

Indigenous Communities Leading the Way for Woodland Caribou Recovery in Canada

A 2015 Review of Indigenous-led Action Plans

Final Report



Submitted To:



Submitted By:



June 2015

Project Team:

Jessie DeGrave
Alex Lynch
Morgan Vespa
Shawna Wolfe

Acknowledgements:

CIER would like to acknowledge all of the interview participants who took the time to share their thoughts and perspectives, without which this review would not have been possible. Thank you also to everyone who made efforts to recommend and put the CIER team in contact with potential interview participants. Special thanks to the Caribou Project Team at the Boreal Leadership Council for their valuable input, guidance and contributions, including Valerie Courtois, Alan Young, and Ronnie Drever. The Boreal Leadership Council commissioned this project with financial support provided by TNC Canada, the Boreal Leadership Council, and Suncor. Thanks to Kathy Johnson for administrative support.

Cover Photo Credits:

Shawna Wolfe, CIER

Copyright & Disclaimer

© 2015 Centre for Indigenous Environmental Resources, Inc. All rights reserved. No part of this document may be reproduced, in any form or by any means, including electronic, mechanical, photocopied, recorded or other means without written permission of CIER.

CIER accepts no liability or responsibility for any damages that may be suffered or incurred by any third party as a result of the use of, reliance on, or any other decision made based upon this report.

CIER, the Centre for Indigenous Environmental Resources, is a national First Nation directed environmental non-profit organisation. We offer research, advisory, and education and training services to Indigenous communities, governments and private companies through our two program areas: Building Sustainable Communities and Protecting Lands and Waters.

Centre for Indigenous Environmental Resources
P.O. Box 26092 RPO Maryland
Winnipeg, Manitoba R3G 3R3
Tel: (204) 956-0660
E-mail: earth@yourcier.org
Web: www.yourcier.org

This document has been designed for double-sided printing and was originally printed on 100% post-consumer content process chlorine free (PCF) paper.

Table of Contents

1.0 INTRODUCTION.....	3
1.1 Project Goals.....	3
1.2 Background.....	3
2.0 METHODOLOGY.....	5
2.1 Preparation.....	5
2.2 The 15th North American Caribou Workshop.....	6
2.3 Review.....	6
2.4 Analysis.....	7
2.5 Reporting and Dissemination.....	7
3.0 RESULTS AND DISCUSSION.....	8
3.1 Interview Results.....	8
3.1.1 Interview Participant Selection.....	8
3.1.2 Background Information.....	8
3.1.3 Baseline Information.....	13
3.1.4 Implementation / Management Details.....	16
3.1.5 Lessons Learned.....	19
3.2 Results of Document Review.....	23
3.2.1 Document Selection.....	23
3.2.2 Background Information.....	24
3.2.3 Baseline Information.....	30
3.2.4 Implementation / Management Details.....	35
3.2.5 Lessons Learned.....	38
4.0 SUMMARY, CONCLUSION AND NEXT STEPS.....	40
4.1 Highlights.....	40
REFERENCES CITED.....	43

Abbreviations

BC	British Columbia
BLC	Boreal Leadership Council
CBFA	The Canadian Boreal Forest Agreement
CIER	Centre for Indigenous Environmental Resources
COSEWIC	The Committee on the Status of Endangered Wildlife in Canada
CTFN	Carcross/Tagish First Nation
NCN	Nisichawayasihk Cree Nation (Nelson House)
NWT	Northwest Territories
ON	Ontario
SFN	Saulteau First Nation
TH	Tr'ondëk Hwëch'in
TK	Traditional Knowledge
TKC	Ta'an Kwäch'än Council
UPCART	Ungava Peninsula Caribou Aboriginal Round Table

List of Tables

Table 1 Background Information for Interview Initiatives	11
Table 2 Reasons for Initiation and Initiation Goals for Interview Communities.....	14
Table 3 Research and Tools Mentioned by Interview Participants.....	15
Table 4 Challenges Noted by Interview Participants	17
Table 5 Recommendations for Future Caribou Action Planning Made by Participants	21
Table 6 Recommendations for Other Indigenous Communities made by Participants.....	22
Table 7 Document Background Information	27
Table 8 Indigenous and Non-Indigenous Groups Involved and Methods of Involvement.....	32
Table 9 Principles and Actions Applied in Document Initiatives.....	36

List of Figures

Figure 1 Map of communities with initiatives and herds.....	9
Figure 2 Map of areas/herds of focus in document review initiatives	25

List of Appendices

Appendix One	Questionnaire Used for Interviews
Appendix Two	Questions Used to Frame Document Review
Appendix Three	Information Package Distributed at the Caribou Workshop
Appendix Four	Interview Data
Appendix Five	Document Review Data

1.0 INTRODUCTION

Most populations of caribou across Canada are now in decline (Parks Canada, 2013) and as caribou management challenges are increasing in their complexity and breadth, so too are the concerns of a variety of stakeholders that have a relationship to the caribou herds of Canada. As such, organizations across Canada are working towards the recovery of caribou populations. The Boreal Leadership Council's (BLC) Caribou Project Team (www.borealcouncil.ca) is one such organization.

The BLC is building on its historical focus on recovery planning and Indigenous management by conducting a cross-country review of caribou action planning led by Indigenous peoples. The BLC obtained the services of the Centre for Indigenous Environmental Resources (CIER – www.yourcier.org) to conduct a review with a focus on tools, data, practices and governance structures currently used by Indigenous peoples for action planning, including Indigenous Knowledge, identifying habitat, monitoring populations and other aspects of caribou conservation.

1.1 PROJECT GOALS

The goals of this project were to:

- Document existing or developing approaches to Indigenous-led caribou action planning in Canada's Boreal
- Raise awareness of how Indigenous peoples are protecting caribou in Canada's Boreal
- Help connect and facilitate the sharing of information among practitioners and planners working on Indigenous-led caribou action planning in Canada's Boreal
- Reach out and engage with companies and governments to garner support and encourage collaboration and cooperation where appropriate

1.2 BACKGROUND

Indigenous peoples have strong and unique historical and cultural connections to the land on which they live – it has sustained them for millennia. This connection has led to an intimate knowledge of lands and the plants and animals that thrive there. Indigenous peoples have stewarded these lands sustainably and responsibly and are key to the restoration and conservation of one of Canada's iconic animals – the caribou.

Caribou (*Rangifer tarandus*) in Canada occupy a number of different habitats, including the boreal forest, mountainous regions, sparse forests, and tundra. There are four main sub-species of caribou in Canada: Barren-ground, Peary, Grant's and Woodland. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has determined all but one of the populations of woodland caribou to be at-risk. One sub-species which roamed Haida Gwaii, Dawson's Caribou, is extinct.

Canadian caribou populations are generally in decline. Learning from Indigenous elders as well as improved data collection and survey methods have taught researchers that caribou herds fluctuate in population size. In the last several decades human activities and climate change have raised concerns about effects on caribou populations and how best to manage a species that seems to be losing a battle of survival in an ever-changing world. These new concerns have led to collaboration and discussions between a variety of stakeholder groups to determine lasting and feasible plans for caribou management.

The research to identify and explain declines in caribou population is plentiful. As such, this review will not focus on reasons for caribou decline, but instead will explore and analyze what has been and is being done with and by Indigenous peoples in Canada to manage and recover caribou populations.

Indigenous peoples have been involved in research projects, monitoring programs, planning and management to varying degrees and levels of success. The purpose of this report is to document, review and share the experiences of the Indigenous communities that have taken a lead on caribou action planning initiatives and also to review those documents/initiatives in which Indigenous peoples have been key to the development/implementation or management of caribou action planning.

2.0 METHODOLOGY

This review of Indigenous-led caribou action planning employed several methods to reach its goals and support data collection methodologies. Five tasks were carried out to conduct the review:

- 1) Preparation
- 2) Attending the 15th North American Caribou Workshop
- 3) Conducting the review
- 4) Analyzing the results
- 5) Reporting

2.1 PREPARATION

To prepare for and conduct the review, CIER held project planning calls with the BLC's Caribou Project Team throughout the duration of the project. This correspondence helped to maintain open communication between CIER and the BLC and allowed CIER to provide regular updates to the client. During these calls, the Caribou Project Team provided valuable guidance and feedback on the project process based on their expertise.

CIER researched Indigenous communities that are developing, have developed and/or are implementing caribou action plans. This research led to a list of resources and communities to contact for the survey portion of the review. CIER also used past research and experience (e.g., the 2010 Caribou Gathering) as well as recommendations from BLC members and experts to identify communities.

Lastly, CIER prepared a questionnaire to guide the interviews with key participants at Indigenous communities. This questionnaire detailed the purpose of the review and went through consent options to ensure informed consent of all participants. The interview questions are divided into four parts: background, baseline information, implementation and/or management details, and lessons learned. The questionnaire was adapted for framing the collection of data for the document review portion of the review. The questionnaire used for interviews is in Appendix One and the questionnaire used to guide the document review is in Appendix Two. The interview questionnaire was reviewed and approved by the BLC Caribou Project Team.

2.2 THE 15TH NORTH AMERICAN CARIBOU WORKSHOP

Shawna Wolfe, CIER Research Associate, attended the 15th North American Caribou Workshop held in Whitehorse, Yukon from May 12-16, 2014. The purpose of attending the workshop was to obtain the most up-to-date information on caribou action planning, specifically what has worked in the field, what has not, and what can be done differently. This helped to further inform and refine the questionnaire to gather the most useful data for the review.

CIER had originally hoped to make connections with Indigenous communities and contacts at the workshop, and to begin scheduling phone interviews with potential participants. However, few Indigenous communities were represented at the conference, limiting CIER's ability to make this initial connection. A number of professionals involved in caribou management, with experience working with Indigenous communities, were in attendance and they made recommendations regarding potential Indigenous communities with which to follow up.

The workshop also provided an opportunity to distribute an information package about the project to workshop participants to raise awareness of the review (see Appendix Three).

2.3 REVIEW

To collect data for the review of caribou action planning involving Indigenous peoples, a two-pronged approach was taken, utilizing both direct interviews with Indigenous community members involved in Indigenous-led caribou management plans, and the collection of secondary data from documents about initiatives in which Indigenous groups were involved in the development or implementation of caribou management. Both interview participants and documents were classified as either Tier 1 or Tier 2, with Tier 1 being an initiative that is Indigenous-led, and Tier 2 being an initiative that involved Indigenous groups.

The first part of data collection for the review was interviewing key community contacts from Indigenous communities that have led the development, implementation or management of caribou action planning occurring in their region. The questionnaire developed in the preparation step was used to guide the interview with key contacts. Eight of the nine interviews took place over the phone. The purpose of the review and the consent process were explained to each participant and once consent was granted the questionnaire questions followed. When completed, the questionnaire document with the participant's answers was sent to the interview

participant for review. If requested by the participant, changes or additions were made to the questionnaire responses.

The second part of data collection included reviewing published documents in which Indigenous communities were actively involved in the development, implementation or management of the caribou action plan. Sections 1-3 of the questionnaire were used in the document review to frame the extraction and analysis of the data.

2.4 ANALYSIS

Analyzing the data collected in the previous steps included identifying how each action plan was developed and executed in comparison to others, identifying common themes and unique approaches and developing a list of key considerations for other Indigenous communities that are developing or implementing action plans for caribou.

To ensure a rigorous analysis, both the interview data and document review were submitted to the same analysis procedure, i.e., the organization of data, followed by grouping of ideas within each questionnaire section and question. This approach allowed for cross-analysis between the interview and document review data and a more holistic discussion regarding Indigenous involvement and leadership in caribou management and action planning.

2.5 REPORTING AND DISSEMINATION

Two deliverables were developed from this review. The first is this report, which includes the detailed findings of this review. This report was submitted to the Boreal Leadership Council (BLC) and shared internally. The second deliverable from this review is a public summary document that was shared beyond CIER and the BLC. The summary document is shorter, more concise and shares highlights of the review findings and high level analysis. The purpose of creating the summary document was to encourage and ensure busy professionals (and more people generally) are given the opportunity to learn about the project and our findings. The summary document was shared with all of the participating communities and with other caribou management professionals.

3.0 RESULTS AND DISCUSSION

3.1 INTERVIEW RESULTS

3.1.1 Interview Participant Selection

Nine interviews (eight complete, and one incomplete) were conducted for this review. Interview participants were selected through recommendations provided by the BLC. Additional communities and interview participants were selected through recommendations provided by contacts made at the North American Caribou Workshop. Preference was given to interviewing Indigenous peoples/staff working for the community/government and directly involved in caribou action planning.

When contacted, several recommended interview participants explained that they were not suitable for this review and provided suggestions for better qualified contacts for more informative interviews.

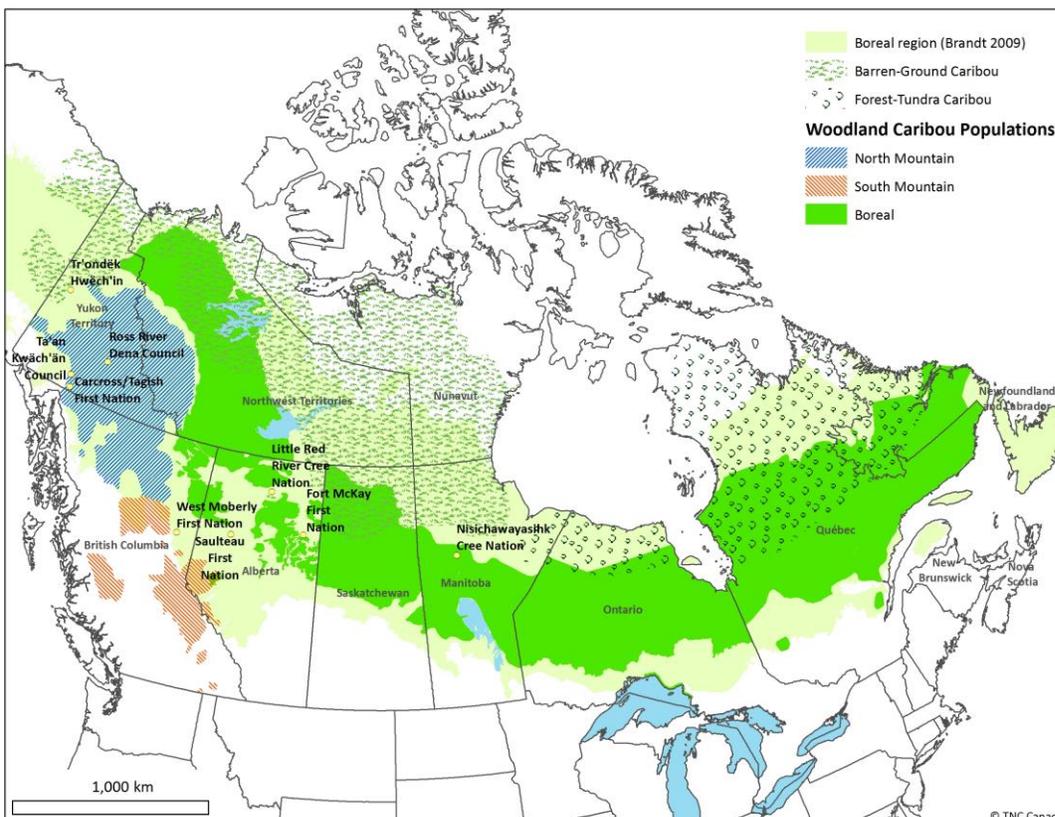
3.1.2 Background Information

Table 1 organizes background information regarding the initiatives as described by interview participants. Some community members mentioned several different initiatives or action plans that are in place for caribou management, and others just one. Figure 1 shows the communities and the herds described in the interviews. The initiatives ranged from tangible, results-oriented plans (such as the penning project in West Moberly First Nations) to looser, less-concrete plans (such as how the Tr'ondëk Hwëch'in Government is to be involved in caribou action planning, providing input and working towards preservation of fish and wildlife within their traditional territory).

The answers to questions surrounding the management approach and whether the community uses herd or landscape management rendered interesting responses. Seven of the nine communities are focused on both herd and landscape management or are in the process of transitioning from herd to landscape management. Participants mentioned the need for herd-by-herd management while still pursuing overarching management for the entire traditional use area. For example, the representative from the Ross River Dena Council said,

All herds in the Ross River Dena traditional use area, including the following herds: Finlayson, Tay, Magundy, Pelly Mountains, Redstone, Nahanni, and Ross River. We are pursuing policies on a herd by herd basis, as well as broad policies across the Ross River traditional use area. (Interview 7)

Figure 1 Map of communities with initiatives and herds



In the case of the Ross River Dena, all of the herds in the Ross River traditional use area are being managed using policies on a herd-by-herd basis in conjunction with broader policies, creating a holistic approach towards caribou management. In other cases, interviewees mentioned the capacity is not yet available in their communities to conduct landscape management; in those cases, the current focus is managing a herd to improve its status and population size before moving on to landscape management.

The earliest initiative described in the interviews is the Caribou Mountain Caribou Committee of Little Red River Cree Nation. Ongoing since 1988, the Caribou Mountain Caribou Committee relies heavily on the knowledge of elders, combined with the collection of data and other research activities, to monitor the Caribou Mountain herd. The latest Indigenous-led caribou

management initiative in this review has been in place for one year – the 2014 West Moberly maternal penning project for the Klinse-Za caribou in Northeast British Columbia. The longevity of several of the initiatives can be attributed to the dedication of individuals and communities to caribou recovery, despite challenges and difficult regulatory obstacles. For instance, in Interview 1, in describing the successes of the Nisichawayasihk Cree Nation (NCN), or Nelson House, initiative that began in 1996, the participant said that their successes include:

Finally convincing Hydro and government to share funds to focus on woodland caribou. Convincing them that Traditional Knowledge is strong and real. Keeping an eye on the woodland caribou. Nelson House now owns 33% of the Wuskwatim so community has a say in what's done (Interview 1)

Seven of nine interview participants were involved since the beginning of the caribou management initiatives they describe in their interview. This history and level of knowledge about the initiatives described by participants allowed for the collection of rich data and the in-depth results that follow.

Table 1 Background Information for Interview Initiatives

No.	Name of Community	Name and Initiative(s)	Herd(s) of Focus Herd or Landscape Management	Timeline	Participant involved since
1	Nisichawayasihk Cree Nation (NCN)/Nelson House	<ul style="list-style-type: none"> • Educational Video – elder interviews • Wapisi Herd Committee • Woodland Caribou Monitoring 	Wapisi herd. Both – the committee focuses on the herd; but the community has multiple plans for their traditional territory.	1996 and ongoing	1996
2	Little Red River Cree Nation	<ul style="list-style-type: none"> • Caribou Mountain Caribou Committee 	Caribou mountain sub herd, but also the northern part of the Red Earth sub-herd. Focusing more on landscape management.	1988 to present	1988
3	Saulteau First Nation (SFN)	<ul style="list-style-type: none"> • Implementation of Action Items: Penning project, wolf control and transferring caribou from other units 	Initially the focus was herd-specific. Indigenous groups were the drivers of the penning project. SFN had a meeting recently and they don't want to focus on herds specifically because they want to take a holistic approach because they used to be one herd – want to move towards a landscape management plan.	2012 to present	2012
4	Tr'ondëk Hwëch'in (TH)	<ul style="list-style-type: none"> • Involved in land claims final agreement fish and wildlife preservation within traditional territory • Involved in co-management of caribou within regional and international boundaries depending on where they migrate to 	Fortymile herd and the Porcupine Caribou herd are the focus of Tr'ondëk Hwëch'in. Focusing on both herds and landscape management.	Fortymile herd – 1993 Porcupine Caribou herd – late 1980s	2005
5	Ta'an Kwäch'än Council (TKC)	<ul style="list-style-type: none"> • Southern Lakes Recovery Program • Southern Lakes Wildlife Coordinating Committee • TKC works collectively to support First Nations in caribou conservation. TKC also works with different Yukon government departments • TKC wildlife monitoring program 	Northern mountain woodland caribou. The Southern Lakes Laberge sub-herd. Landscape management. Within traditional territory, look at herds, the Laberge is within the TKC traditional territory.	2008 to present	2008

6	Fort McKay First Nation	<ul style="list-style-type: none"> Traditional land use study in traditional territory, keeping data on caribou habitat and caribou sightings, trying to reduce industry impact in caribou protected area 	<p>No herds close by – focused on the woodland caribou – 2 or 3 sub-herds, not sure which ones specifically.</p> <p>Both – herds specifically and landscape management – more so the landscape management because without the land there won't be habitat for the caribou.</p>	Before 2005 to present	2005
7	Ross River Dena Council	<ul style="list-style-type: none"> Caribou Conservation Strategy 	<p>All herds in the Ross River Dena traditional use area, including the following herds: Finlayson, Tay, Magundy, Pelly Mountains, Redstone, Nahanni, and Ross River.</p> <p>Pursuing policies on a herd-by-herd basis, as well as broad policies across the Ross River traditional use area.</p>	2006 to present	2006
8	West Moberly First Nations	<ul style="list-style-type: none"> Maternal penning project for the Klinse-Za caribou in NE BC. One of the 7 herds in the area A SARA compliant action plan for the Klinse-Za herd 	<p>Klinse-Za herd is the focus.</p> <p>Want to ultimately focus on landscape management, but priority and focus for now is to bring the number of animals up.</p>	2013 to present	2013
9	Carcross/ Tagish First Nation (CTFN)	<ul style="list-style-type: none"> Southern Lakes Caribou Recovery Program Carcross/Tagish voluntary compliance harvesting ban on caribou 	2 herds - Carcross herd, and Ibex herd	Before 1993	1991

3.1.3 Baseline Information

The baseline information from the interview questionnaires shows that there is overlap in who, what, and why caribou management initiatives begin. For the different initiatives, a number of different goals were described by interview participants. The tools described by interviewees presented the most interesting findings in this section. Participants interpreted the question differently, describing different research methods or tools that the communities used to develop and implement their initiatives.

The way in which caribou management is initiated may have an effect on the direction and implementation of the initiative (Gronquist et al., 2005). There are other factors involved, but if the community is involved in the initiation of the plan there is a better chance for success (Gronquist et al., 2005). In all of the interviews with Indigenous community members, the community (six interviews), or elders in the community (three interviews), were identified as the leaders in the caribou management initiative. In three of the interviews, a Chief was identified as a champion or leader of the initiative, but the Chief leadership was always noted in conjunction with elders or the community being involved.

Communities cited a variety of reasons for their concern about the caribou (Table 2). A declining herd population was the most common answer. As described by the representative from Carcross/Tagish First Nation in interview 9, "Long before 1993 we were hearing comments coming from some of our hunters and trappers that caribou is in trouble, numbers are way down and everybody was hunting them at that time."

Industry and industrial activity were mentioned as reasons for the community initiating action (in interviews 1, 6 and 7) (Table 2). Interviewee 7 of the Ross River Dena noted that the reason for taking action was, "concern for the welfare of these herds, and increasing mineral exploration in the region" (Interview 7). The increasing interest in forestry and mining was a concern raised by several interview participants and remains one of the key factors of influence on caribou identified by researchers.

Table 2 Reasons for Initiation and Initiation Goals for Interview Communities

Reason for Concern	Mentioned in Interviews:	Total Number of Interviews that Mention Reason:
Protection of caribou	2	1
Industry (e.g., mining and forestry)	1, 6, 7, 8	4
Decline in population and herd status concerns	4, 5, 7, 9	4
Why the Community Took Initiative	Mentioned in Interviews:	Total Number of Interviews that Mention Goal:
Forestry and mining coming in	1	1
For improving self-government	7	1
Protect caribou habitat	6	1
Regain control of lands	2	1
In response to government not doing enough	3, 7, 9	3
Caribou as a traditional food source and to protect traditional lifestyle	2, 4, 5, 6, 8	5

In this section of the survey, community members also noted their traditional lifestyle and the caribou food source as a reason for taking initiative and developing a plan to manage caribou populations. The representative of Tr'ondëk Hwëch'in described this need in detail in response to the question, *Why did the community take initiative?*:

Because Tr'ondëk Hwëch'in relies on a traditional/subsistence lifestyle, which includes a lot of wild game from the land including berries and plants. They need to ensure that species like caribou and moose are sustainable in order for the community to be able to rely on those things for food annually. This lifestyle has been passed down from one generation to the next and it continues to this day. Harvesting is a real part of their culture and traditions, and to be able to pass down that to younger generations they need healthy populations of caribou and moose. There are deeper roots than just culture, tradition and food – it's traditional knowledge that is passed down during harvesting times, e.g., the stories that go along with the whole harvesting time within families. Stories are passed down through all the harvesting processes and family bonding occurs during harvesting. (Interview 4)

This reason for taking initiative, mentioned by five of seven participants that answered the question, is one of the most obvious differences between the Indigenous-led initiatives and the initiatives that involved Indigenous groups in the documents. Of the documents reviewed, none note traditional use as a reason for taking action with caribou management. The most commonly cited reason for taking action was the status of the herds of focus.

Research and tools refer to the pieces that move the ideas behind an initiative and towards the realization of its goals. In the communities represented by interview participants, a variety of tools were used in caribou management initiatives. Table 3 lists the research and tools that

were used in communities and how many interview participants mentioned the tools. The most prominent tools mentioned were GIS and mapping techniques and the use of Traditional Knowledge (TK).

Table 3 Research and Tools Mentioned by Interview Participants

Research/Tools	Mentioned in Interviews:	Number of Interviews that Mentioned Tool:
Books	2	1
Collaring Data	3, 9	2
Statistics	3, 9	2
Government Studies	4, 9	2
Database Management	6, 9	2
Masters and Doctoral Research	1, 2	2
GIS and Mapping	2, 6, 8, 9	4
Traditional Knowledge (TK)	2, 3, 6, 7, 8	5

Beyond the tools described, what may be most interesting about this question is how it was interpreted by participants. Of the eight participants that completed the TK question in the questionnaire, all answered yes when asked if TK was used in the caribou management initiative and some described the ways in which TK was collected and used. In interpreting the question about the research and tools used, five of the interviewees recognized TK as a tool. This may be explained in the response from the Renewable Resources Technician at the Ta'an Kwäch'än Council:

Hard to explain how it [traditional knowledge] is used because it's used in everything. When you're out on the land, and living as part of the land and water you have an awareness that you don't get in the office. First Nations knowledge is passed down from generations. It's in everything – it's a perspective of philosophy. TK is everything we do, TK is used in management, work, and assessment; everything we do with caribou.
(Interview 5)

It is possible that not all of those interviewed thought of TK as a tool in caribou management because it is an integral part of everything that is done in some communities. It may be an important consideration in Indigenous involvement in caribou management initiatives and other wildlife management activities to realize that TK may not be acknowledged explicitly as a tool by all Indigenous community members.

3.1.4 Implementation / Management Details

The participants described initiatives at varying stages of implementation, offering a look at challenges and successes at the beginning and middle stages and the ongoing issues faced by those involved in caribou management initiatives. Some of the most significant data with regards to implementation and management show the challenges and how they have been overcome and how TK has been incorporated.

Interview participants noted that formal agreements, such as land claims agreements or land use planning agreements, were key in how the initiative has been carried out. As explained by the representative of Tr'ondëk Hwëch'in:

Prior to the land claims agreement, the approach was focused on government recommendations. As First Nations evolved with their final agreements, they developed responsibilities for their fish and wildlife chapters, and the ability to develop their own legislation, e.g., fish and wildlife act; manage the subsistence harvest in traditional territory. It is more of a collaborative and cooperative process with the Yukon government now that they have final agreements in place. They have stronger input into communication, education, studies and management recommendations. (Interview 4)

In order to implement management initiatives, Indigenous communities noted a variety of governance structures and measures before proceeding with their plans. Several of the communities formed groups responsible for monitoring the area and its development to ensure certain areas remain untouched for caribou habitat. These were called *Knowledge Keepers* in Fort McKay First Nation (Interview 6), *Dena Game Guardians/Monitors* in Ross River Dena Council (Interview 7), *Wildlife Monitors Program* in Ta'an Kwäch'än Council (Interview 5), and *Elder Environmental Monitors* in Carcross/Tagish First Nation (Interview 9).

The successes of the communities, as described by the interview participants, show what has been working for the initiatives so far. Some of the successes were preliminary and process related, and others related their successes to caribou and their status. Interviewees 1, 4, 5, 7 and 8 noted process successes such as NCN/Nelson House "convincing the government that TK is strong and real" (Interview 1). In interviews 3, 4, 8 and 9 participants noted successes with caribou populations. As described by the representative from Carcross/Tagish First Nation:

I think it's a success because right now they are starting to talk about harvesting. So it's been a success to us to see caribou on the landscape and the thing that we all talk about is that, because of all of the years that were put into it. (Interview 9)

The representative from Fort McKay First Nation was the only participant that was unsure of any successes that had been realized in that community's caribou initiative. The participant said, "I'm not sure, companies are still getting approval to go ahead even if they impact special areas. They made a road for the Jackpine Mine right through a caribou conservation zone. Hasn't been very much – slow progress" (Interview 6).

3.1.4.1 Challenges and Overcoming Challenges

Interviewees described a variety of challenges and how they are working on overcoming or overcome them. These challenges ranged from long-term difficulties in changing attitudes and institutional processes to immediate and acute challenges like recruiting community members and securing funding. The challenges described by interviewees are listed in Table 4 and a representative example quote has been paired with each.

Table 4 Challenges Noted by Interview Participants

Challenge	Example Quote
Finding other species (besides caribou) for subsistence	'The biggest challenge would be to have to rely on other species for subsistence.' (Interview 4)
Institutional resistance	'At times there was heated discussion with First Nations and government. Biggest challenge was getting government on board and to get them to see through the lens of the First Nations.' (Interview 3)
Government approval for wolf control	'It was easier for First Nations to run that program because of their treaty rights, but there are resource users and local farmers that saw there was an imbalance in nature. It was a struggle but we knew it would help in the end.' (Interview 3)
Implementation of final agreement	'The challenge is the implementation of the final agreement. The Yukon government sometimes has a different interpretation of the spirit and intent of the agreement and how co-management occurs.' (Interview 5)
Inconsistencies with government	'We are supposed to protect areas and allow industry to encroach on other areas, government is not protecting certain important areas. Always challenges with government providing permits in caribou habitat.' (Interview 6)
Funding	'The biggest challenges are the lack of annual funding, and a lack of cooperation (and funding) from the Yukon Government to participate in caribou management, and accommodate our concerns in regards to the welfare of caribou.' (Interview 7)
Truck traffic on the highway	'They have cattle guards on their truck so between these, and the fact that the caribou winter range is right close to the highway is a problem. This has been one of our concerns that people need to slow down, but it doesn't happen.' (Interview 9)
Industry and development	'The number one thing is development because no matter where you go in this country there's people wanting to develop and one of the challenges was where the caribou range is pretty well off limits to any kind of development.' (Interview 9)

Predation and harvesting	'The other big challenge that we have as well – when we look at the numbers and try to keep them down as much as possible, right at the southern portion of the Yukon and the minute they go across the border to BC, the big game outfitters see it on the northern tip of BC and have access to the same herd we are trying to preserve, just across the border.' (Interview 9)
--------------------------	---

Caribou management is a joint effort which was recognized by several of the interview participants. One of the challenges faced by some communities was cooperation with government. In Interview 7 the challenge was convincing government to take Traditional Knowledge on par with natural science. In Interview 5 the challenge in working with other groups was the interpretation of implementation and final agreements. Interviewee 3 describes this challenge as getting the government to see through the First Nations lens. The representative of Carcross/Tagish First Nation said:

The big challenge for us at the very outset was bringing people together under one roof – at the beginning all of the players under one roof and to resolve the issues that way. It took a lot of coaxing, pushing, and shoving, but eventually we got them all together and that's where all of the things began to happen and a working relationship is established. That's where management plans get established. (Interview 9)

Although the challenges themselves provide key insights into the hurdles that face Indigenous caribou managers, the ways in which Indigenous groups have overcome challenges is key to understanding problem solving in communities. Three interview participants added information about how challenges were overcome in their communities. Broadly, two interview participants (Interviews 2 and 3) noted that perseverance is needed to overcome challenges, such as convincing government that action is needed or recruiting help from community members. In Interview 6 it was suggested that community members are required to attend many meetings to succeed in changing attitudes, and to overcome this there may need to be a staff person in charge of governmental affairs to attend all of the meetings.

3.1.4.2 Incorporating Traditional Knowledge

Traditional Knowledge (TK) is an integral part of many Indigenous communities and informs the ways in which the environment is monitored. The incorporation of TK often poses a challenge in resource management but, as described by interview participants, the communication and meaningful inclusion of TK is incredibly important to successful collaboration.

As mentioned in Section 3.1.3, all eight of the interviewees who answered the question about the incorporation of TK confirmed that TK was used in the development of the caribou

management initiative and most went on to describe how the TK was collected and used in the development of caribou management initiatives. This offers valuable lessons about how Indigenous communities collect knowledge within their own circles for application in management strategies.

Several interview participants described how TK was incorporated into the caribou action planning within their communities. One of the methods mentioned was the use of a *Knowledge Keeper*, noted in Interview 6. A *Knowledge Keeper* is designated to record and keep the knowledge that comes from the community. Another method of collection used in the Sauleau First Nation was a workshop in which ten elders participated and their input was used directly in the West Moberly management plan. In Little Red River Cree Nation, Elders are involved in the ongoing caribou research in the community. As well, all researchers that enter the community must interview elders to include TK as an important component in directing the research and decision-making.

The use of TK relates to something noted by two interview participants (Interviews 8 and 9) about the result of reducing or eliminating the harvest of caribou:

The one thing that [those involved in caribou management] always talked about over the years was that as First Nation people we are the one that has to pick up things; for instance, with caribou, when it came to the crunch for the last 23 years we had to put our life on hold. Not only did we lose our ability to hunt caribou but our traditional way of life, our culture, a lot of stuff that fell by the wayside. In addition to that – our life is put on hold, even for our young people that are not learning how to hunt or how to respect animals [because of the ban]. (Interview 9)

The loss of passing on knowledge as an indirect effect of loss of wildlife also has a detrimental effect on Indigenous communities. As was noted in the above section regarding the reason for starting initiatives, elder and harvester knowledge was cited as a reason for taking action with caribou management. Without this knowledge, the information used to make management decisions will be missing a crucial piece.

3.1.5 Lessons Learned

Asking questions surrounding the lessons learned in communities that have participated in Indigenous-led caribou management initiatives provides a direct link to the crucial learning and recommendations for improving future collaborations in wildlife management, in this case with caribou.

Several interview participants made high level comments about the lessons they had learned through their experiences with caribou management, and others made much more definitive observations of actions that could have been done differently in order to improve the initiative. In terms of a broader and much larger lesson, the representative of the Ta'an Kwäch'än Council said:

We need to educate government, environmental assessment agencies, and industry to encourage greater acceptance of our worldview, our knowledge, and the importance of engaging us in caribou management. (Interview 7)

In that same vein of thought, the representative of Little Red River Cree Nation noted that although sustaining dialogue with a range of stakeholders is important, being too aggressive can lead to negative outcomes and missed opportunities (Interview 2).

Recommendations directly from the Indigenous peoples that have been involved in caribou action planning provide valuable direction for future endeavours.

Table 5 shows all of the responses to the question, *Does the initiative provide any recommendation on provincial action planning processes and ways to improve that process?* Recommendations regarding communication and the need for better cooperation and understanding between groups, the need for engagement of TK, a network of competent and engaged people, better monitoring and information and better access to that information were noted by interview participants.

The recommendations for future caribou planning differed greatly from the responses to the question, *Is there anything that you would share with other Indigenous communities involved with or developing caribou action plans?* The answers to this question from each interview participant are listed in Table 6.

Table 5 Recommendations for Future Caribou Action Planning Made by Participants

No.	Community	Recommendations for Future Caribou Planning
1	NCN/Nelson House	Question not answered.
2	Little Red River Cree Nation	We've made a number of recommendations – mainly – find a way to actively engage traditional knowledge holders in decision making processes. We need an institutional framework for active application of traditional knowledge developed by traditional knowledge holders who are engaged in implementation of approaches that use their knowledge.
3	Saulteau First Nation (SFN)	Need to have the right people involved, need a major network of people who know what they were doing – used both science and TK. And support from the community. Does take a lot of money so need sponsorship from industry – it is a part of their corporate responsibility. SFN has a pretty unique relationship with local industry. Do need the government involved, they can be difficult but they did end up supporting SFN in the end.
4	Tr'ondëk Hwëch'in (TH)	It would be good if there were regional conferences for caribou, e.g., for the Yukon region, for each province, a territorial/provincial caribou conference. Found the Caribou workshop in Whitehorse in May (2014) really educational, it was really good to hear about the various caribou studies around the circumpolar north and how those studies were contributing to various caribou plans, how communities addressed industrial activity in caribou habitat, etc. These kinds of caribou conferences would really help the communities working with caribou. Out of the regional conference, they may be recommendations that might arise for a regional caribou management strategy.
5	Ta'an Kwäch'än Council (TKC)	Have the federal and territorial governments seriously commit to the conservation of caribou and follow through on action. We need action. Land use planning (LUP) is huge, there's so many different uses for land, LUP deals with all human interests and ecological and wildlife needs. LUP is the way it needs to go.
6	Fort McKay First Nation	Wildlife research, population statistics, tracking areas of habitat, annual reporting. For industry to survey the land before they move forward. Involve First Nations in their studies. For industry and government to do their job properly. They need to keep better track of who they are affecting, so we don't end up with a bunch of our species at risk. Better management data.
7	Ross River Dena Council	Get involved, and exercise your constitutional rights. Continue to pressure government to pursue collaborative initiatives. Strive to play a greater role in the environmental assessment process, and work with industry to ensure caribou are not adversely affected by industrial activities. Seek help from management boards, NGOs, and other First Nations to address conservation concerns, and establish co-management committees. Keep your communities informed and involved in caribou and caribou management. Train your young people so they have the skills to become game guardians and caribou managers.
8	West Moberly First Nations	Do it before the herds get too small. The province needs to have the First Nations participation in it – they have the traditional knowledge and are out on the land with the animals. Industry needs to buy into it and support it.
9	Carcross/ Tagish First Nation (CTFN)	Bringing people together under one roof – at the beginning all of the players under one roof and resolving the issues that way.

Table 6 Recommendations for Other Indigenous Communities made by Participants

No.	Community	Recommendations for Other Indigenous Communities
1	NCN/Nelson House	Question Not Answered
2	Little Red River Cree Nation	We've shared everything we've done, participated in organizations and gone to conferences to the best of our ability. Information has no value unless it's shared.
3	Saulteau First Nation (SFN)	SFN hasn't developed their own action plan, just been a part of the process. If you have the means and drive to do something, go for it, don't wait for government.
4	Tr'ondëk Hwëch'in (TH)	Words of advice are to have a good understanding of agreements in place and their objectives – to be able to raise them at all levels because they need to be respected and honoured. When you enter into an agreement, take on that responsibility and hold those other parties accountable as well. It will be difficult but carry out the implementation of your agreements and responsibilities. Really participate in the processes, we need to provide input and actively participate. We don't have the luxury of sitting back, we need to contribute to the decisions and bring the interests of your community to those decisions being made.
5	Ta'an Kwäch'än Council (TKC)	Don't give up. Never give up.
6	Fort McKay First Nation	Get some land stewards out on the land, work with people who are out on the land and knowledgeable. Equip those people properly so they can record information – e.g., GPS. For communities to be aware of the wildlife and to report any sightings they come across – tracks, droppings, etc.
7	Ross River Dena Council	We are willing to share our experiences.
8	West Moberly First Nations	It's a lot of work, takes a lot of dedication and commitment. Need to have a core group and community support. Keep people informed and updated. Document everything. Line up sufficient funding.
9	Carcross/Tagish First Nation (CTFN)	Of the things we would have done differently, one of the things was predator control. Because when you do the caribou count there's always wolves there, and wolves seen and if we would have done things different we would have gotten a hold of trappers to keep the wolves under control. And the grizzly bears, grizzly bears know when the caribou is going to calve.

3.2 RESULTS OF DOCUMENT REVIEW

3.2.1 Document Selection

To supplement the interview data and to ensure various forms of caribou action planning were examined in this study, published caribou action plan documents were researched and reviewed. In the search for caribou action plan documents, several caribou management plans were found and thirteen initiatives were selected for this review. The selection of thirteen initiatives and their corresponding action plans was based on the level of Indigenous involvement and the leadership roles held by Indigenous governments and co-management boards in the development of the strategies. Several documents were included in lieu of an interview with a representative from the initiative. Preference was given to documents that described caribou management by caribou management groups rather than provincial management/recovery strategies. This preference was given because caribou management groups involving representation from Indigenous organizations and communities were found to be more likely to equally represent perspectives of the Indigenous communities, provincial and federal governments involved. The provincial management/recovery strategies were found to be skewed towards the perspective of the provincial government(s) involved.

Of the thirteen documents, nine focused on the involvement of caribou management groups. These nine strategies organized Indigenous and non-Indigenous group collaboration to develop a strategy for caribou management, recovery, or planning. Two provincial caribou management strategies for the Northwest Territories were also included in the document review. These strategies were still considered to have Indigenous involvement and were chosen because they focused on collaborative management with Indigenous government(s), co-management boards, caribou management boards, the federal government and neighboring jurisdictions (Nunavut, Yukon, and Saskatchewan), and also made use of all sources of information, including local and traditional knowledge and scientific information to inform management decisions.

Manitoba Conservation's strategy, *Conserving the Icon of the Boreal: Manitoba's Boreal Woodland Caribou Recovery Strategy*, was included in the document review because it indicated that many Indigenous people and communities contributed TK that aided in the understanding of caribou (Government of Manitoba, 2014). The strategy is also developed in collaboration with regional caribou committees, which includes Indigenous representation.

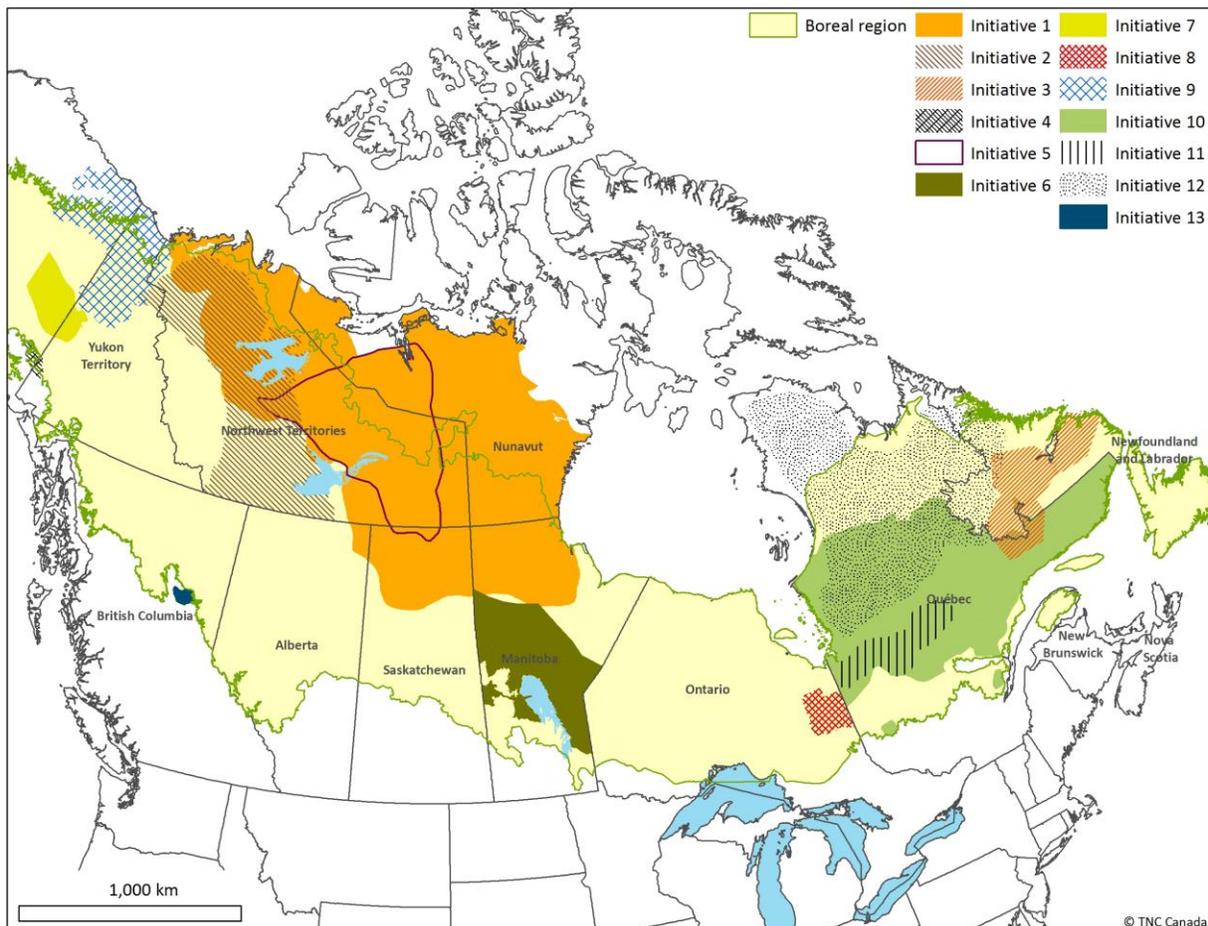
Initiative 11, the Ungava Peninsula Caribou Aboriginal Round Table (UPCART), was included in the review but as of June 2015, their management plan was not yet public, so the documents reviewed to represent the UPCART were press releases and their declaration.

The thirteen documents in this review by no means represent an exhaustive list of caribou management with Indigenous involvement; there are numerous other documents that focus on caribou action planning that are not included in this review. Many of the excluded documents focus only on certain aspects of caribou management (e.g., monitoring or sampling) or broader resource management (i.e., only briefly include caribou). The limited information available and the specific scope of these other documents led to their exclusion from this review.

3.2.2 Background Information

The documents selected provided a range of caribou management areas, timelines and degrees of Indigenous involvement. Table 7 details the background information for each document that was analyzed, including the lead organization responsible for the initiative, the geographic focus area of the initiative, the timeline, the time at which Indigenous groups were involved, and which Indigenous and non-Indigenous groups were involved. The focal areas of the initiatives analyzed in the document review are in Figure 2.

Figure 2 Map of areas/herds of focus in document review initiatives



As presented in Table 7, eight of the thirteen initiatives began after 2005, indicating that for these groups, management of caribou by means of Indigenous and non-Indigenous collaboration became a priority within the last decade. The other five were conducted before 2005, and the earliest initiative began in 1994. *Rebuilding the Fortymile Caribou Herd: A Model of Cooperative Management Planning* (initiative 7), conducted by the Alaska Department of Fish and Game (ADFG), represents a pioneer project in cooperative management of caribou herds (Gronquist et al., 2005). The ADFG was reviewing and developing caribou management plans starting in 1990, but collaboration only began in earnest in 1993 when the Chief of the Dawn First Nation approached those responsible for the management plan and suggested a grassroots coalition be formed. Subsequently, the Yukon and Alaska federal, state, and territorial agencies, First Nations, Alaska Native organizations, and other interest groups and individuals came together to develop a collaborative strategy that now serves as an example of holistic wildlife management (Gronquist et al., 2005).

The level of involvement of Indigenous groups varied from plan to plan, from initiative 8, in which representatives from the Taykwa Tagamou Nation were involved in meeting(s) with the lead organization, the Ontario Regional Working Group, to provide insights and feedback (Ontario Regional Working Group, 2012), to a high level of Indigenous involvement such as in initiative 7 (considered to be 'cooperative management'), in which the Grand Chief proposed a grassroots coalition which led to the formation of a planning team. The planning team included representatives from Indigenous organizations and communities working within a consensus process (Gronquist et al., 2005).

Table 7 Document Background Information

No.	Name of Initiative (Full)	Lead Organization	Herd of Focus/Landscape Management	Geographic Area of Focus	Timeline	Initiation of Indigenous Involvement
1	Caribou Forever – Our Heritage, Our Responsibility: A Barren-ground Caribou Management Strategy for the Northwest Territories 2011 – 2015	Department of Environment and Natural Resources, Northwest Territories	NWT Barren-ground herds (Cape Bathurst, Bluenose West, Porcupine, Bluenose East, Tuktoyaktuk Peninsula, Beverly and Ahiak herds); Focused on herds and landscape management	Primarily NWT, but also Yukon, Alaska, Saskatchewan, Nunavut and Manitoba	2006 to 2010 (previous) and 2011 to 2015 (current)	2006 - at the beginning of the first five year strategy
2	Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories 2010 – 2015	Department of Environment and Natural Resources, Northwest Territories	Boreal Woodland Caribou; Action Plan to manage boreal caribou and landscape, not herd specific	Northwest Territories	2010 to 2015	2005
3	Recovery Strategy for Three Woodland Caribou Herds (<i>Rangifer tarandus caribou</i> ; Boreal population) in Labrador	Labrador Woodland Caribou Recovery Team	Woodland caribou (Boreal population) herds; Focused on herds	Southern Labrador and Northeastern Quebec	Began in 2001	2001
4	Management Plan for the Chisana Caribou Herd 2010 – 2015	Chisana Caribou Herd Working Group	Chisana Caribou Herd; Focused on herd and landscape management	Yukon and Alaska	2003-2006 (Recovery effort) 2010-2015 (Management Plan)	2009
5	A Management Plan for the Bathurst Caribou Herd	Bathurst Caribou Management Planning Committee	Barren-ground caribou – the Bathurst Herd; Focused on landscape management	Nunavut and Northern NWT	Began in 2000	2000

6	Conserving the Icon of the Boreal: Manitoba's Boreal Woodland Caribou Recovery Strategy	Manitoba Conservation and Water Stewardship	Boreal Woodland Caribou	10 boreal woodland caribou ranges in Manitoba	Previous Strategy: 2000 – ongoing This document: 2014 – current	2003/2004 (involved in previous strategies)
7	Rebuilding the Fortymile Caribou Herd: A Model of Cooperative Management Planning	Alaska Department of Fish and Game	Fortymile Caribou Herd; Focused on restoring land/ other wildlife/ herd	Yukon and Alaska	1994–2001	1994
8	Recommendations for, and Voluntary Contributions towards a Kesagami Range Caribou Action Plan	Ontario Regional Working Group of the Canadian Boreal Forest Agreement	Cochrane-Quebec/Kesagami Caribou range in Northeastern Ontario, Canada	Ontario	2010–2012	2010
9	Harvest Management Plan for the Porcupine Caribou Herd in Canada	Porcupine Caribou Management Board	Porcupine Caribou Herd; Focused specifically on herd management	Alaska to Dawson, Yukon and extends along the NWT border	2010 – ongoing (5 year review)	2010
10	The Forest-Dwelling Caribou (<i>Rangifer tarandus</i>) Recovery Plan in Quebec 2005 – 2012	Quebec Forest-Dwelling Caribou Recovery Team	Forest-dwelling caribou, specifically the Herds of Val-d'Or and Charlevoix; Focused on landscape management	Quebec	2005–2012	2003 (since formation of Recovery Plan team)
11	Status of the Woodland Caribou (<i>Rangifer tarandus caribou</i>) in the James Bay Region of Northern Quebec	Grand Council of the Crees	Woodland Caribou	James Bay, Northern Quebec	2012 – this is a study, not an action plan, makes recommendations for developing a strategic plan	Study commissioned in collaboration with Grand Council of the Crees
12	Aboriginal leaders come together to protect the George River and Leaf River Caribou Herds and Ungava Peninsula Caribou Aboriginal Round Table Press Release – May 28 th , 2014	Ungava Peninsula Caribou Aboriginal Round Table (UPCART)	Ungava Peninsula herds – Leaf River Herd, George River Herd and Tornгат Mountain Herd	Ungava Peninsula	Action Plan not yet released	January, 2013

13	Action Plan for the Klinse-Za Herd of Woodland Caribou (<i>Rangifer tarandus caribou</i>) in Canada	West Moberly First Nations	Woodland Caribou – the Klinse-Za Herd, southern mountain population; Focused on herd management	Central in-land British Columbia	2013 – onward	2012
----	---	----------------------------	---	----------------------------------	---------------	------

3.2.3 Baseline Information

The baseline information collected from the documents made clear that caribou action planning was often initiated by different groups for similar reasons. Most documents included goals of managing herds with a declining status and improving certain aspects of population dynamics. The following section describes how the initiatives differed in their approach towards caribou recovery and the methods of Indigenous involvement.

Of the thirteen initiatives chosen for this review, eleven indicate the reason for initiating a plan was decline in herd populations or because caribou were ranked as ‘sensitive’ or ‘threatened’ in the area of concern. Other reasons cited for moving forward with developing an initiative included:

- Unifying herd-specific management plans;
- Concerns about factors affecting herds such as development, climate change, hunting, and commercial harvesting;
- Range changes; and
- Changes to predators and prey.

Plan goals with regards to caribou populations varied depending on the status of the herd(s) of focus or the focus region. Two plans had the goal of maintaining the current herd populations (initiatives 1 and 2), two wanted to reach a self-sustaining caribou population (initiatives 6 and 10), and four others’ main goal was to support a stable or increasing population (initiatives 3, 4, 11 and 13). Some of the action plans deviated from goals directly related to caribou and listed goals relating caribou health to communities, and the surrounding environment. For example:

- Manage boreal caribou and their habitat to contribute to the healthy biodiversity of the NWT. (initiative 2)
- Reach a sustainable harvest of the Bathurst herd and guidelines for the allocation of that harvest; guidelines for regulating the methods of harvest. (initiative 5)
- Promote healthy wildlife populations for their intrinsic value, as well as consumptive and non-consumptive uses. Primary goals: benefit the Fortymile caribou herd and the people who value the herd and its ecosystem. (initiative 7)
- Resolve conflicts among interest groups, encourage sound wildlife management decisions that consider diverse values. (initiative 7)

3.2.3.1 Involvement of Indigenous Groups

The initiatives analyzed in the review represent variations in the approach towards the inclusion of Indigenous groups in wildlife management plans. For each initiative, the groups involved and the methods of Indigenous involvement are listed in Table 8. Often in the documents, numerous Indigenous groups were listed as having involvement in the initiative, but Indigenous inclusion was not detailed beyond that. For instance, several initiatives merely listed the Indigenous groups as members of a working group or team responsible for developing the initiative, whereas others described the translation of educational materials in Indigenous languages to improve interest and involvement in plan development (Schmelzer et al., 2004).

Table 8 Indigenous and Non-Indigenous Groups Involved and Methods of Involvement

No.	Name of Initiative	Name of Indigenous Organizations Involved	Other Organizations or Groups Involved	Methods of Involvement of Indigenous Groups in Development of Plan
1	A Barren-ground Caribou Management Strategy for the Northwest Territories	Wildlife Management Advisory Council (NWT) (WMAC-NWT) (Inuvialuit) Gwich'in Renewable Resource Board (GRRB) (Gwich'in) Sahtu Renewable Resources Boards (SRRB) (Sahtu) Wek'eezhii Renewable Resources Board (WRRB) (Tlicho)	The Porcupine Caribou Management Board The International Porcupine Caribou Board The Beverly and Qumanirjuaq Caricou Management Board	Indigenous groups represented on co-management boards and caribou management groups. Co-management processes established under land claims agreements.
2	Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories	Gwich'in Renewable Resources Board Inuvialuit Wildlife Management Advisory Council (Northwest Territories) Sahtu Renewable Resources Board Wek'eezhii Renewable Resources Board Tlicho Government	Environment Canada Parks Canada Environment and Natural Resources, Government of the Northwest Territories	Information sharing sessions held in communities. Discussion draft developed through research of communities. Comments on discussion draft were accepted and considered.
3	Recovery Strategy for Three Woodland Caribou Herds in Labrador	Labrador Inuit Association Innu Nation Labrador Métis Nation	Department of Environment and Conservation, NL Department of National Defense, Canada Natural Resources Canada – Canadian Forest Service Department of Natural Resources, NL	Indigenous groups represented in the recovery team working group Representative from the Innu Nation withdrew in 2007. Brochures produced in Inuktituk, and Innu-aimun. Signage for protected areas erected in English, French, Innu-aimun. The Labrador Inuit Association is working to incorporate relevant components of Inuit "Customary Law" into resource management policy.

4	Management Plan for the Chisana Caribou Herd	White River First Nations Kluane First Nation	Government of Yukon Alaska Department of Fish and Game U.S. National Park Service U.S. Fish and Wildlife Service	Kluane and White River First Nations actively involved through representation in working group. Lead organization consulted with the Cheesh'na Tribal Council and the Mentasta Traditional Council.
5	A Management Plan for the Bathurst Caribou Herd	Dogrib Treaty 11 Council Yellowknives Dene First Nation North Slave Métis Alliance Lutsel K'e Dene First Nation Kitikmeot Inuit Association Kitikmeot Hunters and Trappers Association Nunavut Tunngavik Inc.	Department of Indian and Northern Affairs Nunavut Wildlife Management Board Department of Sustainable Development, Government of Nunavut Department of Resources, Wildlife and Economic Development, Government of NWT	Indigenous organizations and communities represented on the Bathurst Caribou Management Planning Committee. Plan partially based on information provided by elders. Communities played a central role in the preparation and implementation of the plan.
6	Conserving the Icon of the Boreal: Manitoba's Boreal Woodland Caribou Recovery Strategy	Many Indigenous people and communities (does not provide specific communities, although the 2005 strategy does provide specific communities)	Manitoba Boreal Woodland Recovery Team Eastern Manitoba Woodland Caribou Advisory Committee Northeast Woodland Caribou Advisory Committee Northwest Region Woodland Caribou Research and Management Committee	Contributed traditional knowledge that aided the province's understanding of caribou. Indigenous representation on regional caribou committees, which contribute to the strategy.
7	Rebuilding the Fortymile Caribou Herd: A Model of Cooperative Management Planning	Fortymile Caribou Herd Planning Team (FCHPT) Advisory committees: Eagle, Upper Tanana-Fortymile (Tok), Delta, and Fairbanks The federal subsistence Eastern Interior Regional Advisory Council Tanana Chiefs Conference Tanacross Village Council Tr'ondëk Hwëch'in First Nation	The Northern Alaska Environment Center Alaska Outdoor Council Tanana Valley Sportsmen's Association Alaska Wildlife Conservation Association Yukon Department of Renewable Resources Alaska Department of Fishery and Game Bureau of Land Management (BLM) National Park Service U.S. Fish and Wildlife Service	Strong representation on the Planning Team. Meetings were open to the public. Decisions made by consensus.
8	Recommendations for, and Voluntary Contributions towards a Kesagami Range	Taykwa Tagamou Nation	CBFA National Conservation Planning Ontario Regional Working Group Canadian Parks and Wilderness Society (Wildlands League)	Met with Taykwa Tagamou Nation, collected traditional knowledge and collaborated to develop a plan for protection with the Taykwa Tagamou Nation's traditional territory.

	Caribou Action Plan		Forest Products Association of Canada Resolute Greenpeace Ivey Foundation David Suzuki Foundation Tembec	
9	Harvest Management Plan for the Porcupine Caribou Herd in Canada	Inuvialuit Game Council Gwich'in Tribal Council Vuntut Gwitchin Government Tr'ondëk Hwëch'in First Nation of NaCho Nyäk Dun	Government of the Northwest Territories Government of Yukon Government of Canada	Indigenous groups represented on the management board and on the working group. Annual Harvest meeting held with First Nations.
10	The Forest-Dwelling Caribou Recovery Plan in Québec	Cree Regional Authority Montagnais Essipit Band Council Council of the Montagnais of Lac-Saint-Jean Regroupment Mamit Innuat Betsiamites Band Council Mamuitun Council	Ministry of Natural Resources Ministry of Development Forest Product Industries Université de Québec à Rimouski Fédération québécoise de la faune Nature Québec/UQCN	Indigenous groups listed as part of plan team as of 2003, but team has changed since then (new team not listed).
11	Status of the Woodland Caribou in the James Bay Region of Northern Québec	Grand Council of the Crees	Québec Ministry of Natural Resources Woodland Caribou Recovery Task Force Science Advisory Group	Study commissioned by Minister in collaboration with Grand Council of the Crees, the study makes recommendations for how First Nations should be included in strategic planning in the future
12	Ungava Peninsula Caribou Aboriginal Round Table Press Release and Declaration	The Inuit of Nunavik, the Inuit of Nunatsiavut, Nunatukavut, the Innu Nation, six Innu communities from Québec, the Naskapi Nation of Kawawachikamach, and the Cree Nation of Eeyou Istchee	Release notes that the governments of Québec and Newfoundland and Labrador need to take immediate actions but it is unknown at this time if they are involved.	This initiative is Indigenous-led and is comprised of all Indigenous representatives Each Indigenous group has responsibilities to find solutions respecting the concerns and needs of all communities.
13	Action Plan for the Klinse-Za Herd of Woodland Caribou	West Moberly First Nations	BC Minister of Forests, Lands, and Natural Resource Operations ESJ Wildlife Consulting Wildlife Infometrics, Inc.	This action plan was commissioned by the West Moberly First Nations

The inclusion of Indigenous groups as described in the documents is not always an accurate depiction of the true level of collaboration and continued communication. Several documents provide detailed descriptions of Indigenous involvement, and methods that could be beneficial to effective co-management processes. Initiative 4, the *Recovery Strategy for Three Woodland Caribou Herds in Labrador*, described in detail the ways Indigenous groups were included and the extra steps taken to ensure effective communication between Indigenous and non-Indigenous groups. For example, translating educational brochures and signage to Indigenous languages to clearly inform groups of the existing problem and the need for protection of caribou was unique to this initiative. However, despite these communication efforts there are still greater issues in the case of working groups developing recommendations yet still not affecting the ultimate decisions, which limits Indigenous involvement in the final outcome in some cases. Other documents provided limited details on the methods of collaboration or consultation with Indigenous groups, but the level of Indigenous involvement and support for Indigenous groups was much higher than described. For example, document 8 did not provide the details and only noted meeting with the Taykwa Tagamou Nation. However, in a press release coinciding with the release of the recommendations, Chief Linda Job of Taykwa Tagamou Nation described the community's support for the plan and the process:

Our Indigenous knowledge provided valuable information in developing the part of the woodland caribou plan for conservation, renewal and protection within our traditional territory. We had the opportunity to voice our opinions and provide input on key elements to develop the strategy to balance conservation and resource development that will improve our economic and social conditions. (Nation Talk, 2012)

3.2.4 Implementation / Management Details

Eleven of the thirteen documents in this review describe some type of action plan for implementation, and as such the implementation and management sections took up the bulk of the documents. Most important to note were the challenges that groups had encountered, and their description of overcoming those challenges and the collection and use of traditional knowledge.

The ways in which implementation was framed and the key steps to implementation varied, but some actions were used repeatedly to reach the goals of the initiative (Table 9). The most prominent principle or action item was public education and stewardship, with nine of the thirteen documents having this action item as a key component of the implementation plan to reach their caribou management goals. The least prominent principle or action item was

legislation and policy review (three initiatives). The principle of adaptive management, the use of an iterative plan when there is uncertainty involved, was discussed in only four of the thirteen initiatives. However, those that did highlight adaptive management explained it in detail as a key guiding principle, necessary in an ever-changing social and natural environment. Put simply in document 1, “These plans will follow an adaptive management approach, which means, as required, actions will be modified as new information is received and evaluated” (Government of the Northwest Territories, 2011, p. 34).

Table 9 Principles and Actions Applied in Document Initiatives

Principle or Action Item	Used in Initiatives:	Number of Initiatives Containing Principle or Action Item
Legislation and policy review	2,4,6	3
Adaptive management	1,6,8,11	4
Management of interaction with other wildlife/predation	1,2,7,6,10,13	6
Public consultation/consultation with First Nations	1,5,6,7,9,10,11,12	8
Precautionary principle	1,3,4,5,6,8,9,11	8
Population monitoring	2,3,4,5,6,8,10,11	8
Herd level/range management	1,2,3,4,6,8,11,12,13	9
Habitat protection/improvement/management	1,2,3,5,6,7,10,11,13	9
Public education/stewardship	1,3,4,5,6,7,9,10,11	9
Reduced harvest/hunting	1,3,4,5,7,8,9,10,11,12,13	11

3.2.4.1 Challenges and Overcoming Challenges

Conducting an inclusive and successful initiative with competing interests and multiple cultural perspectives is a challenging task. Four of the documents reviewed included the challenges faced during development of the action plan or the predicted challenges in implementation of the action plan (initiatives 1, 3, 6 and 7). Documents 1, 3 and 7 described the process challenges encountered while developing the initiative, including:

- Dealing with a variety of perspectives,
- Disagreement regarding management techniques (e.g., fertility control, non-lethal wolf control), consultation and public engagement,
- Linking with other planning initiatives, and
- Capacity limitations (to conduct monitoring activities, to participate in management because of time, knowledge, and funding restrictions).

In particular, these three documents all stated that the inter-jurisdictional or collaborative process was a challenge in developing the action plan. Other challenges listed in the documents related to: reaching the action plan goals related to caribou population size; human activities, such as illegal hunting and continued industrial development; logistical factors of implementation, such as alternative management strategies for other ungulate species; and, funding for monitoring.

Migratory herds present a particularly difficult challenge for caribou managers. Four of the initiatives have a migratory herd in their region of focus (initiatives 3, 4, 5, and 10). Migration presents difficulties with multi-jurisdictional management and requires many interests to cooperate to manage caribou herds.

The plans analyzed in this review were published to improve the status of caribou; however, most of them do not explicitly indicate the success of the initiative. That said, initiative 7 reviews a recovery strategy and clearly states that the initiative can be a model for cooperative management. Initiative 7 is also the only one that mentions how challenges were overcome in the process of development and implementation of the initiative. The authors noted that overcoming challenges begins with a proactive and well-planned process. For example, challenges arose in the Fortymile Caribou Herd Planning process, and ground rules developed at the initiative outset were used to deal with challenges. The ground rules, which were agreed upon by all members of the planning team, stated that if someone could not work within a consensus process they would be asked to leave. The challenge of an uncooperative team member could be dealt with quickly and efficiently because of the ground rules. The Fortymile Caribou Herd Planning process also had an independent facilitator present to deal with challenges.

3.2.4.2 Incorporation of Traditional Knowledge

Traditional knowledge (TK) is increasingly recognized as an integral part of holistic wildlife management. Although TK is often recognized and incorporation of TK is part of the plan to develop a management document, the method of knowledge collection and integration can be challenging. In this review, four initiatives (1, 2, 10 and 13) used TK to understand and determine natural fluctuations of herd populations and trends and to aid in determining the effects of environmental conditions on caribou populations. Five of the initiatives (4, 7, 8, 9 and

11) did not indicate any use of TK. Lastly, three initiatives (3, 5 and 6) noted that TK was used in the development of the action plan but did not specify how it was used.

Of the documents that described their use of TK, *Boreal Woodland Caribou Conservation in the Northwest Territories* (initiative 1) and *Action Plan for the Klinse-Za Herd of Woodland Caribou* (initiative 13) were the most descriptive. Document 1 notes that community concerns and opinions based on TK were used throughout this action plan. TK was used in conjunction with scientific studies to determine the current caribou population in the NWT for this plan. TK was also used to inform the conservation strategy to determine suitable habitat, monitor caribou distribution, and to determine effects on caribou caused by interactions with other species (i.e., wood buffalo) (GWNT, 2010). Initiative 1 described collecting TK through a traditional knowledge study and workshops conducted in communities. On the other hand, document 10 does not state if TK was used in the development of the plan, but one of their proposed actions is to collect TK about forest-dwelling caribou:

As secular occupants of the forest territory, Indigenous communities have developed traditional knowledge of the forest-dwelling caribou. Information on certain behavioural traits of the caribou, on the use of parts of the territory or specific sites can be integrated into the various protection activities involving the caribou and its habitat. The confidential nature of information will have to be respected. (The Forest Dwelling Caribou Recovery Team 2005, p.56)

This recognition of the importance of TK is critical to improving relationships and strengthening caribou management in accordance with the interview data outlined in previous sections. The recognition of TK as inherently valuable is necessary, but the incorporation of TK is often only carried out when it fits within the resource management model (Nadasdy, 2003). In their study of the incorporation of TK within resource management, Kendrick and Manseau (2008) found it is not just data obtained from traditional hunters that can be beneficial to resource management but also the opportunities for learning about the ways in which the environment is interpreted.

3.2.5 Lessons Learned

Since most of the documents reviewed were published at the beginning stage of implementation, few key lessons learned could be extracted. Initiative 7 provided some critical lessons of successful cooperative management planning, and there were other lessons that could be inferred from repeated responses to challenges in the action plan documents.

Almost all the documents reviewed noted the importance of public education, awareness and stewardship in the success of a management plan. Gronquist et al. (2005, p. 166) explains that, "the primary benefit of such a public process is drawing from a wide range of experiences, wisdom, and interest in the problem to be solved." Initiative 7 used newsletters, art contests, news releases and roadside information exhibits to promote public awareness of the management plan. Not only is public involvement important for the success of an initiative, as evidenced by the documents, a diverse representation of viewpoints in the planning process from the beginning stages is also critical. For instance, if one of the key challenges to caribou population management is hunting and one of the key action items is likely to be reducing harvest, harvesters and hunting associations should be involved from the beginning so that proper education and awareness can be administered before the plan is developed and groups become displeased because they were not involved or consulted in the process.

As a review of a management action plan that had been implemented, document 7 provides a critical perspective of the keys to success and areas for improvement that could be beneficial to apply to other caribou management plans. The use of an independent facilitator committed to the process, establishment of a common vision early in the process, a commitment by all team members, a consensus process, the development of process ground rules, and an understanding that anyone that could not work in a consensus process would be asked to leave all contributed to the foundation of a successful process (Gronquist et al., 2005).

In terms of lessons in successful implementation, Gronquist et al. (2005, p. 169) explain that for the plan to be implemented as a whole, the Fortymile Caribou Herd Planning Team "developed and presented the Plan as a package, so that if any one section was not implemented by either the state or federal regulatory boards or management agencies, the Plan would be terminated." This commitment by all groups to implement the entire plan, agreed upon by consensus, was instrumental to the plan's success in contrast to a comparable Wolf Management Team in the same area that only selectively implemented the recommendations made by a consensus process. Consensus is based on compromises by representatives and that is why adoption of the entire package is critical to ensuring the approval of all parties and legitimizing the long and sometimes difficult process. If the outcome does not undermine the process, the initiative has a greater chance of success.

4.0 SUMMARY, CONCLUSION AND NEXT STEPS

Interview and document review data provided an in-depth perspective on the involvement and leadership of Indigenous groups in caribou action planning. Document reviews provided the detailed plans by non-Indigenous groups to move forward with caribou management. On the other hand, interviews with Indigenous community members involved in caribou action planning provided the perspectives of those who have witnessed the evolution of caribou action planning in their own initiatives and others.

4.1 HIGHLIGHTS

- In Indigenous-led initiatives, harvesters and elders noticed declines through a close connection with the land that attuned them to early warnings of changes in the environment.
- The committed inclusion of traditional knowledge in caribou initiatives is key to building a strong relationship and ensuring the best management possible.
- Strategies that truly consider all perspectives to have equal influence have the best chance at success.
- Indigenous-led initiatives were often dynamic in that plans were often subject to changes over time depending on the availability of information, the types of collaboration and the capacity built as the initiative progressed.
- Interview participants noted that when caribou harvesting has been limited or eliminated in the interest of protecting the herd, the community's ability to perpetuate components of a traditional lifestyle is affected.
- For continued improvement in Indigenous inclusion and Indigenous-led caribou management initiatives, more action is needed in terms of follow-up with outcomes of action plans.

In both the non-Indigenous-led (described in documents) and Indigenous-led (described by interview participants) initiatives, the most common cause for concern and action was a decline in caribou herd size. However, the ways in which the issue was noticed was different for each group. In Indigenous-led initiatives, harvesters and elders noticed declines. That knowledge, stemming from a connection with the land, enabled an attuned and early warning of changes in the environment, in this case in caribou populations.

Management tools and successes are a product of the process that develops the action plan for caribou. Without the inclusion of the perspectives of all groups with a stake in caribou management, it is very difficult to implement a successful recovery strategy. Those interviewed from Indigenous communities made clear that the committed inclusion of traditional knowledge in the development, implementation and management of caribou initiatives is key to building a strong relationship and ensuring the best management possible. The document review also indicates strategies that truly consider all perspectives equally (such as in a consensus process) on caribou management outcomes have the best chance at success.

The caribou action plans reviewed were diverse and used various methods. Most interestingly, the Indigenous-led initiatives were often dynamic, in the sense that plans often changed over time depending on the availability of information, the types of collaboration and the capacity built over time. For example, several interview participants noted they had started with a caribou herd management plan and were transitioning to or adding a landscape management component.

In many Indigenous communities, the protection of a traditional lifestyle is synonymous with the protection of caribou or other wildlife. Interview participants noted that when caribou harvesting was limited or eliminated in the interest of protecting the herd size, the community's ability to perpetuate components of a traditional lifestyle was stunted. Without harvesting, spin-off effects on other parts of life are affected, for instance the inability to teach youth about traditional ways.

For continued improvement in Indigenous inclusion and Indigenous-led caribou management initiatives, more action is needed in terms of follow-up with outcomes of action plans. Specifically, several documents indicated that building capacity in Indigenous communities will help improve the ability of communities to participate in caribou management activities; indeed, two initiatives had action plans to develop capacity in communities, including providing resources for monitoring and management activities (initiative 1) and the capacity to share the data collection (initiative 5). These two initiatives noted that caribou activities should build capacity in Indigenous communities whenever possible and provide training through workshops on an ongoing basis. Beneficial next steps for the Boreal Leadership Council could be to see what has occurred with those plans and understand what would be necessary for communities reportedly challenged by capacity to participate and become more actively involved.

As indicated in both the interview and document review results, some caribou management initiatives involving Indigenous groups have been ongoing for over two decades, so there is a history of learning and overcoming challenges that can be applied to future endeavours. At this critical point of caribou status in Canada, these reflections on past management and the cooperation of all groups is key to moving forward. The lessons from this review and from others of this type can provide guidance for future management and inclusive and successful caribou action planning.

References Cited

- The Bathurst Caribou Management Planning Committee. (2004). *A Management Plan for the Bathurst Caribou Herd*. Retrieved from http://www.enr.gov.nt.ca/sites/default/files/reports/bathurst_caribou_management_plan.pdf
- Chisana Caribou Herd Working Group. (2012). *Management Plan for the Chisana Caribou Herd: 2010-2015*. Government of Yukon, Department of Environment, Whitehorse, YT. 48pp. Retrieved from <http://www.env.gov.yk.ca/publications-maps/documents/chisana-mgmt-plan-2012.pdf>
- The Forest-Dwelling Caribou Recovery Team Ministère des Ressources naturelles et de la Faune. (2008). *The Forest Dwelling Caribou (Rangifer tarandus) – Recovery Plan in Quebec – 2005-2012*. Retrieved from <http://collections.banq.qc.ca/ark:/52327/bs1935969>
- Government of the Northwest Territories, Department of Environment and Natural Resources. (2010). *Action plan: Boreal Woodland Caribou Conservation in the Northwest Territories 2010–2015*. Retrieved from http://www.enr.gov.nt.ca/sites/default/files/reports/boreal_caribou_action_plan_2010-2015.pdf
- Government of the Northwest Territories, Department of Environment and Natural Resources. (2011). *Caribou Forever – Our Heritage, Our Responsibility: A Barren-ground Caribou Management Strategy for the Northwest Territories 2011-2015*. Retrieved from http://www.enr.gov.nt.ca/sites/default/files/strategies/2011-2015_barren-ground_caribou_management_strategy.pdf
- Gronquist, R.M., Haynes, T.L., & Gardner, C.L. (2005). Rebuilding the Fortymile caribou herd: A model of cooperative management planning. *Rangifer, Special Issue 16*, 163–175.
- Kendrick, A., & Manseau, M. (2008). Representing Traditional Knowledge: Resource management and Inuit Knowledge of barren-ground caribou. *Society & Natural Resources: An International Journal*, 21(5), 404–418.
- Manitoba Boreal Woodland Caribou Management Committee. (2014). *Conserving the Icon of the Boreal, Manitoba's Boreal Woodland Caribou (Rangifer tarandus caribou) Recovery Strategy*. Manitoba Conservation and Water Stewardship. Winnipeg, Manitoba. 30 pp. Retrieved from https://www.gov.mb.ca/conservation/wildlife/sar/pdf/caribou_strategy.pdf
- McNay, R.S., Cichowski, D., & Muir, B.R. (2013). Action Plan for the Klinse-Za Herd of Woodland Caribou (*Rangifer tarandus caribou*) in Canada [draft]. *Species at Risk Act Action Plan Series*. West Moberly First Nations: Moberly Lake, BC. 28pp.
- Nadasdy, P. (2003). *Hunters and bureaucrats: Power, knowledge, and Aboriginal-state relations in the Southwest Yukon*. Vancouver, BC: UBC Press.
- Nation Talk. (2012, June 28). *Breakthrough Under the Canadian Boreal Forest Agreement for Caribou, Economy and Communities in Ontario's Northeast*. Retrieved from <http://nationtalk.ca/story/breakthrough-under-the-canadian-boreal-forest-agreement-for-caribou-economy-and-communities-in-ontarios-northeast/>

- Ontario Regional Working Group of the CBFA. (2012). *Recommendations for, and voluntary contributions, towards a Kesagami Range Caribou Action Plan*. Retrieved from http://cbfa-efbc.ca/wp-content/uploads/2014/12/CBFA_NE_Ontario_Recommendations_FullDoc_FINAL.pdf
- Parks Canada. (2013). *Species at Risk: Woodland Caribou – Southern Mountain population: Rangifer tarandus caribou*. Retrieved from <http://www.pc.gc.ca/eng/nature/eep-sar/itm3/eep-sar3caribou.aspx>
- Porcupine Caribou Management Board. (2010). *Harvest management plan for the Porcupine Caribou Herd in Canada*. Retrieved from <http://www.vgfn.ca/pdf/pch%20hmp%20-%20final%20march%202010.pdf>
- Rudolph, T.D., Drapeau, P., St. Laurent, M.H. and Imbeau, L. (2012). *Status of Woodland Caribou (Rangifer tarandus caribou) in the James Bay Region of Northern Quebec. Scientific report presented to the Ministère des Ressources naturelles et de la Faune du Québec and the Grand Council of the Crees (Eeyou Istchee)*. Montreal, QC. 72 pp.
- Schmelzer, I., Brazil, J., Chubbs, T., French, S., Hearn, B., Jeffery, R., LeDrew, L., Martin, H., McNeill, A., Nuna, R., Otto, R., Phillips, F., Mitchell, G., Pittman, G., Simon, N., & Yetman, G. (2004). *Recovery strategy for three Woodland caribou herds (Rangifer tarandus caribou; Boreal population) in Labrador*. Corner Brook, NL: Department of Environment and Conservation, Government of Newfoundland and Labrador.
- Ungava Peninsula Caribou Aboriginal Round Table. (2013). Declaration. *Aboriginal leaders come together to protect the George River and Leaf River Caribou Herds*, Emergency Aboriginal Caribou Summit, January 16-17, 2013, Kuujuaq, Nunavik
- Ungava Peninsula Caribou Aboriginal Round Table. (2014, May 28). Press Release. Retrieved from <http://www.makivik.org/Aboriginal-roundtable-pleased-report-fourth-meeting-held-whapmagoostui-kuujjuarapik/>