Bistcho Lake

Sub-regional Plan

APRIL 2022

Alberta

Bistcho Lake Sub-regional Plan | Environment and Parks
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Part I: Introduction

The Government of Alberta (GoA) is committed to maintaining jobs, building local economies, and supporting strong communities while conserving and wisely managing our public lands. An important part of the government's approach to managing public lands is the involvement of local Albertans—those who live, work, and recreate on the landscape. This was key to informing the Bistcho Lake Sub-regional Plan.

As part of its 2019 commitment to achieving and maintaining naturally self-sustaining woodland caribou populations, the GoA established the Northwest Caribou Sub-Regional Task Force (Task Force). The GoA initiated a sub-regional approach to caribou recovery because it ensures we consider a broad range of interests and activities. The Task Force provided recommendations to inform the development of this sub-regional plan. It included people and organizations familiar with the Bistcho Lake Sub-region, including local municipalities, Indigenous peoples and organizations, the energy and forestry sectors, trappers, recreational users, environmental non-government organizations, and other local stakeholders and knowledge holders. The Task Force recommendations were important for developing management approaches that support naturally functioning ecosystems that will benefit a wide range of species. In line with Task Force recommendations and commitments under the Alberta-Canada Section 11 Conservation Agreement for Boreal Caribou under the *Species at Risk Act*, the plan includes a focus on conserving and recovering boreal woodland caribou habitat[1] and populations.

Alberta's land and resources support our economy, our vibrant communities, and many subsistence, recreational, and cultural opportunities. This includes Indigenous[2] traditional land use and culture, activities associated with First Nations' treaty rights, and harvesting by recognized Métis harvesters. This sub-regional plan is meant to build on Alberta's environmental leadership by providing clear guidance to regulators and enabling a working landscape that supports economic opportunities now and into the future. This plan gives the regulatory system clarity to enable efficient and transparent decisions. It also demonstrates Alberta's commitment to develop our resources while supporting other land uses and the variety of wildlife and ecosystems across the sub-region. This holistic approach to land and resource management will maintain resilient ecosystems capable of supporting Alberta's economic, social, and environmental objectives for the Bistcho Lake Sub-region.

Purpose

Albertans understand that stewardship of the province's natural resources will help maintain a way of life today and for future generations. The Bistcho Lake Sub-region supports local, Indigenous, and provincial economies by providing opportunities for forestry, mineral resources, tourism and recreation, hunting, fishing, trapping and other activities. Some of these activities alter the landscape and contribute to the change, disturbance and fragmentation of habitats and ecosystems.

This plan provides certainty for Albertans in maintaining future economic opportunities and healthy landscapes capable of maintaining species diversity by outlining a series of management approaches and requirements for development and human footprint restoration. These aim to maintain or re-establish ecological processes, including landscape and habitat intactness. In doing so, this plan enables our public lands to support the interests of all Albertans, including Indigenous peoples, for the present and into the future.

Strategic Management Outcomes

Approaches and requirements in this plan focus on achieving three strategic outcomes:

Outcome 1: Support economic opportunities that provide benefits to local municipalities, Indigenous peoples, and the rest of Alberta.

Outcome 2: Consolidate development and restore footprint over time to support landscape intactness and naturally self-sustaining plant and wildlife populations with a focus on species at risk.

Outcome 3: Support recreational, cultural, and traditional land uses, including the practice of constitutionally recognized rights in the sub-region, for the benefit of local people and all Albertans.

[1] For the purposes of this sub-regional plan, caribou habitat refers to all habitat (biophysical and/or undisturbed as defined by the Recovery Strategy for the Woodland Caribou, Boreal population [2020]) occurring throughout the caribou range.

[2] For the purposes of this sub-regional plan, the term Indigenous means one or both of First Nation or Métis. The Government of Alberta will continue to consult with Indigenous peoples when government decisions may potentially adversely affect the continued exercise of their constitutionally protected rights.

Part II: Legislative and Policy Context for Sub-regional Planning

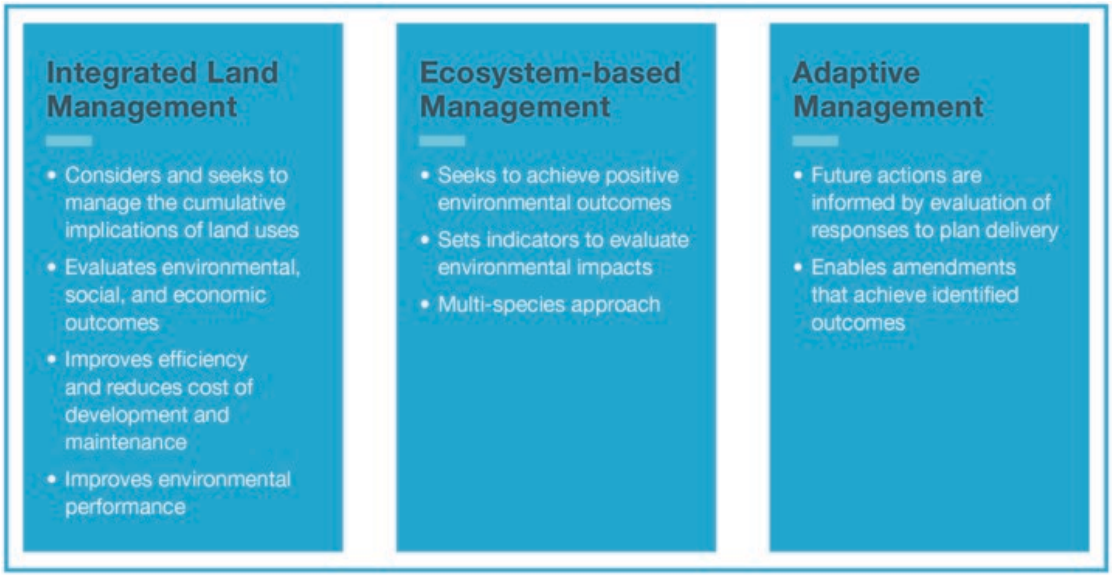
*The GoA intends to implement most of Part V through regulation, which will direct and guide decision-makers and project proponents. In some cases, this may include government commitments to complete additional work to support the implementation of this sub-regional plan.

Contents under Part V that will be incorporated into regulation and will become binding legal requirements are included in the requirements outlined in each section. This content is currently reflected as concepts and will be subject to further drafting as part of finalizing these requirements.*

Part III: A Balanced Approach

The sub-regional plan must consider and balance multiple values across the landscape to achieve its outcomes. To do this, the plan uses three important management approaches: Integrated Land Management, Ecosystem-based Management, and Adaptive Management. This balanced approach ensures activities on the landscape and their impacts work towards achieving the outcomes of the plan (Figure 1).

FIGURE 1. Management approaches used in the sub-regional plan.



Integrated Land Management

Integrated Land Management (ILM) brings key land and resource users together. It promotes coordinated land use and thereby improves land and resource stewardship. To achieve this, ILM:

- must be applied during all phases of managing land use and resources
- aims to coordinate access for resource extraction developments, reduce human footprint, and conserve or improve habitat conditions for various species
- helps with understanding how various activities occur on the landscape together, including how developments individually and cumulatively affect the landscape

Ecosystem-based Management

Ecosystem-based management (EBM) considers ecological values and natural systems as leading components when making decisions for resource management. This structured approach helps identify and achieve environmental goals and objectives.

Adaptive Management

Adaptive management is a key component of both ILM and EBM. To achieve environmental goals and objectives, approaches to managing resources may need to adjust over time. This is particularly true if an event greatly changes the landscape, like a wildfire.

Adaptive management enables the sub-regional plan to be adjusted based on how well it is achieving outcomes. Assessing this relies on identifying and monitoring key indicators that show how effective management approaches are. These indicators will guide various components of the sub-regional plan, such as road locations in the Access Management Plan (AMP) and time and location of forest harvesting. Section 17.0 (Monitoring, Evaluating and Reporting) describes these indicators and how they will be used.

Boreal Woodland Caribou Recovery

The Government of Alberta is responsible for ensuring public land management maintains the diversity of species that call these areas home. The lands also provide the foundation for our resource economy, community well-being, and traditional land use. When a species is at risk of disappearing, it indicates the landscape is changing and the natural systems that support us are being challenged. A primary concern for this plan is the decline of caribou in the Bistcho caribou range.

Woodland caribou in Alberta are listed as *Threatened* under both Alberta's *Wildlife Act* and Canada's *Species at Risk Act*. To create greater certainty around the future well-being of the sub-region's natural systems, this plan includes actions to support caribou conservation and recovery. This plan describes how woodland caribou critical habitat will be conserved, managed, and recovered as identified in the provincial woodland caribou recovery plan[3] and policy[4], and the federal boreal woodland caribou recovery strategy[5].

The objective of this plan in relation to caribou is to meet or exceed the provisions contained within the federal recovery strategy and Alberta's woodland caribou policy by ensuring habitat conditions for caribou improve over time and each caribou population can persist while their habitat is conserved and recovered. The expected outcome of the plan is to enable habitat to consistently recover towards a minimum level of 65% undisturbed critical habitat within 50–100 years while ensuring there is sufficient biophysical critical habitat required by caribou to carry out life processes necessary for their survival and recovery. Ongoing monitoring of caribou and caribou habitat will be required. Land-use decisions will enable caribou populations to be successful over the entire 100-year period.

Working towards recovering a species at risk is about more than just that species. When a landscape can support species at risk, it's a sign that the landscape and natural systems are functioning well and will be able to support Albertans into the future.

Managing Multi-species

The sub-regional plan supports broad species conservation and management in its various landscape management tools. The sub-regional plan will reduce footprint and disturbance and aims to ensure the various habitats within the sub-region will be available at any given time to support species diversity. This habitat approach for multi-species conservation will be used with species-specific management tools to ensure populations recover and are conserved. This habitat approach aligns with the Pan-Canadian approach to transforming species at risk conservation in Canada

This approach is built into several elements of the sub-regional plan:

- The AMP seeks to avoid habitat fragmentation when defining the road network.
- Long-term development footprint is considerate of impacts to major rivers and permanent waterbodies to support habitat conservation and wildlife movements.
- Habitat fragmentation, conservation, and restoration will be monitored across the sub-region.
- Habitat availability for species of interest will be assessed to understand how the plan is potentially affecting these populations.

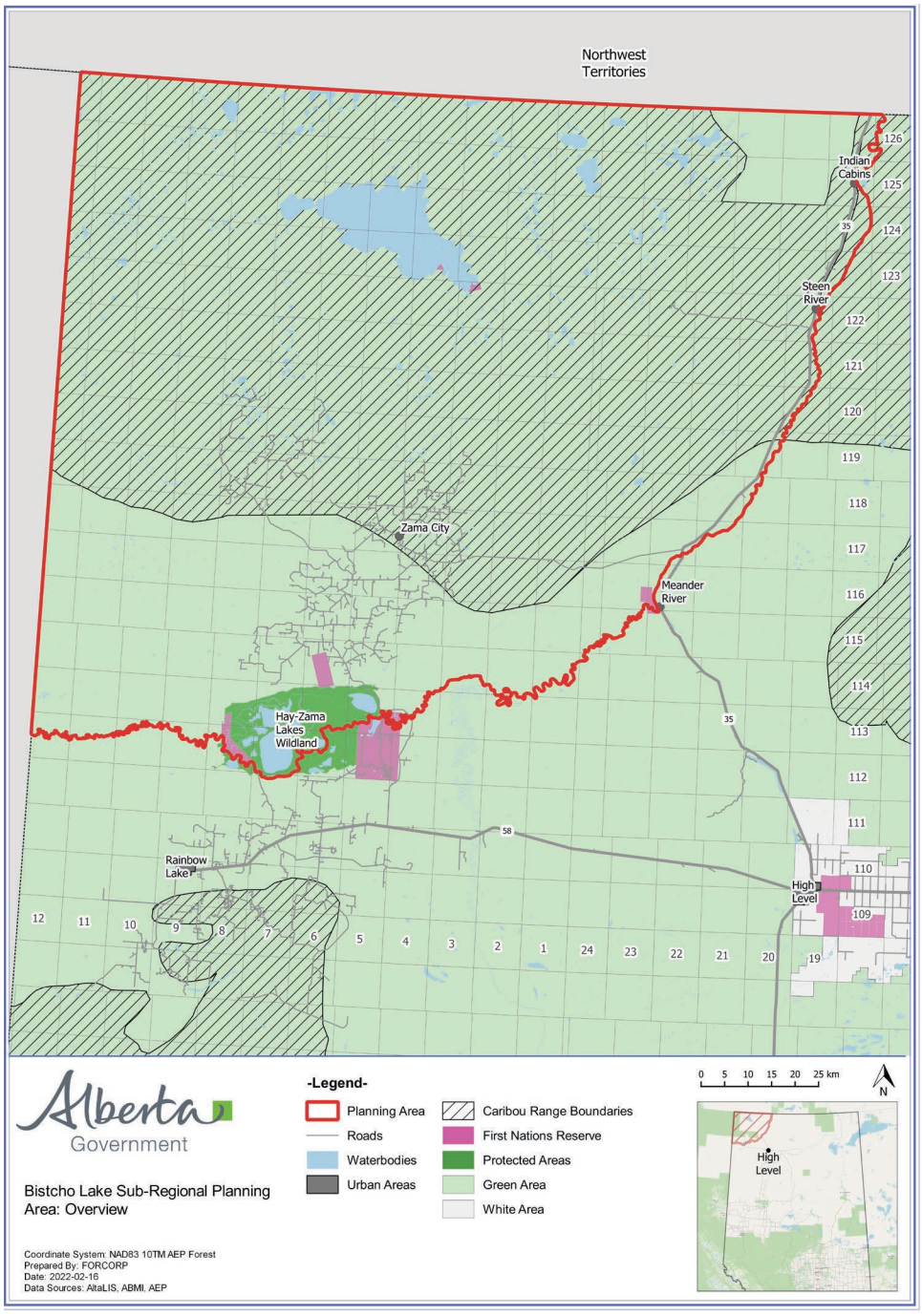
[3] Alberta Woodland Caribou Recovery Plan.
[4] A Woodland Caribou Policy for Alberta.
[5] Recovery Strategy for the Woodland Caribou, Boreal population (Rangifer tarandus caribou) in Canada.

Part IV: The Sub-region

The Bistcho Lake Sub-region is located in the northwest part of the Lower Peace Region and covers 20,093 square kilometres (km) (Figure 2). Since time immemorial, First Nations peoples have lived in the area, which overlaps the geographic area of Treaty 8. Métis peoples also share a deep history with this land.

This sub-region is entirely within the Green Area, which is managed for energy and timber production, watershed health, fish and wildlife habitat, recreation, and other uses.

FIGURE 2. The Bistcho Lake Sub-region.



Vision for the Sub-region

The vision for the Bistcho Lake Sub-region is consistent with the vision for the Land-use Framework:[6] Albertans working together to respect and care for the land and resources as the foundation of our economic, environmental, and social well-being.

The Bistcho Lake Sub-region is a working landscape that supports functioning ecosystems, Indigenous traditional land uses, sustainable development of resources, and vibrant communities.

Part V: Bistcho Lake Sub-regional Plan

1.0 Indigenous Land Uses

The sub-regional plan focuses on improving how we manage the human footprint on the landscape over the long term. This will result in a more intact landscape that can maintain and enhance opportunities for traditional land use across the sub-region.

The GoA has been working to understand what is important to Indigenous peoples within the Bistcho Lake Sub-region by directly engaging with communities and including Indigenous voices on the Task Force.Dene Tha' First Nation (Dene Tha') is a prominent First Nation in the sub-region and has been an active participant throughout the planning process.

In 1899, Treaty No. 8 was signed between Treaty Commissioners for the Crown in right of Canada and First Nations Peoples of Cree, Beaver, Chipewyan, and other Indigenous ancestry in what are now portions of southern Northwest Territories, northwest Saskatchewan, northern Alberta, and east of the Rockies in British Columbia. The Dene Tha' First Nation, believing that there would be renewed negotiations, signed an adhesion to Treaty No. 8, the following year in 1900.

What the Dene Tha' consider to be traditional territory extends north of the Peace River along the south into Caribou Mountains to the east, British Columbia to the west, and the Northwest Territories along the north. This area overlaps the Peace, Hay (Mackenzie Basin), and Petitot (Liard Basin) river systems, within which Bistcho Lake is a key intersection.

Within and directly adjacent to the Bistcho Sub-region, the Dene Tha' First Nation have six Indian Reserves, including three at Hay/Zama Lakes (Hay Lake 209, Zama Lake 210, and Amber River 211), one along the Hay River (Upper Hay River 212), and two on the southern shores of Bistcho Lake (Bistcho Lake 213 and Jackfish Point 214).

Dene Tha' Elders speak of Bistcho Lake (known colloquially as "Mbecho") as an ancestral place to which all Dene Tha' people have a unique and powerful connection since time immemorial. Traditional accounts speak of a giant from long ago who laid down on the Cameron Hills (in Dene, "Nahgahzie"), fell asleep, and then disappeared leaving the imprints of its body that are the shape of the lake shores today. These accounts are consistent with scientific understandings that near the end of the last ice age a large piece broke off from a retreating continental glacier that then melted away and formed Bistcho Lake.

[6] The Land-use Framework (LUF) sets out an approach to managing our province's land and natural resources to achieve Alberta's long-term economic, environmental, and social goals. It provides a blueprint for land-use management and decision-making that addresses Alberta's growth pressures (Land-use Framework, 2008).

The Dene Tha' people have long recognized the ecological value that the Hay-Zama wetlands provide to the abundance of biodiversity in the area, including migratory bird populations, and their role in providing traditional foods, medicines, and livelihoods.

"My parents lived and spent a great deal of time at Bistcho Lake and areas to the north in the NWT. We lived at Dogface Lake in the NWT for some time. My parents and grandparents also lived north of Bistcho Lake and in the NWT around Spawn Lake, Silt Lake, and other lakes along the NWT/Alberta border that have no name. Both my grandparents and parents migrated back and forth from Bistcho Lake along the Petitot River and north into the NWT. My grandparents, like many other Dene Tha' families, spent a great deal of time at Bistcho Lake… and moved north into the NWT and along the Petitot into BC and back."

- Dene Tha' Elder, Antoine Eht-Chillay, 2006

Dene Tha' First Nation initiated efforts for the protection and long-term management of the Bistcho Lake region and aimed to create social and ecological resiliency while providing a refuge for future generations of people and wildlife. The Bistcho Lake area is thought to contain invaluable archeological history, such as the obsidian artifacts which are thousands of years old and from volcanic complexes in British Columbia.

Elders describe a desire to heal and restore the Bistcho Lake and surrounding area to its historic richness and abundance of fish and wildlife—and they say that this healthiness is food for the heart and soul of the people. Dene Tha' First Nation believes the preservation of suitable, sufficient, and preferred wild places to traditionally harvest in the Bistcho area is key to successfully hunt, trap, fish, and gather the many species of animals, plants, and medicines upon which their culture and traditional livelihoods rely. Notably, Dene Tha' First Nation leaders have proclaimed to its members that caribou and other species at risk are no longer to be hunted until such time as the caribou are self-sustaining and can support a limited traditional harvest.

1.1 Indigenous-led Initiatives

The GoA will continue to collaborate with Indigenous peoples to identify opportunities to improve implementation of this plan, including:

- habitat restoration activities
- Indigenous-led tourism opportunities
- community-based monitoring programs

Supporting Indigenous participation can range from developing land-use plans using data and information Indigenous peoples share to opportunities for community participation in programs to restore seismic lines. For example, Dene Tha' First Nation has developed a mobile application to collect a wide range of environmental data and is working with a range of organizations to establish field programs for monitoring. There is opportunity for Dene Tha' First Nation and Alberta Environment and Parks (AEP) to explore how these data may be used in planning and resource management initiatives.

1.2 Long-term Opportunities for Traditional Land Use and Wildlife Habitat

The Task Force recommended the sub-regional plan manage the landscape to provide greater certainty about where, when, and what activities can take place across the sub-region. One of the main interests of this recommendation was to ensure Indigenous peoples have ongoing access to preferred areas for traditional land uses and cultural practices.

The measures described throughout the remaining sections of this plan work together to manage different activities and their associated footprint on the landscape. Implementing the plan is expected to improve outcomes for habitat intactness and opportunities for practicing traditional land uses across the sub-region. Achieving these outcomes will be supported by:

- implementing the Access Management Plan (AMP) (Section 2). This ensures large areas for biodiversity and traditional land use will be present on the landscape over time by:
  - outlining criteria to manage footprint across the sub-region to ensure the overall landscape supports a healthy environment
  - specifying areas for low densities of road development to ensure that large areas within the sub-region have low levels of footprint and are more conducive to traditional land uses
- enhanced requirements for restoring habitat and reducing footprint across multiple industries, which reduces habitat fragmentation and improves landscape outcomes.

1.3 Indigenous Participation in Land-use Planning

Working with Indigenous knowledge holders and land users is an important part of implementing this plan. Indigenous peoples have highlighted to government the importance of ongoing Indigenous participation in land-use planning. The GoA will continue to work with Indigenous peoples to gather traditional land-use information and consider how it can inform the sub-regional plan. Examples of how this information could be applied are outlined in Table 1.

TABLE 1. Examples of how Traditional Knowledge may inform land-use planning

Traditional land use or Traditional Knowledge	What it would inform in the sub-regional plan
Identifying an existing trail network (for example, off-highway vehicle and foot access)	• where trails are placed as part of a recreation management plan • seismic line restoration to avoid or minimize impacts to trails • road planning to avoid potentially impacting trails by considering alignment with known trail networks
Identifying sites that are historically significant, culturally significant, or important for traditional land uses	• seismic line restoration to avoid or minimize impacts to these sites • road planning to mitigate impacts on these sites from roads • the Recreation Management Plan to avoid or carefully manage sensitive areas and improve opportunities for traditional land uses
Identifying important factors for traditional land uses (for example, vegetation, terrain, and distance from roads)	• the Access Management Plan (see Section 2) during implementation and ongoing adjustments • the sub-regional plan review and resulting changes to the plan

Several areas have already been identified as important for communities through engagement on this plan. Future discussions can expand on this initial input to explore other areas important for prioritizing traditional land uses and how this intent may be incorporated into the sub-regional plan during plan review.

1.4 Approaches to Include Indigenous Perspectives and Values

Through the Bistcho Lake Sub-regional Plan, Alberta will continue to pursue opportunities to collaborate with Indigenous peoples, including the following:

1.4.1 Providing opportunities for Indigenous peoples to participate in ongoing land-use planning through a sub-regional implementation committee. The Committee provides advice to the Government of Alberta on plan implementation, review, and adjustment (Section 16.0).

1.4.2 Seeking guidance from local Indigenous peoples on how to best gather and include Indigenous knowledge in a respectful way as part of implementing the sub-regional plan.

1.4.3 Working with Indigenous peoples to gather traditional land-use information for the purpose of incorporating the information into land-use plans. For example, the GoA will work with communities to identify important trails in areas marked for restoration work to ensure restoration treatment plans support continued access to the area.

1.4.4 Working with Indigenous peoples to identify opportunities to be involved in wildlife and habitat monitoring, including completed restoration projects.

1.4.5 Working with Indigenous peoples to identify areas of importance for traditional land uses and opportunities for Indigenous-led tourism.

1.4.6 Considering data from community-based monitoring programs within the sub-region when reviewing the plan.

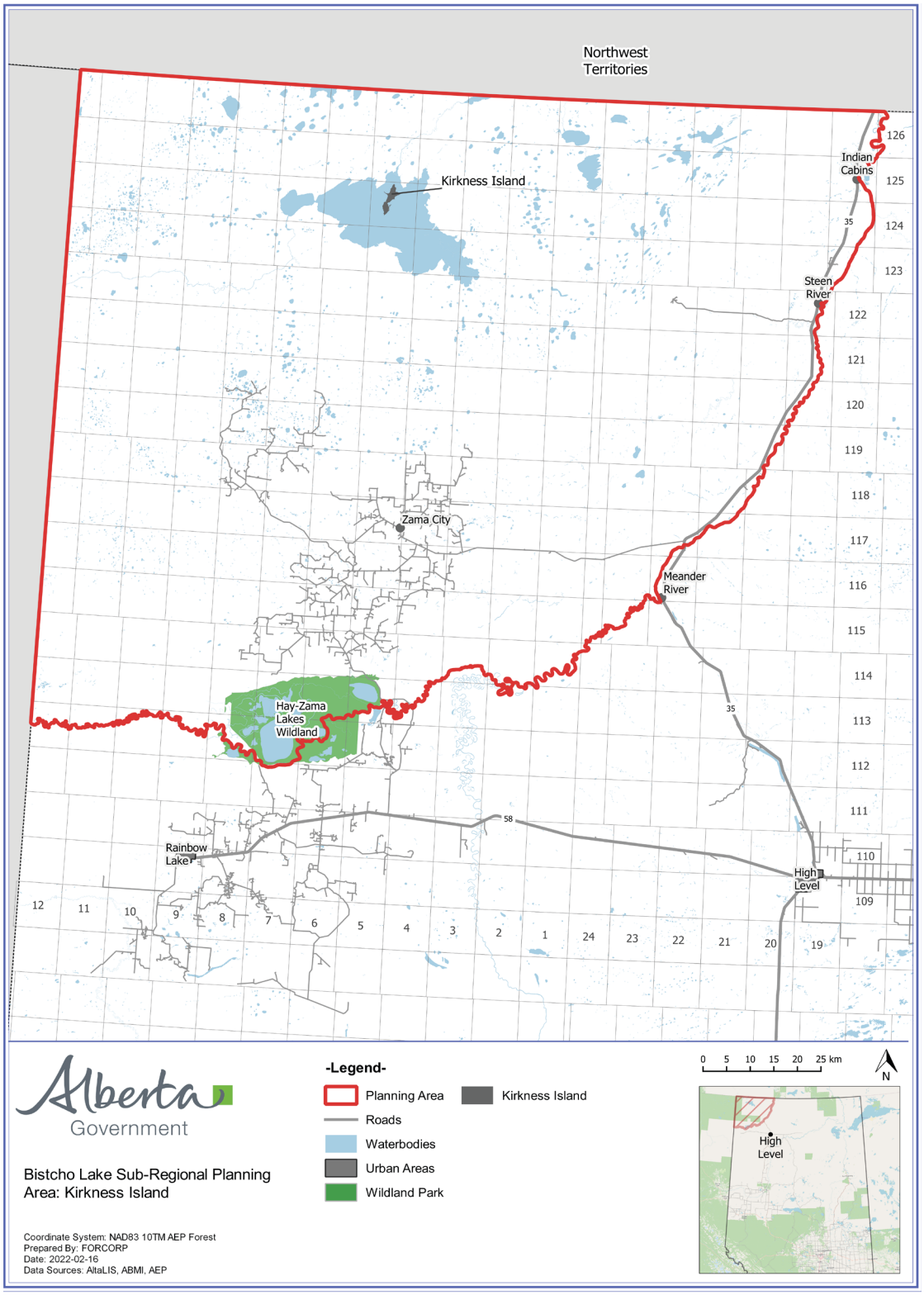
1.5 Kirkness Island (Moose Island)

Dene Tha' First Nation traditional knowledge holders have understood the importance of Kirkness (Moose) Island to caribou populations. This led to the creation of a community-led caribou monitoring program including a traditional knowledge-informed remote camera array around the Bistcho Lake area to collect data on the culturally and ecologically valuable species in the area. The results of the program, along with Alberta's monitoring data, support the traditional knowledge that caribou populations are using the island.

In recognition of the significance of the island to Dene Tha' First Nation and to caribou, the establishment of a wildlife sanctuary encompassing at least Kirkness Island (Figure 3) will be progressed towards implementation. Wildlife sanctuaries are typically managed to preclude hunting. In addition, the plan will restrict motorized access and resource development to prevent habitat loss and degradation.

This initiative serves as a strong example of Indigenous-led conservation efforts and collaboration with Alberta to support wildlife and their habitat for current and future generations.

FIGURE 3. Kirkness Island (Moose Island).



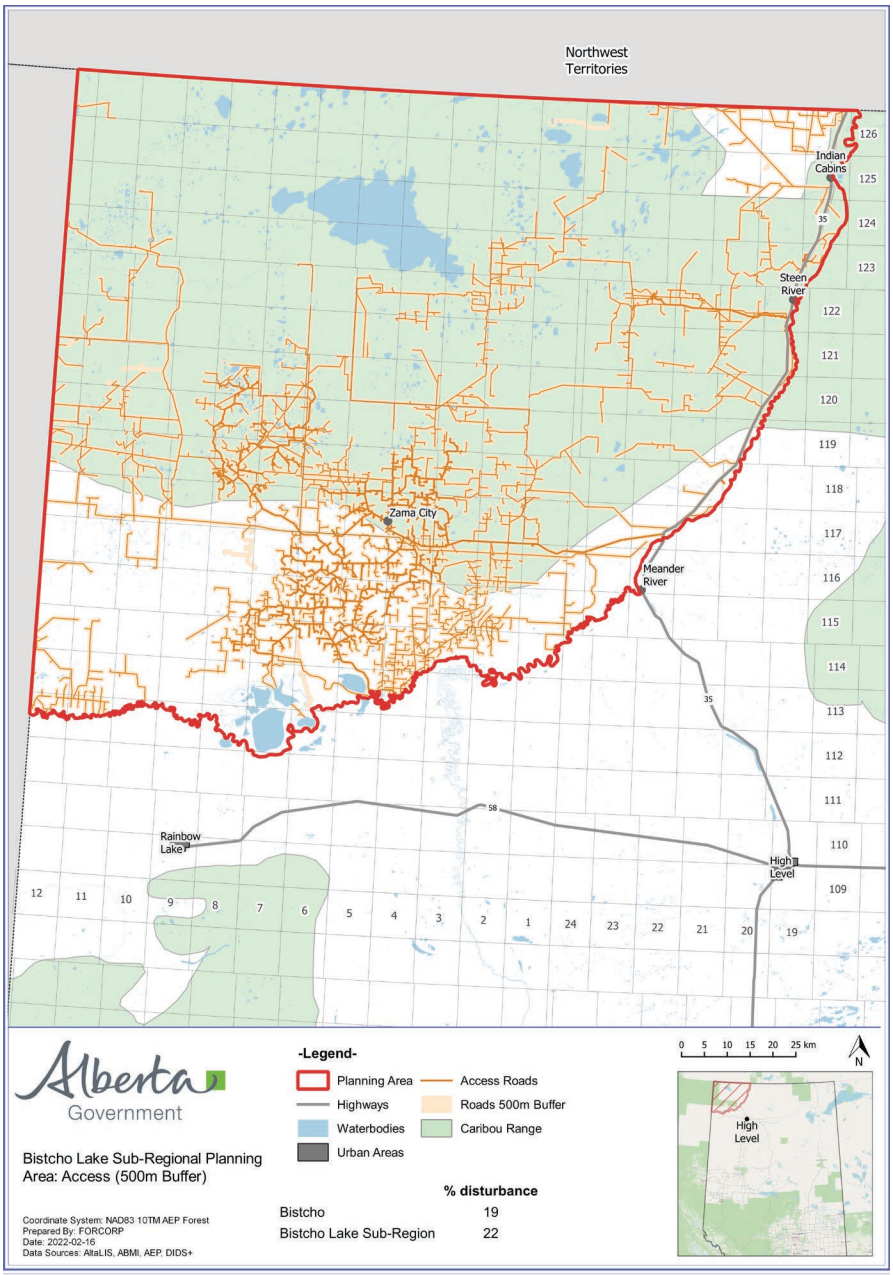
2.0 Access Management Plan

The Bistcho Lake Sub-region has approximately 2,000 kilometres of paved, gravel, and seasonal roads and trails (Figure 4) that provide access for resource development, traditional land use, or recreation activities. Proponents seeking access to resources build the majority of roads across the sub-region.

The existing road network (number, location, and scale of roads and trails) is a result of historical industrial development influenced by the technology available at the time. Over the last decade, the petroleum and natural gas industry have developed improved drilling techniques that reduce the amount of footprint required to extract the resources.

Taking into account the new technologies, there is an opportunity to better plan the sub-region since most existing roads are concentrated within a few areas and large portions of the sub-region do not have many roads. This means future roads can be developed thoughtfully to support future resource development, recreational opportunities, wildlife, traditional land uses, and other land uses.

FIGURE 4. Existing roads in the Bistcho Lake Sub-region.



The Access Management Plan (AMP) takes advantage of this opportunity and proactively plans the sub-region's road network over the long term. It incorporates existing roads, where suitable opportunities occur, while coordinating future road development so that over time, roads will be placed more efficiently to reduce footprint and support desired outcomes for the sub-region and its various land users. Some benefits of the AMP include:

- increased certainty of access to resources
- reduced costs to construct and maintain roads or trails
- expedited approval for new road applications that comply with the AMP
- reduced impacts on wildlife, biodiversity, and traditional values

The AMP outlines an approach to manage roads, including developing new roads, phasing out unnecessary roads, and restoring forests and other land covers where roads are removed. The AMP:

- is guided by technical and outcome-based criteria
- is informed by local stakeholders, municipalities, and Indigenous peoples (this will include informing road density limits that will guide overall landscape outcomes)
- considers access required to develop resources
- considers environmental parameters like wetlands, caribou habitat, and other sensitive wildlife habitats
- may be amended if amendments support the outcomes of the sub-regional plan

The AMP does not apply to roads within the defined boundaries of municipal settlements, such as cities, towns, villages, or hamlets. Implementing the AMP is a shared responsibility of regulators, industry stakeholders, and other land users.

2.1 Technical Design of the Access Management Plan

The Bistcho Lake Sub-regional AMP supports resource development activities moving around the landscape over time while maintaining areas suitable for other values, such as Indigenous traditional land use and recreational activities. To accomplish this, the AMP breaks the sub-region into 24 planning units (Figure 5). Each planning unit has been classified as land-use Level 1 or Level 2 based on engagement with local Indigenous peoples, municipalities, and stakeholders. This can adjust to align with future plan reviews. The land-use level determines the requirements for that planning unit, ensuring economic opportunities are balanced with prioritizing Indigenous traditional land uses and wildlife conservation.

1. Level 1 - Areas with greater opportunity for road networks that facilitate higher levels of resource development. Road development will minimize impacts on biodiversity and traditional land uses while ensuring sufficient access to natural resources.

    a. At any time, the number of planning units classified as Level 1 shall not exceed 13 nor fall below 10.

        i. The portions of planning units that overlap the caribou range must not exceed 25% disturbed habitat from roads.

    b. Road density of planned primary roads (excluding existing primary roads) must not exceed 0.1 km/km^2.

    c. Road density for all primary and secondary roads must not exceed 0.25 km/km^2.

    d. New secondary roads will be permitted in Level 1 planning units where the existing secondary road network exceeds the maximum density when the associated development (for example, a well pad or compressor) is greater than four kilometres from an existing road or a primary road.

2. Level 2 - Areas where roads are kept at a lower level to minimize fragmentation, maintain multi-species values and wildlife habitat, and maintain limited access for traditional land uses, recreation, and wildland firefighting activities.

    a. At any time, the number of planning units classified as Level 2 shall not exceed 14 nor fall below 11, with the majority occurring entirely inside the Bistcho caribou range.

i. The portions of planning units that overlap the caribou range must not exceed 9% disturbed habitat from roads.

b. Road density of primary roads must not exceed 0.1 km/km2.

c. New secondary roads will be permitted to allow access to mineral lease agreements existing prior to January 1, 2022.

d. New mineral lease agreements must only be accessed from primary roads.

Resulting from engagement with Indigenous peoples and stakeholders, sensitive features were identified, including cultural sites, important ecosystems and wildlife habitat, and areas to support traditional land use. To minimize future impact to these areas from disposition roads, the following will apply:

1. Primary roads must be equal to or lesser than the road class identified in Figure 6.

   a. All secondary roads must be winter-only in caribou ranges.

2. Roads will not be permitted within the sensitive areas identified in Figure 7.

FIGURE 5. Planning units and initial designations for the Access Management Plan.

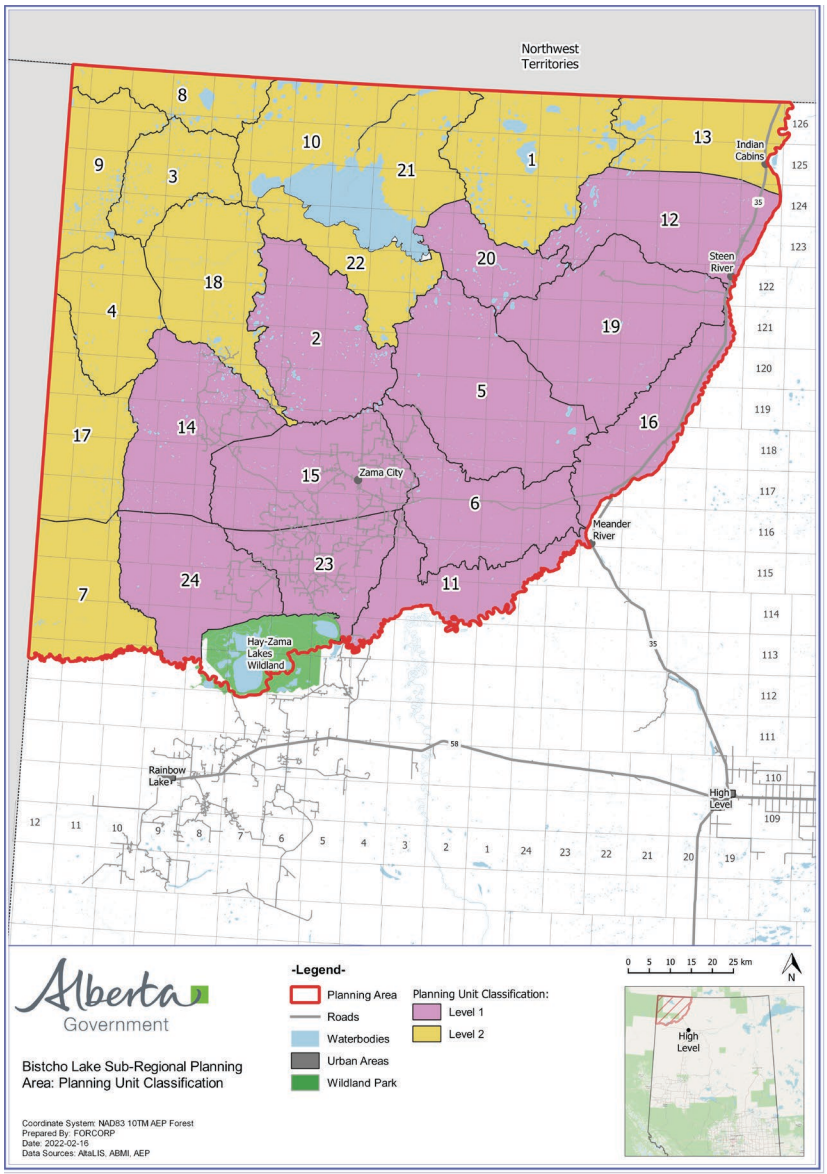


FIGURE 6. Maximum road class for primary roads for the Access Management Plan.

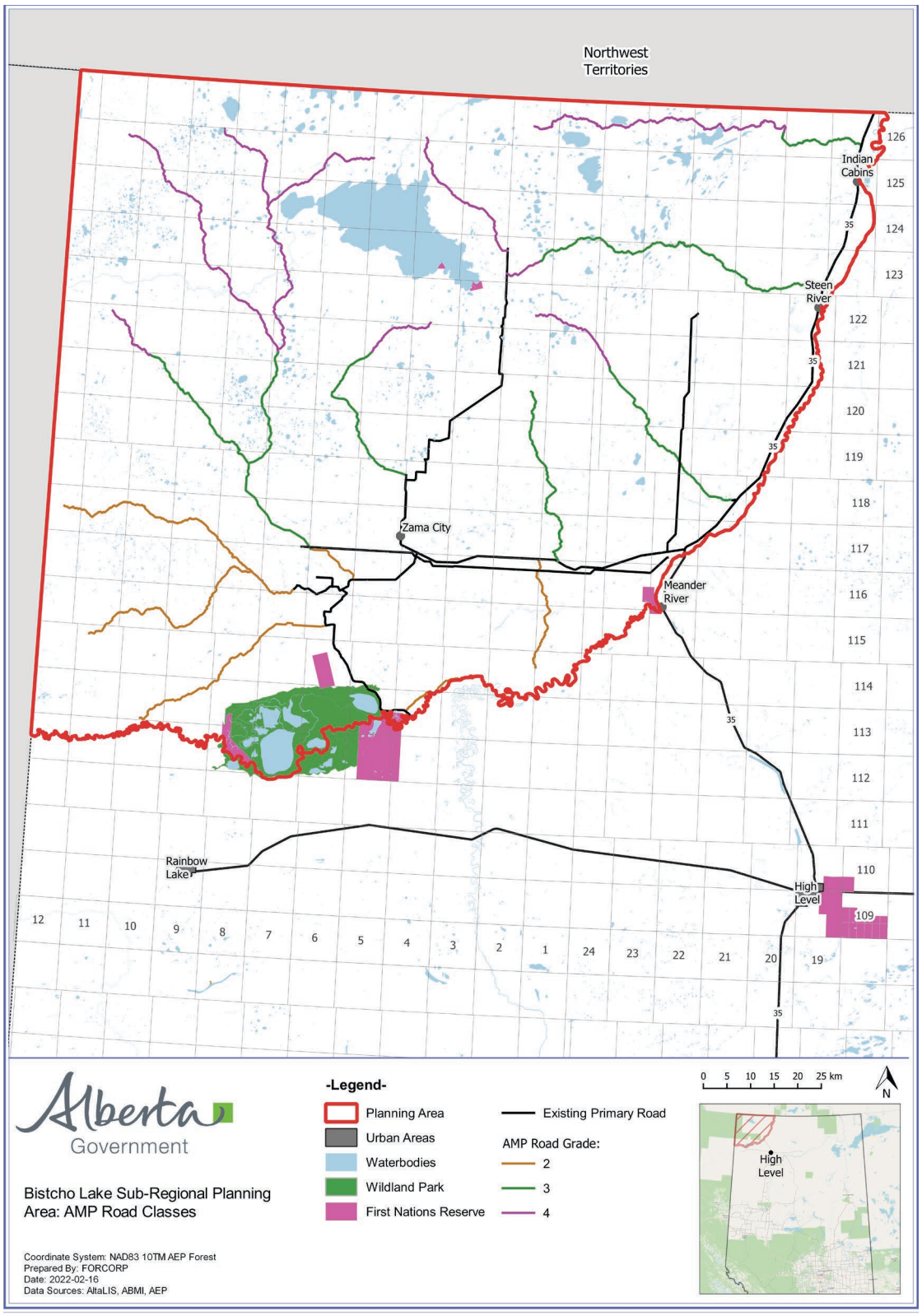
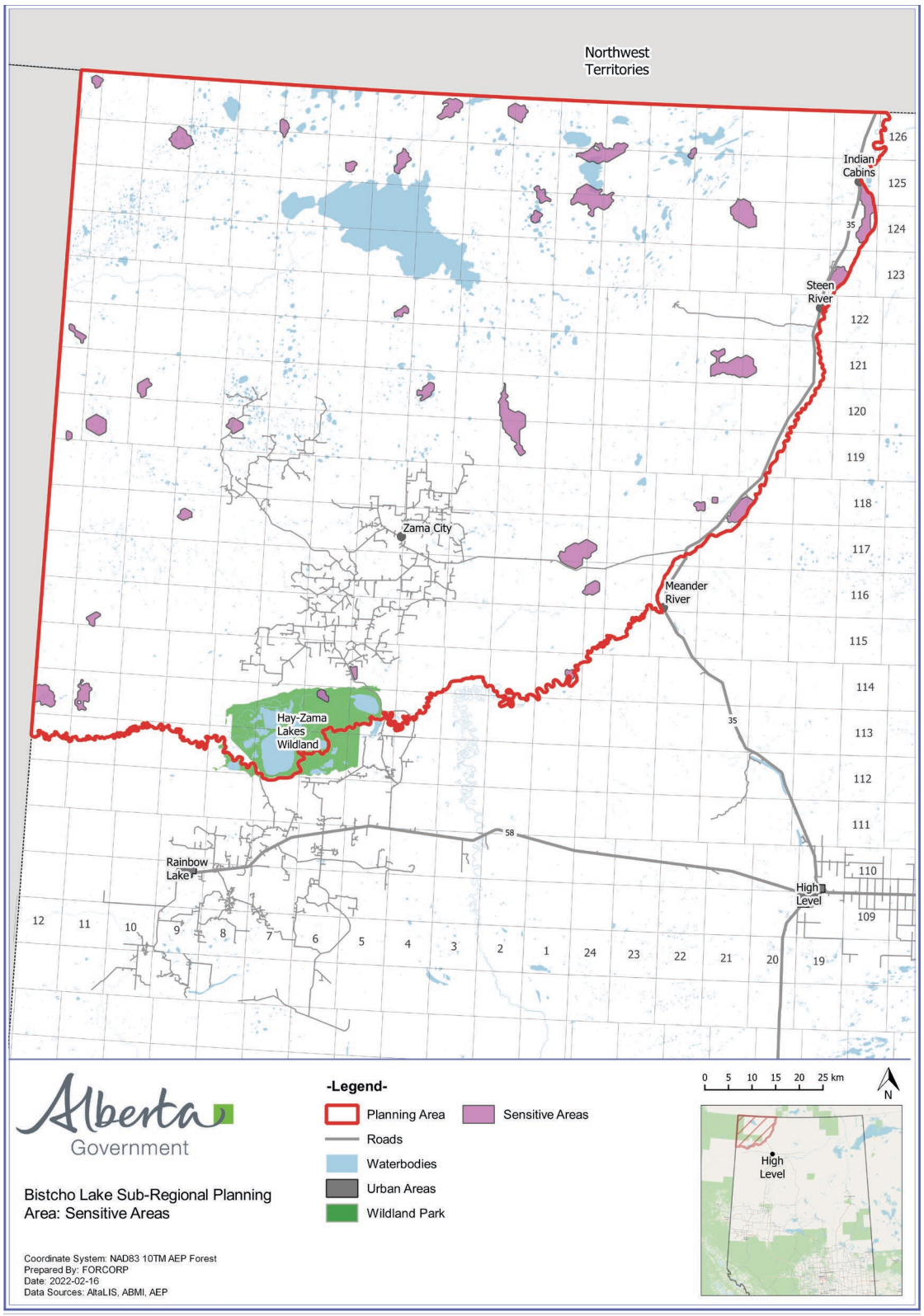


FIGURE 7. Sensitive areas in the Bistcho Lake Sub-region.



Resource development projects can take decades to complete, including exploration, planning, construction, operations, decommissioning, and reclamation. To provide investment certainty for resource access, land-use levels will apply for several years at a time. Planning unit levels will:

- apply for five years (until first plan review) after initially assigned
- apply for 10-year periods after the initial plan review
- be reviewed after each period when the sub-regional plan is reviewed (initially after five years then every 10 years after that)
- be reviewed and assigned in collaboration with the Bistcho Lake Implementation Committee (Section 16.0) and other local Indigenous peoples, municipalities, and stakeholders

Access Route Development

When determining access routes, the AMP (Figure 8):

- focuses on roads that require formal dispositions under the *Public Lands Act* and are outside protected areas
- minimizes stream crossings, linear density, and overlap with wetlands
- classifies roads as primary or secondary to account for the time required to shift to a more efficient and coordinated access system
- assesses requests to change planned roads using set criteria (Section 2.2) to ensure the desired outcomes for the sub-region are achieved
- does not cover temporary access routes, such as roads approved under a temporary field authorization or for forest harvest under annual operating plans

2.1.1 Road Categories

2.1.1.1 Primary roads—Main roads that access large areas or long-term infrastructure, like recreation areas, and often connect multiple planning units.

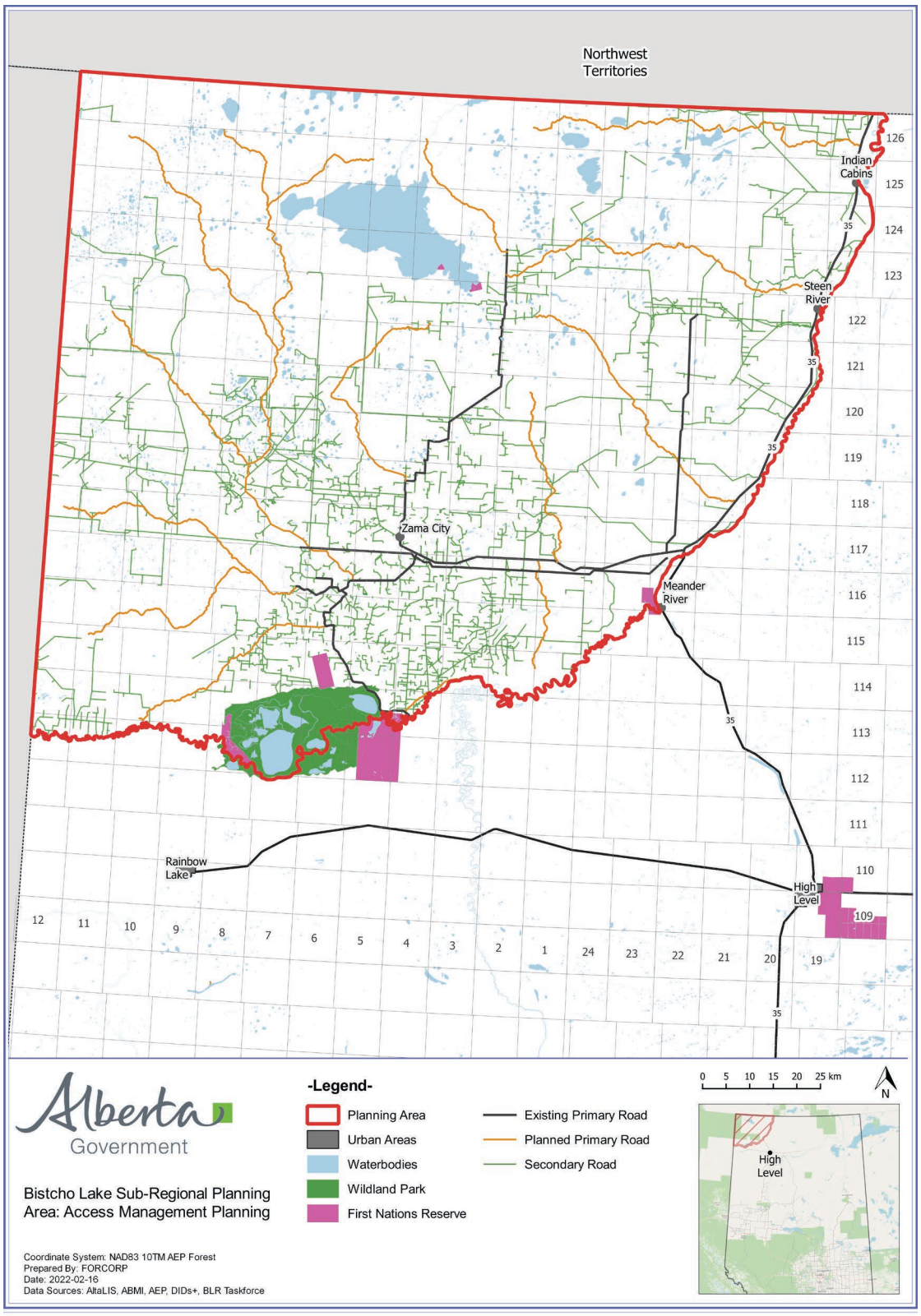
a) Ongoing appended development is permitted in all planning units.

2.1.1.2 Secondary roads—roads that are designed to accommodate infrastructure associated with resource development.

a) The road or portions of the road that are no longer required to access infrastructure associated with resource development must be reclaimed at the same time as the associated infrastructure.

b) As the intent of secondary roads is to maintain access to infrastructure associated with resource development until it is no longer required, new development will not be permitted along secondary roads within Level 2 planning units except to honour sub-surface mineral agreements issued before January 1, 2022.

FIGURE 8. Primary and secondary roads in the Bistcho Lake Access Management Plan.



2.2 Developing New Access

The AMP will lay out a network of primary roads and associated access corridors (300 metres on either side of a road centerline) using detailed landscape information. The AMP will be a living plan that can be amended as long as its technical criteria and outcomes are met. This allows the AMP to adjust to newly identified features, technological advancement, new best practices, and development constraints, such as historical or cultural sites and sensitive environmental features. Engagement about road applications with Indigenous peoples will continue, following the GoA policy that applies at the time.

2.2.1 Secondary Roads

2.2.1.1 Secondary roads within caribou range will not exceed Class IV.

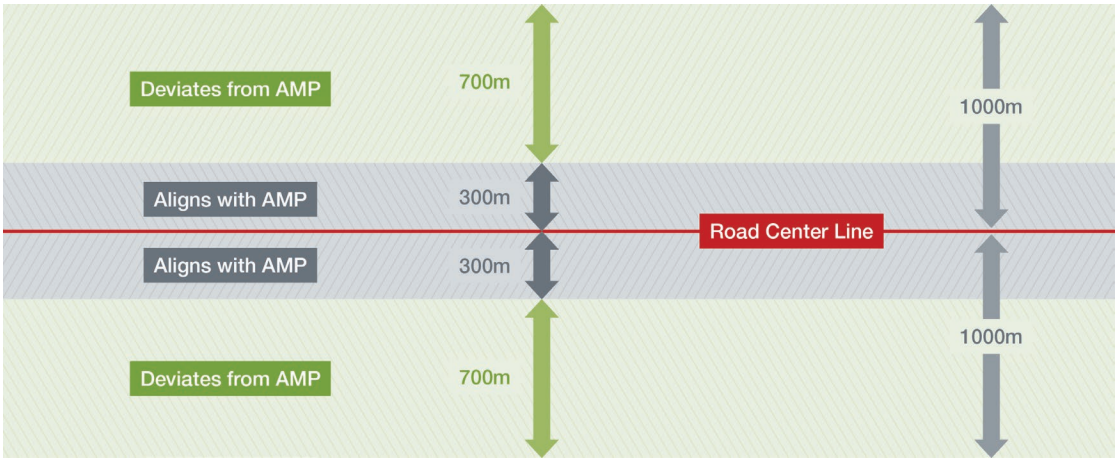
2.2.1.2 Does not overlap sensitive areas identified in Figure 7.

2.2.1.3 The ROW does not parallel within 250 metres of the valley break of watercourses or the bed and shore of waterbodies identified in Figure 14.

Road applications for primary roads will be evaluated against identified criteria and categorized (Figure 9) as one of the following:

- Aligns with the AMP
- Deviates from the AMP
- Addition to the AMP

FIGURE 9. Road application evaluation categories.



2.2.2 Aligns with the AMP Requirements

A primary road application located entirely within 300 metres of a corresponding access route will be considered aligned with the AMP (Figure 8) and may be approved for construction if it meets the following requirements:

2.2.2.1 The road classification (I to V) of the proposed road needs to be lesser or equal to roads classifications identified in Figure 6.

2.2.2.2 Upon approval, the proposed road will replace the planned road within the AMP.

2.2.3 Deviates from the AMP Requirements

A road application located more than 300 metres from either side of the corresponding primary access route but within 1,000 metres of either side of the corresponding primary access route will only be approved for construction if it meets the following requirements:

2.2.3.1 The road classification (I to V) of the proposed road needs to be lesser or equal to the corresponding route identified within the plan's roads classification requirements in Figure 6.

2.2.3.2 The proposed road will not result in a primary road density that exceeds a limit for the associated planning unit.

2.2.3.3 The proposed road must demonstrate an ability to connect with the remaining road segment outlined in the AMP to avoid isolating parts of the sub-region and stranding resources.

2.2.3.4 New roads will not be permitted within sensitive areas identified in Figure 7.

2.2.3.5 Upon approval, the proposed road will replace the planned road within the AMP.

2.2.4 Addition to the AMP Requirements

A road application located more than 1,000 metres from the corresponding access route will only be approved for construction if it meets the following requirements:

2.2.4.1 The road classification will not exceed Class IV.

2.2.4.2 The proposed road will not result in primary road density that exceeds a limit for the associated planning unit.

2.2.4.3 The proposed road must demonstrate alignment with connecting subsequent planned primary road segments.

2.2.4.4 New roads will not be permitted within sensitive areas identified in Figure 7.

2.2.4.5 An additional primary road must not be within six kilometres of an existing or planned primary road identified in Figure 8.

2.3 Watercourse Crossings

Roads can directly or indirectly impact fish and other aquatic life. Poorly constructed or maintained watercourse crossings can fragment or degrade habitat and block fish passage.

To improve local and provincial watercourse outcomes, the GoA developed the Watercourse Crossing Management Directive and a tracking system to be used by land users in public land areas beyond the Foothills Region. This directive provides consistent monitoring and centralizes data management. To align with this directive, roads with a watercourse crossing must meet the following requirements:

2.3.1 The crossing owner must monitor all watercourse crossings associated with a formal disposition and report all findings as per the Roadway Watercourse Crossing Inspection Manual as amended from time to time.

2.3.2 The crossing owner must report all watercourse crossing remediation or maintenance efforts at the time of work being commenced and at the completion of work.

3.0 Energy and Mineral Activity

Alberta is endowed with many natural resources and developing them has contributed significantly to the provincial and national economies. Alberta is uniquely positioned to meet global demand for oil, natural gas, coal, and minerals that are ethically sourced and developed responsibly. Alberta's environmental standards, which are partially achieved by integrated planning, are a main driver of the province's environmental, social, and governance performance. This sub-regional plan will ensure Alberta remains attractive to investors by outlining concrete actions that allow natural resources to be developed while minimizing footprint and landscape fragmentation.

3.1 Sales of New Crown Mineral Agreements

In September 2016, the sale of Crown mineral rights in all Alberta caribou ranges was restricted. This was done to minimize landscape disturbance while Alberta developed strategies to help caribou habitat and populations recover on public lands. This sub-regional plan lays out those strategies for the Bistcho caribou range.

Once this sub-regional plan is adopted as part of LARP, the sales restriction for new Crown mineral agreements may be removed in the Bistcho caribou range. This plan does not affect any other sales restrictions that may be in effect in the sub-region.

All new Crown mineral agreements in the sub-region must align with the sub-regional plan's outcomes and requirements. Under the *Mines and Minerals Act*, the Minister of Energy may add or remove restrictions when issuing Crown mineral agreements.

3.2 Petroleum and Natural Gas

In the Bistcho Lake Sub-region, oil producing zones include Keg River and Muskeg, and gas producing zones include Bluesky, Sulphur Point, and Slave Point. Most gas within the sub-region is produced as solution gas from oil wells.

Petroleum and Natural Gas (PNG) activities within the sub-region will be managed to reduce footprint and increase undisturbed habitat to ensure future development can occur while aligning with the plan, as outlined below:

3.2.1 Roads associated with new PNG projects must align with the requirements outlined in Section 2 of this plan.

- **a)** The access road may be longer than 100 metres but must be wholly within 100 metres of a compliant AMP road disposition edge.
- **b)** The disposition can extend beyond 100 metres of the access road.
- **c)** Access associated with this activity will not exceed the lesser of Class IV or the grade of the associated primary road.

3.2.2 All licensees will be required to meet closure quotas established under the Inventory Reduction Program as part of the Liability Management Framework in accordance with the Oil and Gas Conservation Rules.

3.2.3 The closure quotas are expected to reduce footprint of inactive and abandoned wells based on 2021 footprint within the sub-region as follows:[7]

- **a)** A decrease of 5% before 2028
- **b)** A decrease of 15% before 2033
- **c)** A decrease of 50% before 2038
- **d)** A decrease of 80% before 2043

[7] Based on 1,329 abandoned wells and 712 suspended wells.

3.2.4 A review of the progress will be initiated in 2026, 2031, 2036, and 2041. The review will determine if the targets in 3.2.3 are likely to be achieved and if additional actions are required to meet these targets.

3.3 Coal and Metallic and Industrial Minerals

As the GoA undertakes a renewed minerals strategy, the sub-regional plan will enable further exploration and development by reducing the footprint of these activities. Any future land use related to coal and metallic and industrial minerals in the sub-region must meet the following requirements:

3.3.1 Roads associated with new coal and metallic and industrial minerals projects must align with the requirements outlined in Section 2 of this plan.

3.3.2 Proposed activities related to coal and metallic and industrial minerals in caribou ranges will be subject to an evaluation of projected footprint against current disturbance forecasts for the sub-region to ensure the activity does not conflict with caribou recovery objectives (as defined by the Recovery Strategy for the Woodland Caribou, Boreal population [2020]).

4.0 Pipeline Development and Maintenance

Pipelines are essential to the oil and gas industry and for moving Alberta products to markets. While important, the large amount of pipeline infrastructure across the sub-region makes up a significant portion of the sub-regional footprint. Because the infrastructure itself is located mostly underground, pipelines provide a unique opportunity to reduce footprint. Reducing pipeline footprint in the sub-region will improve habitat for species and create opportunities to develop and invest in the sub-region.

Reducing the surface footprint of below ground pipelines in the caribou range contributes directly to achieving caribou habitat recovery objectives. Pipeline companies can contribute to improving caribou habitat by retaining vegetation during construction and revegetating portions of pipeline corridors in caribou ranges. As part of this process, it is necessary that pipeline operators can still access their pipelines for emergency response and routine maintenance.

During planning for new pipeline infrastructure, operators should seek to employ the following:

- route pipelines to be parallel and/or overlap existing primary roads identified in the AMP as much as possible
- minimize the number of initial clearings
- route around portions of habitat within caribou ranges that are considered important for reasons such as being currently intact, identified as an upcoming restoration area, or an area of high caribou occupancy
- plan above ground facility and/or valve locations to occur at primary roads identified in the AMP

4.1 Requirements for Pipeline Construction and Operations

Pipelines below ground must meet the following requirements within caribou ranges:

4.1.1 Revegetation of pipeline dispositions for below ground pipelines and all temporary disturbances must maintain a minimum level of representative vegetative cover that meets the requirements listed in Section 13.

4.1.2 A vegetation control corridor in the pipeline disposition must not exceed four metres in width.

a) The vegetation control corridor must be a minimum of three metres from the disposition edge.

4.1.3 Vegetation Control of four metres along the perimeter is permitted for above ground installations and infrastructure not approved under a separate disposition to allow for safe ongoing operations. This includes, but is not limited to, valve sites, remote metering stations (for example, fly-in only), helicopter pads, cathodic protection, and thermal electric generators.

4.1.4 Clearings are permitted for integrity dig sites (of a temporary nature and subsequently restored), monitoring sites (for example, geotechnical hazard locations that require a clearing), and where conditions that may lead to failure exist.

4.1.5 Unauthorized human access must be effectively limited on pipeline corridors occurring further than 100 metres from primary roads identified in the AMP, using strategies determined collaboratively by Alberta Environment and Parks, the Alberta Energy Regulator, and the disposition holder. Implementation of measures to limit human access must occur concurrently with delivery of actions to revegetate corridors.

4.1.6 Revegetation programs for existing pipeline right of ways will include inventory of pre-existing site conditions, planning treatments, and implementation of revegetation treatments (where required). In recognition of the effort required, pipeline operators will have 20 years following the approval date of this sub-regional plan to re-establish vegetation on existing right of ways.

a) To achieve this, operators will submit a plan with a schedule within five years outlining the plan to complete 50% of the required treatments within 10 years and the remaining areas within the next five years.

4.1.7 Revegetation of new pipeline projects must be completed within five years of pipeline installation.

4.2 Pipeline Access Allowances

These allowances account for the requirements listed in Section 4.1:

4.2.1 Emergency Access - During a pipeline emergency, immediate access to the right of ways is permitted from the nearest practical access point to the location of the emergency.

a) **Not part of regulatory details** New vegetation clearing is permitted to enable access to the emergency site.

b) **Not part of regulatory details** The new vegetation clearing must be reported as required by the regulator.

c) Recovery treatments of the access must commence in three years of the emergency being remedied and be completed in five years as per 4.1.1.

4.2.2 Maintenance Access - When the least impactful way of accessing a section of pipeline or associated infrastructure for maintenance is to develop new temporary access from a nearby road instead of disturbing a long section of pipeline disposition.

a) **Not part of regulatory details** When access is required outside of an existing pipeline corridor, authorization from the regulator is required.

b) **Not part of regulatory details** New temporary vegetation clearing (outside and in the right of way) is permitted to enable access to the site.

c) **Not part of regulatory details** Application must include a spatial file of the access route.

d) **Not part of regulatory details** The pipeline operator must develop an access plan that outlines environmental considerations, historical resource considerations, and mitigation plans as required.

e) **Not part of regulatory details** The pipeline operator must provide the plan to the regulator for review.

f) Recovery treatments of the access must commence in three years of the maintenance activity ending and be completed in five years.

5.0 Geophysical Exploration

Geophysical exploration determines the type and location of subsurface resources. This has been used extensively across the sub-region to identify oil and gas deposits. Linear footprint associated with geophysical exploration activities can leave the landscape fragmented, in some cases indefinitely, because of slow or no vegetation regrowth.

Geophysical exploration techniques and technology continue to improve and offer an opportunity to reduce footprint associated with seismic lines. To reduce geophysical footprint and increase undisturbed habitat, it will be important to ensure new, low impact techniques and technologies are deployed across the landscape. An evaluation of innovative practices will occur at plan renewal to ensure the plan incorporates best practices as they are developed.

5.1 Requirements for Geophysical Activity

Geophysical activity must meet the following requirements:

5.1.1 Vegetation clearing must meet the following requirements:

a) Receiver lines must be meandering and use tree avoidance techniques.

b) Receiver lines shall not exceed 1.75 metres in width.

c) Source lines must not exceed 2.75 metres in width, must employ tree avoidance techniques, and must meander to limit line of sight to less than 100 metres.

d) Access lines within the program area (lines specifically used for access into and within the program area and not source or receiver lines), including use of existing linear features, must not exceed three metres in width.

e) Turn around clearings at the end of the source lines and access lines are permitted.

f) Doglegs must be employed at all intersections with linear features that are greater than 3.5 metres in width.

5.1.2 Helipads must be constructed in natural open areas or existing clearings where they exist. If required, prepared helipads must not result in clearings that exceed 35 metres in diameter.

5.1.3 Shot holes drop zones used in Heli-portable programs must not exceed 16 square metres.

5.1.4 Access control must be established and extended for 100 metres from all intersections with linear features greater than 3.5 metres. Access control must effectively deter off-highway vehicle (OHV) use. Access control options may include, but are not limited to:

a) debris roll back

b) tree felling or bending across the line

c) reforestation site preparation

6.0 Forestry

Forest management in Alberta has evolved over time. Historically, multiple pass harvesting systems have been used, which are designed to minimize opening size and disperse disturbance across the landscape over many decades. Current practices often strive to emulate natural disturbance patterns. There is increasing consideration of when, where, and how much harvesting can occur over time.

Harvesting plans continue to reflect other interests and values. Current forest management considers non-timber values, such as biodiversity, wildlife habitat, water integrity, and soil productivity. It continues to evolve towards Ecosystem-based Management (EBM). Using adaptive management, forestry practices in the sub-region will continue to work towards EBM by adjusting to changes from both anthropogenic and natural disturbance.

As part of the EBM approach, forest harvesting strategies in caribou ranges have been adapted after considering caribou require large areas of undisturbed habitat of mostly mature and old coniferous forest. Future forest harvesting within the caribou range will focus on aggregating forestry activities to minimize forestry-related disturbance and create larger patches of intact habitat as the forest regrows (Figure 10). Each colour in the diagram below represents areas available for harvest.

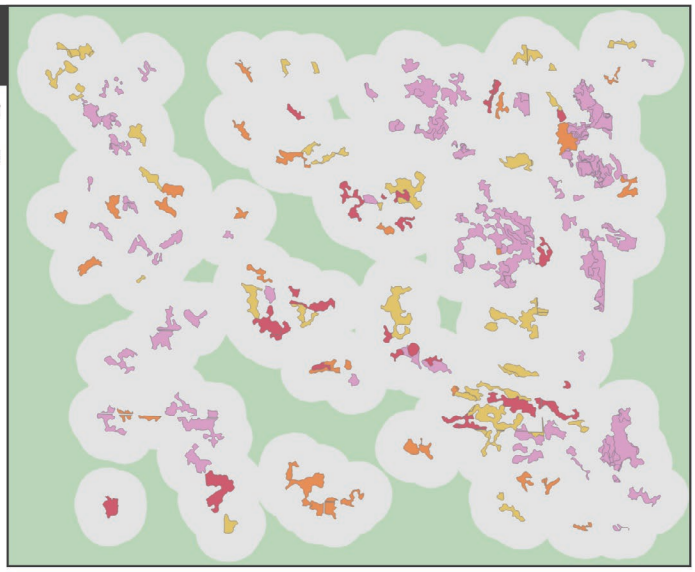
FIGURE 10. Standard spatial harvest sequence approach to forest harvest (a) compared to an aggregated forest harvest pattern after forty years (b).

a)

Current Harvest Sequence Pattern

Current harvest patterns re-enter the same areas many times throughout a sequence, requiring longer term access and smaller areas of intact habitat after re-growth.

- Period 1 (Years 1-10)
- Period 2 (Years 11-20)
- Period 3 (Years 21-30)
- Period 4 (Years 31-40)
- 500m Disturbance Buffer
- Undisturbed Habitat



b)

Aggregated Harvest Sequence Pattern

Implementation of harvest pattern more closely emulating natural disturbance from wildfire resulting in larger patches of intact habitat after re-growth. Buffered disturbance is reduced, as is the extent of access required.

- Period 1 (Years 1-10)
- Period 2 (Years 11-20)
- Period 3 (Years 21-30)
- Period 4 (Years 31-40)
- 500m Disturbance Buffer
- Undisturbed Habitat

Aggregating harvest areas will:

- reduce the amount of access required and therefore slow and reduce habitat disturbance over time
- potentially reduce construction and maintenance costs for the forest sector
- enable regrowth of neighbouring forest patches in areas fragmented by legacy seismic lines
- reduce potential large-scale wildfires by reducing large areas of connected landscape fuel

Key components of adaptive forest management are the location, extent, timing, and rate of forest harvesting. It will be important to monitor and adjust these factors to provide and recover adequate habitat for caribou and other wildlife. Harvest location considers both patterns of caribou population occupancy and available biophysical habitat within a caribou range. During the first decades, harvesting plans seek to limit harvest in areas highly occupied by caribou.

6.1 Requirements for Forest Harvesting

6.1.1 Roads associated with new forestry activities requiring a formal disposition must align with the requirements outlined in Section 2 of this plan.

6.1.2 Temporary roads, landings, storage sites, camp locations, and other temporary footprint authorized by an annual operating plan approval or temporary field authorization, including roads that follow pre-existing disturbance not currently under disposition, shall be restored in addition to any requirements listed in operating ground rules.

a) Within caribou ranges, restoration treatment must be completed within three years of a Harvest Timing Series (HTS) closing.

b) Outside of caribou ranges, restoration must be completed within three years.

c) Any portion of the footprint within a caribou range that occurs within an ecosite capable of producing caribou biophysical habitat must be restored back to an ecosite capable of producing caribou biophysical habitat.

d) Any portion of the footprint that occurs within an upland ecosite must be recovered to a plant community representative of the pre-disturbance ecosite.

e) The portion of the footprint that occurs within a wetland must be recovered to a plant community representative of the pre-disturbance wetland class (for example, bog, fen, or marsh).

f) If trees were on the site prior to construction, tree species must be re-established.

Forest harvesting in caribou ranges will follow an aggregated harvesting approach and must meet the following requirements:

6.1.3 Harvest areas in caribou ranges are broken into Harvest Timing Series (HTS) and shall be applied as illustrated in Figure 11.

6.1.4 The HTS available for harvesting will become available for harvest during the predetermined period (Figure 11).

a) There will be no further harvesting in the completed HTS until the following rotation.

6.1.5 HTS (Figure 11) does not apply for timber salvage of trees killed by a natural disturbance.

a) **Not part of regulatory details** Approval of timber salvage will follow existing department policy and in consideration of the sub-regional plan outcomes.

6.1.6 HTS (Figure 11) does not apply where harvest is required to address public safety or ecological concerns as determined by the minister responsible for implementing the *Forests Act*.

a) **Not part of regulatory details** Approval of timber salvage will follow existing department policy and in consideration of the sub-regional plan outcomes.

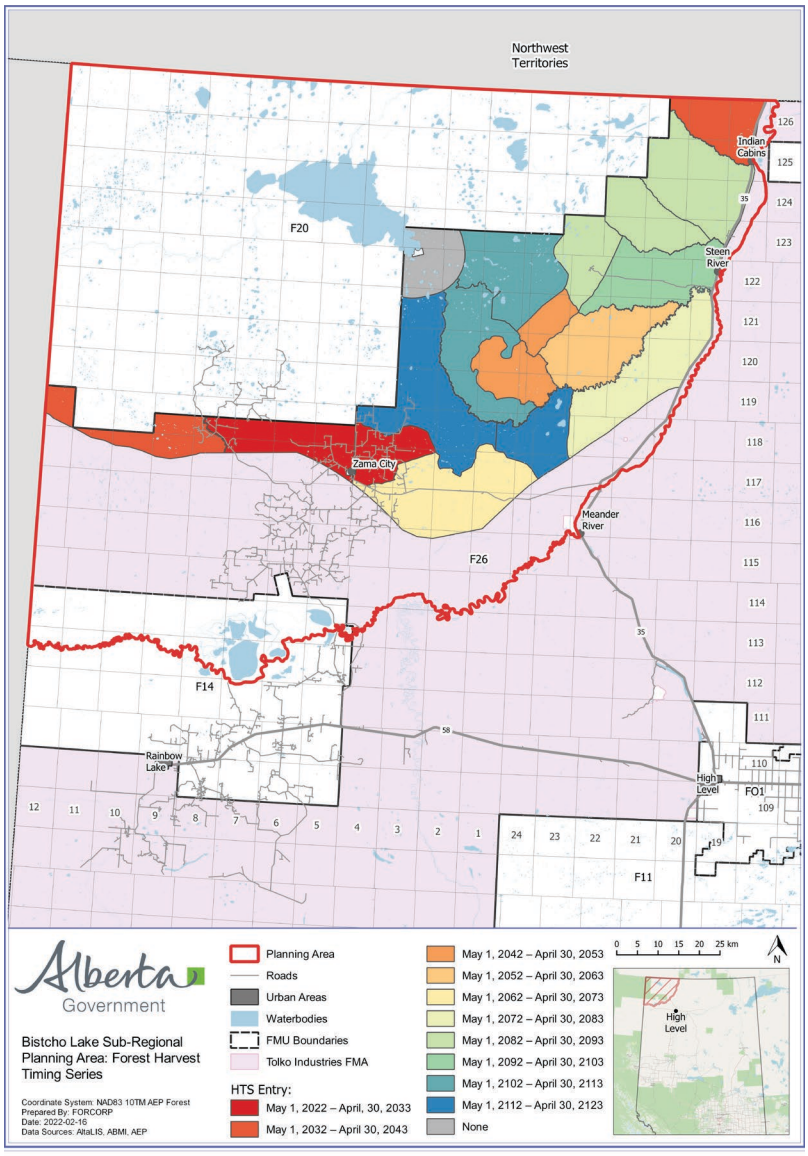
6.1.7 Legacy seismic footprint within new harvest blocks will be reforested to the same standard as the surrounding harvest block.

a) Ongoing access along specified legacy seismic lines following reforestation (for Indigenous traditional land use and trapper use) shall not exceed two metres in width and will require approval as part of the Annual Operating Plan.

b) Exemption may be provided for seismic lines that are part of the provincial recreation trail plan.

6.1.8 HTS will take effect within two timber-years following approval of the plan.

FIGURE 11. Forest Harvest Timing Series (HTS) in the caribou range.



7.0 Surface Material Extraction (sand, gravel, and borrow)

Sand, gravel, and borrow are critical building blocks for economic development across the province, as they are used to create the infrastructure needed to develop resources (for example, roads and well pads). Surface material operations have a relatively small disturbance footprint compared to other industrial land uses and are generally located near the industrial developments they service.

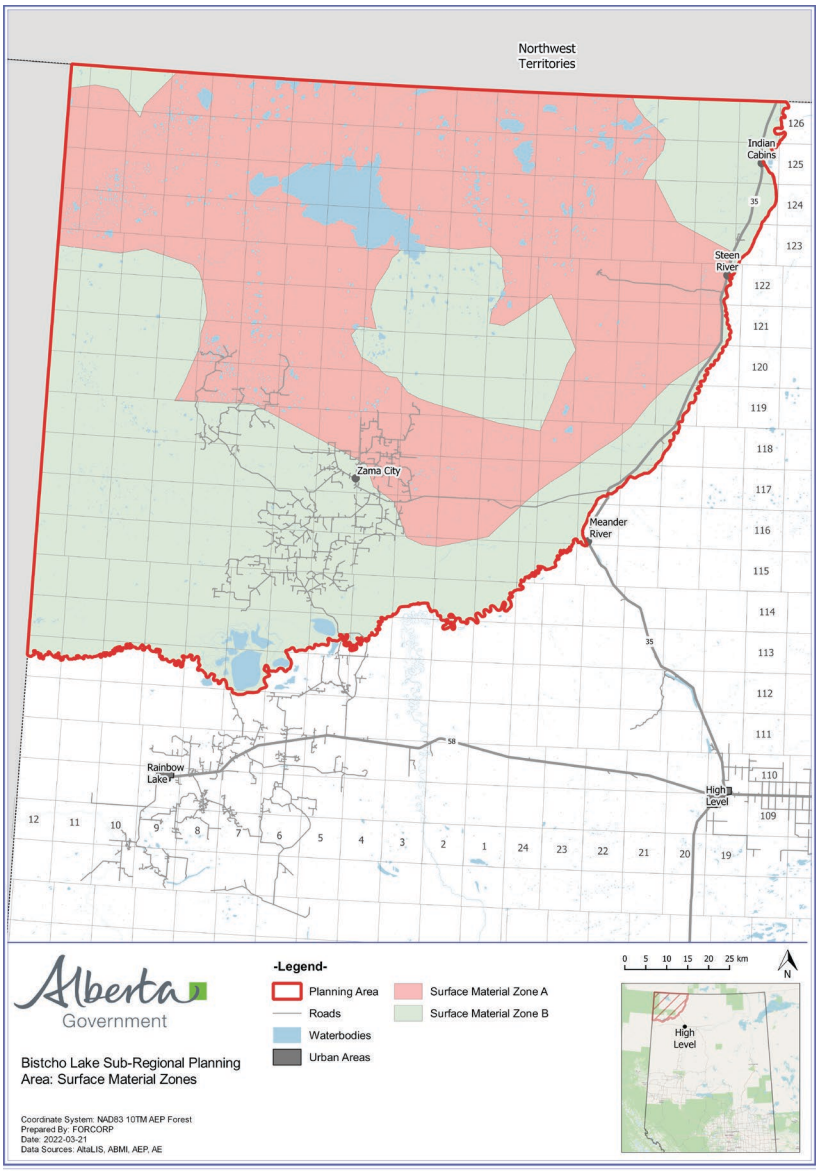
7.1 Requirements for Surface Material Extraction (sand, gravel, and borrow)

Surface material extraction must meet the following requirements:

7.1.1 Roads associated with new surface material extraction projects must align with the requirements outlined in Section 2 of this plan.

a) Appended development is permitted within 1,000 metres in Zone B (identified in Figure 12) from the edge of the right of way of a road that is compliant with the requirements outlined in Section 2 of this plan.

FIGURE 12. Surface material extraction zones within the sub-region.



8.0 Peat

Alberta's existing directive, Allocation and Sustainable Management of Peat Resources on Public Land (2016), establishes two land sensitivity classes on public lands outlined in Table 2.

TABLE 2. Land sensitivity classes for management of peat resources on public lands

Sensitivity class	Constraints to peat operations	Peat availability
Low sensitivity (peat application areas in Figure 13)	Generally available	Generally available
High sensitivity	Sensitive or critical habitats where cumulative land use poses significant challenges to the viability of sustaining fish or wildlife populations	Excluded Not available

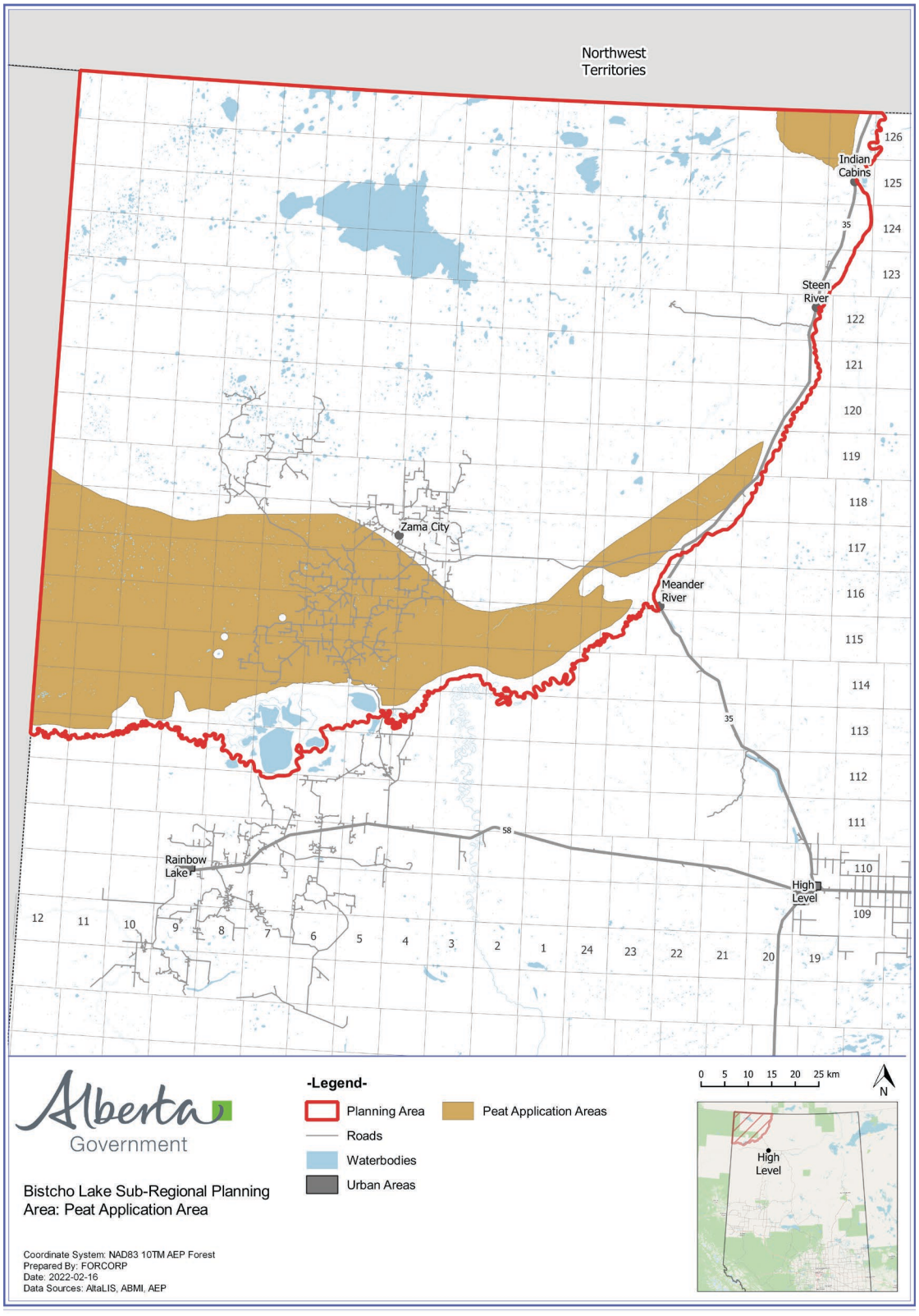
8.1 Requirements for Peat Extraction

Peat extraction must meet the following requirements:

8.1.1 Proposed peat applications must fall completely within the peat application areas identified in Figure 13.

8.1.2 Roads associated with new peat extraction projects must align with the requirements outlined in Section 2 of this plan.

FIGURE 13. Peat application areas in the Bistcho Lake Sub-region.



9.0 Transmission Lines

Transmission lines are important infrastructure for all Albertans. These lines carry electricity over long distances and bring power to homes, businesses, and industries. As electricity moves through the wires, some of it dissipates as heat. Historically, vegetation below transmission lines (>25 kilovolts) has been cleared as a safety measure. This vegetation clearing contributes to disturbance and fragments habitat in the sub-region.

As the transmission lines themselves are located high above ground, an opportunity is presented, similar to below ground pipelines, where footprint on the landscape can be reduced without significantly impacting the infrastructure. By retaining or restoring vegetation along transmission line corridors, landscape fragmentation and its impacts to a variety of species on the landscape are reduced while allowing transmission lines to remain active and economically viable.

The sub-regional plan outlines new requirements for vegetation below transmission lines:

- Vegetation will be retained or recovered. The preferred approach is retaining vegetation underneath transmission lines during construction. However, vegetation can also be re-established.
- A minimum number of access routes will be maintained in transmission line right of ways for maintenance and inspections. This is important to ensure vegetation heights are monitored and controlled to prevent arc flash, which could lead to forest fires.
- Mitigation strategies will be used to reduce residual effects from predation and human access. This includes breaking line of sight and controlling access.

Re-establishing native vegetation below transmission lines is a change to typical business practices and may present unique challenges for operators with existing transmission lines. The sub-regional plan recognizes the technical and safety challenges associated with revegetating the area beneath existing transmisson lines.

9.1 Requirements for Transmission Line Activities

Transmission lines must meet the following requirements:

9.1.1 Revegetation of transmission line right of ways to maintain a minimum level of vegetative cover indicative of pre-existing conditions to reduce negative implications to wildlife.

a) On new lines, vegetation cover is required to be a minimum of two metres high across the right of way for forest ecosites.

b) On existing lines where possible, vegetation should be maintained to a minimum of two metres high and cover the entire right of way width where it is safe to do so.

c) Residual linear corridors may be up no more than four metres wide.

9.1.2 Human access must be effectively limited on transmission line corridors using strategies as determined by the GoA and the proponent. Implementation will occur within the same timelines as restoration.

a) To support habitat improvement over time, operators will submit a plan with a schedule for revegetation (including progress at five-year periods).

9.1.3 Restoration treatments for new transmission projects must be completed within five years of transmission line installation.

10.0 Tourism and Outdoor Recreation Activities

Many areas of Crown land support outdoor recreation activities like fishing, hunting, bird watching, hiking, random camping, and off-highway vehicle use. These areas often have high scenic value, occur in natural settings, and are associated with rivers or lakes and their surrounding riparian areas and terrestrial uplands. Tourism and commercial recreation activities often overlap these areas because of the diverse and desirable recreational opportunities they offer.

Existing tourism operators on public lands have formal dispositions enabled through the tourism and commercial recreation lease process. To grow tourism, benefit the economy, and create employment in the province, the sub-regional plan supports new and expanded tourism development. A recreation management plan will be developed that will:

- identify areas to prioritize for outdoor recreation activities and tourism development opportunities
- maintain high quality, natural areas on the landscape that will support outdoor recreation activities and tourism development opportunities
- ensure recreation management areas support outdoor recreation activities and tourism development opportunities that are compatible with the ecological and resource values of the area
- carefully consider and manage land uses to ensure they do not compromise the ecological, cultural, and historical values that attract users to these areas.

Mackenzie Frontier Tourist Association has identified several notable destinations in the sub-region, including the Hay-Zama Lakes Wildland Park, Tapawingo Lodge, and Zama City campgrounds. Hay-Zama Lakes Wildland Park contains remote wilderness and was designated as a “wetland of international significance” under the Ramsar Convention on Wetlands. Tapawingo Lodge, located on the shores of Bistcho Lake, is known for incredible scenery, such as the northern lights, and recreational fishing opportunities. Zama City campground contains fully serviced sites, offering leisure activities such as swimming, disc golfing, and fishing, as well as the opportunity to view the local Hay-Zama wood bison population.

The recreation management plan will be developed with input from local municipalities, stakeholders, and Indigenous peoples interested in ecologically sustainable recreation and tourism development opportunities. Proposed recreation management areas will be identified in the engagement process and during future planning. Until the recreation management plan is developed, recreation and tourism infrastructure construction and expansion will follow existing application processes and requirements.

10.1 Requirements for Recreation and Tourism

10.1.1 Recreation management areas identified in the recreation management plan will be reserved for outdoor recreation activities and tourism development opportunities.

10.1.2 **Not part of regulatory details** A recreation management plan will be created and implemented for the Bistcho Lake Sub-region.

a) **Not part of regulatory details** An inventory of tourism and commercial recreation opportunities will be completed for the Bistcho Lake Sub-region.

10.1.3 Roads associated with new outdoor recreation and tourism developments must align with the requirements outlined in Section 2 of this plan.

11.0 Natural Disturbance

Natural disturbances continually influence the sub-region. Wildfire, insect outbreaks, and forest disease are the most common disturbances that alter vegetation and associated habitat. Although natural, these disturbances can negatively impact species and economic opportunities throughout the sub-region. To ensure the plan continues to achieve its outcomes, it will be important to monitor natural disturbances as they occur and when regularly reviewing the sub-regional plan.

11.1 Wildfire

Alberta Wildfire, the wildfire management branch in Agriculture and Forestry, primarily manages wildfire on Alberta public lands. It commits to reducing the number and impact of human- and natural-caused wildfires by implementing wildfire prevention and FireSmart programs, detecting wildfires rapidly, and responding effectively.

Alberta Wildfire develops risk-based wildfire management plans for each forested area based on protecting five key priorities that largely impact public safety or the local economy: human life, communities, watersheds and sensitive soils, natural resources, and infrastructure. These plans involve engaging stakeholders and Indigenous peoples to identify fundamental economic, social, and environmental values and objectives. Wildfire management plans are reviewed every five years or if a large disturbance occurs and are updated to incorporate new policies or align with regional and sub-regional plans. To support landscape resilience and protect our critical values, strategies continue to be researched and adopted. This is essential to ensure wildfire management programs succeed in the future.

A significant portion of the wildfires across Alberta have been identified as human caused. In 2020, human causes were connected to well over 50% of all wildfires. It is anticipated that the actions contained within the plan, primarily those related to the restoration and/or coordination of forest harvest areas, roads, and other linear features, will significantly reduce the risk of wildfires throughout the sub-region.

11.2 Insects and Pathogens (not including Pine Beetle)

Managing forest pests requires systematic approaches to limit pest damage to levels that are socially and economically acceptable. The GoA is committed to sustaining the health of our forests and does this by surveying, monitoring, assessing risk, and implementing various management programs.

11.3 Mountain Pine Beetle

Mountain pine beetle infestations and their effects on pine forests can impact hydrological function, ecosystem function, sensitive sites, wildlife habitat, and levels of sustainable forest harvest. Pine stands in Alberta have been assessed for susceptibility to damage from mountain pine beetle. Due to the lack of pine, less than 1% of the sub-region has a low to moderate susceptibility. The GoA will continue prioritizing Level 1 control treatments (removing single trees at high-risk mountain pine beetle sites) in the sub-region where it is most effective and approving Level 2 treatments (block or patch harvesting of infestations).

12.0 Restoring Legacy Seismic Lines

The sub-regional plan cannot achieve its outcomes of supporting new development and increasing undisturbed habitat over the landscape without restoring historical seismic lines, also known as legacy seismic lines. Seismic lines in Alberta are primarily used when assessing sub-surface oil, gas, and mineral resources. Modern seismic practices and technology have reduced the residual disturbance associated with seismic operations. However, many legacy seismic lines are not supporting forest regrowth and remain on the landscape decades after they were constructed.

The challenge with legacy seismic lines is not reserved to the Bistcho Lake Sub-region. There are approximately 250,000 kilometres of legacy seismic lines in caribou ranges across Alberta. It is estimated that 150,000 kilometres of those legacy seismic lines are not fully capable of re-establishing natural forest

re-growth and require treatment to encourage restoration. While the intent is to pursue restoration across the landscape, the effort required is significant, and planning will continue to occur at a more operational level to identify when and where restoration will take place.

Restoring these lines presents an adaptive management opportunity that supports long-term working landscapes while maintaining ecological integrity. By minimzing landscape fragmentation from historical footprint, we make space for new development while limiting impacts on biodiversity. Ongoing partnerships, including funding arrangements with industry and the federal government, are important and will require a coordinated effort. To coordinate this work, AEP will lead a provincial restoration program with assistance from a third-party restoration agency. This program will direct restoration priorities, guide operations, and continue to involve local and Indigenous peoples.

While some legacy seismic lines provide access routes for Indigenous peoples, hunters, trappers, recreationists, and other commercial users of wildlife, the vast majority of these areas are not used for access. Before restoring legacy seismic lines, the GoA will seek input from Indigenous peoples and other land users to identify areas of use and coordinate restoration, development, and land-use practices and rights in the area.

To address the future impacts of seismic operations, the sub-regional plan outlines requirements for geophysical exploration that will help ensure future seismic lines have low long-term impacts across the landscape (Section 5.0).

12.1 Requirements for Restoration of Legacy Seismic Lines

Alberta will lead the restoration of seismic lines over the next 40 years. Seismic line restoration within the Bistcho Lake sub region will be completed according to the schedule in Table 3. The restoration schedule is based on the existing legacy seismic lines in the caribou range within the sub-region, as of 2018.

TABLE 3. Legacy Seismic line restoration schedule

Time period (years)	Per cent treated (or verified as sufficiently stocked)
0–5	10%
5–10	15%
10–20	25%
20–30	25%
30–40	25%

13.0 Disposition Revegetation

Alberta's public lands are both a shared resource and a shared responsibility. Activities occurring on public lands are managed to support the economic, environmental, and social well-being of all Albertans. Recovering areas impacted by human use is critical in ensuring land uses are sustainable over time and that this shared resource can be passed down to future generations.

13.1 Requirements for Revegetation of Dispositions

To support this outcome, the following standards are required for temporary dispositions (i.e., temporary field authorizations), disturbances approved within forest annual operating plans (excluding forest harvest), and revegetation of pipeline right of ways:

13.1.1 Any portion of the disposition within a caribou range that occurs within an ecosite capable of producing caribou biophysical habitat must be recovered back to an ecosite capable of producing caribou biophysical habitat.

13.1.2 Any portion of the disposition that occurs within an upland ecosite phase must be recovered to a plant community representative of the pre-disturbance ecosite phase.

13.1.3 The portion of the disposition that occurs within a wetland must be recovered to a plant community representative of the pre-disturbance wetland class (for example, bog, fen, or marsh).

13.1.4 If trees were on the site prior to construction, tree species must be re-established.

To obtain a reclamation certificate for formal dispositions (except surface material dispositions), the following will apply:

13.1.5 Any upland portion of the disposition within a caribou range that occurs within an ecosite capable of producing caribou biophysical habitat must be recovered back to an ecosite capable of producing caribou biophysical habitat.

13.1.6 Any portion of the disposition that occurs within an upland ecosite must be recovered to a plant community representative of the pre-disturbance ecosite.

13.1.7 The portion of the disposition that occurs within a wetland must be recovered to equivalent land capability.

13.1.8 When applying the Alberta Wetlands Policy in caribou ranges, a regional abundance factor of zero will be applied . Relative wetland value assessment shall include consideration of caribou pre-disturbance occurrence and caribou biophysical habitat.

13.1.9 If trees were on the site prior to construction, tree species must be re-established.

To obtain a reclamation certificate for surface material extraction dispositions, the following will apply:

13.1.10 Any portion of the disposition within a caribou range that was originally considered caribou biophysical habitat and has not been authorized for an end pit waterbody must be recovered back to caribou biophysical habitat.

13.1.11 If trees were on the site prior to construction, tree species must be re-established on areas not occupied by an end pit waterbody.

13.1.12 End pit waterbodies are permitted.

14.0 Riparian Areas

Riparian areas on public lands are the vegetation zones next to flowing and standing waterbodies. Although they make up only about 2% of the land in Alberta, they are often far more productive than the adjoining upland. Because of this, they are used extensively by wildlife, traditional land users, and recreationists. Minimizing footprint within a 250-metre area around flowing and standing waterbodies (Figure 14) increases the likelihood that the unique ecological value of these areas will be maintained and continue to be able to support the environmental, social, and economic values on which they rely.

Some riparian areas in the Bistcho Lake Sub-region are also known for their aggregate resources, including Hay River. Recognizing the importance of aggregate resources for road and infrastructure development and that they are found only in a few select places within the sub-region, aggregate extraction (including the access road) will be exempt along the Hay River.

14.1 Requirements for Riparian Areas

14.1.1 New permanent footprint is not permitted within 250 metres of the valley break of a watercourse or the bed and shore of a waterbody identified in Figure 14.

a) Exempt activities include water intake and outflows, road crossings, electrical powerline crossings, telecommunication crossings, and pipeline crossings.

14.1.2 New linear footprint (including pipelines, transmission lines, and roads) is not permitted to parallel a watercourse identified in Figure 14 within 250 metres of the valley break of a watercourse.

a) a) Exempt activities include water intake and outflows, road crossings, electrical powerline crossings, telecommunication crossings, and pipeline crossings.

14.1.3 Notwithstanding requirements 14.1.1 and 14.1.2, a total of 0.5% of the watercourse and waterbody buffer will be available as a development reserve to accommodate projects that demonstrate reduction in environmental risk by having the project within the riparian buffer versus outside of the buffer area. Industrial development footprint will only be considered within a specific buffer area if it can be demonstrated that impacts (including from cumulative effects) to water, land and biodiversity conservation, traditional values, and recreation opportunities are significantly reduced by developing within the buffer.

a) For pipelines and transmission lines, the area of the dispositions that are revegetated will not count towards the footprint in the development reserve.

14.1.4 Notwithstanding requirements 14.1.1 and 14.1.2, sand and gravel extraction operations, including road access to the extraction area along the Hay River, will be permitted according to existing approval processes.

FIGURE 14. Watercourse and waterbodies wit 250 metre riparian setbacks (includes Hay River).

15.0 Wildlife

Land-use change impacts the type of lands available for species. Land uses can create different types of plant communities that favour certain species (increaser species) and impact others (decreaser species), or they can change species movement, sometimes facilitating movement for predators to areas that were not previously accessible and other times creating barriers to species movement. Under current land-use practices, the prevalence of moose, beaver, deer, and their predators have shifted. It will take time for lands to recover before the species numbers and their interactions will approach pre-disturbance norms. During this period, it will be important to monitor increaser species (deer, moose, beaver, wolf) and indicator sensitive species (barred owl and songbird species) and decide if additional tools or actions are needed to manage the increaser species listed below.

Moose

Moose are an important resource for Indigenous peoples and licensed hunters. Moose are also key prey for wolves, so increased moose densities may lead to increased wolf numbers. This could result in increased predation of caribou. AEP will monitor moose abundance periodically to assess if it might compromise caribou populations. Where required, Indigenous and licensed hunters will harvest moose to manage populations.

Bison

The Hay-Zama population of reintroduced wood bison overlaps with the Bistcho Lake Sub-region. These bison are provincially listed as a species at risk and are protected under the *Wildlife Act* as an endangered species. After being reintroduced, the bison population increased and spread to a larger geographic area. This led the Government of Alberta to introduce a limited-entry hunt of the Hay-Zama population to reduce potential conflicts with human communities and human travel on roadways and to minimize risk of contact with diseased bison from Wood Buffalo National Park. This hunting opportunity is highly sought after by both Indigenous and non-Indigenous hunters. This bison population is surveyed annually to monitor population size, adult female survival, calf recruitment, and bison distribution. These data inform annual hunting allocations.

Predation

Wolves are the key predator of woodland caribou in the sub-region. Declining caribou populations throughout Alberta are typically due to increased wolf predation resulting from human-caused habitat change. To support caribou recovery in the sub-region, AEP will annually monitor the effects of predation on caribou and assess and deliver actions to manage wolf populations as needed.

16.0 Bistcho Lake Implementation Committee

The Bistcho Lake Implementation Committee (BLIC) will be an informal committee to support the implementation of the Bistcho Lake Sub-regional Plan. It will be convened and chaired by the GoA and have representation from Indigenous peoples, local municipalities, energy and forestry sectors, and others as appropriate. The BLIC will not have a regulatory or auditing function and will serve as a mechanism to bring in local perspectives on plan implementation.

17.0 Monitoring, Evaluating, and Reporting

As a key element of adaptive management, the GoA will complete five-year stewardship reports. AEP is accountable for reporting on the items committed to in this plan in collaboration with Alberta Agriculture, Forestry and Rural Economic Development, Alberta Energy, the Alberta Energy Regulator, and other relevant departments and agencies.

17.1 Performance Indicators

Tracking and reporting on indicators is a valuable source of information for land managers, Indigenous peoples, stakeholders, municipalities, and the public. It provides information needed to evaluate how effective the sub-regional plan's requirements are at achieving the desired outcomes in the sub-region and helps land managers determine if the plan needs to be adjusted.

For this purpose, the sub-regional plan will track and report on a combination of environmental indicators (Table 4) and socio-economic indicators (Table 5). Indicators will be reported on publicly at least every five years.

17.1.1 Environmental Performance Indicators

TABLE 4. Environmental performance indicators

Indicator	Description	Purpose
Anthropogenic (human-caused) footprint	The area of anthropogenic disturbance features, classified by originating activity	Evaluate landscape change over time and inform future re-openings or revisions of the sub-regional plan
Barred owl	Assessment of available habitat and population metrics based on habitat availability modeling	Evaluate landscape-change impact on species of interest
Bison population size	Estimated number of bison	Inform management strategies such as sustainable harvest levels
Caribou biophysical habitat	Amount, type, and trend of biophysical habitat attributes	Assess caribou habitat recovery over time
Caribou occurrence and movement patterns	Identified habitat areas under active use	Inform planning and focus of restoration efforts
Caribou population demographic rates and growth (lambda)	Estimated trend in population size	Assess caribou recovery
Caribou population size	Estimated number of caribou	Assess caribou recovery, specifically minimum population requirements

Indicator	Description	Purpose
Disturbed and undisturbed caribou habitat	Amount and trend of undisturbed habitat	Assess caribou habitat recovery over time
Forest cover age class	Area within each seral stage by major forest cover type will be monitored within forest management units of the sub-region	Evaluate landscape change over time and inform future re-openings or revisions of the sub-regional plan
Moose population size	Estimated number of moose	Inform management strategies such as sustainable harvest levels
Natural disturbances	Size and location as monitored by Alberta Agriculture and Forestry and Rural Economic Development	Evaluate landscape change over time and inform future re-openings or revisions of the sub-regional plan
Restoration of legacy seismic lines	Kilometres of line restored, either through active restoration or by field-confirmed natural recovery	Assess trajectory to desired level of undisturbed habitat for the sub-region
Songbirds	Assessment of available habitat and population metrics based on habitat availability modeling	Evaluate landscape-change impact on multi-species
Spatial caribou habitat parameters	Spatial pattern and landscape scale occurrence of caribou habitat	Assess caribou habitat recovery over time
Wetlands	Amount of area directly impacted by anthropogenic footprint	Evaluate landscape change over time and inform future re-openings or revisions of the sub-regional plan

17.1.2 Socio-economic Monitoring and Performance Indicators

Socio-economic indicators are used to track, monitor, and project land-use changes within a given region to evaluate the economic and social benefit of the plan.

These indicators will be monitored and considered during the socio-economic assessment accompanying the sub-regional plan and assessments that follow scheduled reviews.

TABLE 5. Socio-economic performance indicators

Indicator	Description	Purpose
Economic conditions	Assessment of local economies (for example, employment)	Understand local economic conditions
Fiscal conditions	Assessment of provincial and federal economies	Understand local economies in the context of provincial and federal economic conditions
Demographics	State and trends in sub-regional demographics (population size and composition)	Inform future planning opportunities

Indicator	Description	Purpose
Community infrastructure	Community support structures (programs and facilities) in the sub-region (for example, health and social services and programs, and housing conditions)	Inform future planning opportunities and focus
Recreation	Recreational infrastructure in the sub-region (programs, trails, facilities, opportunities)	Inform future planning opportunities and focus

18.0 Plan Review

Building on strong monitoring and reporting, regular review cycles are important to ensure plans support positive environmental, economic, and social outcomes that will benefit current and future generations of Albertans. Sub-regional plans are iterative land management tools that can be adapted over time. This is key to ensuring land-use plans remain relevant over time. The plan will be reviewed five years after its approval and every 10 years after this first review.

These reviews are important, as the socio-economic and environmental context changes over time. As economic conditions change or new technological improvements present themselves, it will be important to ensure the management approaches in the plan continue to align with the plan objectives. Similarly, as the landscape changes over time, reviews will help ensure management approaches continue to be aligned with broader plan objectives. Engagement with stakeholders and Indigenous peoples will be an important part of this process and help to inform where potential adjustments may be required.

A plan review may also be triggered under the following scenarios:

18.0.1 If the annual total natural disturbance within the caribou range exceeds 1%.

18.0.2 If within eight years of the plan coming into force the cumulative new natural disturbance area exceeds 4% of all caribou range within the sub-region.

18.0.3 If within 10 years of the plan coming into force the cumulative new natural disturbance area exceeds 4% of the entire sub-region.

19.0 Glossary

Term	Definition
Access Corridor	A linear corridor identified for human movement where roads or trails are planned and developed.
Adaptive Management	A management approach that involves monitoring and performance evaluation followed by adjusting management actions to achieve the intended outcome. Adaptive management also allows information to be fed back into the project planning and design process so that future reclaimed project areas will meet the intended objectives. A tenet of ecological management in which human resource users are flexible to change the way they interact with the environment based upon need and the availability of new information.
Aggregated Harvest	Harvest planning that concentrates forestry activities in space and time. This results in large, generally contiguous patches of young forest that should better imitate large natural disturbance patterns created by fire.
Anthropogenic (human-caused) Footprint	The visible alteration or conversion of native ecosystems to temporary or permanent residential, recreational, agricultural, or industrial landscapes. This definition includes all areas under human use that have lost their natural cover for extended periods of time, such as cities, roads, agricultural fields, and surface mines. It also includes land that is periodically reset to earlier successional conditions by industrial activities, such as forestry cut blocks and seismic lines.
Annual Operating Plan (AOP)	A plan prepared and submitted by a forest operator every year. An AOP approved by government provides the authorization to harvest.
Appended Development	Development that occurs within 100 metres from the edge of the lands contained in the formal disposition for a primary road.
Bed and Shore	Public lands which form the definable channel of a river, stream, or watercourse; or the basin of a lake of other permanent and naturally occurring body of water that is bound by a bank as defined in Section 17 of the *Surveys Act* which may or may not be fully covered by water. The shore is the exposed bed when not fully covered by water.
Caribou Biophysical Habitat	Habitat containing characteristics required by woodland caribou (*Rangifer tarandus caribou*) to carry out their life processes necessary for survival and recovery within caribou ranges in Alberta, as identified through the methodology and classification system developed by Alberta Government and outlined in “Methods for Refining Federal Classification of Woodland Caribou Biophysical Critical Habitat for Alberta”.
Caribou Range	The geographic area occupied by a group of individuals that are subject to similar factors affecting their demography and used to satisfy their life history processes (for example, calving, rutting, wintering) over a defined time frame.
Chronic Wasting Disease (CWD)	A disease that kills members of the deer family (specifically, white-tailed deer, elk, and moose). Transmission occurs from individual to individual and in certain situations may involve environmental contamination.
Commercial Recreation	Instructing/guiding/outfitting activities (for example, commercial trail riding, dog sled tours, heli-ski tours, fishing, game hunting, off-highway vehicle tours, etc.) or developments that offer facility-oriented recreational, tourism, or accommodation services or programs to the general public on public land for which a consumer pays a fee and for which the operator requires a permit or disposition.
Compartments	A sub-section of a given area for which operational plans are developed.

Term	Definition
Disposition Holder	The holder of a disposition according to the records of a regulatory body, such as under the Public Lands Administration Regulation.
Disposition Roads	Roadways associated with holder of a formal disposition according to the records of a regulatory body.
Disturbance	In respect of public land, means human activity that moves or removes one or more of the following features of the public land or that alters or results in the alteration of the state in which it existed before the human activity occurred, and includes any change in the intensity, frequency, or nature of the human activity: (i) vegetation (ii) soil (iii) subsoil (iv) bedrock (v) landform (vi) wetland (vii) waterbody or watercourse (viii) air flow or wind currents (ix) ambient sound volumes (x) light or shade
Disturbed Habitat	Habitat showing: i) human-caused disturbance visible on Landsat at a scale of 1:50,000, including habitat in a 500-metre buffer of the human-caused disturbance; and/or ii) fire disturbance in the last 40 years, as identified in data from each provincial jurisdiction (without buffer).
Ecosystem-based Management (EBM)	Ecosystem-based management (EBM) is an integrated, science-based approach to the management of natural resources that aims to sustain the health, resilience, and diversity of ecosystems while allowing for sustainable use by humans of the goods and services they provide.
Footprint	The impact or extent of a disturbance on public land. This includes the intensity, frequency, and nature of any uses or activities related to the disturbance.
Forest Harvest Plan or Timber Harvest Plan	Standards for operating and planning field practices that must be measurable and auditable and based on forest-management-plan objectives.
Forest Harvest Timing Units (Harvest Compartment)	Compartments which define the sequence in which forest management activities are permitted within a given area of a Forest Management Area.
Forest Management Agreement (FMA)	A renewable 20-year agreement between the government and a company that grants the company the rights and obligations to manage, grow, and harvest timber on a specific area in a manner designed to provide a yield consistent with sustainable forest management principles and practices.
Forest Management Unit (FMU)	An administrative land unit established under the authority of the *Forests Act* that may be designated for forest management.

Term	Definition
Formal Disposition	A disposition issued under the *Public Lands Act* before or after the coming into force of the Public Lands Administration Regulation and bearing a title and number assigned by the Department for the purposes of identifying the disposition in the records of the Department. This includes numbered instruments bearing the title: (i)commercial trail riding permit, (ii) repealed AR 57/2017 s2, (iii) easement, (iv) farm development lease, (v) grazing lease, (vi) grazing licence, (vii) licence of occupation, (viii) mineral surface lease, (ix) miscellaneous lease, (x) pipeline agreement, (xi) pipeline installation lease, (xii) surface material lease, (xiii), (xiv) repealed AR 57/2017 s2, (xv) lease for tourism and commercial recreation purposes, or any other instrument issued in a form prescribed under Section 6 of the Act.
Green Area	Comprises most of northern Alberta as well as the mountain and foothill areas along the province's western boundary and is managed for timber production, watershed, wildlife and fisheries, recreation, tourism, and other uses.
Habitat	The sum of the environmental conditions in which an organism lives, or the physical and biological environment that provides essential food, water, and shelter for an organism.
Habitat Restoration	The practice, process, or result of active human intervention and treatments to renew and restore degraded, damaged, or destroyed ecosystems and habitats. Habitat restoration aims to protect and restore critical "services" that the environment provides.
Historical (Legacy) Footprint	Footprint as of 2014 that is deemed unnecessary to support continued human activity, is not initially restored, and does not have a legally responsible party to deal with the restoration work (for example, historical seismic lines that have not been returned, either naturally or through management action, to a successional pathway towards effective caribou habitat).
Holistic Approach	Consideration of the whole, including many inputs, perspectives, and parts of a system. Often referred to as taking a holistic approach.
Indigenous Peoples	"Indigenous peoples" includes "aboriginal peoples of Canada" within the meaning of Section 35 of the Constitution Act, 1982.
Indigenous Knowledge	For the purposes of this plan, the knowledge regarding the subject-matter of this plan that Indigenous peoples or their members share outside their community.
Integrated Land Management (ILM)	A strategic, planned approach to managing and reducing the human-caused footprint on the land. The goals of ILM are to reduce land-use disturbance relative to what would occur in the absence of integration efforts, and to foster a stewardship ethic in all land users.

Term	Definition
Land Conversion	An actual, observable land-use change from an agricultural use to a non-agricultural use (or vice versa), such as agricultural to urban development. Conversion can be temporary (for example, upstream oil and gas development) or permanent (for example, urban development). Conversion may be positive or negative (specifically, a gain or loss of agricultural land, respectively).
Land Use	All uses of land, such as agriculture, forestry, conservation, recreation, tourism, oil and gas, mining, utility corridors, transportation, cities and towns, industrial development, etc.
Land-use Framework	In 2008, the GoA implemented Cabinet-approved, provincial-scale policy to develop a new land-use planning system for the province. The Land-use Framework sets out an approach to manage Crown and private lands and natural resources to achieve Alberta's long-term economic, environmental, and social goals. The framework is designed to ensure good stewardship of Alberta's lands and resources so that future generations of Albertans benefit from the province's natural beauty and prosperity, just as we do today. The Land-use Framework was developed through extensive consultation with Albertans and their collective feedback formed the guidance from which a provincial vision and a set of desired provincial outcomes and principles were created. (Planning System Overview.)
Limit	A transition point beyond which an unacceptable risk to a desired objective (or outcome) occurs. The limit is the value of an indicator which represents the point, if exceeded, that the system moves to an undesirable state and management action must be taken.
Local Population (caribou)	A group of caribou occupying a defined area distinguished spatially from areas occupied by other groups of caribou. Local population dynamics are driven primarily by local factors affecting birth and death rates rather than immigration or emigration among groups.
Multiple Use	Management of a land area to support integrated use, including timber and non-timber interests such as water, grazing, industrial development, recreation, tourism, and wildlife.
Natural Disturbance	Term used to describe a type of disturbance to the landscape that is not human caused. These disturbances can include fire, wind, insects, floods, and landslides.
Natural Range of Variation	The spectrum of natural conditions possible in ecosystem structure, composition, and function, when considering both temporal and spatial scales.
Natural Resource(s)	Occur in nature, including non-renewable resources, such as timber, fish, wildlife, soil, water, coal, and minerals.
Nature-based Tourism	Tourism that is undertaken largely or solely for the purpose of enjoying natural attractions and engaging in outdoor activities, whether for relaxation, discovery, or adventure (for example, camping, birdwatching, downhill skiing, hunting, mountain biking, motorized recreation, etc.).
Non-renewable Resource(s)	Natural resources that are in fixed supply, such as coal, oil, and minerals.
Objective	The desired result or goal in well-defined, measurable terms achievable in a certain timeframe. Translates the broad outcomes into more specific, quantifiable statements and guides content and direction of policy.

Term	Definition
Operating Ground Rules	Standards for operating and planning field practices that must be measurable and auditable and based on forest management plan objectives.
Outcome	An event, occurrence, or condition that results from an activity or program and has an actual effect on resources, the environment, or Albertans. For planning purposes, outcomes are the desired/expected endpoint or state and should guide the development and implementation of related programs. An outcome can be expressed as a business result or a resource/environmental result. A program may have multiple outcomes for different timeframes and scales.
Outdoor Recreation	The experience that results from freely chosen participation in physical, social, intellectual, creative, and spiritual pursuits in an outdoor, nature-based setting that enhances individual and community wellbeing.
Progressive Reclamation	Interim or concurrent reclamation undertaken during, following or in connection with construction, development, and ongoing operations associated with an active disposition where there is no expectation of re-disturbance and where the final approved plant community is establishing. For well sites, minor re-disturbance may be required to replace reclamation material over the operational area (tear drop) at final reclamation.
Protected Area(s)	Areas, such as provincial parks, national parks, wilderness areas, ecological reserves, and some recreation areas, that have protected designations according to federal and provincial statutes. Protected areas are land and freshwater or marine areas set aside to protect diverse natural and cultural heritage.
Public Lands	Land of the Crown in right of Alberta.
Reclamation	Any or all of the following: (i) the removal of equipment or buildings or other structures or appurtenances; (ii) the decontamination of buildings or other structures or other appurtenances, or land or water; (iii) the stabilization, contouring, maintenance, conditioning, or reconstruction of the surface of land; (iv) any other procedure, operation, or requirement specified in the regulations.
Recreation Opportunity	The availability for an individual to engage in a chosen recreation activity within a preferred recreation setting in order to achieve a desired experience.
Restoration	The process of restoring site conditions as they were before the land disturbance.
Restored Habitat	Habitat that was disturbed in the past but has since returned to a state that is no longer considered by Alberta to be disturbed.
Right of Way (ROW)	A cleared area facilitating linear activities that contain an access road and its associated features, such as shoulders, ditches, cut and fill slopes, or the area cleared for passage of utility corridors containing power lines or over or under-ground pipelines. Typically, the ROW is a specially designated area of land having very specific rights of usage attached.
Self-sustaining Local Population (caribou)	A local population of caribou that on average demonstrated stable or positive population growth over the short-term (≤20 years) and is large enough to withstand random events and persist over the long-term (≥50 years) without the need for ongoing active management intervention.
Seral Stage	A stage of forest succession. A series of plant community conditions that develop during ecological succession following a major disturbance to the climax stage. Most common characteristics/classifications include tree species and age.

Term	Definition
Spatial Harvest Sequence (SHS)	A stand level map depicting forest stands scheduled for timber harvesting that are feasible to be operated by the organization. SHSs are generally prepared for 20 years.
Stand or Stand Type	A community of trees sufficiently uniform in species, age, arrangement, or condition as to be distinguishable as a group in the forest.
Sub-Regional Plan	Sub-regional plans address location-specific issues through the integration of higher-level plans, policy, and operational requirements. Plans are outcome based, provide clear operational direction, and must be considered when making decisions in the planning area. Enabled through the *Alberta Land Stewardship Act* and ministry legislation (for example, *Public Lands Act*), sub-regional plans are built through a collaborative process and include input and feedback from Indigenous peoples, municipalities, stakeholders, and the public.
Temporary Roads	A road approved under a public lands authorization or forestry annual operating plan.
Tourism	The activity of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business, and other purposes not related to the exercise of an activity remunerated from within the place visited. A tourism trip occurs when a visitor takes an overnight trip, or a same-day trip of more than 40 kilometres (one-way) outside of their home community.
Traditional Land Use	For the purposes of this plan, in the context of Indigenous Peoples, this includes both Treaty Rights and Traditional Uses, and harvesting by recognized Métis harvesters.
Traditional Uses	For the purposes of this plan, “traditional uses” has the same meaning as in the GoA’s policies on consultation with First Nations and Metis Settlements on land and natural resource management, as those policies may read at any one time.
Treaty Rights	Constitutionally protected rights to hunt, trap, and fish for food. These rights may be practiced on unoccupied Crown lands or lands to which First Nations members have right of access for such purposes.
Undisturbed Habitat	Habitat not showing any: i) human-caused disturbance visible on Landsat at a scale of 1:50,000, including habitat in a 500-metre buffer of the human-caused disturbance; and/or ii) fire disturbance in the last 40 years, as identified in data from each provincial and territorial jurisdiction (without a buffer).
Valley Break	The interface between the upland and the crest or rim of the main (oldest) slope of the board river valley.
White Area	The White Area (settled portion) consists of the populated central, southern, and Peace River areas of the province. In the White Area, public land is part of the agricultural landscape. It is managed for various uses, including agriculture, recreation, soil and water conservation, and fish and wildlife habitat.
Working Landscape	An area of land managed for multiple environmental, social, and economic objectives. These objectives include environmental conservation as well as human use for social and economic value.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