

Southern Mountain Caribou

Interim Review of Recovery Plan Progress



May 13, 2008

SciWrite

ENVIRONMENTAL SCIENCES LTD.

2339 Sumpter Dr., Coquitlam, B.C., Canada V3J 6Y3

ph: 604-469-6795 / www.sciwrite.ca

Disclaimer

Opinions expressed in the report are those solely of the author and do not necessarily represent the views of ForestEthics or any members of the Mountain Caribou Project.

EXECUTIVE SUMMARY

Protecting mountain caribou habitat has not been easy. Caribou biologists have defined caribou habitat in great detail. Using geographic information systems, they have extrapolated quantitative habitat descriptions from known caribou use areas to other areas throughout their existing and potential range. The biologists have classified existing and potential mountain caribou habitat into high, medium and low suitability. It would seem relatively simple to plot these on a map and declare them off limits to timber harvest and winter recreation, the two major threats. Lesser threats, such as fires and insect infestations, could be addressed by including old growth caribou habitat in the high priority areas for forest health management. Excessive predation that affects some caribou populations and not others could be reduced by culling predators in those areas. Yet, despite two decades of effort, a mountain caribou recovery plan has yet to be implemented.

Caribou biologists first published concern that southern mountain caribou may be endangered in 1975. American state and federal agencies declared the southern Selkirk population, which straddles the Canada-USA border, as endangered under the *Endangered Species Act* in 1984. As southern mountain caribou populations continued to decline, British Columbia began efforts to develop a recovery plan in 1988. A preliminary recovery plan was published in 1994, but was not implemented. The British Columbia government appointed a new team of biologists who produced a new recovery strategy in 2002. During this eight-year delay, the South Purcell population dropped from an estimated 90 caribou to 20, a 78% decline. Other populations followed similar trajectories.

In 2002, the Committee on Endangered Wildlife in Canada (COSEWIC), in anticipation of the passage of the Species at Risk Act, which would apply to transboundary populations, listed the southern mountain caribou (its definition included other populations that were not declining so severely) as “threatened.” In 2003, British Columbia listed them as “endangered” (Red List). Yet another scientific team was constituted in 2005 and produced a third set of “management options and related actions for mountain caribou” in 2006. In October 2007, the British Columbia government announced a new recovery strategy.

The 2007 strategy stated the government’s goal, “...to protect 95 percent of the high suitability winter habitat within identified herd areas”. The strategy listed specific commitments covering: public and commercial snowmobiling areas, commercial heli- and cat-skiing operations, forestry policy and forest management, mineral exploration leases, translocations of caribou from healthy populations to those in decline and refinement of recovery objectives by management unit. The purpose of this review is to evaluate progress towards meeting the government’s commitments at six months from the October 2007 announcement.

The principal difficulty of applying the latest version of the recovery strategy is the constraints imposed to protect commercial interests. These include:

- Incremental caribou habitat protection areas captured in this process (high and low suitability habitat combined) may not exceed 1% of the commercial timber harvest land base (THLB) throughout the mountain caribou range.
- Although the above cap will not affect the total amount of high-quality caribou habitat to be protected throughout their range, each of the habitat planning teams was also given an *a priori* cap on incremental THLB area that may be reserved for caribou in each planning unit and this is likely to limit the protection of available, high-quality habitat for certain herds.
- Beyond these caps, the main goal of protecting high quality habitat within the THLB is subject to “accommodations [that] will be made to protect local forest operator viability.”
- Protection of caribou habitat in the non-timber harvest land base (NHLB) may not affect the annual allowable cut (AAC) and forest operations in the short term, defined as five years or the next timber supply review (TSR), which is usually completed province-wide at five-year intervals.
- The Hon. Pat Bell (Minister of Agriculture and Lands) and the Hon. Rich Coleman (Minister of Forests and Range) have recently restated the foregoing as a policy of “no net loss” of short-term timber supply as a consequence of the caribou management plan.

These constraints imposed not only a requirement for consultation with parties that have a proprietary interest and other parties with a public interest, but also requires data-intensive modelling and mapping. GIS staff supporting local habitat and recreation teams of proposed caribou protection zones must iteratively analyze the spatial relationships of caribou habitat against commercial interests such as commercial backcountry recreation (CBR) tenures, timber supply areas (TSA) and tree farm licences (TFL). Stewardship Management Agreements (SMAs) must be negotiated with public recreation groups, again requiring iterative mapping. The modelling and mapping must address current conditions such as forest age and stand development and potential future caribou habitat and timber inventories as each stand matures. Draft maps must be presented to the habitat and recreation teams, revised for each new set of recommendations or management scenarios and presented again. This takes time. Consequently, government staff and stakeholders have undertaken an enormous amount of work for each step of progress.

In the course of this enormous effort, technical issues have inevitably arisen that have delayed progress on specific tasks, despite the desire and commitments of all parties to reach a timely conclusion. Examples are definitions of “non-harvestable land base” (NHLB) that vary by forest region, the need to identify and map fire and insect hazard zones, the need to analyse legal options for caribou habitat protection and the need to make and present new maps to stakeholders after each stage of analysis or negotiation. Delays have also resulted from objections by some interest groups – notably certain snowmobile clubs – to having territory withdrawn to protect caribou wintering areas. Following are areas of progress and lack thereof:

- End-of-fiscal-year budgetary transitions have introduced uncertainty into the personnel and funding available for this project. Some key staff have been reassigned.
- Despite enormous effort, the habitat component – protecting high quality caribou habitat from timber harvest – was not achieved by the target of Spring 2008 (i.e., March 21). Delays have been both technical (e.g., time needed to model habitat parameters,

complete spatial analysis, produce new maps for each round of negotiation, review impact on mill viability, analyse forest health management implications and produce “spatialized recommendations”) and interest-driven. The latter centres around the timber industry and associated private interest groups and government agencies defending timber supplies, while public interest groups seek broader extent of caribou habitat protection zones. Nevertheless, negotiations have largely been concluded and this component will probably be complete by the end of May.

- Public and commercial recreation closures to protect caribou habit were to be in place, with appropriate signage, an outreach program to advise recreationists, a system to monitor recreationists’ compliance and procedures to monitor caribou locations and movements and to advise recreationists, by spring 2008. There has been considerable work towards these targets, but they are not yet in place. Funding to assist snowmobiling organizations plan for and deal with closures, announced in October 2007, has not been provided pending establishment of closures or alternative control mechanisms. On the other hand, moratoria on new commercial backcountry recreation tenures in mountain caribou habitats were extended as per the announcement of October 2007. Delays in recreation closures are largely the result of the reluctance of certain snowmobile clubs to enter into Stewardship Management Agreements (SMAs) that are acceptable to the caribou science team and to public interest groups. However, approximately 13 SMAs are likely to be signed soon, and the government is preparing to legislate closures where agreement on SMAs cannot be reached. This component will probably be complete by the end of May.
- There has been no reportable caribou herd augmentation progress, although (a) regional wildlife management officials are planning population surveys in summer 2008 to determine whether potential source populations can support the removal of some animals, (b) further talks are planned with relevant First Nations and (c) a translocation workshop is planned for May.
- A variety of actions to control predator populations have been completed or are in progress and are generally on target.
- A Progress Board – a cross-sectoral committee – had not been established by its target date of Spring 2008. Its purpose is periodically review and evaluate the progress of the Mountain Caribou Recovery Implementation Plan, and to facilitate adaptive management. It appears to be on track for establishment by the end of May.

ACKNOWLEDGEMENTS

The author, Lee Harding, thanks Mark Zacharias and Doug Krogel of the Integrated Land Management Bureau and Steven Wilson of Ecologic Research on behalf of the Ministry of Environment for their input. Candace Batycki of ForestEthics directed the project.

TABLE OF CONTENTS

TABLE OF CONTENTS.....	IV
INTRODUCTION.....	1
METHODS.....	4
RESULTS.....	4
Scientific Basis of Recovery Strategy.....	4
Process.....	5
The Players.....	5
Terms of Reference.....	8
Commitments: the October 2007 Announcement.....	9
Progress.....	11
General Issues.....	11
Habitat.....	12
Managing Recreation.....	17
Predator Populations: Wolf and Cougar.....	19
Alternate Prey Populations: Moose and Deer.....	21
Transplanting Caribou.....	21
Adaptive Management: Habitat, Recreation and Predator-Prey Management.....	22
Progress Board.....	22
CONCLUSIONS.....	23
General.....	23
Habitat.....	23
Recreation.....	23
Caribou Population Augmentation.....	23
Predator Population Control.....	24
Adaptive Management.....	24
REFERENCES CITED.....	25
Appendix 1: Implementation Plan Terms of Reference.....	27
Appendix 2: Mountain Caribou Science Team’s Management Actions.....	28
Appendix 3: Government Commitments Regarding Forestry of November 28, 2007.....	29

Appendix 4: Hunting Regulations Changes..... 31

INTRODUCTION

The southern mountain caribou is a unique ecotype of woodland caribou (*Rangifer tarandus caribou*) that has evolved the ability to subsist on arboreal lichens, as opposed to terrestrial lichens that all other caribou and reindeer eat in winter. For this reason, they are also referred to as the “arboreal feeding” ecotype. In this ability, they contrast with the northern mountain ecotype of the central Coast Range and the northern Rocky Mountains that feed primarily on terrestrial lichens in winter. The latter are larger and have in the past been referred to as *R. t. osborni*. However, all British Columbia mountain caribou contain northern haplotypes and may be more closely allied genetically to Alaska-Yukon barren-ground caribou (*Rangifer tarandus granti*) than to woodland caribou. Although at least some populations of the southern mountain ecotype have been known to be declining since 1954 and thought to be endangered since 1974, there still is no effective recovery plan in place.

The southern mountain ecotype also has another trait that is unique among caribou: most populations have a twice-yearly altitudinal migration pattern. These caribou live in British Columbia's and Idaho's warm-moist Columbia Mountains that receive heavy snow accumulations, usually many metres deep. They spend the summer in alpine tundra and subalpine meadows, but as snows deepen in the autumn, they move to progressively lower elevations. This is similar to many ungulates of temperate mountains. What sets this ecotype apart is that in late winter, when snow blankets even the valley bottoms, the caribou move upslope into subalpine forests to where the deep snow allows them to graze on lichens high in the trees. In early spring they return to low elevations to graze on early greening vegetation of south-facing slopes and avalanche paths. It is their need for both low and high elevation mature forests that support high lichen densities that puts these caribou at risk from fires and logging.

In 2003, 12 populations of southern mountain ecotype – henceforth, “mountain caribou” – were recognized, but these have been consolidated to 11, or 13 if two small subpopulations in the Upper Fraser River population are counted separately. Eleven planning units enclose the populations (Figure 1). Tests of genetic distance and similarity suggest very strong differentiation between all mountain caribou local populations that have been sampled. The local population in the South Purcells is particularly distinct. In terms of genetic distance, the two populations sampled (Revelstoke and South Purcells) are more similar to several northern ecotype local populations than to each other.

In 1984, caribou in the Selkirk Mountains of Idaho and Washington (known as the South Selkirks population), were listed as endangered under the United States *Endangered Species Act*. This population moves back and forth across the US-Canada boundary.

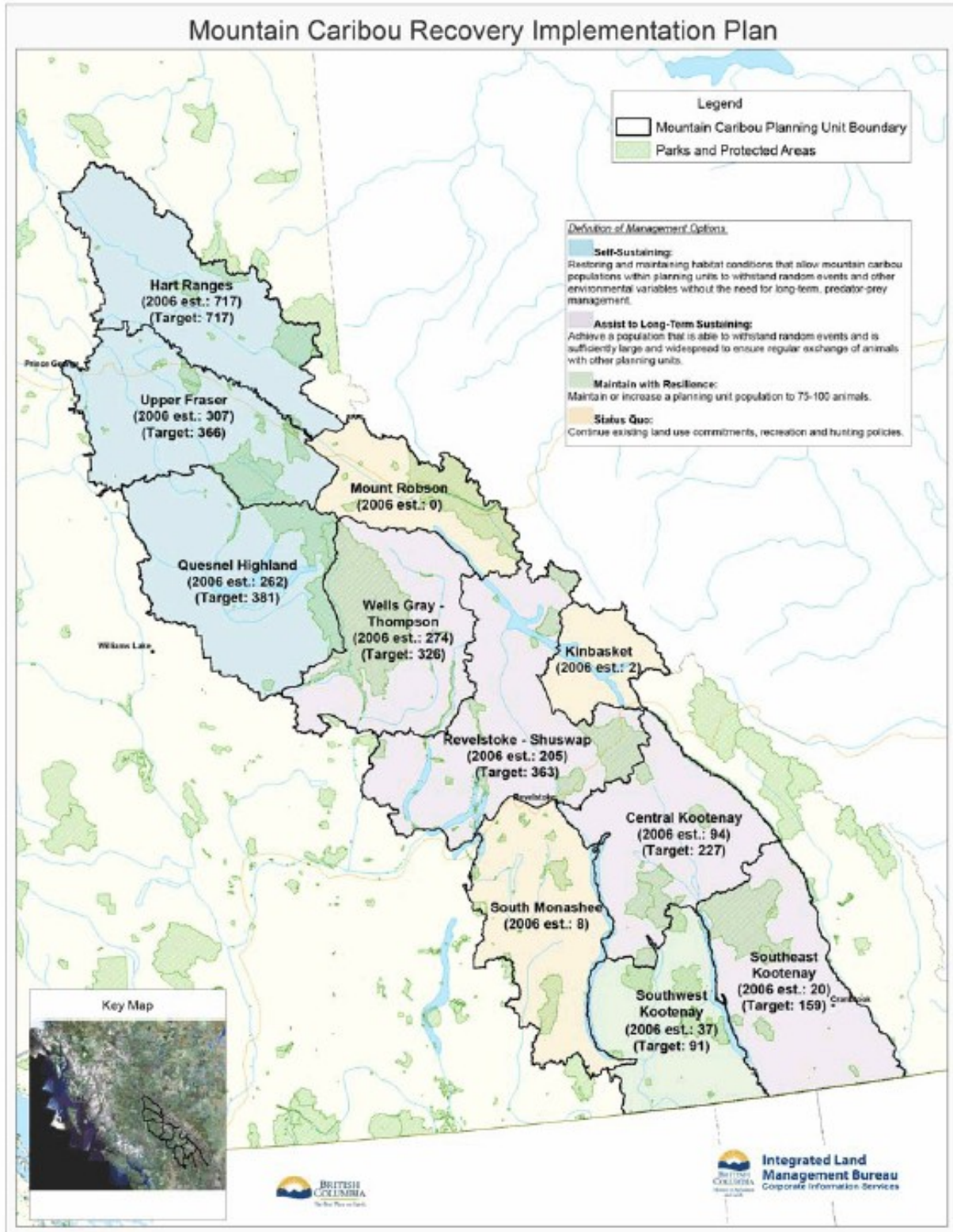


Figure 1. Map of Mountain Caribou Planning Units, 2006 population estimates and population recovery targets (from Habitat Terms of Reference, October 29, 2007).

In British Columbia, work began on a recovery strategy in 1988, culminating in a preliminary recovery strategy in 1994. However, this was not implemented and the government appointed another team, the Mountain Caribou Technical Advisory Committee, which included some of the same members. It produced another recovery strategy in 2002. During this eight-year delay, the Central Selkirk herd dropped from at least 265 to 103 caribou, a 61% decline, while the South Purcell population dropped from 90 caribou to 20, a 78% decline. Other populations followed similar trajectories.

Mountain caribou (somewhat differently defined to include populations in the central Coast Range) finally caught the attention of the Canadian Wildlife Service because, as a transboundary population, they would come under the impending new *Species at Risk Act*. COSEWIC listed them as “threatened” in 2002 (<http://www.sararegistry.gc.ca/> downloaded 27 March 2008). A federal “response statement” pursuant to the *Species at Risk Act*, which came into effect in 2004 (<http://www.sararegistry.gc.ca/> downloaded 27 March 2008) stated that:

Local herds in the Southern Mountains population are generally small, increasingly isolated, and subject to multiple developments. Their range has shrunk by up to 40% and 13 of 19 herds are declining. The most southerly herds are likely to disappear. Many herds are threatened by decreasing habitat quantity and quality, harassment and predation.

Meanwhile, the provincial government assessed their conservation status as S1 (Red List) on March 3, 2003. It confirmed this assessment again in 2006 (<http://a100.gov.bc.ca/pub/eswp/esr.do?id=16822>, downloaded March 29, 2008).

In 2005, the British Columbia Government reconstituted the recovery team as the “Mountain Caribou Science Team,” which has produced a number of scientific study summaries and action plans.

The *Species at Risk Act* (SARA s.42 & 43) sets timelines for completion of recovery strategies for species listed in Schedule 1 of the Act and requires that these strategies are prepared in cooperation and consultation with provincial and territorial governments, wildlife management boards, Aboriginal organizations and stakeholders the Minister considers appropriate. However, the recovery strategy for the Southern Mountain caribou population, due for posting on the SARA Public Registry by June 5, 2007 for a 60-day public comment period, is currently in default of this legal requirement. On June 6, 2007, the federal government posted the following statement as justification for the delay (<http://www.sararegistry.gc.ca/> downloaded 27 March 2008):

The recovery strategy for this species is in final stages of preparation. After it is completed, the Province of British Columbia will provide it to the Government of Canada for adoption and posting on the SARA Registry. Environment Canada will continue to work in cooperation with the Province of British Columbia to ensure a draft is completed and posted on the SARA Public Registry in a timely manner.

Because of the lengthy time that it has taken to develop an implementation plan, the repeated delays in implementation and the current status of default in meeting federal legal requirements, ForestEthics has retained SciWrite Environmental Sciences Ltd. (henceforth, “SciWrite”) to:

"...report on whether they (govt) are doing what they said they would do, whether they are meeting their timelines, whether they are producing the products they said they would, whether said products are effective, and to what extent they are developing appropriate tools and ensuring capacity is in place for ongoing effectiveness. This would be followed by a one-year report card in October." (Email from Candace Batycki, BC Endangered Forests Program Director, February 18, 2008).

SciWrite will provide a preliminary, six-month report on provincial actions to mid-April 2008 and a final report in October 2008.

METHODS

This review is based on published literature and unpublished documents posted on the federal and provincial governments' species-at-risk Web sites, or provided by the contacts mentioned in the Acknowledgements. This review is current to April 16, 2008.

RESULTS

Scientific Basis of Recovery Strategy

Since the early and very general paradigm that mountain caribou need old forests, scientists have greatly refined the factors affecting mountain caribou survival. Mountain caribou definitely need old forests with a heavy lichen growth . Recent research confirms that increasing amounts of early seral forest stages in a population's range are associated with mountain caribou population decline and extirpation . Old forest alone, however, will not save them. They are also affected by fragmentation of habitat by roads , predation, especially by wolves and cougar and winter recreation, especially snowmobiling and cat-skiing . Scientific data such as these provide the basis of recovery planning in British Columbia.

Protection of caribou and their habitat is simple in concept, if not implementation. Examples are winter recreation – keep it away from winter caribou habitat – and timber harvest – don't log caribou winter habitat. Others are more complex. The issue of predation, for example is multifaceted. Predator populations increase when their primary prey increase and in south-eastern British Columbia, their primary prey are deer, elk and moose. Habitat modifications that discourage caribou encourage these species. However, when predator populations are high, they opportunistically take caribou when they can . Therefore, one approach to reducing predators is to reduce their primary prey populations and this can be done through direct manipulation of prey populations – hunting – and indirect manipulation of their habitat. A more aggressive approach is to cull predator populations. Finally, when particular caribou populations have fallen so low that they may not survive without intervention, their populations can be augmented by moving caribou from healthy population areas and releasing them where they are imperilled. All of these are components of the British Columbia recovery strategy.

The table released with the October 16, 2007 news release (Appendix 2: Mountain Caribou Science Team's Management Actions) has sections on:

- recreation management (mostly dealing with public snowmobile closures and commercial backcountry recreation tenure management),
- primary prey population management (liberal moose, deer and elk hunting regulations),
- primary prey habitat manipulation (primarily by changing silvicultural prescriptions to avoid creating better ungulate winter range),
- predator population management (wolf and cougar hunting or culling),
- caribou population management (e.g., augmentation) and
- caribou habitat management (mostly by limiting timber harvest, but also including other approaches).

These general categories are refined and adapted individually for eight of the 11 planning units. For three of the planning units (South Monashee, Kinbasket and Mount Robson) no recovery actions are planned and the strategy assumes that these populations will go extinct where they have not already.

Process

The Players

Federal Mountain Recovery Team

The Mountain Caribou Recovery Team (Southern Mountain Population) listed on the SARA Web site, last updated November 14, 2007, downloaded March 29, 2008) are:

Table 1. Federal Mountain Caribou Recovery Team (Southern Mountain Population), November 14, 2007.

Member	Affiliation
Ian Hatter, Chair	Government of BC
Dave Butler	Other
Anna Fontana	Other
Daryl Hebert	Industry
Trevor Kinley	Private consultant
Scott McNay	Industry
Brian Nyberg	Government of BC
Dale Seip	Government of BC
John Surgenor	Government of BC
Max Tanner	Government of BC
Liz Williams	Government of BC
Guy Woods	Government of BC
Jim Young	Government of BC

At least one of the above, cited as with the Government of BC, is no longer a government employee.

The International Mountain Caribou Technical Committee meets irregularly to share information between agency staff in BC and the US, with a focus on the trans-boundary South Selkirk herd. The last meeting was January 31, 2008.

Provincial Recovery Teams

The Mountain Caribou Technical Advisory Committee that produced the 2002 recovery strategy was reconstituted as the Mountain Caribou Science Team in 2005. Its members as of October 16, 2007, were:

Table 2. Mountain Caribou Science Team, October 16, 2007

Member	Affiliation
Clayton Apps	Private consultant, Calgary, AB
Harold Armleder	BC Ministry of Forests and Range, Williams Lake
Dennis Hamilton	Private consultant, Nelson BC
Ian Hatter	BC Ministry of Environment, Victoria
Trevor Kinley,	Private consultant, Invermere BC
Dr. Bruce McLellan	BC Ministry of Forests and Range, Revelstoke
Dr. Scott McNay	Private consultant, Mackenzie, BC
Dr. Dale Seip	BC Ministry of Forests and Range, Prince George
Rob Serrouya	Private consultant, Revelstoke, BC
John Surgenor	BC Ministry of Environment, Kamloops
Greg Utzig	Private consultant, Nelson, BC
Dr. Steve Wilson	Private consultant, Gabriola, BC
Guy Woods	Private consultant, Nelson, BC (formerly BC Ministry of Environment)
Wayne Wakkinen	Idaho Fish and Game, Bonners Ferry, Idaho

The Mountain Caribou Science Team undertakes or contracts original research into the habitat relationships and requirements, demographics and predator-prey relationships of mountain caribou. It also works with government officials and other contractors to apply the results of research to the problems of bringing resource management and resource users into line with the needs of mountain caribou.

For each planning unit, the science team and planners evaluated a range of possible management actions in a hierarchy ranging from “status quo” (maintaining current protection

procedures, but no new or incremental management prescriptions) through “maintain current population,” “maintain with resilience,” “assist to long term sustaining” to “naturally self-sustaining.” All reasonable options under these categories were listed for each planning unit in a 27-page table, “Management Options and Related Actions for Mountain Caribou in British Columbia,” July 19, 2006. The definitions, principles and assumptions and feasibility of each option for each management unit are detailed in an associated, eight-page document of the same date .

Caribou Directors

Provincial actions are coordinated and options for recovery are prioritized by a committee of Caribou Directors that meets approximately weekly, often by teleconference. Its members represent various programs within the Ministry of Agriculture and Lands and Ministry of Forests and Range. This committee liases with other Ministries (e.g., Ministry of Environment, MOE and Ministry of Energy, Mines and Petroleum Resources, MEMPR) and brings in specialists or other agency representatives as needed. Officials who have attended meetings during January–March 2008 included those listed in the following table, although not all attended every meeting and not all are necessarily full-time members:

Table 3. Participants at the Caribou Director's meetings.

Participant*	Affiliation
Bill Marshall	Timber Supply Areas, Ministry of Forests and Range
Liz Williams	A/Director, Integrated Land Management Bureau, Ministry of Agriculture and Lands
Doug Krogel	Backcountry Recreation and Caribou Recovery, Integrated Land Management Bureau, Ministry of Agriculture and Lands
Tavis McDonald	Ministry of Forests and Range
Ralph Archibald	Ministry of Forests and Range (former MOFR lead; now reassigned)
Mark Zacharias	Formerly Director, Species at Risk Coordination Office (SaRKO), Integrated Land Management Bureau, Ministry of Agriculture and Lands (now reassigned)
Kurt Huettmeyer	Ministry of Forests and Range
Peter Lishman	Integrated Land Management Bureau, Ministry of Agriculture and Lands (moving to another position in April 2008)
Amy Tipler	Integrated Land Management Bureau, Ministry of Agriculture and Lands
Tracy Thomas	Integrated Land Management Bureau, Ministry of Agriculture and Lands
Steve Wilson	EcoLogic Research (Contractor)
Chris Pasztor	Integrated Land Management Bureau, Ministry of Agriculture and Lands

Dan Peterson | Ministry of Forests and Range (to assume MOFR lead from Archibald)

*This list was compiled from the participants at most meetings and does not necessarily represent the official members.

In addition to the above, Alec Dale, Norm Marcy, Rod Davis, Mike Geisler, Dave McBeth, Frank Wilmer, Jim Britton and Pat Field attended one or two meetings during January-March 2008.

There is also a separate Policy Team.

Local Planning Teams

Local planning teams (also referred to as local planning tables) have been established for each planning unit for habitat (five teams) and recreation (six teams). Habitat teams include representatives from Ministries of Environment (MOE), Forests and Range (MFR) and Tourism, Sports and Arts (MTSA) and are chaired by ILMB. First Nations participate as observers. Recreation teams include representatives from First Nations, Ministries of Environment and Tourism, Sports and Arts (MTSA) and are chaired by ILMB, except that the Wells Gray-Thompson team also has an MFR representative. All have GIS support.

Stakeholders

Several interest groups have input to the process, including several First Nations, the Mountain Caribou Project (a coalition of environmental groups including BC Nature, Canadian Parks and Wilderness Society, Conservation Northwest, ForestEthics, Fraser Headwaters Alliance, North Columbia Environmental Society, Quesnel River Watershed Alliance, Sierra Club of Canada BC Chapter, Shuswap Environmental Action Society and Wildsight), Valhalla Wilderness Society, Applied Ecological Stewardship Council of BC, logging industry associations, snowmobile clubs, commercial recreation associations, commercial recreation operators, and timber harvest companies. Government has also received ~12,000 comments from individual members of the public.

Terms of Reference

Terms of reference for the major categories of actions have been developed to guide the local habitat planning teams and central ministry officials. These are:

- Habitat Terms of Reference, final draft October 26, 2007 with proposed changes dated November 29, 2007,
- Forest Health Team Terms of Reference approved December 3, 2007,
- Tenured Commercial Recreation Terms of Reference final draft October 26, 2007,
- Public Snowmobiling Terms of Reference final draft dated November 15, 2007,
- Predator/Prey Component Terms of Reference (no date, Adobe file date-stamped March 18, 2006); there is also an "Interim Strategy for Predator/Prey Management Actions in Support of Mountain Caribou Recovery: Fiscal 07/08 and early fiscal 08/09," no date or author, file: <07-08 Interim Predator-Prey Strategy Final mar13.doc>, and
- Progress Monitoring Board Terms of Reference, draft dated February 2008.

Commitments: the October 2007 Announcement

At this writing, there is no single document that represents the official, provincial recovery strategy or implementation plan. The strategy consists of a news release and background documents in the following categories, each of which refers to multiple documents (hyperlinks are active; from <http://ilmbwww.gov.bc.ca/sarco/mc/index.html>, downloaded March 27, 2008):

- **Mountain Caribou Recovery Strategy Background Materials**
 - [Mountain Caribou Science Team Background Documents](#)
 - [Draft Recovery Strategy Documents](#)
 - [Draft Recovery Strategy Associated Maps](#)
- **Mountain Caribou Recovery Implementation Plan**
 1. October 16, 2007 [News Release](#) [PDF]
 2. [Backgrounder](#) [PDF]
 3. [Implementation Plan Documents](#)
 4. [Questions and Answers](#)

Planned recovery actions were summarized for the public in the October 16, 2007 news release referred to above. They were (text in Arial font is verbatim from the Backgrounder, "Details on Mountain Caribou Recovery Actions"):

1. Protect mountain caribou habitat from logging and road building

- The Mountain Caribou Science Team identified habitat loss and fragmentation as the underlying cause of mountain caribou population declines with mortality by predators as the secondary cause of recent declines since 1995. Halting and reversing this habitat loss is central to the Recovery Implementation Plan.
- Increase the amount of fully protected high suitability winter mountain caribou habitat from 65 per cent to 95 per cent by spring, 2008. These changes will protect 2.2 million hectares within the mountain caribou range. Accommodations will be made to protect the viability of key resource sectors and to address isolated or otherwise ineffective habitat by increasing protection elsewhere, ensuring future recruitment of high suitability habitat.

2. Responsibly managing human recreational activities in habitat areas

- Activities such as snowmobiling and commercial winter backcountry recreation (e.g., heli-skiing, cat-skiing) can displace mountain caribou from their preferred habitat. The Recovery Implementation Plan commits government to work with users to manage their activities in a manner that does not displace mountain caribou. The Association of British Columbia Snowmobile Clubs, British Columbia Snowmobile Federation and Heli-Cat Canada all have memorandums of understanding (MOUs) with the province to reduce impacts on mountain caribou through training, best practices, monitoring and information sharing.
- In areas where activities threaten to displace mountain caribou these areas will be legally closed to those activities in spring, 2008.

Consultations with users are currently underway and agreements on both legal and voluntary closures for mountain caribou have already been reached with snowmobile clubs in the Cranbrook and Creston Valley areas. In addition, government will provide up to \$75,000 funding to develop alternative snowmobiling opportunities outside of identified mountain caribou herd areas as well as additional funding to monitor compliance within legal and voluntary closure areas.

- On March 22, 2007, the Province provided \$50,000 to the British Columbia Snowmobile Federation (BCSF) and \$11,000 to the Association of British Columbia Snowmobile Clubs (ABCSF) to develop best management practices, education and outreach materials, implement a public awareness campaign for snowmobilers while operating in mountain caribou habitat, to purchase and install signage; to monitor snowmobile use and compliance with closures; and to provide information on mountain caribou movement and locations to snowmobilers.
- In addition, the current moratorium (section 16 Land Act reserve) on new commercial backcountry recreation applications in southern mountain caribou habitats will be extended for five years to allow time to implement and monitor the effects of recently developed best practices by the commercial backcountry recreation sector. A second moratorium on new commercial recreation tenures over the balance of the mountain caribou range will be enacted for one year until habitat and backcountry recreation planning is completed.

3. Manage predator populations of wolf and cougar where they are preventing the recovery of caribou

- Although habitat loss was identified by the Science Team as an underlying cause of mountain caribou population declines, high predator populations and unsustainable predation rates on mountain caribou are secondary contributors to significant declines in mountain caribou populations since the mid-1990s.
- Habitat protection alone will be insufficient to reverse negative population trends. The Recovery Implementation Plan commits government to undertake a variety of measure to address unsustainable predation rates on caribou. These measures include changes to hunting regulations to increase harvest of cougars and wolves, supporting non-lethal control measures such as wolf sterilization and the targeted removal of individuals or packs where there is a scientific determination of immediate threat to recovery of mountain caribou herds.

4. Manage the prey of mountain caribou predators to re-balance the predator-prey system.

- The Recovery Implementation Plan commits government to research and implement actions to reduce moose and deer populations in key areas through habitat management and hunting regulations to rebalance the predator-prey system.
- These measures include changes to hunting regulations to increase harvest of deer and moose in or adjacent to core mountain caribou habitats to reduce opportunistic predation on mountain caribou by wolves and cougars.

5. Boost caribou numbers in small herds by transplanting caribou to ensure herds achieve recovery

- Augmenting small mountain caribou populations (10-50 individuals) with animals transplanted from elsewhere can increase population growth rates and more quickly reduce the demographic risks associated with small populations.
- The Recovery Implementation Plan commits government to augmenting the southernmost mountain caribou herds as well as work cooperatively with First Nations to develop maternity pens for the southernmost herds to protect mountain caribou newborn and calves from predators.

6. Support adaptive management and develop effective monitoring plans for habitat, recreation and predator-prey management.

- Implementation of the recovery plan will be monitored closely and outcomes assessed to determine whether the strategy needs to be modified in order to meet the recovery goals. In addition, research addressing knowledge gaps will be supported.
- The Recovery Implementation Plan includes the development of adaptive management and effectiveness monitoring plans for habitat, recreation and predator-prey management both within core mountain caribou habitat areas as well as other areas that contribute to connectivity and predator reduction.

7. Establishment of a cross-sector Progress Board by spring 2008 to advise government on the Recovery Implementation Plan.

- Implementation of the recovery plan will be periodically reviewed by government and key sector representatives from the Association of British Columbia Snowmobile Clubs, British Columbia Snowmobile Federation, Council of Forest Industries, ForestEthics, Heli-Cat Canada, Interior Lumber Manufacturer's Association, the Mountain Caribou Project and other stakeholders.

The recovery strategy and actions recommended for recovery of the 11 planning units are given in Table 4, Appendix 2: Mountain Caribou Science Team's Management Actions. On October 15, 2007, the Integrated Land Management Bureau (ILMB) clarified some of its intended actions in an open letter from Kevin Jardine, Assistant Deputy Minister, to members of the Mountain Caribou Project. These did not, however, alter the timing or substance of the public announcements that were made the following day. On November 28, 2007, government officials further refined their commitments regarding forestry (see Appendix 3: Government Commitments Regarding Forestry of November 28, 2007).

Progress

General Issues

Budget and Staffing

At the March 10 Caribou Directors meeting it was noted that:

- There is a budget shortfall and staff were trying to secure base budget for ILMB,

- Auxiliaries were to be extended until June 30th; jobs were to be posted over next few months, and
- Replacements were being considered for some key personnel who would be “transitioning to other projects.”

At the April 16 Team Leads meeting, it was noted that some Caribou Directors were, or soon would be, no longer working on this project and that a transition plan was in progress.

First Nations Consultations

First Nations consultations cover a variety of issues. Following is the schedule so far (from March 3 Directors’ meeting):

- A workshop planned for February 25 in Williams Lake regarding the Progress Board was postponed to late April,
- A meeting with North Shuswap First Nations is planned for the third week of April,
- A meeting with the K’tunaxa planned for April 22 has now been delayed to May 5, and
- A meeting with the Uklatcho First Nation is planned for May 13 regarding use of the Itchuz-Ilgatchus caribou population as a source for transplants.

Habitat

The government’s commitment was to “increase the amount of fully protected high suitability winter mountain caribou habitat from 65% to 95% by spring 2008. These changes will protect 2.2 million hectares within the mountain caribou range.” (October 16 Backgrounder, quoted above). This figure is the same in the draft Habitat Terms of Reference (last modified December 6, 2007).

On April 11, 2008, the Hon. P. Bell, Minister of Agriculture and Lands, reiterated the above commitment and added that:

“Currently, 64 percent of the 2.2 million hectares is under some form of protection. That would include provincial parks, federal parks, wildlife habitat areas or areas defined in land use management plans that exclude any sort of industrial activity. Of the remainder, there are approximately 380,000 hectares identified for incremental protection. Of those, 77,000 fall within the timber harvesting land base, and 300,000 fall in the non-timber harvesting land base. The overall objective of the plan is to protect 95 percent of the high winter suitability habitat for the caribou.”

Habitat in most of the planning units “... will be spatialized... [except in the] North Thompson and central Selkirk, where they may not be identified spatially, but they may use an adaptive management model over time to provide that incremental protection because of the nature of the regions – harder to spatialize those two particular landscape units.”

These targets will be achieved by a combination of (a) not logging old forests in certain areas, (b) allowing previously logged, young forest stands to be recruited into the old forest inventory by not logging in the future, (c) not managing for ungulate winter range (UWR for moose, deer and elk) adjacent to caribou habitat (this has to do with designing the type of logging to result in a forest with certain characteristics), (d) adding caribou habitat to the area

included in “forest health” management areas, i.e., combating insect infestations, (e) adding caribou habitat to the area in which forest fires are suppressed and (f) in one case, purchasing private land as caribou habitat.

The habitat component is complex and multi-faceted. To measure achievements, the relevant ministries must decide on the actions that are feasible and appropriate for each planning unit, measure the spatial extent of caribou habitat (i.e., forest) affected by these actions and then total up the hectares of each action in each planning unit to meet the target of “2.2 million hectares within the mountain caribou range.” Hence, GIS work is intensive and iterative because the spatial extent of each proposed option must be mapped, measured, presented to stakeholders, negotiated – re-mapped and re-negotiated if necessary – and finalized.

The Habitat terms of reference (October 29, 2007) gave these targets:

- By 31 January 2008: Spatialized recommendations for approval by the Directors Team, by Planning Unit, of incremental habitat [high suitability winter habitat within identified herd areas that reasonably minimize impacts on mills and operators in the short term (i.e. within five to 10 years) that meets government’s objective of protecting 95% of the high suitability winter habitat, and
- By 31 March 2008 (end of deferral period): Advice on legal protection of the spatialized recommendations referred to above.

Proposed incremental habitat maps have been produced for all planning units. Those on the public SaRCO Web site (last revised February 9, 2007) are (hyperlinks are active in this list):

[Central Kootenay](#) Planning Unit 2B
[Hart Ranges](#) Planning Unit 6
[Kinbasket](#) Planning Unit 3B
[Quesnel Highland](#) Planning Unit 5B
[Revelstoke - Shuswap](#) Planning Unit 3A
[Southeast Kootenay](#) Planning Unit 1B
[South Monashee](#) Planning Unit 2A
[Southwest Kootenay](#) Planning Unit 1A
[Upper Fraser](#) Planning Unit 5A
[Wells Gray - Thompson](#) Planning Unit 4A

However, more recent working drafts have been prepared by the local habitat teams and discussed with stakeholders. Proposed THLB caribou habitat protection area maps for most planning units (except Central, Southeast and Southwest Kootenay) had been drafted by January 31, 2008. As of the April 16 Team Leads meeting, all of the near-final THLB maps with existing and incremental caribou protection zones except those for Cariboo and Revelstoke planning units had been posted for review by stakeholders, but none of the NHLB maps had been finalized.

The following topics make up the effort to protect 2.2 million hectares of caribou habitat:

Timber Harvest Land Base (THLB)

Officials have evaluated the demand and supply of timber and impact on saw mills and pulp mills of the various proposals. This is necessary because the government has limited

mountain caribou recovery actions to those that will not affect mill viability (see below). The following progress has been reported:

1. An analysis of timber supply and demand by region was completed in November 2007. It showed that across all regions, the timber supply is in balance with the demand, with northern market areas having a surplus. The market areas that contain caribou habitat generally do not have enough timber to meet demand and the East Kootenay region has the most severe deficit (-12% in 2006, the last year for which data were available). However, the deficit was decreasing in 2006, relative to 2004 and 2005.

2. Policy constraints place upper limits on the amount of caribou habitat that can be protected because protection of mill viability takes precedence. In particular:

- Incremental THLB captured in this process (high and low suitability habitat combined) cannot exceed 1% of THLB (115,000 ha) throughout the mountain caribou range. Over all, however, the 1% cap will not limit the amount of caribou habitat that will be protected, as the Hon. Pat Bell (Minister of Agriculture and Lands) explained on April 11:

"... 1 percent of the THLB in the region works out to 115,000 hectares, and the commitment was to 77,000 hectares. So the ability for us to deliver on the commitment of 95 percent high suitability winter habitat can be met easily within the 1 percent cap."

- However, each of the habitat planning teams was given an *a priori* cap on incremental THLB area that could be protected as caribou habitat in each planning unit. For example (correspondence from ILMB February 13, 2008):

"The habitat target for the Cariboo-Chilcotin planning unit has been capped at 25,000 ha in consideration of forest licensee viability... however, ...the amount of high suitability winter habitat [is] approximately 48,000 ha."

- Protection of caribou habitat in the NHLB may not affect the annual allowable cut (AAC) and forest operations in the short term, defined as five years or the next timber supply review (TSR), which is usually completed province-wide at five-year intervals.
- The Hon. Pat Bell and the Hon. Rich Coleman (Minister of Forests and Range) have recently restated the foregoing as a policy of "no net loss" of short term timber supply as a consequence of the caribou management plan (reported in the March 31, 2008 Caribou Directors meeting minutes).

The potential impact on the mills was discussed with licensees in early April. A meeting is planned for April 30 to determine the next steps (April 14, 2008 Caribou Directors meeting). Latest progress as of April 16 (Team Leads meeting) was:

- Legal orders for variances on higher level plans for the Kootenays, Revelstoke and Kamloops planning units were being drafted;
- Discussion with licensees was required before finalization;
- The review period for First Nations, ENGOs and licensees had not been decided;
- There was a need to look at wording around flexibility because of concerns of licensees regarding maps; and

- A review of options for each planning unit was planned for late April; issues regarding Revelstoke planning units, status quo and incremental habitat were highlighted.
- Legal orders for timber harvest higher level plan variances was expected be complete by May 15.

Non-Timber Harvest Land Base (NHLB)

The “Non-Timber Harvest Land Base” (NHLB) is forest lands that have been identified as not harvestable for various reasons, such as being inoperable, having no commercially valuable and accessible timber, or being in protected status. MOFR expects to add 300,000 hectares from the NHLB to the caribou habitat inventory (forestry meeting November 28, 2007, Appendix 4).

However, some timber in the NHLB is, actually, harvested (for example, by helicopter in areas previously considered unharvestable), and the definition of NHLB is rather fluid as technology and the value of timber change. Moreover, different forest regions define NHLB differently, creating difficulty in uniformly mapping it in different planning units. There has, therefore, been some jockeying for position regarding details of the application of the NHLB to protection of caribou habitat, for example:

- At the January 14 Caribou Directors meeting, it was decided to define the NHLB as that land above the productive forest zone, rather than the operability zone. This may reduce the area available for protection as caribou habitat, while increasing the area available for future timber harvest, when either economic or technological constraints to harvesting in this zone are reduced.
- There has been considerable discussion at the committee level about when and under what conditions the government would protect caribou habitats in this zone from fire and insect infestations.
- A March 5, 2008 proposal from one of the local habitat teams (Wells Gray-Thompson), to which the Mountain Caribou Project objected, proposed adjustments to procedures for defining caribou habitat within the NHLB.

As of April 16 (Team Leads meeting):

- Team Leads were reviewing the first draft of non-THLB maps and area (hectares) affected.
- Planning unit 2B “still has some issues.”
- The Cariboo-North Thompson habitat team was still working on second draft of the NHLB map.

Mining

MEMPR will review recommendations for creation of protective measures by local habitat planning teams. “It is likely that much of the 77,000 ha proposed will have some Conditional Registration Reserve notation in Mineral Titles on Line. In some cases, No Registration Reserves may be established,” . A new “Mines Land Use Brochure” was being finalized in late March (March 17, 2008 Directors’ meeting).

Forest Health (Insects and Fire Protection)

Insect infestations and diseases threaten caribou habitat just as they do commercial timber inventories. Protecting forests from insects such as the western hemlock looper will therefore protect caribou habitat. The challenge for the GIS teams is to determine which forest stands may need protection that are not already protected by existing forest health programs, developing protection programs for these areas and adding their hectares to the caribou habitat inventory.

Status: No specific targets or deadlines were included in the October announcements. Terms of Reference approved December 3, 2007, assigned a Forest Health Team and committed it to providing “recommendations for approval by the Directors Team, by Planning Unit, of forest health management strategies to compliment the habitat component of the Mtn Caribou Recovery Plan” by February 29, 2008. A draft of this document dated March 25, 2008 was provided “to the Local Habitat Tables for stakeholder review.” It outlines recommended approaches to management of six of the major forest insect pests (four species of bark beetles and two species of defoliators) and fire protection. The draft forest health report was had been reviewed by stakeholders and was being finalized as of the April 14 Caribou Directors meeting.

A political decision was taken that there will be “there will be no recruitment areas for fire or forest health issues,” i.e., areas damaged by insects and fire will not be compensated by increasing protection of high suitability habitat elsewhere. This policy decision, which seems contrary to the government’s commitment (see Commitments, page 9) was reported at the February 25 Directors’ meeting following a meeting with the ADMs. It has not yet been determined whether this decision will affect the government’s commitment to protect 2.2 million ha of caribou habitat.

On the other hand, the Ministry of Forests and Range is to add caribou habitats to fire protection zones. Herd experts and GIS staff were to divide the landscape units into high, medium and low priority for fire protection (March 3, 2008 Caribou Directors meeting).

Latest progress (from April 16 Team Leads meeting):

- Digital mapping of fire protection zones required GIS support to identify and map three different types of fire zones (based on risk); the data would then be sent to the Fire Protection Branch; data for North Thompson and Prince George planning units were outstanding; and data for Kootenay and Cariboo were available on the FTP site.
- The Cariboo-North Thompson habitat planning team had not completed the fire-zoning identification.

Legal Options

As noted above, the government committed to “reserve from harvesting areas within the non-THLB ... as mountain caribou habitat through a legal order or variance to land use plans.” A draft “*Regulatory measures for the protection of caribou habitat*” that identified potential legal designations for habitat protection was completed November 16, 2007. The Caribou Directors decided to use the following mechanisms where and when necessary (Steve Wilson, pers. comm., April 7, 2008):

- limit mining exploration using registration reserves as noted above under Mining, page 15,

- restrict timber harvest by various mechanisms under the Land Act (e.g., variance orders for Higher Level Plans), Forests and Range Practices Act (e.g., Government Actions Regulations) and Wildlife Act (e.g., establishment of Wildlife Management Areas),
- close areas to public access by establishing Wildlife Management Areas or other protected area designations, and
- amend operational plans for commercial backcountry recreation tenures under the Land Act.

Tables showing which legal and non-legal mechanisms will be used to protect caribou habitats have been prepared for each planning unit.

Managing Recreation

The Association of British Columbia Snowmobile Clubs, British Columbia Snowmobile Federation and Heli-Cat Canada all had memoranda of understanding (MOU) with the province to reduce impacts on mountain caribou prior to the October 16 announcement.

Target 1: Legally close important caribou wintering areas by spring 2008

Status: Doug Krogel, Manager of Backcountry Recreation with the Integrated Land Management Bureau, provided this update and explanation (*in lit.* April 7, 2008):

"The process for establishing closures has been delayed, slightly. Because the incremental habitat was not yet established, it took a bit to get the recreation piece going. Local agency staff are currently in discussions with snowmobile clubs to develop proposals for snowmobile opportunities through Stewardship Management Agreements (like in Creston area). These draft SMAs will be assessed relative to the risk to recovery (displacement) of caribou. If that risk is considered unacceptable, those areas will be closed using legal means, likely the Wildlife Act. When those legal closures are in place depends on the process that must be followed when enacting any such closure - First Nations consultation, public advertising, etc. Ministry of Environment is the agency that would undertake the implementation of that. I anticipate that my recommendations regarding which areas should be managed under an SMA and which should be legally closed will be forwarded to decision makers in early June."

Maps (Adobe pdf files) of proposed closure areas were posted on the SaRCO Web site in October 2007 as follows (hyperlinks are active in this list):

Mountain Caribou Science Team Proposed Heliski Closure Areas

[Upper Fraser/Hart Ranges](#) Planning Unit 5A/6

[Quesnel Highland](#) Planning Unit 5B

[Revelstoke - Shuswap](#) Planning Unit 3A

[Wells Gray - Thompson](#) Planning Unit 4A

Mountain Caribou Science Team Proposed Snowmobile Closure Areas

[Central Kootenay](#) Planning Unit 2B

[Upper Fraser/Hart Ranges](#) Planning Unit 5A/6

[Kinbasket](#) Planning Unit 3B

[Mount Robson](#) Planning Unit 4B
[Quesnel Highland](#) Planning Unit 5B
[Revelstoke - Shuswap](#) Planning Unit 3A
[Southeast Kootenay](#) Planning Unit 1B
[South Monashee](#) Planning Unit 2A
[Southwest Kootenay](#) Planning Unit 1A
[Wells Gray - Thompson](#) Planning Unit 4A

More recent working drafts of proposed closures have been prepared by each local recreation team, presented to stakeholders and revised at least once. A graphic was prepared (February 5, 2008) outlining a decision framework to determine if closures are needed in any particular area. It allocates responsibilities to the science team and planning teams for input, the backcountry recreation manager to decide on the level of risk to caribou recovery, the latter's recommendation to close or not close and Directors and Assistant Deputy Ministers (ADMs) to make the final decision.

At least 13 SMAs have been drafted with snowmobile clubs. As of the April 14 Caribou Directors meeting, no closures were in place and no SMAs had been signed, although several were very close. The Policy Team was to review draft of legal closure orders by May 15. Currently (April 16 Team Leads meeting):

- The Revelstoke recreation team was working on the final words on SMAs for Hamling and Silvercup Ridge, and will then discuss them with clubs' executives,
- The Prince George (planning unit 5A and 6) team was planning an "information session" for April 16 to "get moving on SMAs."
- Some clubs may refuse to sign SMAs, in consequence of which the government will consider closing caribou habitat by legal order.

Target 2: Provide ≤ \$75,000 for alternative snowmobiling alternatives outside of caribou habitat

Status: These funds have not been distributed pending completion of the SMAs, although there have been requests (Doug Krogel *in lit.* April 7, 2008).

Target 3: Provide additional funding to monitor voluntary and legal closures

Status: Funds have not been allocated because no closures have been established. Doug Krogel (*in lit.* April 7, 2008) noted that, "Allocation of funds will depend on an assessment of the potential for compliance and enforcement workload for any closures (voluntary and legislated)."

Target 4: Funds were provided in March 2007 to the British Columbia Snowmobile Federation (BCSF) and the Association of British Columbia Snowmobile Clubs (ABCSF) to develop outreach materials, implement a public awareness campaign, purchase and install signage, monitor compliance with closures and provide information on mountain caribou movement and locations to snowmobilers.

Status: Doug Krogel (*in lit.* April 7, 2008) noted that, "Any public awareness campaign will follow on the finalization of the closures so that accurate maps of where it is acceptable and unacceptable to snowmobile can be provided to the public."

The draft (November 15, 2007) Public Snowmobiling Terms of Reference gave a January 31, 2008 deadline to end discussions with stakeholders and present recommendations to the Caribou Directors. By March 31, 2008, the Directors were to approve all stewardship management agreements (SMA) with local clubs necessary to minimize displacement of mountain caribou. However, this now awaits completion of an "Effectiveness Monitoring" workshop with commercial operators, NGOs, Science Team herd experts, academics and agency staff scheduled for early May in Kelowna (Doug Krogel, *in lit.* April 7, 2008).

Target 5: Extend current Land Act Section 16 moratorium on commercial backcountry recreation (CBR) applications for 5 years.

Status: The moratorium has been implemented and will expire on March 16, 2013.

In December 2007, an MOU was signed with the British Columbia Helicopter and Snowcat Skiing Operators Association. These associations will participate in the workshop mentioned above.

Target 6: Second moratorium on new commercial backcountry recreation tenures over the balance of mountain caribou range for one year.

Status: Implemented soon after the October 2007 announcements and will expire October 15, 2009 (i.e., two years instead of one).

Predator Populations: Wolf and Cougar

Target 1: Change hunting regulations to increase harvest of cougars and wolves (no date set in October 2007 announcement).

Status: Complete and on-going. In the 2007–2008 hunting season, the bag limits for wolves and cougar were eliminated and seasons were extended in selected management units (see Appendix 4: Hunting Regulations Changes, page 31). On the other hand, on February 7, 2008, MOE made the following announcement:

"The Ministry of Environment has closed the cougar hunting season in five Management Units of the East and West Kootenay. The closure will take effect at midnight Thursday, February 07, 2008.

"The closure is guided by the regional cougar management program to reduce the potential for over-harvesting of the cougar population in the area. The season closes 72 hours after public notification once the quota of 5 female cougars has been reached. The closure covers the following Wildlife Management Units: 4-05 to 4-08, and 4-20. The cougar pursuit-only season will remain open until February 28, 2008."

The above seems inconsistent with the commitment, but according to Mark Zacharias (pers. comm. April 3, 2008) it is consistent because of the success of target removal of male cougars (see Target #3 below). The interim predator control strategy confirms this position.

Target 2: Non-lethal control (no date set)

Status: Experimental sterilization of selected wolves has been initiated in the Quesnel Highlands and other northern planning units .

Target 3: Targeted removal of individuals or packs

Status: Implemented and ongoing. Wolf populations are high in the North Thompson and growing in the west Kootenays. Wolf removals began on a pilot scale in 2002 in the Quesnel Highland Planning Unit (5-B, Wells Gray North) and are continuing in early 2008. Selective removals will be initiated in Narrow Lakes, South Purcells and potentially Columbia South in early fiscal 2008–2009 .

Problem male cougars have been eliminated in the southern Selkirks, where a good crop of new caribou calves has been documented, resulting in an increase of that population to 43 in 2007. However, calf survival remains low in the Southern Purcell population, last estimated (2007) at 16 caribou.

Predator/Prey Component Terms of Reference (document not dated, but Adobe file date-stamped March 18, 2008) have been developed that outlines a process for making decisions on the above targets. It has these dates for “key project deliverables” (parenthetic comments after each item give current status):

- By January 1 of each year document proposed regional ungulate harvest allocations for consultation that are consistent with the Provincial Predator Prey Management Strategy (complete for 2008),
- By October 30, 2007 hold a provincial workshop to draft predator management actions for 2007-2008 and develop the principles of a long-term predator management strategy (completed later in 2007),
- By December 15, 2007 draft an interim predator management strategy (drafted March 18 as noted above),
- By January 31, 2008, hold a provincial workshop to draft prey management actions for 2008-2009 and develop the principles of a long-term prey management strategy (the workshop was held and a draft strategy has been circulated for comment),
- By January 31, 2008 have endorsement of the interim predator management strategy and measures by MOE executive (correspondence dated February 13, 2008 indicated that this is complete),
- By March 31, 2008 implement actions outlined in the interim predator management strategy (the March 13 strategy indicates most actions are complete, in progress or on-going),
- By April 30, 2008 draft a long-term predator-prey strategy suitable for consultation with First Nations and stakeholders. (this target is “on track:” Steve Wilson pers. comm., April 7, 2008),
- By April 30, 2008 develop a communications plan for the predator-prey strategy (this target is “on track:” Steve Wilson pers. comm., April 7, 2008), and
- By June 30, 2008 have MOE executive approval for the predator-prey strategy (this target is “on track:” Steve Wilson pers. comm., April 7, 2008).

A full predator-prey strategy has been drafted and will be peer-reviewed and circulated to stakeholders for comment this spring.

Alternate Prey Populations: Moose and Deer

Target 1: Increase harvest by hunting regulations changes for deer and moose.

Status: Implemented and on-going (see Appendix 4: Hunting Regulations Changes, page 31). However, regional biologists are unsure whether these measures will have the desired effect (Steve Wilson pers. comm., April 7, 2008).

Target 2: Unspecified habitat management

Status: The actions needed are still under consideration. A February 13, 2008 letter from ILMB stated that:

“Government is committed to further research to examine the need to manage the matrix habitat in the Hart, Upper Fraser, and Quesnel Highlands to reduce moose and deer densities adjacent to mountain caribou habitats. This research will commence in April, 2008 and is expected to be completed in fall, 2008 whereupon if this need is scientifically documented and supported by the Science Team, government will manage identified habitat areas to reduce ungulate densities.”

The Caribou Directors have decided not to recruit Ungulate Winter Range (UWR) adjacent to caribou habitat except in limited circumstances. For example in the George River area, an area of UWR reserve (i.e., reserved from timber harvest) that is ineffective for caribou will be removed and the same area of protection applied to high-value caribou habitat. In most situations, however, ungulate biologists felt that the effect on moose and deer would be negligible and it could even adversely affect caribou habitat (Steve Wilson pers. comm., April 7, 2008). Further modeling of predator-prey relationships has been contracted.

Transplanting Caribou

Target 1: Herds with 10-15 caribou to be augmented (this would be the South Purcell population, which had about 20 in the 2006 census and 16 in 2007).

Status: In Idaho, a total of 103 caribou was transplanted to the south Selkirks population between 1987 and 1998. Attempts were made to transplant caribou to the South Purcells during 2001 to 2005, but no transplant was completed. The issues that delayed augmentation included concerns about source population viability, First Nations concerns about the source population in the Itcha- Illgachuz Mountains and concerns about the suitability of release areas to support caribou, such as habitat quality, predation levels and recreation management controls.

In a February 13, 2008 letter, ILMB stated that:

“MOE will be conducting a population census for the Itchuz-Ilgatchus in summer, 2008 to determine whether the population can support the removal of animals for augmentation into the South Selkirks and South Purcells. Should the census indicate that the donor population is sufficiently robust to support translocations, consultation with First Nations will be initiated to support the augmentation program. In the event that the Itchuz-Ilgatchus is unable to withstand removal of animals for augmentation government will explore other areas of the province for donor animals as well as examine options for maternity penning and captive breeding.”

A translocation workshop is planned for early May. In addition, the Caribou Directors were planning a meeting with the Ulkatcho Band, a Carrier Nation tribe in April to seek their cooperation for using the Itchuz-Ilgatchus caribou population as a source for transplants (March 17, 2008 Caribou Directors meeting).

Therefore, no further progress can be reported on this item.

Target 2: First Nations to develop maternity pens for southernmost herds.

Status: No progress or even action was reported at the Caribou Directors meetings, but this may be included in First Nations consultations, particularly with the K'tunaxa First Nation as noted above. Originally, this was intended to be in conjunction with translocation, but if the attempts at translocation continue to fail, this concept could be use with females captured from local herds. Canadian Parks and Wilderness Society retained a consultant (Chris Steeger of Pandion) to report on this possibility.

Adaptive Management: Habitat, Recreation and Predator-Prey Management

Target: No deadline set.

Status: Not implemented; “Discussion around adaptive management” (Mt. Caribou Directors meeting minutes March 17, 2008). This is one of the roles of the Progress Board (see next item).

Progress Board

This is to be a cross-sectoral advisory group to be established “by spring 2008” that would :

“...periodically review and evaluate the progress of implementation activities for all management levers of the Mountain Caribou Recovery Implementation Plan, and to provide information and feedback on recovery implementation to government, constituent groups and the public.”

Target: Originally (October 2007) to be implemented “by spring 2008”; later amended to “by January 2008” (November 28, 2007 meeting).

Status: Not implemented as of April 16. Terms of Reference were still in draft in March 2008. A meeting is planned for May 1 (Mt. Caribou Directors meeting minutes March 31, 2008 – this meeting was held).

CONCLUSIONS

General

1. Communications between the federal and provincial governments on this issue are weak.
2. End-of-fiscal-year budgetary transitions have introduced uncertainty into the personnel and funding available for this project.

Habitat

3. The habitat Terms of Reference (Mountain Caribou Implementation Plan Terms of Reference Habitat, dated November 29, 2007) are still in draft stage. Various components are discussed at regular meetings of the Caribou Directors Committee. Habitat teams are working on habitat inventories and maps under various proposed options. The target "by spring 2008," i.e., March 21, was not met.
4. The "spatialized recommendations" (i.e., maps of recommended habitat protection zones) to be produced by January 31, 2008, were still in draft – although several were in final or near-final stage – and being discussed by committees as of April 16, 2008.
5. The draft forest health report had been reviewed by stakeholders and was being revised as of the April 14 Directors' meeting. The Forest Health schedule given in the December 3, 2007 Terms of Reference is slipping somewhat, but may still be on track for completion "in the spring" i.e., before June 21.

Recreation

6. Public and commercial recreation closures to protect caribou habit were to be in place, with appropriate signage, an outreach program to advise recreationists, a system to monitor recreationists' compliance and procedures to monitor caribou locations and movements and to advise recreationists, by spring 2008. There has been considerable work towards these targets, but they are not yet in place.
7. Funding to assist snowmobiling organizations to plan for and deal with closures, announced in October 2007, has not been provided pending establishment of closures or alternative control mechanisms.
8. A moratorium on new commercial backcountry recreation tenures in mountain caribou habitats was to be extended for five years and a second moratorium on tenures covering the balance of mountain caribou range was to be put in place for one year. These targets were met soon after the October 2007 announcements.

Caribou Population Augmentation

9. There has been no reportable caribou herd augmentation progress, although (a) regional wildlife management officials are planning population surveys in

summer 2008 to determine whether potential source populations can support the removal of some animals, (b) further talks are planned with relevant First Nations and (c) a translocation workshop is planned for May.

Predator Population Control

10. A draft predator control strategy (Terms of Reference) has been circulated for review and comment. It establishes target dates for certain actions, some of which have been met. An implementation plan (“Interim strategy for predator/prey management actions”) describes actions that are complete, in progress and planned through the 2008–2009 fiscal year. Actions to control predator populations are generally on target.
11. Hunting seasons and bag limits have been liberalized with the goal of reducing alternate prey populations (moose and deer). However, regional biologists are unsure whether these measures will have the desired effect.
12. Despite considerable effort by habitat teams and caribou biologists, no apparent progress has been made in reducing habitat quality for alternate prey species (moose and deer).

Adaptive Management

13. No deadline was set for adaptive management and it has not been implemented. There was “Discussion around adaptive management” at the Caribou Directors meeting of March 17, 2008. However, it is one of the roles of the Progress Board (see next item).
14. The Progress Board, to be implemented by January 2008 (November 28, 2007 meeting) had not been implemented by April 16. (A meeting was held May 1.)

REFERENCES CITED

APPENDICES

Appendix 1: Implementation Plan Terms of Reference

Implementation Plan Terms of Reference and associated documents from http://ilmbwww.gov.bc.ca/sarco/mc/habitat_tor.html, accessed March 27, 2008

Mountain Caribou Habitat Protection Component

Protection of High Suitability Mountain Caribou Winter Habitat

[Habitat Component](#) [PDF]

Research of High Suitability Mountain Caribou Winter Habitat

[Forest Health Component](#) [PDF]

Recreation Component

Public Recreation

[Public Snowmobiling Component](#) [PDF]

[Public Recreation Decision Framework](#) [PDF]

[Public Recreation Decision Framework Flow Chart](#) [PDF]

Commercial Recreation

[Tenured Commercial Recreation Component](#) [PDF]

[Memorandum of Understanding](#) [PDF]

Commercial Recreation Best Management Practices Framework
(coming soon)

Predator/Prey Management Component

[Predator/Prey Component](#)

Augmentation Management Component (coming soon)

Adaptive Management and Research Component (coming soon)

Cross- Sector Progress Board Component (coming soon)

Appendix 2: Mountain Caribou Science Team’s Management Actions

Table 4. Mountain Caribou Science Team’s management actions required to achieve the management objective for each planning unit for the SaRCO Draft Mountain Caribou Recovery Strategy (from http://ilmbwww.gov.bc.ca/sarco/mc/mc_recovery_strat_docs.html, downloaded March 27, 2008)

SARCO Draft Mountain Caribou Recovery Strategy								
Incremental Management Action Required for recovery of planning unit population								
Planning Unit	Recommended Option	Recreation management	Primary prey population management	Primary prey habitat management	Predator population management	Caribou population management	Caribou habitat management	Notes/Rationale
1A Southwest Kootenay	Maintain with resilience	Compliance with current snowmobile closures	Liberalized moose and white-tailed deer harvest in and adjacent to caribou habitat	No UWR management for primary prey adjacent to caribou habitat	Enhanced cougar management	Augmentation likely required	Private land acquisition/management required (24K ha), 3K ha additional crown land	Assisted long-term sustaining would require significant additional connectivity habitat to the north
1B Southeast Kootenay	Maintain with resilience	Additional snowmobile closures in core habitat	Liberalized moose and white-tailed deer harvest in and adjacent to caribou habitat	No UWR management for primary prey adjacent to caribou habitat	Enhanced cougar management	Augmentation approximately 15 animals/year for 3 years, monitor outcomes	End partial cutting in caribou habitat	Assisted long-term sustaining would require significant additional connectivity habitat to the north
2A South Monashee	Status quo							To achieve maintain with resilience would require significant additional habitat protection, intensive predator and primary prey management; subpopulation poorly studied and reasons for decline poorly understood
2B Central Kootenay	Assisted long-term sustaining	Additional snowmobile closures	Liberalized moose and white-tailed deer harvest in and adjacent to caribou habitat	No UWR management for primary prey adjacent to caribou habitat	Enhanced cougar and wolf management	Augmentation could be considered in Duncan valley	Increase retention in current partial harvest caribou habitat	Subpopulation currently <100 animals but potential for increase without augmentation in Naskup herd area; Duncan valley herd might not be recoverable
3A Revelstoke-Shuswap	Assisted long-term sustaining	Additional snowmobile closures and CBR reduction	Liberalized moose and white-tailed deer harvest in and adjacent to caribou habitat	No UWR management for primary prey adjacent to caribou habitat	Enhanced wolf and cougar management	Augmentation might be required in Columbia South subpopulation	Assume little or no incremental habitat required	Self-sustaining population requires extensive management of primary prey habitat
3B Kinbasket	Status quo							Very difficult to recover due to very small estimated population (2 animals)
4A Wells Gray-Thompson	Assisted long-term sustaining	Additional snowmobile closures (RIG) and CBR reduction	Liberalized moose harvest in and adjacent to caribou habitat	No UWR management for primary prey adjacent to caribou habitat	Enhanced wolf management		No harvest in core caribou habitat (RIG)	Self-sustaining population requires extensive management of primary prey habitat
4B Mount Robson	Status quo							No resident subpopulation but parts of planning unit is used by other subpopulations
5A Upper Fraser	Assisted long-term sustaining	Additional snowmobile closures (RIG)	Liberalized moose harvest in and adjacent to caribou habitat	No UWR management for primary prey adjacent to caribou habitat	Enhanced wolf management		No partial harvest in core caribou habitat (RIG)	Self-sustaining population requires extensive management of primary prey habitat
5B Quesnel Highland	Assisted long-term sustaining	Additional snowmobile closures (RIG)	Liberalized moose harvest in and adjacent to caribou habitat	No UWR management for primary prey adjacent to caribou habitat	Enhanced wolf management		No partial harvest in core caribou habitat (RIG)	Self-sustaining population requires extensive management of primary prey habitat
6 Hart Ranges	Assisted long-term sustaining	Additional snowmobile closures (RIG)	Liberalized moose harvest in and adjacent to caribou habitat	No UWR management for primary prey adjacent to caribou habitat	Enhanced wolf management		No partial harvest in core caribou habitat (RIG)	Subpopulation stable-increasing

Appendix 3: Government Commitments Regarding Forestry of November 28, 2007

Government Meeting November 28th 2007 YVR Fairmont

TOPIC	ISSUE	ACTION	WHO	WHEN
Meeting Purpose	What is the structure of the process and linkage to the board and the boards role	Linkage to the board roles will come later. See discussion on Progress Board below		
NHLB	Interpretation of whether the incremental habitat is a cap or a target?	The only situation where that may arise is where you can get the population number and not use all of the THLB budget		
NHLB	Define NHLB?	The forest land base that is not included in the THLB (there is an expectation of getting 300,000 hectares)	Directors Team	
		Intent is to freeze the forestry footprint within the caribou zones. The commitment is to protect the caribou habitat in the NHLB. Glossary in the TOR		
NHLB	Assuming blocks anywhere will have the opportunity to use mitigation tools for voluntarily dropping blocks	Yes		
NHLB	Forest Health is not addressed in this discussion paper	This will be addressed when the map is done		
Forest Health	FH commitment in incremental only does not make sense	Directors to discuss and make a decision if this bullet applies, or gets removed Post TOR when done		
2:1 Forest Health Recruitment	Recruitment Language for forest Health	The intent of this language should be addressed in the adaptive management TOR. It stays for now and will be addressed when the other levers are defined on the ground and we move into developing the AM TOR.		
Mill Viability	Existing Process will not work. Document that came out last week from Peter Jacobsen	Report can be distributed to everyone	Ralph to Peter then out to table members	Nov 27th
Mill Viability	What kind of information will be provided in the mill viability analysis	"An Analysis of Interior Timber Supply and Demand Conditions" will be distributed to the group		

		<p>This information will be taken by companies and make some inferences from this study to material impact to their mills or operations (blumes, species mix)</p> <p>Any bright ideas on how to resolve this economic test, will be welcomed.</p>		
Habitat TOR	Change log	<p>Will be posted on the web with the changes, Access to share point site to view changes will be set up for members of this group. Standing conference call for all members to be on the board to be set once a month.</p>		Peter to send out details next week
Process Board	<p>Role of Board?</p> <p>What role would be the Progress Board be advisory to?</p> <p>With no TOR, what are the interim objectives of this group</p> <p>"Other stakeholders", how do we select other members</p> <p>Role of Government Agencies</p>	<p>Advisory in nature, opportunities for feedback to government, feedback to each other to have fair input. Role should be able to shape and make recommendations to government. Role should be monitoring progress and making recommendations to Directors team on where the issues are, where we are lagging behind and offer up solutions to maintain the commitments to the objective.</p> <p>Feed into the directors team</p> <p>Straw Dog to members on TOR including criteria F/Nations? Environment Canada will have a place at the table</p> <p>Directors Committee is part of the Board</p>		<p>Peter by January</p> <p>Peter</p>

Appendix 4: Hunting Regulations Changes

The following text was copied verbatim from: Appendix I. Changes to Predator Seasons in Mountain Caribou Recovery Areas 2007-8 .

Wolves

Wolf Hunting Season in caribou recovery areas in Region 3 (MU's 3-34 to 3-44) was extended to Aug 1 - June 15 and the bag limit eliminated. Previously, the season was Sept 10 - Mar 31 with a bag limit of 3. Bag limits for wolves in caribou recovery areas in Regions 5 (MU's 5-2, 5-15) and 7A (MU's 7-2 to 7-9, 7-16 to 7-18, 7-23) were also eliminated.

The wolf trapping season in Region 3 (same MU's) was extended by one month to March 31. The previous season was Oct 15 to Feb 28

Cougars

Cougar Hunting Season in caribou recovery areas in Region 3 (MUs 3-34 to 3-44) opened almost 11 weeks earlier (on Sept 1). Previously, the season was Nov 15 - March 31.

Cougar seasons in Region 4 attempt to balance data that suggests past harvest has not been sustainable in some portions of the region with caribou recovery objectives that require minimizing predation risk. The anticipated reduction in harvest will be small.

Bag limits were changed to a bag limit of 1 cougar for the entire region. Previously the bag limit was 2 in the West Kootenays, 1 in East Kootenays. Season dates were changed to Sept 10 - Feb 28 or until female quota reached; previously went to March 31 in West Kootenays, Feb 28 in East Kootenays.

Sub-regional quota: Female quota for M.U.s 4-1 to 4-4, 4-21 to 4-26, 4-34 to 4-37, 4-40 is 10; for M.U.s 4-9, 4-14 to 4-19, 4-27 to 4-33, 4-38, 4-39 is 10; for MUs 4-5 to 4-8, 4-20 is 5. Previously East Kootenays was 20, West Kootenays was 25. Three of the 4 caribou recovery areas in Region 4 occur in the West Kootenay (only 3 MU's are not in one of these 3 recovery areas). Three MU's in the East Kootenay are in a caribou recovery area and this regulation will institute a separate quota for these units with the goal of maintaining recent levels of kill.

A new cougar season was opened in Region 7A (MU's 7-2 to 7-9, 7-16 to 7-18, 7-23) from Sept 10 to March 31, bag limit 2. Compulsory Inspection is required.

Black Bears

The spring Black Bear Hunting Season in caribou recovery areas in Region 3 (MU's 3-34 to 3-44) was extended by 2 weeks to April 1-June 30. Previously, the season was April 1 - June 15.

New trapping seasons for Black Bear were opened in Region 3 ((MU's 3-34 to 3-44) from Oct 1 -May 31 and in Region 4 from Oct 15 - May 15. Trapping season was extended in Region 5 (MU's 5-2 and 5-15) to Oct 1 - May 30 from Oct 15 - May 15. Trappers can take 2 black bears under a trapping licence (in addition to 2 bears under a hunting licence). Note: Trappers harvesting black bear must use only a firearm or bow, conventional trapping methods (snare, leg-hold traps, etc.) are prohibited.