



Caribou Forever – Our Heritage, Our Responsibility

A Barren-ground Caribou
Management Strategy
for the Northwest Territories
2006 – 2010



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Minister's Message



Barren-ground caribou are one of the great resources of the Northwest Territories. For thousands of years, people have relied on caribou for food, clothing, trade and cultural identification. Caribou herds are declining. Everyone in the Northwest Territories has a role to play to ensure the barren-ground caribou remain a plentiful resource.

Actions taken over the next five years will have a strategic effect on the recovery of the herds. Advice and direction from co-management boards will be critical to define specific actions needed.

Our vision is to ensure that caribou are still there forever for our children to use wisely. To achieve this vision, the strategy focuses on five key components:

- Engaging partners
- Ensuring appropriate information is available for management decisions
- Managing impacts of human activities
- Informing the public about their role
- Addressing hardships

The success of the strategy rests on your participation and I invite your comments on the actions proposed under this strategy.

J. Michael Miltenberger
Minister of Environment and Natural Resources

Table of Contents

Executive Summary	1
Vision	3
Principles.....	4
Background.....	5
Caribou Herd Status	5
Human Activities and Impacts.....	8
Predation and Disease	9
Co-management.....	9
Our Challenges	11
The NWT Barren-ground Caribou Strategy	14
Annual Report	19
Annual Report	20
Financial Summary.....	21
Conclusion	22
Appendix A: Detailed Financial Summary (in \$'000)	23
Appendix B: Detailed Strategies.....	24
Strategy #1:	24
Strategy #2:	25
Strategy #3:	26
Strategy #4:	27
Strategy #5:	27
Strategy #6:	31
Strategy #7:	32
Strategy #8:	32
Strategy #9:	33
Strategy #10:	34
Strategy #11:	35
Strategy #12:	36
Strategy #13:	36
Strategy #14:	37
Strategy #15:	38
Strategy #16:	38

Executive Summary

The social, cultural and economic value of barren-ground caribou to residents of the Northwest Territories (NWT) is immense. These migratory herds are hunted by Dene, Inuvialuit, Metis and non-aboriginal people from almost all communities on mainland Northwest Territories (NWT). The minimum annual harvest is 11,000 caribou with a minimum economic value of \$17 million dollars (includes meat replacement and outfitting).

Over the last ten years, the barren-ground caribou herds in the Northwest Territories (NWT) have declined from 40 to 86 percent. Management actions are required to assist declining caribou herds to recover and address the economic hardships resulting from low caribou numbers.

The NWT Barren-ground Caribou Management Strategy 2006–2010 supports the Legislative Assembly's vision and goal to care and protect the land, water and wildlife. The Strategy draws on previous management planning initiatives conducted with co-management boards, caribou management boards and NWT communities. The Strategy will not replace herd specific management planning but rather will provide a unifying context for those plans.

The five-year NWT Barren-ground Caribou Management Strategy includes principles to guide barren-ground caribou management. The principles indicate that all NWT residents will understand their role and impact on barren-ground caribou and that the GNWT and co-management boards have leadership roles in making decisions on management actions.

The Strategy has five key components:

- Engaging partners in management
- Ensuring information is available for management decisions
- Managing impacts of human activities
- Public education and compliance
- Addressing hardships from low caribou numbers.





Strategies are described under each key component as well as immediate actions. All actions taken over the next five years will have a strategic effect on recovery of caribou herds.

To implement the Strategy requires a total investment of \$8,773,000 dollars. Of this, the Strategy identifies the current commitment by the Government of the Northwest Territories and the incremental investment required. The major costs in this strategy are associated with the collection of information necessary for sound management decisions. Implementation of the strategy will also require resources from partners who share responsibility for managing caribou herds. These partners include co-management boards, caribou management boards, the Government of Canada and neighbouring jurisdictions.

Vision

The 15th Legislative Assembly of the Northwest Territories (NWT) has published its vision and goals for the next four years. Goal 5 of this vision is:

Care and protection of the natural environment.

This means...

- Respect for the land, water and traditional knowledge guiding decisions of governments, industry and individuals.
- Responsible, coordinated management of the environment to protect the land, water and wildlife.
- Resource development that balances economic benefits, social impacts and environmental preservation and protection.

The NWT Barren-ground Caribou Management Strategy outlines specific direction needed to achieve the Legislative Assembly's vision and goals with respect to management of barren-ground caribou and identifies the additional investments required to implement those actions. The Strategy draws on previous management planning initiatives conducted with co-management boards, caribou management boards and NWT communities. The Strategy will not replace herd specific management planning but rather will provide a unifying context for those plans.





Principles

The following principles will guide barren-ground caribou management decisions:

- Managing for the health and persistence of caribou at the herd level is the best way to ensure barren-ground caribou continue to use their ranges and remain an important aspect of the lives of NWT residents.
- All NWT residents will understand their role and impact on barren-ground caribou.
- Management will be consistent with settled land claim agreements and will recognize Aboriginal harvesting rights in areas without settled land claims.
- Decisions will be made based on recommendations from, and in consultation with, co-management boards.
- All NWT residents will have the opportunity for meaningful input and participation.
- Conservation practices will take into account local and traditional ecological knowledge and values as well as information collected by academic institutions and government.



Background

Barren-ground caribou herds are migratory and hunted by Dene, Inuvialuit, Métis and non-aboriginal people from almost all communities on mainland Northwest Territories (NWT). The social and cultural value of caribou to residents of the NWT is immense. Information collected from harvest studies by co-management boards, winter road check stations, community hunts, outfitter returns and resident hunter surveys provides a minimum annual harvest estimate of 11,000 caribou. The minimum economic value of this harvest is \$17 million dollars.

Barren-ground caribou surveys conducted since 2000 indicate that five NWT barren-ground caribou herds are declining (Porcupine, Cape Bathurst, Bluenose-West, Bluenose-East and Bathurst). The status of three herds is unknown since the early 1990s (Beverly, Qamanirjuaq, Ahiak). Actions taken during the next five years will have a strategic effect on recovery of caribou herds. This management strategy focuses on actions required between 2006 and 2010.



Caribou Herd Status

Barren-ground caribou populations of North America are generally designated as “herds” based upon the location where the animals calve, as identified through satellite telemetry and aerial surveys. Eight large migratory caribou herds have been identified as spending all or a portion of their annual cycle within the NWT (Figure 1).



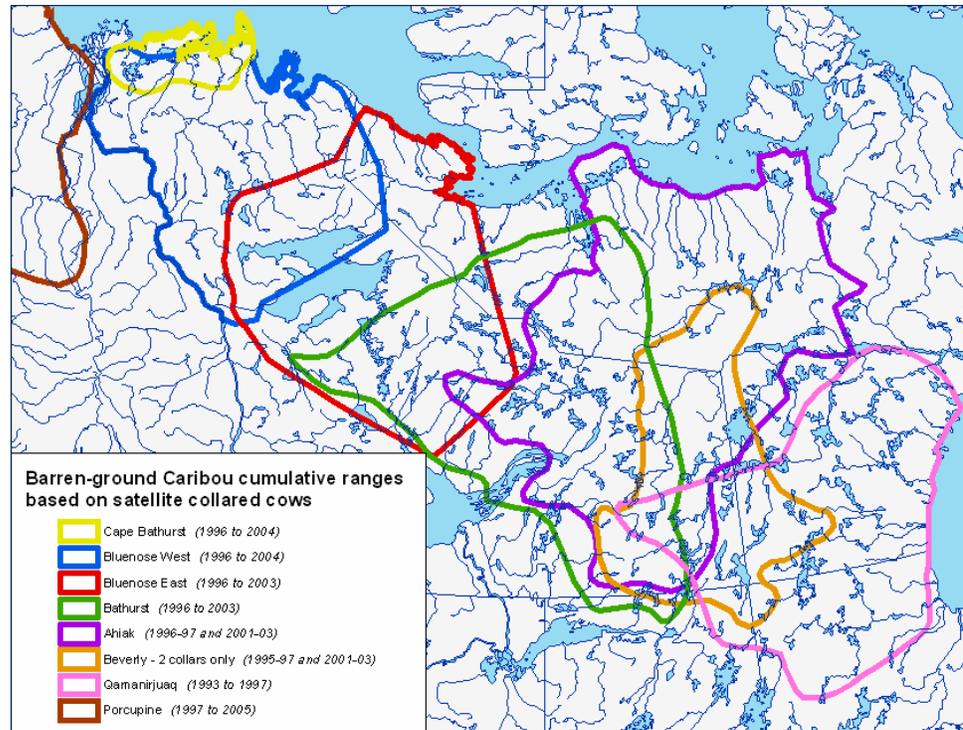


Figure 1: Northwest Territories Barren-ground Caribou cumulative ranges derived from satellite collared cows.

A growing body of evidence from traditional and scientific sources indicates that the number of caribou in a herd periodically increase and decrease at relatively regular intervals. These fluctuations are tied to regular fluctuations in climatic patterns. In the past, when caribou numbers declined, people starved unless they were able to meet their needs with other species. Aboriginal elders talk about the times when there were not enough caribou to feed everyone. Caribou numbers will continue to fluctuate and not all herds will always be large enough to meet people's needs. Although starvation is no longer an issue when caribou are scarce, declines will still bring economic and social hardships. The goal of caribou management is to manage human activities (e.g. harvesting, resource development) so that herds can recover from natural declines.

Caribou Herd	Size of Herd		Trend
Porcupine	178,000 (1989)	123,000 (2001)	Declining
Cape Bathurst	17,500 (1992)	2,400 (2005)	Declining
Bluenose West	98,900 (1987)	20,800 (2005)	Declining
Bluenose East	104,000 (2000)	66,600 (2005)	Declining
Bathurst	472,000 (1986)	186,000 (2003)	Declining
Ahiak	est. 200,000 (1996)	no recent survey	Unknown
Beverly	286,000 (1994)	no recent survey	Suspect Declining

Knowledge of caribou numbers is essential for management, but exact counts are neither possible nor necessary. For larger herds (e.g. Bathurst or Beverly), estimates of the number of pregnant cows on the calving ground can be used to determine whether a herd is stable, declining or increasing. However, calving ground estimates provide only an approximation of total herd size, as bulls, barren-cows, and yearlings do not migrate onto the calving grounds. Caribou in smaller herds (e.g. Cape Bathurst, Bluenose-West, Bluenose-East) are counted from aerial photographs taken after calving when caribou form large post calving aggregations for insect relief.





Managers do not only rely on the estimates of herd size to determine if caribou are increasing, stable or declining. Reports from hunters and elders, as well as information on trends in harvest levels, harvest sex ratio, predator abundance, adult female and calf survival, fall condition, pregnancy rates, disturbance during hunting seasons, effects of resource development activities, and range condition are also used. All this information helps caribou managers and users to identify declines and diagnose their causes and to understand the potential impacts of human activity on the population dynamics of the herd and mitigate those impacts.

Human Activities and Impacts

Harvesting can have a direct impact on the size of a herd. Under the *NWT Wildlife Act*, government can set the number, location and season for caribou harvesting by non-resident hunters and resident hunters and for commercial sale. Aboriginal harvesting rights are set out in land claim settlements, treaties and the laws of Canada and the NWT. These instruments also set out when and how limitations on Aboriginal harvesting may be implemented for conservation purposes.

The impact of mineral exploration on barren-ground caribou ranges has been a concern since the 1970s. Until the early 1990s, caribou protection measures were implemented for two herds to reduce impacts to caribou during spring migration, calving and post-calving. Interest in the potential impacts of non-renewable resource development grew in the 1990s with a surge in mining activities on the Bathurst herd's range. Since then, two diamond mines have been built on spring migration and post calving/summer ranges and two diamond mines are under construction. The diamond mining companies monitor caribou abundance and behaviour in the vicinity of the diamond mines, however uncertainties remain about the cumulative effects of the mines on the caribou. Monitoring agencies have been established for each diamond mine to supervise the monitoring programs and ensure that any impacts are detected early and appropriately mitigated.

Concern about the potential impacts from oil and gas exploration and development has also increased in recent years. The proposed Mackenzie Gas Project proposes the development of gathering systems in proven gas reserves on caribou winter range. If approved, the Mackenzie Gas Project will induce additional exploration activities. Through the environmental

assessment and regulatory review process, measures will be identified and implemented to monitor or mitigate impacts.

Predation and Disease

Wolves, grizzly bears, wolverine and disease can affect caribou numbers. Because these animals are widely dispersed, it is difficult and expensive to determine exact population numbers. In recent years, hunters have reported seeing more wolves and grizzly bears. Management plans prepared for the Bathurst and Beverly/Qamanirjuaq barren-ground caribou herds recommend monitoring for trends in predator abundance and disease. This is important information for management when herds are low.



Co-management

Co-management processes have been established to provide direction and advice to government on the management of human activities that affect caribou and their habitat (Table 1). Each of the larger barren-ground caribou herds has a slightly different co-management process, but all have similar intentions. Using traditional knowledge and technical information, Aboriginal and government representatives work together to advise governments on management decisions affecting caribou.

Table 1. Co-management and Caribou Management Boards with a role in barren-ground caribou management.

Board	Role	Herds Covered
Wildlife Management Advisory Council (NWT)	Established through the Inuvialuit Final Agreement, the WMAC (NWT) advises on management of barren-ground caribou in the Inuvialuit Settlement Area.	Porcupine Cape Bathurst Bluenose West Bluenose East
Gwich'in Renewable Resources Board	Established through the Gwich'in Comprehensive Land Claim Agreement, the GRRB is the main instrument of wildlife management in the Settlement Area.	Porcupine Cape Bathurst Bluenose West
Sahtu Renewable Resources Board	Established through the Sahtu Comprehensive Land Claim Agreement, the SRRB is the main instrument of wildlife management in the Settlement Area.	Bluenose West Bluenose East



Board	Role	Herds Covered
Wek'èezhii Renewable Resources Board	Established through the Tlicho Agreement, WRRB performs the functions of wildlife management set out in the agreement within Wek'èezhii.	Bluenose East Bathurst Ahiak
Bathurst Caribou Management Planning Committee	Established by the Bathurst Caribou Management Planning agreement, the BCMPC identified goals, objectives and recommended management actions in a 10-year management plan. The BCMPC also set out a process for the ongoing monitoring of implementation of the plan.	Bathurst
Porcupine Caribou Management Board	Established by the Porcupine Caribou Management Agreement, the PCMB provides advice and recommendations to Ministers and to co-management boards.	Porcupine
Beverly and Qamanirjuaq Caribou Management Board -	Established by the Beverly and Qamanirjuaq Barren Ground Caribou Management Agreement, the BQCMB provides advice and recommendations to governments and traditional users for the conservation of herds and their habitat.	Beverly Qamanirjuaq
Nunavut Wildlife Management Board	Established through the Nunavut Final Agreement, the NWMB is the main instrument of wildlife management in Nunavut. Although NWMB has no jurisdiction in the NWT it has a key role in management of shared populations	Bluenose East Bathurst Ahiak Beverly Qamanirjuaq



Our Challenges

Changes in Human Activities – Human activity on the barren-ground caribou ranges has changed immensely in the last sixty years. It continues to change rapidly today. Technology has changed many aspects of harvesting over time. Harvesting patterns have shifted from dispersed harvesting to harvesting focused in areas of improved access. Winter road construction to supply communities and mines and the increased use of trucks and snowmobiles has changed how caribou herds are accessed. Few working dog teams exist and so the use of caribou as dog food has almost been eliminated. Availability of aircraft has changed how fall hunts are conducted. The use of satellite telemetry data to locate caribou has changed how hunts are planned.



The intensity of human activity related to resource development has been variable. Oil and gas exploration in the 1970s included extensive seismic exploration in the Mackenzie Sedimentary Basin and drilling in the Mackenzie Delta area and the Colville Hills area. Activity subsided following the report of Justice Thomas Berger in 1977. However, exploration activity has resumed since the Mackenzie Gas Project proposed the development of Mackenzie Delta gas fields and construction of the Mackenzie Valley gas pipeline. This increased exploration has created new access to the barren-ground caribou winter ranges.

In other portions of the ranges, mineral exploration and mining activities have also been variable. In the mid-1900s exploration and mining activities focused on precious metals and uranium. Focus switched to diamonds in the 1990s but potential for precious metals and base metals remains high. This activity has created access to winter ranges, increased interactions between industrial scale developments and caribou on their post-calving and summer ranges and spring migrations, created potential sources of environmental contaminants on caribou ranges, and led to an influx of people into the NWT.

The NWT has become an attractive destination for people seeking a unique recreational experience. Big-game outfitting, fishing lodges, ecotourism outfitting, and aurora viewing businesses have been established. All these operations rely, to some extent, on barren-ground caribou or have facilities on caribou ranges.



Inter-jurisdictional Management – Six of the eight barren-ground caribou herds are shared with other provinces and territories. Effective management must be based on the full cooperation, participation and communication between the governments of the NWT, Nunavut, Yukon, Saskatchewan and Canada, as well as the communities located on the ranges of these herds (Table 2). Each jurisdiction has its own priorities, economic agenda, and limitations on resources so reaching agreement on research programs and management actions is often complicated.

Table 2. Governments with management roles and interests in NWT barren-ground caribou herds.

Herd	Governments
Porcupine	Yukon NWT Canada
Cape Bathurst	NWT
Bluenose West	NWT
Bluenose East	Nunavut NWT Canada
Bathurst	Nunavut NWT Canada
Ahiak	Nunavut NWT
Beverly	Nunavut Saskatchewan NWT Canada
Qamanirjuaq	Nunavut Saskatchewan Manitoba NWT Canada

Fluctuating Environments – Barren-ground caribou are a part of an environment that is constantly changing. While climatic regimes fluctuate over the timescale of decades and exert a strong influence on changes in herd size at a sub-continental scale, other environmental influences are highly variable. Local weather conditions, wildfire, predation rates, insect abundance and even harvest rates are highly unpredictable. Additionally, there is a high degree of uncertainty about the net effects of climate change on barren-ground caribou and their habitat/range conditions.

Financial and Human Resources – The strategy’s success will depend on public support. There is a diversity of views in the NWT about caribou status and management. This strategy will require consultation and information exchange with the many groups of people involved with

caribou in the NWT. Effective consultation is time-consuming and requires financial and human investment by management agencies and co-management boards.

Management actions will require reductions in harvest levels which will result in hardships to the traditional economy and commercial ventures. Investment will be required to address economic impacts.

The ability of managers to monitor the status of herds, the physical environment, harvest levels and human activity depends on availability of financial and human resources. Co-management processes and technological advances have improved the ability to monitor the herds. However, increases in logistical costs, such as aircraft, and the demand for more precise and detailed information, have reduced the ability to monitor herds with existing resources. Other demands on government staff, co-management boards and community members stemming from increased resource development activity have also reduced capacity to undertake management and monitoring programs.





The NWT Barren-ground Caribou Strategy

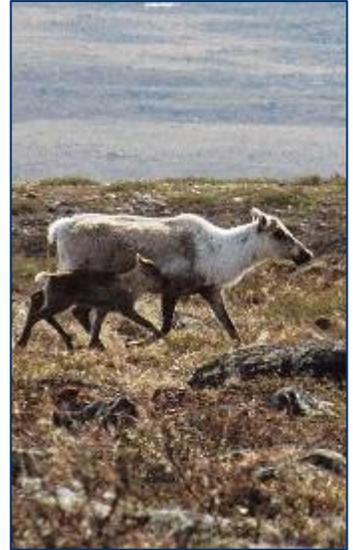
The proposed strategy has five key components:

1. **Engaging all partners** with an interest in barren-ground caribou management.
2. Ensuring appropriate **information** is available **for management** decisions
3. **Managing impacts** of human activities.
4. **Public education** so NWT residents know what impacts they have on the herds, how they can reduce those impacts and what the laws are regarding the caribou. Increased **compliance** to ensure the laws are followed.
5. **Addressing hardships** that result from low caribou numbers.

Key strategies and immediate actions are identified under each component. The actions needed to implement and achieve the goals of this caribou strategy over the next five years (2006-2010) are outlined in Appendix B. The immediate actions are intended to take place in the first six months of 2006.



- 1. Engaging All Partners** – The status and management of caribou is of interest to a majority of NWT residents, to residents of neighbouring jurisdictions and too many Canadians and other circumpolar nations. It is important to engage partners with a common interest in caribou conservation. Co-management boards have been established in areas with settled land claims. Inter-jurisdictional caribou management boards have been established for some herds (Porcupine, Beverly/Qamanirjuaq herds). Caribou management planning processes have been established for other herds (Bathurst, Bluenose herds).



Strategies...

- #1** Work with co-management and other public processes to effectively identify caribou conservation issues and options for caribou conservation.
- #2** Track the implementation of existing management plans, update management plans where needed and develop management plans for herds where they do not exist.
- #3** Establish inter-jurisdictional agreements where needed to enhance coordination and cooperation.
- #4** Enhance and promote the exchange of information on the status and use of caribou across the circumpolar north.

Immediate Actions

- Conduct community consultation sessions. **(Strategy 1)**
- Meet with co-management boards. **(Strategy 1)**
- Meet with industry and public interest groups. **(Strategy 4)**



- 2. Information for Management** – Current and reliable information on herd status is required to identify appropriate management actions. With declining herds, the need for information to refine our understanding of factors driving the declines and to determine or assess sustainable harvest levels is intensified. Information is needed on herd size (abundance and trend), productivity and recruitment, natural mortality, movements and distribution, the impact of harvest and environmental conditions. Management plans will identify the level and types of monitoring required.

Strategies...

- #5** Implement monitoring actions to determine the status of all NWT caribou herds and to understand factors driving changes in herd status.
- #6** Identify and implement studies necessary to understand caribou ecology, including the role of predators.
- #7** Develop population models that incorporate key demographic data, traditional knowledge and community-based knowledge to evaluate proposed management options.

Immediate Actions

- Determine size of the Cape Bathurst, Bluenose West and Bluenose East herds in 2006. **(Strategy 5)**
- Determine the number of breeding females on the Bathurst calving ground in 2006. **(Strategy 5)**
- Conduct reconnaissance surveys of Ahiak and Beverly calving grounds. **(Strategy 5)**
- Conduct late winter composition counts to measure calf survival on the Cape Bathurst, Bluenose-West, Bluenose-East and Bathurst herds in 2006. **(Strategy 5)**
- Determine the adult sex ratio in the Cape Bathurst herd. **(Strategy 5)**
- Maintain the existing satellite tracking program for Cape Bathurst, Bluenose-West, Bluenose-East and Bathurst herds and implement satellite tracking on the Beverly herd. **(Strategy 5)**

3. **Managing Human Impacts** – When caribou herds are declining, human activities can influence rate and extent of decline, how long it takes herds to begin to recover and the rate at which herds recover. Harvest of caribou is the primary human activity affecting herd size. Disturbance from harvesting and development activity can influence caribou behaviour, which can then affect caribou condition and health.

Strategies...

- #8 Evaluate the impacts of harvesting (including predation) on herd declines and recovery and implement strategies to reduce harvest impacts.
- #9 Identify, monitor and mitigate impacts of exploration and development activities and improve understanding of the mechanisms for any impacts.
- #10 Develop models to assess cumulative effects of human and natural impacts.



Immediate Actions

- Identify options to reduce harvest levels by working with co-management boards and user groups. **(Strategy 8)**
- Establish check stations on all NWT winter roads on barren-ground caribou winter range to document harvest. **(Strategy 8)**
- Delay release of locations of collared caribou by two weeks. **(Strategy 8)**
- Conduct a workshop on the assessment of cumulative effects. **(Strategy 10)**

4. **Public Education and Compliance** – Effective management will depend upon NWT residents knowing the status of the caribou herds, and understanding caribou ecology, caribou conservation measures, the impact of their actions on caribou, the rules and legislation governing caribou harvesting and the penalties for not following these rules and legislation. Approaches to minimize wastage and



crippling loss are required. These need to be implemented through public education and compliance measures.

Strategies...

- #11 Develop and implement a public information and education program.
- #12 Promote hunting excellence.
- #13 Document and publicize community based hunting rules.
- #14 Enhance compliance programs.

Immediate Actions

- Develop a communications strategy and appropriate communications products on the status of NWT caribou herds and conservation measures for the herds. **(Strategy 11)**
- Increase compliance activity on winter roads and at check stations. **(Strategy 14)**

5. **Addressing Hardships** – For many Aboriginal residents, harvesting of caribou is a way of life that links directly to Aboriginal livelihoods, culture and well-being. In small communities and for low income families, harvesting caribou and other wild foods is essential for meeting basic nutritional needs where store-bought foodstuffs are prohibitively expensive and cash is scarce. The loss of caribou harvesting opportunities through reduced access to caribou or through the implementation of management actions will cause hardship to these people.

Certain economic activities, such as barren-ground caribou outfitting, commercial meat production and ecotourism, also rely on caribou. NWT companies have made significant investments in some of these activities and provide both full-time and seasonal employment for NWT residents.

Strategies...

- #15** Work with the Department of Industry, Tourism and Investment and impacted communities to identify hardships and identify possible solutions, including alternate meat sources and alternate harvesting opportunities.
- #16** Work with the Department of Industry, Tourism and Investment, outfitters and other commercial ventures to identify ways to maintain viability of businesses through changes in caribou numbers and distribution.

Immediate Actions

- Investigate alternate sources of country foods for hospitals, elders, shut-ins and low income families. **(Strategy 15)**
- Hold consultation meetings with industry. **(Strategy 16)**



Annual Report

Appendix B identifies results and payback for each strategy. An annual report will provide the results of actions taken and assess whether any adjustments to the strategy are required to ensure that caribou herds recover and economic hardships are addressed.



Financial Summary

Appendix A provides a summary of the investment required for each of the proposed strategies over the next five years, the current GNWT commitment to investment and the incremental investment required.

The Strategy outlines the need for a new investment of \$4.620 million over five years to achieve the Legislative Assembly’s Vision and Goal with respect to barren-ground caribou. The major costs in this strategy are associated with the collection of information necessary for sound management decisions. Significant resources will also be needed to ensure that NWT residents are fully aware of caribou management issues and have opportunities for input into management decisions. It is anticipated that some of this additional investment will come from management partners. However, we recognize the capacity of our partners to fund major monitoring projects or studies is limited.

Additional resources will likely be required to address economic hardships created by low caribou numbers. The scope of these costs will depend upon the management actions taken and will be determined as actions are implemented.

The Immediate Actions identified within the strategy cannot be addressed with existing 2005/06 resources. An additional investment of \$780,000 is required in 2005/06. An additional \$255,000 will be requested from management partners.





Conclusion

The management of barren-ground caribou in the NWT is an important issue for all NWT residents. NWT residents must be able to identify and fulfill their role in managing caribou herds. The GNWT and co-management boards accept a leadership role in the management of NWT barren-ground caribou herds. Through the implementation of this Strategy, the GNWT will build on, and enhance, the strong working relationship with co-management boards, caribou management boards, communities, monitoring agencies, other government agencies and caribou user groups to ensure:

- Management decisions are based on sound information and principles of conservation.
- Management decisions have broad public understanding and support.
- Impacts of low caribou numbers on residents are mitigated.
- Human impacts on caribou herds are appropriately monitored and mitigated.
- NWT barren-ground caribou herds have an opportunity to recover.



Appendix A: Detailed Financial Summary (in \$'000)

	2005/06	2006/07	2007/08	2008/09	2009/10
Engaging Partners					
Strategy #1	\$ 125	\$ 140	\$ 55	\$ 55	\$ 55
Strategy #2	83	163	163	83	83
Strategy #3	0	10	0	0	0
Strategy #4	0	40	40	40	40
Information for Management Decisions					
Strategy #5	\$1,080	\$1,165	\$1,135	\$1,045	\$ 775
Strategy #6	0	190	190	80	80
Strategy #7	0	20	20	0	0
Managing Human Impacts					
Strategy #8	\$ 125	\$ 153	\$ 125	\$125	\$ 125
Strategy #9	0	10	10	10	10
Strategy #10	0	60	0	0	0
Public Education					
Strategy #11	\$ 60	\$ 60	\$ 60	\$ 60	\$ 60
Strategy #12	10	10	10	10	10
Strategy #13	30	30	30	0	0
Strategy #14	125	125	125	125	125
Addressing Hardship					
Strategy #15*	\$ 0	TBD	TBD	TBD	TBD
Strategy #16*	0	TBD	TBD	TBD	TBD
Totals	\$1,638	\$2,176	\$1,963	\$1,633	\$1,363
Existing Resources	603	671	513	523	403
Partnership Resources	255	230	405	330	220
New Resources	\$ 780	\$1,275	\$1,045	\$ 780	\$ 740

* Resources required will be determined based on management actions taken.

Appendix B: Detailed Strategies

Strategy #1:

Work with co-management and other public processes to effectively identify caribou conservation issues and options for caribou conservation.

The need for conservation of wildlife is a prominent feature in all NWT land claim agreements, in the NWT *Wildlife Act*, and in the culture of northern Aboriginal peoples. Effective conservation needs to be based on a common understanding of conservation principles, conservation objectives and how to best apply conservation measures.

- Consult (in cooperation with co-management boards in settlement regions) with caribou management boards, communities, Aboriginal organizations, resident hunters, outfitters and other stakeholders to establish conservation objectives, identify threats to conservation for each herd and develop criteria to determine when caribou conservation becomes the primary issue in harvest management.

Timeline: Begin Winter 2006 – Ongoing.

Herd	2005/06	2006/07	2007/08	2008/09	2009/10
Porcupine	N/A ¹	N/A	N/A	N/A	N/A
Cape Bathurst	\$ 30,000	\$ 30,000	\$10,000	\$10,000	\$10,000
Bluenose West	40,000	40,000	10,000	10,000	10,000
Bluenose East	30,000	30,000	10,000	10,000	10,000
Bathurst	20,000	20,000	10,000	10,000	10,000
Ahiak	5,000	5,000	5,000	5,000	5,000
Beverly ²	0	20,000	10,000	10,000	10,000
Qamanirjuaq	N/A	N/A	N/A	N/A	N/A
Total	\$125,000	\$140,000 NEW	\$55,000 NEW	\$55,000 NEW	\$55,000 NEW

¹ Consultation with PCMB conducted at regular meetings of the Board

² Assumes increased consultation following census of the Beverly herd

- Promote land use planning in land claim and non-settled claim areas as a tool to conserve caribou habitat. (Funded outside GNWT) **Timeline: Ongoing**
- Through the NWT Protected Areas Strategy (PAS), work with communities to select candidate areas to protect caribou habitat, where needed. (Funded through PAS) **Timeline: Ongoing**

Payback and Results

- ✓ Co-management boards will provide direction on management actions in settlement areas.
- ✓ Public and caribou user groups will be aware of their role in conserving caribou.

Strategy #2:

Track the implementation of existing management plans, update management plans where needed and develop management plans for herds where they do not exist.

- Bathurst Caribou Management Plan – The Plan identified the need to hold an annual workshop to track and discuss Plan implementation (\$30,000 NEW)
Timeline: First Workshop Winter 2006
- Beverly/Qamanirjuaq Caribou Management Plan – The BQCMB tracks the implementation of this plan. GNWT makes an annual contribution of \$15,000 to the BQCMB. **Timeline: Ongoing**
- Porcupine Caribou Management Plan – The PCMB tracks the implementation of this plan. GNWT makes an annual contribution of \$38,000 to the PCMB.
Timeline: Ongoing
- Draft Co-Management Plan for the Cape Bathurst, Bluenose-West and Bluenose-East Caribou Herds – This draft plan was prepared in collaboration with WMAC(NWT), GRRB, SRRB, NWMB and the Tukturnogait National Park Management Board. The plan needs to be updated. The cost of this update will depend upon the approach identified by the planning partners but required consultation is likely to cost approximately \$80,000 (NEW) per year for two years. **Timeline: Completion Winter 2008**
- Ahiak caribou management plan – There is currently no plan in place or in development for the Ahiak herd. The cost of developing this plan will depend upon the approach identified by the planning partners. **Timeline: Completion Winter 2009**
- Sahtu Land Use Plan (Funded outside of GNWT)
- Tlicho Land Use Planning (Funded outside of GNWT)
- West Kitikmeot Land Use Plan (Funded outside of GNWT)
- Inuvialuit Community Conservation Plans (Funded outside of GNWT)

	2005/06	2006/07	2007/08	2008/09	2009/10
Annual Bathurst Workshop	\$30,000 (NEW)	\$ 30,000 (NEW)	\$ 30,000 (NEW)	\$30,000 (NEW)	\$30,000 (NEW)
BQCMB	15,000	15,000	15,000	15,000	15,000
PCMB	38,000	38,000	38,000	38,000	38,000
Bluenose Plan	0	38,000 (NEW)	38,000 (NEW)	0	0
Total	\$83,000	\$163,000	\$163,000	\$83,000	\$83,000

Payback and Results

- ✓ Management plans will identify monitoring and management actions required.
- ✓ Public involvement in developing plans improves support for implementation.

Strategy #3:

Establish inter-jurisdictional agreements, where needed, to enhance coordination and cooperation

- Open discussions with Nunavut, Yukon, Saskatchewan and Manitoba on the need for enhanced coordination and cooperation (\$10,000)
Timeline: Begin discussions Fall 2006
- Identify appropriate mechanisms for inter-jurisdictional agreements (No major costs) **Timeline: Winter 2007**

	2005/06	2006/07	2007/08	2008/09	2009/10
Travel	\$0	\$10,000	\$0	\$0	\$0

Payback and Results

- ✓ Improved coordination results in cost sharing of actions and reduced requirement for new resources.

Strategy #4:

- Enhance and promote the exchange of information on the status and use of caribou across the circumpolar north. **Timeline: Ongoing**
- Support and participate in the CircumArctic Rangifer Monitoring & Assessment Network (CARMA). (CARMA is seeking funding from International Polar Year – No major costs to GNWT) **Timeline: Ongoing**
- Support, participate in and expand the Arctic Borderlands Ecological Knowledge Cooperative to allow communities to become involved in sharing information on the Cape Bathurst and Bluenose West caribou herds. (Approximately \$40,000 per year NEW) **Timeline: Initiate Fall 2006 – Ongoing**

Action	2005/06	2006/07	2007/08	2008/09	2009/10
Arctic Borderlands	\$0	\$40,000 (NEW)	\$40,000 (NEW)	\$40,000 (NEW)	\$40,000 (NEW)

Payback and Results

- ✓ Common information base improves decision-making and implementation of actions.

Strategy #5:

Implement monitoring actions necessary to determine the status of all NWT caribou herds and to understand factors driving changes in herd status.

A minimum level of monitoring is necessary at all times during the herd's natural cycle of abundance. When herds are declining, monitoring needs to be intensified to ensure that management actions can be identified and implemented in a timely fashion. The following actions will provide the information necessary to determine where a caribou herd is within its long-term population cycle (e.g. increasing, high, declining, or low) and the status of factors affecting caribou survival.

- Design and implement community-based monitoring approaches to collect information on caribou movements, caribou condition including pregnancy rates, health, diseases, environmental conditions and abundance of predators. **Timeline: Spring 2007**

Herd	2005/06	2006/07	2007/08	2008/09	2009/10
Porcupine	\$ 0	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Cape Bathurst	10,000	50,000 (NEW)	50,000 (NEW)	50,000 (NEW)	50,000 (NEW)
Bluenose West	10,000	50,000 (NEW)	50,000 (NEW)	50,000 (NEW)	50,000 (NEW)
Bluenose East	10,000	50,000 (NEW)	50,000 (NEW)	50,000 (NEW)	50,000 (NEW)
Bathurst	50,000	50,000	50,000	50,000	50,000
Ahiak ¹	0	0	0	0	0
Beverly	0	50,000 (NEW)	50,000 (NEW)	50,000 (NEW)	50,000 (NEW)
Qamanirjuaq	N/A	N/A	N/A	N/A	N/A
Total	\$80,000	\$260,000	\$260,000	\$260,000	\$260,000

¹ Information on Ahiak caribou will be collected in conjunction with Bathurst or Beverly herd projects depending upon distribution of Ahiak caribou

- Expand outfitter reporting to include information on caribou movements, health, diseases and environmental conditions. (No major costs – Information collected through increased communication with outfitters and standardization of reporting)
Timeline: Fall 2006
- Conduct late winter composition surveys to monitor calf survival every year.
Timeline: Annually, beginning Winter 2006

Herd	2005/06	2006/07	2007/08	2008/09	2009/10
Porcupine	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Cape Bathurst	20,000 (NEW)	20,000 (NEW)	20,000 (NEW)	20,000 (NEW)	20,000 (NEW)
Bluenose West	25,000 (NEW)	25,000 (NEW)	25,000 (NEW)	25,000 (NEW)	25,000 (NEW)
Bluenose East	25,000 (NEW)	25,000 (NEW)	25,000 (NEW)	25,000 (NEW)	25,000 (NEW)
Bathurst	40,000	40,000	40,000	40,000	40,000
Ahiak	Included above ¹	Included above	Included above	Included above	Included above
Beverly		25,000 (NEW)	\$25,000 (NEW)	25,000 (NEW)	25,000 (NEW)
Qamanirjuaq	N/A	N/A	N/A	N/A	N/A
Total	\$120,000	\$145,000	\$145,000	\$145,000	\$145,000

¹ Composition surveys of the Ahiak herd will be conducted along with the Bathurst herd in years when late winter distribution of Ahiak caribou permits.

- Monitor for trends in the level of disease. (No major costs - Information to be provided through community based monitoring) **Timeline: Initiate Spring 2006 – Ongoing**
- Monitor the seasonal distribution and movements of herds annually. Effective monitoring of herd movements and distribution requires maintaining 20 active satellite collars per herd. **Timeline: Initiate Spring 2006 – Ongoing**

Herd	2005/06	2006/07	2007/08	2008/09	2009/10
Porcupine	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Cape Bathurst	150,000	60,000	60,000	60,000	150,000
Bluenose West	Included above	Included above	Included above	Included above	Included above
Bluenose East	Included above	Included above	Included above	Included above	Included above
Bathurst	60,000	60,000	60,000	100,000	60,000
Ahiak	Included above ¹	Included above	Included above	Included above	Included above
Beverly	200,000 (NEW)	60,000 (NEW)	60,000 (NEW)	60,000 (NEW)	60,000 (NEW)
Qamanirjuaq	N/A	N/A	N/A	N/A	N/A
Total	\$420,000	\$190,000	\$190,000	\$230,000	\$280,000

¹ Satellite telemetry studies of the Ahiak herd will be conducted along with those conducted on the Bathurst herd.

- Compare herd distribution and harvest locations to accurately identify the proportion of the harvest that is from each herd. (No major costs – ability to do this will depend on having sufficient satellite collars deployed and the collection of harvest data) **Timeline: Initiate Spring 2006 – Ongoing**
- Investigate local caribou die-offs. (No major costs) **Timeline: Ongoing**
- Determine the herd size by conducting aerial photographic surveys and monitor trend.
 - **Timeline: Summer 2006 – aerial photographic post-calving census of Cape Bathurst, Bluenose-West and Bluenose-East herds; aerial photographic calving ground census of Bathurst herd; reconnaissance surveys of Ahiak and Beverly calving grounds.**
 - **Timeline: Summer 2007 – aerial photographic calving ground census of Ahiak and Beverly herds**

- **Timeline: Summer 2009 – aerial photographic post-calving census of Cape Bathurst, Bluenose-West and Bluenose-East herds.**

Herd	2005/06	2006/07	2007/08	2008/09	2009/10
Porcupine	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Cape Bathurst	400,000 (NEW)	80,000 (NEW)	0	400,000 (NEW)	80,000 (NEW)
Bluenose West	Included above	Included above	0	Included above	Included above
Bluenose East	Included above	Included above	0	Included above	Included above
Bathurst	50,000 (NEW)	250,000 (NEW)	0	0	0
Ahiak	0	50,000	250,000 (NEW)	0	0
Beverly	0	50,000	250,000 (NEW)	0	0
Qamanirjuaq	N/A	N/A	N/A	N/A	N/A
Total	\$460,000	\$440,000	\$510,000	\$410,000	\$90,000

- Determine adult sex ratios during fall rutting season. Timeline: Winter 2007 for Cape Bathurst, Bluenose-West, Bathurst, Beverly and Qamanirjuaq herd. Winter 2008 for Bluenose-East herd.

Herd	2005/06	2006/07	2007/08	2008/09	2009/10
Porcupine	N/A	N/A	N/A	N/A	N/A
Cape Bathurst	\$0	\$ 20,000 (NEW)	\$ 0	\$0	\$0
Bluenose West	0	30,000 (NEW)	0	0	0
Bluenose East	0	0	30,000 (NEW)	0	0
Bathurst	0	40,000 (NEW)	0	0	0
Ahiak	0	N/A ¹	0	0	0
Beverly	0	40,000	0	0	0
Qamanirjuaq	N/A	N/A	N/A	N/A	N/A
Total	\$0	\$130,000	\$30,000	\$0	\$0

¹ Information on Ahiak caribou will be collected in conjunction with Bathurst or Beverly herd projects depending upon distribution of Ahiak caribou

Payback and Results

- ✓ Management decisions will be made on current information on trend, size, condition and harvest levels of caribou herds.
- ✓ Provide opportunities for residents to become more involved in monitoring activities.

Strategy #6:

Identify and implement studies necessary to improve understanding of caribou ecology:

- Review available traditional knowledge information and collect additional traditional knowledge required. (\$30,000 per year for two years) **Timeline: Spring 2008**
- Review other historical records of caribou abundance and determine links to ecological factors. (No major costs) **Timeline: Spring 2007**
- Complete the vegetation classification of caribou ranges. (The cost of this study will depend upon the approach taken the minimum cost is approximately \$80,000 per year for two years) **Timeline: Spring 2008**
- Use vegetation classifications and satellite telemetry data to prepare resource selection function models for barren-ground caribou winter ranges. **Timeline: Fall 2008**
- Examine historic long term trends in herd abundance using available methods (e.g. tree root scars) (\$10,000 per year) **Timeline: Spring 2008 – Ongoing**
- Monitor seasonal variation in range conditions using remote sensing approaches such as NDVI. (No major costs) **Timeline: Ongoing**
- Monitor weather, insect abundance, and snow conditions. (\$20,000 per year) **Timeline: Ongoing**
- Monitor trend in predator abundance to determine impacts of predation on herd size (\$50,000 per year) **Timeline: Ongoing**

Action	2005/06	2006/07	2007/08	2008/09	2009/10
Traditional Knowledge	\$ 0	\$ 30,000	\$ 30,000	\$ 0	\$ 0
Vegetation Classification	0	80,000	80,000	0	0
Historic Trends	0	10,000	10,000	10,000	10,000
Monitor Weather	0	20,000	20,000	20,000	20,000
Predator Abundance	0	50,000 NEW	50,000 NEW	50,000 NEW	50,000 NEW
Total	\$0	\$190,000	\$190,000	\$80,000	\$80,000

Payback and Results

- ✓ Traditional knowledge provides valuable historical information on caribou trends required to understand caribou cycles.
- ✓ Environmental information is required to understand caribou movements.

Strategy #7:

Develop caribou population models that incorporate key demographic data

- Model demographic data and community based monitoring information available for each herd. (\$20,000) **Timeline: Spring 2008**

Action	2005/06	2006/07	2007/08	2008/09	2009/10
Herd Models	\$0	\$20,000	\$20,000	\$0	\$0

Payback and Results

- ✓ Models provide an assessment of management actions by predicting herd response to changes in key factors (e.g. harvest levels).

Strategy #8:

Determine harvest levels and the impacts of harvesting (including predation) on herd declines and recovery and identify and implement options to reduce harvest impacts.

- Obtain annual estimates of harvest levels and locations. With harvest studies conducted through land claim implementation no longer active, alternate methods

for determining aboriginal harvest levels will need to be implemented. This will include, reporting on community hunts, winter road check stations, resident hunter questionnaires, outfitter reports, and household interviews. **Timeline: Begin Winter 2006 – Ongoing**

Herd	2005/06	2006/07	2007/08	2008/09	2009/10
Porcupine	\$ 15,000	\$ 43,000	\$ 15,000	\$ 15,000	\$ 15,000
Cape Bathurst	30,000 (NEW)	30,000 (NEW)	30,000 (NEW)	30,000 (NEW)	30,000 (NEW)
Bluenose West	10,000 (NEW)	10,000 (NEW)	10,000 (NEW)	10,000 (NEW)	10,000 (NEW)
Bluenose East	10,000 (NEW)	10,000 (NEW)	10,000 (NEW)	10,000 (NEW)	10,000 (NEW)
Bathurst	50,000	50,000	50,000	50,000	50,000
Ahiak	N/A ¹				
Beverly	10,000 (NEW)	10,000 (NEW)	10,000 (NEW)	10,000 (NEW)	10,000 (NEW)
Qamanirjuaq	N/A	N/A	N/A	N/A	N/A
Total	\$125,000	\$153,000	\$125,000	\$125,000	\$125,000

¹ Information on Ahiak caribou will be collected in conjunction with Bathurst or Beverly herd projects depending upon distribution of Ahiak caribou

- Model harvest information – Use demographic models prepared in Strategy #7 to determine the potential affects of various harvest levels and management options. (No major costs) **Timeline: Fall 2006**
- Identify Total Allowable Harvest levels as set out in land claim agreements or as necessary to establish an acceptable level and sex composition of harvest that meets the management objective for a herd. (No major costs) **Timeline: Winter 2007**

Payback and Results

- ✓ Harvest levels will be documented.
- ✓ Harvest targets can be set to ensure herds can recover.

Strategy #9:

Identify, monitor and mitigate impacts of exploration and development activities and improve the understanding of the mechanisms for any impacts

- Review current and proposed wildlife effects monitoring programs established for diamond exploration and mining activities. (\$5,000) **Timeline: Fall 2006 – Ongoing**
- Review mitigation techniques used at diamond exploration and mining sites annually. (\$5,000) **Timeline: Ongoing**
- Establish wildlife effects monitoring programs for current and proposed oil and gas exploration and development activities. (No major costs) **Timeline: Winter 2007**
- Work with other government jurisdictions to track human impacts on caribou ranges by creating a central database of human activities (No major cost- initiative already identified between GNWT and DIAND, need to work with other jurisdictions) **Timeline: Winter 2007**

Action	2005/06	2006/07	2007/08	2008/09	2009/10
Review monitoring plans	\$0	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000
Review mitigation methods	0	5,000	5,000	5,000	5,000
Total	\$0	\$10,000	\$10,000	\$10,000	\$10,000

Payback and Results

- ✓ Development can proceed in a manner that minimizes impact on caribou herds and people who depend on these herds.

Strategy #10:

Develop models to assess the cumulative effects of human and natural impacts

- Use information collected in strategies 5 and 6 to evaluate caribou ability to buffer environmental conditions and human activity (No major costs) **Timeline: Spring 2008 – Ongoing**
- Incorporate mine-based monitoring of caribou activity with demographic and environmental information to model cumulative effects. (Workshop approach \$60,000 NEW) **Timeline: Winter 2007**

Action	2005/06	2006/07	2007/08	2008/09	2009/10
Cumulative Effects Workshop	\$0	\$60,000 (NEW)	\$0	\$0	\$0

Payback and Results

- ✓ An understanding of cumulative impacts is required to assess impact of new development activities.
- ✓ Facilitate the establishment of regional and site-specific thresholds for human activities and carrying capacities.

Strategy #11:

Develop and implement public information and education programs.

- Enhance NWT Wildlife web site with frequent updates and interactive pages. (No major costs) **Timeline: Winter 2006 – Ongoing**
- Produce communications and educational materials to inform residents of the status of caribou populations, conservation measures, actions they can take and compliance requirements in the NWT. (\$40,000 NEW) **Timeline: Spring 2006 – Ongoing**
- Support outdoor education programs in schools and the inclusion of existing caribou information in these and other school programs. (\$20,000 NEW) **Timeline: Ongoing**

Action	2005/06	2006/07	2007/08	2008/09	2009/10
Public Information	\$40,000 (NEW)				
Outdoor Education	\$20,000 (NEW)				
Total	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000

Payback and Results

- ✓ Improved public understanding will reduce wastage, over-harvesting and requirements for compliance actions and costs for justice programs.

Strategy #12:

Promote hunting excellence

- Ensure that hunters from all communities have access to firing ranges either near the community or at winter road check stations. (No major costs) **Timeline: Winter 2006**
- Provide hunters with targets for sighting in rifles and work with communities to identify opportunities to improve marksmanship (\$5,000 NEW) **Timeline: Fall 2006**
- Encourage elder-youth hunting to provide mentorship for inexperienced hunters. (No major costs) **Timeline: Ongoing**
- Provide information to hunters on safe hunting, animal selection, dressing carcasses and meat handling techniques. (\$5,000 NEW) **Timeline: Fall 2006 – Ongoing**

Action	2005/06	2006/07	2007/08	2008/09	2009/10
Improve Marksmanship	\$5,000 (NEW)				
Information Tools	5,000 (NEW)				
Total	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000

Payback and Results

- ✓ Improved marksmanship will reduce wounding and crippling losses.
- ✓ Meat wastage will be reduced.

Strategy #13:

Document and publicize community-based hunting rules

- Provide a source of funding for communities and elders to compile information on appropriate hunting methods and showing respect to animals. (\$30,000 per year for 3 years NEW) **Timeline: Winter 2008**
- Prepare posters or pamphlets for distribution to hunters. (No major costs) **Timeline: Summer 2006 – Ongoing**
- Use community radio to inform hunters of community based hunting rules. (No major costs) **Timeline: Ongoing**

Action	2005/06	2006/07	2007/08	2008/09	2009/10
Hunting Ethics	\$30,000 (NEW)	\$30,000 (NEW)	\$30,000 (NEW)	\$0	\$0

Payback and Results

- ✓ Caribou will be treated with respect by hunters.
- ✓ Hunting rules will reflect Aboriginal values and traditions.

Strategy #14:

Enhance compliance programs.

- Increase compliance activity on winter roads and at check stations. An increase in the number of patrols, weekend enforcement activities and hiring of community monitors to work with compliance personnel will result in increased costs for overtime, casual wages and travel by officers between regions. **Timeline: Winter 2006 – Ongoing**

Herd	2005/06	2006/07	2007/08	2008/09	2009/10
Porcupine	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000
Cape Bathurst	15,000	15,000	15,000	15,000	15,000
Bluenose West	15,000	15,000	15,000	15,000	15,000
Bluenose East	15,000	15,000	15,000	15,000	15,000
Bathurst	50,000	50,000	50,000	50,000	50,000
Ahiak	N/A ¹				
Beverly	15,000	15,000	15,000	15,000	15,000
Qamanirjuaq	N/A	N/A	N/A	N/A	N/A
Total	\$125,000 (NEW)	\$125,000 (NEW)	\$125,000 (NEW)	\$125,000 (NEW)	\$125,000 (NEW)

¹ Compliance activities for the Ahiak herd will be conducted along with either the Bathurst herd or the Beverly herd depending upon the winter distribution of the three herds.

Payback and Results

- ✓ Increased presence of officers will reduce infractions.
- ✓ Meat wastage will be reduced.

Strategy #15:

Work with the Department of Industry, Tourism and Investment and impacted communities to identify hardships caused by reduced caribou availability and identify possible solutions including alternate meat sources and alternate harvesting opportunities.

- Analyze economic implications arising from specific actions taken for caribou management. **Timeline: As required**
- Examine implications of shifting harvesting to other species. (No major costs) **Timeline: Fall 2006**
- Investigate alternate sources of country foods for hospitals, elder facilities, shut-ins and low income families. **Timeline: Winter 2006**
- Determine the current use of caribou in institutions. (No major costs) **Timeline: Spring 2006**
- Assist communities with identification of needy families or individuals. (No major costs) **Timeline: Winter 2006 – Ongoing**

Strategy #16:

Work with the Department of Industry, Tourism and Investment, outfitters and other commercial ventures to identify ways to maintain viability of businesses.

- Analyze economic implications of specific caribou management actions implemented. **Timeline: As required**
- Determine approach to mitigative business programs (could include business planning; product/market development; business relief). **Timeline: Spring 2006**
- Hold consultation meetings with industry. **Timeline: Winter 2006**
- Increase number of wolf tags available to non-resident hunters. **Timeline: Spring 2006**

