

# Caribou Range Planning – Northwest Alberta



January 2017

# Key Objectives:

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- **Background on scientific review and federal requirements to complete caribou range plans**
- **Describe existing key pressures in each range**
- **To inform the county of proposed caribou range planning processes and timelines**
- **To learn from the county what ideas, solutions and opportunities might exist for caribou range planning in the northwest**

# Status of Caribou in Alberta

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- Boreal and Central Mountain woodland caribou populations are designated as ***Threatened*** under Canada's *Species at Risk Act* (SARA) and are also ***Threatened*** under Alberta's *Wildlife Act*.
- A provincial designation of ***Endangered*** has also be recommended for all of Alberta's woodland caribou.

# Federal Recovery Strategies for Woodland Caribou

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## Boreal Population

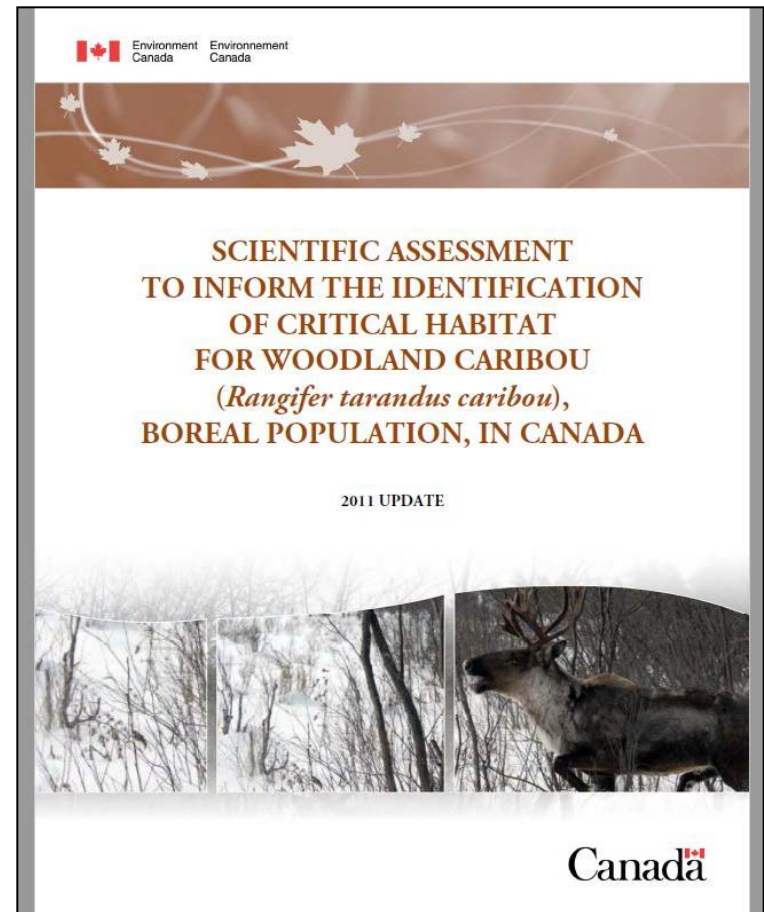
- In October 2012, the Government of Canada released the *Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal Populations in Canada*.
- In September 2016, the Government of Canada released the *Range Plan Guidance for Woodland Caribou, Boreal Population*

## Mountain Population

- In June 2014 the Government of Canada released the *Recovery Strategy for the Woodland Caribou, Southern Mountain population (Rangifer tarandus caribou) in Canada*

# Scientific Assessment to Inform the Identification of Critical Habitat

- In 2007, Environment Canada launched a science-based review to identify boreal caribou critical habitat to the extent possible, using the best available information
- 2011 Scientific Assessment was designed to provide an evaluation of critical habitat relative to the set of conditions (demographic and environmental) within each range.



# Scientific Assessment to Inform the Identification of Critical Habitat

- The scientific assessment identifies 65% undisturbed habitat in a range as the disturbance management threshold.

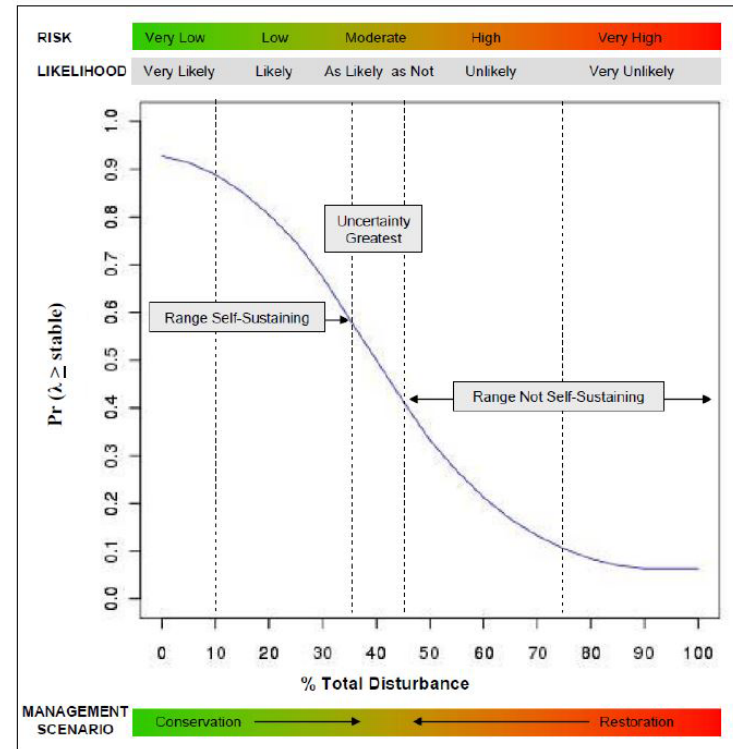


Figure E-1. Disturbance management thresholds: The probability of observing stable or positive growth ( $\lambda \geq \text{stable}$ ) of boreal caribou local populations over a 20-year period at varying levels of total range disturbance (fires  $\leq 40$  years + anthropogenic disturbances buffered by 500 m). Certainty of outcome, ecological risk, and management scenarios are illustrated along a continuum of conditions.

# What is “disturbed” habitat?

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Environment Canada measures the **total disturbance footprint** as the **combined effects of fire that has occurred in the past 40 years and buffered (500 m) anthropogenic disturbance** defined as any human-caused disturbance to the landscape that could be visually identified from Landsat imagery at a scale of 1:50,000.





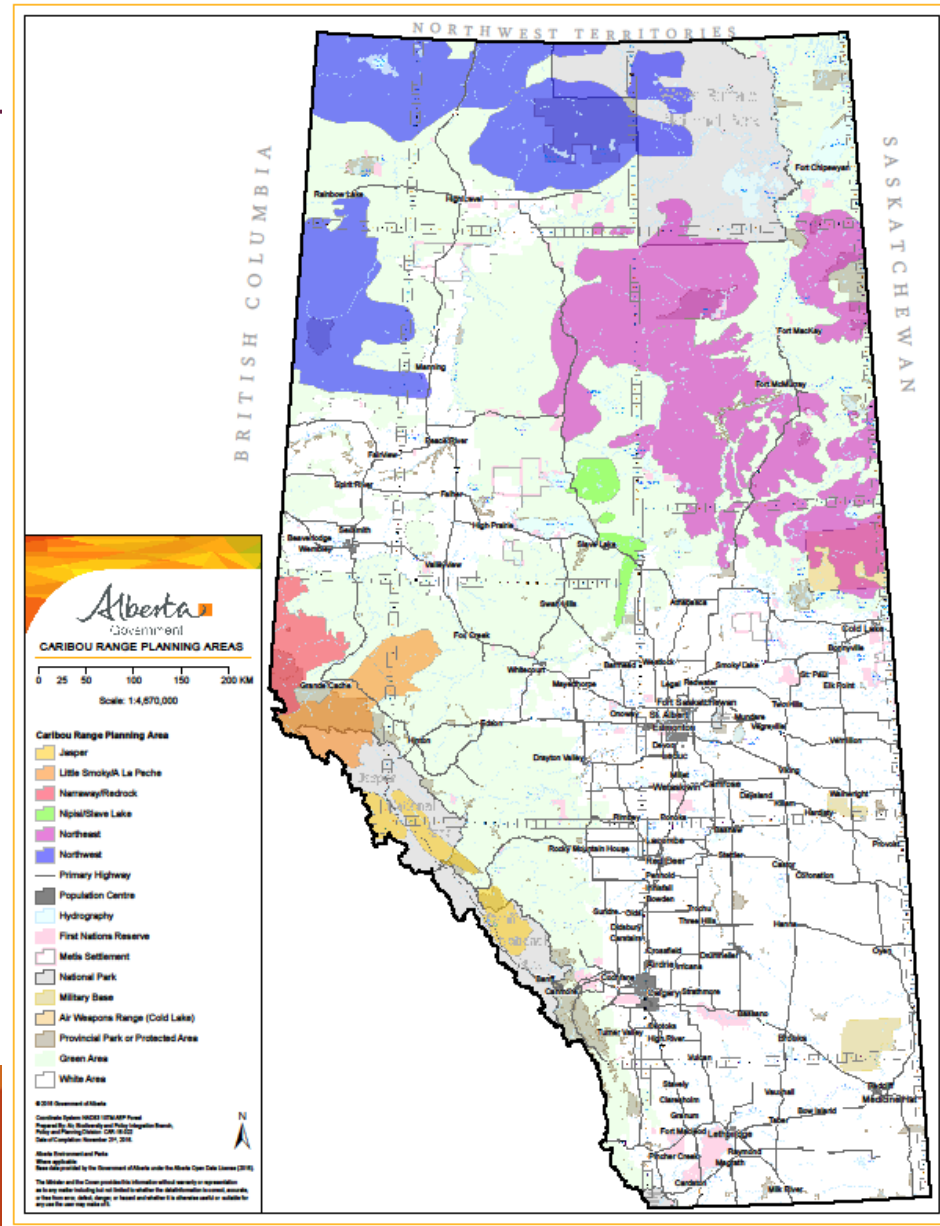
# Federal Recovery Strategies for Woodland Caribou

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- Goals of the federal caribou recovery strategies include:
  - Stabilize and achieve **self-sustaining** status for each caribou population at the range-level.
  - Range plans must outline how activities will be managed to ensure a **minimum of 65%** undisturbed habitat is attained.
  - Reversing existing disturbance on the land will often require time frames in excess of **50 to 100 years**.



# Caribou Range Planning Areas



# Alberta's Caribou Ranges

## Boreal Population

Range Identification	Range Name	Range Type	Population Size Estimate	Population Trend	Disturbed Habitat (%)			Risk Assessment
					Fire <sup>1</sup>	Anthropogenic <sup>2</sup>	Total <sup>3</sup>	
AB1	Chinchaga (incl. BC)	LP	250	declining	8	74	76	NSS
AB2	Bistcho	LP	195	declining	20	61	71	NSS
AB3	Yates	LP	350	stable	43	21	61	NSS
AB4	Caribou Mountains	LP	315-394	declining	44	23	57	NSS
AB6	Red Earth	LP	172-206	declining	30	44	62	NSS
AB7	West Side Athabasca River	LP	204-272	declining	4	68	69	NSS
AB8	Richardson	LP	150	not available	67	22	82	NSS
AB9	East Side Athabasca River	LP	90-150	declining	26	77	81	NSS
AB10	Cold Lake	LP	150	declining	32	72	85	NSS
AB11	Nipisi	LP	55	not available	6	66	68	NSS
AB12	Slave Lake	LP	65	not available	37	63	80	NSS

**Taken from:** Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population, in Canada - 2012

# Our understanding of the issues

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## CARIBOU POPULATIONS DECLINING

- Studies indicate that there has been wide-spread declines in caribou populations across Alberta
- Caribou population declines are driven by low adult and calf survival

## LOSS OF HABITAT

- Loss of habitat, and habitat alteration have been identified as a key pressure resulting in caribou declines.

## ALTERNATE PREY

- Human disturbance can result in habitat conditions that are more favorable to other ungulates (e.g. moose and deer), resulting in an increase in their populations(s)

## PREDATION

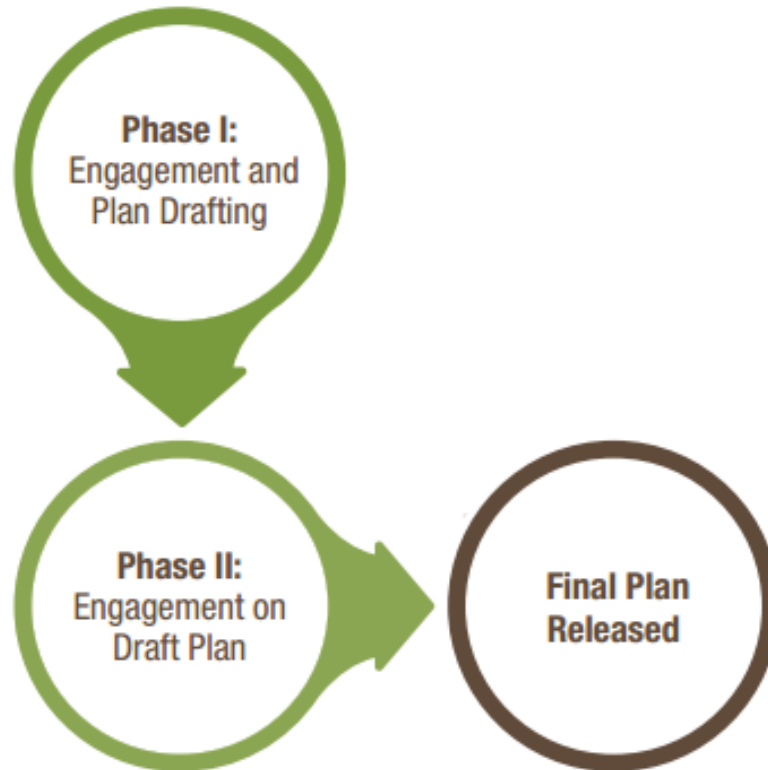
- As alternate prey populations increase, the number of predators also increases. The increase in predators results in increased mortality of caribou.

## CLIMATE CHANGE

- Climate change (warming trends) has led to the expansion of white tail deer ranges further north. This results in increased prey for predators, thus increased predator populations.

# Developing Caribou Range Plans in Alberta

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# Phase I: Engagement and Plan Drafting

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- **Winter/Spring 2017**
- **Intend to Launch of online platform for public feedback**
- **One-on-one and/or sector meetings to exchange information from stakeholders, municipalities**
- **Indigenous communities information exchange sessions and meetings**
- **Working through an iterative process with stakeholders on caribou range planning options**

# Phase II: Engagement on Draft Plans

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- Release draft caribou range plans for public review. Plans will be drafted in context of information gathered during **Phase I**.
- Use of online platform for public feedback
- One-on-one and/or sector meetings to gather input from stakeholders, municipalities (as required)
- First Nations consultation and Metis communities engagement

# Final Plan

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- Final plans will consider feedback received from **Phase II**
- Final range plans will require approval from both Environment and Climate Change Canada and Government of Alberta Cabinet.
- Government will release the final caribou range plans.



# Range Plan Option Development

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## Collect information on current state

Calculate % undisturbed habitat per range

Update population estimates for ranges

Socio-economic review of options

Collect information on alternate prey, predation, recruitment rates, herd health

Collect information via engagement to help identify current and future plans in ranges



## Identify and assess management options for each range

# Other considerations

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A balanced approach to caribou range planning is required. We want to understand the impacts of range plan recommendations. Some examples might include impacts to:

- Employment
- Recreational activities
- Overall biodiversity
- Current and future industrial development
- Municipalities
- Economic development within the region



# Engagement and Plan Drafting

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We acknowledge that not all caribou ranges are the same, and they do not all experience the same pressures. We will not be using a “cookie cutter” approach to range planning.

- **What information are we looking for from you?**
  - **Priority current landuses (existing footprint)**
  - **Priority future landuses (potential future footprint).**
    - I.e. for Industrial stakeholders/recreational use – When? Where? How Long? Level of Impact?

# Examples of Area Designations

Legal Description	Example Name	Petroleum and Natural Gas	Oil Sands, Metallic and Industrial Minerals and Coal	Surface Materials	Forestry	Motorized Recreation on Designated Routes Only	Grazing	Hunting, Fishing, Trapping (including aboriginal peoples)	Multi-use Corridors
Ecological Reserve and Wild	Athabasca Dunes	X	X	X	X	X	X	X	X
Provincial Park	Crow Lake	X	X	X	X	X	√	X	X
Wildlife Provincial Park	La Butte Creek	X	X	X	X	X	√	√	X
Natural Area	Garner Orchid Fen	X	X	X	X	X	√	√	√
Provincial Recreation Area	Slave River Rapids	X	X	X	X	√	√	√	√
Public Land Use Zone	Example 1: Birch River Conservation Area	X	X	X	Ecosystem forestry only	√	√	√	√
	Example 2: Lake Athabasca	√	√	√	√	√	√	√	√

# Examples of Area Designations

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Examples shown here are built from Lower Athabasca Regional Plan  
<https://landuse.alberta.ca/LandUse%20Documents/Lower%20Athabasca%20Regional%20Plan%202012-2022%20Approved%202012-08.pdf>

Additional information on Alberta Parks designations can be found at  
<http://www.albertaparks.ca/albertaparksca/management-land-use/legislation-regulations/#wa>

# Biophysical Attributes for Critical Habitat in the Taiga Plains Ecozone

Includes the Bistcho, Yates and Caribou Mountains ranges

Scale of selection	Description
Broad scale	In NWT caribou prefer open coniferous habitat in all seasons of the year and in the Dehcho prefer using forest stand ages of 100 years or older. <sup>1</sup> Large patches of spruce peatland with reference for bogs over fens and upland and lowland black spruce forests with abundant lichens. <sup>2,3</sup>
Calving	Open conifer forests, tussock tundra, low shrub, riparian, and recent burns in northern extreme of the NWT range. <sup>4</sup> In the Snake-Sahtaneh watershed of BC, caribou observed on small islands of mature black spruce or mixed forests within peatlands, in old burns at the edge of wetlands, in alder thickets with abundant standing water and on lake shores. <sup>2</sup>
Post-calving	Open coniferous forests with abundant lichen, low shrub, riparian, tussock tundra, sparsely vegetated habitat, and recent burns in the northern extreme of the NT range. <sup>4</sup> Old burns and neighbouring remnant unburned forests selected in late spring, early summer in Snake-Sahtaneh watershed. <sup>2</sup>
Rutting	Open coniferous and mixedwood forests, low shrub, riparian tussock tundra, and recent burns in northern extreme of NWT range. <sup>4</sup> Regenerating burns and sparsely vegetated habitat. <sup>4</sup>
Winter	Open coniferous forest with abundant lichen and riparian areas. <sup>1,2,4</sup>
Travel	In NWT some female caribou have little fidelity to calving areas between years, especially in the northern portions of the range, while others show considerable fidelity over successive (2-3) years. <sup>5,6</sup> In NWT Mean daily rates of movement increase during the rut. They are greatest in the late-winter prior to pre-calving period. <sup>6,7</sup>
Avoidance	Avoid edge habita. <sup>8</sup> During calving at northern extreme of range in NWT avoid closed mixed forests and water. <sup>4</sup> In northern extreme of range in NWT avoid closed deciduous and mixed forests in summer, fall, and winter. Water also avoided in fall, closed coniferous forest avoided in winter. <sup>4</sup> Avoid forest stand <10 years old during summer. <sup>9</sup>

**Taken from:** *Scientific Assessment to Inform the Identification of Critical Habitat for Woodland Caribou (Rangifer tarandus caribou), Boreal Population, in Canada: 2011*

# Biophysical Attributes for Critical Habitat in the Boreal Plain Ecozone

Includes the Red Earth caribou range

Scale of selection	Description
Broad scale	Caribou in Boreal Plains of Alberta select late seral-stage (>50 yrs old) conifer forest and treed peatlands with abundant lichens. <sup>1,2,3,4,5</sup> In northeastern Alberta, caribou habitat use restricted primarily to peatland complexes. <sup>1</sup> Elevations of 1135 m. <sup>6</sup> Intermediate levels of NDVI. <sup>6</sup> Selected old (>40 yrs) burns. <sup>6</sup>
Calving	Bogs and mature forests selected for calving in Alberta. <sup>3,4</sup> In Saskatchewan, peatlands and stands dominated by black spruce and lowland black spruce stands within muskeg are used for calving. <sup>7,9</sup>
Post-calving	Forest stands older than 50 yrs. <sup>11</sup> Upland black spruce/jack pine forests, lowland black spruce, young jack pine and open and treed peatlands and muskeg are also selected during summer. <sup>7,12,13</sup> In some areas, sites with abundant arboreal lichen are selected during summer. <sup>14</sup>
Rutting	Mature forests. <sup>3</sup> Upland black spruce/jack pine forests, lowland black spruce, young jack pine and open and treed peatlands and muskeg during summer. <sup>7,12</sup>
Winter	Treed peatlands, treed bog and treed fen and open fen complexes with >50% peatland coverage with high abundance of lichens. <sup>15,16,17</sup> Mature forest > 50 yrs old. <sup>3,11</sup> Upland black spruce/jack pine forests, lowland black spruce, young jack pine and open and treed peatlands. <sup>7,12,13</sup>
Travel	Not available.
Avoidance	Avoid upland and fen habitats, aspen dominated stands, immature stands and large rivers all year round. <sup>3,4,6,9</sup> Avoid matrix-type habitat, including areas with abundant shrubs, disturbed/fragmented habitats, hardwood/deciduous dominated forest stands, and edge habitat. <sup>1,2,8</sup> Avoid recent burns, main roads, seismic lines, well sites and areas with a high density of cut blocks. <sup>6,10</sup> Avoidance of water. <sup>6</sup>

**Taken from:** *Scientific Assessment to Inform the Identification of Critical Habitat for Woodland Caribou (Rangifer tarandus caribou), Boreal Population, in Canada: 2011*

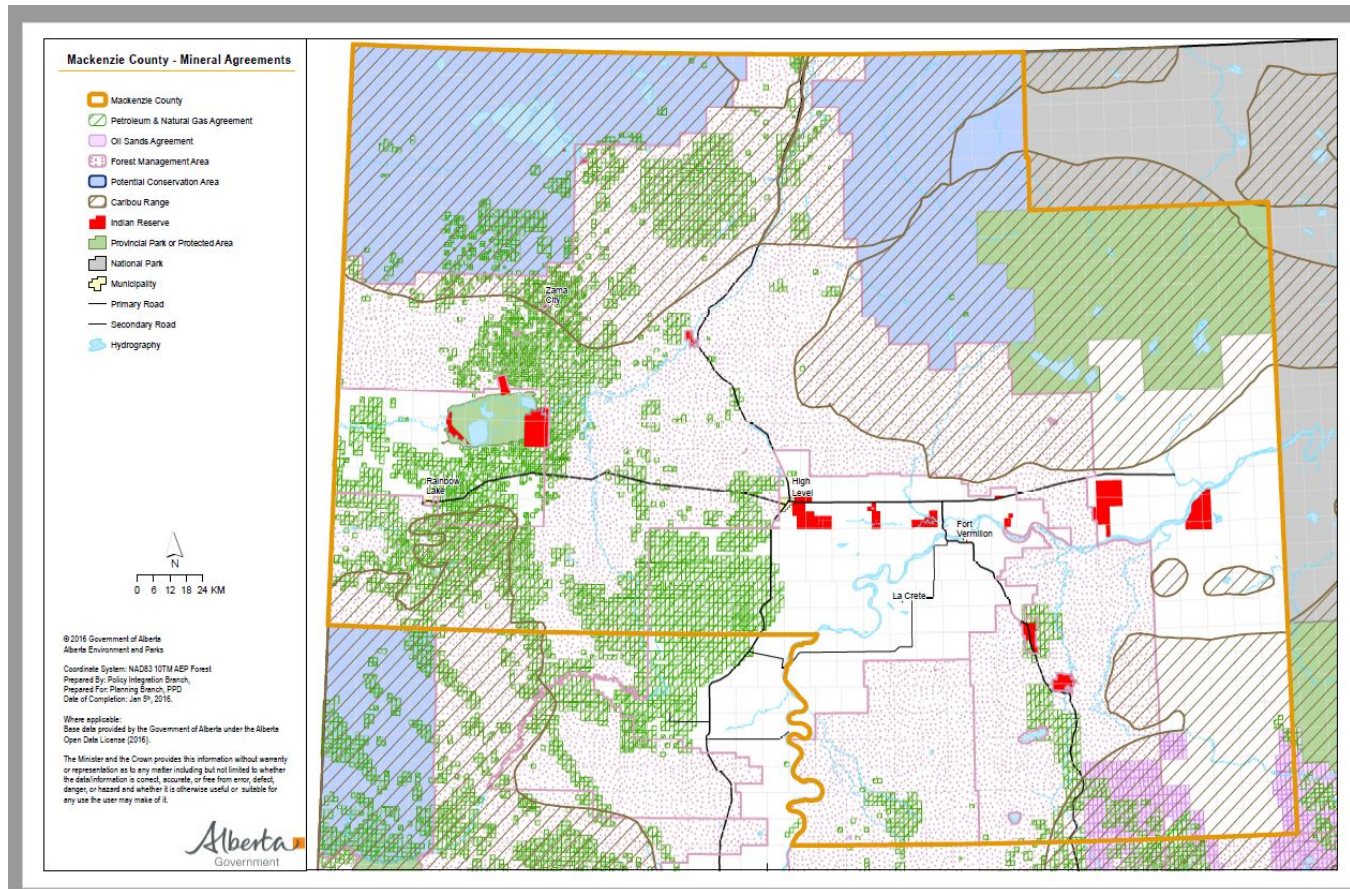


# Questions?

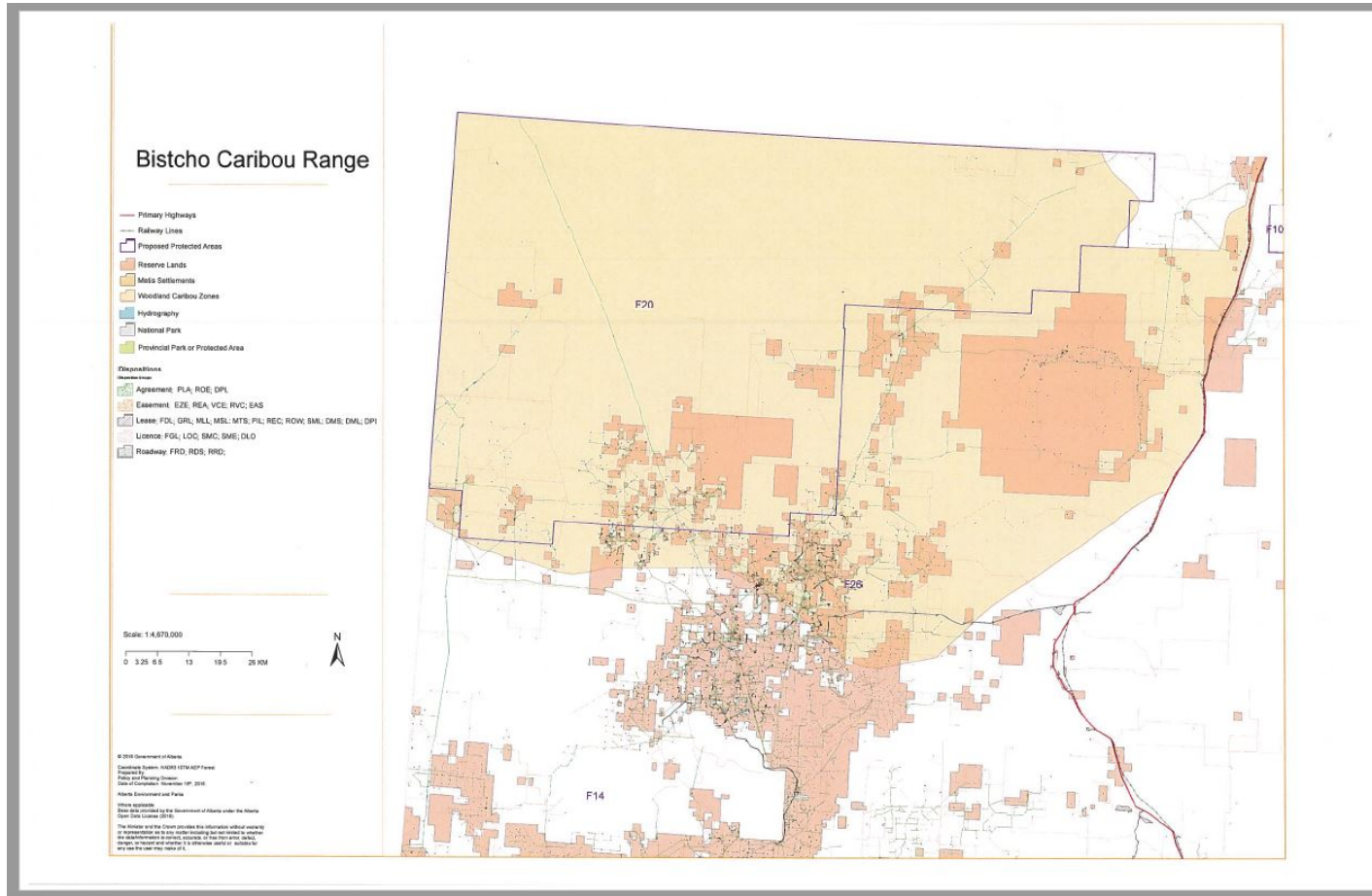
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# Mackenzie County and Existing Dispositions

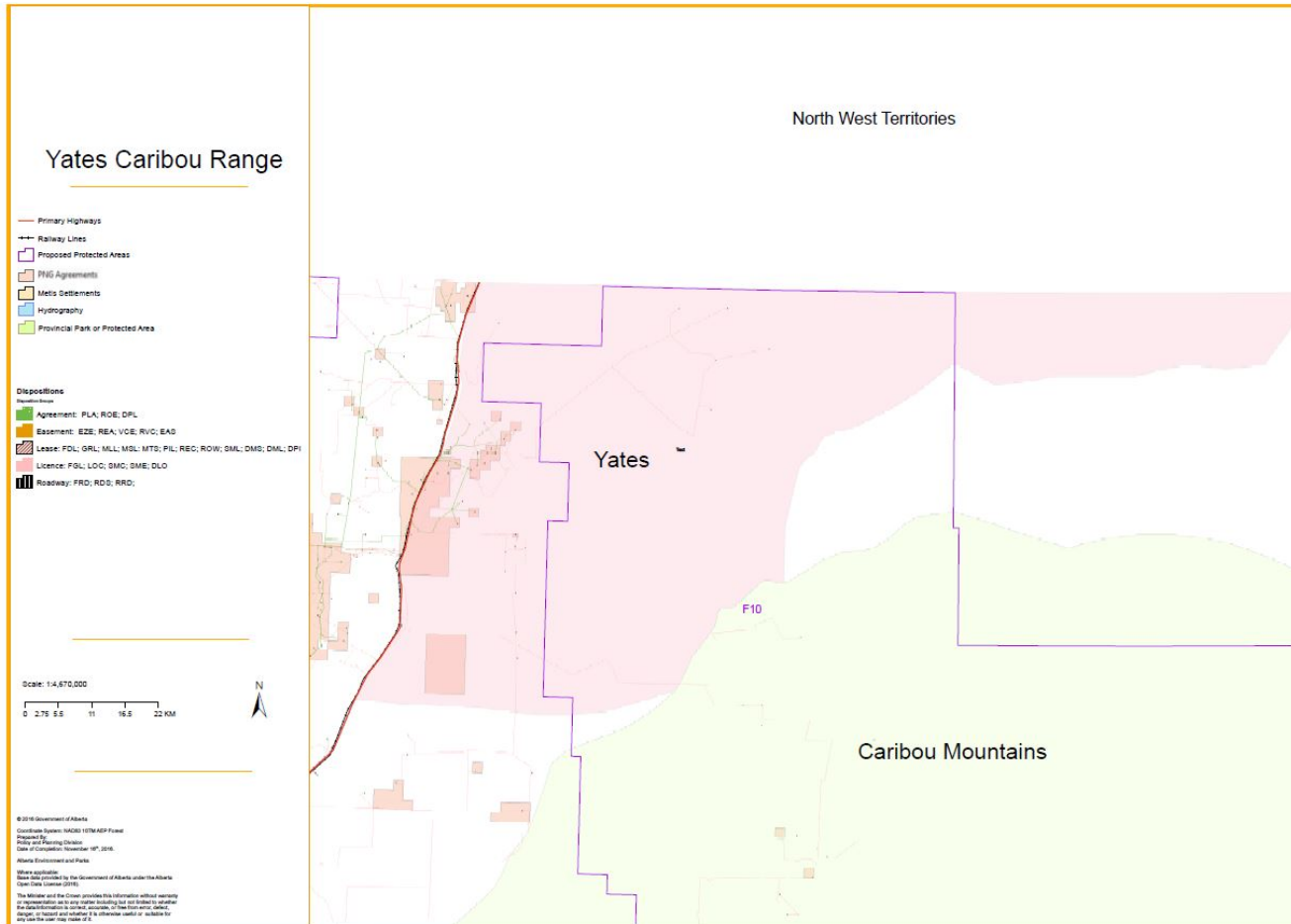


# Bistcho Caribou Range

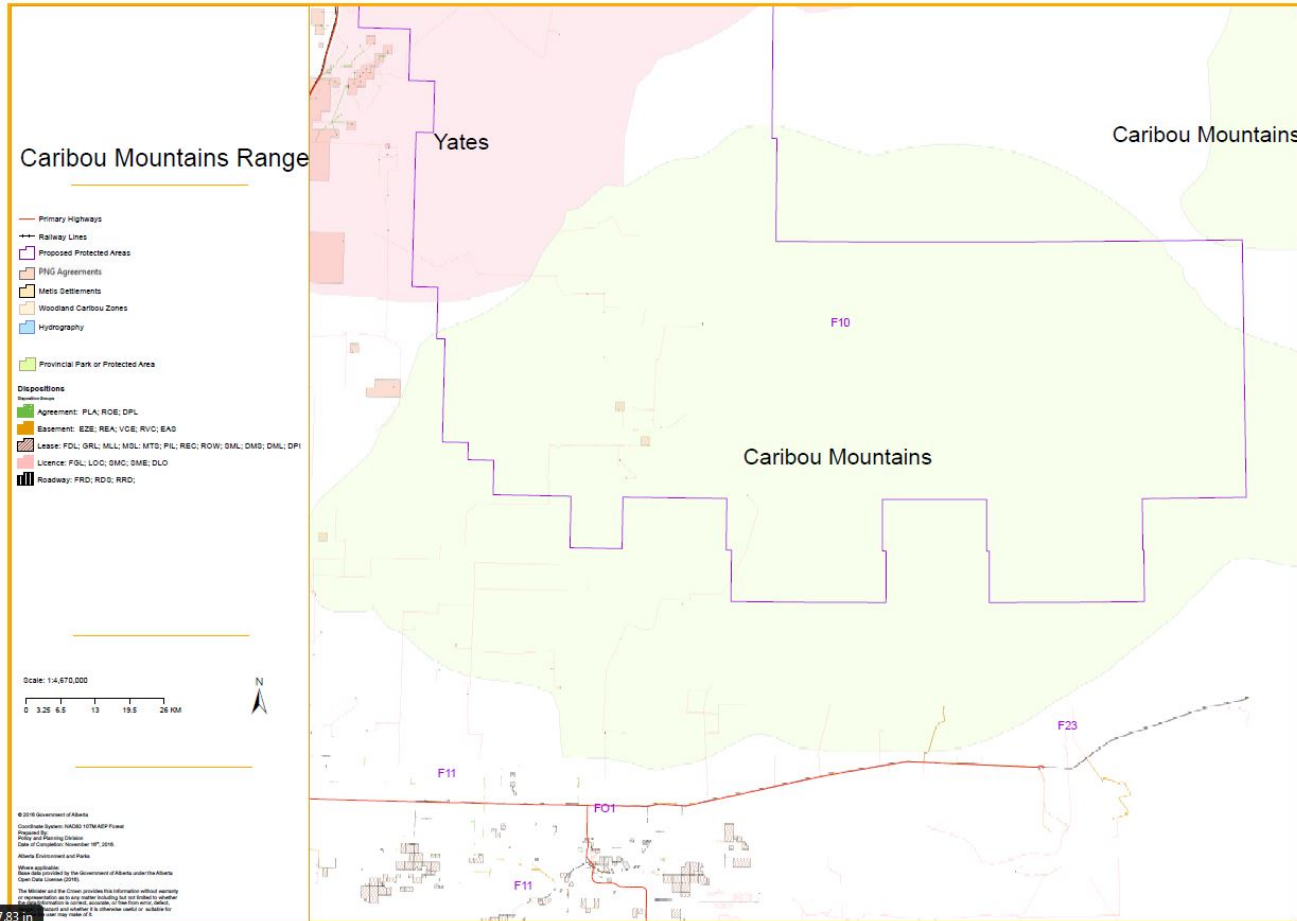




# Yates Caribou Range



# Caribou Mountains Range



# Red Earth Range

