

Setting Alberta on the Path to Caribou Recovery

Eric Denhoff

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Executive Summary

Alberta, like much of the rest of Canada, faces dramatic and urgent decisions to protect the remaining great caribou herds from the cumulative effects of climate change, human interaction, and other threats.

There is little doubt that human industrial, recreational and settlement activities have impacted these herds, and in many cases reduced them to near extinction.

Alberta can be proud of having committed perhaps more money and resources than any other jurisdiction in Canada towards research and innovation in relation to caribou protection. Nonetheless, it faces the challenge of herds in real danger of rapid decline or extirpation.

In the midst of both tremendous pressure on the herds, and the worst economic recession in the natural resource sector in many decades, Alberta has the tough job of balancing precautionary measures necessary for the protection of caribou, with a duty to be cautious in implementing radical change that might inadvertently exacerbate economic challenges.

Caribou come first. That's the law, and that's the right thing to do.

Alberta needs to work with Indigenous peoples, who have lived side by side with caribou successfully for tens of thousands of years; with energy and forestry industries; with communities and the Government of Canada to preserve these great herds, and protect Aboriginal and Treaty rights in doing so.

How Alberta resolves this decades-long issue could have profound impacts on jobs and communities.

No easy task. A solution has eluded provincial governments for decades.

This report will make substantial recommendations to rapidly accelerate habitat recovery in some areas; protect habitat in different ways in different places; embark on a unique undertaking with Indigenous peoples changing the way Alberta and Indigenous peoples face caribou protection issues together; and imposing some of the toughest operating conditions on natural resource industries anywhere.

Alberta has always been an innovator, and this report suggests Alberta move to the forefront in Canada in protecting caribou using common sense, difficult choices, large-scale innovation and sheer effort, with a resolute focus to complete all caribou range plans for all herds in Alberta by the end of 2017, but with special emphasis to conclude plans for three important areas by the end of this year.

Much of the work to date regarding caribou protection in Alberta has involved studying the situation. Strong scientific research effort has been expended to begin to explore and understand the caribou and both threats and opportunities for preservation.

Now is the time to act.

Consider that, in the Little Smoky and A La Peche ranges, Alberta has engaged in no less than ten separate study/stakeholder engagement or task force approaches to reviewing and recommending, over the last thirty or forty years.

Having studied the situation for decades, time is running out for action.

This report identifies specific strategies for six ranges, elements of which can be applied to some or all of the remaining range plans.

This is a story of tough choices—in some range areas, the ability to preserve 65% of habitat over time to ensure caribou survival is a reasonable and quite an achievable goal.

In other areas, the overwhelming level of human activity is so stunningly complete that the complex array of threats (climate change, predators, wildfires, intensive industrial activity, mountain pine beetle, invasions of large scale competing wildlife species and on and on) mean that even the most aggressive habitat protection measures may fail to assure the survival of the herds.

Only thirty or forty years ago, most of the A La Peche and Little Smoky range area was wilderness. Today, by some estimates, 95% of that area is disturbed, and through Government's design of an extremely effective and efficient forest industry in the area, thousands of jobs now depend on the harvesting of wood from the very wilderness and habitat which has supported these caribou for thousands of years.

Industry sincerely believes that they can responsibly operate in these areas and at the same time preserve sufficient habitat for caribou to survive.

They make the point that historic natural events which self-managed the environment and species no longer occur—wildfires are eradicated rather than allowed to burn; wolf and other populations have almost doubled in some areas and require control; moose and other game roll into new areas that were formerly difficult to access, bringing more wolves with them who in turn, also consume caribou.

So the wilderness is now so managed, it is no longer wilderness. Managed wildlife, managed forestry, managed energy extraction, managed predator control.

Forestry and energy experts argue that limited, controlled, well-planned and science-based approaches to harvesting and extracting can work in harmony with caribou.

Others argue that most large-scale industrial activity must be removed from caribou habitat to protect their survival.

And while it excites some of the greatest concern and opposition among the public, my most challenging finding personally is that the caribou of the Little Smoky and A La Peche caribou ranges simply will not survive unless wolf control continues. Virtually no stakeholder I spoke with disagreed with this, though all were familiar with public revulsion over it, some intimately so.

As habitat recovers over time, it will presumably, eventually—in many years—be possible to eliminate active wolf control on a regular and continuing basis.

In every area of Alberta, in every range, sorting out the levels and kinds of activity which may be undertaken requires the delicate balancing of caribou protection with the need for a sustainable economy, the need for jobs, and the necessity to respect Aboriginal and Treaty rights. Ultimately, caribou come first, and federal law requires each province and territory to develop range plans that protect, over time, at least 65% of that habitat or face federal intervention.

There is no easy solution – virtually all the forest fibre in the province has been allocated to companies, so there are few large areas without forestry allocations on which local mills and jobs by the thousands depend.

Where there are fewer forestry interests, there are mining or oil or gas or agricultural interests.

So every decision requires care, not just the duty of care and duty of caution to preserve caribou, but the duty of care and duty of caution to make sure that in finding solutions, unnecessary economic disruptions are not made beyond those necessary to preserve the caribou and their necessary habitat.

This report will clearly outline those choices and a host of suggested immediate actions to address them.

It will recommend immediate action in four distinct areas of Alberta, and the completion of remaining range plans by the end of 2017:

1. A dramatic increase in protected land to the north of the existing Chinchaga Wildland Provincial Park, extending wildland park status to an additional 347,600 hectares, effectively quintupling the existing park size and in a single stroke, forever preserving almost 25% of the Chinchaga caribou range. A complete range plan must be in place by the end of 2016, showing the plan to achieve 65% habitat protection over time.

2. Further large additions of 1,469,879 hectares of protected area covering the Bistcho, Yates and Caribou Mountains caribou ranges, bringing them to 61%, 72% and 72% permanent protection, respectively.

Altogether, this will create over 1,800,000 hectares of new permanent protection for the Chinchaga, Bistcho, Yates and Caribou Mountains ranges, for a total of 3,158,000 hectares of permanent protection in these ranges. This is a dramatic increase in Alberta habitat protection, offering a large, solid foundation on which to complete range plans in Alberta's north.

No new park or protected area is without cost. These actions will have impacts on future and forestry harvesting and have some potential impacts on some future energy developments inside parks, but will demonstrate Alberta is serious about taking action now, to protect habitat.

3. An immediate commitment by the Alberta government to a new co-operative range management process with appropriate Indigenous members of the Alberta Treaty 8 Tribal Association, forest companies, environmental non-government organizations (ENGOS) and others to establish a range plan for the area around forest zone F23 and Red Earth, west of Wood Buffalo National Park and south of Caribou Mountains Park.
4. Major changes and new innovations in the Little Smoky and A La Peche area to enhance herd survival, limit forestry activity and energy activity in the caribou ranges here and insist on the most dramatic seismic line habitat restoration in Alberta history.

These four initial range plan steps provide for the completion of range plans in these areas by the end of 2016, with Alberta's remaining range plans complete by the end of 2017.

Introduction

Woodland caribou are threatened in Alberta and Canada, and efforts to halt their decline and recover the species have been ongoing for decades. These efforts were renewed with the release of the federal recovery strategies for boreal and southern mountain caribou in 2012 and 2014, respectively. Since that time, Alberta has been engaged in a difficult conversation on maintaining caribou on a working landscape in the Little Smoky and A La Peche caribou ranges (LS/ALP) in western Alberta.

These ranges are the most challenging landscape in Canada for the achievement of federal recovery strategy objectives. The Little Smoky is considered the most disturbed range in Canada; both populations co-exist with forest industry that is highly dependent on forests within the range, and beneath them lie some of the most valuable energy resources per unit area in Alberta.

My recommendations will identify opportunities to advance a made-in-Alberta approach to protecting these populations from further decline, and ensuring their persistence in the landscape, while at the same time providing some security to local communities. Further, I have identified caribou ranges to the north where more protection is possible, towards ensuring Alberta's caribou populations are maintained for future generations.

Context

Alberta kicked off its more recent range planning work with the LS/ALP caribou ranges in the spring of 2013, initiating a multi-stakeholder advisory group (MSAG) that included Indigenous peoples, forest products industry, energy industry, municipal and environmental and other non-government organizations. While the broad inclusion of stakeholders was considered positive by participants, many have noted to me that the Government may have underestimated the degree of conflict between some parties, and appeared unwilling to table information or proposals that might precipitate strong conflict. As a result, their opinion was that the discussion was superficial, and failed to produce constructive solutions.

The Government was presented with a draft range plan by a cross-ministry team in the summer of 2014. Aware of the unresolved conflict from discussions with key stakeholders, the Government directed staff to work with the forest and energy sectors to identify a means to resolve key questions on the co-existence of industry and caribou. This culminated in the appointment of the Ministerial Task Force by Ministers Fawcett and Oberle in the spring of 2015. This Task Force provided its report to Government in July 2015, identifying four options that spanned the solution space for range planning in the

LS/ALP, including bookends that highlight the potential impact of management missteps to caribou, industry and local communities.

While this report constructively advanced the discussion, by failing to include Indigenous, municipal and environmental representatives, it lost important credibility. I was appointed in December 2015 to review the report with stakeholders, including representatives to the original MSAG, understand their perspectives and viewpoints on the work and caribou recovery, and make recommendations to Government on how to resolve the situation.

Scope

My terms of reference originally identified my scope as the LS/ALP. With the approval of Ministers, I extended my investigations to the northwest of the province, where I identified opportunities in the immediate future to advance caribou recovery through large scale protected areas and innovative range planning processes.

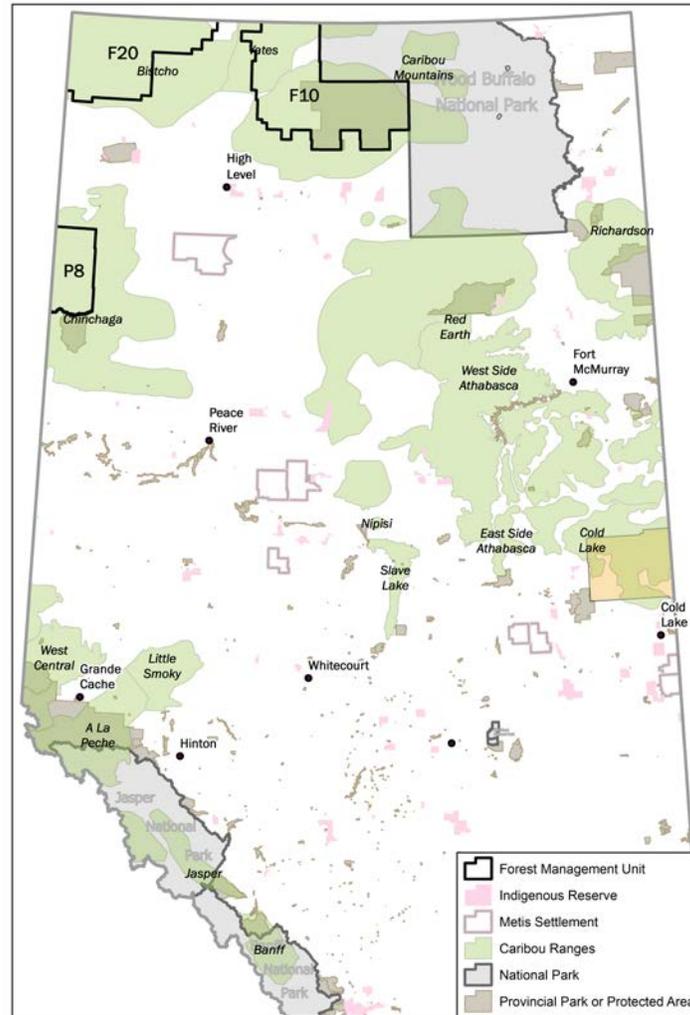


Figure 1. Map showing provincial caribou ranges. My report focuses on the Little Smoky, A La Peche, Chinchaga, Bistcho, Yates, Caribou Mountains and Red Earth ranges. The highlighted forest management units represent areas where strong protection opportunities exist.

Objectives

My objectives, established in the Terms of Reference, were to engage key stakeholders in discussions to develop an approach to caribou habitat and population management within the LS/ALP, seeking as much agreement as possible. This depended on my sharing all information available to me, to ensure transparency of the process with stakeholders, and remove possible future concerns that full information was not exchanged or some viewpoints were excluded. My recommendations were to advise Government on a path forward considerate of caribou recovery, stakeholder impacts and the federal caribou recovery strategies.

During my work, I enjoyed the strong support of department staff in developing an understanding of background and context, introductions to stakeholders, and testing possibilities.

Made-In-Alberta Approach

I have identified several key measures that, if implemented, will vault Alberta to the front of all provinces in taking strong action for caribou recovery:

- Protection of more than 1.8 million hectares of key caribou habitat through creation of a new wildland park and conservation areas in the Chinchaga, Bistcho, Yates and Caribou Mountains ranges, and work towards further protection of up to two million additional hectares in the Caribou Mountains and Red Earth ranges, increasing permanent protection of habitat and Alberta's protected areas network dramatically.
- Initiating the most aggressive seismic line habitat restoration project in Canadian history in the LS/ALP ranges, recovering as fully as possible the 10,000 kilometres of seismic lines over a five year period.
- Building a fenced Caribou Rearing Facility in the LS/ALP ranges, unparalleled in scale, where caribou can safely reproduce and raise their calves, towards rapidly rebuilding local populations, potentially doubling them within five years. Considering this approach, where appropriate, elsewhere.
- Providing strong resourcing for local Indigenous peoples to partner with the Government and other stakeholders in recovering caribou through shared administration and provision of monitoring, restoration, targeted predator control and oversight and maintenance of the Rearing Facility.
- Implementing an innovative Government-backed, energy industry-paid Green Bond program to reduce cash flow impacts to affected companies.
- Minimizing forest harvesting within the ranges LS/ALP ranges, and with a view to still providing for long term habitat recovery to 65%, with voluntary rescheduling of harvesting in most of the range areas.
- A renewed effort between government and industry over the next several months towards the “pooling” concept of forest companies pooling fibre outside the LS/ALP ranges to limit or prevent harvesting inside the ranges.

- Voluntary rescheduling of substantial amounts of energy development in LS/ALP until the restoration program and rearing facility are firmly established.
- Establishing some of the most stringent operating conditions in North America for continuing energy development inside the LS/ALP range, including coordination of development plans and stricter requirements for development.
- Providing coordination and targeted funding towards provincial caribou monitoring and research in support of Alberta's objectives, through the establishment of a dedicated research program.
- Erection of a Caribou Interpretive Centre associated with the Rearing Facility, where the public can learn about Alberta's recovery initiatives and ongoing research.
- Establishment of a Monitoring Board to assess progress and monitor implementation for the ranges. The Board should include representation from all affected stakeholders.

On the basis of this strong foundation, Government will be well-positioned to drive the completion of remaining range plans by the end of 2017.

My Discussions with Stakeholders

Who I talked to

To inform my work and recommendations, I met with a wide range of stakeholders. I initiated discussions in late December, continuing to meet with stakeholders through January and into February. During that time, I shared the Task Force report with them, explored their viewpoint, and tested different ideas and concepts with them. I was able to visit with most key stakeholders at least twice, and met additional times with some.

A full list of stakeholders is provided in Appendix 1.

Previous work

Multi-stakeholder advisory group

In my opinion, the original MSAG established to advise the government on a range plan for LS/ALP appropriately sought representation and input from a broad set of stakeholders. However, all participants I spoke to noted dissatisfaction with its ultimate outcomes. The criticisms included:

- Lack of a clear process leading to a range plan
- Unwillingness by the Government to broadly explore all possible solutions, or support habitat modeling that could inform a shared understanding of stakeholder perspectives. This approach was favored by ENGOs and some forest products representatives

There is substantial concern among all stakeholders that Government will make decisions without fully understanding the different options and their ramifications. This speaks directly to ensuring fully informed, transparent decision-making, inclusive of all key points of view in a strong discussion. Without doubt, that discussion will at times involve heated debate, but that debate is necessary for the different sides to move off their positions and towards creative solutions.

Ministerial Task Force

The Ministerial Task Force was doomed from the outset, as it confined its work to the input of a very small number of industry and government staff, without including Indigenous peoples, municipalities or ENGOs, and was conducted confidentially. As a result, the Task Force Report does not include many other important perspectives on the issue – its conclusions are one-sided and suspect.

Every question or opportunity that is treated as taboo or deemed unrealistic in advance simply leaves some stakeholders feeling the outcome has already been decided. I think that was the case here. Participants I spoke to made it clear they felt the previous government had established the Task Force on the basis of maintaining business-as-usual.

Not all the conclusions were suspect. I think the habitat modeling work had value, but it stopped short of exploring creative solutions. I was able to explore the underlying work more fully, and I have done my best to take it the next step in my report.

That being said, many observers will again view this approach as not resolving all of the long standing issues, some will critique it as, again, a form of business-as-usual.

It is important that stakeholders respect and understand these differing viewpoints, in light of the extraordinary difficulties involved in this land use situation.

General stakeholder perspectives

In general, all stakeholders shared a deep concern and commitment to ensuring caribou recovery, and recognition that business-as-usual was not sufficient to achieve this. There was also consensus that restoration of existing disturbance, especially seismic lines, was a necessary and beneficial measure.

There was a measure of shared support for continuing the Province's current wolf control program, with notable exceptions as described below.

Municipalities

The municipalities I met with expressed strong support for maintaining a viable forest products industry and general support for ensuring both the forest products and energy sectors maintained access to resources within the range. The impact of the recent economic downturn was evident to all the municipalities I spoke with, especially the community of Grande Cache, where the recent closure of the coal mine has added to an already challenging outlook. Mayors and councillors shared that community members are

increasingly aware of the caribou issue, and to some extent, perceive it as a threat to community well-being.

As noted in the Task Force report, local communities are highly dependent on the development of natural resources for maintaining employment in their communities. The Department of Economic Development and Trade provided me with a list of major projects – none appears likely to offset the potential economic impact associated with overly aggressive approaches to habitat protection.

Indigenous Peoples

Aseniwuche Winewak Nation

The Aseniwuche Winewak Nation (AWN) is located in Grande Cache, and has inhabited and used the local landscape for decades, following their eviction from the current area of Jasper National Park when the Park was created. They are not included in a treaty, holding lands granted to them by the Province in fee simple. The AWN voluntarily ceased hunting caribou over 40 years ago, but their elders maintain a deep connection to caribou and desire their recovery. They expressed deep concern that the many caribou initiatives over the past decades have failed to take real action for caribou. They are frustrated that current Government programs, especially wolf control, provide no opportunity for them to participate in a meaningful, hands-on manner or build capacity to implement other more acceptable means of predator control. Meanwhile, their perspective is that the Government's continued use of strychnine as a control measure causes unacceptable losses to non-target species, and the use of moose as strychnine bait stations, combined with increased hunting quotas to reduce prey for wolves, competes with their use of moose as food.

The AWN were deeply dismayed by the exclusion of Indigenous peoples from the Ministerial Task Force, and the lack of representation of their perspective in its report. They are concerned that continued forest harvesting threatens their traditional land use of areas near their communities, including an area they reference as the A La Peche (see map), and recently proposed harvesting near one of their community sites, McDonald Flats. At the same time, many AWN members depend on Foothills Forest Products (FFP) for employment, and they would like a clear role in establishing a balance between development and the environment, and implementing a thoughtful approach to integrated land management.

They are cautious about using fencing on a large scale to protect caribou from predation, noting that there are many unanswered questions about the effects of such a fence on the local ecosystem.

The recent signing of the Statement of Intent with the AWN by Minister Phillips establishes a promising basis to build community capacity for implementing caribou recovery measures in partnership with Government. They are proud of the value their Caribou Patrol Program has had in building community understanding and public support for caribou recovery actions. The AWN has an important role to play in implementing a range plan, including associated restoration and monitoring activities, so that they can continue being stewards of their traditional land use areas.

Horse Lake First Nation

I had a preliminary meeting with staff from the Horse Lake First Nation (HLFN). During our conversation, they expressed frustration at the lack of opportunities for involvement created by the Alberta government, and lack of consultation with them on actions affecting caribou habitat. Particularly, they noted that traditional knowledge of the community, and especially elders, was not being taken into account by government on an equal footing with Western science.

The HLFN remains concerned about both forestry activity and oil and gas activity in the ranges. They are unconvinced that forestry activity can co-exist with caribou in the range itself, citing their experience that second-growth forests provide different ecosystems missing certain herbs and plants, compared to original forests or forests re-growing after wildfires.

We agreed further consultation meetings were required and an initial discussion was scheduled for the community in February.

Sturgeon Lake Cree Nation

I gave Sturgeon Lake Cree Nation (SLCN) copies of both the Task Force report and a discussion of the general direction my recommendations would be taking in this report.

In meeting with staff, representatives of the SLCN expressed concerns with forest harvesting and industrial development. They noted their strong connection to the land, and the growing interest among younger generations to learn traditional knowledge from elders. The SLCN have undertaken very positive efforts and events to help that knowledge and those traditions grow and strengthen.

They view caribou as sacred – hunting caribou has not been a part of their traditional ways. The community strongly favors moose, and they are concerned about the impact of increased wolf populations on moose availability. There is strong support for woodland caribou recovery efforts with particular interest in maintaining predator control for its positive effect on moose populations. They are interested in exploring habitat restoration and a caribou rearing facility, as they see an opportunity for their members to contribute to this. They suggested that SLCN trappers have an important role to play in supporting predator control.

Grande Cache Métis

I had a very preliminary discussion with the Grande Cache Métis Local #1994, who have a strong interest in caribou preservation in the area and who will be examining the report and previous reports as provided to them, with a view to engaging in subsequent discussions and initiatives.

Little Red River Cree Nation

I had a very preliminary discussion with Little Red River Cree Nation (LRRCN) about the F23 forest management unit, the importance of that area to the LRRCN, and the nature and extent of their forestry quota in the area.

They explained the history of their discussions with the Alberta government and others regarding the future status of the area in relation to caribou. They noted their strong potential to contribute creative solutions which would provide for long term habitat access for caribou in the area.

I would expect these discussions to continue under one of the two scenarios outlined later in the report for this area.

Environmental Groups

I was struck by the historical, general lack of consultation and involvement of a wide range of ENGOs in the issues surrounding caribou and their preservation in Alberta. One or two of the organizations, who do have much to contribute to both the discussion and to solutions, were consulted in a limited number of the previous planning initiatives. However, most had little involvement. This appears to have been intentional.

I met with the Alberta Wilderness Association, Canadian Parks and Wilderness Association (CPAWS), Alberta Biodiversity Offset Association, Nature Conservancy of Canada, and indirectly with the Pembina Institute, in that one of their managers participated through his role as a secondee to the CPAWS organization.

The Alberta Wilderness Association noted that they were founded on a shared desire to see the substantial protection of Alberta's Foothills, an area that extends to the LS/ALP. They maintain that park protection of these ranges is the only acceptable approach to caribou recovery. They said they would support the continuation of oil and natural gas dispositions within such a park as supported by the *Parks Act* and used in the establishment of Hay Zama Lakes Wildland Park. They completely oppose any continued forest harvesting in these ranges.

The Canadian Parks and Wilderness Society, Northern Alberta Chapter noted their commitment to seeing the Province achieve its target of 17% protected areas. As a

signatory to the Canadian Boreal Forest Agreement (CBFA), they are not opposed to forest harvesting, provided it accords with the principles of the CBFA.

The Biodiversity Offset discussion centred around the need for substantial offset replacement lands for any lands taken up in these critical caribou habitats for development.

All of the ENGOs said that continued wolf control without substantial caribou habitat protection was unacceptable to them. Generally, ENGOs view wolf control as a necessary mechanism only until such time as sufficient habitat is restored to prevent increased access by moose and other game, which in turn increases wolf populations beyond their natural level. They do not see evidence that the Government is pursuing sufficient habitat protection to warrant the use of wolf control, beyond simply enabling industrial development to continue unabated.

All of the ENGOs were all deeply concerned that they had been excluded from the work of the Ministerial Task Force. They expressed distrust and disagreement with several key aspects of the report, including its representation of the economic contributions of forestry; the threat posed by mountain pine beetle to the forest resource; and the representation of scenarios inclusive of forestry as potentially supporting caribou recovery.

During my consultations, several ENGOs (the Alberta Wilderness Association; the Pembina Institute; the West Athabasca Bioregional Society; and the Yellowstone to Yukon (Y2Y) Initiative) sent a letter to Ministers requesting that:

- new energy dispositions be deferred in all caribou ranges
- compensatory habitat restoration start immediately
- logging be deferred in all caribou ranges
- Government ensure range plans achieve 65% through a combination of protected areas with other measures

The same letter noted that measures including fencing and predator control must be secondary to habitat protection and prevention of further habitat destruction.

During the course of my work, the ENGOs also presented a detailed discussion of the potential for the forest companies in the area to “pool” timber allocations outside the ranges in LS/ALP, to support lowering or eliminating harvesting inside the range.

This discussion is explored further in this report, but the concept, while challenging, has merit and has been explored in the past. There is renewed interest in the concept and the ENGOs made strong proposals for government and industry to work together to utilize this approach.

The ENGOs without exception were constructive and expressed a sincere desire to work collaboratively with all stakeholders towards solutions. They particularly mentioned their willingness to work with Indigenous groups in co-operating towards solutions, and a number of the ENGOs met with industry representatives during the time of my work to explore options for caribou protection and explain their positions to companies or industry groups.

I experienced the ENGOs as neither dogmatic nor highly positional, but rather holding strong views on the steps they consider necessary to preserve caribou herds, including a general aversion to continued forestry operations of any kind in the ranges.

It is fair to say that, despite the efforts of industry to promote a ‘working landscape’ for caribou ranges, ENGOs feel that this approach has not proven successful anywhere in Canada. They are sceptical that continued large scale forestry activities in the ranges can provide, even after many years, the 65% undisturbed habitat the federal *Species At Risk Act* requirements dictate.

In addition, the ENGOs re-iterated strongly that cumulative effects have not been taken seriously by government in general, and specifically in the area in and around the LS/ALP ranges. They noted the dramatic increase in water use to assist gas extraction and the effects of forestry, seismic line activity and overall energy footprints have not been adequately addressed from a cumulative impact perspective.

There is merit in this argument. In general, provincial governments have been reluctant to fully explore and address cumulative effects, primarily out of a fear of the impact of such assessments on future resource development, and therefore jobs, tax revenues and wealth creation. ENGOs make compelling arguments that the public interest requires a more fulsome exploration of cumulative effects, and nowhere more so than as it related to caribou ranges overall across the province.

As was noted, no party is individually responsible for the 95% disturbance rate in the LS/ALP ranges, but somehow it happened.

I was also struck during my work at the vast gulf between the perceived values of government towards the land base—primarily as land for economic development purposes—and the ENGOs view that the public wants and deserves large, protected spaces for parks, recreation and species protection, where economic outcomes are subordinate to these values.

It is the job of government to reconcile these differences.

Academia

I consulted Dr. Stan Boutin, a professor of population ecology and Alberta Biodiversity Conservation Chair at the University of Alberta. A fellow of the Royal Society of Canada, he was awarded the Miroslaw Romanowski Medal "for significant contributions to the resolution of scientific aspects of environmental problems or for important improvements to the quality of an ecosystem in all aspects - terrestrial, atmospheric and aqueous - brought about by scientific means". He previously held a National Sciences and Engineering Council Industrial Chair in Integrated Land Management.

Dr. Boutin expressed his belief, based on decades of caribou research, that the Little Smoky and A La Peche caribou populations are not viable without significant direct intervention, including predator control and the use of fenced predator exclosures to house and protect caribou and their calves from predation. He suggested that habitat-focused means of caribou recovery are more likely to be successful in northern Alberta, where considerable areas are already protected or remain undeveloped, and caribou are primarily dependent on wetlands, which are not subject to similar development pressure from forest harvesting. Conversely, caribou in the LS/ALP have been shown to also use areas of upland pine stands.

In addition, I read a wide variety of research on the issues, both from Government of Alberta work done previously and from general sources. Suffice to say, Alberta remains a leader in research in this area, and at the same time, there is a definite need for significant additional research.

Federal Government

Again, I was struck by the lack of consultation between the Government of Alberta and federal department responsible for SARA regarding potential range management options and direction Alberta was considering.

There have been, at times in every province, dynamic tensions between federal and provincial interests, and these tensions would appear to have precluded extensive communication with federal wildlife officials at a senior level in recent times regarding this issue.

It is important to involve Canada at the earliest opportunity and in the fullest manner possible, in the discussion of key issues in achieving the 65% habitat target, and in the proposed directions for doing so, and to discuss cooperatively the best approaches to finding solutions.

In discussion with the Regional Director of the Canadian Wildlife Service, who has regional responsibility for caribou range planning in Environment & Climate Change Canada, I shared the work of the Task Force under the previous administration and some

of the key issues I had identified. He noted several key considerations that affect my recommendations:

- Canada is open to innovative approaches to addressing the objectives of the recovery strategies that are founded on science.
- Canada desires to work together with Alberta to identify and develop these approaches.
- Canada looks to Alberta for leadership on development of these approaches, keeping in mind that the eventual solutions must meet the criteria laid out in the federal legislation.

I want to emphasize that nothing in my conversations with Canada should be interpreted as an endorsement by Canada of the recommendations in this report, or agreement with the narrative, context or conclusions in this report.

Energy Sector

I had a number of meetings with energy representatives, in groups organized by the Canadian Association of Petroleum Producers (CAPP), and individually, as many of the companies' interest diverge in relation to some of the issues. In addition, I met with the large Caribou Working Group of CAPP.

Generally, CAPP and their members were concerned with their ability to continue to access the core areas and the whole extent of the LS/ALP ranges and at the same time were constructive and creative.

From these discussions, consideration emerged for large scale voluntary rescheduling of most new energy activity within the LS/ALP; general support for the concept of a rapid re-growing of seismic lines through a restoration program financed by industry through a Green Bond issued by the Alberta government; strong support for Integrated Land Management concepts; and a willingness to explore a variety of approaches, such as play-based development and even, potentially and subject to liability and technical issues, multiple companies operating from one well pad to limit resulting footprint.

There are companies whose interests lie almost entirely within these ranges, and thus, feel they need to continue drilling and operating wells in the short to medium term. For these companies—operating under what I think would be the most stringent guidelines in North America for this kind of development—the opportunity for limited drilling should be maintained, primarily by existing road and pipe infrastructure platforms. The companies accounting for most development indicated willingness for a rescheduling of most activity

for four or five years, but in return would need their tenures extended for a reasonable time.

Forest Products Sector

The Forest Products sector is, arguably, the most complex and difficult industrial activity sector in the range areas, not just for LS/ALP but also indirectly for the P8 area north of Chinchaga, where industry might prefer to have those forests available for eventual use, and in the F23 area, where a combination of First Nation quota and dependent mills pose challenges.

However, the most urgent and difficult challenges are found in the LS/ALP area.

The forest industry in Alberta is highly developed, efficient and extremely inter-company inter-related. Nowhere in the province is this more evident than in the region of the LS/ALP.

The companies operating here are highly inter-dependent; exchanging wood fibre in various forms to enable efficient operation of sawmills and pulp mills, and other facilities including biomass power generation and composite wood products. In turn, they are all greatly dependent on wood allocations under various forms of tenure that originate in and around LS/ALP.

The caribou are, of course, dependent on these same areas as habitat, presenting the tremendous challenge of seeing whether industrial forest activity in a permanent working forest can exist alongside the need to maintain the caribou habitat in these ranges and grow it to 65%.

Even worse for the caribou, harvest levels were accelerated, in some cases doubled, to reduce Lodgepole pine in advance of mountain pine beetle, which was believed to pose a substantial and imminent threat to Alberta 10 years ago. That threat hasn't played out as expected, likely due to the government's aggressive control program, and these same mills are facing a large "falldown" in wood supply in 10 to 15 years, which also threatens their long-term viability.

The industry, as evidenced by a host of meetings held with companies and with the Alberta Forest Products Association, feels very strongly that through carefully planned harvesting using exceptionally high standards, replanting and operations, they can maintain and grow habitat.

Not just maintain, but actually grow the habitat back to 65% of habitat being recovered.

While some companies indicated a degree of creativity and thoughtfulness in proposing possible solutions, others reverted to highly positional statures revolving around insistence

on their harvesting rights under existing tenures or a requirement for, in their belief, the Alberta government to compensate them if it wished to take tenure or quota away to preclude harvesting.

After considerable discussion, a number of participants in the industry did provide potential solutions, some of which have been taken and modified or otherwise taken into account in my recommendations.

The industry will need to keep adjusting and innovating in the years to come to maintain access to the ranges and core areas of the ranges, and must win social licence through science to enable that access, based on an ability to reach 65% habitat over time.

Little Smoky & A La Peche Ranges

Now, to the Little Smoky and A La Peche ranges.

The specific approaches are outlined below, and involve a combination of:

- A new approach with Indigenous partners to involve them in project implementation, assessment, monitoring and future planning
- Continuing to plan forest harvesting significantly outside the range and core areas of the Little Smoky and A La Peche ranges for the next five years, and concentrating any harvesting inside the range in already disturbed areas
- A large-scale, voluntary rescheduling of much new energy activity in the ranges, through a program of activity rescheduling for extended periods such as four or five years, or extension and stretching out of activity by energy companies covering a vast majority of the range land base
- Immediate implementation of Integrated Land Management
- A large-scale Caribou Rearing Project to protect maternal caribou and their offspring
- The largest seismic line restoration program in Alberta history, to make habitat again out of the 10,000+ kilometres of seismic lines in the area, financed by a new Green Bond (or other appropriate mechanism) and paid by the energy industry
- New research endeavours to assess the concepts of working forest in the area, the success of the seismic recovery program and the Caribou Rearing Project

The following sections identify specific actions for government, industry, and other impacted stakeholders to advance innovative, challenging approaches for caribou protection in the Little Smoky and A La Peche ranges.

Energy development

Energy companies I met with understood the need for innovative, credible efforts towards caribou recovery in the LS/ALP ranges, supported by research and careful monitoring to see that these efforts actually work.

While the current economic downturn is causing great hardship for Albertans, it provides, perhaps, some breathing space to explore alternative approaches carefully and deliberately.

Then, when energy development recovers, the mechanisms to support it without undue harm to caribou or their habitat will be safely in place.

Voluntary rescheduling of energy development

Several large companies – comprising the majority of the area currently under tenure in the LS/ALP – have stepped forward to suggest voluntary rescheduling of development of most of their leases for up to five years.

My recommendation is that government work expeditiously with the energy industry, through CAPP and other energy representative organizations, to:

- Arrange extensions of tenures commensurate with the length and breadth of activity rescheduling commitments; and
- Examine extensions of tenures for companies who are willing to stretch out drilling activity over multiple years but face tenure expiration.

Under Alberta's Petroleum and Natural Gas Tenure Regulations, agreements must normally be proved productive within a set time. Thus, to support these new activity timelines, the Government will need to provide extensions of these agreements in return for a lessee's commitment to reschedule.

The amount of new footprint associated with energy development here is small. Some smaller companies have most or all of their resources within the LS/ALP. Thus, it is reasonable to allow them to continue their development plans. That said, they would be subject to some of the most stringent requirements in North America for this kind of unconventional development.

Recommendations:

Within the next 90 days, work with all oil and gas companies with agreements in the LS/ALP to determine how best to implement the commitment to voluntary activity rescheduling and extensions of development, to be enabled by appropriate agreement extensions for those companies. The extensions will be conditional on a signed commitment to a significant multi-year rescheduling of new development on the agreements companies identify, or a substantive and significant prolonging of activity over an extensive period of time.

An Area Based Approach

Managing plays for footprint reduction

The unconventional development of shale gas plays like the Montney and Duvernay, which are found across the LS/ALP, is quite different from traditional oil and gas development in Alberta. Companies require access to huge amounts of water as well as roads and well pads distributed throughout a large area, subject to many different levels of government oversight and approval. This poses incredible challenges to Government, who can easily lose control of the cumulative effects of this development on water and footprint in the region.

The Alberta Energy Regulator's (AER) area or play-based regulation pilot overlaps part of the Little Smoky range and was brought to my attention by some energy companies. Ultimately, the goal of the pilot is to coordinate the activities of all the energy companies operating in a play towards ensuring cumulative effects are managed consistently with resource availability and biodiversity needs. At the same time, companies submit plans subject to a single approval, instead of a large number of smaller approvals, reducing the burden for both industry and Government.

My sense of the work thus far is that, as a voluntary initiative, it has not yet had the opportunity to achieve this lofty but worthwhile goal. Six companies applied to the AER during the pilot for specific areas associated with their individual surface and sub-surface leases for the Duvernay play. While it did provide for certain efficiencies in bureaucracy and footprint, it did not achieve the regional scale, multi-company coordination envisioned for the project.

Inherently, “unconventional” development differs from oil and gas development as Alberta has known it to date. The methods have been in broad use for barely a decade, and industry has learned a great amount about their efficient application.

However, regulatory requirements haven't fully evolved to reflect tight gas development as they have in adjoining provinces. The burden of existing regulation places unnecessary requirements on shale gas play development, with a significant cost to caribou habitat. There are clear opportunities for tenure regulatory reform or flexible application of existing tenure regulations.

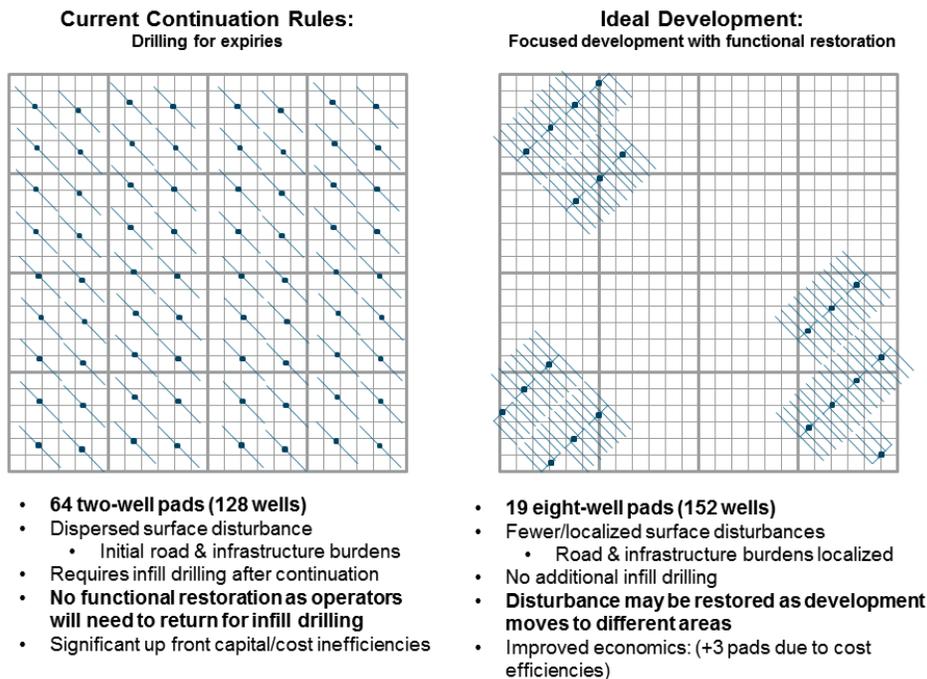
Opportunities exist to improve upon Energy's tenure system and several notable points were brought to my attention that I think deserve more in-depth, expert consideration than I am able to give them here.

- Requirements to demonstrate that areas are producing, or capable of producing, to continue leases creates an incentive for companies to drill sooner and at a

greater density than they might if they were trying to manage and reduce surface footprint (and impact on habitat across time). This could mean increased roads and pipelines as well.

- From an engineering standpoint, industry innovations may have made it possible to continue a larger area with a given well or well pad, than current tenure rules may support.
- Companies and tenure rules are, generally, focused on the development of a site. Companies may be encouraged to think differently about how they arrange and pace their developments in caribou ranges if the concept underlying tenure and associated surface dispositions is shifted from the site, to the area.

At extremes that are very unfair to the interpretation of tenure rules, a worst case scenario might be a very even distribution of one or two-well pads across the landscape, with their associated roads and pipelines, all with a large disturbance buffer applied according to the federal recovery strategies. At the other end of the spectrum, we might have carefully clustered 8-well pads, with a higher number of wells overall, but occupying less of the range with wells, roads and pipelines.



Again, the figure represents extremes. However, one is clearly more ideal for caribou, and changes that may support this approach should be explored.

Current tenure rules may encourage development that more closely approaches the left-hand side of the figure. Caribou ranges should have different rules that support development patterns that can be strategically paced and placed through time.

An approach that supports or incentivizes greater clustering of activity between independent operators will reduce the impact to caribou habitat. Some operators currently place wells primarily to continue their tenure, maximizing the resource held by that location. In the caribou ranges, we want them to place wells based on minimum environmental impact.

Agreement extensions may provide similar benefits in the short term, as it relieves companies of pressure to develop the resource. However, Alberta certainly desires its resources to provide value, through employment, royalties to the province and other benefits.

And where one company seeks to defer development, another may be eagerly awaiting in the wings, hoping to purchase that undeveloped tenure for themselves.

Companies must be held accountable for real development, and not illusory promises of future activity. Any changes to tenure rules must require a direct link between some form of activity and any continuation.

To enable an approach that is area-based, rather than site or play specific, may require a small but important change to the Public Lands Act; this could enable government to issue an approval in support of this approach.

Recommendations:

Starting immediately, use the flexibility of the existing tenure system to support licence and lease continuations consistent with improving outcomes for caribou. Within a year, conduct an internal review to analyze and assess opportunities to make recommendations that will ensure licence and lease continuations are sustainable and support caribou habitat outcomes.

The government should determine what changes may be necessary to the Public Lands Act to support approval of area-based activities as soon as possible, to support an amendment at the soonest opportunity.

Green bond

The potential cost of restoration could be as high as \$40 million or more. With the added cost of a caribou rearing facility, costs could approach \$60 million. Over a five-year period, the resulting cost to contributing energy companies would pose a significant impact to their cash flow, especially during the current economic downturn.

Green bonds use debt capital to fund projects that have a positive environmental benefit. Their application here could provide the funds necessary to rapidly get the needed work done while spreading the cost to the energy sector over a long period. It would work like this:

- The government issues a government-backed green bond for the full cost of the targeted implementation activities related to the seismic recovery program and one third of the rearing facility (the remainder of the rearing facility funding from provincial and federal governments) with regular Alberta bond rates and a 30-year maturity. Industry will pay the reasonable administrative costs of the bond.
- The government then has the necessary funds up front to immediately fund required work and future offset and recoveries, paid in advance.
- The interest on the bond and the principal are repayable to Government by the contributing energy companies over the life of the bonds (30 years), reducing the impact on company cash flow.



Figure 2. A conceptual description of green bonds and their application to the Little Smoky and A La Peche ranges.

The initially proposed amount is smaller than most Green Bond issues; this is an important consideration, as there are fixed overhead costs associated with the bond issue and its administration. However, it is possible to expand the issue over time to address other projects Government may be considering. If this approach is pursued, it will be important to ensure funds are tracked separately to ensure companies are contributing to intended projects in their own backyard – in bond terms, this is called “ring-fencing”.

Recommendations:

The Government should move forward to issue a Green Bond for the full cost of restoration (that is, full costs of current restoration requirements, a set-aside for future restorations and one third of the cost of the Caribou Rearing Facility) and create administrative mechanisms (a contract or payments) to enable contributing energy companies to pay back the principal and interest on the bond over a 30 year timeline. Alternatively, a similar financing mechanism should be designed.

Seismic restoration

Of all the approaches available to recover caribou, planting trees is certainly the most widely supported. Over 10,000 kilometres of seismic lines exist in the LS/ALP, and while every caribou recovery effort has recommended their restoration, these simple, obvious efforts have always failed to come to fruition as Government deferred stronger action on other necessary elements.

Simple, but not inexpensive. While the true cost of restoring seismic lines will not be known until seismic lines are assessed on the ground for regrowth, and different techniques are implemented, estimates range from \$30 to \$40 million.

The energy sector recognizes that they are the beneficiary of the existence of these seismic lines, and in order to have a landscape where energy development can continue simultaneously with caribou, in our discussions, they volunteered as a matter of social responsibility and co-operation to fund the restoration. A green bond program will help them manage the cost of this.

To say they accept responsibility for the seismic lines would be to go too far – in fact, as they point out, the government did not require the companies who created these lines to reclaim them. Industry was at pains to point out that their willingness to fund this seismic recovery plan is a one-off, one time commitment reflecting the unique challenges and requirement for unique solutions in these ranges alone.

Also, when the lines were created, the companies paid ‘timber damage assessment’ dues to the forest products companies holding tenure, and that money was, in part, earmarked to plant trees on these areas. Whether these funds were actually spent on effective replanting programs is, obviously, in question.

This highlights the cooperativeness of the energy sector in finding a solution.

It also flags the opportunity to require reclamation for new seismic lines that do not meet low-impact requirements, and hold forest companies accountable for ensuring timber damage assessment dues are used to fund replanting of the forest, as intended.

It is critical the government embarks on this aggressively in the future.

There is no further reason to delay in the LS/ALP ranges. The means are in place to start a full-scale restoration program of all legacy seismic lines in the LS/ALP virtually immediately, to be completed over the next 5 years.

There is significant opportunity here for regional employment in this recovery program—and the associated caribou rearing facility—and every effort should be made to design the contract for this work as a partnership between Indigenous-owned companies and forestry replanting firms.

Recommendations:

Prepare a seismic restoration priority plan, identifying opportunities for immediate work this spring and summer.

Complete the overall work of a seismic restoration program for the Little Smoky and A La Peche caribou ranges by 2021.

Take steps to require, in the future, proper seismic recovery on new seismic lines as they occur in the province.

Caribou Rearing Facility

It will take decades to regrow habitat to levels that can sustain caribou in the LS/ALP, while caribou remain subject to high predation levels from wolves, bears and other predators. Many stakeholders and the public are tired of, or even repulsed by, the traditional reliance on the wolf cull, without attempts to innovate new ways to reduce caribou predation.

Alberta is home to a current study evaluating a small (10 km²) fenced enclosure. Alberta researchers are also engaged in similar investigations in British Columbia, and have reached a point of maturity in understanding successful ways to house and protect caribou from predation using these methods.

After speaking with academic and industrial researchers, I concluded that establishing a large (10 km by 10 km) fenced area as a caribou rearing facility is the most cost-effective and pragmatic approach, and the most likely to succeed. Approximately 40% of the current female caribou population would be housed in the rearing facility, with rotation of males and some females annually to ensure genetic integrity. This approach provides several real and potential benefits:

- Year-round protection from wolves and bears
- One time, or at least very infrequent, removal of predators from within the fenced area
- Large area (initially 100 km², growing to 400 km²) protection, so caribou do not exceed food supply and intruding predators can be caught before caribou are killed
- Calves grow to yearling stage, when they have developed sufficiently to better avoid predators on their own, then exported to the surrounding herd
- Moose and deer are controlled by hunting
- Oil and gas development can continue inside the fence, under stringent conditions related to seasonality, caribou rearing timelines, and ILM conditions

This is a substantial facility, with associated costs – estimates I received were approximately \$15 million over a 10 year period to build and maintain the fence. However, in various evaluations shared with me, the approach presents an opportunity to examine the potential benefits to building caribou populations with only modest risks and potentially significant benefits.

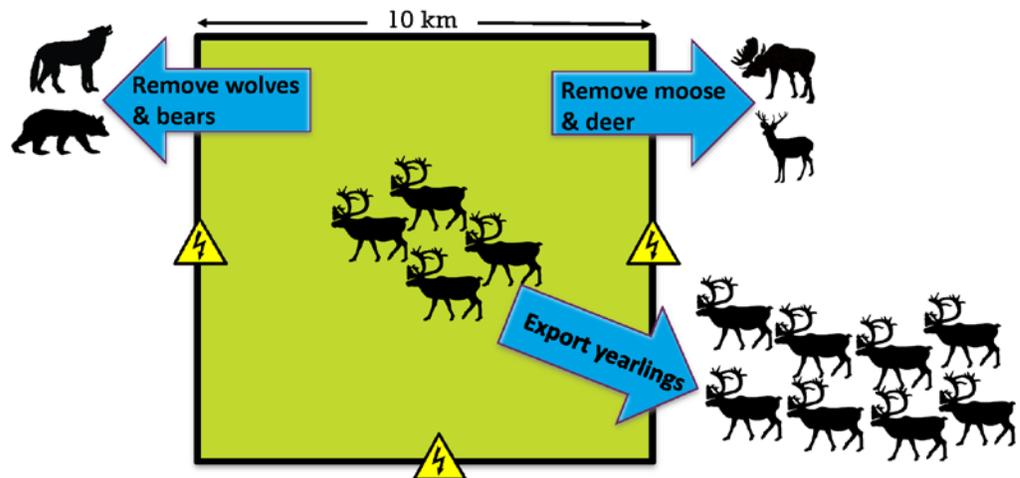


Figure 3. A conceptual diagram of how the caribou rearing facility would work. The triangular symbols denote that the fence would be electrified.

Another option I investigated was a maternity pen. These are much smaller – for the LS/ALP, you might use two 10 hectare pens, penning 40% of the females each year for 3 months while they calve. While the cost of such facilities was lower (perhaps \$6-\$7 million over a 10 year period), compared to a rearing facility, I found the disadvantages were:

- If predators succeed in entering a maternity pen, the results are likely catastrophic.
- Rounding up pregnant, female caribou every year at an annual low point in their fitness is likely to result in some undesired losses.
- Food must be supplemented, for example, by collecting lichens.

Substantial conceptual design and implementation tests for a rearing facility have already been completed in Alberta and British Columbia. The knowledge base and will is there to see this succeed.

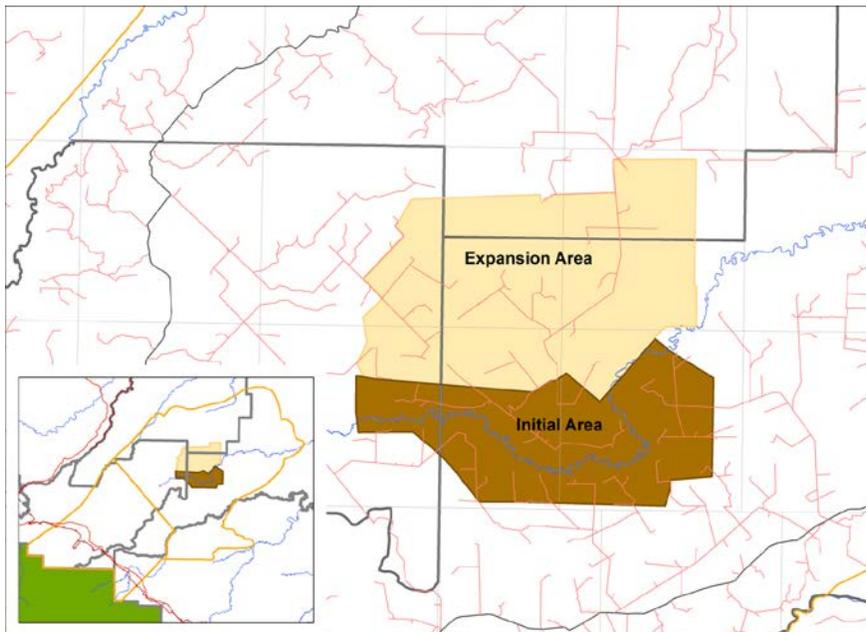


Figure 4. An example of a way to position a caribou rearing facility. The initial area represents approximately 100 km², sufficient to start operation and understand local implementation. It could then be grown to include the expansion area, ultimately including about 400 km².

Recommendations:

Immediately prepare a detailed, implementable plan for placing, constructing, operating and maintaining a 100 km² caribou rearing facility. Examine the potential for similar projects, where appropriate, in other ranges.

Proceed to break ground on its construction in the summer of 2016.

ILM

After restoration, the concept with the most support is integrated land management, or ILM. There is no reason for this not to proceed – it is good business, and smart management of Alberta’s resources, above and below ground.

Integrated land management is the idea of managing all of the activity on a landscape in the service of a common outcome; it is the management of cumulative effects.

The energy sector involves over 100 companies in this area, most operating independently of each other. Certainly, they take advantage of shared efficiencies when the opportunity presents itself, but there is no overarching coordinated effort to make this happen.

Forest companies may actually be the leaders in this respect, as the forest management plans for an area are prepared with consideration of both the land tenure holder and their quota operators simultaneously.

Access planning

As with restoration, previous efforts to proceed with even simple coordination of road planning failed as a result of government’s indecision on how to proceed on caribou habitat. Further, humans will always take advantage of an easy path, and seismic lines have provided access for off-highway vehicles and snowmobiles throughout the ranges.

I agree completely with the recommendations of the Task Force (and many previous initiatives) on this work. The preparation of a well-coordinated multi-company road access plan for energy, forestry and other users is necessary and desirable.

This is no small effort, requiring substantial and expert planning resources. Across Canada, in my experience, government has often functioned best in setting the bar for industry, but rarely in preparing industry’s plans for them. I think the same will prove true here; government is a necessary and important contributor and leader for this effort, but industry must be responsible and accountable for preparing the plan.

All roads lead somewhere – reducing the number of destinations reduces the necessary roads. Although exceedingly complex, the energy sector could assess opportunities to combine their ownership interests in subsurface resources. Business arrangements to combine ownership interests in subsurface oil and gas minerals are supported by existing provincial mechanisms.

Similarly, if companies more closely share footprint such as multi-well pads to access their individual areas, this could substantially improve the efficiency of surface footprint development including associated access, without sterilizing the resource. However, industry has communicated substantial challenges to implementing this approach including:

- Specific extraction techniques, in some part, comprise part of their competitive advantage and they do not want to share that information, for example, by working in such close proximity to each other
- Coordinating the activity of multiple companies from the same well pad, given differences in complex operating procedures and techniques, poses real operational and safety concerns

That said, government should encourage industry to form a working group to assess this approach to determine the potential for more widespread use.

Government will certainly have an important role in working with industry and further with Indigenous peoples, trappers, and the public to reduce the number of seismic lines under active use by off-highway vehicles and snowmobiles, so that trees planted to restore them can grow. Simultaneously, these same users have an important and necessary role to play in hunting and trapping wolves and their alternate prey, moose and deer – carefully planned, continued access will be necessary. As industrial users also make use of these lines, I view it as ultimately part of the same overall access planning effort.

The regulatory tools, in the form of Public Land Use Zones, exist to provide legal support to results of this important work. In my work, I met with the Foothills Landscape Management Forum, established for the express purpose of providing a multi-company forum for coordinated access and restoration planning. They're simply in need of a stick to make it work.

Recommendations:

Within the next year, government should work with the Alberta Energy Regulator to develop an area-based approach for energy companies with mandatory participation inside the caribou ranges that enables companies to combine interests and integrate development plans. Alberta Energy will ensure that companies are able to continue their tenure to support this approach.

Require all industrial land tenure holders to align access development applications in the Little Smoky and A La Pêche caribou ranges with a multi-company plan developed for the entire area.

Designate the Foothills Landscape Management Forum as the society with responsibility for the coordinated preparation of the multi-company access plan, with the required inclusion of government, Indigenous peoples, ENGOs, municipalities and other key impacted stakeholders. This plan must be subject to rigorous government review and approval.

Conduct a rigorous public engagement and planning exercise to ensure that necessary access to the ranges is maintained for Indigenous peoples, trappers and hunters, while allowing regrowth of other, unnecessary routes.

New leasing in ranges

Considerable energy resources underlie Alberta's caribou ranges. No mineral lease sales have been approved in Alberta since spring 2015. Generally, I believe the approval of sales of mineral leases can resume, provided that range plans or supporting policies enable the same general approach:

- Ensure legacy footprint created by energy development is rapidly restored, and enhanced reclamation standards are established for existing and new footprint.
- The energy sector ensures its operations are conducted with the utmost care and world-leading practices, including appending to existing footprint, coordinating access development, net positive restoration, and restoration of existing development.
- Careful monitoring of caribou populations is continued.

The completion of range plans will take approximately another two years. To provide interim direction consistent with the above approach, a directive can be issued enabling the Alberta Energy Regulator to require compensatory restoration for development; improved reclamation standards for new development that are consistent with future caribou habitat needs; and that new development follows practices that minimize footprint.

In addition, government must assess whether during this economic downturn, it is wise to issue new tenures likely to attract the lowest return to government in decades. Instead, proceeding to lease in these areas after oil and gas markets improve will likely obtain a better price from companies. Meanwhile, there will be time and space to improve requirements and practices for caribou.

Recommendation:

At the appropriate time, considerate of caribou recovery and Alberta's economic environment, resume the sale of mineral rights in caribou ranges.

Prepare a directive that requires stringent operating practices (including little or no new footprint) for energy companies who receive new development approvals, pending direction from range plans.

Forestry

Continued forest harvesting in the LS/ALP ranges continues to be the primary subject of debate in relation to caribou habitat in the range.

It is highly likely that one, possibly two facilities would close if habitat protection approached the levels described for Scenario #2 in the preceding Task Force report, and possibly a third under the No Further Action Scenario they examined.

The use of half measures over the last several decades has worsened the problem. While companies have been excluded from much of the ranges, they have continued to harvest outside the ranges at approved harvest levels that assume the availability of the range wood fibre. As a result, there is limited commercial harvesting opportunity remaining outside the ranges for the two most affected companies, Foothills Forest Products (FFP) and Alberta Newsprint Company (ANC), and ANC's primary quota holders, Millar Western and Blue Ridge Lumber. Local communities are deeply concerned about the possible ramifications of the closure of these facilities, or even more modest employment reductions.

A combination of factors has led to this situation, all leaving a choice between only two options: potentially lay off hundreds or thousands of workers; or, let companies harvest on a very limited basis inside the ranges.

An Innovation Model in the LS/ALP Ranges

While industry argues it can be accomplished, the weight of evidence is clear overall that significant disturbance harms caribou, and particularly so without various interventions like wolf control, maternal penning or other tools.

Many of the initiatives I have described should enable modest harvesting in the ranges under certain circumstances, but none have been tried on this scale before, and to move continually in this direction would require close attention to see if they can truly succeed. Further, every effort must be expended to find ways to reduce even necessary footprint inside the ranges.

To that end, my recommendations involve enabling harvesting over the next five years in areas which are already disturbed and not currently prime caribou habitat in the range, so-called "second pass" harvesting.

Let me be clear--wildlife biologists, and various other experts in this area will be deeply concerned and critical about any approach to a working landscape solution, and this approach enables very modest harvesting in primarily already-disturbed areas of the range while the continuing assessment of the potential for further activity takes place.

It's essential that the project not continue indefinitely without adequate monitoring that allows an exit ramp at appropriate junctures over the next decade. I have intentionally constructed the recommended approach with a view to limiting the potential for significant harm during this initial period, so that the Government may choose at a five or ten year interval to exit the strategy and opt for full scale protection.

The suggestion here is to give the combination of elements recommended a brief but intense opportunity to work, on a closely monitored basis, with a very limited incursion into the caribou ranges and inside the range concentrated in already disturbed areas. If the evidence mounts that it is not working, an exit is very possible and practical.

As the forest sector contributes the most footprint, they may present the most opportunity to limit footprint. ENGOs, and even some forest companies, expressed to me their desire to see pooling of wood allocations outside the ranges. This might, through various efficiencies, reduce harvesting inside the ranges. Even long-term avoidance of core areas would improve significantly the speed or certainty of achieving a 65% habitat recovery profile.

I have tried to maintain, for the foreseeable future, a modest intact area in the core, through harvesting reductions and rescheduling of activities by companies including a longer term rescheduling of activity by Foothills Forest Products in 41% of its footprint inside the core.

There has been a lot of harvesting towards the outside of these ranges already. It followed a traditional "two-pass" system, that's left a clover-leaf pattern of cutblocks and mature forest intermixed across some landscapes. This isn't the pattern that fires would leave, and it's not the size and extent of habitat caribou need.

Biologists have shared with me that potential negative effects can be reduced by confining harvest to "second-pass" areas of already logged lands on the periphery of the ranges. I think this provides sufficient time to evaluate progress on the other innovative measures I've recommended. To be clear: forest harvesting should be directed into these areas first, to ensure that the remaining small patches are harvested first, before any other fiber is touched in the range.

And, as the actual wood fibre needs of companies fluctuate from year to year based on market needs, every effort should be expended in harvesting annual allowable cut (AAC) from outside the ranges, before taking any from inside the ranges.

Finally for forestry, care and attention must be paid to how forest harvesting is arranged on the landscape, to minimize the increase in disturbed habitat from a federal perspective, and obtain best outcomes for caribou.

Measures that may reduce pressure to harvest inside the ranges, such as higher utilization of smaller trees and logs, and using unallocated forest in agricultural lands require further exploration as well.

Evidence presented to me during my work suggests that pine beetle is indeed still present, and even modestly increasing. Nonetheless, it does not present the extreme threat that warranted such extreme increases in harvesting, and communities are facing a massive disruption in a decade if the government is not proactive in moderating the future falldown with modest, deliberate reductions now.

Most of all, achieving a working landscape means remaining keenly attuned to opportunity with eternal vigilance for the care of caribou.

Recommendations:

Prepare annual reports assessing the establishment and success of the seismic restoration and caribou rearing facility work.

After five years, and thereafter at appropriate junctures, Government should review the success of this strategy, and make any necessary changes, potentially including further restrictions on forest harvesting.

Harvesting inside the ranges can only proceed once a company has completed any previous year's harvesting from outside the ranges, starting in 2016/17.

For any forest management unit, harvesting inside the ranges may only remove "second-pass" stands, as defined by the government in consultation with companies and consistent with their forest management plans, until all such "second-pass" stands are removed.

During the preparation of logging plans and forest management plans, companies and government should pay careful attention to minimizing any increases to disturbed habitat.

Appoint an independent forestry expert to report to the Minister of Agriculture and Forestry a current outlook for mountain pine beetle, the ramifications of maintaining the pine beetle surge, and identifying recommendations for moderating the falldown that improve the future outlook for affected communities. In the event that one or more tenure holders wishes, or faces a requirement to, dispose of existing quota or annual allowable cut over this five year period, the government should assess whether some or all of that fibre can be withdrawn from harvest to add to permanent protection in the core of the LS/ALP ranges.

Maintaining forest communities - FFP

The forest products industry continues to provide important jobs and wealth creation in this region, especially important at a time when the energy sector is struggling with a worldwide downturn in their fortunes. The communities of Fox Creek, Grande Cache, and Whitecourt surrounded by Woodlands County and Municipal District of Greenview, are especially affected by range planning in the LS/ALP given, in turn, the relative reliance of Alberta Newsprint Company and Foothills Forest Products (FFP) on fiber from the ranges.

Effort and innovation must be expended in the service of trying to maintain these jobs, if at all possible, while simultaneously recovering and protecting caribou and their habitat.

There is little additional fibre available; surge cuts have already over-allocated wood fibre from the land base. The only area that is unallocated is forest management unit E10, which is adjacent to E8, the Crown-managed forest management unit on which FFP is the sole quota holder.

Grande Cache is faced with extremely hard challenges in these tough financial times. The recent announcement of the closure of their coal mine has caused house prices to plummet over a hundred thousand dollars. Like many communities, upgrades to their drinking water facilities have been enormously costly, and they have been forced to close their municipal airport. The coal-fired power plant in their community faces imminent decisions about if and how to migrate to natural gas, and there is uncertainty regarding the future of the medium-security prison found there.

FFP is the largest single employer in Grande Cache, and has expressed the sincere desire to maintain a long-term presence in the community. However, as a quota holder, they are challenged by the relative insecurity of their wood fibre. They, too, are facing a falldown following the pine beetle surge, and are actively working with investors to raise capital to improve their facilities. A forest management agreement, as opposed to a quota, offers FFP needed opportunities and secures their interest in improving the forest land base to increase wood fiber yields.

Working closely with FFP, we have agreed on an approach that, if actioned by government, will:

- FFP would forego harvesting in, on average between the two ranges, 41% of their E8 footprint in the core zone for 35 years
- FFP would not harvest at all in the core zone for three years
- Secure FFP's \$6 million investment in a new pellet dryer, with associated employment.

- Maintain the government’s opportunity to reconsider how fiber is apportioned to caribou habitat and harvesting, should FFP reconsider its business approach.

Recommendations:

The government should allocate a forest management agreement to FFP, subject to the following conditions:

- FFP foregoes harvesting in the core area of the range for at least three years.
- The FMA includes forest management unit E10 and some smaller additions; the annual allowable cut and harvest sequence for the FMA would be partitioned to reflect the originating forest management unit.
- FFP pays all costs associated with preparing a forest management agreement (FMA), including identification of a public advisory group, preparation of a forest management plan and supporting timber supply analysis, and associated consultation.
- FFP continues to harvest in the range, on a limited basis, for the next five years a volume not to exceed 342,000 m³.
- The company foregoes harvesting in identified LS/ALP areas representing, between the two ranges, an average of 41% of the E8 component of the core zone for 35 years.
- The company commits to investing \$6 million in a new pellet dryer, creating some jobs in Grande Cache.
- The FMA is non-compensable for withdrawals made to increase caribou habitat protection or other environmental or protection reasons minus any sunk costs FFP invests in preparing a forest management plan, or infrastructure or silviculture investments FFP makes in withdrawn areas.
- During consultation on their FMA, FFP strives to avoid harvesting in areas identified by AWN as particularly sensitive to their community.

Maintaining forest communities - ANC

Alberta Newsprint Company, or ANC, is one of the lowest cost newsprint providers in North America. ANC shared evidence of the success of their workforce in achieving this

status – all the more amazing, given how highly competitive newsprint remains, with a market that declines in size every year.

ANC and their quota holders, West Fraser and Millar Western, are extremely dependent on fibre from the ranges. Through government policy, this reliance has been growing. The government directed ANC, as it did many companies, to increase its harvest substantially to eliminate pine that would support mountain pine beetle populations.

However, while their annual allowable cut (AAC) was approved at a very high level for 15 years, compared to what it would naturally support over the long term, they have not been allowed to harvest in the range portions of it since 2013, and some parts even longer. As the reason for the deferral has been waiting for government to complete a range plan, they are, of course, nervous and argue they are approaching desperation.

To keep their mill operating, and the mills of some of those they trade fibre with, and satisfy their quota holders and commercial arrangements, they have kept up the harvest level on the eastern portion of their FMA only, outside the ranges.

The problem is obvious. You can't sustainably cut the same number of trees from a small area as you can from a big one – but that is exactly the situation in which they've been placed.

And, the longer they are kept out of the ranges, the more they will need when they are allowed to enter, if they are to maintain the same harvest level.

ANC has, quite rightly, requested that their annual allowable cut be reduced on their whole FMA. Their largest quota holder, West Fraser, expressed their strong support for this strategy. Their considerations included:

- The mountain pine beetle threat, while present, has not come close to having the impact that the government expected a decade ago.
- ANC wants to see their prize asset continue – continue to provide profits for ANC, jobs and wealth for Whitecourt, and valuable partnerships for local sawmills.
- To continue to harvest at the current AAC, they would be forced to overharvest outside the range, force extensive downsizing on one or more of their wood fibre partners to survive, and face their own probable demise. Reducing the AAC now, rather than waiting until the end of their surge in 2028, allows them to continue harvesting enough volume for ANC sustainably, likely for decades to come.

A fortunate consequence is that more trees remain for caribou.

Recommendations

The government should immediately approve ANC and its quota holders to harvest inside the Little Smoky and A La Peche caribou ranges for the 2016/17 season, on a limited basis and in “second pass” areas, consistent with the schedule below.

The government should direct ANC to prepare a forest management plan amendment by 2017, consistent with the recommendations here.

The amended forest management plan will reflect the following harvesting levels, enabling harvest in the range on a limited basis in the first five years:

	FMA-level reduction	FMA AAC	Harvest level inside ranges	Harvest level outside ranges
Year 1	150,000	948,000	548,500	400,000
Year 2	225,000	873,500	498,500	375,000
Year 3	250,000	848,500	498,500	350,000
Year 4	275,000	823,500	473,500	350,000
Year 5	300,000	798,500	448,500	350,000
Annual Average	240,000	858,500	493,500	365,000

This formula can be re-assessed, in combination with the suite of caribou recovery activities implemented by government, after the first five year period to determine its efficacy in meeting both the 65% recovery target mandated by SARA, and the company’s continued viability.

Other Forest Management Considerations

For the Canadian Forest Products (Canfor) and West Fraser Hinton forest management agreement holders, who are much less dependent on range wood fibre, I recommend rescheduling much of their harvesting outside of the ranges for five years. They can seek modest volumes inside the second-pass areas of their FMA areas. I do not expect these volumes to have a material impact on the overall harvesting rescheduling in the ranges.

Overall, even at the end of five years of limited access, I would expect only a small part of the range to have been impacted, most or all of that in second-pass areas, and at the same time restoration work will be complete, and thousands of kilometres of seismic lines on the march to becoming habitat over time.

Recommendations:

Schedule all significant harvesting, outside the ranges in the Canadian Forest Products Ltd. and West Fraser Hinton Forest Management Agreement areas for 5 years, except for limited quantities of mountain pine beetle infested stands and “second-pass” stands.

Pooling of Forest Fibre

The concept of pooling fibre amongst companies to limit impacts in the range has been explored, more than once, in previous decades, and was discussed again internally amongst forest companies during my exercise.

Forest companies who have sufficient fibre at this time outside the range do not feel it appropriate to “force” them to share with the others, and view this approach as, essentially, confiscation of a property right. That seems to me somewhat simplistic and somewhat of an exaggeration, given the inter-connectedness corporately of some of the firms, and the tremendous integration of fibre sharing overall in the region.

There is an argument to be made that companies are legitimately conserving this wood in anticipation of an eventual falldown from pine beetle surge. Without knowing the intimate details of the companies’ corporate strategies, it is difficult to assess this issue accurately, but I have no reason to believe the companies are not accurately portraying their concern.

At any rate, because of the lack of data, the disinterest of some companies, the insistence on compensation which could be, under some circumstances, massive and other challenges, it was not possible in the time frame necessary for this work to completely determine whether pooling can be accomplished, and how.

Therefore, as outlined above, I recommend the government convene a process immediately to engage an experienced forestry executive or firm with professional forestry experience to examine the data, the concept and potential for the solution, and to cost the approach to determine its utility.

If a solution emerged, it can easily be vended into this framework to provide additional protection to habitat in the area.

Recommendations

Government will convene a process within 90 days, chaired by an experienced forestry executive or firm to conduct a thorough analysis of the concept of a regional wood fibre basket, assessing the opportunities the concept may create for increased caribou habitat, as well as efficiencies in wood supply that may moderate the post-pine beetle surge falldown.

A path to 65%

This report is about taking action now. Caribou cannot live on good intentions and studies on shelves.

The federal recovery strategies for these herds clearly describe the critical habitat requirements necessary to recover caribou populations to the point where they can survive naturally, without a fence, without a wolf cull. I want to point out that this may not ever be possible, even with the entire area protected and in park-like status. However, that is the current law.

Ultimately, the real value of any action must be in putting these ranges on the path to having 65% undisturbed habitat, as required by the federal recovery strategies to achieve self-sustaining caribou populations.

Other measures that do not directly increase habitat are, in some sense, only efforts to buy time for caribou, and perhaps give them a positive boost.

The forest harvest volumes and schedules described in the report result in somewhat less harvesting than was proposed in the Task Force report.

Thus, achievement of 65% within 100 years, as was shown in that report, is possible.

The restoration work I have recommended isn't simply about planting trees – it would be considerably cheaper if it was. There has been substantial work in Alberta with innovative site preparation methods that slow or stop predator access and reduce the browse for moose and deer.

With the application of these methods and other approaches, it may make sense to explore improved disturbance definitions, possibly investigating alternative buffer widths in the definition of critical habitat.

I fully expect the governments of Alberta and Canada to explore the science and opportunities carefully in their collaboration, and offer their full and frank advice on a choice that reflects reality.

Northwestern Alberta

Substantial opportunities exist in northwestern Alberta to provide almost immediate protection to vast areas of four caribou ranges. Immediately following and subject to consultation with affected Indigenous communities to assure their Aboriginal and Treaty rights are protected and honoured, the Government should:

- Substantially expand the Chinchaga Wildland Provincial Park by 347,600 hectares, adding all of forest management unit P8.
- Permanently protect forest management unit F20, adding 870,240 hectares of protection to the Bistcho range.
- Permanently protect forest management unit F10, adding 294,440 hectares of protection to the Caribou Mountains range, and 305,190 hectares of protection to the Yates range.

These measures will achieve permanent protection of 24% of the Chinchaga caribou range, 61% of the Bistcho range, 72% of the Caribou Mountains range and 72% of the Yates range - immediately. It does not require displacement of any existing forestry tenure and existing oil and natural gas leases can be grandfathered in; these are not as extensive as some other areas. There are no operations currently underway in the area involving major drilling programs, mines or similar developments. It further protects vast areas of wetlands and there are substantial opportunities to use this protection to provide valuable sinks for carbon.

The landscape in this region consists of as much as 40-50% wetlands habitat preferred by caribou. When combined with other management opportunities, the 65% range target can be achieved in the Chinchaga and Bistcho ranges. The province should move quickly to complete range plans for the area in 2016.

The range planning process here, as in the F23 area, should involve a collaborative process including Indigenous communities, ENGOs, industry, municipalities and the Province.

Ultimately, the Province is responsible to complete a range plan which both meets the federal SARA requirements and meets with Provincial land use goals and objectives. However, the process of constructing the range plans requires much more collaboration than witnessed thus far.

This suggestion reflects both the growing court-ordered requirements for consultation related to Aboriginal and Treaty rights in land use decisions, and the reality that in contemporary Canadian society, consultation that is meaningful is best achieved with significant input from those citizens most affected by government decisions.

The expansion of protected areas to include all of P8, F10 and F20 provides a tremendous foundation on which to finalize range plans in the area.

It will also be necessary to engage in consultation, and ideally some joint planning, with the BC and NWT governments as caribou in these ranges move back and forth across the provincial border.

Recommendations:

Establish a wildland park over forest management unit P8. The park will enable existing oil and gas dispositions to continue, and support continued trapping, hunting, fishing and backcountry camping. Off-highway vehicle and snowmobile use would require careful management to minimize, and in many cases, exclude access to the area.

Permanently protect forest management units F10 and F20, with similar conditions to enable existing oil and gas dispositions to continue and support continued but restricted recreational use.

Immediately establish inter-provincial planning committees for these ranges with British Columbia and the Northwest Territories, and proceed to complete range plans by the end of 2016.

Opportunity for protection: FMA – F23

This report recommends, in consultation and co-operation with the Little Red River Cree Nation (LRRCN) and Treaty 8 members, to protect as much as between 40 and 50% of the F23 forest management unit adjacent to Wood Buffalo National Park and south of Caribou Mountains Provincial Park, through mechanisms to be negotiated with LRRCN as a part of the range planning process during 2016.

LRRCN own a large forestry quota in the area. They have expressed a willingness to contribute to greater caribou habitat protection in the area, but—quite rightly—want and deserve an increasing role in cooperatively managing this area with the Province. They deserve to be consulted and supported in their willingness to reduce forest harvesting—which produces jobs and income for them—in return for some long term habitat protection.

The exact mechanisms for this co-operative approach can be worked out by the parties, but the framework would be a range planning exercise to be completed this year in a joint undertaking between the Government of Alberta, Tolko and other forest companies in the area, LRRCN, ENGOs and energy interests, supported by necessary resources from the Alberta government.

The industry group has made initial contacts with ENGOs, Indigenous communities and the Alberta government to suggest a collaborative planning process which could involve some 5 million hectares—perhaps a fifth the size of Great Britain—and potential protection for up to two million hectares. Science and discussion will have to validate this potential.

This would be a tremendous undertaking, and an even greater achievement if brought to success.

The LRRCN have suggested their quota be converted to a Forest Management Agreement. While this approach has real challenges, it should be explored seriously by the Government of Alberta as a tool supporting one element of the habitat solution in the area. Alternatively, an approach that combines planning over a greater area, inclusive of more forest tenure and range areas, could secure an even larger benefit.

Of equal importance to the actual habitat protection in this and other areas is the need to completely and whole-heartedly change the approach of the government in dealing with Aboriginal and Treaty rights issues in relation to the land base these herds inhabit.

Indigenous peoples are stewards of the land. They are generational students and protectors of wildlife and natural resources, as well as wise, effective, and willing partners for the Alberta government in land management and resource protection.

They need to be included, valued, respected, honoured and made partners — they are not “stakeholders”, just another group to be consulted.

Indigenous communities have both Constitutional rights and a very deep traditional knowledge base to bring to every conversation. They are not mere actors who happen to be geographically close to the caribou herds. They are unique citizens and governments who have both a historical and relational experience to bring to the conversation. Land management approaches, governance approaches and innovations centred on partnerships need to be a hallmark of any reconciliation of the Government of Alberta’s interests with Indigenous interests.

Indigenous peoples also value resource jobs. Their community members need to work, earn income and support families.

Their perspectives are very much lost in the current construct. My recommendation is to create a new land management partnership to govern F23 and adjacent areas, either through an FMA or another constructive co-operative land management arrangement. This is an important pilot project in this area, to be put in place before the end of 2016, coincidental with the completion of a range plan for this area.

This can and should be done by the end of 2016. The area described as forestry area F23 provides a unique opportunity for collaboration in protecting caribou habitat.

As noted above, I recommend an immediate commitment by the Alberta government to a new co-operative range management process with the Little Red River Cree Nation, forest companies, ENGOs and others to establish a range plan for the area around forest area F23 and Red Earth in northern Alberta.

Whichever of the above approaches takes place, the ability to protect 65% of the caribou range for the herds involved in the areas around F23 and into the Wood Buffalo National Park and provincial Caribou Mountains Park should be readily achievable given the amount of land already protected, willingness of Indigenous peoples in the area to contribute to further protection strategies, and the significant element of habitat that is wetland and, therefore, not particularly under development pressure.

Recommendations:

Government should proceed to set a terms of reference for caribou range planning in northwestern caribou ranges, defining an approach that recognizes the unique status of the Little Red River Cree Nation and other Treaty First Nations, and leverages existing relationships with stakeholders.

Government should enable and support discussions to see Little Red River Cree Nation, and potentially other Indigenous communities, established as holders of a forest management agreement in this area.

The role of Government

The provincial government has a strong, over-arching responsibility to protect caribou and their habitat, even if federal SARA legislation did not exist.

Normal land use planning values require provincial governments, as stewards of the land for future generations, to plan not only for economic values for land use, but also for conservation, recreation and, importantly, for Indigenous peoples' ability to exercise their rights.

It is evident that economic interests tend to aggressively pursue government's attention, towards ensuring that the generation of wealth - a legitimate enterprise which creates jobs and tax revenue - are met.

Caribou, of course, have a less well-funded, less resourced and less obvious lobby for their interests.

While environmental and other NGOs are active in promoting caribou habitat protection, there is no doubt that the resources available to industry to lobby for their case vastly outweigh the resources available to those ENGOs representing and actively arguing for the public's interest in caribou recovery.

Government has a strong role in ensuring that industry is accountable in both the planning and execution of their resource extraction. More importantly, government is itself accountable and responsible for ensuring that sufficient caribou habitat is protected.

Failing to protect enough habitat would ultimately result in dramatic federal intervention through SARA. It is in the province's economic interest to ensure it exercises its responsibility to protect habitat, despite intensive lobbying by industry.

To date, it is clear government has not always done this. Undertaking a Task Force report with a group made up solely of a couple of industry representatives and couple of government representatives does not provide comfort that the broad public interest is being taken into account.

Going forward, government has an opportunity to redress the past by providing greater balance, greater transparency to its efforts, and greater inclusion.

In addition, there are significant opportunities for better and more innovative regulatory approaches in the regulatory arena, dealing with everything from seismic reclamation requirements for industry to ILM and other approaches, as I have noted.

Predator control

Wolf control will need to continue in the LS/ALP area for the foreseeable future, and will also be needed in some limited circumstances elsewhere where caribou are particularly at short term risk.

Most authorities believe the wolf population in the LS/ALP area is significantly higher than natural levels, possibly by as much as 50%.

In addition to caribou, wolves are taking an extraordinary number of elk (one First Nation representative reported an incident of 13 elk being killed by a small wolf pack, for example), moose and other game. Of course, they are the primary cause of caribou mortality thanks to caribou habitat destruction.

Currently, wolves are killed in the LS/ALP by government-delivered aerial shooting, poison and private trapping. There is opposition to the wolf cull by animal rights activists, and concern about the methods even from those who approve wolf control as a short-term or transitional method while caribou habitat recovers sufficiently to limit wolf access.

For example, the province kills an average of approximately 20 moose and elk per year to use as strychnine bait stations set to kill wolves. In addition, the strychnine-laced traps used to kill the wolves have unintended consequences, since other animals—from cougars to bears and birds—unwittingly eat the same bait.

In conducting wolf control, society has embarked upon species valuation trade-offs that not everyone is comfortable with.

Ideally, the restoration of habitat in the LS/ALP areas over time will reduce the need for the wolf cull. Other efforts, such as the caribou rearing penning project, may also reduce the need for a cull.

However, even if the entire LS/ALP area was protected today from all industrial activity, it would likely be decades before habitat was sufficiently restored to reduce wolf predation on caribou sufficiently, such that the province could eliminate the wolf cull.

Indigenous representatives argued that they would prefer to replace poisoning of wolves with approaches that avoid killing unintended species, and for direct Indigenous participation in wolf control efforts. Given their traditional knowledge and the direct impact to their rights and traditional use, this is well-advised and should be given consideration. At the same time, discussion needs to continue to reflect the reality that wolf control using trapping alone has not previously been successful.

In addition, the Alberta Trappers Association has raised concerns regarding the use of poison, and will be submitting a proposal to government aimed at decreasing its use.

It would be worthwhile for government to engage Indigenous communities and trappers to assess the best methods for wolf control going forward.

Recommendations:

The wolf cull should continue in the Little Smoky and A La Peche caribou range, and will need to be used on a limited basis elsewhere potentially, until such time as caribou populations remain stable without this intervention.

Government should proceed immediately to work with Indigenous peoples to identify opportunities for them to provide leadership and participation in control of wolves, starting in 2016.

Provincial-Federal Cooperation

I initiated contact with the Canadian Wildlife Service early in my work, and provided them with information prepared to date, including the Task Force report and other information. As my work progressed, I shared with them the general direction of my recommendations to government.

It would be extremely beneficial if there were greater co-operation between the government of Alberta and federal government on the whole range planning exercise. Ottawa should be fully informed of the significant progress being made by Alberta, so no misunderstandings emerge.

Ottawa has its own caribou protection issues, as neither caribou herd inside Banff or Jasper National parks have fared well. The Banff herd is now extirpated, the Jasper population is on the edge of extirpation, and the A La Peche herd, which migrates in and out of Jasper National Park, has all but ceased that migration.

Alberta's concrete efforts can assist Ottawa both in relation to herds moving in and out of national parks like Jasper and Wood Buffalo, as well as in general terms by providing evidence that Canada and provinces working together can achieve positive outcomes for caribou.

It is worth considering further jointly-funded caribou research projects, and federal funding for these projects to assist Alberta.

Alberta has long been a net contributor to Canada's revenues, and even more particularly when it comes to caribou, has spent considerably more than most other jurisdictions in funding innovative and ground-breaking research into caribou.

Alberta has spent millions, and industry has contributed further millions, to working on research and new operational approaches linked to caribou protection, often with little or no funding from Ottawa.

Now that Alberta faces tougher fiscal challenges, it is incumbent on the federal government to provide substantive, significant and ongoing support for research and protection activities to Alberta. These activities can be funded from new federal stimulus and green infrastructure spending.

With more than a dozen new range plans to complete within two years, Alberta faces a major planning challenge that it is left to resource from declining revenues in a rapidly deteriorating fiscal environment. This is an opportunity for Canada to show its commitment, care and compassion, both for caribou and Albertans, in a time of true need.

I recommend Alberta seek:

- One third of the costs of the Caribou Rearing Project funding from Canada, as this is clearly a major research project with implications for all of Canada if successful.
- 100% of funds for an additional \$10 million of research over the next ten years, into various projects identified by fRI Research and other Alberta research agencies, and critical to caribou protection, caribou habitat restoration, and the concept of a working landscape in caribou ranges.
- \$2 million in capital and \$2.5 million in operating funds for the next five years towards a Caribou Interpretive and Education Centre, to be operated by Indigenous partners in a caribou range community such as Grande Cache, to provide greater education to the public regarding the caribou's value to society, their current predicament, and the approaches being taken to protect them.
- \$5 million in funds from Canada to Alberta to support the new collaborative range planning exercises recommended in this report, which are much more expensive than traditional range planning exercises and are required by federal legislation, and therefore should be strongly supported, as partners in caribou recovery, by Canada.
- \$5 million to support Indigenous participation in caribou protection consultations and range planning activities across Alberta. Indigenous populations in Canada,

whose funding and responsibility is primarily a federal one, are completely bereft of federal funds to participate in range planning activities. Many of these range plans involve consideration of federal interests, such as the overlap of range plans with national parks like Wood Buffalo and Jasper, and Indigenous groups have no funds to actively participate in these complex, time consuming and critical discussions.

- \$100 million over ten years towards a Caribou Offset Habitat Fund, to enable purchases by government, ENGOs such as the Nature Conservancy, or others of key forestry or mineral tenure areas which are valuable to protect over the long term as caribou habitat, and for which no other funds currently exist. In many situations, habitat recovery could be accelerated if funds were available to remove existing tenures. While the 65% recovery goal can be achieved, often this will be over many, many decades, in some cases taking nearly a century. The availability of funds to acquire and retire certain tenures could accelerate this recovery dramatically.

Recommendations:

Government should formally establish a clear and specific channel of communication on caribou range planning with Environment Canada. Alberta's range planning team should meet regularly with the federal government, in a complete and transparent exchange of information and developments.

Alberta should request Canada provide representatives to Alberta's caribou range planning multi-stakeholder advisory groups.

Alberta should immediately request support funding from Canada, as detailed above in this section.

Transparency and Oversight

To assist in the transparency and oversight of range planning and implementation efforts, I recommend the establishment of a Range Management and Monitoring Board or Committee to include representatives from the Indigenous community, ENGOs, the research community, the forest products and energy sectors and the Province.

Ultimate decision-making regarding land use in the ranges belongs to the Province.

However, there are a number of activities which the Board can undertake to improve transparency, collaboration and an independent look at progress in the ranges, such as:

- Monitoring the establishment and implementation of the Seismic Recovery Program to ensure it starts immediately, proceeds rapidly and is successful. The Board can assess the annual rate of recovery work, the success of the previous year's work and the extent to which the work is contributing, over time, to habitat restoration in the ranges.
- Monitoring the establishment of and implementation of the Caribou Rearing Facility and similar projects to ensure it is begun in a timely manner and informed by Indigenous communities and caribou science, and to monitor the success of the project on an annual basis with particular attention to protection of maternal caribou and their offspring, calf re-integration into the main herd and survival rates.
- Oversee the direction of research projects in the ranges to assess the continuing potential for working landscape concepts, research regarding herd improvement, wolf control, habitat improvement and restoration and other such research as the board deems appropriate in consultation with the government, funding agencies, and stakeholders.
- For LS/ALP, make recommendations to government after five years as to whether the Board is of the view that the 65% habitat recovery target remains achievable with current plans, or whether additional measures, ranging from additional protection to different operating approaches, are required to achieve 65% habitat recovery.
- Assess the implementation of Integrated Land Management, and make any additional recommendations necessary to ensure its success.
- Undertake research and analysis with government and industry to determine the efficacy of implementation of play-based approaches and other tools to limit the impact of development in the ranges.

Recommendations:

Government should form a Range Management and Monitoring Board or Committee for the caribou ranges, with broad representation, to provide oversight for range plan implementation, monitoring and assessment, and to provide annual reports and make recommendations to government on adaptive management.

My recommendation is that the first Chairperson for the board be eminent caribou expert, Dr. Stan Boutin of the University of Alberta, who will bring tremendous knowledge and experience to the task, as well as unparalleled independence and integrity.

Interpretive Centre

As outlined above, I think it's important that communities adjacent to the ranges, citizens of Alberta and all Canadians understand the importance of caribou to the landscape, and the importance of caribou protection as a core value of society.

Currently, little is done by way of public education to inform the public on the history of the caribou, their importance as indicators of overall landscape health and their tremendous historical and ongoing importance to Indigenous communities.

In our zeal to focus on the minutiae of various options for preserving habitat, what is lost in the discussion is the reality that for tens of thousands of years, caribou survived throughout Alberta in harmony with Indigenous communities. In other words, one human society figured out how to live with caribou in a way that wasn't detrimental to their survival.

Our society hasn't done well in this regard, perhaps in part due to our focus on industrial development, job creation, and wealth creation. Ultimately, these are not ends in themselves, but they create real value for our great society through world class health services, highways, universities and schools and a host of other life-enriching benefits. This includes the opportunity to enjoy, and the fundamental responsibility to conserve, one of the greatest, most diverse natural landscapes in the world. Society needs to work diligently to protect those very natural resources from which we extract our wealth. This is not easy. Energy companies and forestry companies alike have, over the past decade particularly, made enormous efforts to analyze their work in relation to caribou protection and to develop new ways of doing their work to try and protect the caribou and their habitat.

We just don't know if it's enough. We need to make sure that there is continued public support for the inevitable trade-offs necessary to protect caribou. Educating the public about caribou is a necessary and excellent way to ensure their survival.

Indigenous communities in the area of LS and ALP are best suited to undertake this work, and should be provided the opportunity to plan, develop and implement a modest Caribou Interpretive and Education Centre in the area, funded by Canada primarily, but with contributions from time to time from industry as the economy recovers. In my experience, industry generously funds such activities, nowhere more so than Alberta.

Recommendations:

Within the next year, prepare a plan to build a Caribou Interpretive and Education Centre in the region of LS/ALP.

Completing range plans

The Province will be extremely challenged to implement the recommendations of this report, and conclude all remaining range plans by 2017, as required by federal law, unless a dedicated team is put in place to further develop, coordinate and ensure implementation of these plans.

Caribou protection work is cross-government by its nature, involving elements of various ministries and central agencies.

The work required is contentious, typically requires new approaches and may require regulatory or legislative shifts. The work also involves federal-provincial relations and inter-provincial relations. It is almost impossible for existing staff from one line ministry to achieve.

The analysis, consultation, policy development, technical work and negotiation involved in establishing these range plans and associated implementation measures creates an extremely challenging task for line ministry staff in moving these range plans forward. More resources are needed.

I recommend government commit sufficient resources towards ensuring that it is able to develop and implement all remaining range plans by 2017. At the end of the day, the Minister of Environment and Parks is the responsible and accountable provincial Minister in this area. Departments must ensure the Minister is regularly briefed on progress on these recommendations and the development of range plans.

Recommendations:

In the next 90 days, government should identify key staff resources and its approach to implement these recommendations, with Environment and Parks leading.

The Government should renew its commitment and redouble its efforts towards completing range plans for all of Alberta's caribou herds by the end of 2017. The establishing of priorities for range planning, following these initial plans outlined here, should be undertaken by Environment and Parks.

Progress on these recommendations and the completion of range plans should be reported quarterly to the Minister of Environment and Parks.

Appendix I- Stakeholders I Spoke With

Indigenous Peoples

Aseniwuche Winewak Nation
Horse Lake First Nation
Sturgeon Lake Cree Nation
Grande Cache Métis Local #1994
Little Red River Cree Nation

Municipalities

Mayor Chichak, Whitecourt
Mayor Rennie, Woodlands County
Mayor Curtis and Council, Grande Cache
Dale Gervais, Reeve, M.D. of Greenview
Mayor Mackin, Hinton

Forestry

Alberta Newsprint Company
Alberta Forest Products Association
Tolko
Foothills Forest Products
Millar Western
West Fraser
Canadian Forest Products

Academia

Dr. Stan Boutin, University of Alberta

Government

Federal Government - Environment
Canada

Non-Governmental Organizations

Environmental

Alberta Wilderness Association
Nature Conservancy
CPAWS
Environmental Law Centre
Pembina Institute
Alberta Association for Conservation Offsets

Other

Alberta Trappers Association
fRI Research
Foothills Landscape Management Forum

Energy

Canadian Association of Petroleum Producers
CAPP Caribou Working Group
Jupiter
XTO
EnCana
Explorers and Producers Association of
Canada
Cequence
Paramount
Tourmaline
Canadian Natural Resources Limited
ConocoPhillips
Ikkuma Resources