Seasonal Range Use and Movement Patterns of Boreal Caribou in the Dehcho

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Introduction:

This is a long term project with the two ultimate objectives being 1) to document key aspects of the ecology of boreal caribou thus providing baseline information on boreal caribou populations that range through out the Dehcho region, and 2) to continue to foster community support and partnerships in data collection and monitoring programs for boreal caribou in the region.

This project has resulted from extensive community consultation. Local First Nations have indicated the appropriate areas, appropriate means, and appropriate numbers of boreal caribou females to be collared since project inception.

The key ecological objectives are to document: a) seasonal range use, seasonal movements, and calving areas of female boreal caribou over multiple years, b) the fidelity of these movements and calving areas of female caribou over multiple years, c) and monitor calf production and calf survival and to a lesser extent adult female survival, d) female:calf ratios annually in summer, and mid-winter to assess calf survival and recruitment, and e) disease and parasites and winter diet of boreal caribou.

Knowledge of baseline boreal caribou ecology is key for landuse planning in the face of continued pressures from resource-based development. The information will be important to local harvesters, First Nations, wildlife managers, and land use planners as it will be critical for informed decision making on future development activities.

Areas where collars were to be deployed and initial survey area locations were suggested by local residents using their accumulated traditional knowledge. Collar deployment was conducted by a professional helicopter capture crew. Disease/parasite and diet analyses were completed by professionally recognized laboratory personnel. Satellite collar data analyses, mapping, aerial relocation flights and surveys were

conducted by professional government biologists and wildlife technicians overseen by the Dehcho Regional Biologist.

This boreal caribou project is one of at least 2 similar projects being conducted in different geographical locations of the Northwest Territories. The data collected from this project are being used with data collected from the South Slave and Inuvik Regions to investigate boreal caribou ecology at a larger landscape level. Some of the data collected from this project have been and will continue to used by the Samba K'e Dene Band as part of their local boreal caribou monitoring program.

Methods:

Annually we deploy radio collars on female boreal caribou by live capturing animals by a net fired from a helicopter by a professional capture team. Photos of the teeth, blood, fecal, and hair samples and a neck girth measurement is taken from each caribou. Also the snow depth is measured at the collaring site. If First Nations recommend an aerial reconnaissance flight immediately prior to the collar deployment then such a flight is conducted with observers from those First Nations. Such flights have rarely been requested so as to limit the disturbance to caribou.

Aerial relocation flights to locate animals with VHF collars are conducted during months when the weather is not too cold and when other surveys are not conducted.

We fly 2 helicopter surveys annually to try get visual observations of each collared female caribou and to classify by sex/age any other caribou associated with them. The post-calving survey in early June specifically determines how many collared females have newborn calves and is used to assess calf production. For the mid-winter survey in early March we specifically check for calves being present with collared females. At this time of the year caribou groups are largest so this survey is used to assess both overwinter survival of calves and caribou population composition.

All location data are analysed by a variety of computer programs using GIS to map seasonal range use and movements etc. Location data are combined with layers of landuse, linear development, vegetation etc. to complete a variety of analyses.

After extensive consultations and discussions with First Nations participating in the project it was decided that ENR would maintain the raw location data and produce maps of the ranges used by female boreal caribou on a quarterly basis. These maps would be provided to First Nation participants only. Maps indicating quarterly range use of individuals are provided to First Nation partners. No maps indicating point locations of collared animals are provided. Survey and collar deployment results are circulated to all First Nations. A detailed annual progress report is produced, circulated, and posted on the ENR website.

Areas for deploying collars on caribou are determined based upon traditional knowledge of harvesters/elders and current animal distribution. The project area has changed over the course of the study as more First Nations joined the project and selected additional traditional areas.

Results:

Detailed results through April 2008 can be found in the progress report: http://www.nwtwildlife.com/Publications/PDF/ProgRep4_Dehcho%20Boreal%20Caribou%20Study-Apr08.pdf

This project is monitoring the boreal caribou Valued Component in order to acquire baseline data on their ecology. In areas of increased linear development (in the southern parts of their national range) boreal caribou populations have been declining. This study will provide information in areas with currently relatively limited linear development to make informed decisions on future landuse and development.

During the course of this project we assisted in the training and design of the Samba K'e Dene Band boreal caribou monitoring program which uses sign and track counts. We have been providing data and assistance with their project. Preliminary results of their project as well as up to date result of this project were presented at the 4th biannual Dehcho Regional Wildlife Workshop in Fort Simpson in October 2008.

A presentation called Boreal Caribou and Seismic Lines: How many seismic lines are too many? was made at the 4th biannual Dehcho Regional Wildlife Workshop in Fort Simpson in October 2008. The presentation was based upon the data collected to date from this project and was provided as an appendix to the final report from this workshop that was circulated throughout the Dehcho and to CWS in Yellowknife.

Results from the 2008 calf survey where the CIMP funds were directed showed that 24 out of 29 collared female boreal caribou had calves and that 31 out of a total 41 boreal caribou females observed had calves. These are the greatest proportion of females with calves recorded since we began calf surveys in 2006.

Discussion / Conclusions:

The results from this project combined with results from the South Slave and Inuvik Regions have greatly furthered our knowledge of the effects of cumulative linear development as it pertains to boreal caribou populations in the Northwest Territories. Most importantly the results from this work, in the north on northern populations, has demonstrated differences in responses to linear development by boreal caribou in their northern range from results of studies in areas where linear development is high and has already highly fragmented the landscape. Hence questioning the wide applicability

of models generated and findings made elsewhere to northern ecosystems and landscapes.

We have had continued community support for the project, which was reiterated by delegates at the 4th biannual Dehcho Regional Wildlife Workshop in Fort Simpson in October 2008. There was support to continue with the monitoring and recently our First Nation partners approved deploying additional collars in 2009 and to continue with the surveys and monitoring.

An annual progress report of this project will be produced by April 2009 and posted on the ENR website.

Appendix(s):

Project annual progress report

http://www.nwtwildlife.com/Publications/PDF/ProgRep4_Dehcho%20Boreal%20Caribou%20Study-Apr08.pdf