

Science, Utilization, Conservation and Co-Management of the George River Caribou Herd

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Throughout the second half of this century, the George River Caribou (*Rangifer tarandus caribou*) population (GRC) which ranges throughout the Ungava and Labrador Peninsulas of the eastern Canadian provinces of Quebec and Newfoundland, has grown to be one of the world's largest barren-ground caribou herds (Couturier *et al.*, 1990). Recent evidence however, suggests that the herd has exceeded the carrying capacity of its range (Messier *et al.*, 1988, Crête & Huot, 1993) and may no longer be growing (Couturier *et al.*, 1994). These indications have generated concern among aboriginal peoples of Quebec and Labrador whose culture and economy depend on the GRC, and among the non-aboriginal residents who rely on the herd for subsistence, sport hunting and eco-tourism. At present, there is no formal arrangement for the joint management of the GRC between the provincial governments of Newfoundland and Quebec, although wildlife managers from both jurisdictions coordinate management activities on an informal basis. Only in Quebec, has a public advisory committee been established (James Bay Hunting, Trapping and Fishing Coordinating Committee). Anderson & Rowell (1991) have called for the establishment of a joint management agreement which would formalize cooperation between the provinces as well as among aboriginal users and government officials.

Surely, some form of cooperative management between users and government is an idea whose time has come. The George River Caribou Workshop, held on January 27-29, 1994, in Labrador City, Labrador, was conceived in that spirit. Initiated by the Labrador Institute of Northern Studies of Memorial University of Newfoundland, the primary objective of the workshop was to bring together scientists, aboriginal and non-aboriginal

users and government representatives to discuss issues pertaining to the status and management of the GRC. We quickly learned that this is no easy task.

The GRC occupies a range that crosses a provincial boundary, parts of which are still disputed. Furthermore, the GRC range encompasses several distinct cultural and language groups (french-speaking Quebecois, metis, Inuit of Quebec and Labrador, Innu (Montagnais, Naskapi and Cree) and non-aboriginal English-speaking Labradorians). Clearly, meaningful partnerships can only be forged if these differences are recognized and respected. Early in our discussions, the workshop coordinating committee decided that simultaneous translation into the various languages of the participants was critical to ensure the workshop's credibility and success. Generous grants from the government of Canada (Department of Indian and Northern Affairs and the Office of the Secretary of State) allowed us to provide translation among four different languages. As well, we decided that the workshop would be structured around a small number of keynote addresses to allow ample time for discussion and exchange of ideas among all workshop participants.

Four workshop objectives were identified: (1) to consider present and past assessments of caribou numbers and population trends in the GRC (2) to explore the role of environmental factors such as climate and habitat change on population dynamics (3) to consider actual and potential human activities on the population and distribution of the caribou (4) to discuss caribou management strategies and the co-management concept. The workshop was organized around four half-day sessions focused on each of these objectives and each session featured three or four keynote speakers. An evening panel discus-

sion of the social and cultural significance of the GRC was also organized, and the third day was devoted to an open discussion of workshop presentations, research needs and co-management concepts. The following is a brief overview of the results of this workshop. All keynote addresses are presented in this volume.

We were overwhelmed by the positive response to this workshop. More than 100 people participated, including representatives from each of the aboriginal groups mentioned above, from the federal, provincial and local governments, from the Labrador West Caribou Hunters' Association, the Labrador East Hunters' Association and several independent outfitters and local residents. Klein's plenary address, "Caribou management strategies in the circumpolar north" (this volume), provided a global perspective to the workshop discussions. Issues of caribou management of the GRC are not unique and the variety of management options which Klein reviewed provided much for participants to consider. In closing, Klein pointed out that all of the large migratory herds of caribou in North America have reached peak population levels and, under these conditions, a wide range of management strategies appear to work well. Klein cautioned that the difficult challenges will arise when caribou populations decline. Klein's comments were a timely preface to the session on Population Dynamics in which Couturier & Russell (this volume) presented evidence from the 1993 census indicating that the GRC population is no longer increasing. In another presentation, Crête *et al.* (this volume) presented data on recruitment and survival that suggested that the population may, in fact, be declining.

As the GRC population has increased in recent decades, the herd's range has expanded and shifted southward and westward. Possible reasons for population and distribution trends were examined in the session on Habitat and Distribution. Climatic variation and its effects on snowfall patterns and winter range conditions may result in fluctuations in caribou density (Huot *et al.*, this volume). However, Maarouf *et al.* (this volume) concluded that the available data do not substantiate a major regional climatic trend consistent with this hypothesis. Instead, recent work by Huot *et al.* (this volume) and correspondent climatic data (Maarouf *et al.*, this volume) provide evidence that the quality of the summer range, and not the winter range, has deteriorated in recent years. Evidence was presented that animals were in poor condition (Huot *et al.*, this volume), and as a result, reduced productivity may be a cause of reduced population growth. Finally, Heard & Williams (this volume) posed the provocative suggestion that the recent southward shift in

the distribution of the GRC caribou may result in significant increases in wolf predation as the caribou winter further into the boreal forest.

An evening panel on the cultural, social and economic significance of the GRC raised concerns about the effects on caribou of military low-level flying, hydroelectrical development, road construction and human access. The generally poor condition of the animals was also noted. Both aboriginal and non-aboriginal shareholders expressed strong support for the idea of co-management of the herd. The value of traditional knowledge in understanding the GRC and wildlife in general was emphasized. Anecdotal evidence was provided, of many caribou being slaughtered and not utilized in both Labrador and Quebec.

Information arising from the sessions on population dynamics and distribution set the tone for subsequent sessions on Caribou - Human Interactions and The Co-Management Concept. In his overview, Harrington (this volume) identified hunting (subsistence, sport and commercial), low-level military jet fighter training (Harrington & Veitch, 1991) and hydro-electric development as the three sources of human impact within the range of the GRC, which are of greatest concern. Harrington also emphasized the importance of considering the cumulative effects of these human activities as well as those of climatic and other environmental changes. Finally, Harrington warned about the danger of concluding that there are no negative consequences of environmental interventions when we are dealing with complex ecosystems and when no substantive evidence can be brought to bear on the issue. Erring on the side of caution, that is assuming that environmental interventions have impacts until proven otherwise, is the safest way to proceed (Montevecchi & Bouman, 1994). Information on the impacts of these human activities is generally poor. In contrast, based on monitoring by Hydro Quebec, Jean Doucet suggested that impacts of hydro-electric development on the GRC have been negligible and may in fact have been beneficial. Guy Bellefleur of the Conseil des Atikamekw et des Montagnais spoke about the negative consequences for caribou of low-level military flying and hydro-electric and forestry practices which involve the opening of roads and consequent access to wildlife habitat. Mr. Bellefleur pointed out that some aboriginal groups were greatly concerned with recent increases in sport hunters.

Throughout the workshop, local residents expressed great concern over these possible impacts, although perspectives often varied. For example, with regard to hunting, members of the Labrador West Caribou Hunters' Association expressed con-

cern about subsistence (food) hunting, while members of the Labrador East Caribou Hunters' Association raised issues concerning the future of sport hunting. Likewise, the Labrador Inuit Association has until recently operated a successful commercial harvest of the GRC, while the Labrador and Quebec Innu generally oppose commercial ventures on religious grounds.

Despite these sometimes disparate perspectives, there was support from all of the aboriginal and non-aboriginal user groups for the establishment of a co-management board. Composed of government and non-government representatives from Newfoundland and Labrador, and Quebec, the board would advise government on issues of caribou management. Not surprisingly, the final workshop session on co-management was of particular interest to participants. Presentations by Peter (this volume), Thompson (this volume) and David Kritterdlik reviewed the history and evolution of the Porcupine Caribou Management Board, the Split Lake Caribou Management Board and the Beverly-Qamanirjuaq Management Board, respectively, providing useful management perspectives and strategies. Agreement on the concept of co-management of the GRC was tempered with a great deal of disagreement about how best to initiate and develop such a process. A primary issue of contention centred on whether non-aboriginal shareholders should be formally represented on a co-management board (their preference) or represented by government (aboriginal people's preference). Unsettled aboriginal land rights in the region probably acted to preclude meaningful resolution of such substantive issues. Notwithstanding the lack of agreement on these issues, everyone felt they had learned from the exchange of information, ideas and interactions.

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