

Priority Grasslands Initiative

Cariboo-Chilcotin Ecological Assessment

Identifying
Priority
Areas for
Grassland
Conservation
and
Stewardship



Grasslands Conservation Council
of British Columbia

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A sincere thank you is extended to the Regional Expert Panel* that provided their time and enthusiastically shared their extensive knowledge of the region:

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*See Appendix 2 for further information on the Regional Expert Panel

The **Cariboo-Chilcotin Ecological Assessment** project would not have been possible without the experienced leadership of Dennis Lloyd. He is a research ecologist, and member of the GCC Board of Directors, who is a tireless champion of the ***Priority Grasslands Initiative***.

Brad Arner, of Arner Environmental Service, managed the project and Jamie Shippit, a graduate student at Thompson Rivers University, provided GIS support and analysis. Peter Jones, a member of the GCC Board of Directors, engaged First Nations and government agencies.

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Introduction

The mega-wildfires of 2017 and 2018 in the Cariboo-Chilcotin region have shown there is an urgent need to adapt and improve the resilience of our forests and grasslands. Managers of land and natural resources are working on plans to promote ecosystem recovery and restoration, based on the best information available.

A project called, the **Cariboo-Chilcotin Ecological Assessment**, was initiated in October 2018 for the region's grasslands to update and provide current information which can help with this recovery. This project is part of the **Priority Grassland Initiative** of the Grasslands Conservation Council (GCC), which identifies areas of ecological importance that deserve special attention.

Grasslands cover less than 1% of British Columbia but support more than 30% of the threatened and endangered species of plants and animals found in the province. Grasslands are also the backbone of the beef cattle industry and provide critical habitat for wildlife.

Priority Grasslands Initiative

The GCC promotes the wise stewardship and conservation of grasslands through education and outreach, conducting science and research, and supporting sustainable management practices. The Priority Grasslands Initiative is a key part of the science and research program outlined in the current GCC strategic plan, Toward 2021.

The goal of the Priority Grasslands Initiative is to give current, scientific information to landowners, managers of land and natural resources, and community planners so they can make sound decisions. All grasslands are important but some areas have higher concentrations of species at risk or provide exceptional wildlife habitat because their topography. These areas are referred to as, "Areas of Interest", and they require special management practices to maintain their environmental values.

Information resulting from projects under the Priority Grasslands Initiative can be used to help develop effective ecosystem restoration plans and range management plans, or be used in conjunction with local government bylaws that protect environmental values. Grasslands are often lost to urban development and other land uses in part because their ecological values are not known or are poorly understood.

Cariboo-Chilcotin Study Area

Grasslands in the Cariboo Natural Resource Region are a key part of the Provincial management regime for lands and natural resources, and they have provided First Nations with food and medicinal plants for millennia.

The Cariboo-Chilcotin Regional Land Use Plan adopted in 1996 led to the completion of seven sustainable resource management plans, and the adoption of related Land Use Objectives. A zone, called the Grassland Benchmark Area (GBA), was established in 2001 within which forest encroachment is controlled to protect its value for livestock grazing and biodiversity.

The GBA is based on Open Range polygons identified in inventory maps completed between 1963 and 1975. In 2007, an ecosystem restoration plan was developed for this 265,315 ha zone to promote the restoration of open grassland habitats for wildlife, such as California bighorn sheep, and to maintain forage for domestic livestock.

The Study Area for this Priority Grasslands Initiative project, the Cariboo-Chilcotin Ecological Assessment, focused on grasslands found in the biogeoclimatic (BGC) zones: BGxh3, BGxw2, IDFdK3, IDFdK4, IDFDw, IDFXm and IDFXw.

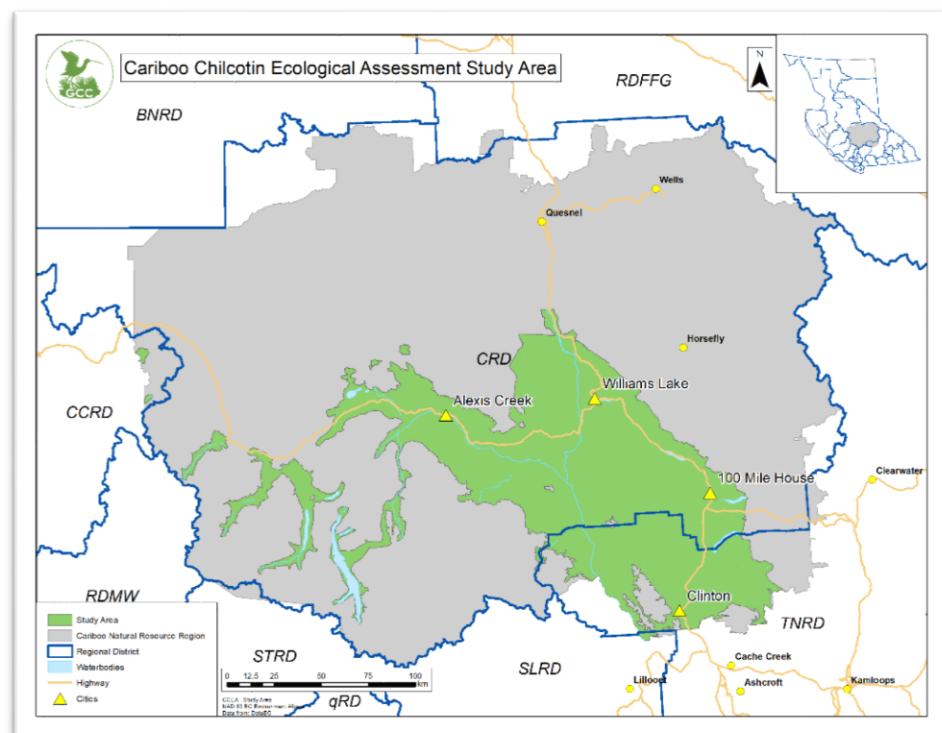


Figure 1 Cariboo-Chilcotin Ecological Assessment Project – Study Area (green)

This study area covered approximately 1.8 million hectares, and over 70% of all of the grasslands in the Cariboo Natural Resource Region. The study area focused on these BGC zones because they represent the northern extension of semi-arid ecoregions to the south, they contain areas of high biodiversity, and they are the location of the greatest human development and activity in the region.

Project Methodology

Projects under the Priority Grasslands Initiative consider the entire landscape within a study area, regardless of its ownership, land use designation, or current use. This approach provides a more complete assessment of areas important to biodiversity and livestock forage.

Purpose

The purpose of the Cariboo-Chilcotin Ecological Assessment project, as outlined in a project plan dated October 31, 2018, was to;

- a. Identify grassland areas of interest (AOI) in the Interior Douglas Fir (IDF) and Bunchgrass (BG) Zones in the Cariboo Natural Resource Region that warrant consideration for special management and protection; and
- b. Provide this information to First Nations, community planners, managers of natural resources, private landowners, and members of the public.

It is intended that this project be the first phase of work to assess the importance and current state of grasslands in the Region. The methodology developed by the GCC in 2007 was streamlined for this project so that timely results would be available to assist with the development of wildfire recovery and ecosystem restoration plans.

In particular, information on the importance of grasslands to First Nations, and their traditional ecological knowledge of grasslands and fire, needs to be added to the work done to date. Other social and economic values, such as the importance of the grasslands to the regional beef cattle industry, the tourism industry, and to outdoor recreation, need to be incorporated in subsequent phases.

This project also resulted in a series of recommendations related to the management of the GBA and the need for further information and assessment of the Areas of Interest, which could be the basis for further work.

Data Inventory and Integration

Spatial and attribute data was compiled, and map products produced, to support workshops with a panel of regional experts. The initial step included acquiring the following datasets for the Study Area:

- Biogeoclimatic Ecosystem Classification (BEC) - DataBC
- Grassland Benchmark Area for the Cariboo Region – DataBC
- VRI – Forest Vegetation Composite Polygons and Rank 1 Layer - DataBC
- Grassland Encroachment for the Cariboo Region – DataBC
- Fire Perimeters: Current – DataBC
- Fire Perimeters: Historical – DataBC
- Sheep Wintering Habitat for the Cariboo Region – DataBC
- Species and Ecosystems at Risk – BC Conservation Data Centre
- Wildlife Habitat Areas – DataBC
- Critical Waterfowl Areas – Canadian Wildlife Service
- Riparian Habitat Areas – Canadian Wildlife Service
- BC Land Bird Watchlist Observations – BC Breeding Bird Atlas
- BC Land Bird Steep decline Observations – BC Breeding Bird Atlas
- Parks and Protected Areas – DataBC
- Forest Tenure Managed Licences – DataBC
- Range Tenure – DataBC
- Indian Reserve Administrative Boundaries – DataBC
- MapBC Parcel Fabric - DataBC
- TANTALIS: Surface Ownership – DataBC
- TANTALIS: Crown Tenures – DataBC
- TANTALIS: Wildlife Management Areas & Conservancy Areas – DataBC
- Wildlife Habitat Areas – DataBC
- NGO Conservation Areas: Fee Simple – DataBC

A series of maps for the study area were produced that depicted vegetation cover, forest encroachment, habitat diversity, species at risk occurrence, land status and designations, and current land use. These datasets were subsequently used to provide more detailed information on each of the Areas of Interest.

In particular, lists of species at risk in the Region in previous reports were reviewed and the current status of a list of animal species with respect to federal and provincial legislation was compiled (Appendix 1).

Identification of Areas of Interest

A qualitative, iterative process was used to identify grassland areas of high ecological importance. This approach relied on the extensive field experience and knowledge of regional experts (Appendix 2) to produce a strategic overview of grasslands in the region. In particular, this approach maximized the value of the results in the time available, and used professional judgement to help overcome data gaps and inconsistencies.

Workshops were held at Thompson Rivers University in Williams Lake for invited participants on December 11, 2018 and on February 20-21, 2019. Facilitated group discussions resulted in the initial identification of areas based on existing data, field knowledge, and the interpretation of landscape features. The initial list was subsequently revised and refined using available site specific information.

*Figure 2
Regional Expert Panel:
Identifying Areas of Interest*



In addition to map products created for the workshops, when identifying Areas of Interest the participants considered a variety of ecological factors such as;

- Species at risk occurrence and the distribution of associated BEC variants;
- Location of grassland areas relative to aquatic features and forest edge;
- Topographical features, such as slope and aspect; and
- Habitat connectivity and wildlife corridors.

Assessment and Ranking

The workshop participants also completed a subjective, cursory ranking of the Areas of Interest based on available information, with the intention that the results would be helpful in developing management plans and related work plans.

Project Results

The grasslands of the Cariboo Natural Resource Region have been studied and mapped extensively in the past. The Grassland Benchmark Area (GBA) established in 2001 comprised 11% (193,996 ha) of the Study Area.

Landscape Description

The lower grasslands of the Bunchgrass zone (BGxh3) occur in the hottest and most arid portions of the region. Bluebunch wheatgrass and big sagebrush are the characteristic species forming shrub-steppe communities in the valley bottoms of the Fraser and Chilcotin Rivers.

At slightly higher elevations, between 650 and 850 m, shrub-steppe communities give way to middle grasslands dominated by bluebunch wheatgrass and needle-and-thread grass. These grasslands of the BGxw2 zone occupy mid to upper slopes along the Fraser River and the lower part of the Chilcotin River valley.

Upper grasslands in the Interior Douglas Fir zones occur in a forested matrix on the plateau surfaces above the Fraser and Chilcotin rivers between 850 and 1200 m. Most of these upper grasslands occur within the IDFx_m zone, which accounts for 42.8% of the GBA in the Study Area. At climax, these upper grasslands are dominated by porcupine grass, bluebunch wheatgrass, spreading needle grass, and Rocky Mountain fescue.

These grasslands support a mix of habitats such as open prairies, wetlands, aspen copses, coniferous forest groves, and rocky, barren terrain. The topographic diversity of the Study Area lends itself to a variety of natural features and ecological communities.

The diverse grassland landscapes in the Cariboo-Chilcotin are a haven for many threatened and endangered species of animals and plants, with some reaching the northern limits of their range in the Study Area.

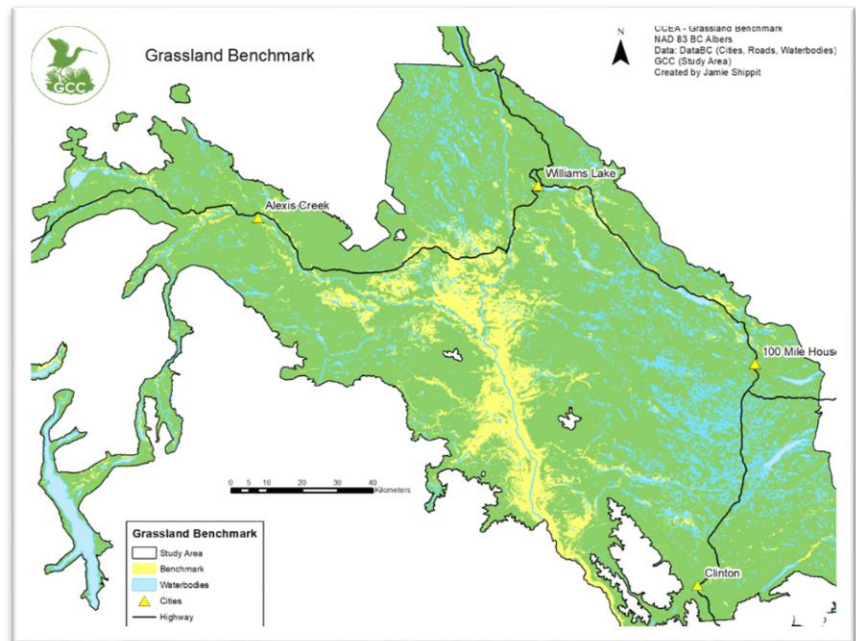
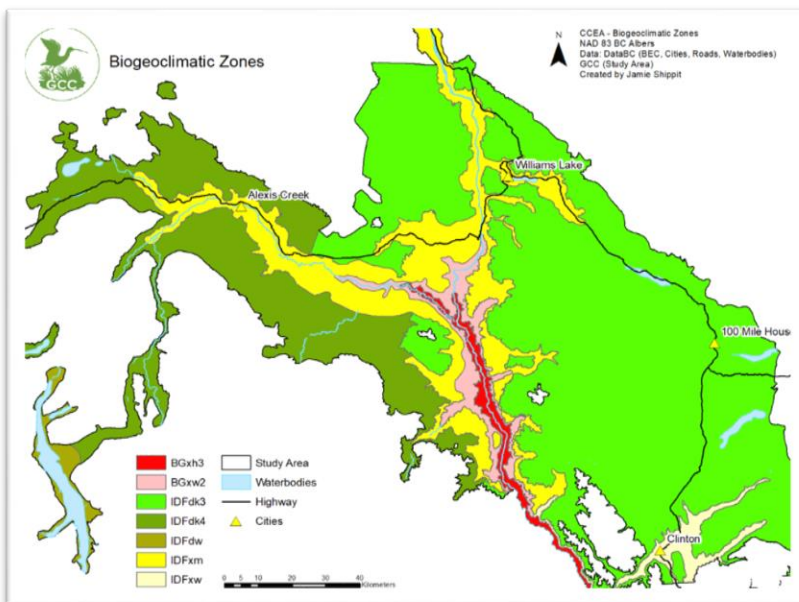


Figure 3 Study Area – Grassland Benchmark Area



Non-native invasive plants are not as widespread in the Cariboo-Chilcotin as in grassland regions further south in BC. However, wildfires and related disturbance by machinery, has increased the risk of weed infestations.

Figure 4 Study Area – Biogeoclimatic Zones

Biogeoclimatic Zone	Study Area (ha)		Grassland Benchmark (ha)	
BGxh3	27344.8	(1.6%)	22871.8	(11.8%)
BGxw2	52088.2	(2.9%)	35980.7	(18.6%)
IDFdk3	957053.6	(53%)	33586	(17.4%)
IDFdk4	372915.8	(20.7%)	15209.6	(7.9%)
IDFdw	107894	(6%)	1016.2	(0.6%)
IDFxm	258922.7	(14.4%)	83014	(42.8%)
IDFxw	31719.2	(1.8%)	2318.1	(1.2%)
Total	1807938	(100%)	193996	(100%)

Areas of Interest

The Regional Expert Panel identified 21 Areas of Interest (AOI) in the Study Area as shown in Figure 5, and each AOI is briefly described in Appendix 3.

Information on the occurrence of species at risk, the diversity of habitats, the connectivity and fragmentation of ecosystems, the presence of migration corridors, and the condition of the grasslands, were considered in identifying these grassland areas of high ecological value.

The area of grasslands in the AOIs equals 69,425 ha, or approximately 36% of the area of the GBA in the Study Area. The total area of the AOIs equals 122,465 ha.

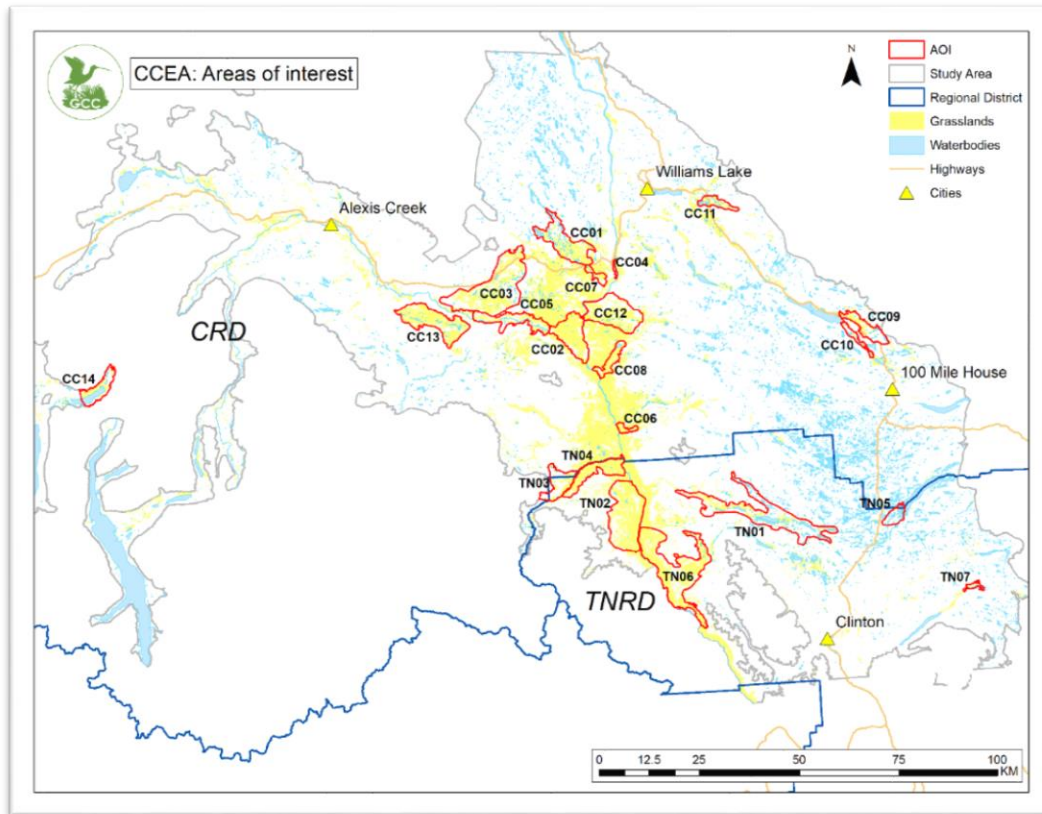


Figure 5 Cariboo-Chilcotin Ecological Assessment Project – Areas of Interest

In general, most of the AOIs are located in two areas: a northern cluster near the confluence of the Chilcotin and Fraser Rivers, and a southern cluster along the Fraser River from Big Bar Mountain to Churn Creek. A third category are AOIs of high habitat diversity on the Fraser Plateau, such as grasslands near Meadow Lake, Lac La Hache, and 150 Mile House.

A total of 27% of the area of the AOI are comprised of bunchgrass ecosystems, which approximately equals that same proportion as the area of bunchgrass zones (30%) in the GBA. The remaining 73% of the area of the AOIs are composed of IDF biogeoclimatic zones.

The AOIs also reinforce the ecological importance of parks and protected areas resulting from the Cariboo-Chilcotin Regional Land Use Plan, such as the 36,747 ha Churn Creek Protected Area and the 4,774 ha Junction Sheep Range Provincial Park. A total of 21% of the area of the AOIs is within existing parks and protected areas, while parks and protected areas represent only 6% of the Study Area.

It is also important to recognize the importance of grasslands in the Study Area to the beef cattle industry. While private land represents 12% of the Study Area, it represents 39% of the GBA in the Study Area, and access to adjacent Crown rangeland is very important.

The Regional Expert Panel also completed a ranking of the priority of the AOIs to help the development of regional action plans.

In particular, this cursory assessment is intended to inform current ecosystem restoration and wildfire recovery planning, and ongoing conservation and stewardship efforts.

This subjective ranking was based on the ecological values of the AOI, its land status and use, and existing knowledge of the condition of its grasslands.

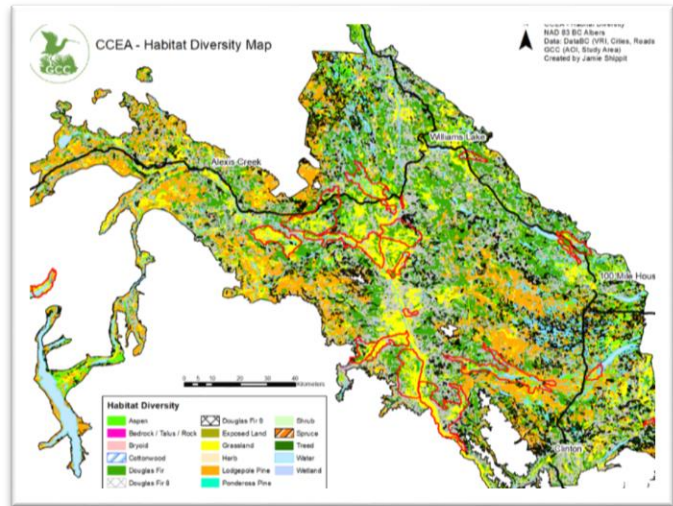


Figure 6 Areas of Interest – Habitat Diversity

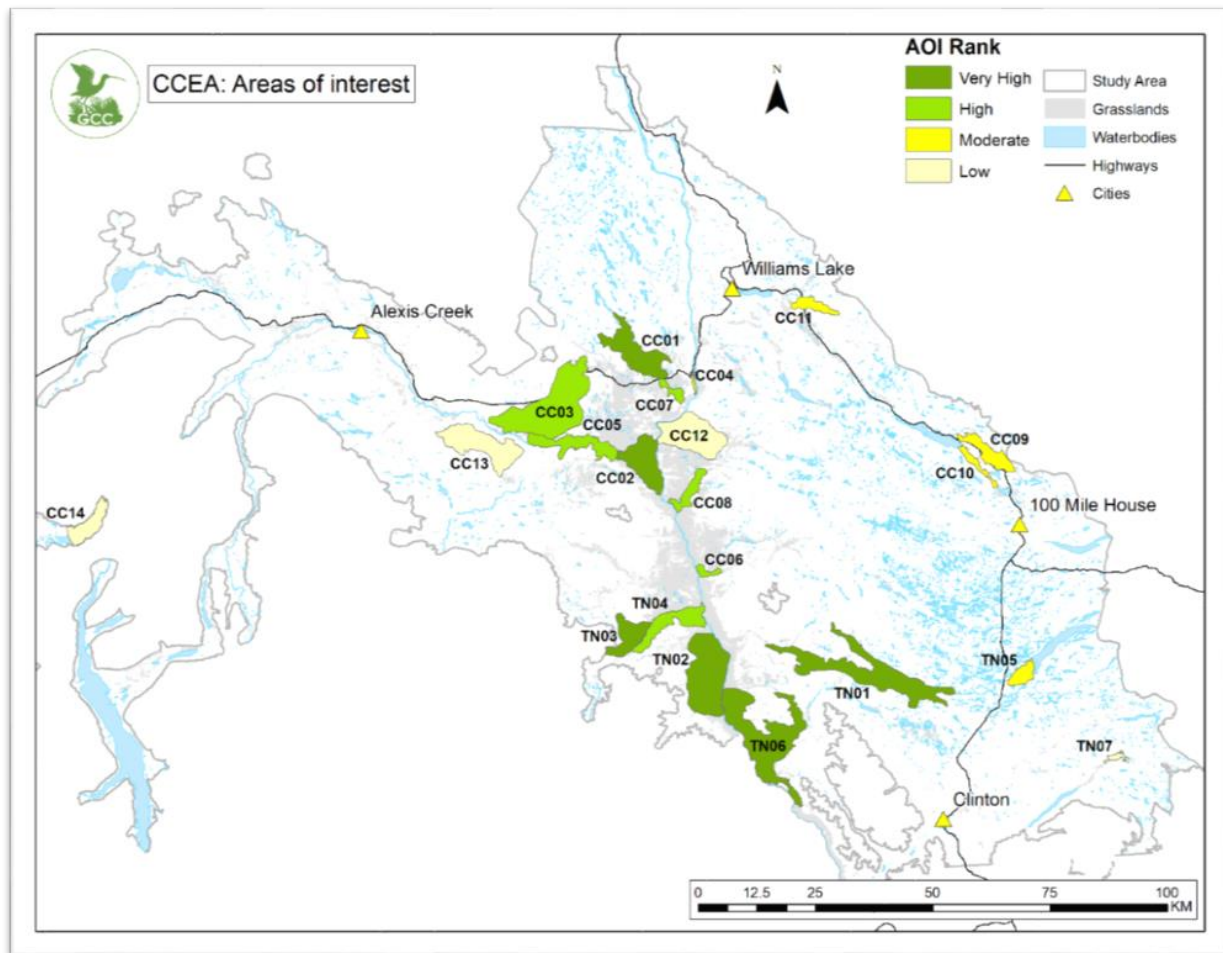


Figure 7 Cariboo-Chilcotin Ecological Assessment Project – Ranked Areas of Interest

Regional Concerns

Several reoccurring threats and risks to grasslands in the Study Area emerged from discussions regarding the identification and description of the AOIs in Appendix 3:

- Forest encroachment
- Wildfire suppression and post-fire treatments
- Invasive non-native plants
- Livestock grazing practices
- Habitat loss and fragmentation

In general, grasslands in the Study Area are at the northern extent of their range in British Columbia, and historically, fire has had a significant role in maintaining these ecosystems in the Cariboo-Chilcotin region. Fire suppression has led to a significant encroachment of trees onto these grasslands, and to date, 20% of the GBA in the Study Area has been lost to trees.

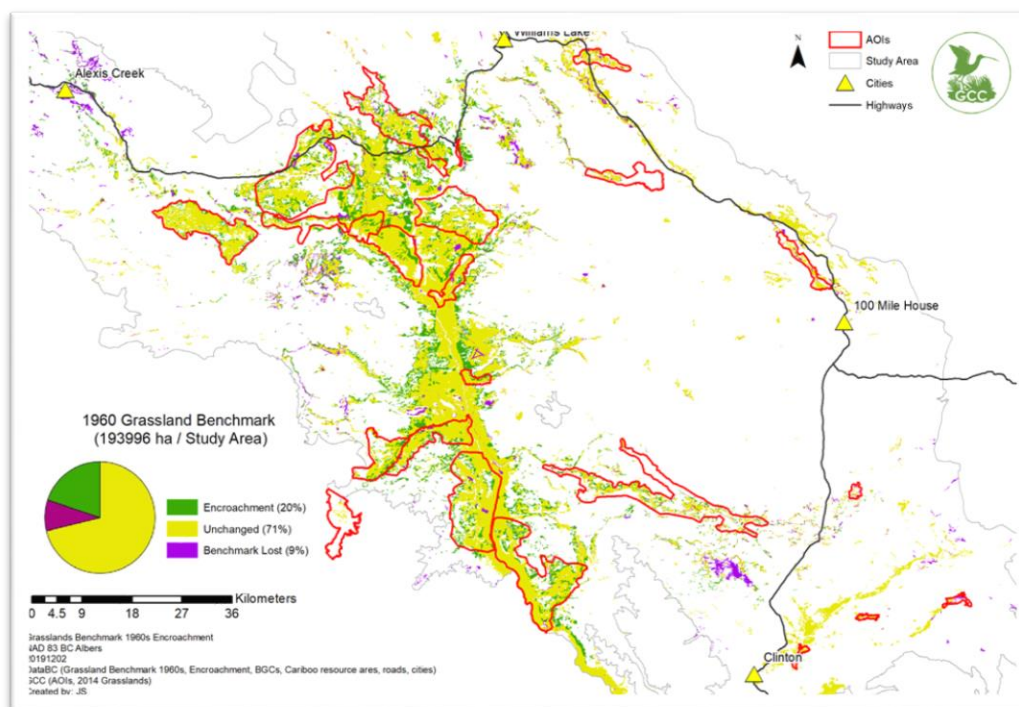


Figure 8 Grassland Benchmark Area – Forest Encroachment

The mega-wildfires (wildfires > 40,000 ha) of 2017 and 2018 in the Cariboo-Chilcotin region had both direct impacts on the soil and vegetation of grasslands, but also significant indirect impacts resulting from fire suppression activities, such as the construction of roads and fire guards on grasslands.

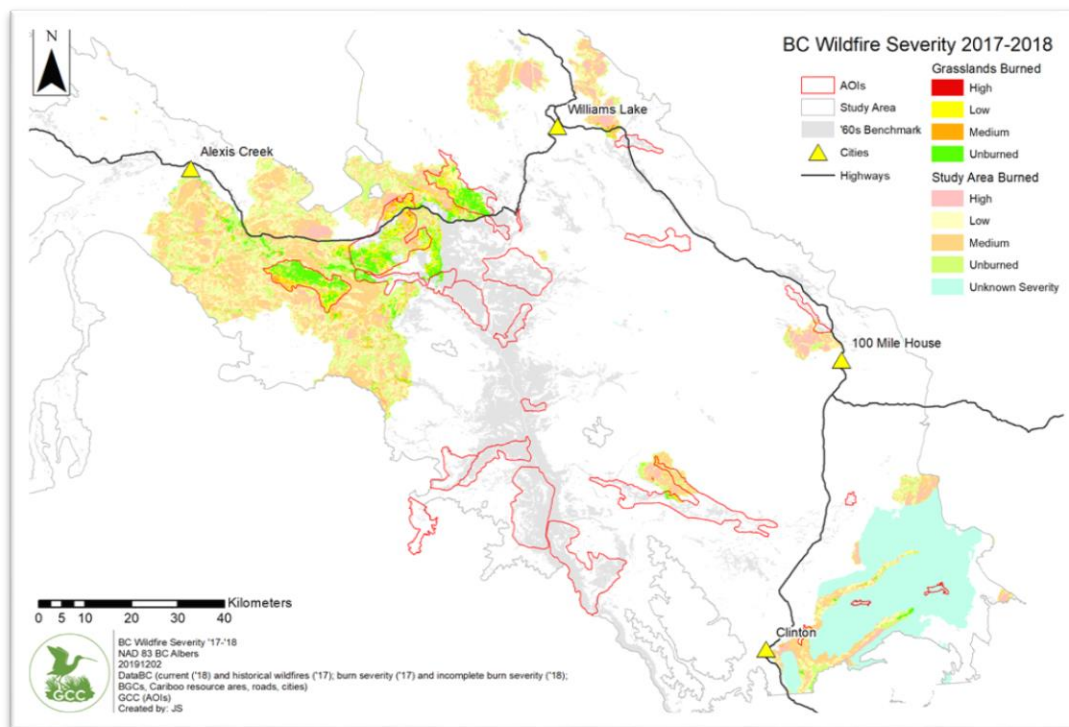


Figure 9 Grassland Benchmark Area – Recent Wildfire Impacts

In 2017 and 2018 a total of 53 wildfires in the Study Area burnt 340,000 ha, which covered 19% of the Study Area. These fires affected 33,100 ha of the GBA, or approximately 17% of its area.

The spread of invasive non-native plants, which includes both weeds and domestic forage species, continues to be a problem that is exacerbated by the increased disturbance of soils and vegetation by industrial development, timber harvesting, and wildfire suppression.

The role and importance of sound livestock grazing practices is integral to the health of grasslands in the Cariboo-Chilcotin. The GBA is the backbone of the regional beef cattle industry and it is grazed extensively. The intensity, distribution, and duration of grazing needs to be determined by sound range management plans, and wetland and riparian areas need to be protected. The term, “inappropriate livestock grazing” used in Appendix 3 is not an assessment of the current range condition of each AOI, but rather reflects the importance of practicing sound grazing practices and of ongoing stewardship efforts in these areas.

It was noted that range management is becoming more difficult in some areas near Meadow Lake, and in parts of the Chilcotin, because of growing feral horse populations.

Urban and rural residential development also have a significant potential impact of the grasslands in the Study Area. These developments result in habitat fragmentation and loss and their potential impacts are best addressed by developing compact communities.

Use and Limitations

The Cariboo-Chilcotin Ecological Assessment Project used the iterative engagement of regional scientific experts to quickly complete a strategic assessment of the ecological values of the grasslands in the Study Area. This subjective analysis was based on the significant field knowledge and experience of the participants and on existing information.

The project results are intended to be used primarily as a guide for ecosystem restoration, land use, and conservation planning at a regional scale. Further information and site investigations are required to develop management recommendations for specific AOIs.

In particular, this project was intended to be the initial phase of a more comprehensive assessment of the Cariboo-Chilcotin grasslands. Incorporating the traditional knowledge of First Nations, and information about the use and importance of the landscape by the beef cattle industry, would be key next steps.

Recommendations

The discussions of the Regional Expert Panel produced a series of recommendations related to the management of grasslands across the landscape, and to the management of the AOIs:



Figure 10 Jane Wellburn of Fraser Basin Council in discussion with Roger Packham

Regional Landscape

1. Develop **Best Management Practices for Fire Suppression in Grasslands** that would help minimize the impact and disturbance of fire suppression activities. This would include guidelines for restoration activities that maintain or enhance ecological values and forage. These guidelines should include recommendations on seeding mixes and application, strategies to control soil erosion, techniques for rehabilitating severely burnt sites, and guidelines for salvage logging that conserves grassland values. The effective implementation of these guidelines would require a training and staff development plan for wildfire suppression crews.
2. Strengthen efforts to control the spread of invasive plants in the region and implement a current, comprehensive **Invasive Plant Regional Control Plan** with adequate funding.

3. Review and update **Best Management Practices for Timber Harvesting in the Grassland Benchmark Area** that reflects current recommendations and techniques for increasing landscape resilience to wildfires, and that addresses forest encroachment. This would involve adapting existing efforts to include requirements in forest stewardship plans and silviculture plans that conserve grassland values.
4. Renew efforts to reduce the impacts of off-road vehicles (ORV) and non-motorized recreation on grasslands by implementing an **ORV and Outdoor Recreation Information Campaign** in collaboration with provincial ORV organizations and local clubs, the BC Wildlife Federation, and the BC Cattlemen's Association.
5. Continue to promote sound range management and grazing practices through a **Stewardship and Sustainable Ranching Program** developed in collaboration with the BC Cattlemen's Association, local ranch owners, government staff, and related professional associations.

Areas of Interest

1. **Site Assessments:** Inventory and gather additional information on the AOIs and reassess the ecological characteristics and importance of each site. Additional activities could include;
 - Terrestrial Ecosystem Mapping (TEM) where it is lacking or of poor quality;
 - Inventorying and mapping range conditions;
 - Confirming occurrence and status of species at risk, and their critical habitats;
 - Identifying keystone species at risk and completing habitat modelling; and
 - Mapping additional features such as red and blue listed ecosystems, concentrations of invasive plants, and special topographic features.
2. **Socio-Economic Values:** Incorporating information on the traditional use of these grasslands by First Nations, and information about the use and importance of the landscape by the beef cattle industry, would be key next steps. In addition, other socio-economic values could include;
 - Archeological sites and sites of cultural or traditional use by First Nations;
 - Tourism and recreational features of regional and local importance; and
 - Community and economic development goals of local governments.
3. **Species at Risk Management:** Clarify the roles and responsibilities of the federal and provincial governments with respect to species at risk in the AOIs, and develop related

management strategies. Actions could include;

- Mapping and modelling critical habitat for selected species at risk;
- Identifying and mapping related ecosystems at risk; and
- Inventorying special features such as rock outcrops, talus slopes, saline ecosystems, and dunes.

4. **Stewardship Plans:** Engage First Nations and local ranch owners in discussions on the sustainable use and management of the highest priority AOIs. This could involve the development of plans and strategies for;

- Improving range conditions
- Controlling invasive plants;
- Reversing forest encroachment; and
- Protecting wetland and riparian habitats.

5. **Regional Coordination:** Plan and implement further work in conjunction with a regional forum, such as the Cariboo-Chilcotin Ecosystem Restoration Committee, to ensure a broad range of interests are involved. This would help to ensure;

- Grassland values are incorporated into regional investment plans and projects;
- Coordination with ongoing field research being conducted by universities; and
- The state of grasslands in the region can be more easily assessed.

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Appendix 1: List of Animal Species at Risk

The following list of animal species at risk are associated with ecosystems that occur in the study area and it was used in the assessment of ecological importance of grassland sites:

Species at Risk in the GCC Cariboo-Chilcotin Priority Grasslands Initiative's study area.					
(BGxh3, BGxw2, IDfxm, IDfxw, IDfdw, IDfdk3, IDfdk4)					
Common Name	Scientific Name		Prov	SARA	COSEWIC
Mammals	6				
American Badger	Taxidea taxus	Red	S2	1-E	E Endangered
Bighorn sheep	Ovis canadensis	Blue	S3?	Not listed	SC Spp of Concern
Fringed myotis	Myotis thysanodes	Blue	S3	3	DD Deficient data
Spotted bat	Euderma maculatum	Blue	S3S4	1-SC	SC Spp of Concern
Townsend's big-eared bat	Corynorhinus townsendii	Blue	S3S4	Not listed	Not listed
Western small-footed myotis	Myotis ciliolabrum	Blue	S2S3	Not listed	Not listed
Amphibians	2				
Great-basin spadefoot	Spea intermontana	blue	S3	1-T Threatened	T Threatened
Painted turtle	Chrysemys picta	blue	S3	1-SC	SC Spp of Concern
Reptiles	4				
Gopher snake	Pituophis catenifer	blue	S3	1-T	T Threatened
Rubber Boa	Charina bottae	blue/Yellow	S4	1-SC	SC Spp of Concern
Western rattlesnake	Crotalus oreganus	blue	S2S3	1-T	T Threatened
Yellow-bellied racer	Coluber constrictor	blue	S2S3	1-T	T Threatened
Birds	23				
American Avocet	Recurvirostra americana	Red	S2S3b	Not Listed	Not Listed
American Bittern	Botaurus lentiginosus	Blue	S3B SNRN	Not Listed	Not Listed
American white pelican	Pelecanus erythrorhynchos	Red	S1B	Not Listed	NAR Not at Risk
Black swift	Cypseloides niger	Blue	S2S3B	Not Listed	E Endangered
Bobolink	Dolichonyx oryzivorus	Blue	S3B	1-T	T Threatened
Brewer's sparrow	Spizella breweri	Red	S2S3b	Not Listed	Not Listed
Flammulated owl	Otus flammeolus	Blue	S3B	1-SC	SC Spp of Concern
Grasshopper sparrow	Ammodramus savannarum	Red	S1B	Not Listed	Not Listed
Great blue heron	Ardea herodias	Blue	S3	Not Listed	Not Listed
Lewis's woodpecker	Melanerpes lewis	Blue	S2S3B	1-T	T Threatened
Long-billed curlew	Numerius americanus	Blue	S3B	1-SC	SC Spp of Concern
Olive-sided flycatcher	Contopus cooperi	Blue	S3S4B	1-T	SC Spp of Concern
Peregrine falcon ssp anatum	Falco peregrinus ssp. anatum	Red	S2?	1-SC	NAR Not at Risk
Prairie falcon	Falco mexicanus	Red	S1	Not Listed	NAR Not at Risk
Rusty blackbird	Euphagus carolinus	Blue	S3S4B	1-SC	SC Spp of Concern
Sandhill crane	Antigone canadensis	Blue/Yellow	S4B	Not Listed	NAR Not at Risk
Sharp-tailed grouse	Tympanuchus phasianellus columbianus	Blue	S2S3	Not Listed	Not Listed
Short-eared owl	Asio flammeus	Blue	S3BS2N	1-SC	SC Spp of Concern
Swainson's hawk	Buteo swainsoni	Red	S2B	Not Listed	Not Listed
Upland sandpiper	Bartramia longicauda	Red	S2B	Not Listed	Not Listed
Western screech-owl	Megascops kennicottii macfarlanei	Blue	S2S3	1-T	T Threatened
White-throated swift	Aeronautes saxatalis	Blue	S3S4B	Not Listed	Not Listed
Yellow-breasted chat	Icteria virens	Red	S2B	1-E	E Endangered

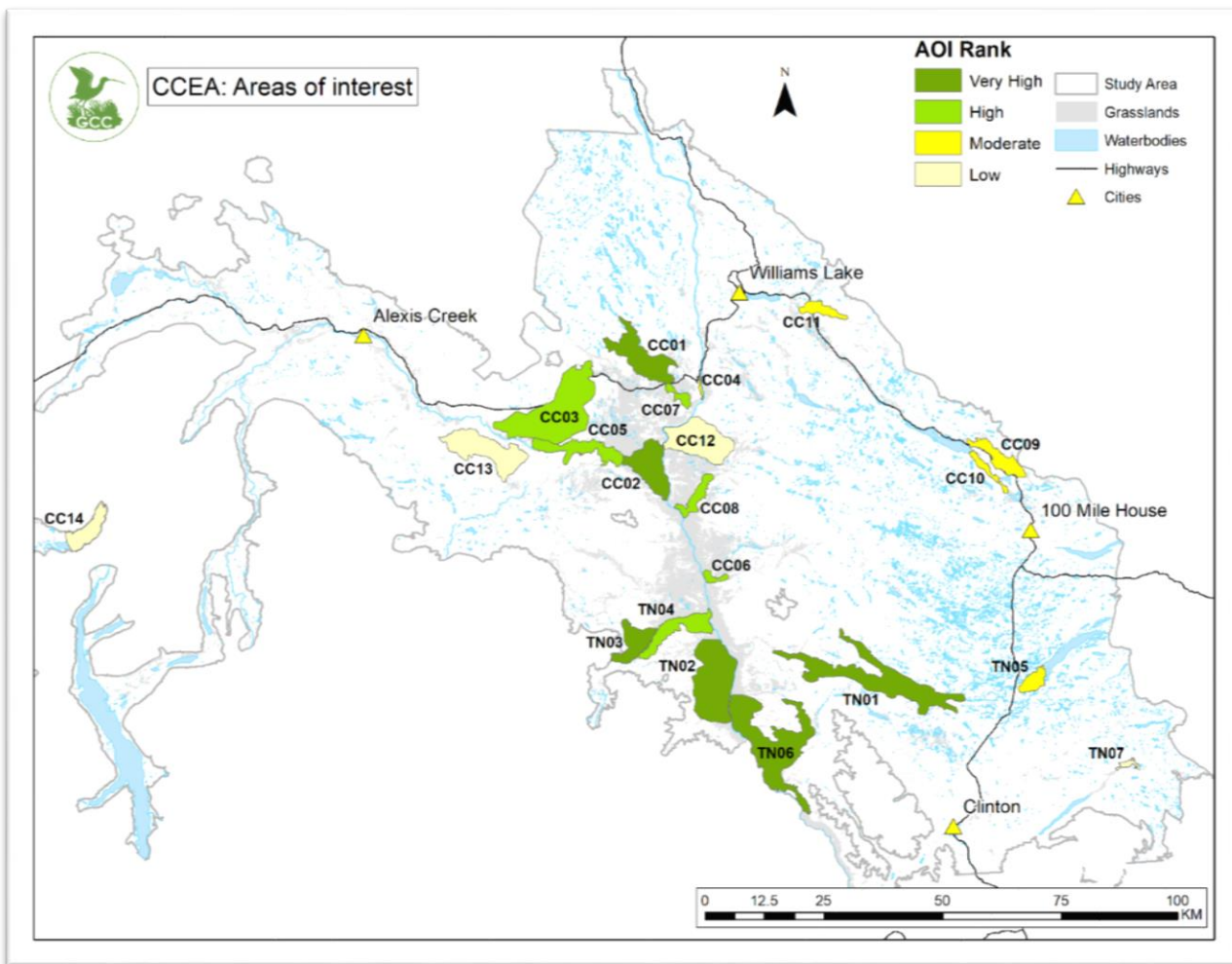
Appendix 2: Regional Expert Panel - Participants

The following people participated in the workshops held at Thompson Rivers University in Williams Lake on December 11, 2018 and on February 20-21, 2019:

NAME	OCCUPATION	LOCATION
Chris Armes	Range Officer Ministry of Forests, Lands and Natural Resource Operations	Williams Lake
Eleanor Bassett	Rangeland Research Ecologist Ministry of Forests, Lands and Natural Resource Operations	100 Mile House
Becky Bings	Habitat Biologist Ministry of Forests, Lands and Natural Resource Operations	Williams Lake
Emily Cameron	Vegetation Ecologist Ministry of Environment and Climate Change Strategy	Victoria
Ray Coupé	Research Ecologist (retired)	150 Mile House
Peter Holub	Ecosystem Restoration Specialist Ministry of Forests, Lands and Natural Resource Operations	Williams Lake
Kerri Howse	Land and Resource Section Head Ministry of Forests, Lands and Natural Resource Operations	Williams Lake
Kristi Iverson	Research Ecologist Iverson & MacKenzie Biological Consulting Ltd.	Lac La Hache

NAME	OCCUPATION	LOCATION
Harry Jennings	Range Specialist (retired)	Williams Lake
Fred Knezevich	Ecosystem Restoration Specialist (retired)	Williams Lake
Roger Packham	Habitat Biologist (retired)	100 Mile House
Julie Steciw	Wildlife Biologist Ministry of Forests, Lands and Natural Resource Operations	Williams Lake
Ordell Steen	Research Ecologist (retired)	Williams Lake
Jane Wellburn	Regional Manager, Cariboo-Chilcotin Fraser Basin Council	Williams Lake

Appendix 3: Areas of Interest - Descriptions












Areas of Interest


















Rank	Code	Name	Area (ha)	Page
Very High	CC01	Becher's Prairie	7598	23
Very High	TN01	Meadow Lake Complex	14909	25
Very High	TN02	Clyde Mt. - Sheep Point	12496	27
Very High	TN03	Churn Creek North	4096	29
High	TN04	Churn Flats - Dry Lake	4867	31
Very High	CC04	Junction (South Bank)	6382	33
Moderate	TN06	Green Lake West	1824	35
High	CC06	Bald Mountain	16980	37
Moderate	CC07	Doc English Bluff	206	39
Very High	TN05	Big Bar Mountain	16033	41
High	CC05	Wineglass Cliff Complex	5036	43
High	CC08	Dog Creek	742	45
High	CC02	Deer Park	1053	47
High	CC08	Alkali Lake	2215	49
Moderate	CC11	111 Mile	3358	51
Moderate	CC12	Walker Valley	1184	53
Moderate	CC13	148 Mile	1846	55
Low	CC03	Last Chance	8942	57
Low	CC10	Chilco	8592	59
Low	TN07	Upper Loon Lake	516	61
Low	CC14	Choelquoit Lake	3590	63

Map Legend

Species and Habitat Values of Note

	Land Bird Decline Observations		Wildlife Habitat Core Area
	Breeding Land Bird Observations		SAR Habitats
	Publically available SAR		Critical Waterfowl Habitat
			Sheep Winter Habitat
			Mule Deer Winter Habitat
			Riparian




Habitat Diversity

	Aspen		Grassland
	Bedrock / Talus / Rock		Herb
	Bryoid		Lodgepole Pine
	Cottonwood		Ponderosa Pine
	Douglas Fir		Shrub
	Douglas Fir 8		Spruce
	Douglas Fir 9		Treed
	Exposed Land		Water
			Wetland

Land Status

	Crown - Parks and protected areas		Crown Tenure - First Nations Woodland Licence
	Crown - Municipal Parcels		Federal - Defense
	Crown - Tenures		Federal - Indian Reserve
	Crown - Wildlife Habitat/Management Area		NGO Conservation Areas
	Crown Lease - Misc. lease		Private
			Unknown Ownership/Exceptions

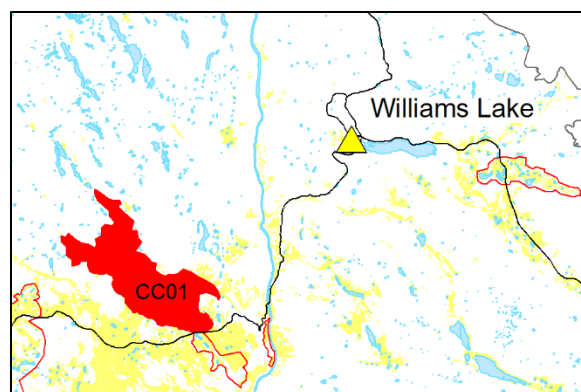
Conservation Concerns

	Fire Boundary '17 or '18		Grazing Permit
	Invasive Weeds		Grazing License
	Encroachment		
	Grassland Benchmark		

Becher's Prairie

Area Characteristics

ID	CC01
UTM Coordinates	10N 537274 mE 5763533 mN
Total Area	7598 ha
Grassland Area	4274 ha (56%)

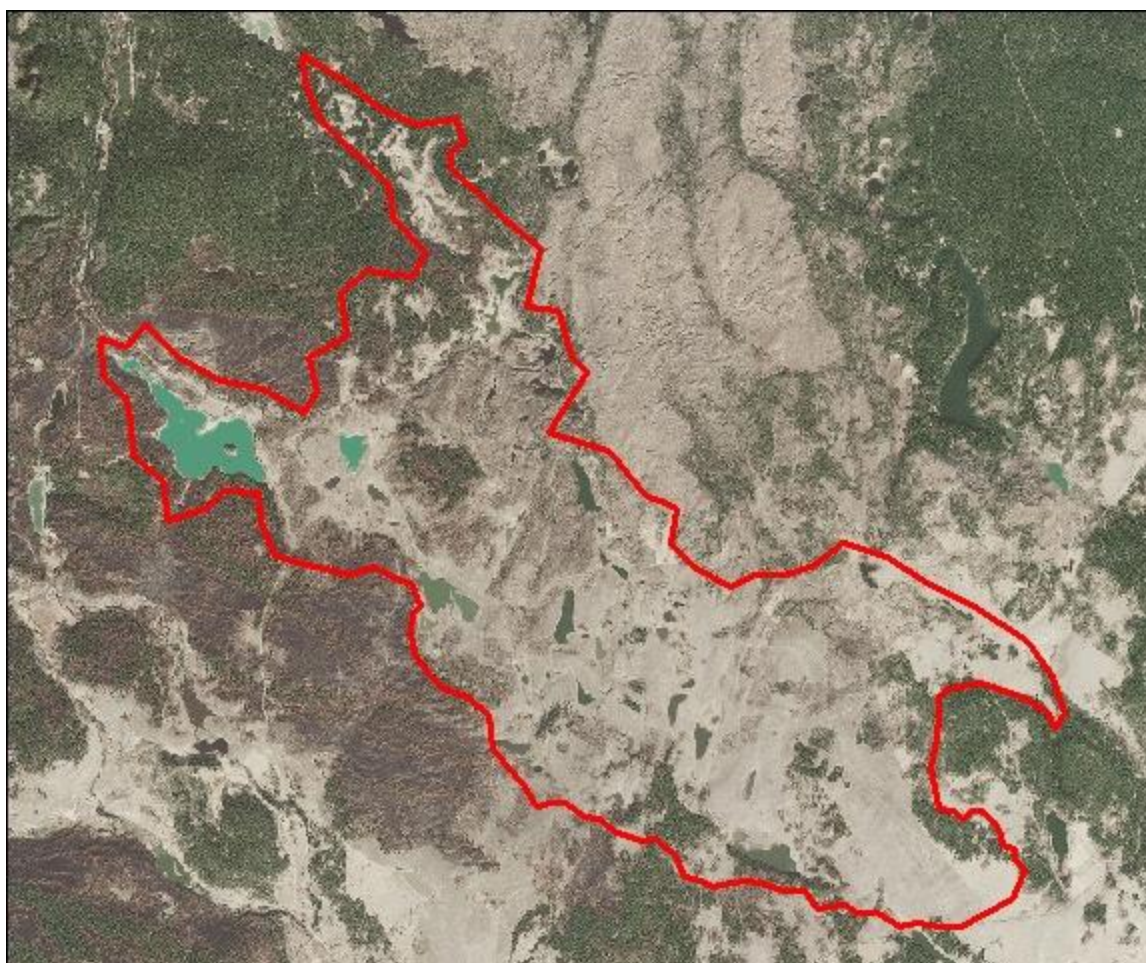


General Description:

Extensive area of mixed upper grassland, coniferous forest and aspen copse, with pond and lake complexes. Located north of Hwy 20 near Riske Creek.

Biogeoclimatic Zones:

IDFdk3	2914 ha (38%)
IDFxm	4684 ha (62%)

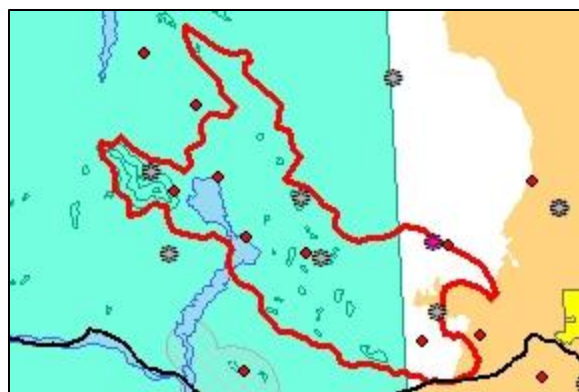


Species and Habitat Values Of Note

American Avocet	Rock outcrops
Long-billed Curlew	Mule Deer Winter
Sharp-tailed Grouse	Riparian
Olive Flycatcher	Sandhill Crane
Least Flycatcher	

Large Garter Snake Hibernaculum
 Pond complex with diverse water chemistry and hydrology
 Long-term habitat and wildlife research area
 Very significant regional Waterfowl Habitat

Species and Habitat Values of Note



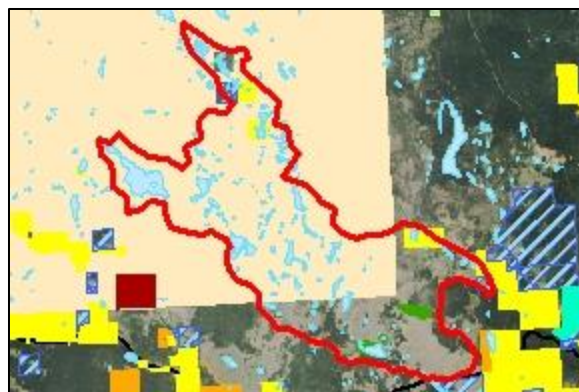
Habitat Diversity



Habitat Diversity

Aspen	1300 ha (17.1%)
Douglas Fir	1566 ha (20.6%)
Douglas Fir 8	279 ha (3.7%)
Grassland	3555 ha (46.8%)
Lodgepole Pine	283 ha (3.7%)
Spruce	59 ha (0.8%)
Water	520 ha (6.8%)
Wetland	35 ha (0.5%)

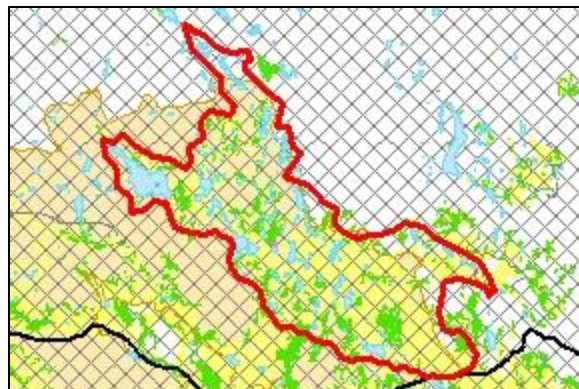
Land Status



Land Status

Crown	2290.6 ha (30.1%)
Crown - Parks and Protected Areas	121.1 ha (1.6%)
Crown Lease - Misc. lease	69.9 ha (0.9%)
Federal - Defense	4869.2 ha (64.1%)
Private	246.6 ha (3.2%)

Conservation Concerns



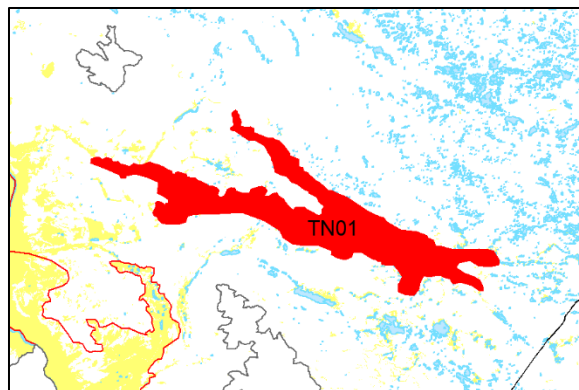
Conservation Concerns

Burned in 2017
 Forest encroachment
 Invasive Plants
 Inappropriate Grazing
 Human activity

Meadow Lake Complex

Area Characteristics

ID	TN01
UTM Coordinates	10N 583201 mE 5693467 mN
Total Area	14909 ha
Grassland Area	3957 (27%)

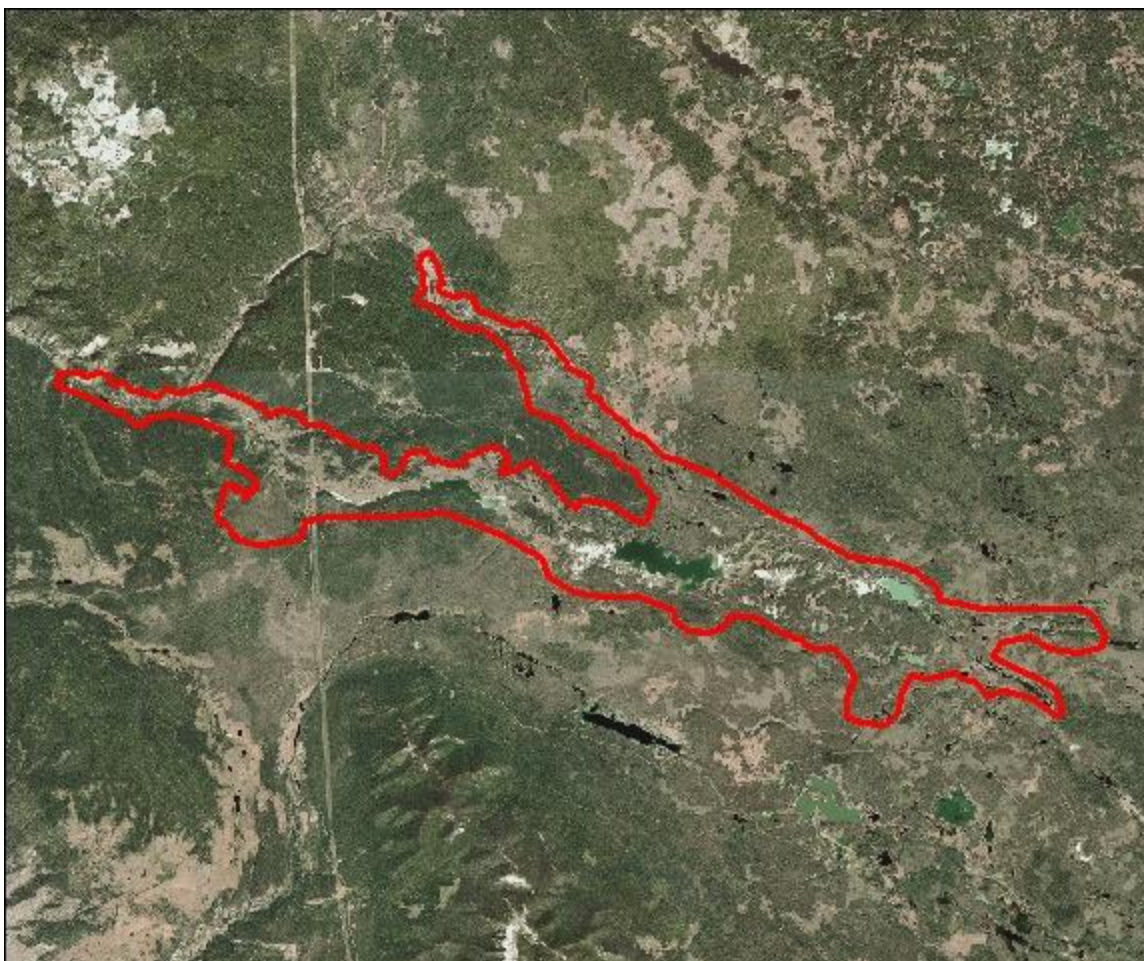


General Description:

A variety of mid-elevation habitats with diverse geology and microclimate.

Biogeoclimatic Zones:

IDFdk3	14675 ha (98%)
IDFxm	234 ha (2%)



Species and Habitat Values Of Note

American Avocet	Habitat Core Area
American Badger	Waterfowl Habitat
Sharp-tailed Grouse	Mule Deer Winter
Pelican foraging	Riparian corridor

High concentration of Great Basin Spadefoot
Lakes and wetlands with diverse water chemistry

Habitat Diversity

Aspen	1189 ha (8.0%)
Douglas Fir	2269 ha (15.2%)
Douglas Fir 8	690 ha (4.6%)
Douglas Fir 9	45 ha (0.3%)
Exposed Land	5 ha (0.03%)
Grassland	3533 ha (23.7%)
Herb	18 ha (0.2%)
Lodgepole Pine	5426 ha (36.4%)
Shrub	8 ha (0.05%)
Spruce	280 ha (1.9%)
Water	1206 ha (8.1%)
Wetland	240 ha (1.6%)

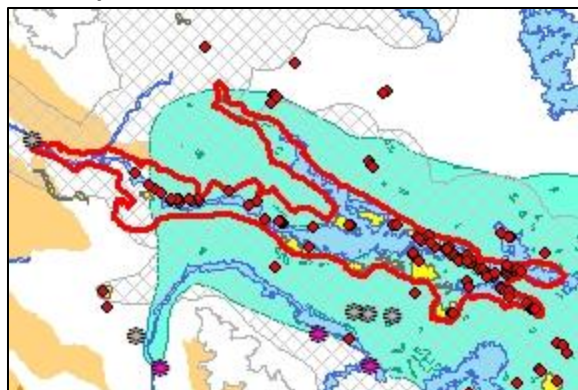
Land Status

Crown	7395.6 ha (49.6%)
Crown - Parks and Protected Area	511.3 ha (3.4%)
Crown - Tenures	4794.0 ha (32.2%)
Crown - Wildlife Habitat Area	2043.9 ha (13.7%)
Federal - Indian Reserve	1111.7 ha (7.5%)
Private	1053.4 ha (7.1%)

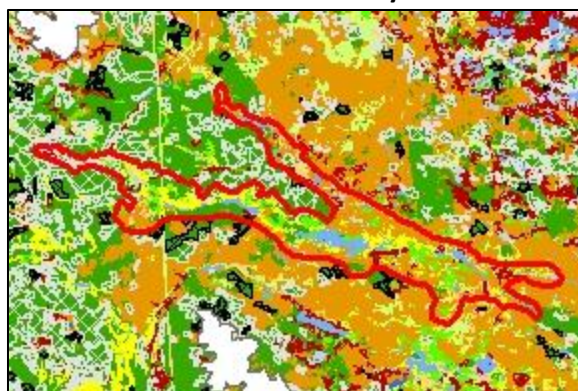
Conservation Concerns

Invasive Plants
Forest Encroachment
Burned in 2017 and 2018
Inappropriate Grazing
Growing feral horse population

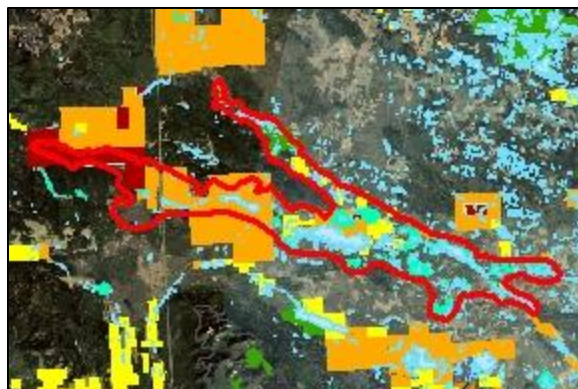
Species and Habitat Values of Note



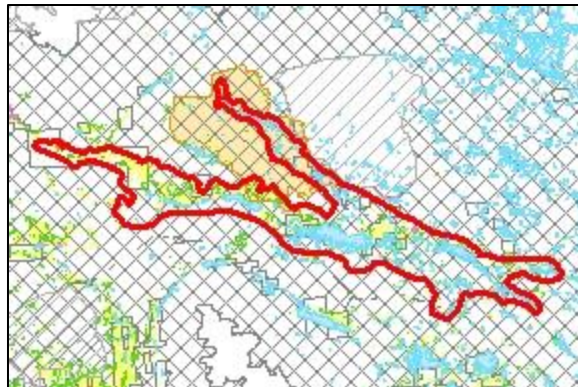
Habitat Diversity



Land Status



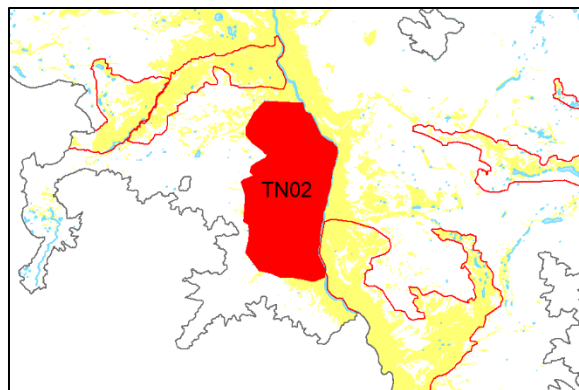
Conservation Concerns



Clyde Mountain – Sheep Point

Area Characteristics

ID	TN02
UTM Coordinates	10N 549800 mE 5693676 mN
Total Area	12496 ha
Grassland Area	9071 ha (73%)

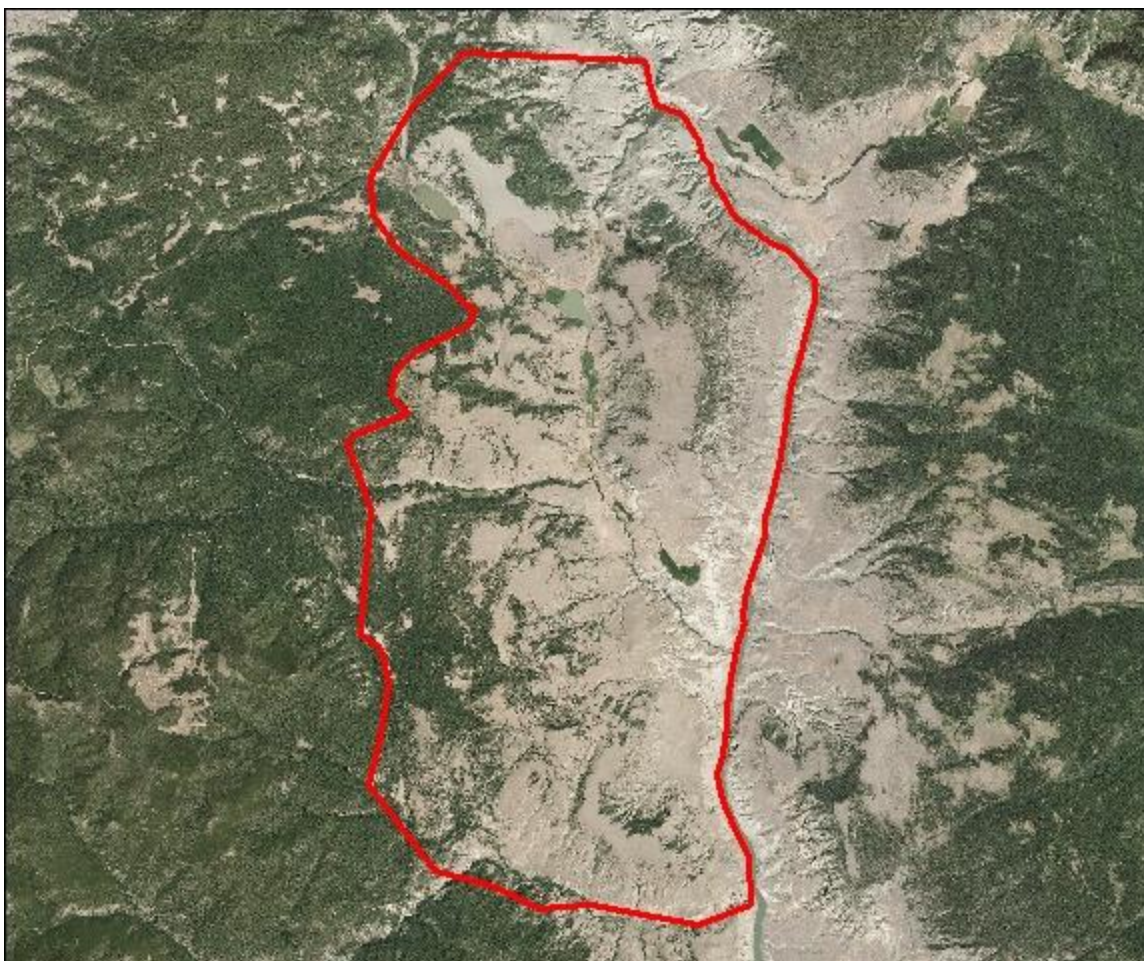


General Description:

East facing grassland slopes and open forest within Churn Creek Protected Area

Biogeoclimatic Zones:

BGxh3	1990 ha (16%)	IDFdk4	39 ha (0%)
BGxw2	4192 ha (34%)	IDFxm	6275 ha (50%)



Species and Habitat Values Of Note

American Badger	Spotted Bat
Flammulated Owl	Townsend's Big-eared Bat
Lewis's Woodpecker	Western Small-footed Myotis
Gopher Snake	Fringed Myotis
Pine Siskin	Mule Deer Winter
	Riparian

Sheep lambing and wintering
 Pothole lake/wetland
 Northern extent of Ponderosa Pine
 Unique plants such as Red Three-Awn and American
 cammerotis
 Elevational range from lower to upper grassland
 Good condition benchlands

Habitat Diversity

Douglas Fir	4003 ha (32.0%)
Douglas Fir 8	924 ha (7.4%)
Grassland	7201 ha (57.6%)
Ponderosa Pine	181 ha (1.4%)
Spruce	23 ha (0.2%)
Treed	4 ha (0.03%)
Water	88 ha (0.7%)

Land Status

Crown	284.2 (2.3%)
Crown - Parks and Protected Area	12194.0 (97.6%)
Private	18.1 (0.1%)

Conservation Concerns

Invasive Plants
 Forest Encroachment
 Inappropriate Grazing

Species and Habitat Values of Note



Habitat Diversity



Land Status



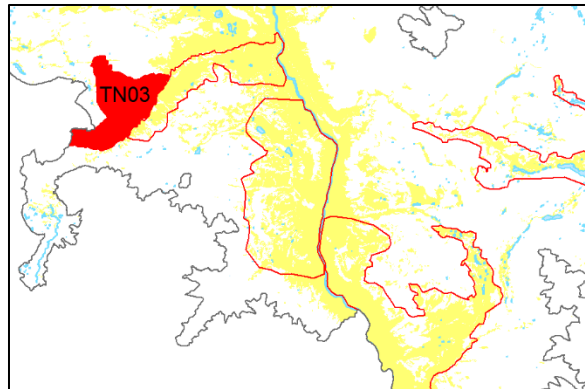
Conservation Concerns



Churn Creek North

Area Characteristics

ID	TN03
UTM Coordinates	10N 533245 mE 5702747 mN
Total Area	4096 ha
Grassland Area	1591 (39%)

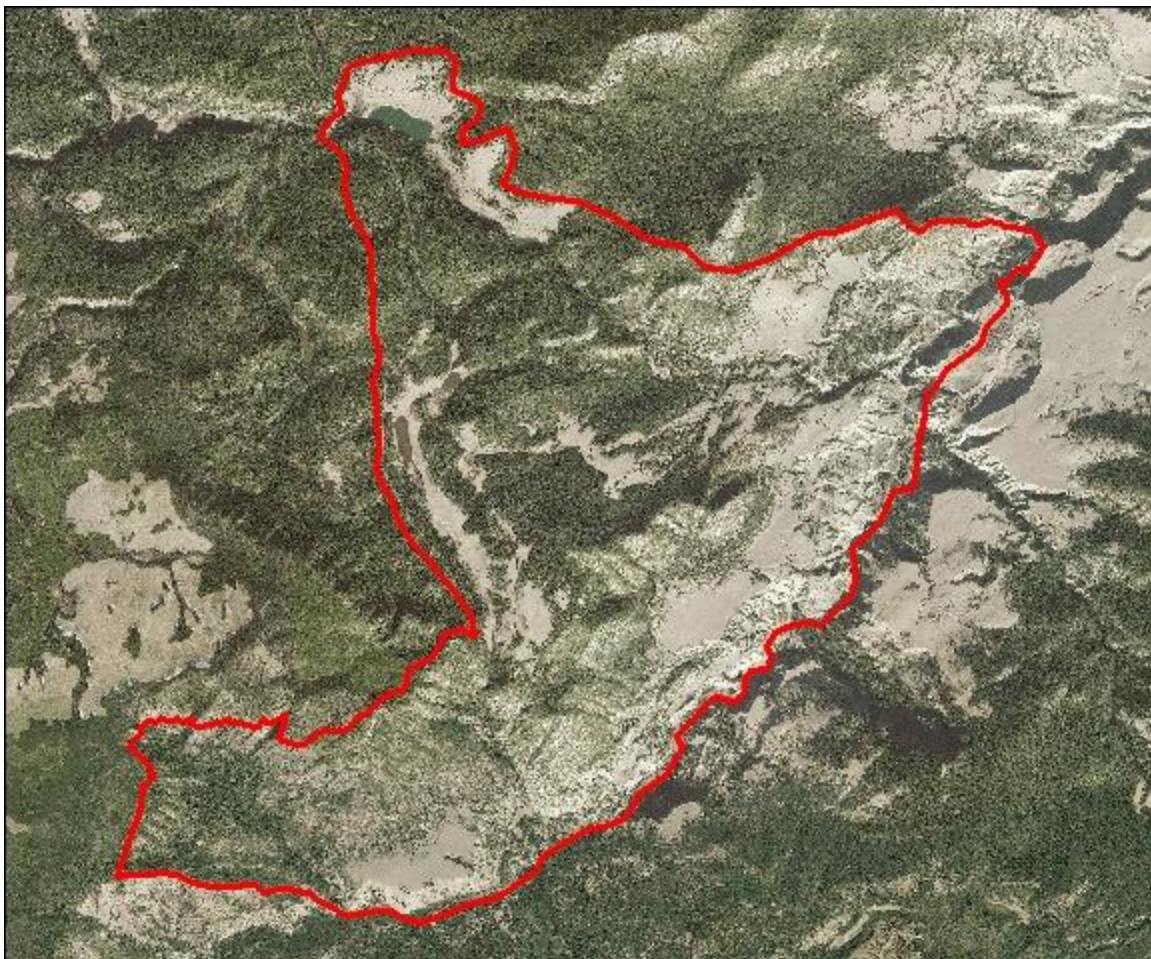


General Description:

Geologically and habitat diverse area within the Churn Creek Protected Area

Biogeoclimatic Zones:

BGxw2	633 ha (15%)	IDFdk4	2022 ha (49%)
		IDFxm	1441 ha (35%)

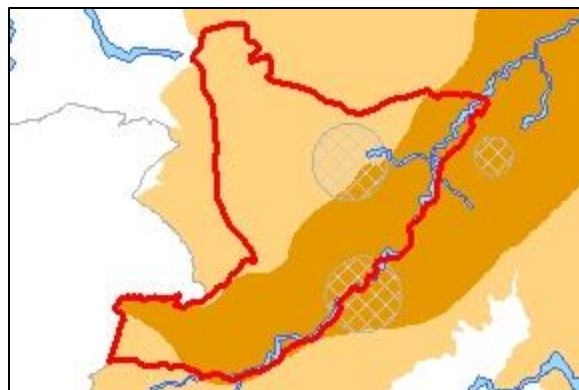


Species and Habitat Values Of Note

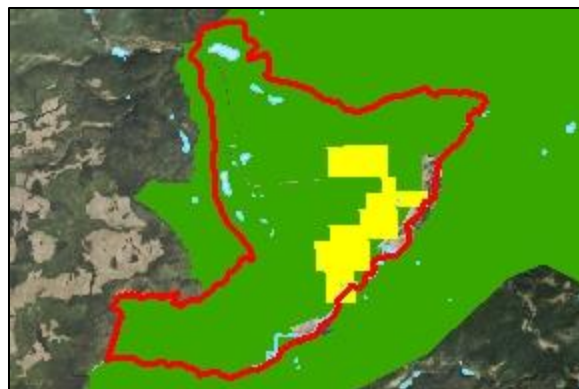
Spotted Bat
Western Small-footed
Myotis

Mule Deer Winter
Lake and riparian habitat

Sheep Winter habitat and migration corridor
Areas of good condition grassland
Good condition sedge wetland
Remnant Ponderosa Pine
Limestone outcrops, fossil beds, coal seams

Species and Habitat Values of Note**Habitat Diversity**

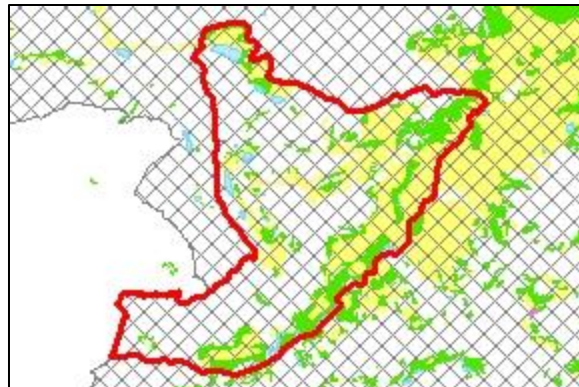
Aspen	52 ha (1.3%)
Bedrock	32 ha (0.8%)
Douglas Fir	1379 ha (33.7%)
Douglas Fir 8	595 ha (14.5%)
Douglas Fir 9	369 ha (9.0%)
Exposed Land	5 ha (0.1%)
Grassland	1454 ha (35.5%)
Lodgepole Pine	30 ha (0.73%)
Shrub	4 ha (0.1%)
Spruce	11 ha (0.3%)
Water	166 ha (4.0%)

Habitat Diversity**Land Status****Land Status**

Crown	137.1 ha (3.3%)
Crown - Parks and Protected Area	3471.6 ha (84.7%)
Private	487.9 ha (11.9%)

Conservation Concerns

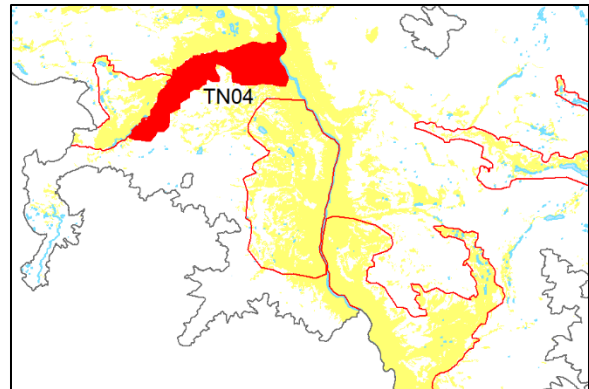
Invasive Plants
Forest Encroachment
Inappropriate Grazing
Poor species inventory

Conservation Concerns

Churn Flats – Dry Lake

Area Characteristics

ID	TN04
UTM Coordinates	10N 542360 mE 5704426 mN
Total Area	4867 ha
Grassland Area	4105 ha (84%)

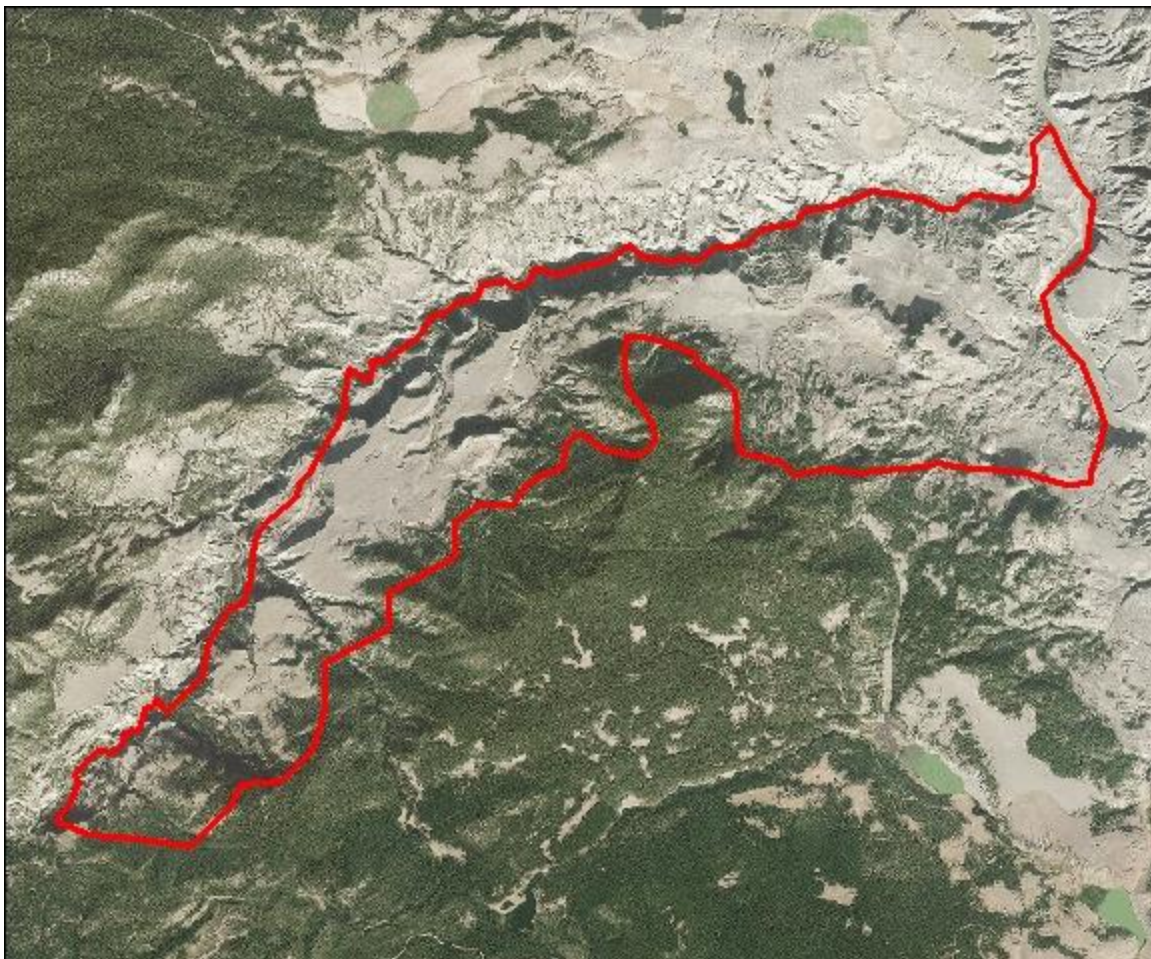


General Description:

This area is iconic for its diverse geology and plant communities within Churn Creek Protected area.

Biogeoclimatic Zones:

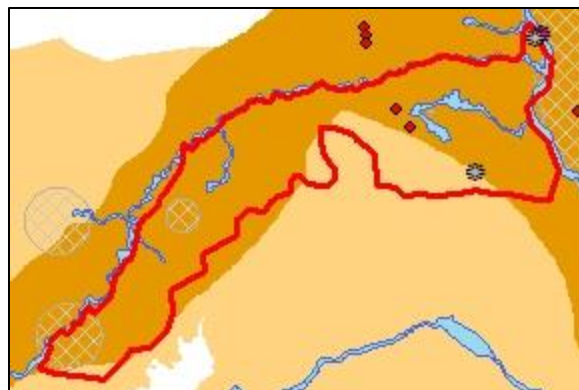
BGxh3	1180 ha (24%)	IDFdk4	56 ha (1%)
BGxw2	2091 ha (43%)	IDFxm	1542 ha (32%)



Species and Habitat Values Of Note

American Badger	Townsend's Big-eared Bat
Gopher Snake	Western Small-footed
	Myotis
Lewis's Woodpecker	Spotted Bat
North American Racer	Mule Deer Winter Range
Pine Siskin	Sheep Winter Range
Bank Swallow	
Sagebrush community	
Areas of good condition grassland	
Riparian/Riverine habitat	

Species and Habitat Values of Note



Habitat Diversity

Aspen	3 ha (0.1%)
Bedrock	10 ha (0.2%)
Douglas Fir	826 ha (16.9%)
Douglas Fir 8	499 ha (10.3%)
Grassland	3503 ha (72.0%)
Water	24 ha (0.5%)

Habitat Diversity



Land Status

Crown	113.3 ha (2.3%)
Crown - Parks and Protected Area	4679.5 ha (96.1%)
Private	74.9 ha (1.5%)

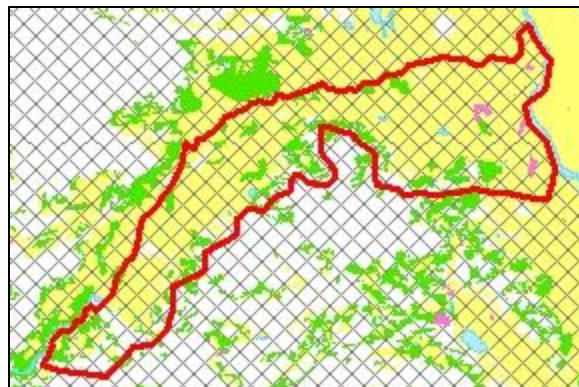
Land Status



Conservation Concerns

Invasive Plants
Forest Encroachment
Inappropriate Grazing

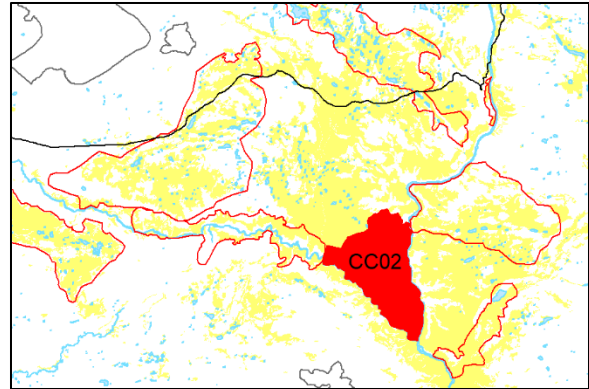
Conservation Concerns



Junction (South Bank)

Area Characteristics

ID	CC02
UTM Coordinates	10N 537800 mE 5739131 mN
Total Area	6382 ha
Grassland Area	5025 ha (79%)



General Description:

Side slopes and adjacent benchlands located at the convergence of the Chilcotin and Fraser Rivers

Biogeoclimatic Zones:

BGxh3	1682 ha (26%)	IDFxm	1117 ha (18%)
BGxw2	3583 ha (56%)		



Species and Habitat Values Of Note

Flammulated Owl	Least Flycatcher
Long-billed Curlew	Evening Grosbeak
Sharp-tailed Grouse leks	Golden Eagle
Rubber Boa	Whip-poor-will
Spotted Bat	Riparian
Western Small-footed	Mule deer winter range
Myotis	

Sheep winter range

Sheep rut area

Examples of good condition lower and middle grasslands

Salt grass communities

Extensive Balsam root community

Habitat Diversity

Aspen	31 ha (0.5%)
Douglas Fir	1185 ha (18.6%)
Douglas Fir 8	237 ha (3.7%)
Grassland	4808 ha (75.3%)
Shrub	5 (0.1%)
Water	117 ha (1.8%)

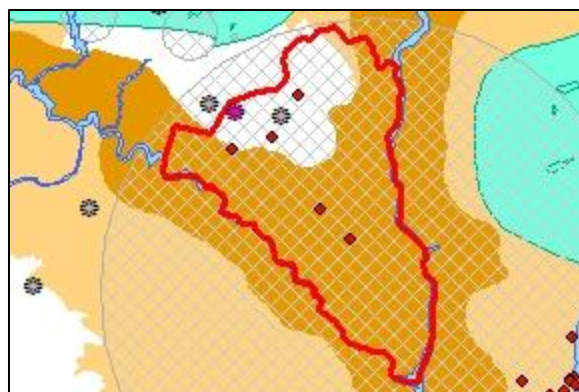
Land Status

Crown	86.7 ha (1.4%)
Crown - Parks and Protected Area	4093.5 ha (64.1%)
Crown Lease - Misc. lease	123.7 (1.9%)
Private	2078.6 (32.6%)

Conservation Concerns

Forest Encroachment
Invasive Plants
Burned in 2018
Human traffic

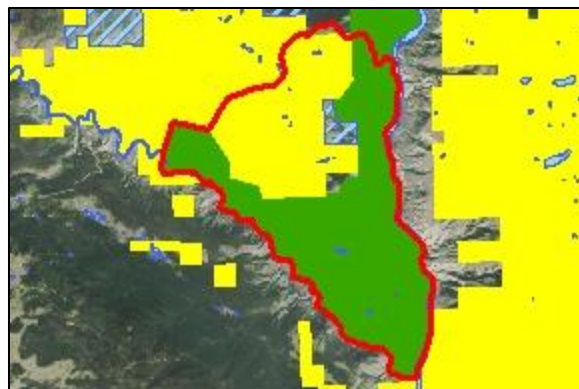
Species and Habitat Values of Note



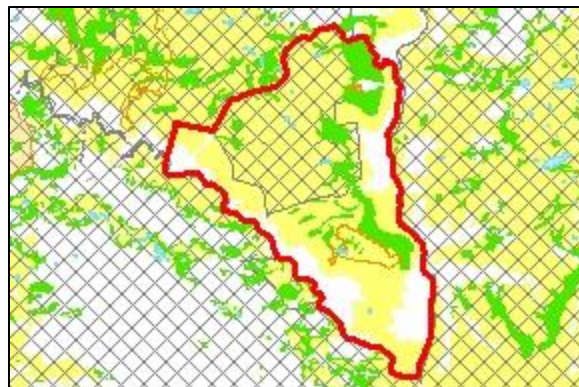
Habitat Diversity



Land Status



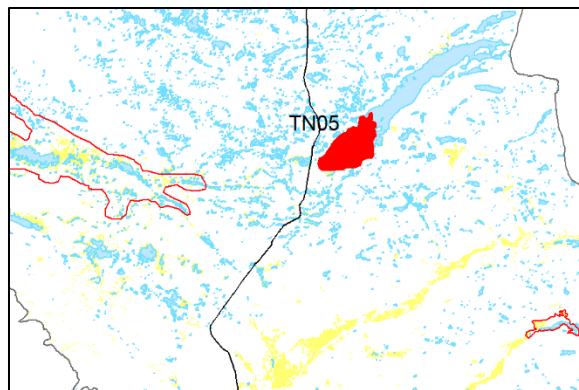
Conservation Concerns



Green Lake West

Area Characteristics

ID	TN05
UTM Coordinates	10N 616835 mE 5691138 mN
Total Area	1824 ha
Grassland Area	284 ha (16%)



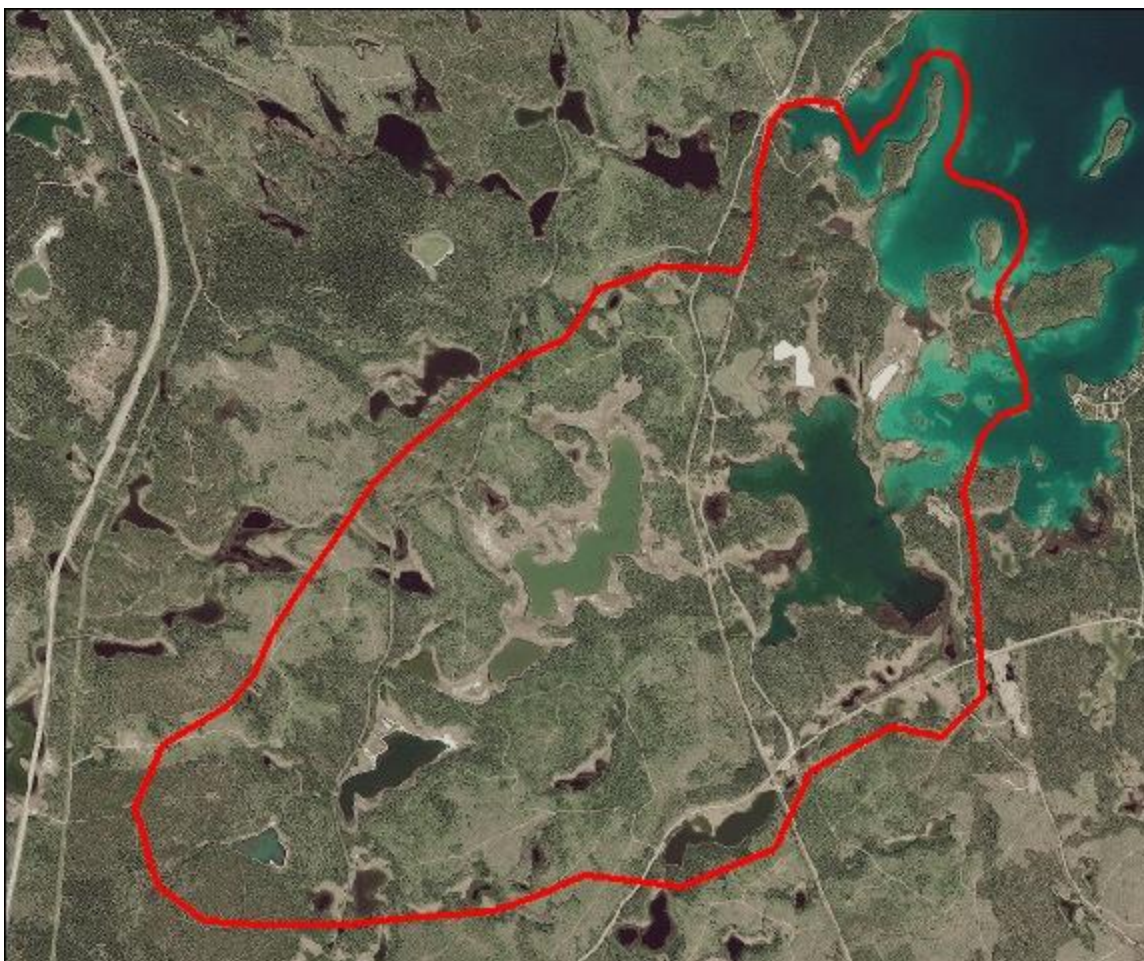
General Description:

South west end of Green Lake with a mix of water and upland habitats

Biogeoclimatic Zones:

IDFdk3

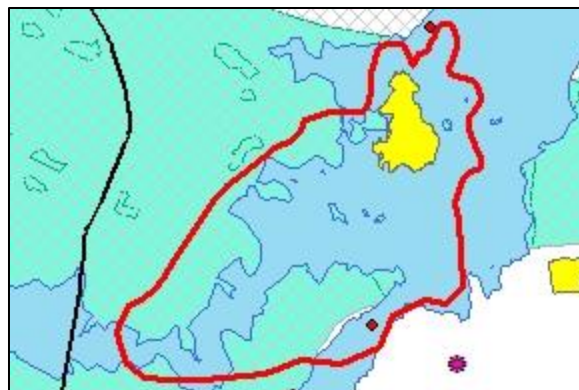
1824 ha (100%)



Species and Habitat Values Of Note

American Badger
 Avocet foraging
 Northern extent of Great Basin Spadefoot
 Sandhill Crane nesting and foraging
 Riparian, lake habitat and salt grass communities

Species and Habitat Values of Note



Habitat Diversity

Aspen 253 ha (13.9%)
Douglas Fir 14 ha (0.8%)
Grassland 537 ha (29.4%)
Lodgepole Pine 580 (31.8%)
Spruce 16 ha (0.9%)
Water 318 ha (17.4%)
Wetland 105 ha (5.8%)

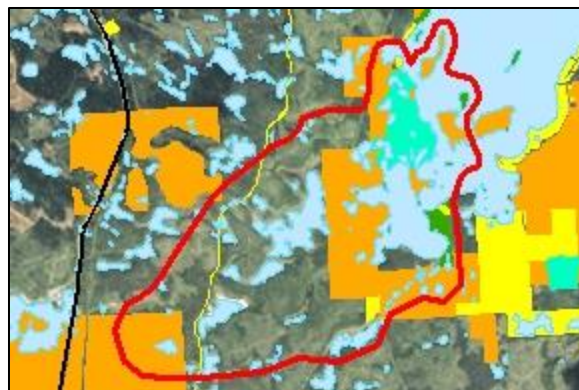
Habitat Diversity



Land Status

Crown 1218.3 ha (66.8%)
Crown - Parks and Protected Area 27.4 ha (1.5%)
Crown - Tenures 554.5 ha (30.4%)
Crown - Wildlife Habitat Area 95.6 ha (5.2%)
Private 24.3 ha (1.3%)

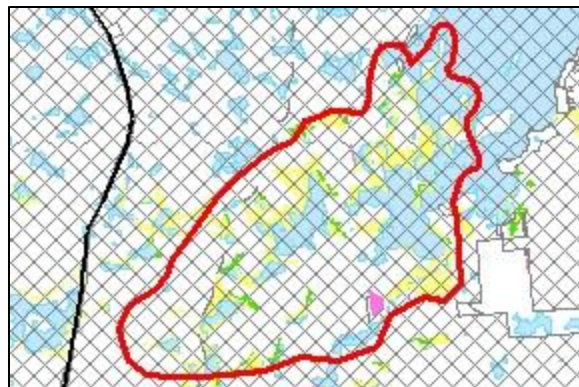
Land Status



Conservation Concerns

Forest Encroachment
 Invasive Plants
 Inappropriate Grazing
 Sale of waterfront properties
 High recreation use

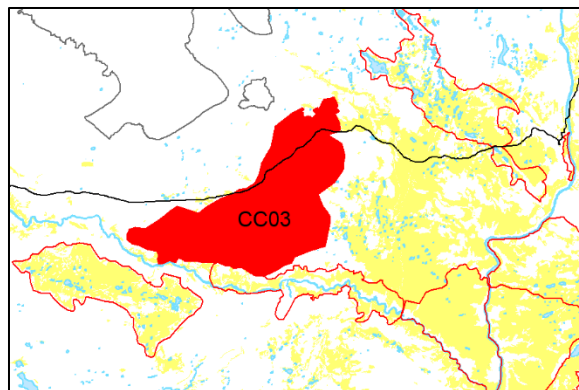
Conservation Concerns



Bald Mountain

Area Characteristics

ID	CC03
UTM Coordinates	10N 517730 mE 5752958 mN
Total Area	16980 ha
Grassland Area	8508 ha (50%)



General Description:

Topographically and habitat diverse area along Highway 20 near Riske Creek.

Biogeoclimatic Zones:

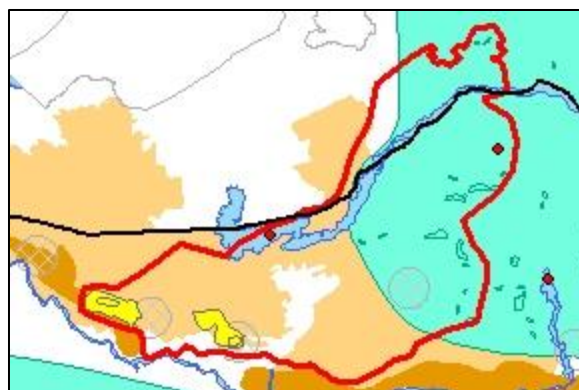
BGxw2	170 ha (1%)	IDFdk3	6461 ha (38%)
		IDFxm	10350 ha (61%)



Species and Habitat Values Of Note

American chamaerhodos Waterfowl Habitat
 Sharp-tailed Grouse Habitat Core Area
 White-throated Swift Sheep Winter Range
 Prairie Falcon Mule Deer Winter Range
 Floristically diverse
 Limestone outcrops
 Wetland and Riparian complexes
 Good representation of Upper Grassland

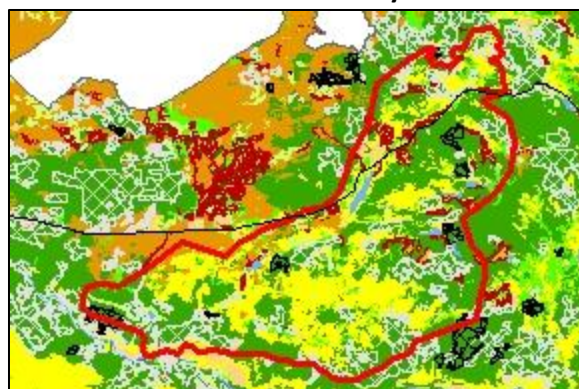
Species and Habitat Values of Note



Habitat Diversity

Aspen	951 ha (5.6%)
Douglas Fir	6338 ha (37.3%)
Douglas Fir 8	1885 ha (11.1%)
Douglas Fir 9	274 ha (1.6%)
Exposed Land	26 ha (0.2%)
Grassland	6150 ha (36.2%)
Lodgepole Pine	544 ha (3.2%)
Spruce	551 ha (3.2%)
Water	254 ha (1.5%)

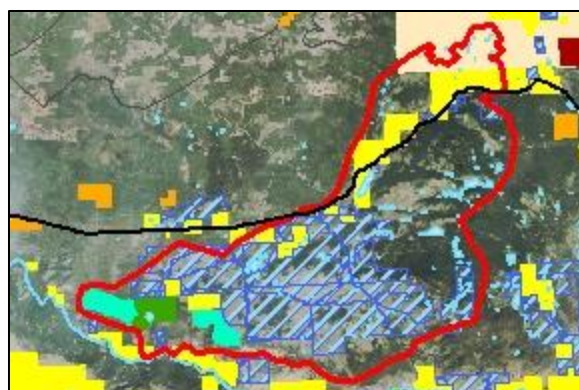
Habitat Diversity



Land Status

Crown	7814.9 ha (46.0%)
Crown - Parks and Protected Area	373.9 ha (2.2%)
Crown - Wildlife Habitat Area	522.0 ha (3.1%)
Crown Lease - Misc. lease	6056.7 ha (35.7 %)
Federal - Defense	632.3 ha (3.7%)
Private	1656.4 ha (9.8%)

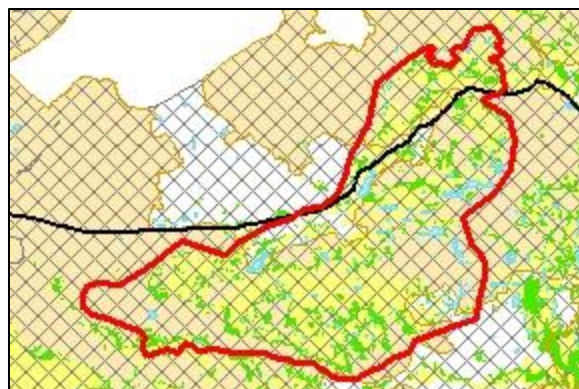
Land Status



Conservation Concerns

Burned in 2017
 Forest encroachment
 Inappropriate Grazing
 Extensive salvage logging

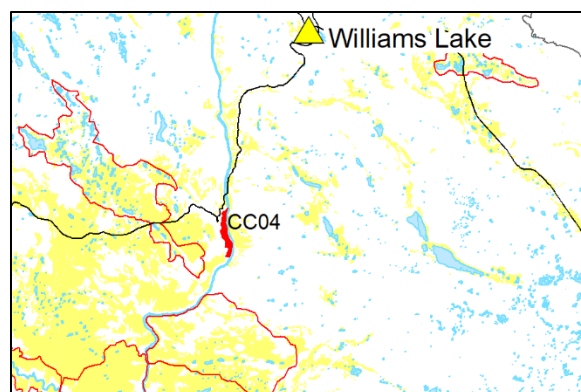
Conservation Concerns



Doc English Bluff

Area Characteristics

ID	CC04
UTM Coordinates	10 U 549612 mE 5755565 mN
Total Area	206 ha
Grassland Area	102 ha (50%)

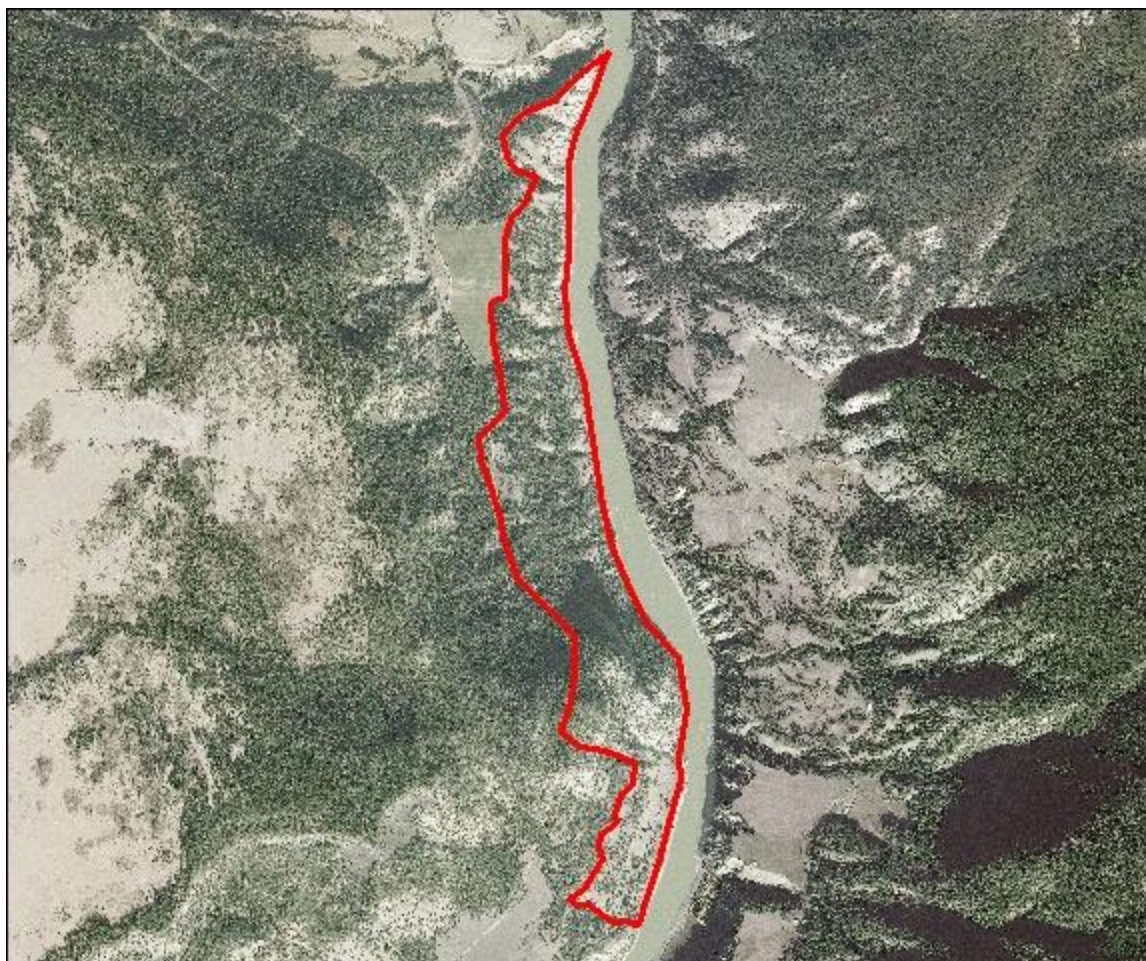


General Description:

Extensive east facing bluff and cliff habitat along the Fraser River.

Biogeoclimatic Zones:

BGxw2	149 ha (72%)	IDFxm	58 ha (28%)
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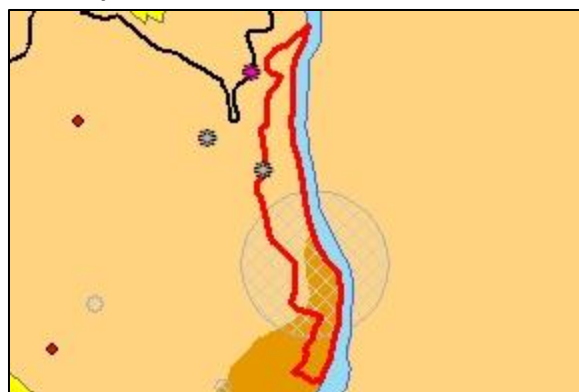


Species and Habitat Values Of Note

Carolina Draba	Sheep Winter range
Swifts	Mule Deer Winter Range
Flammulated Owls	Badger dens
Whip-Poor-Wills	Riparian Habitat
Rubber Boa	Limestone bedrock
American Badger	

Northerly extent of PNC grassland
Bats caves

Species and Habitat Values of Note



Habitat Diversity

Bedrock	15 ha (7.3%)
Douglas Fir	84 ha (40.6%)
Douglas Fir 8	39 ha (18.9%)
Grassland	68 ha (32.9%)

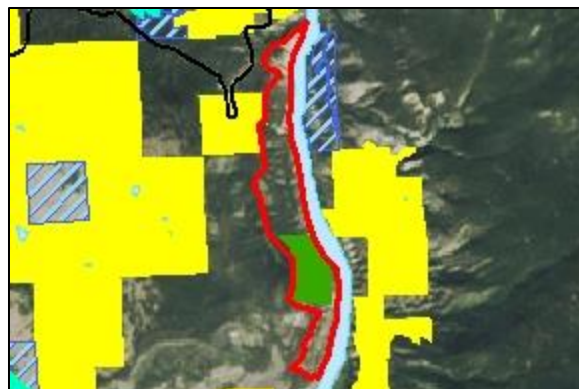
Habitat Diversity



Land Status

Crown	158.8 (76.7%)
Crown - Parks and Protected Area	46.2 (22.3%)
Private	1.9 (0.9%)

Land Status



Conservation Concerns

Forest Encroachment
Inappropriate Grazing
Human Traffic

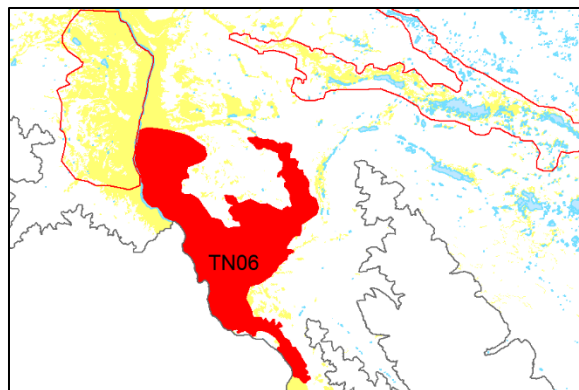
Conservation Concerns



Big Bar Mountain

Area Characteristics

ID	TN06
UTM Coordinates	10N 561494 mE 5679009 mN
Total Area	16033 ha
Grassland Area	11641 ha (73%)

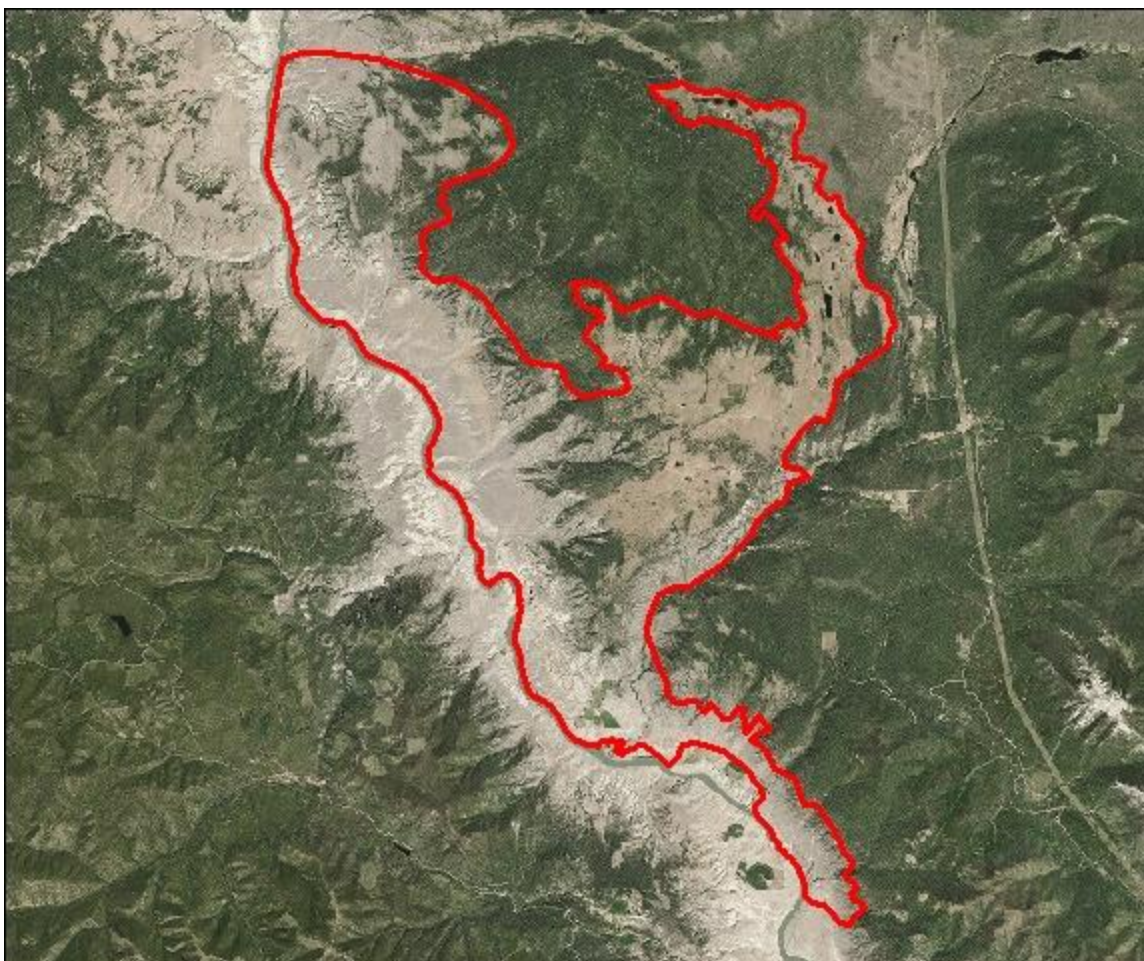


General Description:

Located along the east bank of the Fraser River near Churn Creek protected area. A diverse ecosystem of uninterrupted lower to upper transition from southern to cariboo grassland.

Biogeoclimatic Zones:

BGxh3	4564 ha (28%)	IDFdk3	1597 ha (10%)
BGxw2	3231 ha (20%)	IDFxm	5582 ha (35%)
		IDFwx	1061 ha (7%)



Species and Habitat Values Of Note

American Badger	Olive-sided Flycatcher
Gopher Snake	Pine Siskin
North American Racer	
Lewis's Woodpecker	Riparian habitat
Western Screech-owl	Mule Deer Winter range
Sharp-tailed Grouse	Sheep Winter range

Habitat Diversity

Aspen	94 ha (0.6%)
Cottonwood	9 ha (0.1%)
Douglas Fir	3165 ha (19.8%)
Douglas Fir 8	3389 ha (21.2%)
Douglas Fir 9	279 ha (1.8%)
Grassland	8874 ha (55.4%)
Lodgepole Pine	71 ha (0.5%)
Ponderosa Pine	9 ha (0.1%)
Spruce	38 ha (0.3%)
Water	96 ha (0.6%)
Wetland	9 ha (0.1%)

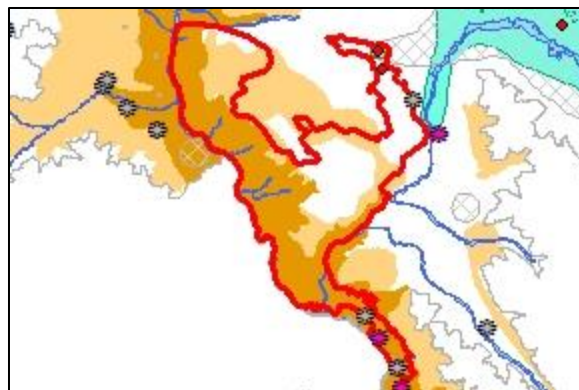
Land Status

Crown	9110.6 ha (56.8%)
Private	6745.4 ha (42.1%)

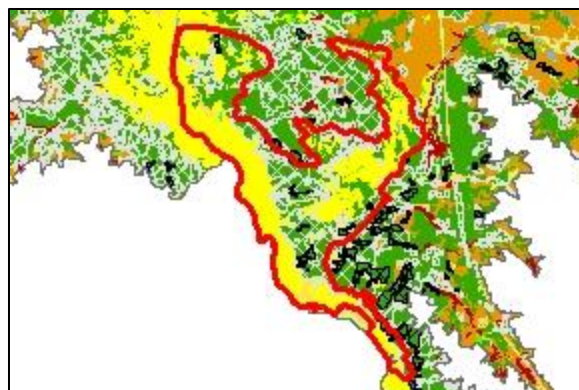
Conservation Concerns

Forest encroachment
Invasive Plants
Inappropriate Grazing
Use of biosolids as soil amendment
Limited mapping inventory

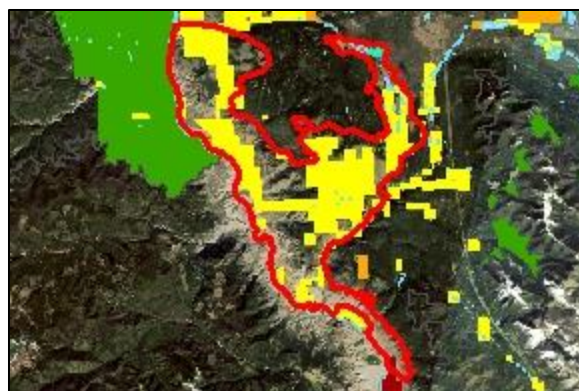
Species and Habitat Values of Note



Habitat Diversity



Land Status



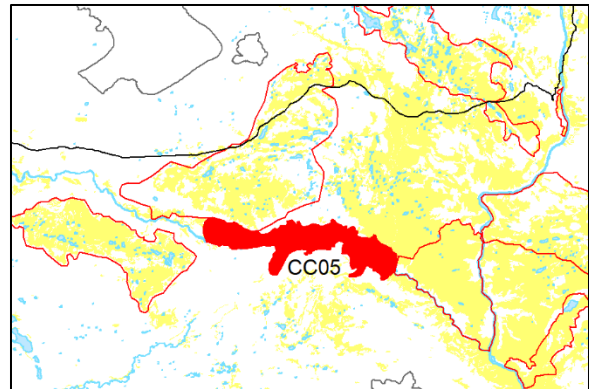
Conservation Concerns



Wineglass Cliff Complex

Area Characteristics

ID	CC05
UTM Coordinates	10N 523388 mE 5743420 mN
Total Area	5036 ha
Grassland Area	2448 ha (49%)



General Description:

Extensive cliff habitat along the Chilcotin River at Big Creek confluence.

Biogeoclimatic Zones:

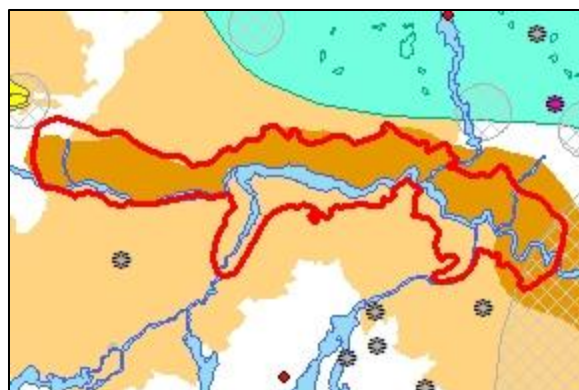
BGxh3	1062 ha (21%)	IDFxm	688 ha (14%)
BGxw2	3286 ha (65%)		



Species and Habitat Values Of Note

Townsend's Big-eared Bat Sheep Winter Range
Riparian Resident Sheep
 Mule Deer Winter Range
Cottonwood/Water Birch community
Blue-bunch Wheat grass community

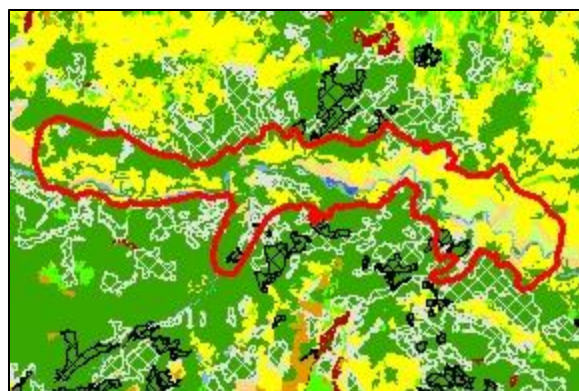
Species and Habitat Values of Note



Habitat Diversity

Aspen	19 ha (0.4%)
Cottonwood	18 ha (0.4%)
Douglas Fir	2048 ha (40.7%)
Douglas Fir 8	368 ha (7.4%)
Douglas Fir 9	73 ha (1.5%)
Grassland	2314 ha (46%)
Water	197 ha (4%)

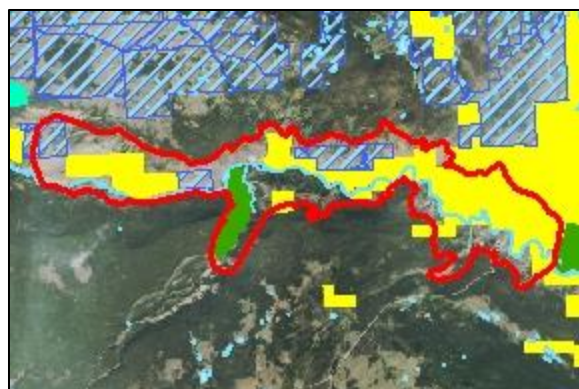
Habitat Diversity



Land Status

Crown	2404.1 ha (47.7%)
Crown - Parks and Protected Area	256.6 ha (5.1%)
Crown Lease - Misc. lease	448.8 ha (8.9%)
Private	1926.1 ha (38.2%)

Land Status



Conservation Concerns

Forest Encroachment
Inappropriate Grazing
Burned in 2017
Intensive agriculture/grassland conversion

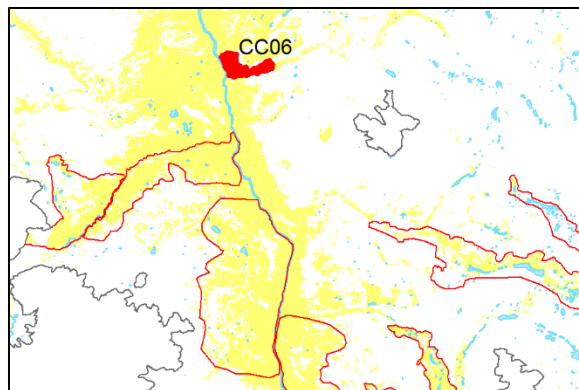
Conservation Concerns



Dog Creek

Area Characteristics

ID	CC06
UTM Coordinates	10N 550787 mE 5715715 mN
Total Area	742 ha
Grassland Area	701 ha (94%)

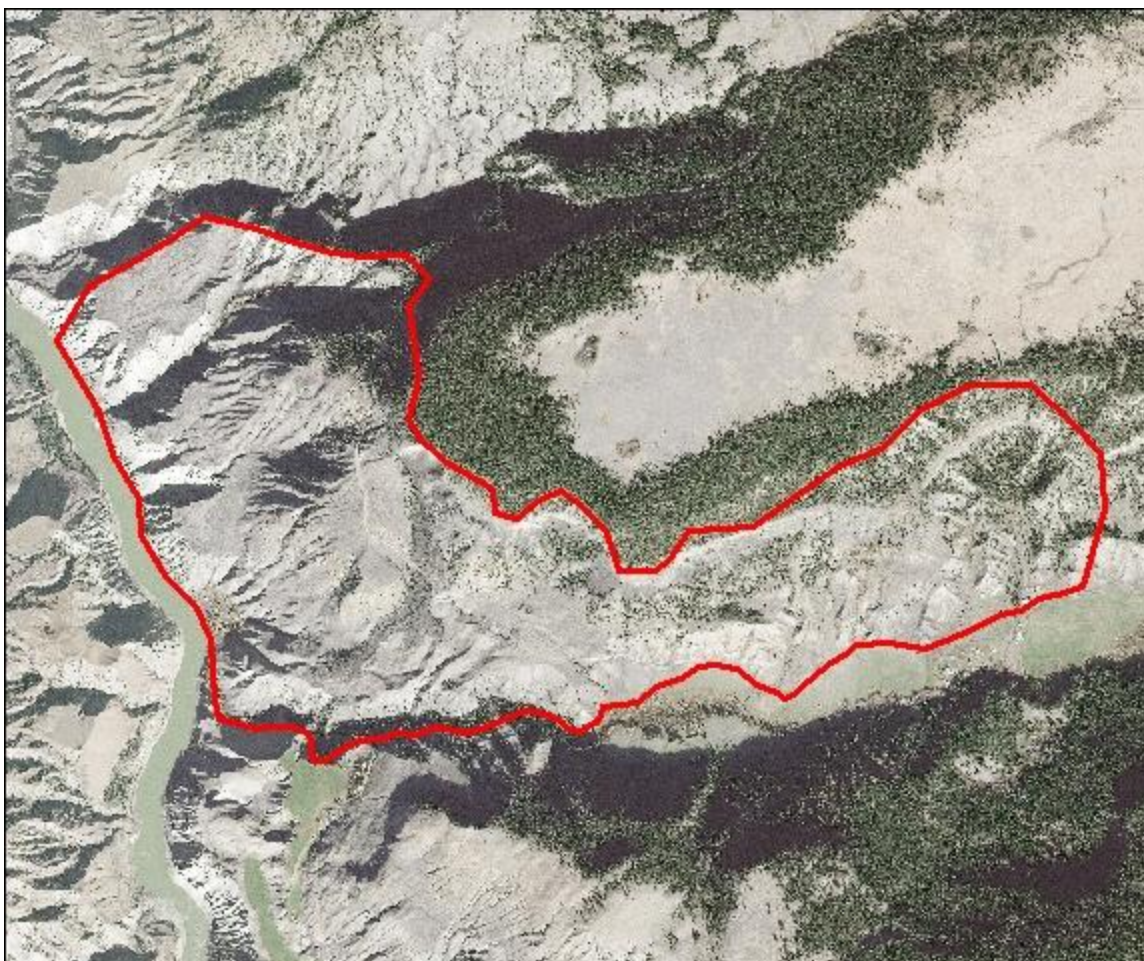


General Description:

The south facing slopes of lower Dog Creek to its confluence with the Fraser River

Biogeoclimatic Zones:

BGxh3	343 ha (46%)	IDFxm	9 ha (1%)
BGxw2	391 ha (53%)		



Species and Habitat Values Of Note

Lewis' Woodpecker	Townsend's Big-eared Bat
Peregrine Falcon	Western Small-footed Myotis
Prairie Falcon	Spotted Bat
Flammulated Owl	Fringed Myotis
Rubber Boa	Mule Deer winter/spring range
Bull Snake	Sheep winter range
White-throated Swift	Resident sheep population
	Riparian
	Basalt cliff complexes
Garter Snake hibernacula	
Cobble and boulder fields	

Habitat Diversity

Aspen	8 ha (1.1%)
Douglas Fir	19 ha (2.6%)
Douglas Fir 8	186 ha (25.1%)
Grassland	529 ha (71.3%)

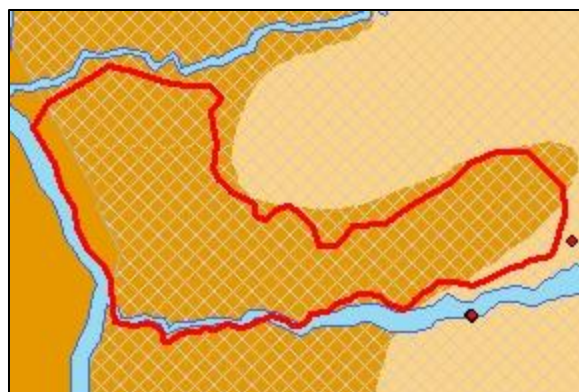
Land Status

Crown	283.5 ha (38.2%)
Crown - Municipal	1.2 ha (0.2%)
Federal - Defense	10.6 ha (1.4%)
Federal - Indian Reserve	121.6 ha (16.4%)
Private	325.8 ha (43.9%)

Conservation Concerns

Invasive Plants
Forest encroachment
Intensive agriculture/grassland conversion

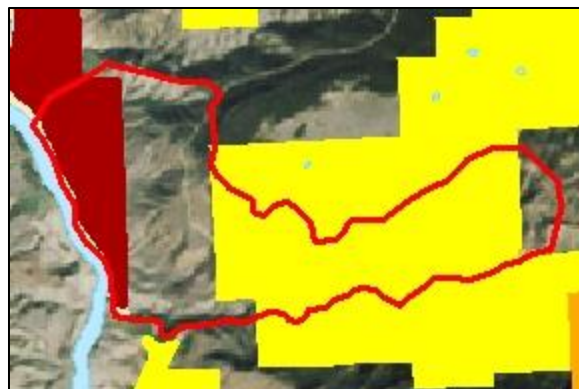
Species and Habitat Values of Note



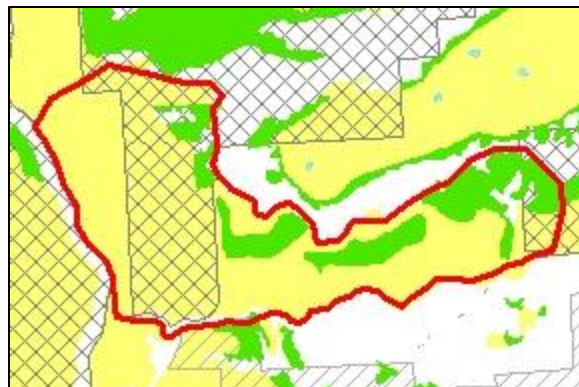
Habitat Diversity



Land Status



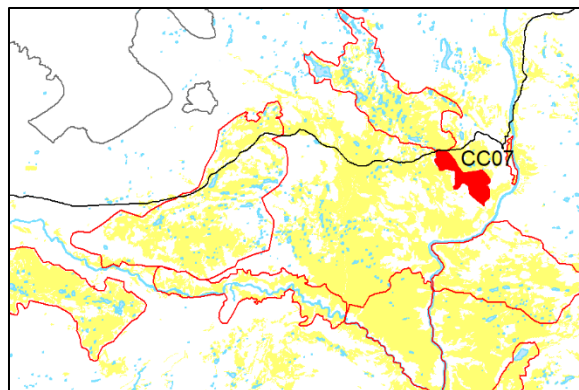
Conservation Concerns



Deer Park

Area Characteristics

ID	CC07
UTM Coordinates	10N 544845 mE 5754133 mN
Total Area	1053 ha
Grassland Area	626 ha (59%)

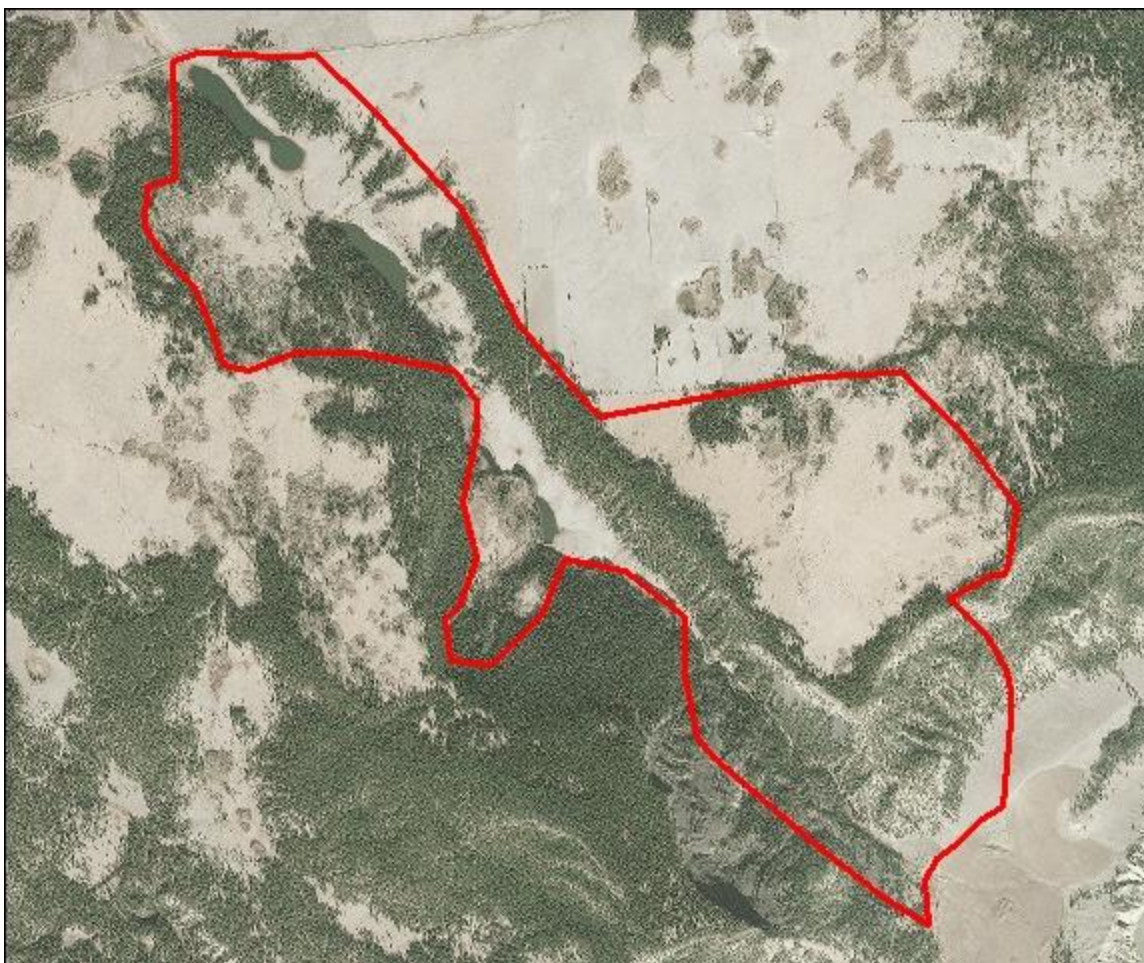


General Description:

Bench lands above the west side of the Fraser River, south of Churn Creek Protected Area.

Biogeoclimatic Zones:

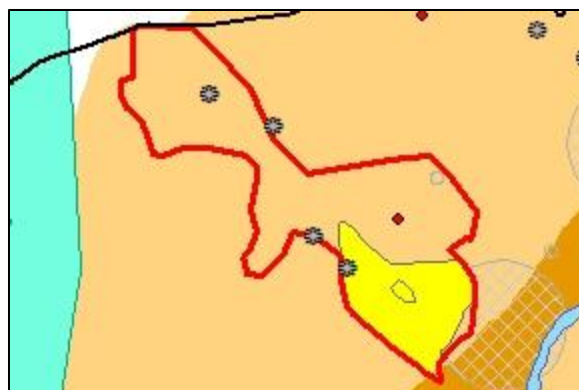
IDFxm	1053 ha (100%)
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Species and Habitat Values Of Note

Flammulated Owl	Upland Sandpiper
Long-billed Curlew	Least Flycatcher
Prairie Falcon	Pine Siskin
Sharp-tailed Grouse	Sheep Winter
Townsend's Big-eared Bat	Mule Deer Winter
Spotted Bat	Range
	Habitat Core Area
Western Small-footed	Cliff Habitat
Myotis	
	Fairy Rings
Areas of good condition upper grasslands	

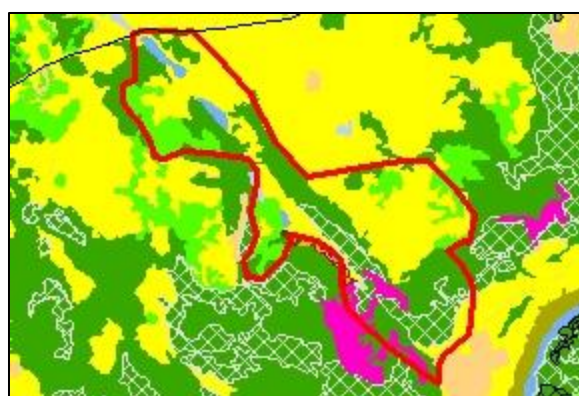
Species and Habitat Values of Note



Habitat Diversity

Aspen	143 ha (13.6%)
Douglas Fir	299 ha (28.4%)
Douglas Fir 8	107 ha (10.2%)
Grassland	432 ha (41.1%)
Spruce	6 ha (0.6%)
Talus	40 ha (3.8%)
Water	23 ha (2.2%)
Wetland	2 ha (0.2%)

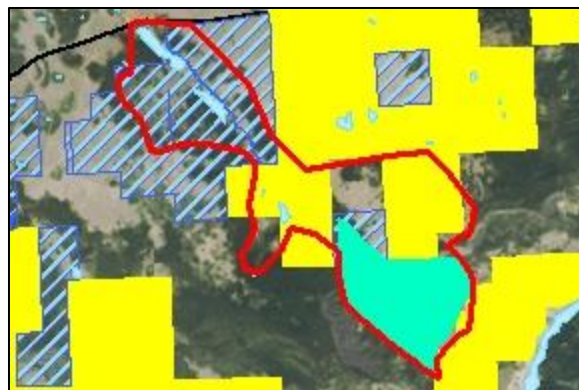
Habitat Diversity



Land Status

Crown	164.3 ha (15.6%)
Crown - Wildlife Habitat Area	265.4 ha (25.2%)
Crown Lease - Misc. lease	352.8 ha (33.5%)
Private	311.8 ha (29.6%)

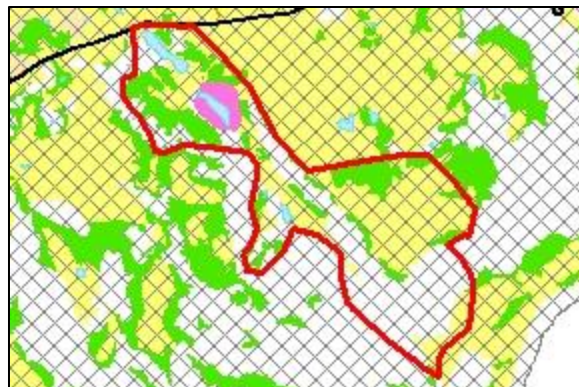
Land Status



Conservation Concerns

Invasive Plants
Forest Encroachment
Inappropriate Grazing
Burned in 2017

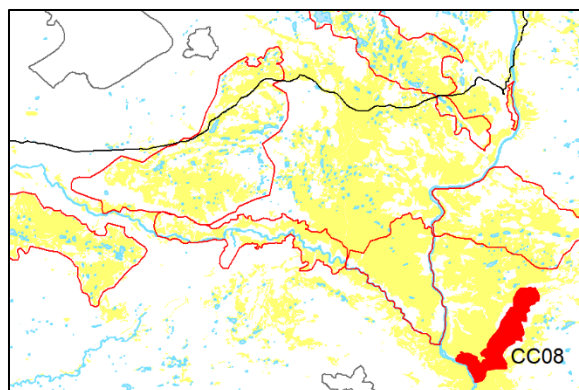
Conservation Concerns



Alkali Lake

Area Characteristics

ID	CC08
UTM Coordinates	10N 547451 mE 5732934 mN
Total Area	2215 ha
Grassland Area	1769 ha (80%)

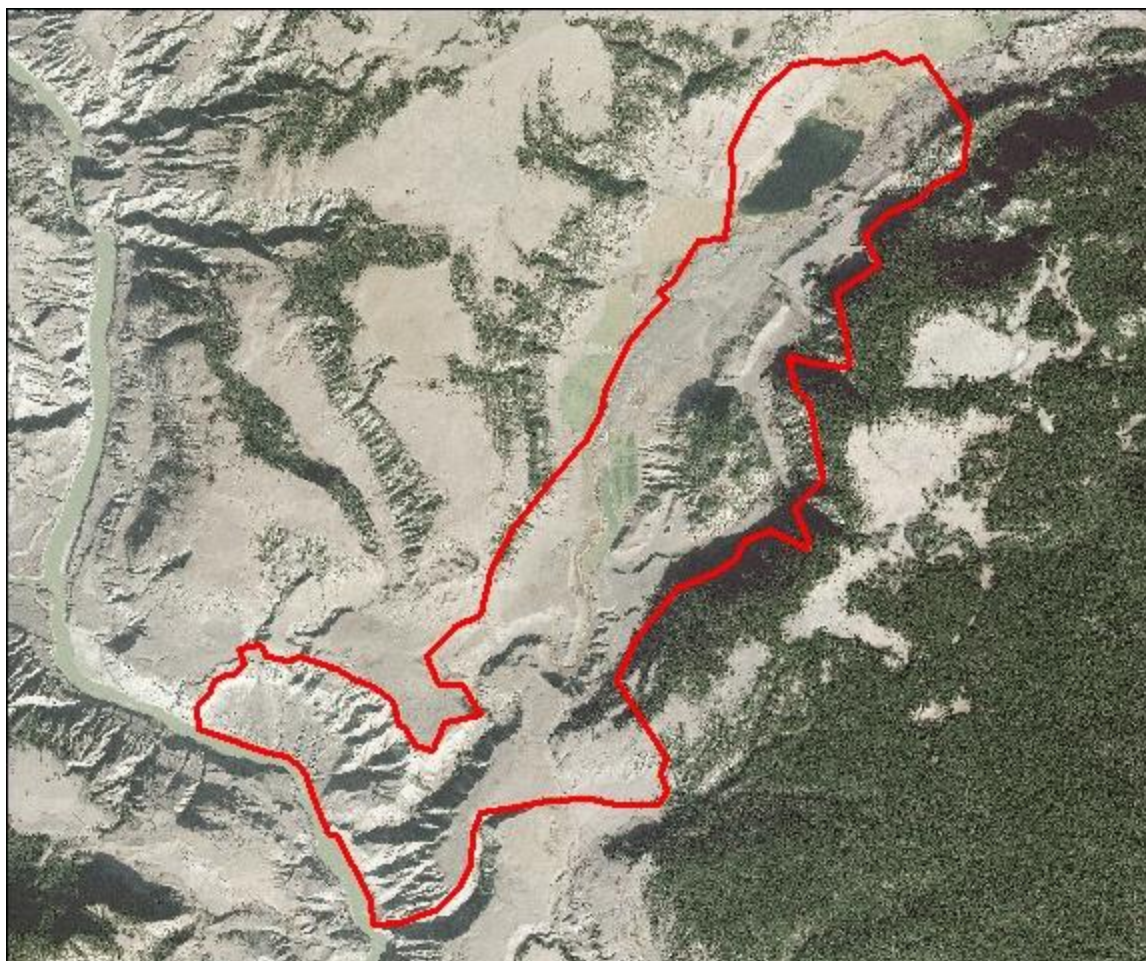


General Description:

Alkali Lake, downstream creek and adjacent grasslands to the Fraser River.

Biogeoclimatic Zones:

BGxh3	450 ha (20%)	IDFxm	67 ha (3%)
BGxw2	1699 ha (77%)		



Species and Habitat Values Of Note

American Badger	Western Small-Footed Myotis
American Bittern	Fringed Myotis
American White Pelican	Sheep Winter Range
Bobolink	Mule Deer Winter range
Lewis's Woodpecker	Pelican foraging
Short-eared Owl	Sage Thrasher
Spotted Bat	Waterfowl Habitat
Townsend's Big-eared Bat	Riparian

Historic values along the Fraser River
Important migration corridor because of microclimate and early spring breakup

Habitat Diversity

Aspen	2 ha (0.1%)
Cottonwood	7 ha (0.4%)
Douglas Fir	472 ha (21.4%)
Douglas Fir 8	155 ha (7%)
Grassland	1496 ha (67.6%)
Spruce	6 ha (0.3%)
Water	78 ha (3.6%)

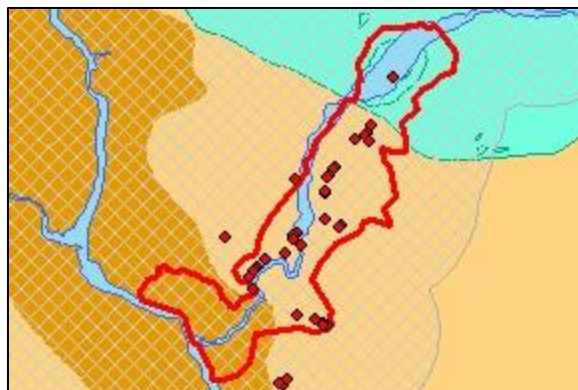
Land Status

Crown	642.3 ha (29.0%)
Crown - Tenures	73.8 ha (3.3%)
Private	1499.4 ha (67.7%)

Conservation Concerns

Human traffic Intensive
Invasive Plants
Inappropriate Grazing
Agriculture/grassland conversion

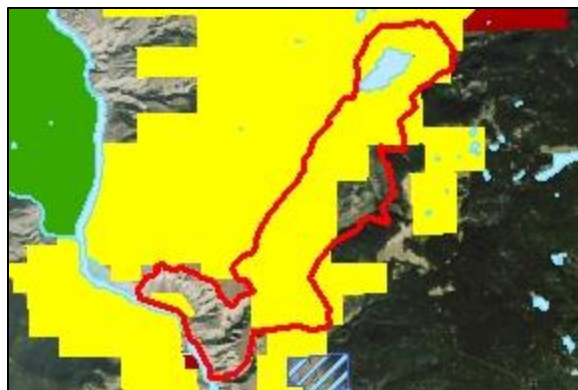
Species and Habitat Values of Note



Habitat Diversity



Land Status



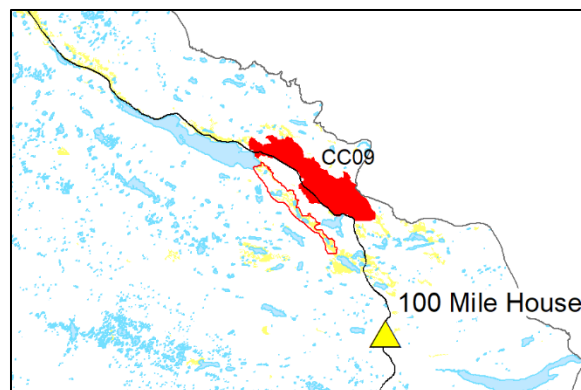
Conservation Concerns



111 Mile

Area Characteristics

ID	CC09
UTM Coordinates	10N 611549 mE 5738227 mN
Total Area	3358 ha
Grassland Area	1542 ha (46%)



General Description:

Rolling west facing landscape along Hwy 97 southeast of Lac la Hache.

Biogeoclimatic Zones:

IDFdk3

3358 ha (100%)



Species and Habitat Values Of Note

American Badger Mule deer spring/winter range
Alkali communities

Diverse mix of habitat communities
Good representation of upper grasslands

Species and Habitat Values of Note



Habitat Diversity

Aspen	442 ha (13.2%)
Douglas Fir	1096 ha (32.7%)
Douglas Fir 8	241 ha (7.2%)
Exposed Land	0 ha (0%)
Grassland	1368 ha (40.8%)
Spruce	27 ha (0.9%)
Treed	23 ha (0.7%)
Water	160 ha (4.8%)

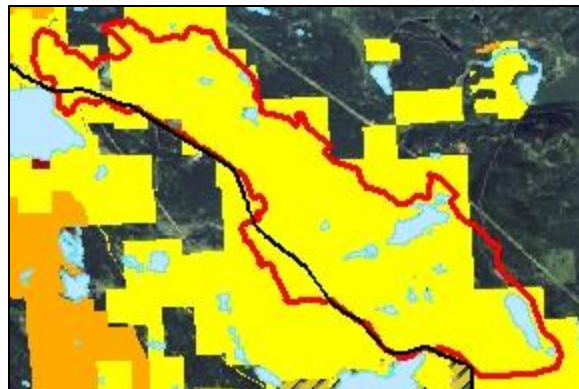
Habitat Diversity



Land Status

Crown	219.7 ha (6.5%)
Crown - Municipal	7.6 ha (0.2%)
Private	3131.4 ha (93.2%)

Land Status



Conservation Concerns

Human traffic
Inappropriate Grazing
Invasive Plants

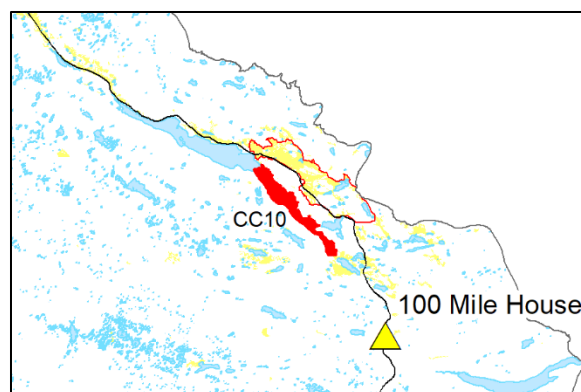
Conservation Concerns



Walker Valley

Area Characteristics

ID	CC10
UTM Coordinates	10N 609255 mE 5735697 mN
Total Area	1184 ha
Grassland Area	501 ha (42%)



General Description:

Wetland complex corridor north of 100 Mile House stretching from Watson Lake to Lac la Hache

Biogeoclimatic Zones:

IDFdk3	1184 ha (100%)
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Species and Habitat Values Of Note

American Badger	Western Small-footed Myotis
Fringed Myotis	Mule Deer winter/spring range
Townsend's Big-eared Bat	Riparian corridor
Waterfowl breeding and staging habitat	
Wetland restorations	

Habitat Diversity

Aspen	266 ha (22.5%)
Cottonwood	7 ha (0.6%)
Douglas Fir	253 ha (21.4%)
Douglas Fir 8	48 ha (4.1%)
Grassland	462 ha (39.1%)
Shrub	4 ha (0.4%)
Spruce	13 ha (1.1%)
Treed	29 ha (2.5%)
Water	74 ha (6.3%)
Wetland	29 ha (2.5%)

Land Status

Crown	128.3 ha (10.8%)
Crown - Municipal	266.1 ha (22.5%)
Private	789.7 ha (66.7%)

Conservation Concerns

Burned in 2017
Invasive Plants
Inappropriate Grazing
Human traffic

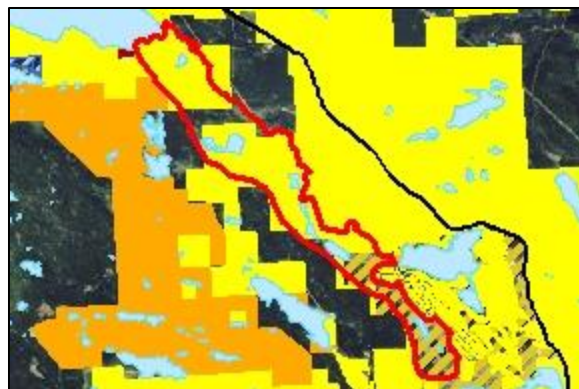
Species and Habitat Values of Note



Habitat Diversity



Land Status



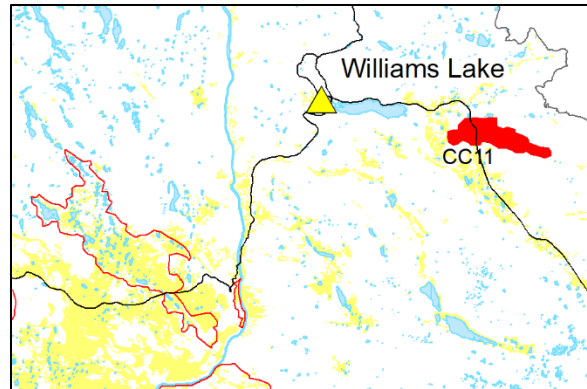
Conservation Concerns



148 Mile

Area Characteristics

ID	CC11
UTM Coordinates	10N 575874 mE 5770927 mN
Total Area	1846 ha
Grassland Area	962 ha (52%)



General Description:

Mix of forest, grassland and wetlands intersected by a major highway

Biogeoclimatic Zones:

IDFdk3	891 ha (48%)
IDFxm	956 ha (52%)



Species and Habitat Values Of Note

Bobolink
Painted Turtle

Mule deer winter range
Shrub thickets

High density of American Badger
Areas of mid-late seral grassland
Waterfowl nesting and migration

Species and Habitat Values of Note



Habitat Diversity

Aspen	31 ha (1.7%)
Cottonwood	12 ha (0.7%)
Douglas Fir	547 ha (29.7%)
Douglas Fir 8	116 ha (6.3%)
Grassland	979 ha (53.1%)
Spruce	49 ha (2.7%)
Water	111 ha (6.1%)

Habitat Diversity



Land Status

Crown	62.9 (3.4%)
Crown - Tenures	149.3 (8.1%)
Crown Lease - Misc. lease	228.7 (12.4%)
Federal - Indian Reserve	16.5 (0.9%)
Private	1389.5 (75.2%)

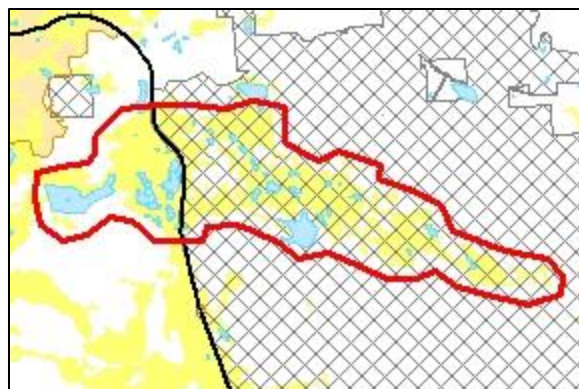
Land Status



Conservation Concerns

Invasive Plants
Burned in 2017
Inappropriate Grazing
Subdivision/residential development
Highway traffic (road kills)

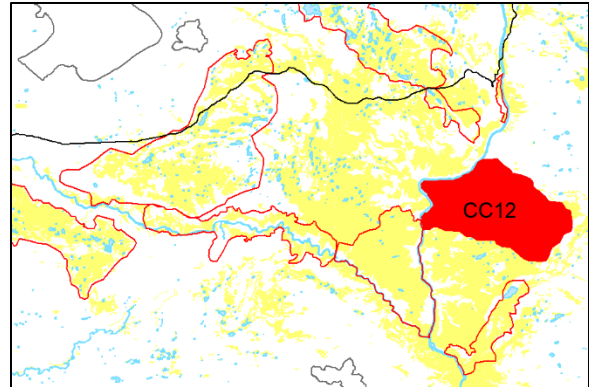
Conservation Concerns



Last Chance

Area Characteristics

ID	CC12
UTM Coordinates	10N 548749 mE 5744527 mN
Total Area	8942 ha
Grassland Area	4912 ha (55%)

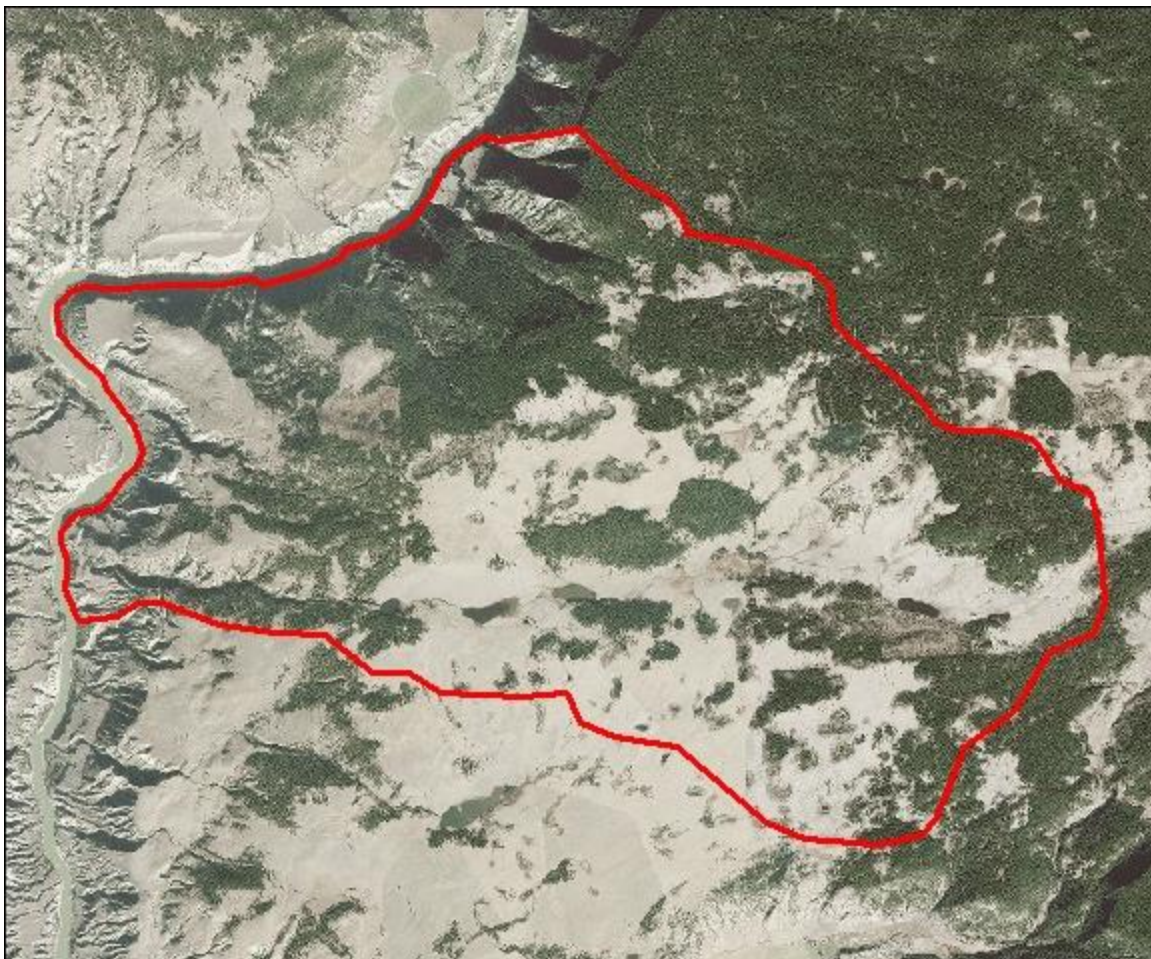


General Description:

A diverse landscape located across the Fraser River from the Junction Sheep Range. Starting at the Fraser River and east with a mix of forest and grassland.

Biogeoclimatic Zones:

BGxw2	2524 ha (28%)	IDFdk3	499 ha (6%)
		IDFxm	5919 ha (66%)



Species and Habitat Values Of Note

American Badger	Sheep winter range
Waterfowl Habitat	Mule Deer winter range
	Riparian
	Basalt Cliffs

Habitat Diversity

Aspen	228 ha (2.6%)
Cottonwood	6 ha (0.1%)
Douglas Fir	3482 ha (39%)
Douglas Fir 8	637 ha (7.2%)
Douglas Fir 9	310 ha (3.5%)
Exposed Land	91 ha (1.1%)
Grassland	4017 ha (45%)
Lodgepole Pine	26 ha (0.3%)
Spruce	54 ha (0.7%)
Talus	3 ha (0.1%)
Water	53 ha (0.6%)
Wetland	35 ha (0.4%)

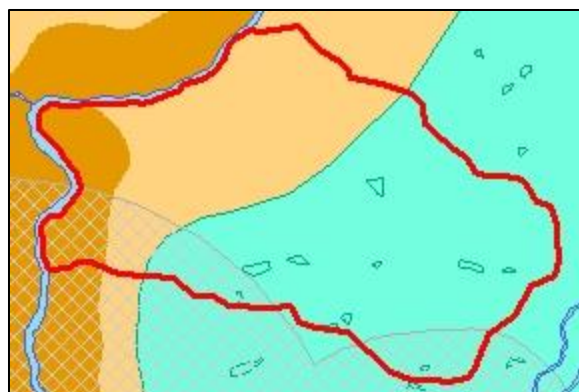
Land Status

Crown	3186.4 ha (35.6%)
Private	5756.0 ha (64.4%)

Conservation Concerns

Forest Encroachment
Invasive Plants
Inappropriate Grazing

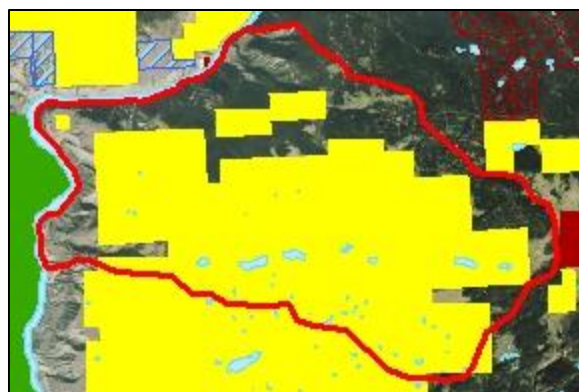
Species and Habitat Values of Note



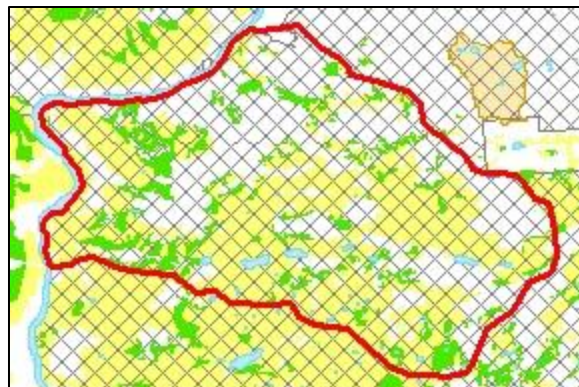
Habitat Diversity



Land Status



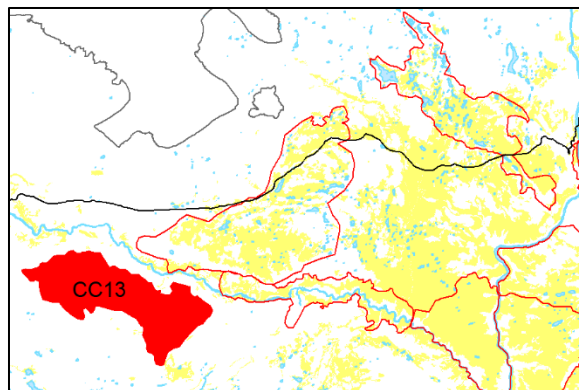
Conservation Concerns



Chilco

Area Characteristics

ID	CC13
UTM Coordinates	10N 503529 mE 5743881 mN
Total Area	8592 ha
Grassland Area	6052 ha (70%)



General Description:

Extensive and contiguous grassland with conifer forest and aspen copse and managed wetland complex south of the Chilcotin River near Lee's Corner.

Biogeoclimatic Zones:

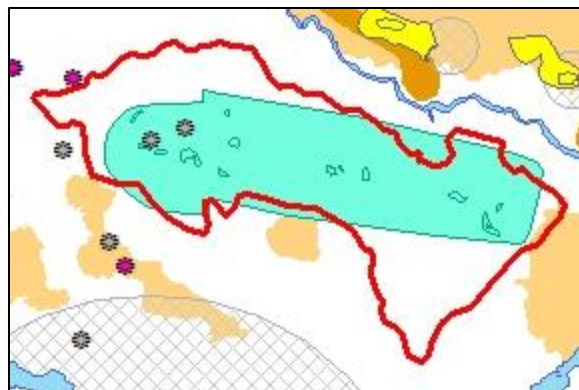
IDFdk4	121 ha (1%)
IDFxm	8472 ha (99%)



Species and Habitat Values Of Note

Horned Lark	Waterfowl Habitat
Long-Billed Curlew	Snake Hibernaculum

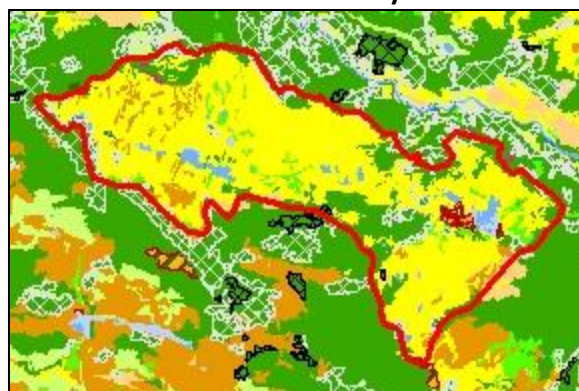
Species and Habitat Values of Note



Habitat Diversity

Aspen	289 ha (3.4%)
Bedrock	12 ha (0.2%)
Douglas Fir	1496 ha (17.5%)
Douglas Fir 8	401 ha (4.7%)
Douglas Fir 9	12 ha (0.2%)
Grassland	5645 ha (65.7%)
Lodgepole Pine	381 ha (4.5%)
Spruce	60 ha (0.7%)
Talus	3 ha (0.1%)
Treed	18 ha (0.3%)
Water	223 ha (2.6%)
Wetland	54 ha (0.7%)

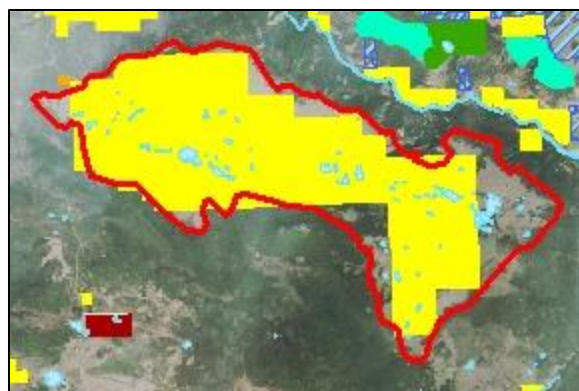
Habitat Diversity



Land Status

Crown	2229.3 ha (25.9%)
Private	6363.5 ha (74.1%)

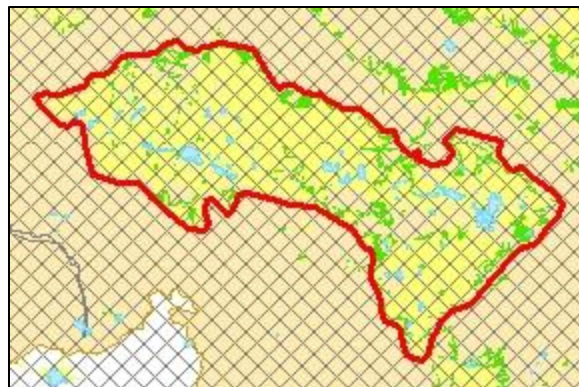
Land Status



Conservation Concerns

Burned in 2017
Forest Encroachment
Invasive Plants
Inappropriate Grazing
Intensively managed water diversion system

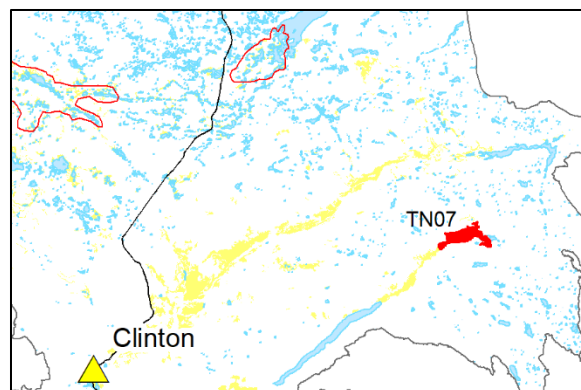
Conservation Concerns



Upper Loon Lake

Area Characteristics

ID	TN07
UTM Coordinates	10N 636318 mE 5672459 mN
Total Area	516 ha
Grassland Area	196 ha (38%)



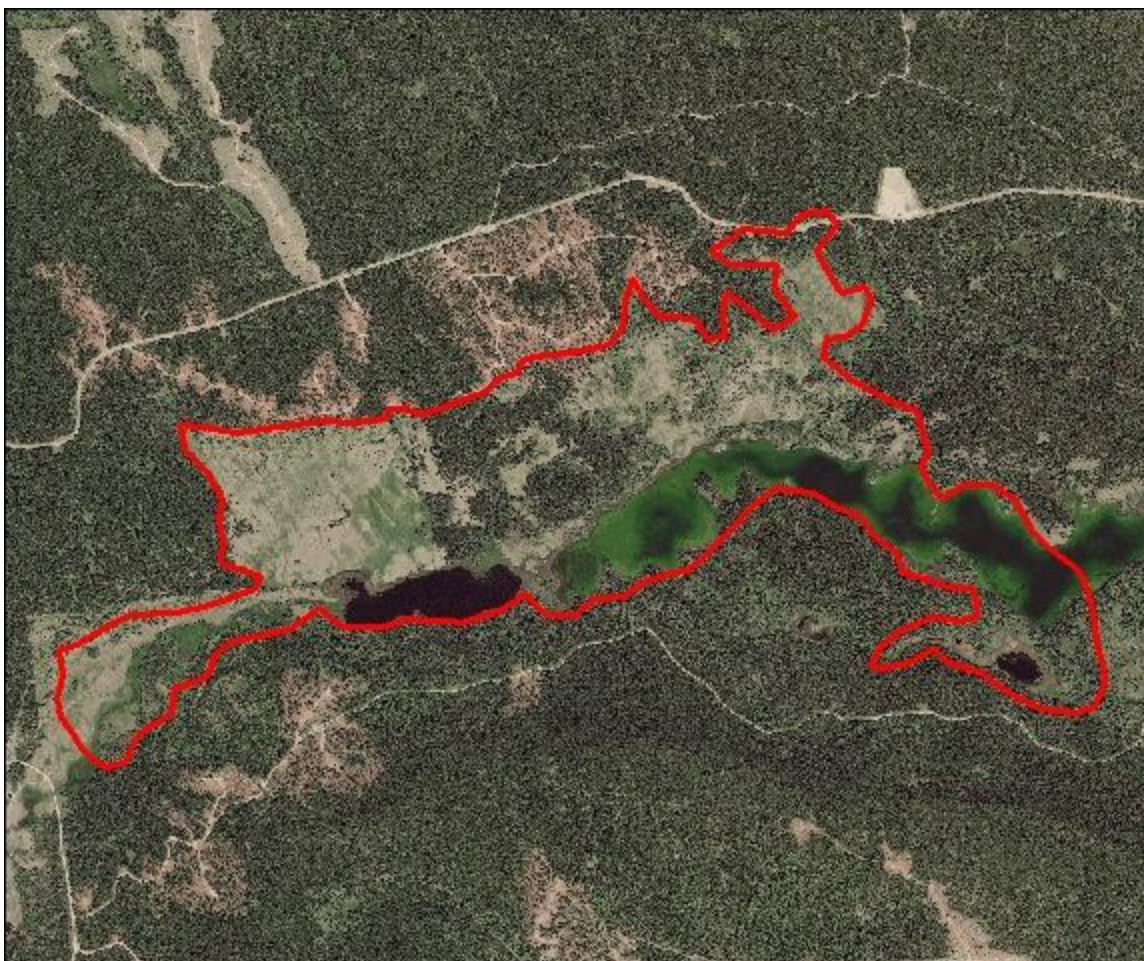
General Description:

Western part of Upper Loon Lake and adjacent open forest and grassland

Biogeoclimatic Zones:

IDFdk3

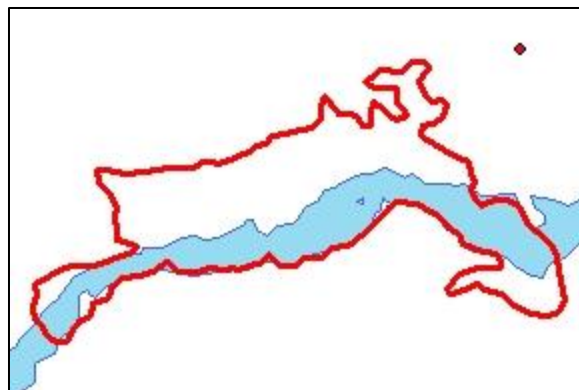
516 ha (100%)



Species and Habitat Values Of Note

Uncommon grasslands within IDfxm, northerly extent of fescue
Extensive wetland, riparian and lake habitat
Easterly range limit of Ponderosa Pine

Species and Habitat Values of Note



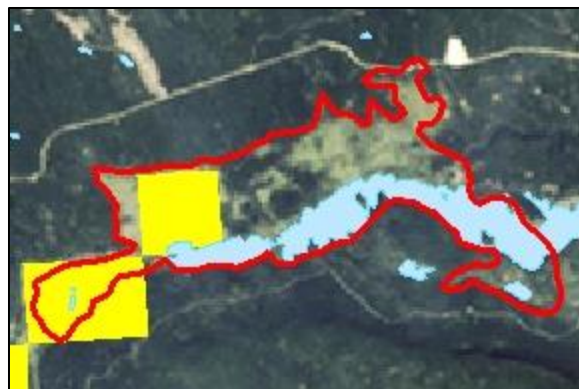
Habitat Diversity



Habitat Diversity

Aspen	62 ha (12.1%)
Douglas Fir	65 ha (12.6%)
Douglas Fir 8	6 ha (1.2%)
Grassland	240 ha (46.5%)
Lodgepole Pine	2 ha (0.4%)
Spruce	14 ha (2.8%)
Water	115 ha (22.3%)
Wetland	12 ha (2.4%)

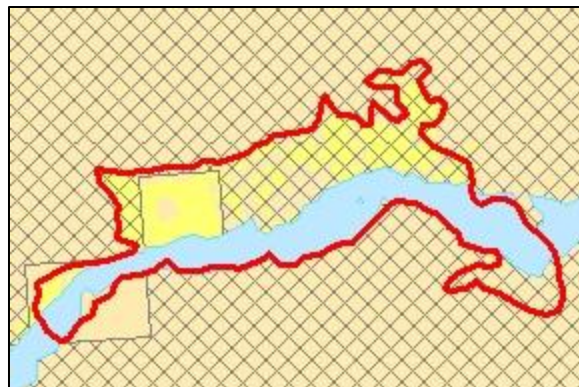
Land Status



Land Status

Crown	406.1 ha (78.6%)
Private	110.3 ha (21.4%)

Conservation Concerns



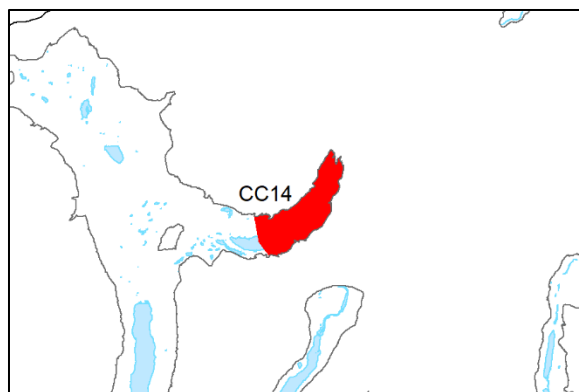
Conservation Concerns

Inappropriate grazing
Burned in 2017

Choelquoit Lake

Area Characteristics

ID	CC14
UTM Coordinates	10N 419089 mE 5731503 mN
Total Area	3590 ha
Grassland Area	1146 ha (32%)



General Description:

At the extreme west of the study area, covering the eastern part of Choelquoit Lake and adjacent small lakes.

Biogeoclimatic Zones:

IDFdk4	3590 ha (100%)
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Species and Habitat Values Of Note

Mule Deer winter range Mushroom Rings
Lake and riparian habitat
Western extent of high elevation grassland

Habitat Diversity

Aspen	220 ha (6.2%)
Douglas Fir	125 ha (3.5%)
Douglas Fir 8	373 ha (10.4%)
Douglas Fir 9	3 ha (0.1%)
Grassland	817 ha (22.8%)
Lodgepole Pine	1026 ha (28.6%)
Spruce	24 ha (0.7%)
Treed	8 ha (0.3%)
Water	970 ha (27.1%)
Wetland	23 ha (0.7%)

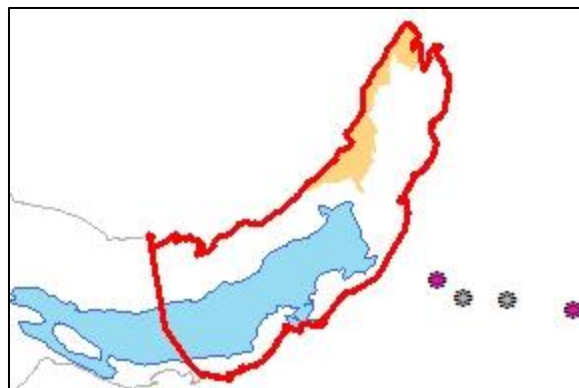
Land Status

Crown	814.8 ha (22.7%)
Crown - Tenures	2775.5 ha (77.3%)

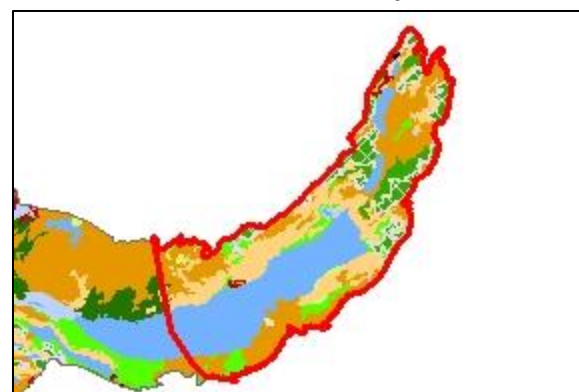
Conservation Concerns

Inappropriate Grazing
Forest encroachment
Feral horses
Little mapped inventory

Species and Habitat Values of Note



Habitat Diversity



Land Status



Conservation Concerns

