in 1981. Another result was the development of restrictive industrial land use regulations on caribou range, aimed at minimizing disturbance. It was speculated that disturbance during late winter potentially increased caribou mortality.

Industrial operators found the land use restrictions very awkward. Discussions with regulators led to the formation of a partnership to conduct research and potentially resolve conflicts. The development of this government/industry working group, representing land users and managers within the boreal mixed-wood forest in northeastern Alberta, is described.

DEVELOPMENT OF THE NORTHEAST REGION STANDING COMMITTEE ON WOODLAND CARIBOU

Alberta government land use restrictions on occupied caribou range were based on limited information and aimed largely at reducing risks to caribou by petroleum industry activity.

The restrictions centred around four concepts:

- minimizing exposure of caribou to energetic stress caused by sensory disturbance from

- industrial activity, by the use of late winter construction timing constraints; minimizing habitat loss and/or fragmentation;
- minimizing predator efficiency by reducing opportunities for wolf travel along ploughed or pack linear developments;
- minimizing public access and associated hunting and disturbance along new corridors

The Northeast Region Standing Committee on Woodland Caribou (NERSC) was initiated in mid-1991 to illicit a better understanding of the restrictions, and to foster cooperation toward integrating caribou needs with industrial objectives. Committee membership has increased to include representatives from Alberta Energy, Alberta Environmental Protection, the Alberta Energy and Utilities Board, 24 petroleum companies, two forestry companies and peat companies. NERSC is co-chaired by a government member and an industry member.

Very early in its evolution (fall 1991) it was learned that flexibility in land use regulations would not be possible until further information was known about caribou in the region. It was decided that NERSC would have to act as facilitator for researching important aspects of caribou biology and methods needed for integrating industrial activity on caribou range.

A mandate and a set of objectives to achieve the; mandate, were discussed and adopted by consensus. An extensive research program was drafted, accepted by the committee, and implemented. The committee objectives and the research program are re-evaluated periodically.

NERSC continued to evolve with an increasingly large and diverse membership, including post-graduate student participation through the University of Alberta. Specific sub-committees were developed in early 1992 to address funding, public information and liaison, provincial coordination and caribou research. In mid 1994, an operational guidelines sub-committee was struck to assess the research results and recommend updated industrial operational guidelines.

Research funding originated from annual member donations and from in-kind contribution of equipment, facilities and staff. The Province's Wildlife Trust Fund was used to house the project's bank account. Donations and funds have been supplemented by significant grants from the Natural Sciences and Engineering Research Council of Canada, the Canada-Alberta Partnership Agreement in Forestry, the Alberta Recreation Parks and Wildlife Foundation, and the Alberta Fish and Game Association. Total NERSC funding to date, including membership contributions, exceeds \$850,000.00.

Public information efforts include production and distribution of three videos, a brochure, and five periodic newsletters illustrating the committee's purpose, composition, research efforts and progress. Committee members liaise through meetings, conferences and enquiries generated by our communication tools. All sectors of the public are welcome to NERSC's information. It is an open process. Copies of our brochure and the two most recent videos are available.

RESEARCH DESIGN AND STATUS

The NERSC Research program consists primarily of three studies; basic biology, assessment of industry-caused sensory disturbance, and the predator/prey relationships.

Considering the nature of the restrictions, the NERSC research program was designed first to learn the basic biological characteristics of northeastern caribou. Through a telemetry program from 1991-1995 involving the capture and radio-collaring of approximately 75 animals we determined caribou numbers, distribution, habitat relationships, seasonal movements, and limiting factors. We learned that caribou are relatively sedentary, occurring in discreet populations each associated with specific wetland complexes. The populations are stable or slightly declining. Wolf (*Canis lupus*) predation has been identified as the main mortality factor (Bradshaw, *et al*, 1995), as supported in the literature (Bergerud and Elliot, 1986; Seip, 1992).

Second, using this baseline, we determined caribou reaction to simulated industrial activity, and developed a model to predict population consequences of future industrial activity (Bradshaw, 1994). The research subcommittee is presently investigating the role of linear development (mainly seismic cutlines and pipelines) in caribou predation.

Finally, investigations have begun into the strategies used by caribou to avoid excessive wolf predation. This involves investigations into relationships among wolves, moose, deer and caribou as per the work of Seip (1992). Our caribou telemetry program has expanded to include capture and collaring of 30 moose (*Alces alces*), 12 wolves and four whitetail deer (*Odocoileus virginianus*). NERSC hopes to discover the critical habitat elements essential for caribou to avoid wolves, and use the information to develop guidelines for future logging operations on and near caribou range.

Research results accrue slowly, but in 1994 sufficient data was available to make preliminary adjustments to regulations affecting industrial development during the winter of 1994/95. One master's thesis and three research papers, all authored by committee members, will be published soon. These will then be made available for general release.

DEVELOPMENT OF RESEARCH-BASED GUIDELINES FOR INDUSTRY

The ultimate objective of NERSC is to facilitate the development of specific management plans which will address the needs of caribou, while accommodating resource extraction to the extent possible. Whether this is possible on a large scale while meeting the long term goals of all parties, is open to speculation.

NERSC resulted in a better understanding of the; rationale behind the original industry restrictions, and fostered a cooperative atmosphere for problem solving. Based on three full years of data collection, new operational guidelines were recommended by NERSC to the

province, and were subsequently adopted unaltered. The guidelines included a very clear mapping of caribou habitat preference ("key caribou areas"), several construction-specific modifications, and a relaxation of time constraints on industrial activity in key caribou areas from mid-January to March 1. These new guidelines will be re-evaluated in mid 1995, updated with the most recent biology, habitat, and sensory disturbance data and modified for the 1995/96 winter construction season. The development of the new, research-based guidelines, and their recommendation to and acceptance by the Province represents new ground.

The synergy of previously-juxtaposed sectors (regulators and industry) working together toward common management goals has lead to increased credibility. Government representatives have not lost regulative power, but gained support from industry. Conversely, industry views the process as non-adversarial, and feels both increased responsibility toward land use management, and peer pressure.

NERSC AS A COOPERATIVE PROGRAM OF LAND USE MANAGEMENT

The success of NERSC as an effective, cooperative government-industry research program is a result of genuine commitment by its members to the objectives, planning, research, funding and public information facets of the joint project. With rare exceptions, decisions are reached by consensus, following discussion by the committee of the whole.

The establishment of a working group such as NERSC first requires commitments by senior government regulators to rely on cooperative approaches to problem solving. It then requires key persons in government and industry to develop and instill confidence in all stakeholders. Demonstrated progress on problem solving acts to assure members that efforts made are recognized, and helps build commitment and trust. Incorporation of a public information system is essential to assure acceptance and accountability beyond the direct stakeholders.

The extent and diversity of the membership is a highly visible, valuable asset of the cooperative.

Another essential element for the success of NERSC is the extent and diversity of funding. Financial contributions are easier to obtain if other stakeholders are seen to be monetarily involved, and thereby committed to the research efforts. Credibility increases with both the number and diversity of funders. Pooling and stacking resources is extremely beneficial to both the "pot" and the "comfort zone" of potential contributors. To design funding efforts around the cooperative theme has proven to be effective.

It is the intent of NERSC to explore options to address caribou management and industrial land use through discreet area prescriptions, based on the results of the research to date and over the next two years. A necessary ingredient in the successful conclusion of our efforts is the continued cooperative atmosphere that was created by the committee's formation in 1991, and has been maintained to the present. Without a multi-sector organization like NERSC, the long term survival of northeastern Alberta woodland caribou could be further compromised.

ACKNOWLEDGEMENTS

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