

Appendix H: Organizations Represented on Churn Creek Local

Advisory Group

Cariboo Cattleman's Association
Back Country Horseman of British Columbia
British Columbia Grasslands Conservation Council
Williams Lake Field Naturalists
Blackdome Mine
Cariboo Tribal Council
Gang Ranch
Horse Council of British Columbia
Cariboo Chilcotin Conservation Society
Ministry of Transportation and Highways
Cariboo Communities Coalition
West Fraser Mills
Four Point Hilton
BC Snowmobiling Federation
BC Wildlife Federation
Ministry of Employment and Investment – Mines Branch
Guide Outfitters
Riverside Forest Products
Ducks Unlimited
Fernier Perlite Mine
BC Environment – Wildlife Branch
Ministry of Forests – Research Branch
Ministry of Aboriginal Affairs
SHARE Cariboo Chilcotin Resources
Great Cariboo Ride
Williams Lake Powder Kings Snowmobile Club
Ministry of Agriculture, Fisheries and Food
Ministry of Small Business, Tourism and Culture (Tourism)
Wild Sheep Foundation of North America
Lignum Ltd
Ainsworth Forest Products
Cariboo Tourism Association
Parks Canada
J&J Cattle Company
Williams Lake Rod and Gun Club
Placer Miners
Hunters
Recreationists

Empire Valley Cattle Co (1974) Ltd.
Other ranchers
Interested members of public and Media

Appendix I: Description of Major Grassland Ecosystems in Churn Creek

Lower (BGxh3) Grasslands

Location:

In the CCPA, the Lower Grasslands occupy lower and middle slopes of the Fraser River valley. Elevations range from approximately 450 m on the valley floor to 650 m on valley side-slopes. The topography is characterized by eroded valley slopes and prominent terraces. Erosional features and colluvial slopes are very common. The terraces are primarily silt loam and sandy loam deposits which accumulated on the bed of the glacial Fraser River. The current Fraser River has downcut into the glacial deposits and, as a result, the valley bottom is relatively narrow and little floodplain is present.

The Lower Grasslands are closely related to other low elevation grasslands in main valley systems of southern B.C. and to the sagebrush-bunchgrass grasslands of the northwestern U.S.

Climate:

Mean annual temperature: 5.9°C

Mean annual precipitation: 330 mm

Mean summer precipitation: 177 mm

Vegetation:

Zonal²⁰ Sites: Climax vegetation on zonal sites is dominated by bluebunch wheatgrass (*Elymus spicatus*), scattered to abundant big sagebrush (*Artemisia tridentata*), and a soil crust of lichens and dryland mosses. Other commonly occurring plants include needle-and-thread grass (*Stipa comata*), sand dropseed (*Sporobolus cryptandrus*), Sandberg's bluegrass (*Poa sandbergii*), junegrass (*Koeleria macrantha*), prickly pear cactus (*Opuntia fragilis*), rabbitbrush (*Chrysothamnus nauseosus*), pasture sage (*Artemisia frigida*), large-fruited desert-parsley (*Lomatium macrocarpum*), low pussytoes (*Antennaria dimorpha*), umber pussytoes (*A. umbrinella*), Holboell's rockcress (*Arabis holboellii*), and yarrow (*Achillea millefolium*). Vascular plants often cover less than 50% of the soil surface while ground lichens, algae and dryland mosses may cover up to 80% of the soil surface. Bluebunch wheatgrass typically decreases while the other grasses initially increase with grazing. Big sagebrush has probably increased with grazing and fire suppression.

Productivity is much lower and vegetation recovery following disturbance is much slower than in the Middle and Upper grasslands.

²⁰ Zonal sites are those sites where the influence of the prevailing climate on the vegetation is believed to be least modified by the local topography and the physical/chemical properties of the soil. They have intermediate soil moisture and soil nutrients.

Other Sites:

Steep north aspects often have bluebunch wheatgrass dominated vegetation in which the cover of bluebunch wheatgrass is much greater than on zonal sites. Big sagebrush is much less abundant and some cooler site species such as three flowered avens (*Geum triflorum*) are common. These slopes are often only lightly grazed by cattle.

Moderately sloping south and west aspects with sandy soils typically have vegetation dominated by sand dropseed or needle-and-thread grass. Steep south aspects have sparse vegetation of bluebunch wheatgrass, needle-and-thread grass, big sagebrush, compact selaginella, sand dropseed, and prickly pear cactus.

Moist lower slopes have a relatively dense cover of grasses (primarily bluebunch wheatgrass and needle-and-thread grass) with relatively little big sagebrush. Riparian areas have a variety of taller shrubs including Douglas maple (*Acer glabrum*) and water birch (*Betula occidentalis*) and often poison ivy (*Rhus radicans*).

Soils: Soils of the Lower Grasslands are predominantly Brown Chernozems. Organic matter levels in the Ah are lower than in the middle and upper grasslands and the Bm horizon is often more calcareous. Soils are developed primarily in silt loam to sandy loam fluvial deposits that are often gravelly.

Middle (BGxw2) GrasslandsLocation:

In the Churn Creek Protected Area, the Middle Grasslands occur on the middle and upper slopes of the Fraser River valley and lower reaches of the Churn Creek valley. They occupy a band between the Lower and Upper grasslands at elevations of about 650 m and 800 m. The topography includes gullied valley slopes, colluvial slopes, fluvial terraces, basal moraine, bedrock cliffs and escarpments, and cliffs of unconsolidated fluvial deposits.

Climate:

Mean annual temperature: 5.0°C

Mean annual precipitation: 345 mm

Mean summer precipitation: 197 mm

Vegetation:

Zonal Sites: Late seral and climax vegetation on zonal sites is dominated by bluebunch wheatgrass, needle-and-thread grass and junegrass. Other common species include umber pussytoes, meadow salsify (*Tragopogon pratense*), trailing fleabane (*Erigeron flagellaris*), cut-leaved daisy (*E. compositus*), pasture sage, spike-like goldenrod (*Solidago spathulata*), wild blue flax (*Linum lewisii*), northern wormwood (*Artemisia campestris*), large-fruited desert-parsley, and slender hawkbeard (*Crepis atrabarba*). Total plant cover of species is typically greater than in the Lower Grasslands. Big sagebrush occurs primarily at the lower elevations of the Middle Grasslands and is much less common than in the Lower Grasslands. South of Churn Creek, vegetation on these

sites frequently contains green needlegrass (*Nassella viridula*), which may dominate heavily grazed sites. Productivity and the diversity of vascular plant species is higher than in the Lower Grasslands but lower than in the Upper Grasslands.

With persistent heavy grazing of bluebunch wheatgrass, its abundance declines and other grasses including needle-and-thread grass, junegrass, and sand dropseed tend to initially increase in cover. With continued heavy grazing, these species also decrease in cover and are largely replaced with more weedy native forbs such as pussytoes, fleabanes and pasture sage.

Other Sites:

Moist lower slopes and shallow depressions are dominated by short-awned porcupinegrass, occasionally with spreading needlegrass or green needlegrass on very moist sites. Other species characteristic of these sites are sticky geranium (*Geranium viscosissimum*), balsam root (*Balsamorhiza sagittata*), northern bedstraw (*Galium boreale*), prairie rose (*Rosa woodsii*), saskatoon (*Amelanchier alnifolia*), western snowberry (*Symphoricarpos occidentalis*), lemonweed (*Lithospermum ruderales*), and round-leaved alum root (*Heuchera cylindrica*).

Dry, steep south-facing slopes are dominated by a relatively sparse cover of bluebunch wheatgrass, needle-and-thread grass, pasture sage, and sand dropseed. Big sagebrush and rabbitbrush are often present.

Soils: Soils are predominantly Orthic Brown or Dark Brown Chernozems with a 15 - 30 cm thick organic-rich surface (Ah) horizon which occurs primarily in the silty aeolian cap that covers most morainal deposits of the area.

Upper (IDFxm) Grasslands

Location:

Upper Grasslands occur above the Middle Grasslands on upper slopes of the Fraser River Valley and on the adjacent plateau. They also occur on the plateau adjacent to the Churn Creek Valley as far west as the western edge of the protected area. Elevations are 800 - 1200 m on a predominantly level to gently rolling landscape. The vegetation is a mosaic of grasslands, Douglas-fir forests, and aspen forests.

Climate: (data available from only 1 station north of CCPA)

Mean annual temperature: 5.4°C

Mean annual precipitation: 386 mm

Mean summer precipitation: 191 mm

Vegetation:

General: The IDFxm Subzone is a transition from open grassland to continuous forest.

Although the theoretical climax vegetation on zonal sites is a forest, the climate is only marginally suitable for forest. As a result, the vegetation shifts from forest to grassland and

from grasslands to forest in response to small local changes in climate, site or historical factors. The resulting landscape is a mosaic of forest and grassland in which the forest occurs predominantly on cooler, moister sites and the grasslands on warmer, drier sites. Soil differences may also contribute to the current pattern of forest and grassland.

Zonal Sites: Relatively undisturbed grasslands on zonal sites are dominated by bluebunch wheatgrass, short-awned porcupine grass and spreading needlegrass. Small patches dominated by one of the latter two grasses often occur within a matrix of all three species. Plant cover is nearly continuous and a thick litter layer is often present where fires have not occurred recently. A very diverse forb, graminoid, and lichen flora is present. Other common grass and grass-like plants are Rocky Mt. fescue (*Festuca saximontana*), Kentucky bluegrass (*Poa pratensis*), junegrass, pasture sedge (*Carex petasata*) and blunt sedge (*Carex obtusata*). In contrast to the Lower and Middle grasslands, needle-and-thread grass is uncommon. Common forb species include yarrow, umber pussytoes, northern bedstraw, spike-like goldenrod, cut-leaved anemone (*Anemone multifida*) and Holboell's rockcress. Common lichens include *Cladonia pyxidata*, *C. cariosa* and *Peltigera lepidophora*.

Other Sites: On gentle north- and east-facing slopes, the vegetation is often dominated by short-awned porcupine grass with only incidental bluebunch wheatgrass. Moderate to steep north-facing slopes typically have a spreading needlegrass vegetation while moist, lower slopes are dominated by spreading needlegrass, Kentucky bluegrass and baltic rush (*Juncus balticus*). Steep, dry south-facing slopes typically have bluebunch wheatgrass vegetation with sparse plant cover.

Soils: Soils in the Upper Grasslands are most often developed in a veneer (20 - 50 cm thick) of silty or loamy aeolian materials over basal moraine. Soils are predominantly Dark Brown Chernozems with a 15 - 30 cm thick organic-rich surface mineral (Ah) horizon. The Ah horizon is generally darker (contains more organic matter) than in the Middle Grasslands.