
Community Involvement in Recovering Woodland Caribou Populations: Yukon Success Stories

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Abstract: The Northern Mountain population of woodland caribou (*Rangifer tarandus caribou*) is important to the culture and ecology of the Yukon. The species is listed as being of Special Concern nationally, and individual herds in the territory have experienced serious declines; however, recovery programs for these herds have been successfully carried out in several areas. Three of these recovery programs have focused on the Finlayson, Aishihik, and Chisana herds. All three programs were developed in response to local communities who insisted that something needed to be done to recover these herds. Land claims have created a new management regime in the territory, which has allowed for the evolution of greater First Nation and community involvement in various aspects of recovery programs. It has also led to an evolution in predator management techniques and to an increased role for traditional and community knowledge.

Key Words: co-management, community knowledge, woodland caribou, *Rangifer tarandus caribou*, Yukon

Introduction

The Northern Mountain population of woodland caribou (*Rangifer tarandus caribou*) plays an important role in the identity of the Yukon, both ecologically and culturally. Woodland caribou are key elements in the boreal ecosystem, and are important prey for northern predators such as wolves and humans. Yukon First Nations have had a long relationship with caribou. Archeological discoveries in high mountain ice patches in the southern Yukon show a relationship between caribou and aboriginal hunters dating back at least 4000 years (Kuzyk et al. 1999). As Yukon communities have evolved, this close relationship with local woodland caribou populations has continued. In many cases, communities feel a deep responsibility for maintaining the herd, not only as a food source but as a representation of the health of their environment.

The Yukon currently has 23 woodland caribou herds which are distinguished by their distinct wintering ranges. Herd sizes range from a hundred animals to up to 10,000 animals (Yukon Department of Renewable Resources 1996). The woodland caribou is listed as a species of Special Concern nationally (COSEWIC 2002), and individual populations in the Yukon have experienced serious declines; however, recovery programs for these herds have been carried out with great success in several areas. In this paper, we examine three caribou recovery programs that have been conducted in the Yukon over the past 20 years. We also outline the evolution of

community involvement in recovery planning as a result of land claims, and the evolution of corresponding changes in management techniques.

Wildlife Management under the Yukon Umbrella Final Agreement

The settlement of land claims in the Yukon established a new management regime that requires the involvement of First Nation governments, local communities, and the general public in ways that had not been experienced before. First Nations became governments in their own right and became legally responsible for many things, including ensuring the subsistence harvesting rights of their members were retained. Upon ratification of the Yukon Umbrella Final Agreement in 1995, two new advisory bodies—local Renewable Resources Councils and a territory-wide Yukon Fish and Wildlife Management Board—became part of the decision-making process with regards to managing fish and wildlife in the territory.

Renewable Resources Councils are established in the Yukon to make recommendations on the management of local fish and wildlife populations within their traditional territory. The Yukon Fish and Wildlife Management Board has the authority to make recommendations on several issues including the management of any populations that may be of territorial, national, or international interest. First Nation governments are also to be included in this process to ensure their rights and authorities are respected. The Yukon government is still, ultimately, responsible for carrying out any required management activities, but must consult with, and consider the input of, these other agencies.

The Yukon has 14 First Nations, 12 of which are at various stages of settling their individual land claims. There are currently eight established Renewable Resources Councils. The Yukon Fish and Wildlife Management Board is now entering its tenth year of official operations. The process for involving communities and First Nations in the management of fish and wildlife has evolved over the past decade, and will continue to evolve. The following examples will illustrate how things have changed with the settlement of land claims.

Finlayson Caribou Recovery: 1982 to Present

In the early 1980s, the people of Ross River, a small Kaska community in the southeast Yukon, began raising concerns about the size and health of the Finlayson herd, and suggested that the herd may decline to a point where it would not recover. In response to these concerns, the Yukon government conducted an intensive wolf control program in the area. Between 1983 and 1989, the local wolf population was reduced from 215 wolves in 25 packs to 29 wolves in 7 packs (Hayes 1995). In addition, the licensed harvest of caribou was reduced and put on a permit system, and First Nations voluntarily and significantly limited their harvest for the duration of the wolf control program; however, there was limited involvement by the community or the First Nation in the design of the caribou recovery program.

With reduced pressure from predators, the Finlayson herd increased from 2500 animals in 1983 to about 6000 animals in 1991. By 1992, wolf numbers had returned to the same level as before the control program was implemented, and by 1996 had increased to 260 animals (Hayes 1995). The caribou population stabilized, but has slowly been decreasing since 1996. The Yukon government attempted to develop an informal management plan with the involvement of the First Nation and other partners, but it had limited success. Without a specific land claim or a designated community advisory committee such as a Renewable Resources Council, there was not a sufficient framework or community capacity to successfully develop such a plan.

The Finlayson caribou recovery program faced several challenges. Firstly, the local community raised concerns about the state of the Finlayson herd, but played a minimal role in identifying how those concerns should be addressed. The project was designed almost exclusively by government scientists with limited local or traditional information or input. Secondly, the aerial wolf control program was very expensive, took a long time, and was very controversial. This controversy spread around the world and, as a result, the Yukon became a target for animal rights organizations. Thirdly, while there was informal community involvement in the program, there was no specific management framework in place to continue the momentum of the program's success. Finally, there was no formal management plan for the herd once the recovery program was completed. As a result, the herd—while still healthy—has slowly declined. The community, however, continues to conduct a successful monitoring program in the area each year.

Aishihik Recovery Program: 1990 to Present

Members of the Champagne and Aishihik First Nation began noticing a decline in the Aishihik caribou herd in the 1980s. Surveys conducted by the Yukon government in 1990 indicated that the herd had declined by 50% since 1981 (Hayes et al. 2003). Local people believed that predation and overhunting were primarily responsible for the herd's decline (Allen 1994).

In response to these concerns, the Yukon government examined what was happening with the herd, and confirmed what the local people were saying. The government began by closing the area to hunting in 1990 in order to determine the effects of a reduced harvest on the herd (Hayes et al. 2003). First Nations also voluntarily reduced their harvest. The Yukon government then established a citizen's group, which included representation from First Nations and the pre-implementation Yukon Fish and Wildlife Management Board, to develop a policy for the management of wolves. The Yukon Wolf Conservation and Management Plan was finalized in August 1992 (Yukon Wolf Planning Team 1992). This plan provided ethical and scientific guidelines for managing wolves, including the conditions under which wolf control could be used. This plan also provided the Yukon public with a clear understanding of what could be expected and what was required before a drastic measure such as wolf control would be used.

In 1992, a recovery plan for the Aishihik herd was developed at a public workshop which included the participation of academic ecologists, biologists, First Nations, and members of the public (Hayes et al. 2003). Wolf reduction was deemed to be a necessary component of the recovery program. Between 1993 and 1997, the Yukon government reduced the wolf population to about one-fifth of its size (Hayes et al. 2003). The methods used included aerial culls, but focus was also placed on alternate methods such as encouraging local trapping and implementing experimental fertility control using surgical sterilization. The idea for using sterilization was initially raised during discussions about First Nations' traditional practices of killing wolf pups in the den in spring to limit local wolf populations. Following the wolf control program, the Aishihik herd quickly recovered to about 1500 animals. Development of the recovery program also involved conducting an extensive survey to gather information from elders on their traditional knowledge and beliefs about caribou, moose, wolves, and bears (Allen 1994).

The local community was intimately involved in the Aishihik recovery program; elders were consulted about methods of wolf control, First Nations participated in population surveys, and local game guardians patrolled the area to ensure there was no hunting of animals during the recovery program. Initially, an informal Aishihik Steering Group was formed, which included members of the local community and First Nation. Then in 1995, the Alsek Renewable Resources Council was formally established upon the settlement of land claims in the area. The council ensured that the public continued to be involved in all aspects of the recovery plan, and provided direction in developing a comprehensive integrated plan for the long-term management of all species in the Aishihik area. The Aishihik Integrated Wildlife Management Plan, in which the Alsek Renewable Resources Council, the First Nation, and the Yukon government are all partners, has just gone through its first five-year review (Alsek Renewable Resources Council 1999). The Aishihik herd is currently being hunted at a 2% harvest rate, and its population has stabilized.

Chisana Recovery Program: 2000 to Present

The Chisana herd is a small herd of woodland caribou that ranges between the southwest Yukon and southeast Alaska north of the St. Elias Mountain Range. It is believed that the herd numbered up to 3000 animals in the early 1960s; however, the herd declined from about 1800 animals in 1989 to about 400 animals in 2000 (R. Farnell, unpublished data). Both the White River and Kluane First Nations raised strong concerns about the herd's declining trend (Farnell and Gardner 2002).

In 1996, in response to the herd's decline, the Yukon government reduced the number of hunting permits for caribou in the area to zero. Over the next four years, biologists conducted various studies on the herd. In addition, two planning workshops were organized to develop a comprehensive research and management plan for the herd. The first workshop was held in 1999 in Tok, Alaska, and included mainly scientific partners. In 2001, the White River First Nation

hosted a traditional knowledge workshop in Beaver Creek, Yukon so that elders and residents could share their knowledge of the herd and its movements. Based on information provided at both these workshops, the Yukon Fish and Wildlife Management Board recommended the herd be designated as a species at risk under the Yukon's Specially Protected Wildlife Regulations, which meant that all harvest (both First Nation and licensed harvest) would be legally prohibited (Yukon Fish and Wildlife Management Board 2002).

The community and the Alaskan and Yukon governments were not interested in conducting another aerial wolf control program; however, research conducted during both the Finlayson and Aishihik programs provided new information on the predator/prey relationship between wolves and caribou and the effects of calf predation on herd dynamics, which helped scientists determine what alternative methods could be used successfully (Hayes 1995; Hayes et al. 2003). In June 2002, another workshop was held in Tok, Alaska where all the partners came together again to decide how they would move forward with a recovery plan. Initially, the idea of captive breeding caribou at a game farm in the Whitehorse area was discussed, but the transport of cows and calves was deemed to be too stressful and expensive. Instead, it was suggested that a captive-rearing enclosure be built within the herd's own range, and that a few pregnant cows would be kept in the enclosure until their calves were born and had survived the first few critical weeks in their development. In addition to the captive-rearing program, local trappers agreed to focus on snaring wolves in the calving and summer areas of the Chisana herd.

In the spring of 2003, biologists and nearby community residents constructed an 8-ha enclosure, made of 1.5 m high geocloth, near the herd's summer range. A local outfitter's camp was used as a base for the captive-rearing operation. Twenty caribou cows were captured and brought to the enclosure. All the caribou were carefully tested to determine their health, and 17 were confirmed to be pregnant. All 17 cows were deemed to be healthy and were released into the enclosure where they were fed a mixture of lichens that had been gathered by students from local schools the previous fall. In addition, several local people were hired to monitor the captive females throughout the project and to ensure that no predators broke through the fence.

All 17 females gave birth, and the calves survived their first three weeks. At that time, a portion of the fence was taken down to allow the cows and calves to leave the enclosure. Within a few days, they had rejoined the larger Chisana herd. By the fall, 12 calves were still alive, indicating a 71% survival rate compared to a 13% survival rate for calves raised outside the enclosure (R. Farnell, unpublished data). As a result, all partners are interested in expanding the project this year and doubling the number of captive cows to 40.

Lessons Learned

Many scientific advances have been made as a result of the three recovery programs described. There is now a greater understanding of wolf pack dynamics; the predator/prey relationship between wolves and caribou; the effects of wolf and bear predation on calf survival

during the first few weeks of life; the effects of sterilization on wolf packs; and the relationship among wolves, caribou, and moose; however, perhaps some of the greatest advances have been made in the social or community field.

Instead of being strictly academic, the caribou recovery planning exercises have expanded to include both local and traditional knowledge, and have sought the participation of all members of the community. This can be directly linked to the evolution of First Nation land claim agreements in the territory, which legally required the involvement of communities and First Nation governments in the management of fish and wildlife species. This inclusion of local people has led to two specific lessons that have helped ensure the successful recovery of declining caribou populations.

The first lesson is that by involving local people in all aspects of a project, from identifying the problem to developing a recovery plan to ongoing monitoring and management, overall social acceptance of management measures (such as predator control or restricting human harvest) has increased, and local compliance has improved. Instead of having to use territorial enforcement agencies, communities have developed a certain 'ownership' of the program, which has reduced the amount of poaching and has increased support for the initiatives. This has also led to increased community involvement in different aspects of the projects, from monitoring the herd's recovery to gathering lichen and target trapping wolves. The inclusion of traditional and local knowledge in all aspects of the recovery program has also increased feelings of ownership and pride in the success of the programs.

The second lesson is that with increased social and community acceptance, governments were more willing to invest in the recovery programs, and this led to more support for research and recovery projects. The public controversies that were part of the first wolf cull programs were no longer an issue. By being part of the solution, diverse groups ranging from First Nation governments to animal rights groups and hunting organizations were able to reach a consensus on how best to recover a specific herd. As a result of this widespread support for the programs, more money was leveraged from governments and other agencies in order to ensure the programs' success.

In conclusion, there are several important elements of public involvement in the recovery of a species that will help ensure success. Specifically, communities need to be involved in

- identifying the problem,
- developing acceptable solutions,
- playing an active role in recovery, and
- participating in ongoing management planning.

Overall, community involvement in all aspects of fish and wildlife management has evolved substantially in the Yukon over the ten years since land claims were settled. While there have been many advances, we are sure that these are only the beginning, and we will continue to develop new and exciting approaches to managing our important wildlife populations.

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