

**CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING
WITH WILDLIFE INTERPRETATIONS
FOR
MAPSHEETS 92O.028, 92O.029, 92O.038, 92O.039, 92O.048, 92O.049**

EXPANDED LEGEND

FOR:

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1.0 BGxh3 - Bunchgrass Very Dry Hot Subzone Fraser Variant

1.1 BGxh3 Forested Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	CW / 06 Black Cottonwood - Sandbar Willow - Dogbane
Typically occurs on level, very active low floodplains and islands along rivers such as the Fraser. Soils are generally coarse-textured (sandy or gravelly) due to frequent flooding (CW). These sites may remain submerged for a significant period during spring flooding.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-340	330
Slope (%)	0-20	5
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric	medium to rich	
Drainage	imperfect	
Surficial Material		
sandy or gravelly sediments on very active floodplains		
Soil Development		
regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	0-35	
Soil Texture	Humus Form	
sandy to loamy sand, silt	none	

PLOT C253 CW4

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

CW / 06

Black Cottonwood - Sandbar Willow - Dogbane

Map Symbol	CW2	CW3	CW4	CW5	CW6	CW7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	white sweet-clover alfalfa slender wheatgrass scouring rush tarragon	sandbar willow silverberry black cottonwood alfalfa scouring rush white sweet-clover tarragon	Open canopy of: black cottonwood sandbar willow alfalfa	Open canopy of: black cottonwood sandbar willow alfalfa	Open canopy of: black cottonwood sandbar willow	Open canopy of: black cottonwood sandbar willow red-osier dogwood
Associates	quackgrass dogbane salsify	slender wheatgrass salsify quackgrass willows dogbane	silverberry red-osier dogwood willows slender wheatgrass scouring rush bluejoint tarragon white-sweet clover dogbane	silverberry red-osier dogwood willows slender wheatgrass scouring rush bluejoint tarragon white-sweet clover dogbane	Silverberry red-osier dogwood willows white sweet-clover alfalfa slender wheatgrass scouring rush bluejoint	silverberry willows white sweet-clover alfalfa slender wheatgrass scouring rush bluejoint
Plots			C253			

Comments: The vegetation can be quite variable depending on frequency and last date of flooding. The deciduous crown closure is patchy with vigorous shrub and herb layers and no mosses. The site series may be maintained in early seral stages by repeated flooding; mature and old forest are very rare.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

CW / 06

Black Cottonwood - Sandbar Willow - Dogbane

Map Symbol	CW2	CW3	CW4	CW5	CW6	CW7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	white sweet-clover alfalfa slender wheatgrass bluejoint scouring rush tarragon	sandbar willow silverberry black cottonwood alfalfa bluejoint scouring rush white sweet-clover tarragon	black cottonwood sandbar willow alfalfa	black cottonwood sandbar willow alfalfa	black cottonwood sandbar willow	black cottonwood sandbar willow red-osier dogwood
Associates	quackgrass salsify	slender wheatgrass salsify quackgrass willows	silverberry red-osier dogwood willows slender wheatgrass scouring rush bluejoint tarragon	silverberry red-osier dogwood willows slender wheatgrass scouring rush bluejoint tarragon	silverberry red-osier dogwood willows white sweet-clover alfalfa slender wheatgrass scouring rush bluejoint	silverberry willows white sweet-clover alfalfa slender wheatgrass scouring rush
Bear Forage Species	white sweet-clover alfalfa slender wheatgrass bluejoint scouring rush tarragon quackgrass salsify	white sweet-clover tarragon alfalfa bluejoint scouring rush slender wheatgrass salsify quackgrass	white-sweet clover alfalfa bluejoint red-osier dogwood slender wheatgrass scouring rush tarragon	white-sweet clover alfalfa bluejoint red-osier dogwood slender wheatgrass scouring rush tarragon	red-osier dogwood white sweet-clover alfalfa slender wheatgrass scouring rush bluejoint	red-osier dogwood white sweet-clover alfalfa slender wheatgrass scouring rush

Comments: This unit provides good security and thermal cover for bear and ungulates along with favorable forage species. This unit may serve as a travel corridor for moose and deer.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	<p>DJ / 02 Douglas-fir - Rocky Mountain Juniper DJc / 02 Douglas-fir - Rocky Mountain Juniper; coarse-textured soil DJcg / 02 Douglas-fir - Rocky Mountain Juniper; coarse-textured soil on gullied terrain DJg / 02 Douglas-fir - Rocky Mountain Juniper; gullied DJgs / 02 Douglas-fir - Rocky Mountain Juniper; gullied terrain on shallow soil DJj / 02 Douglas-fir - Rocky Mountain Juniper; gentle slope DJt / 02 Douglas-fir - Rocky Mountain Juniper; on terrace scarps</p>
<p>Typically occurs on long, steep north and north-east cool aspect slopes and cool shaded toe slopes with deep, medium-textured soils (DJ). Coarse-textured glaciofluvial soils and gullied terrain can occur (DJc, DJcg, DJg), although shallow soils are infrequent in this ecosystem type (DJgs). When shaded by adjacent slopes, this ecosystem can occur on gentle slopes (DJj). It is quite common on terrace scarps (DJt). This unit also includes the new BGxh3 /03 Douglas-fir - Snowberry - Bluebunch wheatgrass site series, which will be mapped separately in future projects.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	25-70+	50
Aspect (degrees)	350-50	
Moisture Regime	Nutrient Regime	
submesic to mesic	poor to medium	
Drainage	well	
Surficial Material		
eolian veneer, morainal blanket or glaciofluvial scarps		
Soil Development		
orthic brunisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
loamy to fine sandy loam	mor (mull)	

PLOT C698 DJ 6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 02

Douglas-fir - Rocky Mountain Juniper

Map Symbol	DJ2, DJc2, DJcg2, DJg2, DJgs2, DJj2, DJt2	DJ3, DJc3, DJcg3, DJg3, DJgs3, DJj3, DJt3	DJ4, DJc4, DJcg4, DJg4, DJgs4, DJj4, DJt4	DJ5, DJc5, DJcg5, DJg5, DJgs5, DJj5, DJt5	DJ6, DJc6, DJcg6, DJg6, DJgs6, DJj6, DJt6	DJ7, DJc7, DJcg7, DJg7, DJgs7, DJj7, DJt7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass pussetoos step moss pasture sage	big sagebrush snowberry bluebunch wheatgrass step moss pasture sage	Open canopy of: Douglas-fir bluebunch wheatgrass step moss red-stemmed feathermoss	Open canopy of: Douglas-fir bluebunch wheatgrass step moss red-stemmed feathermoss	Open canopy of: Douglas-fir bluebunch wheatgrass step moss red-stemmed feathermoss	Open canopy of: Douglas-fir bluebunch wheatgrass step moss red-stemmed feathermoss
Associates	round-leaved alumroot big sagebrush pelt lichens prairie rose junegrass	Douglas-fir Rocky Mtn. juniper pussetoos round-leaved alumroot pelt lichens junegrass prairie rose	Rocky Mtn. juniper snowberry showy aster pussetoos round-leaved alumroot pelt lichens big sagebrush prairie rose pasture sage	Rocky Mtn. juniper snowberry spike-like goldenrod showy aster pussetoos round-leaved alumroot pelt lichens big sagebrush prairie rose pasture sage	Rocky Mtn. juniper snowberry spike-like goldenrod showy aster round-leaved alumroot pelt lichens prairie rose pasture sage	Rocky Mtn. juniper snowberry spike-like goldenrod showy aster round-leaved alumroot pelt lichens prairie rose pasture sage
Plots					C698	

Comments: Structural stages 2 and 3 occur in areas cleared for pasture, logged and/or burned and will return to trees if left undisturbed. The forest canopy, dominated by Douglas-fir with some Rocky Mountain juniper, is moderately open with 10-40% cover. Shrubs are sparse or non-existent. The herb layer consists of well-spaced bluebunch wheatgrass and a few herbs similar to the WA/87 site series. The moss and lichen layer is nearly continuous with 70-85% cover.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 02

Douglas-fir - Rocky Mountain Juniper

Map Symbol	DJ2, DJc2, DJcg2, DJg2, DJgs2, DJj2, DJt2	DJ3, DJc3, DJcg3, DJg3, DJgs3, DJj3, DJt3	DJ4, DJc4, DJcg4, DJg4, DJgs4, DJj4, DJt4	DJ5, DJc5, DJcg5, DJg5, DJgs5, DJj5, DJt5	DJ6, DJc6, DJcg6, DJg6, DJgs6, DJj6, DJt6	DJ7, DJc7, DJcg7, DJg7, DJgs7, DJj7, DJt7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass pasture sage	bluebunch wheatgrass big sagebrush pasture sage	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass
Associates	junegrass big sagebrush prairie rose	Douglas-fir juniper prairie rose junegrass	Rocky Mtn. juniper big sagebrush prairie rose pasture sage	Rocky Mtn. juniper big sagebrush prairie rose pasture sage	Rocky Mtn. juniper prairie rose pasture sage	Rocky Mtn. juniper prairie rose pasture sage
Bear Forage Species	bluebunch wheatgrass prairie rose junegrass	bluebunch wheatgrass prairie rose	prairie rose	prairie rose	prairie rose	prairie rose

Comments: This unit may be used as thermal and security cover in the winter by ungulates. It also provides some grassy forage.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	DM / 04 Douglas-fir - Wood rose - Saskatoon DMa / 04 Douglas-fir - Wood rose - Saskatoon; active floodplain DMg / 04 Douglas-fir - Wood rose - Saskatoon; gullied
Typically occurs on mid to lower gentle to moderate slopes receiving moisture from permanent or intermittent streams or seepage. Soils are deep and medium-textured (DM). These ecosystems are frequently gullied (DMg) and may be active floodplains (DMa).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0-65	40
Aspect (degrees)	variable	(gullies)
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	imperfect	
Surficial Material		
eolian veneer over moraine or colluvium, fluvial		
Soil Development		
eutric brunisol, regosol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy	moder, none	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 04

Douglas-fir - Wood rose - Saskatoon

Map Symbol	DM2, DMA2, DMg2	DM3, DMA3, DMg3	DM4, DMA4, DMg4	DM5, DMA5, DMg5	DM6, DMA6, DMg6	DM7, DMA7, DMg7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	showy aster American vetch bluebunch wheatgrass	trembling aspen black cottonwood Douglas maple saskatoon chokecherry showy aster bluebunch wheatgrass	Open canopy of: trembling aspen black cottonwood Douglas maple prairie rose	Open canopy of: Douglas-fir trembling aspen black cottonwood Douglas maple	Open canopy of: Douglas-fir trembling aspen black cottonwood Douglas maple	Open canopy of: Douglas-fir trembling aspen black cottonwood Douglas maple
Associates	star-flowered false Solomon's seal common dandelion	Douglas-fir water birch snowberry star-flowered false Solomon's-seal common dandelion spike-like goldenrod	Douglas-fir star-flowered false Solomon's-seal saskatoon chokecherry snowberry showy aster common dandelion bluebunch wheatgrass spike-like goldenrod	saskatoon chokecherry snowberry prairie rose showy aster star-flowered false Solomon's-seal common dandelion bluebunch wheatgrass spike-like goldenrod	saskatoon chokecherry snowberry prairie rose showy aster star-flowered false Solomon's-seal bluebunch wheatgrass spike-like goldenrod	saskatoon chokecherry snowberry prairie rose showy aster star-flowered false Solomon's seal
Plots						

Comments: These moist draws and deep cool gullies are characterized by a dense shrub layer and a variable tree overstory of aspen, black cottonwood, and/or Douglas-fir. Vegetation cover is often patchy and discontinuous, especially in areas of active gully erosion (DMg). Gullies exhibit considerable variation in site conditions and vegetation types with sometimes deeply incised gulches and warm and cool aspect microsite slopes. More active creek draws tend to have more trembling aspen and/or black cottonwood. Logging, burning, or flooding can create structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 04

Douglas-fir - Wood rose - Saskatoon

Map Symbol	DM2, DMa2, DMg2	DM3, DMa3, DMg3	DM4, DMa4, DMg4	DM5, DMa5, DMg5	DM6, DMa6, DMg6	DM7, DMa7, DMg7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	American vetch bluebunch wheatgrass	trembling aspen black cottonwood Douglas maple saskatoon chokecherry	trembling aspen black cottonwood Douglas maple prairie rose	Douglas -fir trembling aspen black cottonwood Douglas maple	Douglas -fir trembling aspen black cottonwood Douglas maple	Douglas -fir trembling aspen black cottonwood Douglas maple
Associates	star-flowered False Solomon's seal common dandelion	Douglas-fir water birch snowberry star-flowered false Solomon's-seal common dandelion bluebunch wheatgrass	Douglas-fir star-flowered false Solomon's-seal saskatoon chokecherry snowberry common dandelion bluebunch wheatgrass	saskatoon chokecherry snowberry prairie rose common dandelion bluebunch wheatgrass star-flowered False Solomon's seal	saskatoon chokecherry snowberry prairie rose bluebunch wheatgrass star-flowered False Solomon's seal	saskatoon chokecherry snowberry prairie rose star-flowered False Solomon's seal
Bear Forage Species	American vetch bluebunch wheatgrass star-flowered False Solomon's seal common dandelion	saskatoon chokecherry star-flowered False Solomon's seal common dandelion bluebunch wheatgrass	prairie rose star-flowered false Solomon's-seal saskatoon chokecherry common dandelion bluebunch wheatgrass	saskatoon chokecherry prairie rose common dandelion bluebunch wheatgrass star-flowered false Solomon's-seal	saskatoon chokecherry prairie rose bluebunch wheatgrass star-flowered false Solomon's-seal	saskatoon chokecherry prairie rose star-flowered False Solomon's-seal

Comments: Although small and linear, these riparian gullies are important deer and bear habitat for forage and cover.

1.2 BGxh3 Grassland Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	DR / 84 Sand Dropseed - Indian Ricegrass DRk / 84 Sand Dropseed - Indian Ricegrass; cool aspect
Typically occurs on gentle to moderate warm aspects of stabilized dune deposits. Soils are deep and coarse-textured (DR). This unit may rarely occur on cool aspect dune deposits (DRk).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0-45	
Aspect (degrees)	180	
Moisture Regime	Nutrient Regime	
submesic	poorB	
Drainage	well	
Surficial Material		
deep sandy eolian deposits		
Soil Development		
brown chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
sandy to loamy sand	rhizomull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 DR / 84 Sand Dropseed - Indian Ricegrass

Map Symbol	DR2, DRk2
Plant species	Herb Climax / Late Seral
Dominants	sand dropseed needle-and-thread grass <i>Tortula spp.</i> <i>Cladonia cariosa</i> (ribbed pixie) <i>Diploschistes muscorum</i> (cow pie lichen)
Associates	Rocky Mountain juniper silverberry Sandberg's bluegrass Indian ricegrass brittle prickly pear cactus
Plots	

Comments: There is a moderate (30-60%) grass cover with a moderate to high (25-70%) cryptogam crust between the bunchgrasses. Unvegetated mineral soil is 30-60% ground cover. Sand dune vegetation may be quite variable and may sometimes have scattered Rocky Mountain juniper or silverberry.

Map Symbol	DR2, DRk2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	sand dropseed needle-and-thread grass
Ungulate Forage Species - Associates	silverberry Sandberg's bluegrass Indian ricegrass
Bear Forage Species	sand dropseed Indian ricegrass

Comments: These sites may be used for forage by California bighorn sheep if there is nearby escape terrain.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	<p>JR / 00 Rocky Mountain Juniper - Rabbit-brush</p> <p>JRg / 00 Rocky Mountain Juniper - Rabbit-brush; gullied</p> <p>JRgs / 00 Rocky Mountain Juniper - Rabbit-brush; gullied on shallow soil</p> <p>JRw / 00 Rocky Mountain Juniper - Rabbit-brush; warm aspect</p>
<p>These rare sites occur principally in the Word Creek and Empire Valley areas on significant slopes with cool (east or northwest) aspects. Surficial materials are unconsolidated and eroding deep medium-textured calcareous soils (JR). Due to the high cover of exposed mineral soil, these sites are frequently gullied (JRg) , occasionally on shallow soil (JRgs). This ecosystem more rarely occurs on warm (west) aspects (JRw). This unit will be mapped as a phase of the SW /01 site series in future mapping projects.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	65-100+	75
Aspect (degrees)	90	
Moisture Regime	Nutrient Regime	
subxeric	medium to rich	
Drainage	rapid to well	
Surficial Material		
eroding undifferentiated sediments		
Soil Development		
calcareous orthic regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	35-70+	
Soil Texture	Humus Form	
silty clay loam, silt loam	absent	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

JR / 00

Rock Mountain Juniper - Rabbit-brush

Map Symbol	JR2, JRg2, JRgs2, JRw2	JR3a, JRg3a, JRgs3a, JRw3a
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass	big sagebrush rabbit-brush
Associates	big sagebrush rabbit-brush pasture sage pulse milk-vetch narrow-leaved skeleton weed tar-paper lichens	Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass pasture sage tar-paper lichens
Plots	C732, C742	

Comments: This type has very sparse vegetation with exposed mineral soil (70-90%) dominating the ground cover.

Map Symbol	JR2, JRg2, JRgs2, JRw2	JR3a, JRg3a, JRgs3a, JRw3a
Plant Species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass	big sagebrush Rocky Mtn. juniper rabbit-brush
Ungulate Forage Species - Associates	big sagebrush rabbit-brush pasture sage pulse milk-vetch	Douglas-fir bluebunch wheatgrass pasture sage
Bear Forage Species	bluebunch wheatgrass pulse milk-vetch	bluebunch wheatgrass

Comments: Mule deer will feed on rabbit-brush and bluebunch wheatgrass in the spring, as will California Bighorn Sheep if security habitat is nearby.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	<p>NC / 85 Needle-and-thread Grass - <i>Cladonia cariosa</i></p> <p>NCg / 85 Needle-and-thread Grass - <i>Cladonia cariosa</i>; gullied</p> <p>NCgt / 85 Needle-and-thread Grass - <i>Cladonia cariosa</i>; gullied terrace</p> <p>NCh / 85 Needle-and-thread Grass - <i>Cladonia cariosa</i>; hummocky terrace</p> <p>NCr / 85 Needle-and-thread Grass - <i>Cladonia cariosa</i>; ridged</p> <p>NCt / 85 Needle-and-thread Grass - <i>Cladonia cariosa</i>; terrace</p>
Typically occurs on gentle slopes with a southerly aspect on deep eolian deposits often over glaciofluvial materials. Soils are deep and coarse-textured (NC). It is common on terraces (NCh, NCt) and may be gullied (NCg, NCgt) or ridged (NCr).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
5-25	5-25	15
Aspect (degrees)	180	
Moisture Regime	Nutrient Regime	
submesic to mesic	poor to medium	
Drainage	well	
Surficial Material		
eolian blanket or veneer over glaciofluvial		
Soil Development		
chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
fine sandy loam (loamy sand)	rhizomull	

PLOT C691 NC 2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 NC / 85 Needle-and-thread Grass - *Cladonia cariosa*

Map Symbol	NC2, NCg2, NCgt2, Ncht2, Ncr2, Nct2
Plant species	Herb Climax / Late Seral
Dominants	needle-and-thread grass pasture sage <i>Cladonia cariosa</i> (ribbed pixie) <i>Cladonia pyxidata</i> (brown pixie cup) <i>Diploschistes muscorum</i> (cow pie lichen)
Associates	brittle prickly pear cactus Indian ricegrass sand dropseed <i>Psora spp.</i> (scale lichens) <i>Collema spp.</i> (tar-paper lichens) <i>Caloplaca spp.</i> <i>Catapyrenium spp.</i> (stipplescale lichens) <i>Tortula spp.</i> <i>Physconia muscigena</i> (ground frost)
Plots	C35, C691

Comments: Climax and late seral vegetation consists of high covers of needle-and-thread grass averaging 50% and scattered brittle prickly pear cactus, pasture sage, as well as a well-developed and diverse lichen layer. Grazing results in more exposed mineral soil (>20%), reduced lichen cover and more sand dropseed and/or prickly pear cactus.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series **Name**
 NC / 85 Needle-and-thread Grass - *Cladonia cariosa*

Map Symbol	NC2, NCg2, NCgt2, NCh2, NCK2, NCr2, Nct2
Plant Species	Herb Climax / Late seral
Ungulate Forage Species - Dominants	needle-and-thread grass pasture sage
Ungulate Forage Species - Associates	Indian ricegrass sand dropseed
Bear Forage Species	Indian ricegrass sand dropseed

Comments: California Bighorn Sheep will make use of this ecosystem provided it is adjacent to suitable escape terrain.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	PP / 88 Short-awned Porcupinegrass - Small-flowered Penstemon
Typically occurs in shallow moist depressions with deep medium-textured soil in the grasslands (PP).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0-5	3
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	moderately well	
Surficial Material		
eolian veneer over morainal blanket		
Soil Development		
chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
loamy	mull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 PP / 88 Short-awned Porcupinegrass - Small-flowered Penstemon

Map Symbol	PP2
Plant species	Herb Climax / Late Seral
Dominants	needle-and-thread grass short-awned porcupinegrass bluebunch wheatgrass <i>Cladonia spp.</i> <i>Peltigera spp.</i> <i>Polytrichum spp.</i> <i>Brachythecium spp.</i>
Associates	small-flowered penstemon death camas western blue flax yarrow prairie cinquefoil
Plots	

Comments: Climax / late seral vegetation consists of a continuous cover of grasses and a variety of forbs, with a well-developed lichen layer. Frequently these sites are disturbed by grazing and may be dominated by quackgrass and other weedy species.

Map Symbol	PP2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	needle-and-thread grass short-awned porcupinegrass bluebunch wheatgrass
Ungulate Forage Species - Associates	western blue flax
Bear Forage Species	bluebunch wheatgrass

Comments: This unit has a limited abundance of palatable grasses for ungulates, but may be utilized early in the growing season before certain species develop long awns that may injure the animals' muzzles.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	<p>SC / 80 Big Sagebrush - Prickly Pear Cactus</p> <p>SCg / 80 Big Sagebrush - Prickly Pear Cactus; gullied SCh / 80 Big Sagebrush - Prickly Pear Cactus; hummocky SCk / 80 Big Sagebrush - Prickly Pear Cactus; cool aspect SCq / 80 Big Sagebrush - Prickly Pear Cactus; very steep cool aspect SCr / 80 Big Sagebrush - Prickly Pear Cactus; ridged SCw / 80 Big Sagebrush - Prickly Pear Cactus; warm aspect SCz / 80 Big Sagebrush - Prickly Pear Cactus; very steep warm aspect</p>
Typically occurs on gently sloping rock outcrops with thin pockets of soil (SC). It also occurs on rock cliffs on all aspects (SCq, SCk, SCw, SCz) and in shallow bedrock-dominated gullies (SCg). The bedrock may be hummocky (SCh) or ridged (SCr).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0-25 (30-70)	20 (50)
Aspect (degrees)	225	
Moisture Regime	Nutrient Regime	
very xeric to subxeric	very poor to medium	
Drainage	rapid (well)	
Surficial Material		
colluvial (morainal or glaciofluvial) very thin veneers over bedrock		
Soil Development		
shallow regosols		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35 - >70	
Soil Texture	Humus Form	
loamy	rhizomull	

PLOT C728 SC3a (Upper half of photo)

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SC / 80

Big Sagebrush - Prickly Pear Cactus

Map Symbol	SC2, SCg2, SCh2, SCK2, SCq2, SCr2, SCw2, SCz2	SC3a, SCg3a, SCh3a, SCK3a, SCq3a, SCr3a, SCw3a, SCz3a	SC3b, SCg3b, SCh3b, SCK3b, SCq3b, SCr3b, SCw3b, SCz3b	SC4, SCg4, SCh4, SCK4, SCq4, SCr4, SCw4, SCz4	SC5, SCg5, SCh5, SCK5, SCq5, SCr5, SCw5, SCz5	SC6, SCg6, SCh6, SCK6, SCq6, SCr6, SCw6, SCz6	SC7, SCg7, SCh7, SCK7, SCq7, SCr7, SCw7, SCz7
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral	Tall Shrub Climax / Late Seral	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass pasture sage compact selaginella	big sagebrush bluebunch wheatgrass compact selaginella	Very open canopy of: big sagebrush Douglas-fir bluebunch wheatgrass compact selaginella	Very open canopy of: big sagebrush Douglas-fir bluebunch wheatgrass compact selaginella	Very open canopy of: Douglas-fir big sagebrush bluebunch wheatgrass compact selaginella	Very open canopy of: Douglas-fir big sagebrush bluebunch wheatgrass compact selaginella	Very open canopy of: Douglas-fir big sagebrush bluebunch wheatgrass compact selaginella
Associates	Douglas-fir brittle prickly pear cactus junegrass pussytoes Holboell's rockcress lance-leaved stonecrop <i>Xanthoparmelia</i> spp. (rock frog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Tortula</i> spp. <i>Cladonia</i> spp. <i>Diploschistes muscorum</i> (cow pie lichen) needle-and-thread grass	Douglas-fir saskatoon brittle prickly pear cactus pasture sage junegrass pussytoes Holboell's rockcress lance-leaved stonecrop <i>Xanthoparmelia</i> spp. (rock frog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Tortula</i> spp. <i>Cladonia</i> spp. <i>Diploschistes muscorum</i> (cow pie lichen)	saskatoon brittle prickly pear cactus pasture sage junegrass pussytoes Holboell's rockcress lance-leaved stonecrop <i>Xanthoparmelia</i> spp. (rock frog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Tortula</i> spp. <i>Cladonia</i> spp. <i>Diploschistes muscorum</i> (cow pie lichen)	saskatoon brittle prickly pear cactus pasture sage junegrass pussytoes Holboell's rockcress lance-leaved stonecrop <i>Xanthoparmelia</i> spp. (rock frog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Tortula</i> spp. <i>Cladonia</i> spp. <i>Diploschistes muscorum</i> (cow pie lichen)	saskatoon brittle prickly pear cactus pasture sage junegrass pussytoes Holboell's rockcress lance-leaved stonecrop <i>Xanthoparmelia</i> spp. (rock frog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Tortula</i> spp. <i>Cladonia</i> spp. <i>Diploschistes muscorum</i> (cow pie lichen)	saskatoon brittle prickly pear cactus pasture sage junegrass pussytoes Holboell's rockcress lance-leaved stonecrop <i>Xanthoparmelia</i> spp. (rock frog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Tortula</i> spp. <i>Cladonia</i> spp. <i>Diploschistes muscorum</i> (cow pie lichen)	saskatoon brittle prickly pear cactus pasture sage junegrass pussytoes Holboell's rockcress lance-leaved stonecrop <i>Xanthoparmelia</i> spp. (rock frog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Tortula</i> spp. <i>Cladonia</i> spp. <i>Diploschistes muscorum</i> (cow pie lichen)
Plots	C614	C728					

Comments: Grazed areas tend to have more exposed mineral soil (>15%). These sparsely vegetated sites usually climax in the low shrub or herb structural stage, but scattered Douglas-fir trees in the fractured bedrock may result in forested structural stages if over 10% tree cover.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SC / 80

Big Sagebrush - Prickly Pear Cactus

Map Symbol	SC2, SCg2, SCh2, SCK2, SCq2, SCr2, SCw2, SCz2	SC3a, SCg3a, SCh3a, SCK3a, SCq3a, SCr3a, SCw3a, SCz3a	SC3b, SCg3b, SCh3b, SCK3b, SCq3b, SCr3b, SCw3b, SCz3b	SC4, SCg4, SCh4, SCK4, SCq4, SCr4, SCw4, SCz4	SC5, SCg5, SCh5, SCK5, SCq5, SCr5, SCw5, SCz5	SC6, SCg6, SCh6, SCK6, SCq6, SCr6, SCw6, SCz6	SC7, SCg7, SCh7, SCK7, SCq7, SCr7, SCw7, SCz7
Plant Species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral	Tall Shrub Climax / Late Seral	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass pasture sage	big sagebrush bluebunch wheatgrass	Very open canopy of: big sagebrush Douglas-fir bluebunch wheatgrass	big sagebrush Douglas-fir bluebunch wheatgrass	Douglas-fir big sagebrush bluebunch wheatgrass	Douglas-fir big sagebrush bluebunch wheatgrass	Douglas-fir big sagebrush bluebunch wheatgrass
Associates	Douglas-fir junegrass	Douglas-fir saskatoon pasture sage junegrass	saskatoon pasture sage junegrass Holboell's rockcress	saskatoon pasture sage junegrass	saskatoon pasture sage junegrass	saskatoon pasture sage junegrass	saskatoon pasture sage junegrass
Bear Forage Species	bluebunch wheatgrass junegrass	saskatoon bluebunch wheatgrass junegrass	saskatoon bluebunch wheatgrass junegrass	saskatoon bluebunch wheatgrass junegrass	saskatoon junegrass	saskatoon bluebunch wheatgrass junegrass	saskatoon bluebunch wheatgrass junegrass

Comments: Forested structural stages are generally too open to provide much security/thermal cover. Understory vegetation may be utilized for winter and spring feeding by deer. California Bighorn Sheep may use this unit for feeding year round if near suitable escape terrain.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	SD / 81 Saskatoon - Douglas-fir SDk / 81 Saskatoon - Douglas-fir; cool aspect SDw / 81 Saskatoon - Douglas-fir; warm aspect
Typically occurs on moderate to steep talus slopes on all aspects; warm and cool slopes are treated separately (SDk, SDw). The ravelling gravel banks of undifferentiated surficial material along the Fraser River may have vegetation resembling this site series, but are mapped as SS/82 or JR/00 depending on aspect, because the slopes are not talus.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	27-70	50
Aspect (degrees)	360-90	180-270
Moisture Regime	Nutrient Regime	
xeric to subxeric	poor	
Drainage	rapid	
Surficial Material		
coarse colluvium ie. talus		
Soil Development		
regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	>70	
Soil Texture	Humus Form	
sandy, sandy loam	absent	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SDk / 81a

Saskatoon - Douglas-fir - cool aspect

Map Symbol	SDk2	SDk3a	SDk4	SDk5	SDk6	SDk7
Plant species	Herb	Low Shrub Climax / Late Seral	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass	big sagebrush saskatoon prairie rose	Very open canopy of: Douglas-fir big sagebrush saskatoon prairie rose	Very open canopy of: Douglas-fir big sagebrush saskatoon prairie rose	Very open canopy of: Douglas-fir saskatoon prairie rose bluebunch wheatgrass	Very open canopy of: Douglas-fir saskatoon prairie rose bluebunch wheatgrass
Associates	big sagebrush northern sweet- vetch tarragon junegrass spike-like goldenrod cliff ferns	bluebunch wheatgrass cliff ferns Douglas maple junegrass spike-like goldenrod cliff ferns	bluebunch wheatgrass cliff ferns Douglas maple junegrass spike-like goldenrod cliff ferns	Douglas maple junegrass spike-like goldenrod cliff ferns	Douglas maple junegrass spike-like goldenrod cliff ferns	Douglas maple junegrass spike-like goldenrod cliff ferns
Plots						

Comments: Undisturbed sites have scattered Douglas-fir with 10-25% shrub cover of big sagebrush, saskatoon and prairie rose and a sparse herb layer. This ecosystem usually climaxes in the low shrub (3a) structural stage, but it may appear in forested structural stages due to the presence of Douglas-fir trees if they have greater than 10% cover. Cool aspects have a greater cover of shrubs (15-35% cover) and Douglas-fir trees, than do warm aspects. Sites with smaller coarse fragments tend to have a higher cover of herbs.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SDk / 81a

Saskatoon - Douglas-fir - cool aspect

Map Symbol	SDk2	SDk3a	SDk4	SDk5	SDk6	SDk7
Plant Species	Herb	Low Shrub Climax / Late Seral	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass	big sagebrush saskatoon prairie rose	Douglas-fir big sagebrush saskatoon prairie rose	Douglas-fir saskatoon prairie rose bluebunch wheatgrass	Douglas-fir saskatoon prairie rose bluebunch wheatgrass	Douglas-fir saskatoon prairie rose bluebunch wheatgrass
Associates	big sagebrush northern sweet-vetch tarragon junegrass	bluebunch wheatgrass Douglas maple junegrass	bluebunch wheatgrass Douglas maple junegrass	Douglas maple junegrass	Douglas maple junegrass	Douglas maple junegrass
Bear Forage Species	northern sweet-vetch tarragon junegrass	saskatoon prairie rose junegrass	saskatoon prairie rose bluebunch wheatgrass junegrass	saskatoon prairie rose junegrass	saskatoon prairie rose junegrass	saskatoon prairie rose junegrass

Comments: Douglas-fir provides limited cover. Both herb and shrub layers provide palatable forage for deer and California Bighorn Sheep (provided escape terrain is nearby).

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SDw / 81b

Saskatoon - Douglas-fir - warm aspect

Map Symbol	SDw2	SDw3a	SDw4	SDw5	SDw6	SDw7
Plant species	Herb	Low Shrub Climax / Late Seral	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants		big sagebrush saskatoon prairie rose	Very open canopy of: Douglas-fir big sagebrush saskatoon prairie rose	Very open canopy of: Douglas-fir big sagebrush saskatoon prairie rose	Very open canopy of: Douglas-fir big sagebrush saskatoon prairie rose	Very open canopy of: Douglas-fir big sagebrush saskatoon prairie rose
Associates	bluebunch wheatgrass cliff ferns	Douglas- fir rabbit-brush chokecherry bluebunch wheatgrass cliff ferns	chokecherry rabbit-brush bluebunch wheatgrass cliff ferns	chokecherry rabbit-brush bluebunch wheatgrass cliff ferns	chokecherry rabbit-brush bluebunch wheatgrass cliff ferns	chokecherry rabbit-brush bluebunch wheatgrass cliff ferns
Plots						

Comments: Undisturbed sites have scattered Douglas-fir with 10-25% shrub cover of big sagebrush, saskatoon and prairie rose and a sparse herb layer. This ecosystem usually climaxes in the low shrub (3a) structural stage, but it may appear in forest structural stages due to the presence of Douglas-fir trees if they have greater than 10% cover. Sites with smaller coarse fragments tend to have a higher cover of herbs. Warm aspects have a lower cover of shrubs and trees than cool aspects.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SDw / 81b

Saskatoon - Douglas-fir - gentle or warm aspect

Map Symbol	SDw2	SDw3a	SDw4	SDw5	SDw6	SDw7
Plant Species	Herb	Low Shrub Climax / Late Seral	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants		big sagebrush saskatoon prairie rose	Douglas-fir big sagebrush saskatoon prairie rose	Douglas-fir big sagebrush saskatoon prairie rose	Douglas-fir big sagebrush saskatoon prairie rose	Douglas-fir big sagebrush saskatoon prairie rose
Associates	bluebunch wheatgrass	Douglas-fir chokecherry bluebunch wheatgrass	chokecherry bluebunch wheatgrass	chokecherry bluebunch wheatgrass	chokecherry bluebunch wheatgrass	chokecherry bluebunch wheatgrass
Bear Forage Species	bluebunch wheatgrass	saskatoon prairie rose chokecherry bluebunch wheatgrass	saskatoon prairie rose chokecherry bluebunch wheatgrass	saskatoon prairie rose chokecherry bluebunch wheatgrass	saskatoon prairie rose chokecherry	saskatoon prairie rose chokecherry

Comments: Douglas-fir provides limited cover. Both herb and shrub layers provide palatable forage for mule deer and California Bighorn Sheep (provided escape terrain is nearby).

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	SJ / 86 Snowberry - Juniper SJc / 86 Snowberry - Juniper; coarse-textured soil SJg / 86 Snowberry - Juniper; gullied
Typically occurs in narrow, low relief draws with brief, intermittent water flow. Soils are typically deep and medium-textured (SJ). These may have coarse-textured soil (SJc) and be more deeply gullied (SJg).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0-25 (35)	15
Aspect (degrees)	variable	(gullies)
Moisture Regime	Nutrient Regime	
mesic to subhygric	medium	
Drainage	moderately well to well	
Surficial Material		
fluvial veneer over glaciofluvial or morainal sediments		
Soil Development		
regosol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
medium	rhizomull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 SJ / 86 Snowberry - Juniper

Map Symbol	SJ3a, SJc3a, SJg3a
Plant species	Low Shrub Climax / Late Seral
Dominants	snowberry saskatoon Rocky Mountain Juniper common juniper big sagebrush bluebunch wheatgrass <i>Cladonia spp.</i>
Associates	ponderosa pine needle-and-thread grass junegrass pussytoes pasture sage northern fairy candelabra lemonweed <i>Tortula spp.</i> <i>Hypnum spp.</i> <i>Peltigera spp.</i>
Plots	

Comments: These sites have a well developed low shrub layer and include many of the same grass and forb species found in surrounding grasslands. The moss / lichen layer is generally poorly developed as these sites may be scoured by a flush of spring runoff after a high snowfall year.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 SJ / 86 Snowberry - Juniper

Map Symbol	SJ3a, SJc3a, SJg3a
Plant Species	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	snowberry saskatoon Rocky Mountain juniper big sagebrush bluebunch wheatgrass
Ungulate Forage Species - Associates	needle-and-thread grass junegrass
Bear Forage Species	saskatoon bluebunch wheatgrass junegrass

Comments: This unit provides moderate winter and spring feeding habitat for deer and and year round for California Bighorn Sheep.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	<p>SS / 82 Big Sagebrush - Sand Dropseed</p> <p>SSg / 82 Big Sagebrush - Sand Dropseed; gullied SSgj / 82 Big Sagebrush - Sand Dropseed; gullied on gentle slope SSgy / 82 Big Sagebrush - Sand Dropseed; gullied on moister than average site SSj / 82 Big Sagebrush - Sand Dropseed; gentle slope SSm / 82 Big Sagebrush - Sand Dropseed; medium-textured soil SSn / 82 Big Sagebrush - Sand Dropseed; fan SSs / 82 Big Sagebrush - Sand Dropseed; shallow soil SSy / 82 Big Sagebrush - Sand Dropseed; moister than average SSz / 82 Big Sagebrush - Sand Dropseed; very steep warm aspect</p>
<p>Typically occurs on moderate to steep warm (south and southwest) aspects with coarse-textured, gravelly, continuously eroding soils (SS). These are frequently gullied (SSg) and may occur on gentler slopes (SSgj, SSj), fans or cones (SSn), and medium-textured soils (SSm). Very steep warm aspects (SSz) and shallow soils are not uncommon. Moister than average sites (SSgy, SSy) are the result of seepage and overflow from irrigation.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	27-70	50
Aspect (degrees)	160-235	
Moisture Regime	Nutrient Regime	
subxeric to submesic	poor to very poor	
Drainage	rapid to well	
Surficial Material		
gravelly sandy glaciofluvial or undifferentiated sediments		
Soil Development		
orthic regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	20-70	
Soil Texture	Humus Form	
fine sandy loam, sandy loam	absent	

PLOT C713 SS3a

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SS / 82

Big Sagebrush - Sand Dropseed

Map Symbol	SS2, SSg2, SSgj2, SSj2, SSm2, SSn2, SSs2, SSz2	SSgy2, SSy2	SS3a, SSg3a, SSgj3a, SSj3a, SSm3a, SSn3a, SSs3a, SSz3a
Plant species	Herb Climax / Late Seral	Herb Disclimax	Low Shrub Climax / Late Seral
Dominants	sand dropseed	creeping bentgrass crested wheatgrass quackgrass Kentucky bluegrass giant wildrye	big sagebrush rabbit-brush sand dropseed
Associates	bluebunch wheatgrass Indian ricegrass pasture sage needle-and-thread grass rabbit-brush big sagebrush brittle prickly pear cactus <i>Psora spp.</i> (scale lichens) <i>Collema spp.</i> (tarpaper lichens)	sand dropseed bluebunch wheatgrass Indian ricegrass pasture sage <i>Psora spp.</i> (scale lichens) <i>Collema spp.</i> (tarpaper lichens)	Indian ricegrass bluebunch wheatgrass pasture sage needle-and-thread grass Douglas-fir saskatoon ponderosa pine brittle prickly pear cactus <i>Psora spp.</i> (scale lichens) <i>Collema spp.</i> (tarpaper lichens)
Plots	C144		C713, C719

Comments: Exposed mineral soil dominates these sites with 30-90% cover. Vegetation can be quite variable (10-30% cover) depending on the amount of erosion. Scattered Douglas-fir and saskatoon are common in this type along the Fraser River canyon. Moister than average sites (SSy) result from seepage or overflow from irrigated fields and are dominated by introduced weedy species.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series
SS / 82

Name
Big Sagebrush - Sand Dropseed

Map Symbol	SS2, SSg2, SSgj2, SSj2, SSm2, SSn2, SSs2, SSz2	SSgy2, SSy2	SS3a, SSg3a, SSgj3a, SSj3a, SSm3a, SSn3a, SSs3a, SSz3a
Plant Species	Herb Climax / Late Seral	Herb Disclimax	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	sand dropseed	creeping bentgrass crested wheatgrass quackgrass Kentucky bluegrass giant wildrye	big sagebrush rabbit-brush sand dropseed
Ungulate Forage Species - Associates	bluebunch wheatgrass Indian ricegrass pasture sage needle-and-thread grass rabbit-brush big sagebrush	sand dropseed bluebunch wheatgrass Indian ricegrass pasture sage	Indian ricegrass bluebunch wheatgrass pasture sage needle-and-thread grass Douglas-fir saskatoon
Bear Forage Species	sand dropseed bluebunch wheatgrass Indian ricegrass	creeping bentgrass crested wheatgrass quackgrass Kentucky bluegrass giant wildrye sand dropseed bluebunch wheatgrass Indian ricegrass	sand dropseed Indian ricegrass bluebunch wheatgrass saskatoon

Comments: Due to the steep nature of this unit, it is probably acceptable California Bighorn Sheep habitat as well as being moderate mule deer habitat.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
<p>BGxh3</p>	<p>SW / 01 Bluebunch Wheatgrass - Big Sagebrush SWc / 01 Bluebunch Wheatgrass - Big Sagebrush; coarse-textured soil SWck / 01 Bluebunch Wheatgrass - Big Sagebrush; coarse-textured soil on cool aspect SWcn / 01 Bluebunch Wheatgrass - Big Sagebrush; coarse-textured soil on fan SWct / 01 Bluebunch Wheatgrass - Big Sagebrush; coarse-textured soil on terrace SWg / 01 Bluebunch Wheatgrass - Big Sagebrush; gullied SWgn / 01 Bluebunch Wheatgrass - Big Sagebrush; gullied fan SWgt / 01 Bluebunch Wheatgrass - Big Sagebrush; gullied terrace SWh / 01 Bluebunch Wheatgrass - Big Sagebrush; hummocky SWht / 01 Bluebunch Wheatgrass - Big Sagebrush; hummocky terrace SWk / 01 Bluebunch Wheatgrass - Big Sagebrush; cool aspect SWn / 01 Bluebunch Wheatgrass - Big Sagebrush; fan SWq / 01 Bluebunch Wheatgrass - Big Sagebrush; very steep cool aspect SWr / 01 Bluebunch Wheatgrass - Big Sagebrush; ridged SWrs / 01 Bluebunch Wheatgrass - Big Sagebrush; ridged shallow soil SWs / 01 Bluebunch Wheatgrass - Big Sagebrush; shallow soil SWt / 01 Bluebunch Wheatgrass - Big Sagebrush; terrace SWw / 01 Bluebunch Wheatgrass - Big Sagebrush; warm aspect SWy / 01 Bluebunch Wheatgrass - Big Sagebrush; moister than average SW:ns / 01 Bluebunch Wheatgrass - Big Sagebrush: Needlegrass - Sand Dropseed Seral Association SWr :ns / 01 Bluebunch Wheatgrass - Big Sagebrush; ridged: Needlegrass - Sand Dropseed Seral Association SWt :ns / 01 Bluebunch Wheatgrass - Big Sagebrush; terrace: Needlegrass - Sand Dropseed Seral Association</p>
<p>This is the zonal ecosystem which typically occurs on gentle slopes with deep, medium-textured soils (SW). This ecosystem commonly occurs on glaciofluvial fans and terraces (SWgn, SWgt, SWht, SWn, SWt) which may be coarse-textured (SWc, SWck, SWcn, SWct). This type may appear on cool east and northwest aspects on stable soils (SWk, SWq). Morainal terrain may be hummocky (SWh), gullied (SWg), or ridged (SWr). Shallow soils or warm aspects are rare with this type (SWs, SWw). Moister than average sites may occur where there is seepage or overflow below irrigated fields (SWy).</p>	

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series **Name**
 SW / 01 Bluebunch Wheatgrass - Big Sagebrush

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0-20 (35)	5 (35)
Aspect (degrees)	all (90,315)	
Moisture Regime	Nutrient Regime	
mesic to submesic	medium (poor)	
Drainage	moderately well to well	
Surficial Material		
eolian veneers on glaciofluvial terraces or fans, or over morainal blanket		
Soil Development		
brown chernozem, dark brown chernozem		
	Range	Mean
Humus Depth (cm)	0-0.3	0.1
Coarse Fragments (%)	0-45	
Soil Texture	Humus Form	
fine sandy loam	rhizomull	

PLOT 9800444 SWt3a

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SW / 01

Bluebunch Wheatgrass - Big Sagebrush

Map Symbol	SW2, SWc2, SWck2, SWcn2, SWct2, SWg2, SWgn2, SWgt2, SWh2, SWht2, SWk2, SWn2, SWq2, SWr2, SWrs2, SWs2, SWt2, SWw2	SWy2	SW3a, SWc3a, SWck3a, SWcn3a, SWct3a, SWg3a, SWgn3a, SWgt3a, SWh3a, SWht3a, SWk3a, SWn3a, SWq3a, SWr3a, SWrs3a, SWs3a, SWt3a, SWw3a	SW2:ns, SWr2:ns, SWt2:ns
Plant species	Herb Climax / Late Seral	Herb Disclimax	Low Shrub Climax / Late Seral	Herb Seral Association
Dominants	bluebunch wheatgrass needle-and-thread grass <i>Cladonia cariosa</i> (ribbed cladonia) <i>Cladonia pyxidata</i> (brown pixie cup) <i>Cladonia symphicarpa</i> <i>Diploschistes muscorum</i> (cow pie lichen) <i>Collema spp.</i> (tarpaper lichens)	creeping bentgrass crested wheatgrass quackgrass Kentucky bluegrass	big sagebrush bluebunch wheatgrass <i>Cladonia cariosa</i> (ribbed cladonia) <i>Cladonia pyxidata</i> (brown pixie cup) <i>Cladonia symphicarpa</i>	needle-and-thread grass sand dropseed junegrass <i>Collema spp.</i> (tarpaper lichens) <i>Cladonia cariosa</i> (ribbed cladonia)
Associates	junegrass pussetoes pasture sage brittle prickly pear cactus northern fairy candelabra sand dropseed sidewalk moss <i>Peltigera spp.</i> (pelt moss) <i>Psora spp.</i> (scale lichens)	tumble mustard summer-cypress bluebunch wheatgrass pasture sage.	needle-and-thread grass junegrass pussetoes pasture sage brittle prickly pear cactus northern fairy candelabra lemonweed trailing daisy sidewalk moss <i>Peltigera spp.</i> (pelt moss) <i>Diploschistes muscorum</i> <i>Psora spp.</i> (scale lichens)	pasture sage brittle prickly pear cactus low pussetoes meadow salsify big sagebrush Sandberg's bluegrass <i>Cladonia pyxidata</i> (brown pixie cup) <i>Diploschistes muscorum</i> (cow pie lichen) sidewalk moss
Plots	C88, C575, C602, C606, C608, C615, C689, C725		9800444, C1, C31, C251, C686, C700, C709, C718, C721, C722	9800410, 9800414

Comments: Late seral and climax vegetation is dominated by bluebunch wheatgrass with 25-85% cover and big sagebrush with 5-35% cover. There is a well developed cryptogam crust with 30-80% cover. Exposed mineral soil is usually less than 30%. Moister than average sites (SWy2) below irrigated fields are dominated by weedy introduced grasses and forbs. Heavily disturbed sites (SW:ns) have little vegetative cover and high exposed soil; lightly disturbed sites generally have lower covers for big sagebrush (10-25%), more bluebunch wheatgrass, and significantly less lichen cover. Big sagebrush may be absent (herb climax structural stage) due to regular burning (Tisdale 1982, Iverson person. com.). Heavy grazing may increase sagebrush cover. (Nicholson et al 1982)

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

SW / 01

Bluebunch Wheatgrass - Big Sagebrush

Map Symbol	SW2, SWc2, SWck2, SWcn2, SWct2, SWg2, SWgn2, SWgt2, SWh2, SWht2, SWk2, SWn2, SWq2, SWr2, SWrs2, SWs2, SWt2, SWw2	SWy2	SW3a, SWc3a, SWck3a, SWcn3a, SWct3a, SWg3a, SWgn3a, SWgt3a, SWh3a, SWht3a, SWk3a, SWn3a, SWq3a, SWr3a, SWrs3a, SWs3a, SWt3a, SWw3a	SW2:ns, SWr2:ns, SWt2:ns
Plant Species	Herb Climax / Late Seral	Herb Disclimax	Low Shrub Climax / Late Seral	Herb Seral Association
Ungulate Forage Species - Dominants	bluebunch wheatgrass needle-and-thread grass	creeping bentgrass crested wheatgrass quackgrass Kentucky bluegrass	big sagebrush bluebunch wheatgrass	needle-and-thread grass sand dropseed junegrass
Ungulate Forage Species - Associates	junegrass pasture sage sand dropseed	tumble mustard summer-cypress bluebunch wheatgrass pasture sage.	needle-and-thread grass junegrass pasture sage	pasture sage meadow salsify big sagebrush Sandberg's bluegrass
Bear Forage Species	bluebunch wheatgrass junegrass sand dropseed	creeping bentgrass crested wheatgrass quackgrass Kentucky bluegrass tumble mustard bluebunch wheatgrass	bluebunch wheatgrass junegrass	sand dropseed junegrass meadow salsify

Comments: Herb climax is probably more favorable ungulate feeding habitat than the low shrub, although both do provide suitable forage species.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	<p>WA / 87 Bluebunch Wheatgrass - Round-leaved Alumroot</p> <p>WAc / 87 Bluebunch Wheatgrass - Round-leaved Alumroot; coarse-textured soil</p> <p>WAg / 87 Bluebunch Wheatgrass - Round-leaved Alumroot; gullied</p> <p>WAn / 87 Bluebunch Wheatgrass - Round-leaved Alumroot; fan or cone</p>
<p>Typically occurs on steep cool north and northeast aspects with deep, medium-textured soils (WA). On glaciofluvial scarps these may be coarse-textured (WAc). This ecosystem may also be gullied (WAg), or on a fan or cone (WAn).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	30-75	50
Aspect (degrees)	350-70	
Moisture Regime	Nutrient Regime	
mesic to submesic	medium	
Drainage	well	
Surficial Material		
eolian veneer or blanket over morainal, glaciofluvial, or glaciolacustrine		
Soil Development		
dark brown, brown chernozem		
	Range	Mean
Humus Depth (cm)	0-0.2	0.1
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
loamy (sandy)	rhizomull	

PLOT C695 WA 2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WA / 87

Bluebunch Wheatgrass - Round-leaved Alumroot

Map Symbol	WA2, WAc2, WAg2, WAn2	WA3a, WAc3a, WAg3a, WAn3a
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass pasture sage <i>Physconia muscigena</i> (ground frost) <i>Cladonia spp.</i>	big sagebrush bluebunch wheatgrass sidewalk moss
Associates	pussytoes yarrow junegrass northern fairy candelabra round-leaved alumroot sagebrush mariposa lily western blue flax cut-leaved anemone spike-like goldenrod rabbit-brush big sagebrush <i>Tortula spp.</i> <i>Diploschistes muscorum</i> (cow pie lichen) <i>Grimmia spp.</i> <i>Peltigera spp.</i>	pasture sage junegrass western blue flax spike-like goldenrod yarrow northern fairy candelabra pussytoes western blue flax <i>Cladonia pyxidata</i> <i>Cladonia cariosa</i>
Plots	C45, C693, C695	C89, C146, C248, C616

Comments: Climax sites have a good cover (35-70%) of vigorous bluebunch wheatgrass and diverse forbs, a dense litter layer, and a well-developed cryptogam layer (30-90%) cover. There is little exposed mineral soil (2-14%). While these sites have less big sagebrush than steep east and northwest slopes (SWk3a), big sagebrush may occasionally be dominant enough to form a low shrub climax (3a).

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series **Name**
 WA / 87 Bluebunch Wheatgrass - Round-leaved Alumroot

Map Symbol	WA2, WAc2, WAg2, WAn2	WA3a, WAc3a, WAg3a, WAn3a
Plant Species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass pasture sage	big sagebrush bluebunch wheatgrass
Ungulate Forage Species - Associates	junegrass rabbit-brush big sagebrush	pasture sage junegrass
Bear Forage Species	bluebunch wheatgrass junegrass	bluebunch wheatgrass junegrass

Comments: Herb climax is probably more favorable ungulate feeding habitat than the low shrub, although both do provide suitable forage species. Mule deer may use this unit for winter and spring feeding if near a forest.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	<p>WD / 83b Bluebunch Wheatgrass - Pasture Sage, eroded phase WDg / 83b Bluebunch Wheatgrass - Pasture Sage, eroded phase; gullied WDgm / 83b Bluebunch Wheatgrass - Pasture Sage, eroded phase; gullied on medium-textured soil WDM / 83b Bluebunch Wheatgrass - Pasture Sage, eroded phase; medium-textured soil</p>
<p>Typically occurs on steep eroded slopes with west aspects. Soils are coarse-textured due to high coarse fragment content (WD). These sites are frequently gullied (WDg) and may have medium-textured soil on undifferentiated slopes (WDgm, WDM).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	30-60	45
Aspect (degrees)	270	
Moisture Regime	Nutrient Regime	
subxeric to submesic	poor	
Drainage	rapid to well	
Surficial Material		
undifferentiated, glaciofluvial sands and gravels		
Soil Development		
coarse-textured regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	0 - >70	
Soil Texture	Humus Form	
coarse, sandy or gravelly	absent	

PLOT C94 WD 3a

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series **Name**
 WD / 83b Bluebunch Wheatgrass - Pasture Sage , eroded phase

Map Symbol	WD2, WDg2, WDgm2, WDM2	WD3a, WDg3a, WDgm3a, WDM3a
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass	big sagebrush bluebunch wheatgrass
Associates	sand dropseed pasture sage needle-and-thread grass brittle prickly pear cactus Indian ricegrass big sagebrush <i>Collema spp.</i> (tarpaper lichens) <i>Psora spp.</i> (scale lichens) <i>Caloplaca spp.</i> <i>Catapyrenium spp.</i> (stipplescale lichens)	sand dropseed pasture sage needle-and-thread grass brittle prickly pear cactus Indian ricegrass <i>Collema spp.</i> (tarpaper lichens) <i>Psora spp.</i> (scale lichens) <i>Caloplaca spp.</i> <i>Catapyrenium spp.</i> (stipplescale lichens)
Plots		C94

Comments: This unit is characterized by low vegetation cover including seral lichens, with much of the area being unvegetated mineral soil. (MoF Draft Report 1996)
 Species are similar to WS /34a, but due to active erosion there are much lower herb and lichen covers. Sometimes big sagebrush may become dominant, forming a low shrub climax. Scattered ponderosa pine and/or Douglas-fir with low covers may occur in this type. Heavy grazing can potentially convert the stable phase WS / 83a to this eroded phase WD / 83b.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WD / 83b

Bluebunch Wheatgrass - Pasture Sage , eroded phase

Map Symbol	WD2, WDg2, WDgm2, WDM2	WD3a, WDg3a, WDgm3a, WDM3a
Plant Species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass	big sagebrush bluebunch wheatgrass
Ungulate Forage Species - Associates	sand dropseed needle-and-thread grass Indian ricegrass big sagebrush	sand dropseed pasture sage needle-and-thread grass Indian ricegrass
Bear Forage Species	bluebunch wheatgrass sand dropseed Indian ricegrass	bluebunch wheatgrass sand dropseed pasture sage needle-and-thread grass Indian ricegrass

Comments: Reasonable ungulate feeding habitat especially in winter and early spring.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	WS / 83a Bluebunch Wheatgrass - Pasture Sage, stable phase WSg / 83a Bluebunch Wheatgrass - Pasture Sage, stable phase; gullied WSm / 83a Bluebunch Wheatgrass - Pasture Sage, stable phase; medium-textured soil WSr / 83a Bluebunch Wheatgrass - Pasture Sage, stable phase; ridged
Typically occurs on steep west facing slopes with relatively stable coarse-textured soils. These are sometimes gullied (WSg). Medium-textured soils are found more frequently in this phase than with WD /83b the eroded phase. This type may also occur on ridged terrain (WSr)	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	25-60	40
Aspect (degrees)	270	
Moisture Regime	Nutrient Regime	
subxeric to submesic	poor	
Drainage	well to rapid	
Surficial Material		
sandy or gravelly undifferentiated or glaciofluvial sediments		
Soil Development		
coarse-textured		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)		
Soil Texture	Humus Form	
coarse, sandy or gravelly	absent	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WS / 83a

Bluebunch Wheatgrass - Pasture Sage, stable phase

Map Symbol	WS2, WSg2, WSm2, Wsr2	WS3a, WSg3a, WSm3a
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass pasture sage <i>Cladonia pyxidata</i> (brown pixie cup) <i>Tortula spp.</i> <i>Cladonia cariosa</i> (ribbed pixie) <i>Diploschistes muscorum</i> (cow pie lichen)	big sagebrush bluebunch wheatgrass pasture sage <i>Cladonia pyxidata</i> (brown pixie cup) <i>Tortula spp.</i> <i>Cladonia cariosa</i> (ribbed pixie) <i>Diploschistes muscorum</i> (cow pie lichen)
Associates	big sagebrush sand dropseed needle-and-thread grass slender hawksbeard brittle prickly pear cactus	sand dropseed needle-and-thread grass slender hawksbeard brittle prickly pear cactus
Plots		

Comments: Climax vegetation consists of well-spaced bluebunch wheatgrass and scattered big sagebrush, herbs and other grasses. Lichens and mosses cover 10-35% of the ground while exposed mineral soil has 25-75% cover. Heavily disturbed sites have only minor amounts of bluebunch wheatgrass, prickly pear cactus and sand dropseed, with large areas of exposed soil. Lightly disturbed sites have increased cover of pasture sage and lichens. Heavy grazing can potentially convert this site to the eroded phase WD / 83b.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WS / 83a

Bluebunch Wheatgrass - Pasture Sage, stable phase

Map Symbol	WS2	WS3a, Wsg3a, Wsm3a
Plant Species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass	big sagebrush bluebunch wheatgrass pasture sage
Ungulate Forage Species - Associates	big sagebrush sand dropseed needle-and-thread grass	sand dropseed needle-and-thread grass
Bear Forage Species	bluebunch wheatgrass sand dropseed	bluebunch wheatgrass sand dropseed

Comments: Herb climax is probably more favorable ungulate feeding habitat than the low shrub, although both do provide suitable forage species. Mule deer may use this unit for winter and spring feeding if near a forest.

1.3 BGxh3 Shrubland Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	BR / 53 Water Birch - Prairie Rose BRk / 53 Water Birch - Prairie Rose; cool aspect
Typic BR units occur on gentle slopes in shrubby riparian gullies, sometimes with an aspen or cottonwood overstory. Soils are deep and medium-textured. They can exhibit considerable variability in vegetation and slope/aspect, sometimes occurring on cool aspects (BRk).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0 - 40	10
Aspect (degrees)	level, all	
Moisture Regime	Nutrient Regime	
subhygric to hygric	rich	
Drainage	imperfect to moderately well	
Surficial Material		
active fluvial sediments		
Soil Development		
regosol, gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
loamy, silty, sandy	mull	

PLOT C 93 BR 3b

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

BR / 53

Water Birch - Prairie rose

Map Symbol	BR3a, BRk3a	BR3b, BRk3b
Plant species	Low Shrub Climax	Tall Shrub Climax
Dominants	silverberry prairie rose snowberry poison ivy white sweet-clover	water birch prairie rose snowberry silverberry
Associates	water birch willow red-osier dogwood quackgrass horsetail	trembling aspen black cottonwood willow red-osier dogwood small twisted stalk poison ivy horsetail
Plots		C252, C93

Comments:
 These shrubby riparian gullies are dominated by a variety of shrub combinations, with scattered herbs and sometimes a trembling aspen or black cottonwood overstory. Livestock use of these sites can affect stream bank stability. Cattle may introduce weedy species to these sites.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 BR / 53 Water Birch - Prairie rose

Map Symbol	BR3a, BRk3a	BR3b, BRk3b
Plant Species	Low Shrub Climax	Tall Shrub Climax
Ungulate Forage Species - Dominants	silverberry prairie rose snowberry white sweet-clover	water birch prairie rose snowberry silverberry
Associates	water birch willow red-osier dogwood horsetail	trembling aspen black cottonwood willow red-osier dogwood small twisted stalk poison ivy horsetail
Bear Forage Species	prairie rose white sweet-clover horsetail	prairie rose small twisted stalk horsetail

Comments: These riparian gullies provide good cover and important forage species for ungulates primarily in the winter..

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	RS / 51 Prairie Rose - Snowberry
Typic sites are moist, broad, shallow basins. Soils are deep and medium-textured (RS).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0 -5	2
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	imperfect to moderately well	
Surficial Material		
eolian veneer over glaciofluvial		
Soil Development		
regosols, may be gleyed		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
sandy or loamy, silt loam	mull	

PLOT C249 RS3a

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RS / 51

Prairie rose - Snowberry

Map Symbol	RS3a	RS3b
Plant species	Low Shrub Climax	Tall Shrub Climax
Dominants	prairie rose snowberry	willows prairie rose snowberry
Associates	silverberry willows Rocky Mountain juniper star-flowered false Solomon's seal Kentucky bluegrass	silverberry Rocky Mountain juniper star-flowered false Solomon's seal Kentucky bluegrass
Plots	C249	C60

Comments: Late seral and climax vegetation is dominated by a nearly continuous cover of shrubs. There is considerable variability in shrub composition from site to site. These sites are quite uncommon.

Map Symbol	RS3a	RS3b
Plant Species	Low Shrub Climax	Tall Shrub Climax
Ungulate Forage Species - Dominants	prairie rose snowberry	willows prairie rose snowberry
Ungulate Forage Species - Associates	silverberry willows star-flowered false Solomon's seal Kentucky bluegrass	silverberry star-flowered false Solomon's seal Kentucky bluegrass
Bear Forage Species	prairie rose star-flowered false Solomon's seal Kentucky bluegrass	prairie rose star-flowered false Solomon's seal Kentucky bluegrass

Comments: This unit provides moderate forage species for both ungulates and bears.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	WW / 50 Wolf-willow - Giant Wildrye WWk / 50 Wolf-willow - Giant Wildrye; cool aspect WWw / 50 Wolf-willow - Giant Wildrye; warm aspect
Typically occurs on steep eroded banks with seepage, frequently appearing as distinct horizontal bands on escarpments of river valleys on all aspects (WWk, WWw). Soils are deep and medium-textured. This ecosystem may result from long term consistent irrigation or water diversion in fields above the scarps.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	25-70+	50
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric	medium to rich	
Drainage	well to rapid	
Surficial Material		
undifferentiated or glaciofluvial sediments		
Soil Development		
medium-textured regosols with abundant seepage and surface erosion. A calcium carbonate crust is often present.		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	variable	
Soil Texture	Humus Form	
silt loam	none	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series **Name**
 WW / 50 Wolf-willow - Giant Wildrye

Map Symbol	WW2, WWk2, WWw2	WW3a, WWk3a, WWw3a
Plant species	Herb	Low Shrub Climax
Dominants	giant wildrye poison ivy	silverberry (wolf-willow) giant wildrye
Associates	star-flowered false Solomon's seal silverberry (wolf-willow) prairie rose	water birch prairie rose poison ivy star-flowered false Solomon's seal
Plots		C2

Comments: Generally occurs as a shrubby community (30% cover of shrubs) with sparse forb cover and active soil erosion.

Map Symbol	WW2, WWk2, WWw2	WW3a, WWk3a, WWw3a
Plant Species	Herb	Low Shrub Climax
Ungulate Forage Species - Dominants	giant wildrye	silverberry (wolf-willow) giant wildrye
Ungulate Forage Species - Associates	star-flowered false Solomon's seal prairie rose	water birch prairie rose star-flowered false Solomon's seal
Bear Forage Species	giant wildrye star-flowered false Solomon's seal	prairie rose giant wildrye star-flowered false Solomon's seal

Comments: This unit provides low to moderate feeding opportunities due to limited concentrations of preferred forage. It would be most accessible to California Bighorn Sheep.

1.4 BGxh3 Wetland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	BU / 00 Great Bulrush Marsh
These deep marshes usually surround open water and are permanently inundated, typically with deep, fine-textured soils (BU).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hydric	very rich	
Drainage	very poor	
Surficial Material		
Lacustrine veneers		
Soil Development		
orthic gleysol, typic humisol Fine-textured mineral sediments with shells frequently present. Surfaces often carbonated.		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
silty clay loam		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 BU / 00 Great Bulrush Marsh

Map Symbol	BU2
Plant species	Herb Climax
Dominants	great bulrush
Associates	common spike-rush greater bladderwort water smartweed duckweed
Plots	

Comments: Wetlands are very rare in this subzone, due to the dry climate and generally steep topography. This ecosystem was observed in only one location in the Churn Creek study area, on an irrigated terrace east of the Empire Ranch buildings.

Map Symbol	BU2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	
Ungulate Forage Species - Associates	common spike-rush greater bladderwort water smartweed duckweed
Bear Forage Species	common spike-rush greater bladderwort water smartweed

Comments: Limited feeding opportunities for ungulates and bears.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxh3	CM / 00 Common Spike-rush Marsh
These marshes usually surround open water and are permanently inundated, typically occurring on deep fine-textured soils (CM).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hydric	very rich	
Drainage	very poor	
Surficial Material		
Lacustrine veneer or blanket		
Soil Development		
mineral soil may be somewhat alkaline		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
silty or clayey		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 CM / 00 Common Spike-rush Marsh

Map Symbol	CM2
Plant species	Herb Climax
Dominants	common spike-rush
Associates	Baltic rush greater bladderwort water smartweed duckweed
Plots	C38

Comments: Wetlands are very rare in this subzone, due to the dry climate and generally steep topography. This ecosystem was observed in only one location in the Churn Creek study area, on an irrigated terrace east of the Empire Ranch buildings.

Map Symbol	CM2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	common spike-rush
Ungulate Forage Species - Associates	Baltic rush greater bladderwort water smartweed
Bear Forage Species	common spike-rush Baltic rush greater bladderwort water smartweed

Comments: Ungulate forage values are low, but bears may feed on early spring growth.

2.0 BGxw2 - Bunchgrass Very Dry Warm Subzone Alkali Variant

2.1 BGxw2 Forested Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	AR / 00 Trembling Aspen – Rose - Sarsaparilla
Typically occurs on moisture receiving gentle slopes adjacent to intermittent streams. Soils are deep and medium-textured (AR).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0-30	5
Aspect (degrees)	variable	
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	iimperfect	
Surficial Material		
fluvial		
Soil Development		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
medium		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AR / 00

Trembling Aspen – Rose - Sarsaparilla

Map Symbol	AR2	AR3	AR4	AR5	AR6	AR7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	Kentucky bluegrass common dandelion sweet-clover	trembling aspen Douglas maple red-osier dogwood snowberry prickly rose sarsaparilla Kentucky bluegrass	Closed canopy of: trembling aspen Douglas maple red-osier dogwood snowberry prickly rose sarsaparilla Kentucky bluegrass	Closed canopy of: trembling aspen Douglas maple red-osier dogwood snowberry prickly rose sarsaparilla Kentucky bluegrass	Closed canopy of: trembling aspen Douglas maple red-osier dogwood snowberry prickly rose sarsaparilla	Closed canopy of: trembling aspen Douglas maple red-osier dogwood snowberry prickly rose sarsaparilla
Associates	serviceberry prickly rose snowberry poison-ivy	willows serviceberry showy aster American vetch violets sweet-clover poison-ivy	willows serviceberry showy aster American vetch violets	willows serviceberry showy aster American vetch violets	willows serviceberry showy aster American vetch violets Kentucky bluegrass	willows serviceberry showy aster American vetch violets Kentucky bluegrass
Plots						

Comments: There is a closed deciduous canopy and a dense, vigorous shrub layer. Shrub composition is often quite variable. These sites are often heavily impacted by livestock, and their successional sequences are not well understood. Structural stages 2 and 3 are created by clearing for grazing or burning.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AR / 00

Trembling Aspen – Rose - Sarsaparilla

Map Symbol	AR2	AR3	AR4	AR5	AR6	AR7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	Kentucky bluegrass common dandelion sweet-clover	trembling aspen Douglas maple red-osier dogwood snowberry prickly rose Kentucky bluegrass	trembling aspen Douglas maple red-osier dogwood snowberry prickly rose Kentucky bluegrass	trembling aspen Douglas maple red-osier dogwood snowberry prickly rose Kentucky bluegrass	trembling aspen Douglas maple red-osier dogwood snowberry prickly rose	trembling aspen Douglas maple red-osier dogwood snowberry prickly rose
Associates	serviceberry prickly rose snowberry	willows serviceberry American vetch sweet-clover	willows serviceberry American vetch	willows serviceberry American vetch	willows serviceberry American vetch Kentucky bluegrass	willows serviceberry American vetch Kentucky bluegrass
Bear Forage Species	Kentucky bluegrass common dandelion sweet-clover serviceberry prickly rose	red-osier dogwood prickly rose Kentucky bluegrass serviceberry American vetch sweet-clover	red-osier dogwood prickly rose Kentucky bluegrass serviceberry American vetch	red-osier dogwood prickly rose Kentucky bluegrass serviceberry American vetch	red-osier dogwood prickly rose serviceberry American vetch Kentucky bluegrass	red-osier dogwood prickly rose serviceberry American vetch Kentucky bluegrass

Comments: This ecosystem is important ungulate and bear habitat. It provides good thermal and security cover while its abundance of shrubby vegetation provides forage year round.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	AS / 06 Trembling Aspen – Snowberry
Typically these sites are situated in broad moist depressions within a mosaic of zonal grassland communities. They may be surrounded by the NB /88 grassland ecosystem unit. Soils are typically deep and medium-textured (AS).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0-10	3
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
mesic to subhygric	rich	
Drainage	imperfect	
Surficial Material		
lacustrine veneer , eolian veneer over morainal blanket		
Soil Development		
dystric brunisol, luvisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
silt loam (silty clay)	moder (mull)	

PLOT C79 AS5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AS / 06

Trembling Aspen - Snowberry

Map Symbol	AS2	AS3	AS4	AS5	AS6	AS7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	Kentucky bluegrass	snowberry prairie rose smooth brome	Closed canopy of: trembling aspen snowberry prairie rose	Closed canopy of: trembling aspen snowberry prairie rose	Closed canopy of: trembling aspen snowberry prairie rose	Closed canopy of: trembling aspen snowberry prairie rose
Associates	snowberry prairie rose saskatoon common dandelion graceful cinquefoil yarrow northern bedstraw	trembling aspen saskatoon Kentucky bluegrass common dandelion graceful cinquefoil yarrow northern bedstraw American vetch Rocky Mtn. juniper	saskatoon quackgrass smooth brome Kentucky bluegrass common dandelion graceful cinquefoil yarrow northern bedstraw American vetch Rocky Mtn. juniper	Kentucky bluegrass American vetch common dandelion yarrow northern bedstraw Rocky Mtn. juniper creamy peavine pinegrass	birch-leaved spirea black gooseberry American vetch showy aster common dandelion yarrow northern bedstraw pinegrass	birch-leaved spirea black gooseberry showy aster common dandelion yarrow northern bedstraw pinegrass
Plots				C79		

Comments: The deciduous crown closure is high (60-80%), and there is a dense vigorous low shrub layer. These sites are heavily utilized by livestock; we currently lack data on areas without grazing. These would have more spreading needlegrass in the early seral stages, instead of the Kentucky bluegrass and other introduced grasses and herbs. Heavily grazed sites may have reduced shrub cover and may lack aspen suckers. Mature stands are expected to be dominated by aspen. Late successional sequences are not well understood and mature or old forests are rare. Structural stages 2 and 3 are created by clearing for grazing or burning.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AS / 06

Trembling Aspen - Snowberry

Map Symbol	AS2	AS3	AS4	AS5	AS6	AS7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	Kentucky bluegrass	snowberry prairie rose smooth brome	trembling aspen snowberry prairie rose	trembling aspen snowberry prairie rose	trembling aspen snowberry prairie rose	trembling aspen snowberry prairie rose
Associates	snowberry prairie rose saskatoon common dandelion	trembling aspen saskatoon Kentucky bluegrass common dandelion American vetch	saskatoon quackgrass smooth brome Kentucky bluegrass common dandelion American vetch creamy peavine	Kentucky bluegrass American vetch common dandelion creamy peavine pinegrass	black gooseberry American vetch common dandelion pinegrass	black gooseberry common dandelion pinegrass
Bear Forage Species	Kentucky bluegrass prairie rose saskatoon common dandelion	prairie rose smooth brome saskatoon Kentucky bluegrass common dandelion American vetch	prairie rose saskatoon quackgrass smooth brome Kentucky bluegrass common dandelion American vetch creamy peavine	prairie rose Kentucky bluegrass American vetch common dandelion creamy peavine	prairie rose black gooseberry American vetch common dandelion	prairie rose black gooseberry common dandelion

Comments: This ecosystem is valuable habitat for ungulates and bears. It provides good security and thermal cover to animals that may be feeding in the open grasslands. This unit also provides good foraging opportunities.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	CR / 07 Black Cottonwood – Wild Rose – Snowberry
Typically occurs on moderately active floodplains and islands along large streams such as Churn Creek. Soils are typically deep and coarse-textured (CR).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric	rich to very rich	
Drainage	imperfect to moderately well	
Surficial Material		
deep sand, silt and gravel lenses on moderately active low floodplains and islands		
Soil Development		
coarse-textured regosol		
	Range	Mean
Humus Depth (cm)	0-2	1
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
sandy, gravelly	moder	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

CR / 07

Black Cottonwood – Wild Rose – Snowberry

Map Symbol	CR2	CR3	CR4	CR5	CR6	CR7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	white-sweet clover slender wheatgrass	willows water birch trembling aspen Kentucky bluegrass	Open canopy of: black cottonwood trembling aspen Kentucky bluegrass red raspberry	Open canopy of: black cottonwood trembling aspen red raspberry scouring rush	Open canopy of: black cottonwood trembling aspen red-osier dogwood snowberry prairie rose scouring rush	Open canopy of: black cottonwood trembling aspen red-osier dogwood snowberry prairie rose scouring rush
Associates	alfalfa scouring rush	black cottonwood snowberry prairie rose red-osier dogwood slender wheatgrass American vetch scouring rush alfalfa white sweet-clover	water birch snowberry prairie rose red-osier dogwood willows slender wheatgrass scouring rush alfalfa white sweet-clover	snowberry prairie rose red-osier dogwood willows Kentucky bluegrass slender wheatgrass black gooseberry alfalfa white sweet-clover	willows red raspberry black gooseberry Kentucky bluegrass slender wheatgrass	black gooseberry red raspberry Kentucky bluegrass slender wheatgrass
Plots						

Comments: The vegetation can be quite variable depending on frequency and last date of flooding and may be maintained in early seral stages by repeated flooding. The deciduous crown closure is patchy with a dense vigorous shrub layer and no mosses.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

CR / 07

Black Cottonwood – Wild Rose – Snowberry

Map Symbol	CR2	CR3	CR4	CR5	CR6	CR7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	white-sweet clover slender wheatgrass	willows water birch trembling aspen Kentucky bluegrass	black cottonwood trembling aspen Kentucky bluegrass red raspberry	black cottonwood trembling aspen red raspberry scouring rush	black cottonwood trembling aspen red-osier dogwood snowberry prairie rose scouring rush	black cottonwood trembling aspen red-osier dogwood snowberry prairie rose scouring rush
Associates	alfalfa scouring rush	black cottonwood snowberry prairie rose red-osier dogwood slender wheatgrass American vetch scouring rush alfalfa white sweet-clover	water birch snowberry prairie rose red-osier dogwood willows slender wheatgrass scouring rush alfalfa white sweet-clover	snowberry prairie rose red-osier dogwood willows Kentucky bluegrass slender wheatgrass black gooseberry alfalfa white sweet-clover	willows red raspberry black gooseberry Kentucky bluegrass slender wheatgrass	black gooseberry red raspberry Kentucky bluegrass slender wheatgrass
Bear Forage Species	white-sweet clover slender wheatgrass alfalfa scouring rush	Kentucky bluegrass prairie rose red-osier dogwood slender wheatgrass American vetch scouring rush alfalfa white sweet-clover	Kentucky bluegrass red raspberry prairie rose red-osier dogwood slender wheatgrass scouring rush alfalfa white sweet-clover	red raspberry scouring rush prairie rose red-osier dogwood Kentucky bluegrass slender wheatgrass black gooseberry alfalfa white sweet-clover	red-osier dogwood red raspberry prairie rose black gooseberry Kentucky bluegrass slender wheatgrass	red-osier dogwood red raspberry prairie rose scouring rush black gooseberry Kentucky bluegrass slender wheatgrass

Comments: This ecosystem is important ungulate and bear habitat. It provides good thermal and security cover while its abundance of shrubby vegetation provides forage year round.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	CW / 00 Black Cottonwood - Sandbar Willow - Dogbane
Typically occurs on very active low floodplains and islands along rivers and streams such as Churn Creek. Soils are generally coarse-textured (sandy or gravelly) due to frequent flooding by a rapid current (CW). Sites may be immersed during spring flooding.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-340	330
Slope (%)	0-20	10
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric	medium to rich	
Drainage	imperfect	
Surficial Material		
sandy or gravelly sediments on very active floodplains		
Soil Development		
regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	0-35	
Soil Texture	Humus Form	
sandy to loamy sand	none	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

CW / 00

Black Cottonwood - Sandbar Willow - Dogbane

Map Symbol	CW2	CW3	CW4	CW5	CW6	CW7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	white sweet-clover alfalfa slender wheatgrass scouring rush tarragon	sandbar willow silverberry black cottonwood alfalfa scouring rush white sweet-clover tarragon	Open canopy of: black cottonwood sandbar willow alfalfa	Open canopy of: black cottonwood sandbar willow alfalfa	Open canopy of: black cottonwood sandbar willow	Open canopy of: black cottonwood sandbar willow red-osier dogwood
Associates	dogbane quackgrass	slender wheatgrass salsify quackgrass willows dogbane	silverberry red-osier dogwood slender wheatgrass scouring rush willows tarragon dogbane bluejoint white sweet-clover	silverberry red-osier dogwood slender wheatgrass scouring rush willows tarragon dogbane bluejoint white sweet-clover	silverberry willows red-osier dogwood white sweet-clover alfalfa slender wheatgrass scouring rush bluejoint	silverberry willows white sweet-clover alfalfa slender wheatgrass scouring rush bluejoint
Plots						

Comments: The vegetation can be quite variable depending on frequency and last date of flooding. The deciduous crown closure is patchy with vigorous shrub and herb layers and no mosses. The site series may be maintained in early seral stages by repeated flooding; mature and old forest are very rare.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

CW / 00

Black Cottonwood - Sandbar Willow - Dogbane

Map Symbol	CW2	CW3	CW4	CW5	CW6	CW7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	white sweet-clover alfalfa slender wheatgrass bluejoint scouring rush tarragon	sandbar willow silverberry black cottonwood alfalfa bluejoint scouring rush white sweet-clover tarragon	black cottonwood sandbar willow alfalfa	black cottonwood sandbar willow alfalfa	black cottonwood sandbar willow	black cottonwood sandbar willow red-osier dogwood
Associates	quackgrass	willows slender wheatgrass salsify quackgrass	silverberry red-osier dogwood willows slender wheatgrass scouring rush tarragon bluejoint	silverberry willows red-osier dogwood slender wheatgrass scouring rush tarragon bluejoint	silverberry willows red-osier dogwood white sweet-clover alfalfa slender wheatgrass scouring rush bluejoint	silverberry willows white sweet-clover alfalfa slender wheatgrass scouring rush bluejoint
Bear Forage Species	white sweet-clover alfalfa slender wheatgrass bluejoint scouring rush tarragon quackgrass	white sweet-clover tarragon alfalfa bluejoint scouring rush slender wheatgrass salsify quackgrass	white-sweet clover alfalfa bluejoint red-osier dogwood slender wheatgrass scouring rush tarragon	white-sweet clover alfalfa bluejoint red-osier dogwood slender wheatgrass scouring rush tarragon	bluejoint red-osier dogwood white sweet-clover alfalfa slender wheatgrass scouring rush	red-osier dogwood white sweet-clover alfalfa slender wheatgrass scouring rush

Comments: This ecosystem is important ungulate and bear habitat. It provides good thermal and security cover while its abundance of shrubby vegetation provides forage year round.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	<p>DG / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen</p> <p>DGc / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; coarse-textured soil DGg / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; gullied DGgj / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen;gullied on gentle slope DGgs / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen;gullied on shallow soil DGh / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; hummocky DGj / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen;gentle slope DGjt / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; gentle slope on terrace DGn / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; fan DGqs / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; very steep cool shallow soil DGs / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; shallow soil DGt / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; terrace DGw /02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; warm aspect</p> <p>DG:wn / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen: Bluebunch Wheatgrass – Needle-and-thread grass Seral Association</p> <p>DGj :wn / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; gentle slope : Bluebunch Wheatgrass – Needle-and-thread grass Seral Association DGw :wn / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen; warm aspect : Bluebunch Wheatgrass – Needle-and-thread grass Seral Association</p>
<p>Typically occurs on moderate to steeply sloping morainal blankets with cool aspect and deep medium-textured soils (DG). On strongly facing north aspects it occurs on moderate to gentle slopes (DGj, DGjt) and hummocky terrain (DGh). It can occur on coarse-textured glaciofluvial material (DGc) and fans (DGn) and terraces (DGt). It frequently occurs in gullies (DGg), and sometimes on shallow soils (DGgs, DGqs, DGs). Near the IDfxm transition and in cool canyons, this ecosystem may occur on warm aspects (DGw).</p> <p>The seral association occurs where trees from the adjacent DG /02 site series are encroaching on an established grassland ecosystem (WN/ 01). This starts gradually with Douglas-fir invasion on the Bluebunch wheatgrass – Needle-and-thread grass (WN) site series (DG:wn). While tree invasion onto the grasslands is not as common in the BGxw2 as in the IDfxm, it is happening in some locations. As the stand matures past structural stage 3, vegetation generally begins to resemble the adjacent forest (DG) rather than the grassland due to the dominance to trees changing the microclimate and soil.</p>	

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series **Name**
 DG / 02 Douglas-fir – Spike-like Goldenrod – Pelt Lichen

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	25-50	35
Aspect (degrees)	270-360, 0-90	
Moisture Regime	Nutrient Regime	
mesic	medium (poor)	
Drainage	well	
Surficial Material		
morainal blankets which may have eolian veneers, colluvium		
Soil Development		
orthic eutric brunisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
loamy	mull (mor)	

PLOT C706 DG5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DG / 02

Douglas-fir – Spike-like Goldenrod – Pelt Lichen

Map Symbol	DG2, DGc2, DGg2, DGgj2, DGgs2, DGh2, DGj2, DGjt2, DGn2, DGqs2, DGs2, DGt2, DGw2	DG3, DGc3, DGg3, DGgj3, DGgs3, DGh3, DGj3, DGjt3, DGn3, DGqs3, DGs3, DGt3, DGw3	DG3:wn, DGj3:wn, DGw3:wn	DG4, DGc4, DGg4, DGgj4, DGgs4, DGh4, DGj4, DGjt, DGn4, DGqs4, DGs4, DGt4, DGw4	DG5, DGc5, DGg5, DGgj5, DGgs5, DGh5, DGj5, DGjt5, DGn5, DGqs5, DGs5, DGt5, DGw5	DG6, DGc6, DGg6, DGgj6, DGgs6, DGh6, DGj6, DGjt6, DGn6, DGqs6, DGs6, DGt6, DGw6	DG7, DGc7, DGg7, DGgj7, DGgs7, DGh7, DGj7, DGjt7, DGn7, DGqs7, DGs7, DGt7, DGw7
Plant species	Herb	Shrub	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass junegrass	Rocky Mtn. juniper bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass needle-and-thread grass <i>Cladonia spp.</i>	Open canopy of: Douglas-fir bluebunch wheatgrass <i>Cladonia spp.</i>	Open canopy of: Douglas-fir bluebunch wheatgrass <i>Cladonia spp.</i>	Open canopy of: Douglas-fir bluebunch wheatgrass <i>Cladonia spp.</i>	Open canopy of: Douglas-fir bluebunch wheatgrass <i>Cladonia spp.</i>
Associates	pasture sage pussytoes nodding onion salsify <i>Peltigera spp.</i>	snowberry pasture sage pussytoes junegrass nodding onion Douglas-fir salsify <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Rocky Mtn. juniper junegrass pasture sage salsify	Rocky Mtn. juniper snowberry pussytoes spike-like goldenrod creeping juniper showy daisy junegrass nodding onion <i>Peltigera spp.</i>	Rocky Mtn. juniper pasture sage spike-like goldenrod pussytoes creeping juniper showy daisy junegrass nodding onion <i>Peltigera spp.</i>	Rocky Mtn. juniper pasture sage spike-like goldenrod pussytoes showy daisy junegrass nodding onion <i>Peltigera spp.</i>	Rocky Mtn. juniper pasture sage spike-like goldenrod pussytoes showy daisy junegrass nodding onion <i>Peltigera spp.</i>
Plots					C58, C706		

Comments: Sites are typified by open Douglas-fir stands, but can be quite variable, ranging from small gullies to extensive open forest. Climax sites have open to moderately closed (7-40%) Douglas-fir tree cover with scattered Rock Mountain juniper and bluebunch wheatgrass and herb understory (10-30%) cover. Lichen and moss cover is lower than on grassland or DJ/03 ecosystems. Understory composition is similar to cool aspect grassland sites (WO /86). Structural stages 2 and 3 are created by clearing for pasture, logging and/or burning and will revert to a forest if left undisturbed. Tree establishment on many of these sites may depend on surficial materials that are loose enough not to restrict the penetration of tree roots, as well as allowing precipitation to penetrate deeper into the soil where deeply rooted trees (as opposed to shallower rooted grasses) may survive summer drought (Green & van Ryswyk 1982).

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DG / 02

Douglas-fir – Spike-like Goldenrod – Pelt Lichen

Map Symbol	DG2, DGc2, DGg2, DGgj2, DGgs2, DGh2, DGj2, DGjt2, DGn2, DGqs2, DGs2, DGt2, DGw2	DG3, DGc3, DGg3, DGgj3, DGgs3, DGh3, DGj3, DGjt3, DGn3, DGqs3, DGs3, DGt3, DGw3	DG3:wn, DGj3:wn, DGw3:wn	DG4, DGc4, DGg4, DGgj4, DGgs4, DGh4, DGj4, DGjt, DGn4, DGqs4, DGs4, DGt4, DGw4	DG5, DGc5, DGg5, DGgj5, DGgs5, DGh5, DGj5, DGjt5, DGn5, DGqs5, DGs5, DGt5, DGw5	DG6, DGc6, DGg6, DGgj6, DGgs6, DGh6, DGj6, DGjt6, DGn6, DGqs6, DGs6, DGt6, DGw6	DG7, DGc7, DGg7, DGgj7, DGgs7, DGh7, DGj7, DGjt7, DGn7, DGqs7, DGs7, DGt7, DGw7
Plant Species	Herb	Shrub	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass junegrass	Rocky Mtn. juniper bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass needle-and-thread grass	Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass
Associates	pasture sage nodding onion salsify	snowberry pasture sage Douglas-fir junegrass nodding onion salsify	junegrass salsify	snowberry pasture sage showy daisy junegrass nodding onion	Rocky Mtn. juniper pasture sage showy daisy junegrass nodding onion	Rocky Mtn. juniper pasture sage showy daisy junegrass nodding onion	Rocky Mtn. juniper pasture sage showy daisy junegrass nodding onion
Bear Forage Species	bluebunch wheatgrass nodding onion salsify	bluebunch wheatgrass junegrass nodding onion salsify	bluebunch wheatgrass needle-and-thread grass junegrass salsify	bluebunch wheatgrass junegrass nodding onion	bluebunch wheatgrass junegrass nodding onion	bluebunch wheatgrass junegrass nodding onion	bluebunch wheatgrass junegrass nodding onion

Comments: This unit may be used for security and thermal cover where the canopy is dense enough. Ungulates may also take advantage of feeding on the grass dominated understory.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	<p>DJ / 03 Douglas-fir – Rocky Mountain Juniper – Bluebunch Wheatgrass</p> <p>DJc / 03 Douglas-fir – Rocky Mountain Juniper – Bluebunch Wheatgrass; coarse-textured soil</p> <p>DJcg / 03 Douglas-fir – Rocky Mountain Juniper – Bluebunch Wheatgrass; coarse-textured soil on gullied terrain</p> <p>DJg / 03 Douglas-fir – Rocky Mountain Juniper – Bluebunch Wheatgrass; gullied</p> <p>DJgs / 03 Douglas-fir – Rocky Mountain Juniper – Bluebunch Wheatgrass; gullied terrain with shallow soil</p> <p>DJj / 03 Douglas-fir – Rocky Mountain Juniper – Bluebunch Wheatgrass; gentle slope</p> <p>DJv / 03 Douglas-fir – Rocky Mountain Juniper – Bluebunch Wheatgrass; very shallow soil</p>
<p>Typically occurs on steep cool northwest, north and northeast aspects with deep medium-textured soils (DJ). These frequently occur in gullies (DJg, DJgs) with coarse-textured soils (DJc, DJcg). Rarely, soils may be very shallow (DJv). Near the IDFx transition and in cool canyons, this type may appear on gentle slopes (DJj).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	35-75	60
Aspect (degrees)	350-20	
Moisture Regime	Nutrient Regime	
mesic (submesic to subhygric)	medium	
Drainage	well	
Surficial Material		
eolian veneer over moraine or glaciofluvial, colluvial		
Soil Development		
orthic eutric brunisol, dystric brunisol		
	Range	Mean
Humus Depth (cm)	3-5	4
Coarse Fragments (%)	0-35	
Soil Texture	Humus Form	
loamy (loamy sand)	mor (mull)	

PLOT 9800418 DJ 5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 03

Douglas-fir – Rocky Mountain Juniper – Bluebunch Wheatgrass

Map Symbol	DJ2, DJc2, DJcg2, DJg2, DJgs2, DJj2, DJv2	DJ3, DJc3, DJcg3, DJg3, DJgs3, DJj3, DJv3	DJ4, DJc4, DJcg4, DJg4, DJgs4, DJj4, DJv4	DJ5, DJc5, DJcg5, DJg5, DJgs5, DJj5, DJv5	DJ6, DJc6, DJcg6, DJg6, DJgs6, DJj6, DJv6	DJ7, DJc7, DJcg7, DJg7, DJgs7, DJj7, DJv7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass step moss red-stemmed feathermoss	bluebunch wheatgrass step moss red-stemmed feathermoss pelt lichens	Closed canopy of: Douglas-fir bluebunch wheatgrass step moss red-stemmed feathermoss	Closed canopy of: Douglas-fir bluebunch wheatgrass step moss red-stemmed feathermoss pelt lichens	Closed canopy of: Douglas-fir bluebunch wheatgrass step moss red-stemmed feathermoss	Closed canopy of: Douglas-fir bluebunch wheatgrass step moss red-stemmed feathermoss
Associates	snowberry junegrass nodding onion pelt lichens	Douglas-fir Rocky Mtn. juniper snowberry junegrass nodding onion	Rocky Mtn. juniper snowberry junegrass nodding onion pelt lichens	Rocky Mtn. juniper snowberry Wheeler's bluegrass northern bedstraw spike-like goldenrod junegrass nodding onion	Rocky Mtn. juniper snowberry northern bedstraw spike-like goldenrod dog pelt lichen	Rocky Mtn. juniper snowberry northern bedstraw spike-like goldenrod dog pelt lichen
Plots			C131	9800418, C78	C580	

Comments: These sites are characterized by a moderate to high (20-80%) Douglas-fir cover and a well-developed moss layer. The abundance of bluebunch wheatgrass varies inversely with tree canopy closure. Steeper slopes tend to have a continuous moss layer and sparse herbs. (MoF Draft Report 1996). Structural stages 2 and 3 are created by clearing, logging and/or burning.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 03

Douglas-fir – Rocky Mountain Juniper – Bluebunch Wheatgrass

Map Symbol	DJ2, DJc2, DJcg2, DJg2, DJgs2, DJj2, DJv2	DJ3, DJc3, DJcg3, DJg3, DJgs3, DJj3, DJv3	DJ4, DJc4, DJcg4, DJg4, DJgs4, DJj4, DJv4	DJ5, DJc5, DJcg5, DJg5, DJgs5, DJj5, DJv5	DJ6, DJc6, DJcg6, DJg6, DJgs6, DJj6, DJv6	DJ7, DJc7, DJcg7, DJg7, DJgs7, DJj7, DJv7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass	bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass
Associates	snowberry junegrass nodding onion	Douglas-fir Rocky Mtn. juniper snowberry junegrass nodding onion	Rocky Mtn. juniper snowberry junegrass nodding onion	Rocky Mtn. juniper snowberry Wheeler's bluegrass junegrass nodding onion	Rocky Mtn. juniper snowberry	Rocky Mtn. juniper snowberry
Bear Forage Species	bluebunch wheatgrass	bluebunch wheatgrass junegrass nodding onion	bluebunch wheatgrass junegrass nodding onion	bluebunch wheatgrass Wheeler's bluegrass junegrass nodding onion	bluebunch wheatgrass	bluebunch wheatgrass

Comments: This unit can provide security and thermal cover as well as some forage opportunities.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	DM / 05 Douglas-fir – Douglas Maple DMg / 05 Douglas-fir – Douglas Maple; gullied
Typically occurs on mid to lower gentle slopes which receive moisture along permanent or intermittent streams.. Soils are typically deep and medium-textured (DM). Gullies exhibit considerable variation in site conditions and vegetation types, with deeply incised gulches, and warm and cool aspect microsite slopes (DMg).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0-65	40
Aspect (degrees)	variable	(gullies)
Moisture Regime	Nutrient Regime	
subhygric	richD	
Drainage	imperfect	
Surficial Material		
eolian veneer over moraine or colluvium, fluvial		
Soil Development		
eutric brunisol, regosol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy	moder , none	

PLOT C705 DM6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 05

Douglas-fir – Douglas Maple

Map Symbol	DM2, DMg2	DM3, DMg3	DM4, DMg4	DM5, DMg5	DM6, DMg6	DM7, DMg7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	American vetch bluebunch wheatgrass	trembling aspen Douglas maple saskatoon chokecherry snowberry	Closed canopy of: trembling aspen Douglas maple prairie rose snowberry	Closed canopy of: Douglas-fir trembling aspen Douglas maple prairie rose	Closed canopy of: Douglas-fir Douglas maple prairie rose	Closed canopy of: Douglas-fir prairie rose Douglas maple
Associates	star-flowered false Solomon's-seal slender wheatgrass common dandelion showy aster	red-osier dogwood soopolallie star-flowered false Solomon's-seal slender wheatgrass prairie rose spike-like goldenrod bluebunch wheatgrass showy aster	Douglas-fir saskatoon chokecherry red-osier dogwood soopolallie star-flowered false Solomon's-seal showy aster bluebunch wheatgrass spike-like goldenrod American vetch Canada violet	saskatoon chokecherry red-osier dogwood snowberry soopolallie star-flowered false Solomon's-seal showy aster bluebunch wheatgrass spike-like goldenrod American vetch Canada violet	trembling aspen saskatoon chokecherry red-osier dogwood snowberry soopolallie star-flowered false Solomon's-seal showy aster bluebunch wheatgrass spike-like goldenrod American vetch Canada violet dog pelt lichen mosses	saskatoon chokecherry snowberry red-osier dogwood star-flowered false Solomon's-seal showy aster American vetch Canada violet dog pelt lichen mosses
Plots					C680, C705	

Comments: These moist draws and deep cool gullies are characterized by a dense shrub layer and a variable tree overstory of aspen and/or Douglas-fir. Vegetation cover is often patchy and discontinuous.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 05

Douglas-fir – Douglas Maple

Map Symbol	DM2, DMg2	DM3, DMg3	DM4, DMg4	DM5, DMg5	DM6, DMg6	DM7, DMg7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	American vetch bluebunch wheatgrass	trembling aspen Douglas maple saskatoon chokecherry snowberry bluebunch wheatgrass	trembling aspen Douglas maple prairie rose	Douglas-fir trembling aspen Douglas maple prairie rose	Douglas-fir Douglas maple prairie rose	Douglas-fir prairie rose Douglas maple
Associates	star-flowered false Solomon's-seal slender wheatgrass common dandelion	red-osier dogwood soopalalie star-flowered false Solomon's-seal slender wheatgrass prairie rose	Douglas-fir saskatoon chokecherry red-osier dogwood soopalalie snowberry star-flowered false Solomon's-seal showy aster bluebunch wheatgrass American vetch Canada violet	saskatoon chokecherry red-osier dogwood snowberry soopolallie star-flowered false Solomon's-seal showy aster bluebunch wheatgrass American vetch Canada violet	trembling aspen saskatoon chokecherry red-osier dogwood snowberry soopolallie star-flowered false Solomon's-seal showy aster bluebunch wheatgrass American vetch Canada violet	saskatoon chokecherry snowberry red-osier dogwood star-flowered false Solomon's-seal showy aster American vetch Canada violet
Bear Forage Species	American vetch bluebunch wheatgrass star-flowered false Solomon's-seal slender wheatgrass common dandelion	saskatoon chokecherry red-osier dogwood soopalalie star-flowered false Solomon's-seal slender wheatgrass prairie rose bluebunch wheatgrass	prairie rose saskatoon chokecherry red-osier dogwood soopalalie star-flowered false Solomon's-seal bluebunch wheatgrass American vetch Canada violet	prairie rose saskatoon chokecherry red-osier dogwood soopolallie star-flowered false Solomon's-seal bluebunch wheatgrass American vetch Canada violet	prairie rose saskatoon chokecherry red-osier dogwood soopolallie star-flowered false Solomon's-seal bluebunch wheatgrass American vetch Canada violet	prairie rose saskatoon chokecherry red-osier dogwood star-flowered false Solomon's-seal American vetch Canada violet

Comments: This ecosystem provides security, thermal and feeding habitat. The variety of shrubby species provides forage for ungulates and bear.

2.2 BGxw2 Grassland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	NB / 88a Spreading Needlegrass – Northern Bedstraw NB:kb / 88b Spreading Needlegrass – Northern Bedstraw: Kentucky Bluegrass Seral Association
Typically occurs on gentle, lower slopes in depressions and small basins. This unit often occurs adjacent to aspen stands or small wetlands in complex with the WN/01 ecosystem unit.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0-5	2
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric	medium	
Drainage	moderately well to imperfect	
Surficial Material		
eolian veneer over lacustrine		
Soil Development		
dark brown (black) chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0-35	
Soil Texture	Humus Form	
loamy	rhizomull	

PLOT C86 NB :kb2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

NB / 88

Spreading Needlegrass – Northern Bedstraw

Map Symbol	NB2	NB2:kb
Plant species	Herb Climax / Late Seral	Herb Seral Association
Dominants	spreading needlegrass	Kentucky bluegrass green needlegrass northern bedstraw
Associates	junegrass green needlegrass meadow sedge northern bedstraw pussytoes kinnikinnick pulse milk-vetch small-flowered penstemon salsify	stiff needlegrass spreading needlegrass bluebunch wheatgrass pussytoes small-flowered penstemon rabbit-brush saskatoon prickly rose
Plots		C86

Comments: Climax and late seral vegetation consists of a nearly continuous cover of spreading needlegrass with a dense litter layer and diverse forbs. Low shrubs are usually present, as well as occasional Douglas-fir trees. Lichens are limited by the thick grass litter layer. Intensive grazing promotes the seral association NB:kb with Kentucky bluegrass dominating. Climax ecosystems of this type are very rare to non-existent in the Churn Creek Study Area. Green needlegrass is frequently present in the seral association in the study area.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

NB / 88

Spreading Needlegrass – Northern Bedstraw

Map Symbol	NB2	NB2:kb
Plant Species	Herb Climax / Late Seral	Herb Seral Association
Ungulate Forage Species - Dominants	spreading needlegrass	Kentucky bluegrass green needlegrass
Ungulate Forage Species - Associates	junegrass green needlegrass meadow sedge pulse milk-vetch salsify	stiff needlegrass spreading needlegrass bluebunch wheatgrass rabbit-brush saskatoon prickly rose
Bear Forage Species	spreading needlegrass green needlegrass saskatoon prickly rose junegrass meadow sedge kinnikinnick pulse milk-vetch salsify	Kentucky bluegrass green needlegrass spreading needlegrass stiff needlegrass bluebunch wheatgrass prickly rose saskatoon

Comments: The seral association provides more palatable ungulate and bear forage than does the typic due to the abundance of Kentucky Bluegrass.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	ND / 84 Needle-and-thread Grass – Sand Dropseed NDg / 84 Needle-and-thread Grass – Sand Dropseed; gullied
Typically occurs on significant slopes on warm aspects with deep medium-textured (loamy and fine sand) eolian deposits (ND). These slopes may be gullied (NDg).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	750
Slope (%)	15-40	25
Aspect (degrees)	180-225	
Moisture Regime	Nutrient Regime	
submesic	poor to medium	
Drainage	well	
Surficial Material		
deep loamy and fine sand eolian deposits		
Soil Development		
dark brown chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
loamy, fine sandy loam	rhizomull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

ND / 84

Needle-and-thread Grass – Sand Dropseed

Map Symbol	ND2
Plant species	Herb Climax / Late Seral
Dominants	needle-and-thread grass
Associates	pasture sage sand dropseed Indian ricegrass junegrass brittle prickly pear cactus <i>Collema spp.</i> <i>Cladonia cariosa</i>
Plots	

Comments: Climax ecosystems are characterized by well-spaced clumps of needle-and-thread grass (25-35% cover) with a few other herbs and a high proportion of exposed mineral soil (20-60%). The cryptogam layer is poorly developed. Overgrazing increases prickly pear cactus and sand dropseed.

Map Symbol	ND2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	needle-and-thread grass
Ungulate Forage Species - Associates	sand dropseed Indian ricegrass junegrass pasture sage
Bear Forage Species	needle-and-thread grass sand dropseed Indian ricegrass junegrass

Comments: This unit will see ungulate and bear feeding activity in the early spring on succulent new growth. Sheep may use this ecosystem unit year round.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	PL / 87 Short-awned Porcupinegrass – Lemonweed
Typically occurs on gentle lower slopes and in very shallow depressions and swales that receive soil moisture where snow accumulates on hillsides. Soils are typically deep and medium-textured (PL). Snowpacks often remain later in the year than on adjacent sites. This type is generally present as small inclusions within the WN ecosystem unit.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0-5	3
Aspect (degrees)	35	
Moisture Regime	Nutrient Regime	
mesic to subhygric	medium	
Drainage	moderately well	
Surficial Material		
eolian veneer on morainal blanket		
Soil Development		
black chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy, silt loam	rhizomull	

PLOT C702 PL2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

PL / 87

Short-awned Porcupinegrass - Lemonweed

Map Symbol	PL2
Plant species	Herb Climax / Late Seral
Dominants	short-awned porcupinegrass <i>Cladonia cariosa</i>
Associates	stiff needlegrass lemonweed bluebunch wheatgrass junegrass pasture sage salsify northern bedstraw yarrow pussytoes mariposa lily Sandberg's bluegrass <i>Physconia muscigena</i> <i>Diploschistes muscorum</i>
Plots	C702

Comments: Climax vegetation consists of a dense cover of short-awned porcupinegrass (50-85%) with other grasses and forbs, but low lichen cover (1-30%) due to the thick litter. Stiff needlegrass is common on seral sites in this area.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

PL / 87

Short-awned Porcupinegrass - Lemonweed

Map Symbol	PL2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	short-awned porcupinegrass
Ungulate Forage Species - Associates	stiff needlegrass bluebunch wheatgrass junegrass pasture sage salsify Sandberg's bluegrass
Bear Forage Species	short-awned porcupinegrass stiff needlegrass bluebunch wheatgrass junegrass salsify

Comments: This unit will see ungulate and bear feeding activity in the early spring on succulent new growth. Sheep may use this ecosystem unit year round.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	<p>PW / 83 Pasture Sage – Bluebunch Wheatgrass</p> <p>PWg / 83 Pasture Sage – Bluebunch Wheatgrass; gullied PWh / 83 Pasture Sage – Bluebunch Wheatgrass; hummocky PWj / 83 Pasture Sage – Bluebunch Wheatgrass; gentle slope PWk / 83 Pasture Sage – Bluebunch Wheatgrass; cool aspect PWks / 83 Pasture Sage – Bluebunch Wheatgrass; cool aspect on shallow soil PWh / 83 Pasture Sage – Bluebunch Wheatgrass; fan PWq / 83 Pasture Sage – Bluebunch Wheatgrass; very steep cool aspect PWr / 83 Pasture Sage – Bluebunch Wheatgrass; ridged PWs / 83 Pasture Sage – Bluebunch Wheatgrass; shallow soil PWy / 83 Pasture Sage – Bluebunch Wheatgrass; moister than average PWz / 83 Pasture Sage – Bluebunch Wheatgrass; very steep warm aspect</p>
<p>Typically occurs on steep warm aspect slopes with deep, medium-textured soil (PW). Due to the hot dry nature of these sites and erosion of unstable surface soils, vegetation cover is low, resulting in high percentages of exposed unvegetated soil. Thus the soil surface is often unstable and eroding and frequently gullied (PWg). It may occur on hummocky or ridged terrain (PWh, PWr), fans or cones (PWh). It is rare on gentle slopes (PWj), shallow soils (PWs) and on cooler aspects (PWk, PWks). Moister than average sites are overflow seepage from irrigation (PWy).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	27-70	50
Aspect (degrees)	180-270	
Moisture Regime	Nutrient Regime	
subxeric (xeric)	poor to very poor	
Drainage	rapid to well	
Surficial Material		
eolian veneer, colluvium		
Soil Development		
dark brown or brown chernozem, regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	25-75	
Soil Texture	Humus Form	
loamy, silt loam	mull or absent	

PWg2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

PW / 83

Pasture Sage – Bluebunch Wheatgrass

Map Symbol	PW2, PWg2, PWh2, PWj2, PWk2, PWks2, PWN2, PWq2, PWr2, PWS2, PWz2	PWy2	PW3a, PWg3a, PWh3a, PWj3a, PWk3a, PWks3a, PWN3a, PWq3a, PWr3a, PWS3a, PWS3a, PWz3a
Plant species	Herb Climax / Late Seral	Herb Disclimax	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass <i>Collema spp.</i>	alfalfa bluebunch wheatgrass	big sagebrush bluebunch wheatgrass <i>Collema spp.</i> <i>Psora spp.</i> <i>Cladonia cariosa</i>
Associates	big sagebrush pasture sage junegrass needle-and-thread grass brittle prickly pear cactus <i>Psora sp.</i> <i>Cladonia cariosa</i> <i>Cladonia pyxidata</i>	summer-cypress tumble mustard creeping bentgrass crested wheatgrass quackgrass Kentucky bluegrass	pasture sage junegrass needle-and-thread grass brittle prickly pear cactus <i>Caloplaca spp.</i> <i>Cladonia pyxidata</i>
Plots			

Comments: Climax vegetation consists of widely spaced clumps of bluebunch wheatgrass and big sagebrush, with low (0.2-2%) cover of herbs and other grasses and a variable (15-90%) cover of cryptogams, mostly early seral, crust, and scale lichens. Grazed and eroded sites have lower lichen cover. Due to surface erosion, species are sporadic and of low diversity and species lists are variable. Big sagebrush is generally more common at lower elevations near the BGxh3. Cool eroding aspects frequently have high covers of big sagebrush and may be quite weedy if near seed sources. Areas with irrigation seepage (PWy) are dominated by weedy introduced species.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

PW / 83

Pasture Sage – Bluebunch Wheatgrass

Map Symbol	PW2, PWg2, PWh2, PWj2, PWk2, PWks2, PWN2, PWq2, PWr2, PWS2, PWz2	PWy2	PW3a, PWg3a, PWh3a, PWj3a, PWk3a, PWks3a, PWN3a, PWq3a, PWr3a, PWS3a, PWS3a, PWz3a
Plant Species	Herb Climax / Late Seral	Herb Disclimax	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass	alfalfa bluebunch wheatgrass	big sagebrush bluebunch wheatgrass
Ungulate Forage Species - Associates	big sagebrush junegrass needle-and-thread grass	summer-cypress tumble mustard creeping bentgrass crested wheatgrass quackgrass Kentucky bluegrass	junegrass needle-and-thread grass
Bear Forage Species	bluebunch wheatgrass junegrass	alfalfa bluebunch wheatgrass tumble mustard creeping bentgrass crested wheatgrass quackgrass Kentucky bluegrass	bluebunch wheatgrass junegrass

Comments: All three seral stages can facilitate moderate ungulate feeding activity which is most common in the winter and spring seasons. Bighorn sheep can use this unit year round.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	RL / 82 Small-flowered Ricegrass - Lichen RLnw / 82 Small-flowered Ricegrass - Lichen; warm aspect cone
Typically occurs on steep coarse talus slopes (RL). These sites are relatively uncommon in the BGxw2 and may occur on cool (RLk) or warm (RLw) aspects.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	25-70	50
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subxeric to submesic (xeric)	very poor to poor	
Drainage	rapid	
Surficial Material		
coarse talus slopes		
Soil Development		
orthic regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	>70	
Soil Texture	Humus Form	
silt loam	absent	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RL / 82

Small-flowered Ricegrass - Lichen

Map Symbol	RL2, RLnw2	RL3a, RLnw3a	RL3b, RLnw3b
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral	Tall Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass pasture sage <i>Xanthoparmelia</i> spp. (rockfrog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Grimmia</i> spp.	big sagebrush Rocky Mountain juniper chokecherry <i>Xanthoparmelia</i> spp. (rockfrog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Grimmia</i> spp.	Rocky Mountain juniper chokecherry big sagebrush <i>Xanthoparmelia</i> spp. (rockfrog lichens) <i>Xanthoria elegans</i> (elegant orange lichen) <i>Grimmia</i> spp.
Associates	Rocky Mountain juniper chokecherry saskatoon big sagebrush small-flowered ricegrass sand dropseed cliff ferns	saskatoon bluebunch wheatgrass small-flowered ricegrass pasture sage sand dropseed cliff ferns	Douglas-fir saskatoon bluebunch wheatgrass small-flowered ricegrass pasture sage sand dropseed cliff ferns
Plots		C 178	

Comments: Vegetation cover is generally sparse. Moss and lichen cover is 10-30%, depending on the amount of mineral soil at the surface. There is little exposed mineral soil due to the coarse nature of the substrate.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

RL / 82

Small-flowered Ricegrass - Lichen

Map Symbol	RL2, RLnw2	RL3a, RLnw3a	RL3b, RLnw3b
Plant Species	Herb Climax	Low Shrub Climax / Late Seral	Tall Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass pasture sage	big sagebrush Rocky Mountain juniper chokecherry	Rocky Mountain juniper chokecherry big sagebrush
Ungulate Forage Species - Associates	big sagebrush chokecherry saskatoon sand dropseed	saskatoon bluebunch wheatgrass small-flowered ricegrass pasture sage sand dropseed	Douglas-fir saskatoon bluebunch wheatgrass small-flowered ricegrass pasture sage sand dropseed
Bear Forage Species	chokecherry saskatoon bluebunch wheatgrass sand dropseed	chokecherry saskatoon bluebunch wheatgrass small-flowered ricegrass sand dropseed	chokecherry saskatoon bluebunch wheatgrass small-flowered ricegrass sand dropseed

Comments: Low abundance of preferred forage for ungulates and bears.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	<p>SP / 81 Big sagebrush – Pasture sage</p> <p>SPg / 81 Big sagebrush – Pasture sage; gullied</p> <p>SPk / 81 Big sagebrush – Pasture sage; cool aspect</p> <p>SPq / 81 Big sagebrush – Pasture sage; very steep cool aspect</p> <p>SPv / 81 Big sagebrush – Pasture sage; very shallow soil</p> <p>SPz / 81 Big sagebrush – Pasture sage; very steep warm aspect</p>
Typically occurs on steep warm aspects with shallow soils over bedrock (SP). These may be gullied (SPg), have very shallow soils (SPv), or be very steep warm aspects (SPz). Cool aspects tend to have greater vegetative cover (SPk, SPq).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	25-70+	50
Aspect (degrees)	135-285	(also cool)
Moisture Regime	Nutrient Regime	
xeric to subxeric	very poor to poor	
Drainage	rapid to very rapid	
Surficial Material		
colluvial or morainal veneer over bedrock		
Soil Development		
regosol, brown chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
medium (sandy), sandy loam	absent, mull	

PLOT C181 SPk3a

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SP / 81

Big Sagebrush – Pasture Sage

Map Symbol	SP2, SPg2, SPk2, SPq2, SPv2, SPz2	SP3a, SPg3a, SPk3a, SPq3a, SPv3a, SPz3a	SP3b, SPg3b, SPk3b, SPq3b, SPv3b, SPz3b	SP4, SPg4, SPk4, SPq4, SPv4, SPz4	SP5, SPg5, SPk5, SPq5, SPv5, SPz5	SP6, SPg6, SPk6, SPq6, SPv6, SPz6	SP7, SPg7, SPk7, SPq7, SPv7, SPz7
Plant species	Herb	Low Shrub Climax / Late Seral	Tall Shrub Climax / Late Seral	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass pasture sage	big sagebrush bluebunch wheatgrass	Douglas-fir big sagebrush	Very open canopy of: Douglas-fir big sagebrush	Very open canopy of: Douglas-fir big sagebrush	Very open canopy of: Douglas-fir big sagebrush	Very open canopy of: Douglas-fir big sagebrush
Associates	big sagebrush prickly pear cactus junegrass pussetoes <i>Cladonia spp.</i> <i>Psora spp.</i> <i>Caloplaca spp.</i> <i>Tortula spp.</i>	Douglas-fir Rocky Mtn. juniper bluebunch saskatoon rabbit-brush prickly pear cactus pasture sage pussetoes <i>Cladonia spp.</i> <i>Psora spp.</i> <i>Caloplaca spp.</i> <i>Tortula spp.</i>	Rocky Mtn. juniper bluebunch wheatgrass saskatoon rabbit-brush prickly pear cactus pasture sage <i>Cladonia spp.</i> <i>Psora spp.</i> <i>Caloplaca spp.</i> <i>Tortula spp.</i>	Rocky Mtn. juniper bluebunch wheatgrass pasture sage prickly pear cactus saskatoon rabbit-brush <i>Cladonia spp.</i> <i>Psora spp.</i> <i>Caloplaca spp.</i> <i>Tortula spp.</i>	Rocky Mtn. juniper bluebunch wheatgrass pasture sage prickly pear cactus saskatoon rabbit-brush <i>Cladonia spp.</i> <i>Psora spp.</i> <i>Caloplaca spp.</i> <i>Tortula spp.</i>	Rocky Mtn. juniper bluebunch wheatgrass pasture sage prickly pear cactus saskatoon rabbit-brush <i>Cladonia spp.</i> <i>Psora spp.</i> <i>Caloplaca spp.</i> <i>Tortula spp.</i>	Rocky Mtn. juniper bluebunch wheatgrass pasture sage prickly pear cactus saskatoon rabbit-brush <i>Cladonia spp.</i> <i>Psora spp.</i> <i>Caloplaca spp.</i> <i>Tortula spp.</i>
Plots		C181					

Comments: This ecosystem usually climaxes in the low shrub structural stage 3a with big sagebrush being dominant, but scattered Douglas-fir of poor vigour may grow in cracks in the bedrock structural stage 3b. If crown closure is greater than 10% and trees are taller than 10m., this results in forested structural stage 4 to 7. There is a sparse herb layer and a moss and lichen layer up to 25%. Exposed mineral soil is 10-30% cover. Cool aspects may have higher covers of bluebunch wheatgrass and the presence of Douglas maple.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SP / 81

Big Sagebrush – Pasture Sage

Map Symbol	SP2, SPg2, SPk2, SPq2, SPv2, SPz2	SP3a, SPg3a, SPk3a, SPq3a, SPv3a, SPz3a	SP3b, SPg3b, SPk3b, SPq3b, SPv3b, SPz3b	SP4, SPg4, SPk4, SPq4, SPv4, SPz4	SP5, SPg5, SPk5, SPq5, SPv5, SPz5	SP6, SPg6, SPk6, SPq6, SPv6, SPz6	SP7, SPg7, SPk7, SPq7, SPv7, SPz7
Plant Species	Herb	Low Shrub Climax / Late Seral	Tall Shrub Climax / Late Seral	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass	big sagebrush bluebunch wheatgrass	Douglas-fir big sagebrush	Douglas-fir big sagebrush	Douglas-fir big sagebrush	Douglas-fir big sagebrush	Douglas-fir big sagebrush
Associates	big sagebrush junegrass pussytoes	Douglas-fir Rocky Mtn. juniper saskatoon rabbit-brush	Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass saskatoon rabbit-brush	Rocky Mtn. juniper bluebunch wheatgrass saskatoon rabbit-brush	Rocky Mtn. juniper bluebunch wheatgrass saskatoon rabbit-brush	Rocky Mtn. juniper bluebunch wheatgrass saskatoon rabbit-brush	Rocky Mtn. juniper bluebunch wheatgrass saskatoon rabbit-brush
Bear Forage Species	bluebunch wheatgrass junegrass	bluebunch wheatgrass saskatoon	bluebunch wheatgrass saskatoon	bluebunch wheatgrass saskatoon	bluebunch wheatgrass saskatoon	bluebunch wheatgrass saskatoon	bluebunch wheatgrass saskatoon

Comments: Grasses and rabbit-brush can be fed upon by deer during winter and spring. This site may be used by sheep year round.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	SS / 80 Saskatoon – Pasture Sage SSg / 80 Saskatoon – Pasture Sage; gullied SSk / 80 Saskatoon – Pasture Sage; cool aspect SSq / 80 Saskatoon – Pasture Sage; very steep cool aspect SSz / 80 Saskatoon – Pasture Sage; very steep warm aspect
Typically occurs on steep rock faces with very shallow soil (SS). These occur on all aspects and can be very steep (SSk, SSq, SSz). The rock face can be fissured or gullied (SSg).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	320-680	500
Slope (%)	100+	100
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
xeric to subxeric, very xeric	very poor to poor	
Drainage	very rapid	
Surficial Material		
very thin colluvial veneers on very steep rock faces		
Soil Development		
regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	>70	
Soil Texture	Humus Form	
medium	absent	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 SS / 80 Saskatoon – Pasture Sage

Map Symbol	SS2, SSg2, SSk2, SSq2, SSz2	SS3a, SSg3a, SSk3a, SSq3a, SSz3a
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Dominants		
Associates	bluebunch wheatgrass pasture sage cliff ferns round-leaved alumroot <i>Xanthoria spp.</i>	saskatoon chokecherry bluebunch wheatgrass pasture sage cliff ferns round-leaved alumroot <i>Xanthoria spp.</i>
Plots		

Comments: Vegetation cover is low and grows in pockets of shallow regosolic soil and in rock fissures. This ecosystem usually climaxes as the low shrub structural stage 3a with scattered saskatoon and chokecherry and occasional Douglas-fir. Cool aspects have higher tree cover and generally more vegetation, depending on the bedrock type.

Map Symbol	SS2, SSg2, SSk2, SSq2, SSz2	SS3a, SSg3a, SSk3a, SSq3a, SSz3a
Plant Species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants		
Ungulate Forage Species - Associates	bluebunch wheatgrass	saskatoon chokecherry bluebunch wheatgrass
Bear Forage Species	bluebunch wheatgrass	saskatoon chokecherry bluebunch wheatgrass

Comments: This ecosystem provides both escape terrain and some forage for California bighorn sheep. It is generally too steep for other ungulates and bears.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
<p>BGxw2</p>	<p>WN / 01 Bluebunch Wheatgrass – Needle-and-thread Grass WNC / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; coarse-textured soil WNCg / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; gully on coarse-textured soil WNg / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; gullied WNgh / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; gullied hummocky terrain WNgt / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; gullied terrace WNh / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; hummocky WNhr / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; hummocky ridged terrain WNht / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; hummocky terrace WNk / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; cool aspect WNks / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; shallow soil on cool aspect WNN / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; fan WNny / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; moister than average fan WNr / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; ridged WNT / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; terrace WNTw / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; warm aspect on terrace WNw / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; warm aspect WNy / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; moister than average WNht :pp / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; hummocky terrace: Prickly Pear Cactus – Pussytoes Seral Association WNgh:sd / 01 Bluebunch Wheatgrass – Needle-and-thread Grass; hummocky gullied terrain : Pasture Sage – Sand Dropseed Seral Association</p>
	<p>Typically occurs on deep medium-textured soils with mesic soil moisture regimes, primarily on level to gentle slopes (WN) and steep east and northwest aspects (WNk, WNks). This is the dominant ecosystem in the BGxw2 landscape, occurring on a wide variety of terrain types, including sandy glaciofluvial terraces and alluvial fans (WNC, WNCg, WNg, WNgt, WNht, WNN, WNT) where needle-and-thread grass may dominate, and hummocky (WNh, WNhr) or ridged terrain (WNr) which may be more variable. Near the IDFXm transition, this ecosystem also can occur on warm aspects where there is more bluebunch wheatgrass (WNTw, WNw). Moister than average sites can occur where there is seepage overflow from irrigated fields (WNny, WNy).</p>

MAP

Symbol /Site Series **Name**
 WN / 01 Bluebunch Wheatgrass – Needle-and-thread Grass

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0-20 (20-50)	15
Aspect (degrees)	all gentle	(90+215)
Moisture Regime	Nutrient Regime	
mesic to submesic	medium (poor)	
Drainage	moderately well to well	
Surficial Material		
eolian veneer over moraine or glaciofluvial or glaciolacustrine		
Soil Development		
dark brown chernozem, brown chernozem		
	Range	Mean
Humus Depth (cm)	0-0.5	0.1
Coarse Fragments (%)	10-45	
Soil Texture	Humus Form	
loamy, sandy loam	rhizomull	

PLOT 9800036 WN2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 WN / 01 Bluebunch Wheatgrass – Needle-and-thread Grass

Map Symbol	WN2, WNC2, WNCg2, WNg2, WNgH2, WNgT2, WNH2, WNHr2, WNHt2, WNN2, WNR2, WNT2, WNTw2, WNw2	WNk2, WNks2	WNny2, WNy2	WN3a, WNC3a, WNCg3a, WNg3a, WNgH3a, WNgT3a, WNH3a, WNHr3a, WNHt3a, WNk3a, WNks3a, WNN3a, WNT3a, WNTw3a, WNw3a
Plant species	Herb Climax / Late Seral	Herb Climax / Late Seral	Herb Disclimax	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass needle-and-thread grass pasture sage <i>Cladonia pyxidata</i> <i>Cladonia cariosa</i> <i>Collema spp.</i>	bluebunch wheatgrass junegrass pasture sage <i>Cladonia pyxidata</i> <i>Cladonia cariosa</i> <i>Cladonia symphocarpia</i>	Kentucky bluegrass alfalfa	big sagebrush bluebunch wheatgrass <i>Cladonia pyxidata</i> <i>Cladonia cariosa</i>
Associates	junegrass brittle prickly pear cactus salsify Holboell's rockcress western blue flax large-fruited desert-parsley pale comandra green needlegrass <i>Diploschistes muscorum</i>	needle-and-thread grass western blue flax large-fruited desert-parsley pale comandra pusseytoes	summer-cypress tumble mustard creeping bentgrass crested wheatgrass quackgrass	junegrass pasture sage brittle prickly pear cactus salsify Holboell's rockcress western blue flax large-fruited desert-parsley pale comandra umber pusseytoes nodding onion field sedge
Plots	9800036, 9800040, C173, C149, C582, C707	9800416		9800415

Comments: On climax/late seral sites, needle-and-thread grass, bluebunch wheatgrass, and junegrass have a combined cover of 35-75%. A deep litter layer is characteristic along with a variety of forbs. The lichen crust is well developed with 25-70% cover. Exposed mineral soil consists of less than 10% cover on climax sites. Where this ecosystem occurs on cool aspects (WNk), it is characterized by higher covers of bluebunch wheatgrass, little or no needle-and-thread grass, and fewer herbs. Near the BGxh3 transition, zonal sites and cool aspects may occasionally be dominated by big sagebrush and bluebunch wheatgrass thus climaxing in the low shrub structural stage 3a. Big sagebrush on zonal sites becomes more common towards the southern portion of the study area.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 WN / 01 Bluebunch Wheatgrass – Needle-and-thread Grass Seral Associations

Map Symbol	WNht2:pp	WNgh2:sd
Plant species	Herb Seral Association	Herb Seral Association
Dominants	needle-and-threadgrass	pasture sage junegrass
Associates	brittle prickly pear cactus <i>Antennaria spp.</i> bluebunch wheatgrass junegrass	rabbit-brush umber pussytoes brittle prickly pear cactus needle-and-thread grass sand dropseed <i>Cladonia cariosa</i>
Plots	9800034	9800451, C56

Comments: In the seral associations of the WN site series, most sites are dominated by disturbance species. Heavily disturbed sites (WN:pp) have much higher covers of needle-and-thread grass or pussytoes, with virtually no bluebunch wheatgrass, low lichen cover, and significant amounts of brittle prickly pear cactus and pasture sage. Moderately or lightly grazed sites (WN:sd) have significant amounts of pasture sage or pussytoes and small amounts of brittle prickly pear cactus.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 WN / 01 Bluebunch Wheatgrass – Needle-and-thread Grass Seral Associations

Map Symbol	WN2, WNC2, WNCg2, WNg2, WNGh2, WNgT2, WNH2, WNHr2, WNht2, WNN2, WNR2, WNT2, WNTw2, WNw2	WNk2, WNks2	WNny2, WNY2	WN3a, WNC3a, WNCg3a, WNg3a, WNGh3a, WNgT3a, WNH3a, WNHr3a, WNht3a, WNk3a, WNks3a, WNN3a, WNT3a, WNTw3a, WNw3a	WNht2:pp	WNGh2:sd
Plant species	Herb Climax / Late Seral	Herb Climax / Late Seral	Herb Disclimax	Low Shrub Climax / Late Seral	Herb Seral Association	Herb Seral Association
Ungulate Forage Species - Dominants	bluebunch wheatgrass needle-and-thread grass pasture sage	bluebunch wheatgrass junegrass pasture sage	Kentucky bluegrass alfalfa	big sagebrush bluebunch wheatgrass	needle-and-threadgrass	pasture sage junegrass
Associates	junegrass green needlegrass salsify	needle-and thread grass	tumble mustard creeping bentgrass crested wheatgrass quackgrass	junegrass pasture sage salsify nodding onion field sedge	bluebunch wheatgrass junegrass	
Bear Forage Species	bluebunch wheatgrass junegrass green needlegrass salsify	bluebunch wheatgrass junegrass	Kentucky bluegrass alfalfa tumble mustard creeping bentgrass crested wheatgrass quackgrass	bluebunch wheatgrass junegrass salsify nodding onion field sedge	bluebunch wheatgrass junegrass	junegrass

Comments: The seral stages can facilitate moderate ungulate feeding activity especially in the winter and spring seasons. Bighorn sheep can use this unit year round.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	<p>WO / 86 Bluebunch Wheatgrass – Nodding Onion</p> <p>WOc / 86 Bluebunch Wheatgrass – Nodding Onion; coarse-textured soil W Og / 86 Bluebunch Wheatgrass – Nodding Onion; gullied W Ogs / 86 Bluebunch Wheatgrass – Nodding Onion; gullied shallow soil W Oh / 86 Bluebunch Wheatgrass – Nodding Onion; hummocky W On / 86 Bluebunch Wheatgrass – Nodding Onion; fan or cone W Or / 86 Bluebunch Wheatgrass – Nodding Onion; ridged W Os / 86 Bluebunch Wheatgrass – Nodding Onion; shallow soil</p>
<p>Typically occurs on moderate to steep cool north and northeast aspects, often above Douglas-fir forests. Soils are typically deep and medium-textured (WO). Glaciofluvial scarps may have coarse-textured soil (WOc). Slopes may be gullied (W Og) or occur on the cool sides of hummocks (W Oh), cones (W On) or ridges (W Or). Occasionally soils may be shallow (W Ogs, W Os).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	35-75	50
Aspect (degrees)	350-45	
Moisture Regime	Nutrient Regime	
submesic to mesic	medium	
Drainage	well (rapid)	
Surficial Material		
eolian veneer over morainal blanket		
Soil Development		
black chernozem, dark brown chernozem		
	Range	Mean
Humus Depth (cm)	0-0.2	0.1
Coarse Fragments (%)	20 - >70	
Soil Texture	Humus Form	
fine sandy loam	rhizomull	

PLOT 9800413 WO2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WO / 86

Bluebunch Wheatgrass – Nodding Onion

Map Symbol	WO2, WOc2, WOG2, WOGs2, WOh2, WOn2, WOR2, WOs2	WO3a, WOGs3a
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass pasture sage <i>Cladonia pyxidata</i> mosses sidewalk moss	big sagebrush bluebunch wheatgrass pasture sage <i>Cladonia pyxidata</i> mosses sidewalk moss
Associates	junegrass umber pussytoes spike-like goldenrod Rocky Mtn. fescue meadow alumroot nodding onion common dandelion <i>Peltigera spp.</i> <i>Cladonia cariosa</i> <i>Cladonia symphocarpia</i> <i>Diploschistes muscorum</i>	junegrass umber pussytoes Rocky Mtn. fescue meadow alumroot nodding onion <i>Cladonia cariosa</i>
Plots	9800413	

Comments: In climax stands a dense cover of bluebunch wheatgrass (40-55% cover) dominates; lichens and mosses have 60-75% cover, while exposed mineral soil is less than 10%. Grazed sites have lower bluebunch wheatgrass and *Cladonia* cover, and an increase in junegrass, pussytoes, and *Collema* and *Psora* lichens. Big sagebrush becomes more abundant in this site series towards the southern section of the Study Area, along stable east-facing slopes.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WO / 86

Bluebunch Wheatgrass – Nodding Onion

Map Symbol	WO2, WOc2, WOG2, WOGs2, WOh2, WOn2, WOr2, WOs2	WO3a, WOc3a, WOG3a, WOGs3a, WOh3a, WOn3a, WOr3a, WOs3a
Plant Species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass pasture sage	big sagebrush bluebunch wheatgrass pasture sage
Ungulate Forage Species - Associates	junegrass Rocky Mtn. fescue nodding onion common dandelion	junegrass Rocky Mtn. fescue nodding onion
Bear Forage Species	bluebunch wheatgrass pasture sage Rocky Mtn. fescue nodding onion common dandelion	bluebunch wheatgrass junegrass Rocky Mtn. fescue nodding onion

Comments: The seral stages can facilitate moderate ungulate feeding activity especially in the winter and spring seasons. Bighorn sheep can use this unit year round.

2.3 BGxw2 Shrubland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	DB / 00 Red-osier Dogwood – Common Burdock Riparian
These are shrubby streamside riparian communities exposed to occasional flooding. Soils are deep and medium-textured (DB).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-800	765
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric to hygric	rich	
Drainage	imperfect to poor	
Surficial Material		
active fluvial sediments		
Soil Development		
regosol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
loamy, silty	moder	

PLOT C683 DB6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DB / 00

Red-osier Dogwood – Common Burdock Riparian

Map Symbol	DB2	DB3	DB4	DB5	DB6	DB7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	common horsetail blue wildrye brome orchardgrass	water birch paper birch red-osier dogwood Bebb's willow mountain alder snowberry common horsetail	Open canopy of: black cottonwood water birch paper birch red-osier dogwood prairie rose common horsetail	Open canopy of: black cottonwood water birch paper birch red-osier dogwood prairie rose common horsetail trembling aspen	Open canopy of: black cottonwood water birch paper birch red-osier dogwood prairie rose common horsetail trembling aspen	Open canopy of: black cottonwood water birch paper birch red-osier dogwood prairie rose common horsetail trembling aspen
Associates	prairie rose snowberry Douglas' water hemlock Canada violet common burdock	black cottonwood prairie rose common burdock fowl mannagrass Douglas' water hemlock Canada violet blue wildrye brome orchardgrass	Bebb's willow mountain alder snowberry common burdock fowl mannagrass Douglas' water hemlock Canada violet blue wildrye orchardgrass	Bebb's willow mountain alder snowberry common burdock fowl mannagrass Canada violet blue wildrye	Bebb's willow mountain alder snowberry fowl mannagrass Canada violet blue wildrye	Bebb's willow mountain alder snowberry fowl mannagrass Canada violet blue wildrye
Plots		C156			C683	

Comments: Black cottonwood or paper birch may sometimes form an overstory. These sites may be heavily impacted by livestock. Succession to a mature or old forest may not occur due to flooding disturbance.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DB / 00

Red-osier Dogwood – Common Burdock Riparian

Map Symbol	DB2	DB3	DB4	DB5	DB6	DB7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	common horsetail blue wildrye brome orchardgrass	water birch paper birch red-osier dogwood Bebb's willow snowberry common horsetail	black cottonwood water birch paper birch red-osier dogwood prairie rose common horsetail	black cottonwood water birch paper birch red-osier dogwood prairie rose common horsetail trembling aspen	black cottonwood water birch paper birch red-osier dogwood prairie rose common horsetail trembling aspen	black cottonwood water birch paper birch red-osier dogwood prairie rose common horsetail trembling aspen
Associates	prairie rose snowberry	black cottonwood prairie rose fowl mannagrass blue wildrye brome orchardgrass	Bebb's willow snowberry fowl mannagrass blue wildrye orchardgrass	Bebb's willow snowberry fowl mannagrass blue wildrye	Bebb's willow snowberry fowl mannagrass blue wildrye	Bebb's willow snowberry fowl mannagrass blue wildrye
Bear Forage Species	common horsetail blue wildrye brome orchardgrass prairie rose	red-osier dogwood common horsetail prairie rose fowl mannagrass blue wildrye brome orchardgrass	red-osier dogwood prairie rose common horsetail fowl mannagrass blue wildrye orchardgrass	red-osier dogwood prairie rose common horsetail fowl mannagrass blue wildrye	red-osier dogwood prairie rose common horsetail fowl mannagrass blue wildrye	red-osier dogwood prairie rose common horsetail fowl mannagrass blue wildrye

Comments: This site provides good security thermal habitat while the abundance of dogwood and horsetail provide forage opportunities

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	TS / 50 Willow – Kentucky Bluegrass
These variable ecosystems are usually fringes around marshes, but may also occur in wet depressions or on seepage slopes. Soils are deep, medium-textured and are usually saturated near or at the surface throughout the growing season (TS). Formerly called Tall Willow - Sedge - Grass Swamp (TS/00).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to hydric	rich	
Drainage	poor to very poor	
Surficial Material		
active fluvial over morainal blanket		
Soil Development		
humic mesosol, humic gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
loamy, silt loam	mull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

TS / 50

Willow – Kentucky Bluegrass

Map Symbol	TS2	TS3a	TS3b
Plant species	Herb	Low Shrub Climax	Tall Shrub Climax
Dominants	Baltic rush Kentucky bluegrass beaked sedge sickle moss	willows Baltic rush Kentucky bluegrass beaked sedge sickle moss	willows Baltic rush Kentucky bluegrass beaked sedge sickle moss
Associates	willows <i>Rosa spp</i> snowberry Scribner's reedgrass slender wheatgrass scouring rush field mint purple-leaved willowherb fowl bluegrass	<i>Rosa spp</i> snowberry Scribner's reedgrass slender wheatgrass scouring rush field mint purple-leaved willowherb fowl bluegrass	<i>Rosa spp</i> snowberry Scribner's reedgrass slender wheatgrass scouring rush field mint purple-leaved willowherb fowl bluegrass
Plots			

Comments: The composition of these shrubby sites can be quite variable.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

TS / 50

Willow – Kentucky Bluegrass

Map Symbol	TS2	TS3a	TS3b
Plant Species	Herb Climax	Low Shrub Climax	Tall Shrub Climax
Ungulate Forage Species - Dominants	willows Kentucky bluegrass beaked sedge	willows Baltic rush Kentucky bluegrass beaked sedge	willows Baltic rush Kentucky bluegrass beaked sedge
Ungulate Forage Species - Associates	<i>Rosa spp</i> snowberry Scribner's reedgrass slender wheatgrass scouring rush purple-leaved willowherb fowl bluegrass	<i>Rosa spp</i> snowberry Scribner's reedgrass slender wheatgrass scouring rush field mint purple-leaved willowherb fowl bluegrass	<i>Rosa spp</i> snowberry Scribner's reedgrass slender wheatgrass scouring rush field mint purple-leaved willowherb fowl bluegrass
Bear Forage Species	<i>Rosa spp</i> Kentucky bluegrass beaked sedge Scribner's reedgrass slender wheatgrass scouring rush purple-leaved willowherb fowl bluegrass	<i>Rosa spp</i> Kentucky bluegrass beaked sedge Scribner's reedgrass slender wheatgrass scouring rush purple-leaved willowherb fowl bluegrass	<i>Rosa spp</i> Kentucky bluegrass beaked sedge Scribner's reedgrass slender wheatgrass scouring rush purple-leaved willowherb fowl bluegrass

Comments: Good winter and spring feeding habitat for moose and deer. Bear may feed on early green-up species in spring.

2.4 BGxw2 Wetland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	AM / 32 Awned Sedge Marsh
This marsh is seasonally or permanently inundated (AM). The deep fine-textured mineral soils are occasionally carbonated; organic horizons are generally very thin may be absent.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to hydric	very rich	
Drainage	poor to very poor	
Surficial Material		
lacustrine		
Soil Development		
gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
silty clay loam, silt		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 AM / 32 Awned Sedge Marsh

Map Symbol	AM2
Plant species	Herb Climax
Dominants	awned sedge sloughgrass beaked sedge water buttercup
Associates	slimstem reedgrass meadow foxtail
Plots	

Comments:

Map Symbol	AM2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	awned sedge sloughgrass water buttercup
Ungulate Forage Species - Associates	slimstem reedgrass meadow foxtail
Bear Forage Species	awned sedge sloughgrass water buttercup slimstem reedgrass

Comments: Vegetation limits feeding activity to early spring when new growth makes plants palatable to bears and ungulates.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	RF / 61 Baltic Rush – Field Sedge Meadow
Moist meadow complexes which are rarely inundated, but usually wet early in the growing season. Soils are typically deep and medium-textured (RF). Usually occurs as a band between upland grasslands and marshes.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric to hygric	rich	
Drainage	imperfect to poor	
Surficial Material		
medium-textured lacustrine deposits		
Soil Development		
orthic humic gleysol, gleyed eluviated eutric brunisol – strongly carbonated		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
silt loam, silt		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RF / 61

Baltic Rush – Field Sedge Moist Meadow

Map Symbol	RF2
Plant species	Herb Climax / Late Seral
Dominants	Baltic rush field sedge
Associates	foxtail barley silverweed slender wheatgrass white prairie aster Nuttall's alkaligrass alkali bluegrass Kentucky bluegrass Parry's sedge early blue violet
Plots	

Comments: This wetland zone frequently occurs adjacent to marshes and downslope of the NB:kb /88b grassland type. This unit is often heavily utilized by cattle and/or horses, and frequently has a fairly high proportion of introduced species.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RF / 61

Baltic Rush – Field Sedge Moist Meadow

Map Symbol	RF2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	Baltic rush field sedge
Ungulate Forage Species - Associates	foxtail barley slender wheatgrass white prairie aster Nuttall's alkaligrass alkali bluegrass Kentucky bluegrass Parry's sedge early blue violet
Bear Forage Species	Baltic rush field sedge foxtail barley slender wheatgrass Nuttall's alkaligrass alkali bluegrass Kentucky bluegrass Parry's sedge early blue violet

Comments: Ungulate and bear feeding is low to moderate due to the low concentrations of preferred forage.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	RM / 30 Baltic Rush Marsh
This shallow marsh (RM /30) commonly occurs between a deep marsh such as CM /31 and a moist meadow type such as RF /61. Soils are typically deep and fine-textured (RM). It remains inundated most of the year.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	680-850	765
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric to hydric	very rich to rich	
Drainage	very poor	
Surficial Material		
lacustrine		
Soil Development		
variable organic accumulations 0 - >40cm gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
silty		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 RM / 30 Baltic Rush Marsh

Map Symbol	RM2
Plant species	Herb Climax
Dominants	Baltic rush
Associates	common spike-rush great bulrush alkali bulrush
Plots	

Comments:

Map Symbol	RM2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	Baltic rush
Ungulate Forage Species - Associates	common spike-rush
Bear Forage Species	Baltic rush common spike-rush

Comments: Low value for ungulate and bear feeding activity due to the lack of preferred forage species.

3.0 IDFxm - Interior Douglas-fir Very Dry Mild Subzone

3.1 IDfxm Forested Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	AM / 00 Trembling Aspen – Douglas Maple AMk / 00 Trembling Aspen – Douglas Maple; cool aspect AMw / 00 Trembling Aspen – Douglas Maple; warm aspect
Typically occurs on mid to lower gentle to moderate slopes of gullies which receive moisture along permanent or intermittent streams. Soils are typically deep and medium-textured (AM). These may be on cool or warm aspects (AMk, AMw).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1000	900
Slope (%)	0-75	15
Aspect (degrees)	variable	(in gully)
Moisture Regime	Nutrient Regime	
subhygric to mesic	rich (medium)	
Drainage	imperfect to moderately well	
Surficial Material		
active fluvial, colluvial, eolian veneer over colluvial or morainal		
Soil Development		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	50	
Soil Texture	Humus Form	
fine sandy loam	mor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AM / 00

Trembling Aspen – Douglas Maple

Map Symbol	AM2, AMk2, AMw2	AM3, AMk3, AMw3	AM4, AMk4, AMw4	AM5, AMk5, AMw5	AM6, AMk6, AMw6	AM7, AMk7, AMw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	American vetch slender wheatgrass	trembling aspen Douglas maple saskatoon chokecherry snowberry	Open canopy of: trembling aspen Douglas maple prairie rose water birch	Open canopy of: Douglas-fir trembling aspen Douglas maple water birch prairie rose	Open canopy of: Douglas-fir trembling aspen Douglas maple prairie rose water birch	Open canopy of: Douglas-fir trembling aspen prairie rose Douglas maple
Associates	star-flowered false Solomon's-seal common dandelion	red-osier dogwood star-flowered false Solomon's-seal slender wheatgrass prairie rose	Douglas-fir saskatoon chokecherry red-osier dogwood snowberry star-flowered false Solomon's-seal showy aster	saskatoon chokecherry red-osier dogwood snowberry soopolallie star-flowered false Solomon's-seal showy aster	saskatoon chokecherry red-osier dogwood snowberry soopolallie star-flowered false Solomon's-seal showy aster dog pelt lichen mosses	saskatoon chokecherry snowberry red-osier dogwood star-flowered false Solomon's-seal showy aster dog pelt lichen mosses
Plots						

Comments: These moist draws and deep cool gullies are characterized by a dense shrub layer and open to moderately closed tree overstory of aspen and/or Douglas-fir. Vegetation cover is often patchy and discontinuous, especially in areas of active flooding or erosion. Gullies exhibit considerable variation in site conditions and vegetation types, with deeply incised gulches, and warm and cool aspect microsite slopes. Structural stages 2 and 3 are created by logging, clearing for livestock, or flooding.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AM / 00

Trembling Aspen – Douglas Maple

Map Symbol	AM2, AMk2, AMw2	AM3, AMk3, AMw3	AM4, AMk4, AMw4	AM5, AMk5, AMw5	AM6, AMk6, AMw6	AM7, AMk7, AMw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	American vetch slender wheatgrass	trembling aspen Douglas maple saskatoon chokecherry snowberry	trembling aspen Douglas maple prairie rose water birch	Douglas-fir trembling aspen Douglas maple water birch prairie rose	Douglas-fir trembling aspen Douglas maple prairie rose water birch	Douglas-fir trembling aspen prairie rose Douglas maple
Associates	star-flowered false Solomon's-seal common dandelion	red-osier dogwood star-flowered false Solomon's-seal slender wheatgrass prairie rose	Douglas-fir saskatoon chokecherry red-osier dogwood snowberry star-flowered false Solomon's-seal showy aster	saskatoon chokecherry red-osier dogwood snowberry soopolallie star-flowered false Solomon's-seal showy aster	saskatoon chokecherry red-osier dogwood snowberry soopolallie star-flowered false Solomon's-seal showy aster	saskatoon chokecherry snowberry red-osier dogwood star-flowered false Solomon's-seal showy aster
Bear Forage Species	American vetch star-flowered false Solomon's-seal slender wheatgrass common dandelion	saskatoon chokecherry red-osier dogwood star-flowered false Solomon's-seal slender wheatgrass prairie rose	prairie rose saskatoon chokecherry red-osier dogwood star-flowered false Solomon's-seal	prairie rose saskatoon chokecherry red-osier dogwood soopolallie star-flowered false Solomon's-seal	prairie rose saskatoon chokecherry red-osier dogwood soopolallie star-flowered false Solomon's-seal	prairie rose saskatoon chokecherry red-osier dogwood star-flowered false Solomon's-seal

Comments: This unit provides important cover and forage for both ungulates and bears.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	AR / 00 Trembling Aspen – Prickly Rose ARg / 00 Trembling Aspen – Prickly Rose; gullied
Typically occurs on level sites in moist receiving depressions with deep medium-textured soils (AR). These are sometimes adjacent to wetlands or along open gullies and glaciofluvial channels (ARg).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	900-1000	950
Slope (%)	0-15	5
Aspect (degrees)	level, variable	
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	imperfect to moderately well	
Surficial Material		
eolian veneer or blanket over glaciofluvial, moraine, or glaciolacustrine		
Soil Development		
luvisols, orthic regosol		
	Range	Mean
Humus Depth (cm)	5-8	6
Coarse Fragments (%)	0-75	
Soil Texture	Humus Form	
silty loam, loamy sand	leptomodor	

PLOT 9800446 AR5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AR / 00

Trembling Aspen – Prickly Rose

Map Symbol	AR2, ARg2	AR3, ARg3	AR4, ARg4	AR5, ARg5	AR6, ARg6	AR7, ARg7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	Kentucky bluegrass common dandelion strawberry	trembling aspen prickly rose snowberry Kentucky bluegrass	Closed canopy of: trembling aspen prickly rose snowberry Kentucky bluegrass	Closed canopy of: trembling aspen prickly rose snowberry	Closed canopy of: trembling aspen prickly rose snowberry	Closed canopy of: trembling aspen prickly rose snowberry
Associates	American vetch pinegrass showy aster	American vetch pinegrass soopolallie showy aster	American vetch pinegrass soopolallie showy aster	lodgepole pine red-osier dogwood sarsaparilla American vetch pinegrass soopolallie showy aster Kentucky bluegrass	lodgepole pine red-osier dogwood sarsaparilla American vetch pinegrass soopolallie showy aster Kentucky bluegrass	lodgepole pine sarsaparilla American vetch pinegrass soopolallie showy aster red-osier dogwood
Plots				9800446	C455	

Comments: These sites are heavily utilized by livestock and may be cleared by logging (AR2) for grazing – thus seral species dominate in younger structural stages. While trembling aspen occurs as a seral component in most of the other IDfxm forested site series (Peterson & Peterson 1995), pure aspen clones often form stable plant associations on moister sites within the matrix of IDfxm grassland communities. These often surround small wetlands, and occur in dips in upland slopes and adjacent to Douglas-fir stands. Lodgepole pine may be a minor component of mature stands, but it is assumed that those aspen stands with a significant component of Douglas-fir or hybrid white spruce in the understory are seral stages of the DR, RS, or DP site series. Aspen crown closure is high, and in lightly disturbed sites, shrub cover can be quite dense. There is reduced shrub cover while introduced herbs dominate in heavily grazed sites.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AR / 00

Trembling Aspen – Prickly Rose

Map Symbol	AR2, ARg2	AR3, ARg3	AR4, ARg4	AR5, ARg5	AR6, ARg6	AR7, ARg7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	Kentucky bluegrass common dandelion strawberry	trembling aspen prickly rose Kentucky bluegrass	trembling aspen prickly rose snowberry Kentucky bluegrass	trembling aspen prickly rose snowberry	trembling aspen prickly rose snowberry	trembling aspen prickly rose snowberry
Associates	American vetch pinegrass showy aster	American vetch pinegrass snowberry soopolallie showy aster	American vetch pinegrass soopolallie showy aster	lodgepole pine red-osier dogwood American vetch pinegrass soopolallie showy aster Kentucky bluegrass	lodgepole pine red-osier dogwood American vetch pinegrass soopolallie showy aster Kentucky bluegrass	lodgepole pine American vetch pinegrass soopolallie showy aster red-osier dogwood
Bear Forage Species	Kentucky bluegrass common dandelion strawberry American vetch	prickly rose red-osier dogwood Kentucky bluegrass American vetch soopolallie	prickly rose Kentucky bluegrass red-osier dogwood American vetch soopolallie	prickly rose red-osier dogwood American vetch soopolallie Kentucky bluegrass	prickly rose red-osier dogwood American vetch soopolallie Kentucky bluegrass	prickly rose American vetch soopolallie red-osier dogwood

Comments: These small ecosystems are important for deer and bear forage.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	CR / 00 Black Cottonwood – Prairie Rose – Mountain Alder
Typically occurs on moderately active floodplains and islands along large streams such as Churn Creek. Soils are typically deep and coarse-textured (CR).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1000	900
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric	medium to rich	
Drainage	moderatey well to imperfect	
Surficial Material		
active fluvial sediments		
Soil Development		
coarse-textured loamy sand mixed with gravel lenses		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0-20+	
Soil Texture	Humus Form	
loamy sand	moder	

PLOT C778 CR3

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
CR / 00

Name
Black Cottonwood – Prairie Rose – Mountain Alder

Map Symbol	CR2	CR3	CR4	CR5	CR6	CR7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	white sweet-clover slender wheatgrass scouring rush	black cottonwood willows mountain alder Kentucky bluegrass scouring rush	Closed canopy of: black cottonwood trembling aspen mountain alder willows Kentucky bluegrass red raspberry	Closed canopy of: black cottonwood trembling aspen mountain alder red-osier dogwood Douglas maple red raspberry willows scouring rush	Closed canopy of: black cottonwood trembling aspen mountain alder red-osier dogwood red raspberry snowberry prairie rose black gooseberry scouring rush	Closed canopy of: black cottonwood trembling aspen mountain alder red-osier dogwood red raspberry snowberry prairie rose scouring rush
Associates	alfalfa Kentucky bluegrass	snowberry prairie rose red-osier dogwood slender wheatgrass American vetch red raspberry bluejoint stinging nettle	snowberry prairie rose red-osier dogwood slender wheatgrass scouring rush bluejoint	snowberry prairie rose Kentucky bluegrass slender wheatgrass black gooseberry bluejoint	willows Kentucky bluegrass slender wheatgrass	black gooseberry Kentucky bluegrass slender wheatgrass
Plots		C778				

Comments: The vegetation can be quite variable depending in frequency and last date of flooding and may be maintained in early seral stages by repeated flooding. This riparian zone is characterized by a tall vigorous shrub layer.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

CR / 00

Black Cottonwood – Prairie Rose – Mountain Alder

Map Symbol	CR2	CR3	CR4	CR5	CR6	CR7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	white sweet-clover slender wheatgrass scouring rush	black cottonwood willows Kentucky bluegrass scouring rush	black cottonwood trembling aspen willows Kentucky bluegrass red raspberry	black cottonwood trembling aspen red-osier dogwood Douglas maple red raspberry willows scouring rush	black cottonwood trembling aspen red-osier dogwood red raspberry snowberry prairie rose black gooseberry scouring rush	black cottonwood trembling aspen red-osier dogwood red raspberry snowberry prairie rose scouring rush
Associates	alfalfa Kentucky bluegrass	snowberry prairie rose red-osier dogwood slender wheatgrass American vetch red raspberry bluejoint stinging nettle	snowberry prairie rose red-osier dogwood slender wheatgrass scouring rush bluejoint	snowberry prairie rose Kentucky bluegrass slender wheatgrass black gooseberry bluejoint	willows Kentucky bluegrass slender wheatgrass	black gooseberry Kentucky bluegrass slender wheatgrass
Bear Forage Species	white sweet-clover slender wheatgrass scouring rush Kentucky bluegrass alfalfa	Kentucky bluegrass scouring rush prairie rose red-osier dogwood slender wheatgrass American vetch red raspberry bluejoint	Kentucky bluegrass red raspberry prairie rose red-osier dogwood slender wheatgrass scouring rush bluejoint	red-osier dogwood red raspberry scouring rush prairie rose Kentucky bluegrass slender wheatgrass black gooseberry bluejoint	red-osier dogwood red raspberry prairie rose black gooseberry scouring rush Kentucky bluegrass slender wheatgrass	red-osier dogwood red raspberry prairie rose black gooseberry scouring rush black gooseberry Kentucky bluegrass slender wheatgrass

Comments: This ecosystem is important ungulate and bear habitat. It provides good thermal and security cover while its abundance of shrubby vegetation provides forage year round.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	DJ / 03 Douglas-fir – Juniper - <i>Cladonia</i> DJr / 03 Douglas-fir – Juniper - <i>Cladonia</i> ; ridged
Typical sites have gentle slopes with deep coarse-textured soils on gravelly sandy glaciofluvial blankets (DJ). These are occasionally ridged (DJr).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1000-2000	1500
Slope (%)	0-30	5
Aspect (degrees)	220	
Moisture Regime	Nutrient Regime	
subxeric to submesic	very poor to poor	
Drainage	well	
Surficial Material		
gravelly sandy glaciofluvial blankets		
Soil Development		
	Range	Mean
Humus Depth (cm)	0 - 4	2
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
coarse, gravelly sandy	hemimor, xeromor (mull)	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 03

Douglas-fir – Juniper - *Cladonia*

Map Symbol	DJ2, DJr2	DJ3, DJr3	DJ4, DJr4	DJ5, DJr5	DJ6, DJr6	DJ7, DJr7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick bluebunch wheatgrass mosses	common juniper kinnikinnick bluebunch wheatgrass	Open canopy of: lodgepole pine Douglas-fir common juniper red-stemmed feathermoss bluebunch wheatgrass	Open canopy of: lodgepole pine Douglas-fir common juniper red-stemmed feathermoss	Open canopy of: lodgepole pine Douglas-fir common juniper	Open canopy of: lodgepole pine Douglas-fir common juniper
Associates	<i>Cladonia spp.</i> <i>Peltigera spp.</i>	lodgepole pine trembling aspen snowberry <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Rocky Mtn. juniper birch-leaved spirea trembling aspen snowberry <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Rocky Mtn. juniper birch-leaved spirea trembling aspen snowberry bluebunch wheatgrass <i>Cladonia spp.</i>	Rocky Mtn. juniper birch-leaved spirea bluebunch wheatgrass feather mosses <i>Cladonia spp.</i>	Rocky Mtn. juniper birch-leaved spirea bluebunch wheatgrass feather mosses <i>Cladonia spp.</i>
Plots			C106			

Comments: Logging or burning creates structural stages 2 or 3. Not common in the Churn Creek Study Area.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 03

Douglas-fir – Juniper - *Cladonia*

Map Symbol	DJ2, DJr2	DJ3, DJr3	DJ4, DJr4	DJ5, DJr5	DJ6, DJr6	DJ7, DJr7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	kinnikinnick bluebunch wheatgrass	kinnikinnick bluebunch wheatgrass	lodgepole pine Douglas-fir bluebunch wheatgrass	lodgepole pine Douglas-fir	lodgepole pine Douglas-fir	lodgepole pine Douglas-fir
Associates		lodgepole pine trembling aspen snowberry	Rocky Mtn. juniper trembling aspen snowberry	Rocky Mtn. juniper trembling aspen snowberry bluebunch wheatgrass	Rocky Mtn. juniper bluebunch wheatgrass	Rocky Mtn. juniper bluebunch wheatgrass
Bear Forage Species	bluebunch wheatgrass	bluebunch wheatgrass	bluebunch wheatgrass	bluebunch wheatgrass	bluebunch wheatgrass	bluebunch wheatgrass

Comments: This relatively dry site provides low to moderate forage and cover opportunities for deer, elk and bear.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	<p>DM / 05 Douglas-fir – Feathermoss - Step moss</p> <p>DMc / 05 Douglas-fir – Feathermoss - Step moss; coarse-textured soil</p> <p>DMcq / 05 Douglas-fir – Feathermoss - Step moss; coarse-textured soil on very steep cool aspect</p> <p>DMcs / 05 Douglas-fir – Feathermoss - Step moss; coarse-textured shallow soil</p> <p>DMg / 05 Douglas-fir – Feathermoss - Step moss; gullied</p> <p>DMgs / 05 Douglas-fir – Feathermoss - Step moss; shallow soil on gullied terrain</p> <p>DMh / 05 Douglas-fir – Feathermoss - Step moss; hummocky</p> <p>DMq / 05 Douglas-fir – Feathermoss - Step moss; very steep cool aspect</p> <p>DMqs / 05 Douglas-fir – Feathermoss - Step moss; very steep cool aspect with shallow soil</p> <p>DMqv / 05 Douglas-fir – Feathermoss - Step moss; very steep cool aspect with very shallow soil</p> <p>DMr / 05 Douglas-fir – Feathermoss - Step moss; ridged</p> <p>DMrs / 05 Douglas-fir – Feathermoss - Step moss; ridged shallow soil</p> <p>DMs / 05 Douglas-fir – Feathermoss - Step moss; shallow soil</p> <p>DMt / 05 Douglas-fir – Feathermoss - Step moss; terrace</p>
<p>Typically occurs on steep slopes with cool aspects and deep medium-textured soils (DM). However, on glaciofluvial scarps, soils may be coarse (DMc, DMcq, DMcs). Slopes are sometimes gullied (DMg, DMgs) or ridged (DMr, DMrs) or on terraces (DMt). This type may occur on very steep cool slopes (DMq, DMqs, DMqv) and shallow soils (DMs).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1150	1000
Slope (%)	35-95	55
Aspect (degrees)	335-120	
Moisture Regime	Nutrient Regime	
submesic to mesic	medium to poor	
Drainage	well	
Surficial Material		
moraine, occasionally with eolian veneer		
Soil Development		
orthic grey luvisol, orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)	0.3-4	2
Coarse Fragments (%)	30	
Soil Texture	Humus Form	
silty clay loam, sandy loam	mull, hemimor	

PLOT 9800458 DM6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 05

Douglas-fir – Feathermoss - Step moss

Map Symbol	DM2, DMc2, DMcq2, DMcs2, DMg2, DMgs2, DMh2, DMq2, DMqs2, DMqv2, DMr2, DMrs2, DMs2, DMt2	DM3, DMc3, DMcq3, DMcs3, DMg3, DMgs3, DMh3, DMq3, DMqs3, DMqv3, DMr3, DMrs3, DMs3, DMt3	DM4, DMc4, DMcq4, DMcs4, DMg4, DMgs4, DMh4, DMq4, DMqs4, DMqv4, DMr4, DMrs4, DMs4, DMt4	DM5, DMc5, DMcq5, DMcs5, DMg5, DMgs5, DMh5, DMq5, DMqs5, DMqv5, DMr5, DMrs5, DMs5, DMt5	DM6, DMc6, DMcq6, DMcs6, DMg6, DMgs6, DMh6, DMq6, DMqs6, DMqv6, DMr6, DMrs6, DMs6, DMt6	DM7, DMc7, DMcq7, DMcs7, DMg7, DMgs7, DMh7, DMq7, DMqs7, DMqv7, DMr7, DMrs7, DMs7, DMt7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass kinnikinnick red-stemmed feathermoss step moss	birch-leaved spirea prairie rose pinegrass kinnikinnick red-stemmed feathermoss step moss	Closed canopy of: Douglas-fir red-stemmed feathermoss step moss birch-leaved spirea	Closed canopy of: Douglas-fir pinegrass red-stemmed feathermoss step moss	Closed canopy of: Douglas-fir pinegrass red-stemmed feathermoss step moss <i>Peltigera spp.</i>	Closed canopy of: Douglas-fir red-stemmed feathermoss step moss <i>Peltigera spp.</i>
Associates	bluebunch wheatgrass spreading needlegrass showy aster northern bedstraw birch-leaved spirea <i>Peltigera spp.</i> <i>Cladonia spp.</i>	Douglas-fir bluebunch wheatgrass spreading needlegrass showy aster northern bedstraw pinegrass <i>Peltigera spp.</i> <i>Cladonia spp.</i>	bluebunch wheatgrass showy aster northern bedstraw pinegrass prairie rose Rocky Mtn. juniper common juniper <i>Peltigera spp.</i> <i>Cladonia spp.</i>	bluebunch wheatgrass showy aster northern bedstraw birch-leaved spirea prairie rose Rocky Mtn. juniper common juniper <i>Peltigera spp.</i> <i>Cladonia spp.</i>	birch-leaved spirea bluebunch wheatgrass showy aster northern bedstraw prairie rose Rocky Mtn. juniper common juniper	birch-leaved spirea bluebunch wheatgrass showy aster northern bedstraw pinegrass <i>Dicranum spp.</i>
Plots			C274, C551	9800443, 9800453, C16, C524, C549, C650	9800448, 9800449, 9800458, C164, C171, C435, C544, C590	

Comments: Logging or burning creates structural stages 2 and 3. The mature forest canopy is quite closed, with a sparse shrub/herb layer and a nearly continuous moss layer.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 05

Douglas-fir – Feathermoss - Step moss

Map Symbol	DM2, DMc2, DMcq2, DMcs2, DMg2, DMgs2, DMh2, DMq2, DMqs2, DMqv2, DMr2, DMrs2, DMs2, DMt2	DM3, DMc3, DMcq3, DMcs3, DMg3, DMgs3, DMh3, DMq3, DMqs3, DMqv3, DMr3, DMrs3, DMs3, DMt3	DM4, DMc4, DMcq4, DMcs4, DMg4, DMgs4, DMh4, DMq4, DMqs4, DMqv4, DMr4, DMrs4, DMs4, DMt4	DM5, DMc5, DMcq5, DMcs5, DMg5, DMgs5, DMh5, DMq5, DMqs5, DMqv5, DMr5, DMrs5, DMs5, DMt5	DM6, DMc6, DMcq6, DMcs6, DMg6, DMgs6, DMh6, DMq6, DMqs6, DMqv6, DMr6, DMrs6, DMs6, DMt6	DM7, DMc7, DMcq7, DMcs7, DMg7, DMgs7, DMh7, DMq7, DMqs7, DMqv7, DMr7, DMrs7, DMs7, DMt7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass kinnikinnick	prairie rose pinegrass kinnikinnick	Douglas-fir	Douglas-fir pinegrass	Douglas-fir pinegrass	Douglas-fir
Associates	bluebunch wheatgrass spreading needlegrass	Douglas-fir bluebunch wheatgrass spreading needlegrass	bluebunch wheatgrass pinegrass prairie rose Rocky Mtn. juniper	bluebunch wheatgrass prairie rose Rocky Mtn. juniper	bluebunch wheatgrass prairie rose Rocky Mtn. juniper	bluebunch wheatgrass pinegrass
Bear Forage Species	bluebunch wheatgrass kinnikinnick	prairie rose bluebunch wheatgrass kinnikinnick	bluebunch wheatgrass prairie rose	bluebunch wheatgrass prairie rose	bluebunch wheatgrass prairie rose	bluebunch wheatgrass

Comments: Closed Douglas-fir canopy provides good security/thermal habitat but lack of forage species makes this unit unfavorable as feeding habitat.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	<p>DP / 01 Douglas-fir – Pinegrass - Feathermoss</p> <p>DPc / 01 Douglas-fir – Pinegrass - Feathermoss; coarse-textured soil</p> <p>DPck / 01 Douglas-fir – Pinegrass - Feathermoss; coarse-textured soil on cool aspect</p> <p>DPcn / 01 Douglas-fir – Pinegrass - Feathermoss; coarse-textured soil on fan</p> <p>DPf / 01 Douglas-fir – Pinegrass - Feathermoss; fine-textured soil</p> <p>DPg / 01 Douglas-fir – Pinegrass - Feathermoss; gullied</p> <p>DPgs / 01 Douglas-fir – Pinegrass - Feathermoss; gullied shallow soil</p> <p>DPgt / 01 Douglas-fir – Pinegrass - Feathermoss; gullied terrace</p> <p>DPh / 01 Douglas-fir – Pinegrass - Feathermoss; hummocky</p> <p>DPht / 01 Douglas-fir – Pinegrass - Feathermoss; hummocky terrace</p> <p>DPk / 01 Douglas-fir – Pinegrass - Feathermoss; cool aspect</p> <p>DPks / 01 Douglas-fir – Pinegrass - Feathermoss; shallow soil on cool aspect</p> <p>DPn / 01 Douglas-fir – Pinegrass - Feathermoss; fan</p> <p>DPr / 01 Douglas-fir – Pinegrass - Feathermoss; ridged</p> <p>DPrs / 01 Douglas-fir – Pinegrass - Feathermoss; ridged shallow soil</p> <p>DPs / 01 Douglas-fir – Pinegrass - Feathermoss; shallow soil</p> <p>DPt / 01 Douglas-fir – Pinegrass - Feathermoss; terrace</p> <p>DPw / 01 Douglas-fir – Pinegrass - Feathermoss; warm aspect</p>
<p>This is zonal site series is typically found on level to moderate slopes with deep medium-textured soils (DP). It is common on glaciofluvial sediments (DPt, DPgt, DPht, DPn) which may have coarse-textured soils (DPc, DPck, DPcn). While slopes are predominantly less than 20%, sites may be quite variable with gullying (DPg, DPgs, DPgt), hummocky terrain (DPh, DPht), ridged terrain (DPr, DPrs) and steeper slopes (DPk, DPks, DPw). Soils are rarely fine-textured (DPf) or shallow (DPs)</p>	

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DP / 01

Douglas-fir – Pinegrass- Feathermoss

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	2-27	15
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic	medium (poor to rich)	
Drainage	moderately well to well	
Surficial Material		
eolian veneer over morainal blanket, or morainal, occasional glaciofluvial or glaciolacustrine		
Soil Development		
orthic dystic brunisol, eutric brunisol, orthic grey luvisol		
	Range	Mean
Humus Depth (cm)	0.8-4	2
Coarse Fragments (%)	0-35	
Soil Texture	Humus Form	
medium: sandy clay loam, fine sandy loam, silty clay loam	mor, rhizomull (rarely moder)	

PLOT 9800035 DP4

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DP / 01

Douglas-fir – Pinegrass- Feathermoss

Map Symbol	DP2, DPc2, DPck2, DPcn2, DPf2, DPg2, DPgs2, DPgt2, DPh2, DPht2, DPk2, DPks2, DPn2, DPr2, DPrs2, DPs2, DPt2, DPw2	DP3, DPc3, DPck3, DPcn3, DPf3, DPg3, DPgs3DPgt3, DPh3, DPht3, DPk3, DPks3, DPn3, DPr3, DPrs3, DPs3, DPt3, DPw3	DP4, DPc4, DPck4, DPcn4, DPf4, DPg4, DPgs4DPgt4, DPh4, DPht4, DPk4, DPks4, DPn4, DPr4, DPrs4, DPs4, DPt4, DPw4	DP5, DPc5, DPck5, DPcn5, DPf5, DPg5, DPgs5 DPgt5, DPh5, DPht5, DPk5, DPks5, DPn5, DPr5, DPrs5, DPs5, DPt5, DPw5	DP6, DPc6, DPck6, DPcn6, DPf6, DPg6, DPgs6DPgt6, DPh6, DPht6, DPk6, DPks6, DPn6, DPr6, DPrs6, DPs6, DPt6, DPw6	DP7, DPc7, DPck7, DPcn7, DPf7, DPg7, DPgs7, DPgt7, DPh7, DPht7, DPk7, DPks7, DPn7, DPr7, DPrs7, DPs7, DPt7, DPw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass kinnikinnick	Douglas-fir snowberry pinegrass	Closed canopy of: Douglas-fir lodgepole pine pinegrass red-stemmed feathermoss	Closed canopy of: Douglas-fir pinegrass red-stemmed feathermoss bluebunch wheatgrass	Closed canopy of: Douglas-fir pinegrass red-stemmed feathermoss step moss	Closed canopy of: Douglas-fir pinegrass red-stemmed feathermoss
Associates	snowberry showy daisy bluebunch wheatgrass junegrass fireweed	lodgepole pine kinnikinnick showy daisy bluebunch wheatgrass fireweed showy aster	snowberry showy daisy step moss kinnikinnick timber milk-vetch bluebunch wheatgrass showy aster <i>Peltigera spp.</i>	Rocky Mtn. juniper snowberry showy daisy step moss common juniper Rocky Mtn. fescue pusseytoes showy aster <i>Peltigera spp.</i>	Rocky Mtn. juniper snowberry showy daisy bluebunch wheatgrass pusseytoes showy aster dog pelt freckle pelt	Rocky Mtn. juniper snowberry showy daisy step moss bluebunch wheatgrass showy aster <i>Peltigera spp.</i>
Plots	C522	C107, C273, C855	9800032, 9800035, C66, C453, C665, C823	9800425, 9800447, 9800436, C6, C281, C290, C401, C525, C545, C564, C660, C662	9800417, 9800419, 9800428, 9800435, 9800442, 9800902, C103, C174, C184, C279, C433, C441, C470, C539, C542	C99, C624, C675

Comments: Logging and/or burning create structural stages 2 and 3. Due to fire suppression, many stands are two-layered, with a moderately dense Douglas-fir young forest under scattered or patches of large vets. Patches of old trees create a more open forest. The undergrowth contains a sparse to moderate cover of shrubs, grasses, and herbs, depending on the canopy closure. Moss cover is usually patchy.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DP / 01

Douglas-fir – Feathermoss

Map Symbol	DP2, DPc2, DPck2, DPcn2, DPf2, DPg2, DPgs2, DPgt2, DPh2, DPht2, DPk2, DPks2, DPn2, DPr2, DPrs2, DPs2, DPt2, DPw2	DP3, DPc3, DPck3, DPcn3, DPf3, DPg3, DPgs3DPgt3, DPh3, DPht3, DPk3, DPks3, DPn3, DPr3, DPrs3, DPs3, DPt3, DPw3	DP4, DPc4, DPck4, DPcn4, DPf4, DPg4, DPgs4DPgt4, DPh4, DPht4, DPk4, DPks4, DPn4, DPr4, DPrs4 DPs4, DPt4, DPw4	DP5, DPc5, DPck5, DPcn5, DPf5, DPg5, DPgs5 DPgt5, DPh5, DPht5, DPk5, DPks5, DPn5, DPr5, DPrs5, DPs5, DPt5, DPw5	DP6, DPc6, DPck6, DPcn6, DPf6, DPg6, DPgs6DPgt6, DPh6, DPht6, DPk6, DPks6, DPn6, DPr6, DPrs6, DPs6, DPt6, DPw6	DP7, DPc7, DPck7, DPcn7, DPf7, DPg7, DPgs7, DPgt7, DPh7, DPht7, DPk7, DPks7, DPn7, DPr7, DPrs7 DPs7, DPt7, DPw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass kinnikinnick	Douglas-fir snowberry pinegrass	Douglas-fir lodgepole pine pinegrass	Douglas-fir pinegrass bluebunch wheatgrass	Douglas-fir pinegrass	Douglas-fir pinegrass
Associates	snowberry showy daisy bluebunch wheatgrass junegrass fireweed	lodgepole pine kinnikinnick showy daisy bluebunch wheatgrass fireweed showy aster	snowberry showy daisy kinnikinnick timber milk-vetch bluebunch wheatgrass showy aster	snowberry showy daisy Rocky Mtn. juniper Rocky Mtn. fescue showy aster	snowberry showy daisy bluebunch wheatgrass showy aster Rocky Mtn. juniper	snowberry showy daisy bluebunch wheatgrass showy aster Rocky Mtn. juniper
Bear Forage Species	kinnikinnick bluebunch wheatgrass junegrass fireweed	kinnikinnick bluebunch wheatgrass fireweed	timber milk-vetch bluebunch wheatgrass	bluebunch wheatgrass Rocky Mtn. fescue	bluebunch wheatgrass	bluebunch wheatgrass

Comments: This unit may be used for security and thermal cover. Ungulates and bears may also take advantage of feeding on the grasses, shrubs or herbs found in the understory.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	DP:na / 01 Douglas-fir – Pinegrass – Feathermoss : Spreading Needlegrass - Cut-leaved Anemone Seral Association DP:np / 01 Douglas-fir – Pinegrass – Feathermoss : Spreading Needlegrass - Pussytoes Seral Association DP:pp / 01 Douglas-fir – Pinegrass – Feathermoss : Short-awned Porcupinegrass – Pussytoes Seral Association DPK :pp / 01 Douglas-fir – Pinegrass – Feathermoss; cool aspect : Short-awned Porcupinegrass – Pussytoes Seral Association DP:wy / 01 Douglas-fir – Pinegrass – Feathermoss: Bluebunch Wheatgrass – Yarrow Seral Association DPg :wy / 01 Douglas-fir – Pinegrass – Feathermoss; gullied : Bluebunch Wheatgrass – Yarrow Seral Association DPh :wy / 01 Douglas-fir – Pinegrass – Feathermoss; hummocky : Bluebunch Wheatgrass – Yarrow Seral Association DPk :wy / 01 Douglas-fir – Pinegrass – Feathermoss; cool aspect : Bluebunch Wheatgrass – Yarrow Seral Association DPn :wy / 01 Douglas-fir – Pinegrass – Feathermoss; fan : Bluebunch Wheatgrass – Yarrow Seral Association DPt :wy / 01 Douglas-fir – Pinegrass – Feathermoss; terrace : Bluebunch Wheatgrass – Yarrow Seral Association DPw :wy / 01 Douglas-fir – Pinegrass – Feathermoss; warm aspect : Bluebunch Wheatgrass – Yarrow Seral Association
These seral associations are used to represent recent forest encroachment from zonal DP/01 site series onto established grassland communities (NA/36, NP/35, PP/34, WY/33). In the Churn Creek Study Area this occurs most commonly on the WY/33 Bluebunch wheatgrass – Yarrow site series, thus forming the DP:wy Seral Association, which also may occur on various aspects (DPg:wy, DPh:wy, DPk:wy, DPn:wy, DPt:wy, DPw:wy). The NA/36 Spreading Needlegrass - Cut-leaved Anemone, NP/35 Spreading Needlegrass - Pussytoes and the PP/34 Short-awned Porcupinegrass – Pussytoes site series are uncommon in the Churn Creek Study Area, but forest encroachment does occur on these sites where they are adjacent to DP/01 forests, thus forming the DP:na, DP:np, or DP:pp Seral Associations.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1050	9501
Slope (%)	8-24	12
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic to submesic	medium	
Drainage	well to moderately well	
Surficial Material		
colian veneer over moraine		
Soil Development		
dark brown chernozem		
	Range	Mean
Humus Depth (cm)	0-0.2	0.1
Coarse Fragments (%)	20-70	
Soil Texture	Humus Form	
loamy	mull	

PLOT 9800037 DP3 :pp

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DP / 01

Douglas-fir – Pinegrass - Feathermoss

Map Symbol	DP3:na	DP3:np	DP3:pp, DPk3:pp	DP3:wy, DPg3:wy, DPh3:wy, DPk3:wy, DP3n:wy, DPT3:wy, DPw3:wy
Plant species	Shrub	Shrub	Shrub	Shrub
Dominants	Douglas-fir bluebunch wheatgrass spreading needlegrass	Douglas-fir spreading needlegrass bluebunch wheatgrass <i>Cladonia pyxidata</i>	short-awned porcupinegrass Douglas-fir Kentucky bluegrass <i>Cladonia spp.</i>	bluebunch wheatgrass Douglas-fir pasture sage <i>Cladonia spp.</i>
Associates	cut-leaved anemone timber-milk vetch pasture sage purple needlegrass <i>Cladonia spp.</i>	short-awned porcupinegrass small-flowered penstemon pussytoes salsify old man's whiskers northern bedstraw juniper haircap moss <i>Cladonia spp.</i> <i>Peltigera spp.</i>	junegrass lodgepole pine salsify umber pussytoes bluebunch wheatgrass pasture sage rabbit-brush	pussytoes yarrow
Plots			9800037	C101, C169, C295, C643

Comments: The seral associations occur only as structural stage 3 with most trees under 10m height and generally over 10% tree cover, although an area with many advanced seedlings may have less than 10% cover but succession is obviously toward forest. Once structural stage 4 the pole sapling/young forest stage is reached, a forest understory begins replacing the grassland plant community since conditions such as microclimate and soil acidity change due to the dominance of trees.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

DP / 01

Douglas-fir – Pinegrass - Feathermoss

Map Symbol	DP3:na	DP3:np	DP3:pp, DPk3:pp	DP3:wy, DPg3:wy, DPh3:wy, DPk3:wy, DPt3:wy, DPw3:wy
Plant Species	Shrub	Shrub	Shrub	Shrub
Ungulate Forage Species - Dominants	Douglas-fir bluebunch wheatgrass spreading needlegrass	Douglas-fir spreading needlegrass bluebunch wheatgrass	short-awned porcupinegrass Douglas-fir Kentucky bluegrass	bluebunch wheatgrass Douglas-fir pasture sage
Ungulate Forage Species - Associates	cut-leaved anemone timber-milk vetch pasture sage purple needlegrass	short-awned porcupinegrass salsify old man's whiskers northern bedstraw	junegrass lodgepole pine salsify bluebunch wheatgrass pasture sage rabbit-brush	
Bear Forage Species	bluebunch wheatgrass spreading needlegrass cut-leaved anemone timber-milk vetch purple needlegrass	spreading needlegrass bluebunch wheatgrass short-awned porcupinegrass salsify old man's whiskers northern bedstraw	short-awned porcupinegrass Kentucky bluegrass junegrass salsify bluebunch wheatgrass	bluebunch wheatgrass

Comments: This ecosystem unit provides feeding habitat for ungulates and bears.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	DR / 06 Douglas-fir – Ricegrass - Feathermoss DRc / 06 Douglas-fir – Ricegrass - Feathermoss; coarse-textured soil DRg / 06 Douglas-fir – Ricegrass - Feathermoss; gullied
Typical sites are mesic to moist depressions and at the base of short slopes in a grassland or forest matrix. Soils are deep and medium-textured (DR). This type sometimes occur in gullies (DRg) or with coarse-textured soil (DRc).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	900-1150	1000
Slope (%)	0-10	5
Aspect (degrees)	135	
Moisture Regime	Nutrient Regime	
mesic to subhygric	medium to rich	
Drainage	moderately well	
Surficial Material		
glaciofluvial, glaciolacustrine, or morainal depressions		
Soil Development		
	Range	Mean
Humus Depth (cm)	2 - 6	
Coarse Fragments (%)	0-35	
Soil Texture	Humus Form	
loamy	moder, hemimor	

PLOT C98 DR6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DR / 06

Douglas-fir – Rice grass - Feathermoss

Map Symbol	DR2, DRc2, DRg2	DR3, DRc3, DRg3	DR4, DRc4, DRg4	DR5, DRc5, DRg5	DR6, DRc6, DRg6	DR7, DRc7, DRg7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	Kentucky bluegrass pinegrass fireweed	trembling aspen <i>Rosa spp.</i> willow fireweed Kentucky bluegrass pinegrass	Closed canopy of: trembling aspen <i>Rosa spp.</i> Kentucky bluegrass pinegrass	Closed canopy of: trembling aspen Douglas-fir <i>Rosa spp.</i> Kentucky bluegrass pinegrass red-stemmed feathermoss	Closed canopy of: Douglas-fir trembling aspen <i>Rosa spp.</i> tall oregon grape snowberry pinegrass red-stemmed feathermoss	Closed canopy of: Douglas-fir hybrid white spruce <i>Rosa spp.</i> tall oregon grape snowberry red-stemmed feathermoss
Associates	<i>Rosa spp.</i>	snowberry saskatoon American vetch	Douglas-fir northern bedstraw common dandelion snowberry	tall oregon grape northern bedstraw common dandelion snowberry soopolallie saskatoon fireweed	hybrid white spruce field pussytoes saskatoon twinline purple peavine step moss	field pussytoes twinline pinegrass step moss
Plots				C798	C98	

Comments: These sites may be heavily used by livestock, and clearing for grazing, logging and/or burning create structural stages 2 and 3. Mature climax stands of mixed Douglas-fir and hybrid white spruce are uncommon. Many sites occur as moderately closed mixed trembling aspen and Douglas-fir stands with a moderately dense shrub/herb layer and a well developed moss layer. Lodgepole pine may occur in this type near the upper subzone boundary.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DR / 06

Douglas-fir – Ricegrass - Feathermoss

Map Symbol	DR2, DRc2, DRg2	DR3, DRc3, DRg3	DR4, DRc4, DRg4	DR5, DRc5, DRg5	DR6, DRc6, DRg6	DR7, DRc7, DRg7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	Kentucky bluegrass pinegrass fireweed	trembling aspen <i>Rosa spp.</i> willow fireweed Kentucky bluegrass pinegrass	trembling aspen <i>Rosa spp.</i> Kentucky bluegrass pinegrass	trembling aspen Douglas-fir <i>Rosa spp.</i> Kentucky bluegrass pinegrass	Douglas-fir trembling aspen <i>Rosa spp.</i> tall oregon grape snowberry pinegrass	Douglas-fir <i>Rosa spp.</i> tall oregon grape snowberry
Associates	<i>Rosa spp.</i>	snowberry saskatoon American vetch	Douglas-fir common dandelion snowberry	tall oregon grape common dandelion snowberry soopolallie fireweed	saskatoon purple peavine	pinegrass
Bear Forage Species	Kentucky bluegrass fireweed <i>Rosa spp.</i>	<i>Rosa spp.</i> fireweed Kentucky bluegrass saskatoon American vetch	<i>Rosa spp.</i> Kentucky bluegrass common dandelion	<i>Rosa spp.</i> Kentucky bluegrass tall oregon grape common dandelion soopolallie fireweed	<i>Rosa spp.</i> tall oregon grape saskatoon purple peavine	<i>Rosa spp.</i> tall oregon grape

Comments: This unit provides good cover for bears and ungulates along with important forage species.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	<p>DS / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage</p> <p>DSc / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; coarse-textured</p> <p>DSck / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; coarse-textured soil on cool aspect</p> <p>DScs / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; coarse-textured shallow soil</p> <p>DSg / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; gullied</p> <p>DSh / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; hummocky</p> <p>DSj / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; gentle slope</p> <p>DSk / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; cool aspect</p> <p>DSn / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; fan or cone</p> <p>DSq / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; very steep cool aspect</p> <p>DSr / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; ridged</p> <p>DSs / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; shallow soil</p> <p>DSt / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; terrace</p> <p>DSz / 04 Douglas-fir – Bluebunch Wheatgrass – Pasture Sage; very steep warm aspect</p>
<p>Typical sites are moderate to steep slopes on warm aspects with deep, medium-textured soils (DS). On glaciofluvial sediments these frequently have coarse-textured soil (DSc, DSck, DScs) or occur on terrace scarps (DSt) or fans or cones (DSn). This ecosystem can be gullied (DSg), hummocky (DSh), ridged (DSr), or occur on very steep warm aspects (DSz). More rarely, it can occur on shallow soil (DSs) and gentle or cool aspects (DSj, DSk, DSq).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	35-80	45
Aspect (degrees)	200	
Moisture Regime	Nutrient Regime	
submesic to subxeric	poor to medium	
Drainage	well to rapid	
Surficial Material		
colluvial or eolian veneer over morainal blanket or undifferentiated material		
Soil Development		
brunisol, luvisol		
	Range	Mean
Humus Depth (cm)	0 - 2	1
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy, sandy loam	none, rhizomull, xeromor	

PLOT C652 DS5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DS / 04

Douglas-fir – Bluebunch Wheatgrass – Pasture Sage

Map Symbol	DS2, DSc2, DSck2, DScs2, DSg2, DSh2, DSj2, DSk2, DSn2, DSq2, DSr2, DSs2, DSt2, DSz2	DS3, DSc3, DSck3, DScs3, DSg3, DSh3, DSj3, DSk3, DSn3, DSq3, DSr3, DSs3, DSt3, DSz3	DS4, DSc4, DSck4, DScs4, DSg4, DSh4, DSj4, DSk4, DSn4, DSq4, DSr4, DSs4, DSt4, DSz4	DS5, DSc5, DSck5, DScs5, DSg5, DSh5, DSj5, DSk5, DSn5, DSq5, DSr5, DSs5, DSt5, DSz5	DS6, DSc6, DSck6, DScs6, DSg6, DSh6, DSj6, DSk6, DSn6, DSq6, DSr6, DSs6, DSt6, DSz6	DS7, DSc7, DSck7, DScs7, DSg7, DSh7, DSj7, DSk7, DSn7, DSq7, DSr7, DSs7, DSt7, DSz7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass junegrass pasture sage	snowberry bluebunch wheatgrass junegrass	Open canopy of: Douglas-fir bluebunch wheatgrass junegrass	Open canopy of: Douglas-fir bluebunch wheatgrass junegrass	Open canopy of: Douglas-fir bluebunch wheatgrass pussytoes junegrass	Open canopy of: Douglas-fir bluebunch wheatgrass pussytoes
Associates	snowberry arrow-leaved balsamroot northern bedstraw yarrow pussytoes	Douglas-fir nodding onion spike-like goldenrod saskatoon yarrow pussytoes pasture sage	snowberry saskatoon pussytoes nodding onion yarrow spike-like goldenrod <i>Peltigera canina</i>	snowberry saskatoon pussytoes nodding onion yarrow spike-like goldenrod northern wormwood <i>Peltigera canina</i>	saskatoon nodding onion yarrow spike-like goldenrod <i>Peltigera canina</i>	saskatoon nodding onion junegrass yarrow spike-like goldenrod creeping juniper <i>Peltigera canina</i>
Plots				C547, C652		C116

Comments: An open forest of Douglas-fir is typical, with bluebunch wheatgrass and sparse herbs and frequent exposed mineral soil. Structural stages 2 and 3 are created by logging and/or burning. Mature forests are relatively open (10-35% mean cover) and shrub/herb layers are patchy.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DS / 04

Douglas-fir – Bluebunch Wheatgrass – Pasture Sage

Map Symbol	DS2, DSc2, DSck2, DScs2, DSg2, DSh2, DSj2, DSk2, DSn2, DSq2, DSr2, DSs2, DSt2, DSz2	DS3, DSc3, DSck3, DScs3, DSg3, DSh3, DSj3, DSk3, DSn3, DSq3, DSr3, DSs3, DSt3, DSz3	DS4, DSc4, DSck4, DScs4, DSg4, DSh4, DSj4, DSk4, DSn4, DSq4, DSr4, DSs4, DSt4, DSz4	DS5, DSc5, DSck5, DScs5, DSg5, DSh5, DSj5, DSk5, DSn5, DSq5, DSr5, DSs5, DSt5, DSz5	DS6, DSc6, DSck6, DScs6, DSg6, DSh6, DSj6, DSk6, DSn6, DSq6, DSr6, DSs6, DSt6, DSz6	DS7, DSc7, DSck7, DScs7, DSg7, DSh7, DSj7, DSk7, DSn7, DSq7, DSr7, DSs7, DSt7, DSz7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass junegrass pasture sage	snowberry bluebunch wheatgrass junegrass	Douglas-fir bluebunch wheatgrass junegrass	Douglas-fir bluebunch wheatgrass junegrass	Douglas-fir bluebunch wheatgrass junegrass	Douglas-fir bluebunch wheatgrass
Associates	snowberry arrow-leaved balsamroot	Douglas-fir saskatoon nodding onion pasture sage	snowberry saskatoon nodding onion	snowberry saskatoon nodding onion northern wormwood	saskatoon nodding onion	saskatoon junegrass nodding onion
Bear Forage Species	bluebunch wheatgrass	bluebunch wheatgrass junegrass nodding onion saskatoon	saskatoon bluebunch wheatgrass junegrass nodding onion	saskatoon bluebunch wheatgrass junegrass nodding onion	saskatoon bluebunch wheatgrass junegrass nodding onion	saskatoon bluebunch wheatgrass junegrass nodding onion

Comments: Although the forest canopy is open it provides some security/ thermal cover for ungulates as well as some preferred forage species.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	<p>DW / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon</p> <p>DWc / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; coarse-textured</p> <p>DWg / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; gullied</p> <p>DWgk / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; gullied on cool aspect</p> <p>DWh / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; hummocky</p> <p>DWj / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; gentle slope</p> <p>DWk / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; cool aspect</p> <p>DWq / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; very steep cool aspect</p> <p>DWqv / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; very shallow soil on very steep cool aspect</p> <p>DWr / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; ridged</p> <p>DWrv / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; very shallow soil on ridged terrain</p> <p>DWv / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; very shallow soil</p> <p>DWvz / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; very shallow soil on very steep warm aspect</p> <p>DWz / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon; very steep warm aspect</p>
<p>Typically occurs on moderate to steep warm aspects and crests, with shallow soils over bedrock (DW). The thin soils can be coarse-textured (DWc) or very shallow (DWv, DWvz). Depending on the underlying bedrock, it may occur on gullied, hummocky, or ridged terrain (DWg, DWgk, DWh, DWr, DWrv) or very steep or gentle slopes (DWz, DWj). It may also be found on cool aspects (DWk, DWq, DWqv).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	30-55	43
Aspect (degrees)	135-285	
Moisture Regime	Nutrient Regime	
subxeric to xeric	very poor to poor	
Drainage	rapid	
Surficial Material		
colluvial veneer or undifferentiated materials over bedrock		
Soil Development		
regosol		
	Range	Mean
Humus Depth (cm)	0 - 4	1
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
sandy loam, loamy sand	none, rhizomull, xeromoder	

PLOT C565 DW5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 DW / 02 Douglas-fir – Bluebunch Wheatgrass - Penstemon

Map Symbol	DW2, DWc2, DWg2, DWgk2, DWh2, DWj2, DWk2, DWq2, DWqv2, DWr2, DWrv2, DWv2, DWvz2, DWz2	DW3, DWc3, DWg3, DWgk3, DWh3, DWj3, DWk3, DWq3, DWqv3, DWr3, DWrv3, DWv3, DWvz3, DWz3	DW3b, DWc3b, DWg3b, DWgk3b, DWh3b, DWj3b, DWk3b, DWq3b, DWqv3b, DWr3b, DWrv3b, DWv3b, DWvz3b, DWz3b	DW4, DWc4, DWg4, DWgk4, DWh4, DWj4, DWk4, DWq4, DWqv4, DWr4, DWrv4, DWv4, DWvz4, DWz4	DW5, DWc5, DWg5, DWgk5, DWh5, DWj5, DWk5, DWq5, DWqv5, DWr5, DWrv5, DWv5, DWvz5, DWz5	DW6, DWc6, DWg6, DWgk6, DWh6, DWj6, DWk6, DWq6, DWqv6, DWr6, DWrv6, DWv6, DWvz6, DWz6	DW7, DWc7, DWg7, DWgk7, DWh7, DWj7, DWk7, DWq7, DWqv7, DWr7, DWrv7, DWv7, DWvz7, DWz7
Plant species	Herb	Shrub	Tall Shrub Climax	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass needle-and- thread grass	Rocky Mtn. juniper common juniper bluebunch wheatgrass junegrass pasture sage	Open canopy of: Douglas –fir Rocky Mtn. juniper common juniper bluebunch wheatgrass junegrass pasture sage	Open canopy of: Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass common juniper	Open canopy of: Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass common juniper	Open canopy of: Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass common juniper creeping juniper	Open canopy of: Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass common juniper creeping juniper
Associates	common juniper pasture sage pusseytoes <i>Collema spp.</i>	rabbit-brush shrubby penstemon Douglas-fir <i>Collema spp.</i>	rabbit-brush shrubby penstemon Douglas-fir <i>Collema spp.</i>	shrubby penstemon spike-like goldenrod pasture sage Ross’s sedge <i>Collema spp.</i>	shrubby penstemon spike-like goldenrod pasture sage Ross’s sedge northern wormwood <i>Collema spp.</i>	shrubby penstemon spike-like goldenrod pasture sage Ross’s sedge <i>Collema spp.</i>	shrubby penstemon spike-like goldenrod pasture sage Ross’s sedge <i>Collema spp.</i>
Plots			C11, C199		C565, C671	C543	

Comments: Forests are very open (<20%) in patches or clumps with multilayered stems. An open cover of shrubs and herbs with considerable exposed rock and soil is common. On very thin soils, Douglas-fir may be stunted, and only reach the 3b structural stage. Logging and burning create structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DW / 02

Douglas-fir – Bluebunch Wheatgrass - Penstemon

Map Symbol	DW2, DWc2, DWg2, DWgk2, DWh2, DWj2, DWk2, DWq2, DWqv2, DWr2, DWrv2, DWv2, DWvz2, DWz2	DW3, DWc3, DWg3, DWgk3, DWh3, DWj3, DWk3, DWq3, DWqv3, DWr3, DWrv3, DWv3, DWvz3, DWz3	DW3b, DWc3b, DWg3b, DWgk3b, DWh3b, DWj3b, DWk3b, DWq3b, DWqv3b, DWr3b, DWrv3b, DWv3b, DWvz3b, DWz3b	DW4, DWc4, DWg4, DWgk4, DWh4, DWj4, DWk4, DWq4, DWqv4, DWr4, DWrv4, DWv4, DWvz4, DWz4	DW5, DWc5, DWg5, DWgk5, DWh5, DWj5, DWk5, DWq5, DWqv5, DWr5, DWrv5, DWv5, DWvz5, DWz5	DW6, DWc6, DWg6, DWgk6, DWh6, DWj6, DWk6, DWq6, DWqv6, DWr6, DWrv6, DWv6, DWvz6, DWz6	DW7, DWc7, DWg7, DWgk7, DWh7, DWj7, DWk7, DWq7, DWqv7, DWr7, DWrv7, DWv7, DWvz7, DWz7
Plant Species	Herb	Shrub	Tall Shrub Climax	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass needle-and-thread grass	Rocky Mtn. juniper bluebunch wheatgrass junegrass pasture sage	Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass junegrass pasture sage	Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass	Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass	Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass	Douglas-fir Rocky Mtn. juniper bluebunch wheatgrass
Associates	pasture sage	rabbit-brush Douglas-fir	rabbit-brush	pasture sage Ross's sedge	pasture sage Ross's sedge northern wormwood	pasture sage Ross's sedge	pasture sage Ross's sedge
Bear Forage Species	bluebunch wheatgrass	bluebunch wheatgrass junegrass	bluebunch wheatgrass junegrass	bluebunch wheatgrass Ross's sedge	bluebunch wheatgrass Ross's sedge	bluebunch wheatgrass Ross's sedge	bluebunch wheatgrass Ross's sedge

Comments: The warm aspect forest provides good habitat for deer and elk. They may feed on Douglas-fir needles and grasses. The canopy may provide some security and thermal cover.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	RS / 07 Douglas-fir – Prickly rose - Sarsaparilla RSac / 07 Douglas-fir – Prickly rose - Sarsaparilla; active floodplain with coarse-textured soil RSg / 07 Douglas-fir – Prickly rose - Sarsaparilla; gullied RSk / 07 Douglas-fir – Prickly rose - Sarsaparilla; cool aspect
Typical sites are gentle lower slopes of north aspects in receiving positions. Soils are typically deep and medium-textured (RS). Seepage water is seasonally present. This type may appear on active floodplains with coarse-textured soil or in gullies (RSac, RSg) or on cool slopes >25% (RSk).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	840-1200	1000
Slope (%)	0-5	3
Aspect (degrees)	320-90	
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	imperfect	
Surficial Material		
fluvial		
Soil Development		
	Range	Mean
Humus Depth (cm)	2 - 6	4
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
loamy, sandy	hemimor	

PLOT C172 RS4

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RS / 07

Douglas-fir – Prickly Rose – Sarsaparilla

Map Symbol	RS2, RSac2, RSg2, RSk2	RS3, RSac3, RSg3, RSk3	RS4, RSac4, RSg4, RSk4	RS5, RSac5, RSg5, RSk5	RS6, RSac6, RSg6, RSk6	RS7, RSac7, RSg7, RSk7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	Kentucky bluegrass pinegrass salsify common dandelion	paper birch trembling aspen <i>Rosa spp.</i> red-osier dogwood snowberry pinegrass red-stemmed feathermoss	Closed canopy of: paper birch trembling aspen <i>Rosa spp.</i> red-osier dogwood snowberry red-stemmed feathermoss	Closed canopy of: paper birch trembling aspen <i>Rosa spp.</i> red-osier dogwood snowberry red-stemmed feathermoss	Closed canopy of: hybrid white spruce Douglas-fir paper birch trembling aspen Douglas maple red-stemmed feathermoss	Closed canopy of: hybrid white spruce Douglas-fir paper birch trembling aspen red-stemmed feathermoss
Associates	<i>Rosa sp.</i> snowberry American vetch northern bedstraw red-stemmed feathermoss	saskatoon willow common dandelion American vetch northern bedstraw salsify	hybrid white spruce Douglas-fir willow American vetch northern bedstraw salsify pinegrass	hybrid white spruce Douglas-fir willow American vetch northern bedstraw salsify	willow <i>Rosa spp.</i> red-osier dogwood American vetch northern bedstraw	willow <i>Rosa spp.</i> red-osier dogwood American vetch northern bedstraw
Plots			C172		C163	

Comments: The forest canopy is moderately closed, generally consisting of mixed white birch, trembling aspen, Douglas-fir, and hybrid white spruce. There is a moderate density of shrubs and moist site forbs and grasses.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RS / 07

Douglas-fir – Prickly Rose - Sarsaparilla

Map Symbol	RS2, RSac2, RSg2, RSk2	RS3, RSac3, RSg3, RSk3	RS4, RSac4, RSg4, RSk4	RS5, RSac5, RSg5, RSk5	RS6, RSac6, RSg6, RSk6	RS7, RSac7, RSg7, RSk7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	Kentucky bluegrass pinegrass salsify common dandelion	paper birch. trembling aspen <i>Rosa spp.</i> red-osier dogwood snowberry pinegrass	paper birch. trembling aspen <i>Rosa spp.</i> red-osier dogwood snowberry	paper birch. trembling aspen <i>Rosa spp.</i> red-osier dogwood snowberry	Douglas-fir paper birch. trembling aspen Douglas maple	Douglas-fir paper birch. trembling aspen
Associates	American vetch <i>Rosa spp.</i> snowberry	saskatoon willow common dandelion American vetch salsify	Douglas-fir willow American vetch salsify pinegrass	Douglas-fir willow American vetch salsify	willow <i>Rosa spp.</i> red-osier dogwood American vetch	willow <i>Rosa spp.</i> red-osier dogwood American vetch
Bear Forage Species	fowl bluegrass salsify common dandelion American vetch <i>Rosa spp.</i>	<i>Rosa spp.</i> red-osier dogwood saskatoon common dandelion American vetch salsify	<i>Rosa spp.</i> red-osier dogwood American vetch salsify pinegrass	<i>Rosa spp.</i> red-osier dogwood American vetch salsify	<i>Rosa spp.</i> red-osier dogwood American vetch	<i>Rosa spp.</i> red-osier dogwood American vetch

Comments: This unit provides security and thermal cover for bears and ungulates while providing important forage species.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	SH / 09 Hybrid White Spruce – Horsetail – Glow Moss
Typical sites are toe slopes and depressions where the water table is near the surface, adjacent to wetlands and on floodplains of larger streams. Soils are typically deep and fine-textured (SH).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0-5	2
Aspect (degrees)	30	
Moisture Regime	Nutrient Regime	
hygric to subhydic	poor to rich	
Drainage	poor to imperfect	
Surficial Material		
fluvial		
Soil Development		
	Range	Mean
Humus Depth (cm)	8 - 40	20
Coarse Fragments (%)	0 - >70	
Soil Texture	Humus Form	
fine (silty)	hemimor, hydromor	

PLOT C22 SH3

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SH / 09

Hybrid white spruce – Horsetail - Glow Moss

Map Symbol	SH2	SH3	SH4	SH5	SH6	SH7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	horsetail sedges	willows trembling aspen horsetail mountain alder prickly rose Kentucky bluegrass clover	Open canopy of: hybrid white spruce trembling aspen horsetail mountain alder prickly rose	Open canopy of: hybrid white spruce trembling aspen horsetail mountain alder prickly rose	Open canopy of: hybrid white spruce horsetail mountain alder prickly rose	Open canopy of: hybrid white spruce horsetail mountain alder prickly rose
Associates	twinflower palmate coltsfoot tall annual willowherb buttercup glow moss	red-osier dogwood hybrid white spruce water birch twinflower buttercup fowl mannagrass palmate coltsfoot sedges glow moss	red-osier dogwood willow water birch palmate coltsfoot twinflower fowl mannagrass sedges glow moss leafy mosses	water birch willow red-osier dogwood snowberry twinflower fowl mannagrass sedges glow moss leafy mosses	water birch trembling aspen willow red-osier dogwood snowberry twinflower sedges glow moss leafy mosses	water birch trembling aspen willow red-osier dogwood snowberry twinflower sedges leafy mosses glow moss
Plots		C22				

Comments: Logging or clearing creates structural stages 2 or 3. Mature forests often have a patchy canopy, moderately dense shrub layer, and moist to wet site herbs.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SH / 09

Hybrid white spruce – Horsetail – Glow Moss

Map Symbol	SH2	SH3	SH4	SH5	SH6	SH7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	horsetail sedges	willows trembling aspen horsetail prickly rose Kentucky bluegrass clover	trembling aspen horsetail prickly rose	trembling aspen horsetail prickly rose	horsetail prickly rose	horsetail prickly rose
Associates	tall annual willowherb	red-osier dogwood water birch fowl mannagrass sedges	red-osier dogwood willow water birch fowl mannagrass sedges	water birch willow red-osier dogwood snowberry fowl mannagrass sedges	water birch trembling aspen willow red-osier dogwood sedges snowberry	water birch trembling aspen willow red-osier dogwood snowberry sedges
Bear Forage Species	horsetail sedges tall annual willowherb	horsetail prickly rose red-osier dogwood fowl mannagrass sedges	horsetail prickly rose red-osier dogwood fowl mannagrass sedges	horsetail prickly rose red-osier dogwood fowl mannagrass sedges	horsetail prickly rose red-osier dogwood sedges	horsetail prickly rose red-osier dogwood sedges

Comments: This ecosystem unit provides valuable bear habitat during the spring green-up as there is an abundance of horsetail for feeding along with some canopy closure for cover.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	SS / 08 Hybrid White Spruce – Snowberry – Prickly Rose SSg / 08 Hybrid White Spruce – Snowberry – Prickly Rose; gullied
These sites typically occur on gentle moist to wet lower and toe north slopes, often associated with intermittent or permanent stream channels. They receive seepage throughout the growing season. Soils are typically deep and medium-textured (SS). These sites are frequently found in gullies (SSg).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to subhygric	rich to very rich	
Drainage	imperfect to poor	
Surficial Material		
fluvial		
Soil Development		
orthic regosol, gleysol		
	Range	Mean
Humus Depth (cm)	0-2+	1.5
Coarse Fragments (%)	0-75	
Soil Texture	Humus Form	
medium, fine sandy loam	hemimor, mormoder	

PLOT 9800459 SS7

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
SS / 08

Name
Hybrid White Spruce – Snowberry – Prickly Rose

Map Symbol	SS2, SSg2	SS3, SSg3	SS4, SSg4	SS5, SSg5	SS6, SSg6	SS7, SSg7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	Kentucky bluegrass northern bedstraw American vetch common horsetail	trembling aspen <i>Rosa spp.</i> snowberry Kentucky bluegrass	Closed canopy of: trembling aspen <i>Rosa spp.</i> red-stemmed feathermoss	Closed canopy of: trembling aspen hybrid white spruce red-stemmed feathermoss	Closed canopy of: hybrid white spruce lawn moss red-stemmed feathermoss	Closed canopy of: hybrid white spruce lawn moss red-stemmed feathermoss
Associates	common dandelion pinegrass bunchberry	black gooseberry willow common horsetail northern bedstraw common dandelion American vetch pinegrass bunchberry red-stemmed feathermoss	hybrid white spruce snowberry Canadian violet red-osier dogwood pinegrass common horsetail twinflower bunchberry	<i>Rosa spp.</i> snowberry red-osier dogwood common horsetail showy aster Canadian violet sarsaparilla twinflower bunchberry	trembling aspen twinflower <i>Rosa spp.</i> snowberry red-osier dogwood pinegrass star-flowered false Solomon's-seal common horsetail bastard toadflax bunchberry	trembling aspen twinflower <i>Rosa spp.</i> snowberry red-osier dogwood pinegrass bunchberry star-flowered false Solomon's-seal common horsetail bastard toadflax waxpaper lichen step moss freckle pelt dog pelt
Plots						9800459, C825

Comments: Structural stages 2 and 3 are created by clearing for grazing or logging. Use by livestock introduces species like Kentucky bluegrass. Mature forest has a moderately closed canopy of hybrid white spruce, a moderate cover of shrubs, scattered moist site herbs, and a well developed moss layer, with leafy mosses usually present.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
SS / 08

Name
Hybrid White Spruce – Snowberry – Prickly Rose

Map Symbol	SS2, SSg2	SS3, SSg3	SS4, SSg4	SS5, SSg5	SS6, SSg6	SS7, SSg7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	Kentucky bluegrass American vetch common horsetail	trembling aspen <i>Rosa spp.</i> snowberry Kentucky bluegrass	trembling aspen <i>Rosa spp.</i>	trembling aspen		
Associates	common dandelion pinegrass	black gooseberry willow common horsetail common dandelion American vetch pinegrass	snowberry red-osier dogwood pinegrass common horsetail	<i>Rosa spp.</i> snowberry red-osier dogwood common horsetail	trembling aspen <i>Rosa spp.</i> snowberry red-osier dogwood pinegrass star-flowered false Solomon's-seal common horsetail	trembling aspen <i>Rosa spp.</i> snowberry red-osier dogwood pinegrass star-flowered false Solomon's-seal common horsetail
Bear Forage Species	Kentucky bluegrass common dandelion American vetch common horsetail pinegrass	<i>Rosa spp.</i> Kentucky bluegrass black gooseberry common horsetail common dandelion American vetch pinegrass	<i>Rosa spp.</i> red-osier dogwood common horsetail	<i>Rosa spp.</i> red-osier dogwood common horsetail	<i>Rosa spp.</i> red-osier dogwood star-flowered false Solomon's-seal common horsetail	<i>Rosa spp.</i> red-osier dogwood star-flowered false Solomon's-seal common horsetail

Comments: This unit provides forage in all seasons for ungulate species. Bears also have moderate feeding values in this unit.

3.2 IDExm Grassland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	NA / 36 Spreading Needlegrass – Cut-leaved Anemone NAg / 36 Spreading Needlegrass – Cut-leaved Anemone; gullied
This grassland type occurs on moderate to steep north-facing slopes with relatively late snowpack and lower evapotranspiration than more mesic grasslands. Soils are typically deep and medium-textured (NA). It occurs within a matrix of WY/33 grassland ecosystems. Slopes may be gullied (NAg).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1100	950
Slope (%)	25-50	35
Aspect (degrees)	285-45	
Moisture Regime	Nutrient Regime	
subhygric to mesic	medium	
Drainage	imperfect to moderately well	
Surficial Material		
eolian veneer over morainal blanket		
Soil Development		
black chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
medium		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 NA / 36 Spreading Needlegrass – Cut-leaved Anemone

Map Symbol	NA 2, NAg2
Plant species	Herb Climax / Late Seral
Dominants	bluebunch wheatgrass spreading needlegrass
Associates	cut-leaved anemone timber-milk vetch pasture sage Columbian needlegrass <i>Cladonia spp.</i>
Plots	C49

Comments: While spreading needlegrass typically forms a nearly continuous cover in this site series farther north, in the Churn Creek Study Area spreading needlegrass is much less dominant, being largely replaced by vigorous bluebunch wheatgrass. A variety of forbs are present, while lichen cover is low (5-15%).

Map Symbol	NA2, NAg2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass spreading needlegrass
Ungulate Forage Species - Associates	timber milk-vetch pasture sage Columbian needlegrass
Bear Forage Species	bluebunch wheatgrass spreading needlegrass timber milk-vetch Columbian needlegrass

Comments: This unit provides some palatable forage species for ungulates and bears.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	NP / 39 Spreading Needlegrass - Pussytoes
This type typically occurs on level to gently sloping sites adjacent to the forest edge and in the lee of hills. Soils are typically deep and medium-textured (NP). Due to windbreak effect and shading, snow cover is greater and evapotranspiration less than on drier site series.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0-24	5
Aspect (degrees)	variable	
Moisture Regime	Nutrient Regime	
mesic	medium	
Drainage	moderately well	
Surficial Material		
eolian veneer over morainal blanket		
Soil Development		
chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
medium		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

NP / 39

Spreading Needlegrass - Pussytoes

Map Symbol	NP2
Plant species	Herb Climax / Late Seral
Dominants	spreading needlegrass bluebunch wheatgrass Cladonia pyxidata
Associates	short-awned porcupinegrass small-flowered penstemon pussytoes salsify old man's whiskers northern bedstraw juniper haircap moss <i>Cladonia spp.</i> <i>Peltigera spp.</i>
Plots	

Comments: Climax and late seral communities have a nearly continuous cover of spreading needlegrass with abundant grass litter. There is a vigorous cryptogam layer dominated by *Cladonia* and *Peltigera* species, except on sites where the grass litter is too thick for lichen growth. Spreading needlegrass occurs only sporadically in the IDFxm in the Churn Creek Study Area, mostly on the plateau fairly distant from the Fraser River canyon. Hence this site series is much less common in this study area than farther north. It is replaced by the WY/33 grassland site series which, in this area, often extends to the forest edge and in the lee of hills.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

NP / 35

Spreading Needlegrass - Pussytoes

Map Symbol	NP2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	spreading needlegrass bluebunch wheatgrass
Ungulate Forage Species - Associates	short-awned porcupinegrass salsify
Bear Forage Species	spreading needlegrass bluebunch wheatgrass short-awned porcupinegrass salsify

Comments: This ecosystem unit provides some palatable foraging species for ungulates.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	NR / 38 Spreading Needlegrass – Baltic rush NR:bb / 38a Spreading Needlegrass – Baltic Rush: Kentucky Bluegrass Seral Association
This unit typically occurs in moist depressions, toe slopes, and moisture receiving sites adjacent to wet meadows or wetlands. Soils are typically deep and medium-textured (NR). The seral association NR:bb /38a commonly occurs on grazed sites.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0-3	1
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	imperfect	
Surficial Material		
eolian veneer, glaciolacustrine, glaciofluvial, or morainal blanket		
Soil Development		
chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	<20%	
Soil Texture	Humus Form	
loamy, silty or clayey	mull	

PLOT C104 NR2 :bb

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

NR / 38

Spreading Needlegrass – Baltic Rush

Map Symbol	NR2	NR2:bb
Plant species	Herb Climax / Late Seral	Herb Seral Association
Dominants	spreading needlegrass Baltic rush	Kentucky bluegrass
Associates	field sedge small-flowered penstemon graceful cinquefoil	Baltic rush slender wheatgrass sweet-clover alfalfa common dandelion field sedge Nevada bluegrass
Plots		C20, C42, C104

Comments: Intensive grazing had promoted the seral association NR:bb dominated by Kentucky bluegrass and weedy plant species. No sites with climax vegetation were observed, since this ecosystem is generally heavily grazed and has a dense, vigorous cover of Kentucky bluegrass and various other introduced herbs.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

NR / 38

Spreading Needlegrass – Baltic Rush

Map Symbol	NR2	NR2:bb
Plant Species	Herb Climax / Late Climax	Herb Seral Association
Ungulate Forage Species - Dominants	spreading needlegrass Baltic rush	Kentucky bluegrass
Ungulate Forage Species - Associates	field sedge	Baltic rush slender wheatgrass sweet-clover alfalfa common dandelion field sedge Nevada bluegrass
Bear Forage Species	spreading needlegrass Baltic rush field sedge	Kentucky bluegrass Baltic rush slender wheatgrass sweet-clover alfalfa common dandelion field sedge Nevada bluegrass

Comments: The seral association is highly palatable to ungulates and bears and will be used for feeding. The typic situation is not as valuable for feeding but may still receive low to moderate use.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	<p>PP / 34 Short-awned Porcupinegrass – Pussytoes PPh / 34 Short-awned Porcupinegrass – Pussytoes; hummocky PPt / 34 Short-awned Porcupinegrass – Pussytoes; terrace PP:ks / 34 Short-awned Porcupinegrass – Pussytoes: Kentucky Bluegrass – Short-awned Porcupinegrass Seral Association PP:sj / 34 Short-awned Porcupinegrass – Pussytoes: Short-awned Porcupinegrass – Junegrass Seral Association</p>
<p>Typical are flat-lying and gently sloping sites with short north, northeast, or southeast aspects. Due to cool or lee aspects, snowpacks are more persistent than in other areas. Soils are typically deep and medium-textured (PP). These sites may occur on terraced (PPt) or hummocky terrain (PPh). In the Churn Creek Study Area, this site series is much less common than farther north. However, it was observed on short north or lee aspects and in shallow depressions where snow and meltwater accumulates within a matrix of drier grassland types like WY/33. It appears in the hollows of hummocky or undulating bedrock-controlled plateaus where the dominant site series is WY/33.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	900-1100	1000
Slope (%)	0-10	5
Aspect (degrees)	315-135	
Moisture Regime	Nutrient Regime	
mesic	medium	
Drainage	moderately well	
Surficial Material		
eolian veneer over morainal blanket		
Soil Development		
dark brown chernozem		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
medium	mull	

PLOT C18 PP2 :sj

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

PP / 34

Short-awned Porcupinegrass - Pussytoes

Map Symbol	PP2, PPh2, PPt2	PP2:ks	PP2:sj
Plant species	Herb Climax / Late Seral	Herb Seral Association	Herb Seral Association
Dominants	short-awned porcupinegrass umber pussytoes junegrass pasture sage <i>Cladonia cariosa</i> <i>Collema spp.</i> <i>Psora spp.</i>	Kentucky bluegrass short-awned porcupinegrass junegrass	junegrass short-awned porcupinegrass pussytoes pasture sage Rocky Mountain fescue
Associates	spreading needlegrass trailing fleabane old man's whiskers nodding onion lemonweed <i>Cladonia pyxidata</i> <i>Peltigera spp.</i>	stiff needlegrass pussytoes trailing fleabane pasture sage yellow salsify lemonweed silverweed <i>Collema spp.</i>	trailing fleabane Kentucky bluegrass spike-like goldenrod cut-leaved anemone lemonweed Holboell's rockcress <i>Cladonia cariosa</i> <i>Collema spp.</i>
Plots	C62	C438, C454	C18

Comments: Climax and late seral vegetation is dominated by a nearly continuous cover of short-awned porcupinegrass with a thick litter buildup and only scattered forbs and lichens. Disturbance species such as field chickweed, Kentucky bluegrass, pasture sage, woolly cinquefoil, northern wormwood, and pale comandra can be locally abundant. Grazing promotes weedy forbs which increase from moderately grazed (PP:ks) to heavily grazed (PP:sj) seral associations. In the absence of burning, tree establishment is frequent near forest edges, and the PP commonly grades into the DP:pp seral association.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 PP / 34 Short-awned Porcupinegrass - Pussytoes

Map Symbol	PP2, PPh2, PPt2	PP2:ks	PP2:sj
Plant Species	Herb Climax / Late Seral	Herb Seral Association	Herb Seral Association
Ungulate Forage Species - Dominants	short-awned porcupinegrass junegrass pasture sage	Kentucky bluegrass short-awned porcupinegrass junegrass	junegrass short-awned porcupinegrass pasture sage Rocky Mountain fescue
Ungulate Forage Species - Associates	spreading needlegrass nodding onion	pasture sage	Kentucky bluegrass
Bear Forage Species	short-awned porcupinegrass junegrass spreading needlegrass nodding onion	Kentucky bluegrass short-awned porcupinegrass junegrass	junegrass short-awned porcupinegrass Rocky Mountain fescue Kentucky bluegrass

Comments: Junegrass and Kentucky bluegrass are preferred ungulate forage species. This unit, especially the seral associations provides good feeding habitat for ungulates. Bears may dig for grubs and nodding onion bulbs especially in the typic ecosystem unit.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	<p>WP / 32 Bluebunch Wheatgrass – Pasture Sage</p> <p>WPg / 32 Bluebunch Wheatgrass – Pasture Sage; gullied WPk / 32 Bluebunch Wheatgrass – Pasture Sage; cool aspect Wpm / 32 Bluebunch Wheatgrass – Pasture Sage; medium-textured soil Wpn / 32 Bluebunch Wheatgrass – Pasture Sage; fan or cone WPr / 32 Bluebunch Wheatgrass – Pasture Sage; ridge WPs / 32 Bluebunch Wheatgrass – Pasture Sage; shallow soil WPz / 32 Bluebunch Wheatgrass – Pasture Sage; very steep warm aspect</p>
<p>This type typically occurs in warm aspects sufficiently steep to be characterized by colluvial activity and sheet or gully erosion. Soils are typically deep and coarse-textured (WP). Gullying is common on these sites (WPg). They frequently occur on ridgetops (WPr), fans or cones and terraces (Wpn), and very steep warm aspects (WPz). It occasionally occurs on cool aspects (WPk) or with medium-textured or shallow soils (Wpm, WPs).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1100	950
Slope (%)	30-100	50
Aspect (degrees)	145-220	
Moisture Regime	Nutrient Regime	
subxeric to submesic	poor	
Drainage	well to rapid	
Surficial Material		
colluvial, eolian veneer, glaciofluvial or morainal blanket		
Soil Development		
orthic regosol		
	Range	Mean
Humus Depth (cm)	0-1	0.5
Coarse Fragments (%)	20 - >70	
Soil Texture	Humus Form	
fine sandy loam, loamy sand	none, mull	

PLOT C162 WP2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WP / 32

Bluebunch Wheatgrass – Pasture Sage

Map Symbol	WP2, WPg2, WPK2, Wpm2, Wpn2, WPr2, WPs2, WPz2	WP3a, WPg3a, WPK3a, Wpm3a, Wpn3a, WPr3a, WPs3a, WPz3a
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass pasture sage	big sagebrush bluebunch wheatgrass pasture sage rabbit-brush
Associates	rabbit-brush tarragon pussytoes Sandberg's bluegrass needle-and-thread grass <i>Cladonia spp.</i> <i>Collema spp.</i> sidewalk moss	pussytoes tarragon <i>Cladonia spp.</i> <i>Collema spp.</i> sidewalk moss
Plots	9800456, C162, C676	

Comments: Bluebunch wheatgrass clumps are usually well-spaced but can be fairly continuous with 15-60% cover. Other herbs and lichens form a minor component of this ecosystem, with mineral soil (10-25% cover) and rocks (5-40% cover) dominating between the grass clumps. Widely scattered Douglas-fir sometimes grow on this type. In the Churn Creek Study Area near the BGxw2 transition along the Fraser Canyon, big sagebrush may occur in this site series with greater than 10% cover, forming a Low Shrub Climax (3a).

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WP / 32

Bluebunch Wheatgrass – Pasture sage

Map Symbol	WP2, WPg2, WPk2, WPm2, WPn2, WPr2, WPs2, WPz2	WP3a, WPg3a, WPk3a, WPm3a, WPn3a, WPr3a, WPs3a, WPz3a
Plant Species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass pasture sage	big sagebrush bluebunch wheatgrass pasture sage rabbit-brush
Ungulate Forage Species - Associates	rabbit-brush tarragon Sandberg's bluegrass needle-and-thread grass	tarragon
Bear Forage Species	bluebunch wheatgrass	bluebunch wheatgrass tarragon

Comments: Moderate forage availability for both ungulates and bears. May receive use in spring due to warm aspect, which allows for early green-up.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	<p>WT / 31 Bluebunch Wheatgrass – Pussytoes</p> <p>WTg / 31 Bluebunch Wheatgrass – Pussytoes; gullied</p> <p>WTh / 31 Bluebunch Wheatgrass – Pussytoes; hummocky</p> <p>WTK / 31 Bluebunch Wheatgrass – Pussytoes; cool aspect</p> <p>WTq / 31 Bluebunch Wheatgrass – Pussytoes; very steep cool aspect</p> <p>WTqv / 31 Bluebunch Wheatgrass – Pussytoes; very steep cool aspect with very shallow soil</p> <p>WTr / 31 Bluebunch Wheatgrass – Pussytoes; ridged</p> <p>WTV / 31 Bluebunch Wheatgrass – Pussytoes; very shallow soil</p> <p>WTw / 31 Bluebunch Wheatgrass – Pussytoes; warm aspect</p> <p>WTz / 31 Bluebunch Wheatgrass – Pussytoes; very steep warm aspect</p>
<p>This is the driest type of grassland in the IDFxm, typically occurring on gently to moderately sloping bedrock outcrops with shallow soils (WT). Sometimes the soil is very shallow (WTV). Depending on the underlying bedrock, sites may be gullied (WTg), hummocky (WTh), or ridged (WTr). Steeper sites are common, designated with cool (WTK, WTq, WTqv) or warm (WTw, WTz) aspect modifiers.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1100	1000
Slope (%)	0-25	8
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subxeric to xeric	poor to very poor (medium)	
Drainage	well to rapid	
Surficial Material		
weathered bedrock, very thin eolian veneer over morainal veneer over bedrock		
Soil Development		
orthic dark brown chernozem, regosol		
	Range	Mean
Humus Depth (cm)	0-0.3	0.2
Coarse Fragments (%)	20-70	
Soil Texture	Humus Form	
loamy	rhizomull	

PLOT C46 WT2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WT / 31

Bluebunch Wheatgrass - Pussytoes

Map Symbol	WT2, WTg2, WTh2, WTk2, WTq2, WTqv2, WTr2, WTv2, WTw2, WTz2	WT3a, WTz3a
Plant species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass junegrass	big sagebrush bluebunch wheatgrass
Associates	needle-and-thread grass pasture sage pussytoes fine-leaved daisy parsnip-flowered buckwheat compact selaginella Sandberg's bluegrass	rabbit-brush junegrass needle-and-thread grass pasture sage pussytoes fine-leaved daisy parsnip-flowered buckwheat compact selaginella Sandberg's bluegrass
Plots	9800450, C46, C623, C670	

Comments: Vegetation cover is sparse, dominated by widely spaced clumps of bluebunch wheatgrass (5-40% cover) with minor amounts of needle-and-thread grass, pasture sage, and scattered other herbs. Lichen cover is sparse. In the Churn Creek Study Area near the BGxw2 transition in the Fraser Canyon, big sagebrush may occur in this site series forming a Low Shrub Climax (3a).
The rare blue-listed American chamaerhodos (*Chamaerhodos erecta*) is an inconspicuous plant that is found in this ecosystem in the Churn Creek Study Area.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WT / 31

Bluebunch Wheatgrass - Pussytoes

Map Symbol	WT2	WT3a, WTz3a
Plant Species	Herb Climax / Late Seral	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass junegrass	big sagebrush bluebunch wheatgrass
Ungulate Forage Species - Associates	needle-and-thread grass pasture sage fine-leaved daisy parsnip-flowered buckwheat Sandberg's bluegrass	rabbit-brush junegrass needle-and-thread grass parsnip-flowered buckwheat Sandberg's bluegrass
Bear Forage Species	bluebunch wheatgrass junegrass parsnip-flowered buckwheat	bluebunch wheatgrass parsnip-flowered buckwheat

Comments: This unit provides preferred forage species for deer and elk but due to its dry nature and shallow soils, the cover of vegetation is sparse.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	<p>WY / 33 Bluebunch Wheatgrass – Yarrow WYg / 33 Bluebunch Wheatgrass – Yarrow; gullied WYgh / 33 Bluebunch Wheatgrass – Yarrow; gullied and hummocky WYh / 33 Bluebunch Wheatgrass – Yarrow; hummocky WYht / 33 Bluebunch Wheatgrass – Yarrow; hummocky terrace WYk / 33 Bluebunch Wheatgrass – Yarrow; cool aspect WYky / 33 Bluebunch Wheatgrass – Yarrow; moister than average on cool aspect WYn / 33 Bluebunch Wheatgrass – Yarrow; fan WYr / 33 Bluebunch Wheatgrass – Yarrow; ridged WYt / 33 Bluebunch Wheatgrass – Yarrow; terrace WYw / 33 Bluebunch Wheatgrass – Yarrow; warm aspect WYy / 33 Bluebunch Wheatgrass – Yarrow; moister than average WY:ks / 33 Bluebunch Wheatgrass – Yarrow: Kentucky Bluegrass – Salsify Seral Association WY:pj / 33 Bluebunch Wheatgrass – Yarrow: Pussytoes - Junegrass Seral Association WYg :pj / 33 Bluebunch Wheatgrass – Yarrow; gullied : Pussytoes - Junegrass Seral Association; gullied WYh :pj / 33 Bluebunch Wheatgrass – Yarrow; hummocky : Pussytoes - Junegrass Seral Association; hummocky WYw :pj / 33 Bluebunch Wheatgrass – Yarrow; warm aspect : Pussytoes - Junegrass Seral Association; warm aspect WY:sp / 33 Bluebunch Wheatgrass – Yarrow: Stiff Needlegrass - Pussytoes Seral Association</p>
<p>This ecosystem is the dominant ecosystem in the grasslands portion of the IDFxm landscape (MoF Draft Report 1996). This ecosystem is common on level to moderately sloping sites primarily on south and west facing aspects from mid to upper slope positions. Soils are typically deep and medium-textured (WY). This unit sometimes occurs on steeper aspects but not north or northeast (WYk, WYw). Terrain can be gullied (WYg, WYgh), hummocky (WYh, WYht), terraced (WYt), fans (WYn, WYnt) or ridged terrain (WYr). Moister than average sites occur where there is seepage or overflow from irrigation or other water sources (WYy, WYky). Seral Associations (WY:ks, WY:pj, WYg:pj, WYh:pj, WYw:pj, WY:sp) were identified on moderately to heavily grazed sites.</p>	

MAP

Symbol /Site Series
WY / 33

Name
Bluebunch Wheatgrass – Yarrow

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0-30	10
Aspect (degrees)	160-280	(0-90)
Moisture Regime	Nutrient Regime	
mesic to submesic	medium	
Drainage	well to moderately well	
Surficial Material		
eolian veneer over morainal or glaciofluvial blanket		
Soil Development		
dark brown or brown chernozem, eutric brunisol		
	Range	Mean
Humus Depth (cm)	0-0.3	0.2
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
silty loam, silty clay loam, loamy sand	rhizomull	

PLOT 9800031 WY2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 WY / 33 Bluebunch Wheatgrass – Yarrow

Map Symbol	WY2, WYg2, WYgh2, WYh2, WYht2, WYk2, WYn2, WYr2, WYt2, WYw2	WYky2, WYy2	WY3a, WYg3a, WYgh3a, WYh3a, WYht3a, WYk3a, WYn3a, WYr3a, WYt3a, WYw3a
Plant species	Herb Climax / Late Seral	Herb Disclimax	Low Shrub Climax / Late Seral
Dominants	bluebunch wheatgrass <i>Cladonia pyxidata</i> (brown pixie cup) <i>Cladonia cariosa</i> (ribbed pixie)	Kentucky bluegrass alfalfa	big sagebrush bluebunch wheatgrass <i>Cladonia pyxidata</i> (brown pixie cup) <i>Cladonia cariosa</i> (ribbed pixie)
Associates	spreading needlegrass pussytoes lemonweed yarrow Rocky Mtn. fescue short-awned porcupinegrass pasture sage northern wormwood junegrass <i>Psora spp.</i> (scale lichens) <i>Diploschistes muscorum</i> (cow pie lichen) <i>Peltigera spp.</i> (pelt lichens)	summer-cypress tumble mustard creeping bentgrass crested wheatgrass	spreading needlegrass pussytoes yarrow Rocky Mtn. fescue pasture sage northern wormwood junegrass <i>Psora spp.</i> (scale lichens)
Plots	9800031, 9800441, C8, C48, C150, C166, C182, C365, C400, C436, C527, C548, C557, C563, C591, C799, C812, C857		

Comments: Late seral and climax vegetation is dominated by bluebunch wheatgrass with a very diverse grass, forb, and a well developed cryptogam community (WY). Seepage and overflow from irrigated hayfields creates a moister than average disclimax (WYy). In the Churn Creek Study Area near the BGxw2 transition in the Fraser canyon, big sagebrush may occur in this site series with greater than 10% cover, forming a Low Shrub Climax (WY3a).

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
WY / 33

Name
Bluebunch Wheatgrass – Yarrow Seral Associations

Map Symbol	WY2:ks	WY2:pj	WY2:sp
Plant species	Herb Seral Association	Herb Seral Association	Herb Seral Association
Dominants	Kentucky bluegrass	pussytoes junegrass	stiff needlegrass <i>Cladonia pyxidata (brown pixie cup)</i>
Associates	salsify pussytoes Rocky Mtn. fescue junegrass pasture sage woolly cinquefoil spreading needlegrass bluebunch wheatgrass <i>Cladonia spp.</i>	salsify bluebunch wheatgrass Kentucky bluegrass woolly cinquefoil northern wormwood pasture sage trailing daisy cut-leaved anemone <i>Tortula ruralis</i> (sidewalk moss)	bluebunch wheatgrass salsify pussytoes junegrass Kentucky bluegrass needle-and-thread grass Rocky Mtn. fescue <i>Cladonia cariosa</i> (ribbed pixie)
Plots	C448	9800454, C43, C644, C681, C762, C786, C811	C654

Comments: Grazing reduces the lichen cover and increases weedy forbs significantly on heavily grazed (WY:ks, WY:pj) and less so moderately grazed (WY:sp) seral associations.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WY / 33

Bluebunch Wheatgrass – Yarrow

Map Symbol	WY2, WYg2, WYgh2, WYh2, WYht2, WYk2, WYn2, WYr2, WYt2, WYw2	WYky2, WYy2	WY2:ks	WY2:pj	WY2:sp	WY3a, WYg3a, WYgh3a, WYh3a, WYht3a, WYk3a, WYn3a, WYr3a, WYt3a, WYw3a
Plant Species	Herb Climax / Late Seral	Herb Disclimax	Herb Seral Association	Herb Seral Association	Herb Seral Association	Low Shrub Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass	Kentucky bluegrass alfalfa	Kentucky bluegrass	junegrass	stiff needlegrass	big sagebrush bluebunch wheatgrass
Associates	spreading needlegrass Rocky Mtn. fescue short-awned porcupinegrass pasture sage northern wormwood junegrass	creeping bentgrass crested wheatgrass	salsify Rocky Mtn. fescue junegrass pasture sage spreading needlegrass bluebunch wheatgrass	salsify bluebunch wheatgrass Kentucky bluegrass northern wormwood pasture sage	bluebunch wheatgrass salsify junegrass Kentucky bluegrass needle-and-thread grass Rocky Mtn. fescue	spreading needlegrass Rocky Mtn.fescue junegrass
Bear Forage Species	bluebunch wheatgrass spreading needlegrass Rocky Mtn. fescue short-awned porcupinegrass northern wormwood junegrass	Kentucky bluegrass alfalfa creeping bentgrass crested wheatgrass	Kentucky bluegrass salsify Rocky Mtn. fescue junegrass spreading needlegrass bluebunch wheatgrass	junegrass salsify bluebunch wheatgrass Kentucky bluegrass	stiff needlegrass bluebunch wheatgrass salsify junegrass Kentucky bluegrass Rocky Mtn. fescue	bluebunch wheatgrass spreading needlegrass Rocky Mtn.fescue junegrass

Comments: This ecosystem unit provides valuable winter forage for ungulates due to its dry nature and especially where it occurs on warm aspects. Preferred forage species such as junegrass, bluebunch wheatgrass and Rocky Mtn. fescue are found in abundance.

3.4 IDFxm Wetland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	BU / 00 Great Bulrush Marsh
These deep marshes usually surround shallow open water and are permanently inundated. Soils are typically deep and fine-textured. (BU)	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hydric	very rich	
Drainage	very poor	
Surficial Material		
lacustrine blanket (organic veneer)		
Soil Development		
orthic gleysol (typic humisol), fine-textured sediments and organic material 0 - >25cm with shells. Surfaces carbonated.		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
silty clay loam		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 BU / 00 Great Bulrush Marsh

Map Symbol	BU2
Plant species	Herb Climax
Dominants	great bulrush
Associates	greater bladderwort water smartweed duckweed
Plots	

Comments: Great bulrush generally forms pure stands, with aquatics such as greater bladderwort often present.

Map Symbol	BU2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	great bulrush
Ungulate Forage Species - Associates	great bladderwort water smartweed
Bear Forage Species	water smartweed duckweed

Comments: Limited habitat for ungulates due to lack of forage species.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	CM / 00 Common Spike-rush Marsh
This marsh commonly fringes shallow open water and is usually inundated most of the year. Soils are typically deep and fine-textured (CM).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1000-1050	1025
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric	very rich	
Drainage	poor	
Surficial Material		
lacustrine veneer or blanket		
Soil Development		
mineral soil may be somewhat alkaline		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
silty or clayey		

PLOT C19 CM2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 CM / 00 Common Spike-rush Marsh

Map Symbol	CM2
Plant species	Herb Climax
Dominants	common spike-rush sedges
Associates	water smartweed bluejoint reedgrass duckweed
Plots	C4, C19

Comments: Common spike-rush may form pure stands, but generally is intermixed with patches of sedges such as meadow sedge or Sartwell's sedge and various grasses.

Map Symbol	CM2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	common spike-rush sedges
Ungulate Forage Species - Associates	water smartweed bluejoint reedgrass
Bear Forage Species	common spike-rush sedges water smartweed bluejoint reedgrass

Comments: Ungulate forage values are low, but bears may feed on spring growth.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	CT / 00 Cattail Marsh
This is an uncommon deep marsh ecosystem that is permanently inundated. Soils are typically deep and fine-textured (CT). It is usually small in area, occurring as patches at the edge of ponds, slow streams or lakes.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hydric	very rich	
Drainage	very poor	
Surficial Material		
organic veneer over lacustrine blanket		
Soil Development		
orthic gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
silty clay loam		

NO PHOTO

MAP

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

Symbol /Site Series Name
 CT / 00 Cattail Marsh

Map Symbol	CT2
Plant species	Herb Climax
Dominants	cattail beaked sedge
Associates	purple-leaved willow herb great duckweed slimstem reedgrass great bulrush marsh scullcap field mint sedges
Plots	

Comments: Cattails may form pure stands, with other forbs and occasionally grasses intermixed.

Map Symbol	CT2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	beaked sedge
Ungulate Forage Species - Associates	purple-leaved willow herb slimstem reedgrass great bulrush marsh scullcap sedges
Bear Forage Species	beaked sedge purple-leaved willow herb slimstem reedgrass marsh scullcap sedges

Comments: This ecosystem unit provides limited feeding opportunity for most ungulates. May provide some feeding opportunities for moose.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	NM / 00 Northern Mannagrass Marsh
This freshwater marsh commonly fringes shallow open water and remains inundated most of the year. Soils are typically deep and fine-textured (NM). In the Churn Creek study area this wetland type was too small to map at the scale used, so it does not appear in the database.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1100	900
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric	rich	
Drainage	poor	
Surficial Material		
lacustrine veneer		
Soil Development		
variable organic accumulations 0 - >40cm over gleysols		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
clayey	hydromull	

PLOT C55 NM2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series **Name**
 NM / 00 Northern Mannagrass Marsh

Map Symbol	NM2
Plant species	Herb Climax
Dominants	northern mannagrass Baltic rush
Associates	sloughgrass fowl bluegrass field mint horsetail
Plots	C55

Comments: This ecosystem forms a narrow band of mixed aquatic grasses around shallow open water.

Map Symbol	NM2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	northern mannagrass Baltic rush
Ungulate Forage Species - Associates	sloughgrass fowl bluegrass horsetail
Bear Forage Species	northern mannagrass sloughgrass fowl bluegrass horsetail

Comments: Moderate abundance of preferred forage for ungulates and bears, especially in the spring season.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	RF / 00 Baltic Rush – Field Sedge Moist Meadow
These are moist meadow complexes which are rarely inundated, but usually wet early in the growing season. Soils are typically deep and medium-textured (RF). This meadow frequently occurs adjacent to marshes and downslope of the NR:bb/38 grassland type.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric to hygric	rich	
Drainage	imperfect to poor	
Surficial Material		
medium-textured lacustrine deposits		
Soil Development		
orthic humic gleysol, gleyed eluviated eutric brunisol – strongly carbonated		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
silty clay loam, silty clay	none	

PLOT C4 RF2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RF / 00

Baltic Rush – Field Sedge Moist Meadow

Map Symbol	RF2
Plant species	Herb Climax / Late Seral
Dominants	Baltic rush field sedge
Associates	foxtail barley silverweed slender wheatgrass white prairie aster Nuttall's alkaligrass alkali bluegrass Kentucky bluegrass Parry's sedge early blue violet
Plots	C4

Comments: This unit is often heavily utilized by cattle and/or horses, and frequently has a fairly high proportion of introduced species.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RF / 00

Baltic Rush – Field Sedge Moist Meadow

Map Symbol	RF2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	Baltic rush field sedge
Ungulate Forage Species - Associates	foxtail barley slender wheatgrass white prairie aster Nuttall's alkaligrass alkali bluegrass Kentucky bluegrass Parry's sedge early blue violet
Bear Forage Species	Baltic rush field sedge foxtail barley slender wheatgrass Nuttall's alkaligrass alkali bluegrass Kentucky bluegrass Parry's sedge early blue violet

Comments: This ecosystem unit provides diverse forage species for ungulates and bears to feed on.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	RM / 00 Baltic Rush Marsh
This shallow marsh commonly occurs between a deep marsh (BU) and a moist meadow type. It remains inundated most of the year. Soils are typically deep and fine-textured (RM).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hydric	very richE	
Drainage	very poor	
Surficial Material		
lacustrine		
Soil Development		
gleysol, organic accumulations 0->40cm		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
clayey		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 RM /00 Baltic Rush Marsh

Map Symbol	RM2
Plant species	Herb Climax
Dominants	Baltic rush
Associates	common spike-rush sedges slimstem reedgrass Canada mint water smartweed tufted white prairie aster northern mannagrass
Plots	

Comments: Baltic rush may form pure stands, but other graminoids and forbs are frequently intermixed.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 RM /00 Baltic Rush Marsh

Map Symbol	RM2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	Baltic rush
Ungulate Forage Species - Associates	common spike-rush sedges slimstem reedgrass water smartweed tufted white prairie aster northern mannagrass
Bear Forage Species	Baltic rush common spike-rush sedges slimstem reedgrass water smartweed northern mannagrass

Comments: This ecosystem unit provides forage for ungulates and bears, especially in the spring season.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	SM / 00 Beaked Sedge – Water Sedge Marsh
This marsh is inundated (up to 40 cm) early in the growing season, but standing water usually disappears by mid-August. soils are typically deep and fine-textured (SM).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	1000
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric to hydric	rich to very rich	
Drainage	very poor to poor	
Surficial Material		
lacustrine, organic veneer over moraine		
Soil Development		
organic accumulations may be >50cm over mineral soil - mesisol, gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
organic – mesic		

PLOT C753 SM2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SM / 00

Beaked Sedge – Water Sedge Marsh

Map Symbol	SM2
Plant species	Herb Climax
Dominants	beaked sedge water sedge <i>Drepanocladus aduncus</i>
Associates	northern mannagrass willow buttercups water-milfoil bladderwort duckweed water smartweed
Plots	C753

Comments: Either species of sedge may dominate, or they may grow intermixed in various proportions. Forbs are more common at the upper, drier edge of this wetland zone.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SM / 00

Beaked Sedge – Water Sedge Marsh

Map Symbol	SM2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	beaked sedge water sedge
Ungulate Forage Species - Associates	northern mannagrass willow buttercups water-milfoil bladderwort water smartweed
Bear Forage Species	beaked sedge water sedge northern mannagrass

Comments: Possible early spring feeding habitat on succulent new growth.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFxm	TS / 00 Tall Willow – Sedge Swamp
These swamps are active floodplains associated with streams and rivers and are enriched by surface and subsurface water flow which brings sediments and nutrients. Small channels and pools are often evident, with soils saturated near the surface throughout the growing season. Soils are typically deep and medium-textured (TS).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	850-1200	765
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to subhydric	rich to very rich	
Drainage	poor to very poor	
Surficial Material		
active fluvial over morainal blanket		
Soil Development		
organic accumulation 0-40cm gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
organic or loamy		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

TS / 00

Tall Willow – Sedge Swamp

Map Symbol	TS3b
Plant species	Tall Shrub Climax
Dominants	grey-leaved willow tea-leaved willow Mackenzie's willow Maccall's willow Sartwell's sedge beaked sedge water sedge slimstem reedgrass glow moss sickle moss <i>Mnium rugicum</i>
Associates	hybrid white spruce pink wintergreen small bedstraw boreal aster fowl mannagrass
Plots	

Comments: Species of willow and sedges will vary between locations. Plant cover and ecosystem structure is also quite variable depending in frequency and severity of flooding.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 TS / 00 Tall Willow – Sedge Swamp

Map Symbol	TS3b
Plant Species	Tall Shrub Climax
Ungulate Forage Species - Dominants	grey-leaved willow tea-leaved willow Mackenzie's willow Maccall's willow Sartwell's sedge beaked sedge water sedge slimstem reedgrass
Ungulate Forage Species - Associates	boreal aster fowl mannagrass
Bear Forage Species	Sartwell's sedge beaked sedge water sedge slimstem reedgrass fowl mannagrass

Comments: The tall willows provide excellent feeding opportunities for ungulates, especially moose. The undergrowth vegetation is also favorable for bears.

4.0 IDFdk3 - Interior Douglas-fir Dry Cool Subzone Fraser Variant

4.1 IDFdk3 - Forested Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	<p>DJ / 03 Douglas-fir - Common Juniper - Peltigera</p> <p>DJv / 03 Douglas-fir - Common Juniper - Peltigera; very shallow soil DJvw / 03 Douglas-fir - Common Juniper - Peltigera; very shallow soil on warm aspect DJvz / 03 Douglas-fir - Common Juniper - Peltigera; very shallow soil on very steep warm aspect</p>
<p>Typical sites are gentle sloping upper and ridge crest slope positions with shallow soils (DJ). It is not uncommon to find this unit on very shallow soils (DJv) or very shallow soils with warm or very steep warm aspects (DJvw). These ecosystems are typically very small but are disturbed by cattle throughout the IDFdk3.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1300-1500	1400
Slope (%)	0-20	10
Aspect (degrees)	none	
Moisture Regime	Nutrient Regime	
xeric	medium to rich	
Drainage	well-rapid	
Surficial Material		
Rock, weathered bedrock, colluvial and morainal veneers		
Soil Development		
	Range	Mean
Humus Depth (cm)	0-5	2.5
Coarse Fragments (%)	<50%	
Soil Texture	Humus Form	
loamy	rhizomor – xeromor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 03

Douglas-fir - Common Juniper - Peltigera

Map Symbol	DJ2, DJv2, DJvw2, DJvz2	DJ3, DJv3, DJvw3, DJvz3	DJ4, DJv4, DJvw4, DJvz4	DJ5, DJv5, DJvw5, DJvz5	DJ6, DJv6, DJvw6, DJvz6	DJ7, DJv7, DJvw7, DJvz7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass kinnikinnick compact selaginella <i>Cladonia spp.</i> mosses	common juniper kinnikinnick saskatoon soopolallie bluebunch wheatgrass	Very open canopy of: lodgepole pine Douglas-fir common juniper	Very open canopy of: lodgepole pine Douglas-fir common juniper	Very open canopy of: Douglas-fir common juniper	Very open canopy of: Douglas-fir common juniper
Associates	pussytoes wild strawberry Rocky Mtn. fescue <i>Peltigera spp.</i>	Douglas-fir lodgepole pine wild strawberry compact selaginella willow nodding onion Rocky Mtn. fescue <i>Cladonia spp.</i>	bluebunch wheatgrass saskatoon kinnikinnick soopolallie nodding onion Rocky Mtn. fescue <i>Peltigera spp.</i> <i>Cladonia spp.</i>	bluebunch wheatgrass saskatoon kinnikinnick soopolallie nodding onion Rocky Mtn. fescue <i>Peltigera spp.</i> <i>Cladonia spp.</i>	bluebunch wheatgrass saskatoon kinnikinnick soopolallie showy aster nodding onion Rocky Mtn. fescue <i>Peltigera spp.</i> <i>Cladonia spp.</i>	bluebunch wheatgrass saskatoon kinnikinnick soopolallie nodding onion Rocky Mtn. fescue <i>Peltigera spp.</i> <i>Cladonia spp.</i>
Plots						

Comments: Forests are quite open with moderate undergrowth cover, mostly dominated by common juniper, dry-land forbs, grasses and lichens. It is not uncommon to find this forest stunted at structural stage 3. Bedrock is commonly exposed but pockets of deeper soils are also present. Bare rock and mineral soil can take up 20-50% of the ground cover.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 03

Douglas-fir - Common Juniper - Peltigera

Map Symbol	DJ2, DJv2, DJvw2, DJvz2	DJ3, DJv3, DJvw3, DJvz3	DJ4, DJv4, DJvw4, DJvz4	DJ5, DJv5, DJvw5, DJvz5	DJ6, DJv6, DJvw6, DJvz6	DJ7, DJv7, DJvw7, DJvz7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass	saskatoon soopolallie bluebunch wheatgrass	Douglas-fir	Douglas-fir	Douglas-fir	Douglas-fir
Associates	pussytoes Rocky Mtn. fescue	Douglas-fir Rocky Mtn. fescue	saskatoon soopolallie bluebunch wheatgrass	saskatoon soopolallie bluebunch wheatgrass	saskatoon soopolallie bluebunch wheatgrass	saskatoon soopolallie bluebunch wheatgrass
Bear Forage Species	kinnikinnick bluebunch wheatgrass	kinnikinnick nodding onion bluebunch wheatgrass	saskatoon soopolallie kinnikinnick nodding onion bluebunch wheatgrass	saskatoon soopolallie kinnikinnick nodding onion bluebunch wheatgrass	saskatoon soopolallie kinnikinnick nodding onion bluebunch wheatgrass	saskatoon soopolallie kinnikinnick nodding onion bluebunch wheatgrass

Comments: Forage values are of moderate value to ungulates due to the sparse open nature of this unit. Deer will feed upon Douglas-fir needles and fescues. Bear forage is of little consequence.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	DK / 02 Douglas-fir - Common Juniper - Kinnikinnick
Typically occurs on moderate-steep south or west facing slopes with deep coarse-textured soils. This unit is uncommon in the study area but when found is of moderate size.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1300-1500	1400
Slope (%)	20-44	30
Aspect (degrees)	100-280	
Moisture Regime	Nutrient Regime	
xeric	very poor / poor	
Drainage	well to rapid	
Surficial Material		
colluvial, morainal		
Soil Development		
	Range	Mean
Humus Depth (cm)	0-2	1
Coarse Fragments (%)	>50	
Soil Texture	Humus Form	
gravelly sandy	xeromor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name

DK / 02 Douglas-fir - Common Juniper - Kinnikinnick

Map Symbol	DK2	DK3	DK4	DK5	DK6	DK7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick bluebunch wheatgrass showy aster nodding onion	saskatoon willow common juniper prairie rose kinnikinnick bluebunch wheatgrass	Very open canopy of: lodgepole pine Douglas-fir saskatoon common juniper prairie rose common snowberry kinnikinnick	Very open canopy of: lodgepole pine Douglas-fir saskatoon common juniper prairie rose common snowberry kinnikinnick	Very open canopy of: Douglas-fir saskatoon common juniper prairie rose common snowberry kinnikinnick	Very open canopy of: Douglas-fir saskatoon common juniper prairie rose common snowberry kinnikinnick
Associates	soopolallie <i>Cladonia spp.</i> <i>Dicranum spp.</i> Saskatoon common juniper	Douglas-fir lodgepole pine trembling aspen showy aster nodding onion soopolallie <i>Cladonia spp.</i> <i>Dicranum spp.</i>	bluebunch wheatgrass trembling aspen nodding onion showy aster soopolallie <i>Cladonia spp.</i> <i>Dicranum spp.</i>	trembling aspen soopolallie bluebunch wheatgrass nodding onion showy aster <i>Cladonia spp.</i> <i>Dicranum spp.</i>	soopolallie bluebunch wheatgrass nodding onion showy aster <i>Cladonia spp.</i> <i>Dicranum spp.</i>	soopolallie bluebunch wheatgrass nodding onion showy aster <i>Cladonia spp.</i> <i>Dicranum spp.</i>
Plots						

Comments: Forest canopies are very open (<15% crown closure) with multi-aged Douglas-fir. The Cariboo Forest Region Fieldguide reports that this unit often has several large snags. Tree regeneration is sparse due to the very dry nature of this site. Undergrowth is sparse and dominated by kinnikinnick. Moss and lichen cover is low while exposed mineral soil is common. This type was found in the Churn Creek study area but is not common and was not sampled.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DK / 02

Douglas-fir - Common Juniper - Kinnikinnick

Map Symbol	DK2	DK3	DK4	DK5	DK6	DK7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass	saskatoon willow prairie rose bluebunch wheatgrass	Douglas-fir saskatoon prairie rose common snowberry	Douglas-fir saskatoon prairie rose common snowberry	Douglas-fir saskatoon prairie rose common snowberry	Douglas-fir saskatoon prairie rose common snowberry
Associates	soopolallie saskatoon	Douglas-fir trembling aspen soopolallie	trembling aspen bluebunch wheatgrass soopolallie	trembling aspen bluebunch wheatgrass soopolallie	bluebunch wheatgrass soopolallie	bluebunch wheatgrass soopolallie
Bear Forage Species	soopolallie saskatoon kinnikinnick bluebunch wheatgrass nodding onion	trembling aspen saskatoon soopolallie kinnikinnick prairie rose nodding onion bluebunch wheatgrass	trembling aspen saskatoon soopolallie kinnikinnick prairie rose nodding onion bluebunch wheatgrass	trembling aspen saskatoon soopolallie kinnikinnick prairie rose nodding onion bluebunch wheatgrass	saskatoon soopolallie kinnikinnick prairie rose nodding onion bluebunch wheatgrass	saskatoon soopolallie kinnikinnick prairie rose nodding onion bluebunch wheatgrass

Comments: Although there is a variety of palatable forage species, ungulate growing season feeding values will be low to moderate due to the sparse nature of the understory cover. Bear feeding values are also low due to the sparse nature of this site.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	DM / 05 Douglas-fir - Feathermoss - Step Moss DMrs / 05 Douglas-fir - Feathermoss - Step Moss; ridged shallow soil DMs / 05 Douglas-fir - Feathermoss - Step Moss; shallow soil
Typical sites are found on moderate to steep slopes with cool aspects with deep medium-textured soils. This site can also be found to occur on shallow soils (DMs) or shallow soil ridge tops (DMrs). These sites are relatively common but generally small occurring on short slopes.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1500	1350
Slope (%)	20-70	45
Aspect (degrees)	281-360	0-99
Moisture Regime	Nutrient Regime	
subxeric to mesic	very poor to medium	
Drainage	moderate to well	
Surficial Material		
morainal, eolian veneer over moraine, colluvial veneer, morainal veneer		
Soil Development		
brunisols luvisols		
	Range	Mean
Humus Depth (cm)	3-5	4
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
sandy or loamy	hemimor, mullmoder	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 05

Douglas-fir - Feathermoss - Step Moss

Map Symbol	DM2, DMrs2, DMs2	DM3, DMrs3, DMs3	DM4, DMrs4, DMs4	DM5, DMrs5, DMs5	DM6, DMrs6, DMs6	DM7, DMrs7, DMs7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	prickly rose kinnikinnick showy aster pinegrass red-stemmed feathermoss	prickly rose pinegrass showy aster twinflower red-stemmed feathermoss	Closed canopy of: Douglas-fir red-stemmed feathermoss	Closed canopy of: Douglas-fir showy aster step moss red-stemmed feathermoss	Closed canopy of: Douglas-fir showy aster step moss red-stemmed feathermoss	Closed canopy of: Douglas-fir showy aster step moss red-stemmed feathermoss
Associates	fireweed dwarf blueberry	Douglas-fir lodgepole pine saskatoon Scouler's willow kinnikinnick	lodgepole pine prickly rose soopolallie birch-leaved spirea pinegrass twinflower step moss dog pelt lichen	lodgepole pine prickly rose soopolallie birch-leaved spirea pinegrass twinflower dog pelt lichen	prickly rose soopolallie birch-leaved spirea pinegrass twinflower dog pelt lichen	prickly rose soopolallie birch-leaved spirea pinegrass twinflower dog pelt lichen
Plots						

Comments: Forest canopies are relatively closed, usually greater than 40% crown closure dominated by Douglas-fir and minor amounts of lodgepole pine. Shrub and herb layers are typically poorly developed and tend to be represented by showy aster and some pinegrass. The moss layer is well developed and most sites have a near continuous cover of feathermoss. Logging and/or burning creates structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 05

Douglas-fir - Feathermoss - Step Moss

Map Symbol	DM2, DMrs2, DMs2	DM3, DMrs3, DMs3	DM4, DMrs4, DMs4	DM5, DMrs5, DMs5	DM6, DMrs6, DMs6	DM7, DMrs7, DMs7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	prickly rose pinegrass	prickly rose pinegrass	Douglas-fir	Douglas-fir	Douglas-fir	Douglas-fir
Associates	fireweed	Douglas-fir saskatoon Scouler's willow	prickly rose soopolallie pinegrass	prickly rose soopolallie pinegrass	prickly rose soopolallie pinegrass	prickly rose soopolallie pinegrass
Bear Forage Species	dwarf blueberry prickly rose kinnikinnick fireweed pinegrass	pinegrass prickly rose saskatoon kinnikinnick	prickly rose soopolallie pinegrass	prickly rose soopolallie pinegrass	prickly rose soopolallie pinegrass	prickly rose soopolallie pinegrass

Comments: This unit would see use as security and thermal cover for ungulates and bears. If present, ungulates and bears could feed on regenerating pinegrass in the spring. Douglas-fir needles could be used by deer in the winter and spring.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	DP / 06 Douglas-fir - Pinegrass - Aster DPs / 06 Douglas-fir - Pinegrass - Aster; shallow soil
This ecosystem typically occurs on moderate to steep warm aspects with deep medium-textured soils (DP). This unit is common, small in size and widespread in distribution. This unit is also present on shallow soils (DPs) such as morainal veneers.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1500	1350
Slope (%)	15-45	30
Aspect (degrees)	100-280	
Moisture Regime	Nutrient Regime	
submesic	medium, rich	
Drainage	moderate to well	
Surficial Material		
morainal blanket or veneer		
Soil Development		
brunisols		
	Range	Mean
Humus Depth (cm)	2-5	3.5
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy	hemimor, mormoder	

Plot C894 DP6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DP / 06

Douglas-fir - Pinegrass - Aster

Map Symbol	DP2, DP2s	DP3, DP3s	DP4, DP4s	DP5, DP5s	DP6, DP6s	DP7, DP7s
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass prickly rose kinnikinnick showy aster	trembling aspen kinnikinnick soopolallie common juniper pinegrass	Closed canopy of: Douglas-fir soopolallie common juniper pinegrass	Closed canopy of: Douglas-fir soopolallie common juniper pinegrass showy aster	Closed canopy of: Douglas-fir common juniper pinegrass showy aster red-stemmed feathermoss	Closed canopy of: Douglas-fir pinegrass showy aster red-stemmed feathermoss
Associates	common juniper timber milk vetch Northwestern sedge firemoss	Douglas-fir lodgepole pine prickly rose timber milk-vetch showy aster	trembling aspen lodgepole pine prickly rose kinnikinnick showy aster timber milk-vetch bluebunch wheatgrass Northwestern sedge <i>Cladonia spp.</i>	trembling aspen lodgepole pine kinnikinnick red-stemmed feathermoss timber milk-vetch bluebunch wheatgrass Northwestern sedge <i>Cladonia spp.</i>	lodgepole pine soopolallie kinnikinnick timber-milk vetch bluebunch wheatgrass Northwestern sedge <i>Cladonia spp.</i>	soopolallie kinnikinnick timber-milk vetch bluebunch wheatgrass Northwestern sedge <i>Cladonia spp.</i>
Plots					C894	

Comments: The canopy can be moderately open to closed (15-35% crown closure) and dominated by multi-sized, often large Douglas-fir trees, with snags being common. Douglas-fir regeneration typically occurs in dense clumps associated with past disturbance or decaying logs. Herb and moss cover is quite high, with the understory being dominated by pinegrass (40%), kinnikinnick (up to 40%) and a patchy moss and lichen layer.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DP / 06

Douglas-fir - Pinegrass - Aster

Map Symbol	DP2, DPs2	DP3, DPs3	DP4, DPs4	DP5, DPs5	DP6, DPs6	DP7, DPs7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass prickly rose	soopolallie pinegrass trembling aspen	Douglas-fir soopolallie pinegrass	Douglas-fir soopolallie pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass
Associates	northwestern sedge	Douglas-fir prickly rose northwestern sedge	trembling aspen prickly rose bluebunch wheatgrass northwestern sedge	trembling aspen bluebunch wheatgrass northwestern sedge	soopolallie bluebunch wheatgrass northwestern sedge	soopolallie bluebunch wheatgrass northwestern sedge
Bear Forage Species	prickly rose kinnikinnick northwestern sedge pinegrass	trembling aspen soopolallie prickly rose kinnikinnick pinegrass bluebunch wheatgrass northwestern sedge	trembling aspen soopolallie prickly rose kinnikinnick pinegrass bluebunch wheatgrass northwestern sedge	trembling aspen soopolallie kinnikinnick pinegrass bluebunch wheatgrass northwestern sedge	soopolallie kinnikinnick pinegrass bluebunch wheatgrass northwestern sedge	soopolallie kinnikinnick pinegrass bluebunch wheatgrass northwestern sedge

Comments: Generally moderate-good bear and deer/elk habitat. Warm aspect allows for preferred grasses and shrubs to proliferate while still providing some thermal cover. Large Douglas-fir and Douglas-fir snags combined with open forest make for good Flammulated owl and Lewis's woodpecker.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	DW / 04 Douglas-fir - Bluebunch Wheatgrass - Needlegrass DWc / 04 Douglas-fir - Bluebunch Wheatgrass - Needlegrass; coarse-textured soils DWs / 04 Douglas-fir - Bluebunch Wheatgrass - Needlegrass; shallow soil
This ecosystem typically occurs on steep warm aspect with deep medium-textured soils (DW). Shallow soils (DWs) are common on these hot dry ecosystems. This ecosystem is uncommon in the Churn Creek study area..	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1500	1350
Slope (%)	> 45	
Aspect (degrees)	100-280	
Moisture Regime	Nutrient Regime	
subxeric	medium, rich	
Drainage	well	
Surficial Material		
morainal blanket, veneer		
Soil Development		
brunisols		
	Range	Mean
Humus Depth (cm)	2-4	3
Coarse Fragments (%)	< 50	
Soil Texture	Humus Form	
loamy	mullmoder	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DW / 04

Douglas-fir - Bluebunch Wheatgrass - Needlegrass

Map Symbol	DW2, DWc2, DWs2	DW3, DWc3, DWs3	DW4, DWc4, DWs4	DW5, DWc5, DWs5	DW6, DWc6, DWs6	DW7, DWc7, DWs7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick bluebunch wheatgrass pinegrass	common juniper trembling aspen kinnikinnick bluebunch wheatgrass	Open canopy of: Douglas-fir bluebunch wheatgrass common juniper	Open canopy of: Douglas-fir bluebunch wheatgrass common juniper	Open canopy of: Douglas-fir bluebunch wheatgrass common juniper	Open canopy of: Douglas-fir bluebunch wheatgrass common juniper
Associates	saskatoon northern bedstraw nodding onion yarrow	saskatoon northern bedstraw nodding onion timber milk-vetch	trembling aspen saskatoon kinnikinnick nodding onion timber milk-vetch northern bedstraw	trembling aspen saskatoon kinnikinnick nodding onion timber milk-vetch northern bedstraw	trembling aspen saskatoon kinnikinnick nodding onion timber milk-vetch northern bedstraw	trembling aspen saskatoon kinnikinnick nodding onion timber milk-vetch northern bedstraw
Plots						

Comments: The forest canopy is open (<20% crown closure) dominated by multi-sized Douglas-fir often with several large snags. Regeneration is patchy and sparse. The understory is comprised of a moderate cover of common juniper and bluebunch wheatgrass (>15%). Moss and lichen cover is sparse.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DW / 04

Douglas-fir - Bluebunch Wheatgrass - Needlegrass

Map Symbol	DW2, DWc2, DWs2	DW3, DWc3, DWs3	DW4, DWc4, DWs4	DW5, DWc5, DWs5	DW6, DWc6, DWs6	DW7, DWc7, DWs7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass pinegrass	trembling aspen bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass
Associates	saskatoon	saskatoon	trembling aspen saskatoon	trembling aspen saskatoon	trembling aspen saskatoon	trembling aspen saskatoon
Bear Forage Species	bluebunch wheatgrass pinegrass kinnikinnick nodding onion	trembling aspen bluebunch wheatgrass kinnikinnick nodding onion	trembling aspen bluebunch wheatgrass kinnikinnick nodding onion	trembling aspen bluebunch wheatgrass kinnikinnick nodding onion	trembling aspen bluebunch wheatgrass kinnikinnick nodding onion	trembling aspen bluebunch wheatgrass kinnikinnick nodding onion

Comments: Warm aspect forests provide good habitat for deer and elk. Here they may feed upon grasses and Douglas-fir needles. While the canopy, even though open, may provide some protection from the elements. Although bear forage is present it is of little consequence. Bear habitat is low. Flammulated owl and Lewis's woodpecker will make use of the large Douglas-fir and Douglas-fir snags coupled with open understory.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	<p>LP / 01 Douglas-fir - Lodgepole Pine - Pinegrass - Feathermoss</p> <p>LPch / 01 Douglas-fir - Lodgepole Pine - Pinegrass - Feathermoss; coarse-textured soil, hummocky terrain LPk / 01 Douglas-fir - Lodgepole Pine - Pinegrass - Feathermoss; cool aspect LPks / 01 Douglas-fir - Lodgepole Pine - Pinegrass - Feathermoss; shallow soil on cool aspect LPs / 01 Douglas-fir - Lodgepole Pine - Pinegrass - Feathermoss; shallow soil LPw / 01 Douglas-fir - Lodgepole Pine - Pinegrass - Feathermoss; warm aspect</p>
<p>Typical mesic forests occur on level to gentle slopes with deep medium-textured soils. Shallow soil sites occur where parent material is a veneer over rock (but is still > 50cm deep) (LPs), coarse-textured sites are often found on glaciofluvial or colluvial deposits (LPch). Occasionally this type occurs on moderate warm (LPw) or cool aspects (LPk, LPks).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1400	1300
Slope (%)	0-20	10
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic	medium	
Drainage	moderate to well	
Surficial Material		
morainal blankets (veneers), eolian veneer over morainal blanket		
Soil Development		
luvisols or brunisols		
	Range	Mean
Humus Depth (cm)	2-6	4
Coarse Fragments (%)	< 30	
Soil Texture	Humus Form	
loamy (silty loam, sandy loam, sandy clay loam)	hemimor	

PLOT 9800904 LP5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LP / 01

Douglas-fir - Lodgepole Pine - Pinegrass - Feathermoss

Map Symbol	LP2, LPch2, LPk2, LPks2, LPs2, LPw2	LP3, LPch3, LPk3, LPks3, LPs3, LPw3	LP4, LPch4, LPk4, LPks4, LPs4, LPw4	LP5, LPch5, LPk5, LPks5, LPs5, LPw5	LP, LPch6, LPk6, LPks6, LPs6, LPw6	LP7, LPch7, LPk7, LPks7, LPs7, LPw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick pinegrass fireweed	lodgepole pine kinnikinnick pinegrass	Closed canopy of: lodgepole pine Douglas-fir pinegrass red-stemmed feather moss	Closed canopy of : Douglas-fir lodgepole pine pinegrass red-stemmed feathermoss	Closed canopy of : Douglas-fir pinegrass red-stemmed feathermoss	Closed canopy of : Douglas-fir pinegrass red-stemmed feathermoss
Associates	dwarf blueberry wild strawberry northern bedstraw rough-leaved ricegrass heart-leaved arnica firemoss <i>Peltigera spp.</i>	trembling aspen soopolallie prickly rose saskatoon willow dwarf blueberry wild strawberry twinflower northern bedstraw <i>Peltigera spp.</i>	trembling aspen common juniper soopolallie prickly rose dwarf blueberry kinnikinnick twinflower dog pelt lichen <i>Peltigera spp.</i>	trembling aspen common juniper soopolallie prickly rose dwarf blueberry twinflower dog pelt lichen <i>Peltigera spp.</i>	lodgepole pine trembling aspen common juniper soopolallie prickly rose dwarf blueberry twinflower dog pelt lichen <i>Peltigera spp.</i>	common juniper soopolallie prickly rose dwarf blueberry twinflower dog pelt lichen <i>Peltigera spp.</i>
Plots				9800904	C633	

Comments: Mature forests are usually dominated by Douglas-fir with minor amounts of lodgepole pine (canopy closure 20-35%). Douglas-fir stands are multi-aged and multi-storied with abundant and patchy Douglas-fir regeneration. Lodgepole pine is a dominant seral species in young stands, forming uniform aged stand and is gradually replaced by Douglas-fir over time. Small trembling aspen stands may also occur in young seral stages. Hybrid spruce occasionally forms a minor part of the forest canopy in more mature stands. Pinegrass and red-stemmed feathermoss typically dominate understory growth (up to 50% and 75% cover respectively). Shrubs are generally scattered but soopolallie can be abundant. Logging and/or burning creates structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LP / 01

Douglas-fir - Lodgepole Pine - Pinegrass - Feathermoss

Map Symbol	LP2, LPch2, LPk2, LPks2, LPS2, LPw2	LP3, LPch3, LPk3, LPks3, LPS3, LPw3	LP4, LPch4, LPk4, LPks4, LPS4, LPw4	LP5, LPch5, LPk5, LPks5, LPS5, LPw5	LP, LPch6, LPk6, LPks6, LPS6, LPw6	LP7, LPch7, LPk7, LPks7, LPS7, LPw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass
Associates		trembling aspen prickly rose saskatoon soopolallie willow	trembling aspen prickly rose soopolallie	trembling aspen prickly rose soopolallie	trembling aspen prickly rose soopolallie	trembling aspen prickly rose soopolallie
Bear Forage Species	kinnikinnick dwarf blueberry pinegrass wild strawberry	pinegrass prairie rose saskatoon soopolallie dwarf blueberry kinnikinnick wild strawberry	prairie rose soopolallie pinegrass dwarf blueberry kinnikinnick	prairie rose soopolallie dwarf blueberry pinegrass	prairie rose soopolallie dwarf blueberry pinegrass	prairie rose soopolallie dwarf blueberry pinegrass

Comments: This unit provides good security/thermal cover for both bears and ungulates due to a moderately closed canopy. Deer may feed on Douglas-fir needles in winter and bear, deer and elk may feed on emergent pinegrass in spring. But generally preferred forage is absent. If abundant CWD is present then this may be a good habitat for small rodents and in turn marten.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	SH / 09 Hybrid White Spruce – Horsetail – Glow Moss SHa / 09 Hybrid White Spruce – Horsetail – Glow Moss; active floodplain
This ecosystem typically occurs on wet toe slope positions and depressions often near the edge of wetlands. Soils are typically deep and medium-textured. The water table is often near the soil surface (<50cm) and soils are frequently gleyed. Sites can be found on active floodplains (SHa) where vegetation composition may vary with the degree and frequency of flooding.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1300	1250
Slope (%)	0-2	1
Aspect (degrees)	none	
Moisture Regime	Nutrient Regime	
hygric, subhydric	poor to very rich	
Drainage	poor to imperfect	
Surficial Material		
moraine, fluvial, lacustrine		
Soil Development		
gleysols		
	Range	Mean
Humus Depth (cm)	10-50	30
Coarse Fragments (%)	< 20	
Soil Texture	Humus Form	
loamy, silty	hydromoder, histomoder	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SH / 09

Hybrid White Spruce – Horsetail – Glow Moss

Map Symbol	SH2, SHa2	SH3, SHa3	SH4, SHa4	SH5, SHa5	SH6, SHa6	SH7, SHa7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	horsetails nodding wood-reed soft-leaved sedge bluejoint sedges glow moss	red-osier dogwood black twinberry high-bush cranberry horsetails glow moss	Open canopy of: hybrid white spruce red-osier dogwood black twinberry horsetails glow moss	Open canopy of: hybrid white spruce red-osier dogwood black twinberry horsetails glow moss stepmoss	Open canopy of: hybrid white spruce red-osier dogwood black twinberry horsetails glow moss stepmoss	Open canopy of: hybrid white spruce red-osier dogwood black twinberry horsetails glow moss stepmoss
Associates	palmate coltsfoot	prickly rose trembling aspen nodding wood-reed sedges palmate coltsfoot soft-leaved sedge twinflower fringed aster leafy mosses	prickly rose trembling aspen nodding wood-reed palmate coltsfoot soft-leaved sedge twinflower fringed aster high-bush cranberry step moss leafy mosses	prickly rose trembling aspen nodding wood-reed palmate coltsfoot soft-leaved sedge twinflower fringed aster high-bush cranberry leafy mosses	prickly rose nodding wood-reed palmate coltsfoot soft-leaved sedge twinflower fringed aster high-bush cranberry leafy mosses	prickly rose nodding wood-reed palmate coltsfoot soft-leaved sedge twinflower fringed aster high-bush cranberry leafy mosses
Plots						

Comments: This site is composed of widely spaced hybrid white spruce on raised microsites (usually <20 % crown closure). The undergrowth has abundant common horsetail and other wet site indicator species such as nodding wood-reed, palmate coltsfoot and soft-leaved sedge, prickly rose, red-osier dogwood and black twinberry. Some sites are forested wetlands. Logging and/or burning creates structural stage 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
SH / 09

Name
Hybrid White Spruce – Horsetail – Glow Moss

Map Symbol	SH2, SHa2	SH3, SHa3	SH4, SHa4	SH5, SHa5	SH6, SHa6	SH7, SHa7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	soft-leaved sedge bluejoint sedges horsetails	red-osier dogwood black twinberry high-bush cranberry horsetails	red-osier dogwood black twinberry horsetails	red-osier dogwood black twinberry horsetails	red-osier dogwood black twinberry horsetails	red-osier dogwood black twinberry horsetails
Associates		prickly rose trembling aspen soft-leaved sedge sedges	prickly rose trembling aspen soft-leaved sedge sedges	prickly rose trembling aspen soft-leaved sedge sedges	prickly rose high-bush cranberry soft-leaved sedge sedges	prickly rose high-bush cranberry soft-leaved sedge sedges
Bear Forage Species	horsetails sedges bluejoint	red-osier dogwood prickly rose black twinberry high-bush cranberry soft-leaved sedge horsetails sedges	red-osier dogwood prickly rose black twinberry high-bush cranberry soft-leaved sedge horsetails sedges	red-osier dogwood prickly rose black twinberry high-bush cranberry soft-leaved sedge horsetails sedges	red-osier dogwood prickly rose black twinberry high-bush cranberry soft-leaved sedge horsetails sedges	red-osier dogwood prickly rose black twinberry high-bush cranberry soft-leaved sedge horsetails sedges

Comments: Abundance of red-osier dogwood makes this unit a valuable foraging habitat for riparian species such as moose. This unit also provides forage in spring for bear in the abundant horsetail and shrubs. Security and thermal cover is moderate to high for both ungulates and bears.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	SR / 07 Hybrid White Spruce – Douglas-fir – Sedge
This ecosystem typically occurs on gentle mid to lower slopes in receiving positions with deep medium-textured soils. This unit is without significant seepage except early in the growing season and following heavy rains. This ecosystem is common yet small in size, and occurs most commonly on cool aspects that are too gentle for cool aspect modifiers.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1300	1250
Slope (%)	2-15	8
Aspect (degrees)	281-360	0-100
Moisture Regime	Nutrient Regime	
subhygric	medium, rich	
Drainage	moderate, imperfect	
Surficial Material		
morainal		
Soil Development		
luvisols		
	Range	Mean
Humus Depth (cm)	3-5	4
Coarse Fragments (%)	< 50	
Soil Texture	Humus Form	
loamy	hemimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SR / 07

Hybrid White spruce – Douglas-fir – Prickly Rose - Sedge

Map Symbol	SR2	SR3	SR4	SR5	SR6	SR7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass twinflower bunchberry fireweed red-stemmed feathermoss	lodgepole pine paper birch prickly rose black twinberry red-osier dogwood bunchberry pinegrass	Closed canopy of: lodgepole pine paper birch twinflower pinegrass red-stemmed feathermoss	Closed canopy of: Douglas-fir lodgepole pine paper birch twinflower pinegrass red-stemmed feathermoss	Closed canopy of: hybrid white spruce Douglas-fir twinflower pinegrass red-stemmed feathermoss	Closed canopy of: hybrid white spruce Douglas-fir twinflower pinegrass red-stemmed feathermoss
Associates	showy aster rough-leaved ricegrass	trembling aspen showy aster	hybrid white spruce Douglas-fir trembling aspen prickly rose black twinberry red-osier dogwood bunchberry showy aster electrified cat's tail moss step moss	hybrid white spruce prickly rose black twinberry red-osier dogwood bunchberry showy aster electrified cat's tail moss step moss	lodgepole pine paper birch prickly rose black twinberry red-osier dogwood bunchberry showy aster electrified cat's tail moss step moss	paper birch prickly rose black twinberry red-osier dogwood bunchberry showy aster electrified cat's tail moss step moss
Plots						

Comments: Mature forests generally have a closed canopy (>35% crown closure) and are dominated by a mix of hybrid white spruce and Douglas-fir. Lodgepole pine and paper birch are often present. Undergrowth consists of a moderate to sparse shrub/herb layer, and a continuous moss cover. Species such as pinegrass, red-stemmed feathermoss and twinflower predominate but moist site indicators such as red-osier dogwood, black twinberry and bunchberry may be present. Logging and/or burning creates structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
SR / 07

Name
Hybrid White Spruce- Douglas-fir – Prickly Rose - Sedge

Map Symbol	SR2	SR3	SR4	SR5	SR6	SR7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	paper birch prickly rose black twinberry red-osier dogwood pinegrass	paper birch pinegrass	Douglas-fir paper birch pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass
Associates		Douglas-fir trembling aspen	Douglas-fir trembling aspen prickly rose black twinberry red-osier dogwood	prickly rose black twinberry red-osier dogwood	paper birch prickly rose black twinberry red-osier dogwood	paper birch prickly rose black twinberry red-osier dogwood
Bear Forage Species	pinegrass	prickly rose black twinberry red-osier dogwood pinegrass	prickly rose black twinberry red-osier dogwood pinegrass	prickly rose black twinberry red-osier dogwood pinegrass	prickly rose black twinberry red-osier dogwood pinegrass	prickly rose black twinberry red-osier dogwood pinegrass

Comments: This unit provides sufficient security/thermal cover for ungulates and bears. Scattered shrubs can also be used for feeding as ungulates and bears move through this unit, but densities of shrub cover would not support a resident population.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	SS / 08 Hybrid White Spruce – Douglas-fir – Prickly Rose – Sarsaparilla
This ecosystem typically occurs on moist lower and toe slopes in receiving positions with seepage. Soils are deep and medium textured (SS). This unit frequently occurs downslope of the /07 unit and is often found on gentle lower and toe slope position of north aspects.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1300	1250
Slope (%)	2-15	9
Aspect (degrees)	281,360	0-100
Moisture Regime	Nutrient Regime	
subhygric	rich, very rich	
Drainage	moderate to poor	
Surficial Material		
morainal, fluvial		
Soil Development		
	Range	Mean
Humus Depth (cm)	2-15	9
Coarse Fragments (%)	< 40	
Soil Texture	Humus Form	
loamy	hemimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SS / 08

Hybrid White Spruce – Douglas-fir – Prickly Rose – Sarsaparilla

Map Symbol	SS2	SS3	SS4	SS5	SS6	SS7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass twinflower bunchberry wild strawberry leafy mosses	paper birch trembling aspen high-bush cranberry prickly rose black twinberry black huckleberry soopolallie wild strawberry leafy mosses	Closed canopy of: lodgepole pine hybrid white spruce paper birch trembling aspen high-bush cranberry prickly rose black twinberry black huckleberry soopolallie leafy mosses	Closed canopy of: lodgepole pine hybrid white spruce paper birch high-bush cranberry prickly rose black twinberry black huckleberry soopolallie leafy mosses	Closed canopy of: hybrid white spruce Douglas-fir high-bush cranberry prickly rose black twinberry black huckleberry soopolallie leafy mosses	Closed canopy of: hybrid white spruce Douglas-fir high-bush cranberry prickly rose black twinberry black huckleberry soopolallie leafy mosses
Associates	prickly rose black huckleberry high-bush cranberry sedges horsetails	hybrid white spruce lodgepole pine pinegrass sarsaparilla bunchberry twinflower sedges horsetails	pinegrass wild strawberry sarsaparilla bunchberry twinflower	Douglas-fir trembling aspen pinegrass wild strawberry sarsaparilla bunchberry twinflower step moss red-stemmed feathermoss	lodgepole pine paper birch trembling aspen pinegrass wild strawberry sarsaparilla bunchberry twinflower step moss red-stemmed feathermoss	paper birch trembling aspen pinegrass wild strawberry sarsaparilla bunchberry twinflower step moss red-stemmed feathermoss
Plots						

Comments: Mature forest have a closed canopy (>30% crown closure) of a mixture of Douglas-fir and hybrid spruce with scattered lodgepole, paper birch and aspen in the lower canopy. This site has a moderate to high shrub cover of high-bush cranberry, prickly rose, black twinberry, black huckleberry and soopolallie. The herb layer is productive consisting of pinegrass, bunchberry and sarsaparilla. The moss cover is nearly continuous. Seral stage forests are dominated by a mix of lodgepole pine, trembling aspen and paper birch. Logging and/or burning creates structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SS / 08

Hybrid White Spruce – Douglas-fir – Prickly Rose – Sarsaparilla

Map Symbol	SS2	SS3	SS4	SS5	SS6	SS7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	paper birch trembling aspen high-bush cranberry prickly rose black twinberry black huckleberry soopolallie	paper birch trembling aspen high-bush cranberry prickly rose black twinberry black huckleberry soopolallie	paper birch high-bush cranberry prickly rose black twinberry black huckleberry soopolallie	Douglas-fir high-bush cranberry prickly rose black twinberry black huckleberry soopolallie	Douglas-fir high-bush cranberry prickly rose black twinberry black huckleberry soopolallie
Associates	prickly rose black huckleberry high-bush cranberry sedges horsetails	pinegrass sedges horsetails	pinegrass	Douglas-fir trembling aspen pinegrass	paper birch trembling aspen pinegrass	paper birch trembling aspen pinegrass
Bear Forage Species	pinegrass wild strawberry prickly rose black huckleberry high-bush cranberry	trembling aspen high-bush cranberry prickly rose black twinberry black huckleberry soopolallie wild strawberry pinegrass	trembling aspen high-bush cranberry prickly rose black twinberry black huckleberry soopolallie wild strawberry pinegrass	trembling aspen high-bush cranberry prickly rose black twinberry black huckleberry soopolallie wild strawberry pinegrass	trembling aspen high-bush cranberry prickly rose black twinberry black huckleberry soopolallie wild strawberry pinegrass	trembling aspen high-bush cranberry prickly rose black twinberry black huckleberry soopolallie wild strawberry pinegrass

Comments: The wild variety of herbaceous shrubs provide forage in all seasons for all ungulate species. Bears will feed on the fruit of the herbaceous shrubs in summer and fall. This ecosystem has high security thermal values.

4.2 IDFdk3 Grassland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	NR / 38 Spreading Needlegrass – Baltic Rush NR:bb / 38 Spreading Needlegrass – Baltic Rush: Kentucky Bluegrass Association
This unit typically occurs in moist depressions, toe slopes, and moisture receiving sites adjacent to wet meadows or wetlands. Soils are deep and medium-textured. Extensive grazing has promoted the seral association (NR:bb) dominated by cultivated and weedy plant species such as Kentucky bluegrass. No sites with climax vegetation were sampled in the Churn Creek study area.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1500	1350
Slope (%)	0-3	1
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
sybhygric	medium to rich	
Drainage	moderate to imperfect	
Surficial Material		
eolian veneer, morainal blanket, glaciolacustrine, glaciofluvial		
Soil Development		
chernozem		
	Range	Mean
Humus Depth (cm)	2-15	8
Coarse Fragments (%)	< 25	
Soil Texture	Humus Form	
loamy, silty, clayey	mull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

NR / 38

Spreading Needlegrass – Baltic Rush

Map Symbol	NR2	NR:bb2
Plant species	Herb Climax / Late Seral	Herb Seral Association
Dominants	spreading needlegrass Baltic rush	Kentucky bluegrass
Associates	field sedge small-flowered penstemon graceful cinquefoil	Baltic rush common dandelion field sedge slender wheatgrass sweet-clover alfalfa
Plots		

Comments: The seral association is dominated by Kentucky bluegrass and other weedy species.

Map Symbol	NR2	NR:bb2
Plant Species	Herb Climax / Late Seral	Herb Seral Association
Ungulate Forage Species - Dominants		Kentucky bluegrass
Ungulate Forage Species - Associates	field sedge	common dandelion field sedge slender wheatgrass sweet-clover alfalfa
Bear Forage Species	Baltic rush field sedge	Baltic rush common dandelion field sedge slender wheatgrass sweet-clover alfalfa

Comments: The seral association vegetation is highly palatable to ungulates and bears and will be used for feeding. The typical situation is not as valuable for feed but may still receive low to moderate use.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	WY / 33 Bluebunch Wheatgrass – Yarrow WYs / 33 Bluebunch Wheatgrass – Yarrow; shallow soil
This ecosystem occurs on level to moderately sloping sites primarily on south and west facing aspects from mid to upper slope positions. Soils are deep and medium textured. In the study area, shallow soils are occasionally found (WYs).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1500	1350
Slope (%)	0-30	10
Aspect (degrees)	160-280	10-90
Moisture Regime	Nutrient Regime	
submesic to mesic	medium	
Drainage	well (moderate)	
Surficial Material		
eolian veneer over morainal blanket, morainal veneer, glaciofluvial		
Soil Development		
dark brown chernozem, eutric brunisol		
	Range	Mean
Humus Depth (cm)	0-1	0.5
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
silty, loamy	rhizomull	

PLOT C895 WY2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WY / 33

Bluebunch Wheatgrass - Yarrow

Map Symbol	WY2, WYs2
Plant species	Herb Climax / Late Seral
Dominants	bluebunch wheatgrass pixie cup lichen cladonia scales
Associates	pussytoes meadow salsify yarrow Rocky Mtn. fescue pasture sage cut-leaved daisy northern wormwood timber milk-vetch compact selaginella junegrass <i>Psora spp.</i> <i>Cladonia spp.</i>
Plots	C895

Comments: Late seral and climax vegetation is dominated by bluebunch wheatgrass with a very diverse grass, forb, and a well developed cryptogram community. Grazing reduces lichen cover and increases weeds and forbs such as salsify, Kentucky bluegrass, cut leaved daisy, and northern wormwood.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WY / 33

Bluebunch Wheatgrass - Yarrow

Map Symbol	WY2, WYs2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass
Ungulate Forage Species - Associates	Rocky Mtn. fescue pasture sage junegrass
Bear Forage Species	bluebunch wheatgrass Rocky Mtn. fescue pasture sage junegrass

Comments: This unit would provide valuable winter forage due to its warm aspect and dry mature. Here preferred forage species such as junegrass, Rocky Mtn. fescue and bluebunch wheatgrass proliferate.

4.3 IDFdK3 Wetland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	RS / 00 Baltic Rush – Field Sedge Moist Meadow
These are moist meadow complexes which are rarely inundated, but usually wet early in the growing season. Soils are typically deep and medium-textured.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1500	1350
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric to hygric		
Drainage	imperfect to poor	
Surficial Material		
medium textured lacustrine, glaciolacustrine deposits		
Soil Development		
orthic humic gleysol, gleyed eluviated eutric brunisol may be carbonated		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
loamy	none	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RS / 00

Baltic Rush – Field Sedge Moist Meadow

Map Symbol	RS2
Plant species	Herb Climax / Late Seral
Dominants	Baltic rush field sedge
Associates	foxtail barley silverweed slender wheatgrass white prairie aster Nuttall's alkaligrass alkali bluegrass Kentucky bluegrass Parry's sedge early blue violet
Plots	

Comments: These meadows are often heavily grazed with higher covers of introduced species such as Kentucky bluegrass.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series **Name**
 RS /00 Baltic Rush – Field Sedge Moist Meadow

Map Symbol	RS2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	Baltic rush field sedge
Ungulate Forage Species - Associates	foxtail barley slender wheatgrass Nuttall's alkaligrass alkali bluegrass Kentucky bluegrass Parry's sedge
Bear Forage Species	Baltic rush field sedge foxtail barley slender wheatgrass Nuttall's alkaligrass Kentucky bluegrass alkali bluegrass Parry's sedge

Comments: This ecosystem provides sufficient forage species diversity and abundance for feeding by ungulates and bears.

5.0 IDFdk4 - Interior Douglas-fir Dry Cool Subzone Chilcotin Variant

5.1 IDFd4 - Forested Sites

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	AR / 00 Trembling Aspen – Prairie Rose ARa / 00 Trembling Aspen – Prairie Rose; active floodplain ARf / 00 Trembling Aspen – Prairie Rose; fine-textured soils ARt / 00 Trembling Aspen – Prairie Rose; terraced
Typically occurs on gentle slopes in moist receiving depressions, sometimes adjacent to wetlands or along open and glaciofluvial channels. Soils are typically deep and medium-textured (AR). This unit may occur on glaciofluvial terraces (ARt) as well as on fine textured soils (ARf). On active floodplains (ARa) the vegetation can be quite variable depending on the frequency and date of flooding. Vegetation may be maintained in early seral stage by repeated flooding.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1300	1200
Slope (%)	0-15	7
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	moderate to poor	
Surficial Material		
eolian veneer over either moraine, glaciofluvial or glaciolacustrine		
Soil Development		
orthic regosol		
	Range	Mean
Humus Depth (cm)	5-8	6
Coarse Fragments (%)		
Soil Texture	Humus Form	
silty, loamy	leptomoder	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AR / 00

Trembling Aspen – Prairie Rose

Map Symbol	AR2, ARa2, ARf2, ARt2	AR3, ARa3, ARf3, ARt3	AR4, ARa4, ARf4, ARt4	AR5, ARa5, ARf5, ARt5	AR6, ARa6, ARf6, ARt6	AR7, ARa7, ARf7, ARt7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	Kentucky bluegrass pinegrass wild strawberry	trembling aspen prairie rose snowberry Kentucky bluegrass	Closed canopy of: trembling aspen prairie rose snowberry Kentucky bluegrass	Closed canopy of: trembling aspen prairie rose snowberry	Closed canopy of: trembling aspen prairie rose snowberry	Closed canopy of: trembling aspen prairie rose snowberry
Associates	northern bedstraw American vetch blue wildrye showy aster	northern bedstraw American vetch pinegrass showy aster blue wildrye wild strawberry	western meadowrue northern bedstraw American vetch blue wildrye pinegrass showy aster	western meadowrue northern bedstraw American vetch pinegrass showy aster blue wildrye	western meadowrue northern bedstraw American vetch pinegrass showy aster blue wildrye	western meadowrue northern bedstraw American vetch pinegrass showy aster blue wildrye
Plots						

Comments: While trembling aspen occurs as a seral component in most of the other IDFdk4 forested sites series (Peterson & Peterson 1995), pure aspen clones may form stable plant associations on moister sites within the matrix of IDFdk4 grassland communities. These generally occur in depressions and channels in upland slopes, around wetlands, and between Douglas-fir stands and grasslands. Aspen crown closure is high (<= 60%) and the understory is characterized by a tall vigorous shrub layer (up to 75%). Clearing and logging for grazing creates structural stages 2 and 3. Mature and old forests in the ecosystem are very rare.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AR / 00

Trembling Aspen – Prairie Rose

Map Symbol	AR2, ARa2, ARf2, ARt2	AR3, ARa3, ARf3, ARt3	AR4, ARa4, ARf4, ARt4	AR5, ARa5, ARf5, ARt5	AR6, ARa6, ARf6, ARt6	AR7, ARa7, ARf7, ARt7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	Kentucky bluegrass pinegrass	trembling aspen prairie rose snowberry Kentucky bluegrass	trembling aspen prairie rose snowberry Kentucky bluegrass	trembling aspen prairie rose snowberry	trembling aspen prairie rose snowberry	trembling aspen prairie rose snowberry
Associates	blue wildrye	pinegrass blue wildrye fireweed	pinegrass blue wildrye fireweed	pinegrass blue wildrye fireweed	pinegrass blue wildrye	pinegrass blue wildrye
Bear Forage Species	Kentucky bluegrass pinegrass fireweed wild strawberry blue wildrye	Kentucky bluegrass pinegrass wild strawberry blue wildrye	Kentucky bluegrass pinegrass wild strawberry blue wildrye	prairie rose pinegrass blue wildrye	prairie rose pinegrass blue wildrye	prairie rose pinegrass blue wildrye

Comments: This small ecosystem provides important cover and forage for ungulates and bears, especially when found as a “forest island” in a large grassland.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	DJ / 03 Douglas-fir – Juniper – Saskatoon DJs / 03 Douglas-fir – Juniper – Saskatoon; shallow soil
Typically occurs on moderate to steep south or west aspects upper, mid or crest slopes with deep coarse-textured (sandy) soils (DJ). These are typically very dry sites.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1500	1350
Slope (%)	>15	
Aspect (degrees)	145-295	
Moisture Regime	Nutrient Regime	
xeric to subxeric	poor to very poor	
Drainage	well to rapid	
Surficial Material		
morainal blankets and/or veneers colluvial blanket or veneer		
Soil Development		
orthic eutric brunisol		
	Range	Mean
Humus Depth (cm)	0-2	1
Coarse Fragments (%)	25-70	
Soil Texture	Humus Form	
sandy and often gravelly	xeromor, rhizomull	

PLOT 9800420 DJ5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 03

Douglas-fir – Juniper – Saskatoon

Map Symbol	DJ2, DJ2s	DJ3, DJ3s	DJ4, DJ4s	DJ5, DJ5s	DJ6, DJ6s	DJ7, DJ7s
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick stiff needlegrass bluebunch wheatgrass <i>Cladonia spp.</i> <i>Peltigera spp.</i> rusty steppe moss firemoss	saskatoon kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i> rusty steppe moss	Open canopy of: Douglas fir saskatoon kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i> rusty steppe moss	Open canopy of: Douglas fir saskatoon kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i> rusty steppe moss	Open canopy of: Douglas fir saskatoon kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i> rusty steppe moss	Open canopy of: Douglas fir saskatoon kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i> rusty steppe moss
Associates	Rocky Mtn. fescue pinegrass shrubby penstemon lance-leaved stonecrop	Douglas-fir Rocky Mtn. Juniper common juniper western snowberry bluebunch wheatgrass Rocky Mtn. fescue pinegrass shrubby penstemon lance-leaved stonecrop prickly rose spike-like goldenrod stiff needlegrass	Rocky Mtn. Juniper common juniper western snowberry bluebunch wheatgrass Rocky Mtn. fescue pinegrass shrubby penstemon lance-leaved stonecrop prickly rose spike-like goldenrod stiff needlegrass	Rocky Mtn. Juniper common juniper western snowberry bluebunch wheatgrass Rocky Mtn. fescue pinegrass shrubby penstemon lance-leaved stonecrop prickly rose spike-like goldenrod stiff needlegrass	Rocky Mtn. Juniper common juniper western snowberry bluebunch wheatgrass Rocky Mtn. fescue pinegrass shrubby penstemon lance-leaved stonecrop prickly rose spike-like goldenrod stiff needlegrass	Rocky Mtn. Juniper common juniper western snowberry bluebunch wheatgrass Rocky Mtn. fescue pinegrass shrubby penstemon lance-leaved stonecrop prickly rose spike-like goldenrod stiff needlegrass
Plots		C854		9800420		

Comments: The forest canopy is typically very open, patchy, and dominated by multi-sized Douglas-fir (<20% crown closure) and frequently with large standing dead trees. The undergrowth is dominated by saskatoon and a variety of dry-land herbaceous plants and lichens. Moss cover is sparse and exposed mineral soil is common.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DJ / 03

Douglas-fir – Juniper – Saskatoon

Map Symbol	DJ2, DJ2s2	DJ3, DJ3s3	DJ4, DJ4s4	DJ5, DJ5s 5	DJ6, DJ6s6	DJ7, DJ7s7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass	saskatoon	Douglas-fir saskatoon	Douglas-fir saskatoon	Douglas-fir saskatoon	Douglas-fir saskatoon
Associates	Rocky Mtn. fescue pinegrass	Douglas-fir prickly rose bluebunch wheatgrass Rocky Mtn. fescue pinegrass	prickly rose bluebunch wheatgrass Rocky Mtn. fescue pinegrass	prickly rose bluebunch wheatgrass Rocky Mtn. fescue pinegrass	prickly rose bluebunch wheatgrass Rocky Mtn. fescue pinegrass	prickly rose bluebunch wheatgrass Rocky Mtn. fescue pinegrass
Bear Forage Species	kinnikinnick bluebunch wheatgrass Rocky Mtn. fescue pinegrass	saskatoon prickly rose kinnikinnick bluebunch wheatgrass Rocky Mtn. fescue pinegrass	saskatoon prickly rose kinnikinnick bluebunch wheatgrass Rocky Mtn. fescue pinegrass	saskatoon prickly rose kinnikinnick bluebunch wheatgrass Rocky Mtn. fescue pinegrass	saskatoon prickly rose kinnikinnick bluebunch wheatgrass Rocky Mtn. fescue pinegrass	saskatoon prickly rose kinnikinnick bluebunch wheatgrass Rocky Mtn. fescue pinegrass

Comments: This dry warm site provides some forage and cover opportunities to deer, elk and bear. Forage is of moderate quality as is cover (due to the lack of understory shrub development).

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	<p>DM / 07 Douglas-fir – Feathermoss – Step Moss</p> <p>DMcs / 07 Douglas-fir – Feathermoss – Step Moss; coarse-textured, shallow soil</p> <p>DMc / 07 Douglas-fir – Feathermoss – Step Moss; coarse-textured</p> <p>DMg / 07 Douglas-fir – Feathermoss – Step Moss; gullied</p> <p>DMhs / 07 Douglas-fir – Feathermoss – Step Moss; hummocky terrain, shallow soil</p> <p>DMj / 07 Douglas-fir – Feathermoss – Step Moss; gentle slope</p> <p>DMqs / 07 Douglas-fir – Feathermoss – Step Moss; steep cool aspect, shallow soil</p> <p>DMr / 07 Douglas-fir – Feathermoss – Step Moss; ridge</p> <p>DMs / 07 Douglas-fir – Feathermoss – Step Moss; shallow soil</p> <p>DMv / 07 Douglas-fir – Feathermoss – Step Moss; very shallow soil</p>
<p>This ecosystem typically occurs on steep slopes with cool aspects and deep medium-textured soil (DM). Snow persists longer than on other sites in the IDFdk4. On some slopes, soil may be shallow (DMs, DMhs, DMqs), or very shallow (DMv), or coarse-texture (DMc, DMcs). This ecosystem can uncommonly be found to occur on ridges (DMr) and gentle slopes (DMj). This unit can also occur on gullied terrain (DMg).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1200-1500	1300
Slope (%)	22-82	50
Aspect (degrees)	296-360	50
Moisture Regime	Nutrient Regime	
submesic	poor, medium	
Drainage	well to moderate	
Surficial Material		
morainal blanket, veneer		
Soil Development		
orthic eutric brunisol, orthic gray luvisol		
	Range	Mean
Humus Depth (cm)	0-10	5
Coarse Fragments (%)	20-65	
Soil Texture	Humus Form	
loamy – clayey	hemimor, mormoder	

PLOT 9800452 DM6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 07

Douglas-fir – Feathermoss – Step Moss

Map Symbol	DM2, DMcs2, DMc2,DMg2, DMhs2, DMj2, DMqs2, DMr2, DMs2, DMv2	DM3, DMcs3, DMc3,DMg3, DMhs3, DMj3, DMqs3, DMr3, DMs3, DMv3	DM4, DMcs4, DMc4,DMg4, DMhs4, DMj4, DMqs4, DMr4, DMs4, DMv4	DM5, DMcs5, DMc5,DMg5, DMhs5, DMj5, DMqs5, DMr5, DMs5, DMv5	DM6, DMcs6, DMc6,DMg6, DMhs6, DMj6, DMqs6, DMr6, DMs6, DMv6	DM7, DMcs7, DMc7,DMg7, DMhs7, DMj7, DMqs7, DMr7, DMs7, DMv7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass showy aster red-stemmed feathermoss	pinegrass step moss red-stemmed feathermoss	Closed canopy of : Douglas-fir pinegrass step moss red-stemmed feathermoss showy aster	Closed canopy of: Douglas-fir showy aster pinegrass step moss red-stemmed feathermoss	Closed canopy of: Douglas-fir showy aster pinegrass step moss red-stemmed feathermoss	Closed canopy of: Douglas-fir showy aster pinegrass step moss red-stemmed feathermoss
Associates	kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Douglas-fir lodgepole pine kinnikinnick common juniper prickly rose showy aster twinflower <i>Cladonia spp.</i> <i>Peltigera spp.</i>	lodgepole pine common juniper prickly rose twinflower kinnikinnick dog pelt lichen freckled pelt <i>Cladonia spp.</i> <i>Peltigera spp.</i>	common juniper prickly rose twinflower kinnikinnick dog pelt lichen freckled pelt <i>Cladonia spp.</i> <i>Peltigera spp.</i>	common juniper pusseytoes prickly rose twinflower Richardson's sedge kinnikinnick dog pelt lichen freckled pelt <i>Cladonia spp.</i> <i>Peltigera spp.</i>	common juniper pusseytoes prickly rose twinflower Richardson's sedge kinnikinnick dog pelt lichen freckled pelt <i>Cladonia spp.</i> <i>Peltigera spp.</i>
Plots		C224	C84, C310, C636, C350, C850	C663, C851	9800429, 9800452, C205, C349, C510, C752, C849	C212

Comments: The Douglas-fir dominated forest canopies are relatively closed (20-45% crown closure), often with a moderately dense subcanopy layer. Shrub and herb layers are typically poorly developed, with mosses forming a continuous, thick carpet.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DM / 07

Douglas-fir – Feathermoss – Step Moss

Map Symbol	DM2, DMcs2, DMc2,DMg2, DMhs2, DMj2, DMqs2, DMr2, DMs2, DMv2	DM3, DMcs3, DMc3,DMg3, DMhs3, DMj3, DMqs3, DMr3, DMs3, DMv3	DM4, DMcs4, DMc4,DMg4, DMhs4, DMj4, DMqs4, DMr4, DMs4, DMv4	DM5, DMcs5, DMc5,DMg5, DMhs5, DMj5, DMqs5, DMr5, DMs5, DMv5	DM6, DMcs6, DMc6,DMg6, DMhs6, DMj6, DMqs6, DMr6, DMs6, DMv6	DM7, DMcs7, DMc7,DMg7, DMhs7, DMj7, DMqs7, DMr7, DMs7, DMv7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass
Associates		Douglas-fir prickly rose	prickly rose	prickly rose	prickly rose	prickly rose
Bear Forage Species	kinnikinnick pinegrass	kinnikinnick prickly rose pinegrass	prickly rose kinnikinnick pinegrass	prickly rose kinnikinnick pinegrass	prickly rose Richardson's sedge pinegrass	prickly rose Richardson's sedge pinegrass

Comments: Closed Douglas-fir canopy with dense subcanopy provides good security/thermal habitat but lack of forage species makes this unit unfavorable as feeding habitat.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	DS / 04 Douglas-fir – Juniper – Pasture Sage
	DSc / 04 Douglas-fir – Juniper – Pasture Sage; coarse-textured soil
	DSg / 04 Douglas-fir – Juniper – Pasture Sage; gullied
	DSjs / 04 Douglas-fir – Juniper – Pasture Sage; gentle slope, shallow soil
	DSj / 04 Douglas-fir – Juniper – Pasture Sage; gentle slope
	DSs / 04 Douglas-fir – Juniper – Pasture Sage; shallow soil
	DSv / 04 Douglas-fir – Juniper – Pasture Sage; very shallow soil
This ecosystem typically occurs on steep warm aspects with deep medium-textured soils (DS). The soil may be coarse-textured (DSc). Soil may also be shallow (DSs) or very shallow (DSv). This unit may occur on gentle slopes (DSj, DSjs) as well as gullied terrain (DSg).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1500	1350
Slope (%)	30-70	50
Aspect (degrees)	170-235	
Moisture Regime	Nutrient Regime	
subxeric, xeric	medium, rich	
Drainage	well to rapid	
Surficial Material		
colluvial veneer/thin veneer over rock steep/moderate slope morainal blanket/veneer		
Soil Development		
	Range	Mean
Humus Depth (cm)	1-3	2
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy	xeromor	

PLOT C202 DS7

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DS / 04

Douglas-fir – Juniper – Pasture Sage

Map Symbol	DS2, DSc2, DSg2, DSjs2, DSj2, DSs2, DSv2	DS3, DSc3, DSg3, DSjs3, DSj3, DSs3, DSv3	DS4, DSc4, DSg4, DSjs4, DSj4, DSs4, DSv4	DS5, DSc5, DSg5, DSjs5, DSj5, DSs5, DSv5	DS6, DSc6, DSg6, DSjs6, DSj6, DSs6, DSv6	DS7, DSc7, DSg7, DSjs7, DSj7, DSs7, DSv7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick pinegrass bluebunch wheatgrass Rocky Mtn. fescue	saskatoon kinnikinnick common juniper Rocky Mtn. juniper pinegrass bluebunch wheatgrass Rocky Mtn. fescue	Very open canopy of: Douglas-fir kinnikinnick common juniper Rocky Mtn. juniper pinegrass bluebunch wheatgrass Rocky Mtn. fescue	Very open canopy of: Douglas-fir kinnikinnick common juniper Rocky Mtn. juniper pinegrass bluebunch wheatgrass Rocky Mtn. fescue	Very open canopy of: Douglas-fir kinnikinnick common juniper Rocky Mtn. juniper pinegrass bluebunch wheatgrass Rocky Mtn. fescue	Very open canopy of: Douglas-fir kinnikinnick common juniper Rocky Mtn. juniper pinegrass bluebunch wheatgrass Rocky Mtn. fescue
Associates	pasture sage showy aster junegrass Richardson's sedge lichens	Douglas-fir snowberry pasture sage timber milk-vetch showy aster junegrass Richardson's sedge <i>Tortula ruralis</i> <i>Cladonia spp.</i> lichens	saskatoon snowberry pasture sage timber milk-vetch showy aster junegrass Richardson's sedge <i>Tortula ruralis</i> <i>Cladonia spp.</i> lichens	saskatoon snowberry pasture sage timber milk-vetch showy aster junegrass Richardson's sedge <i>Tortula ruralis</i> <i>Cladonia spp.</i> lichens	saskatoon snowberry pasture sage timber milk-vetch showy aster junegrass Richardson's sedge <i>Tortula ruralis</i> <i>Cladonia spp.</i> lichens	saskatoon snowberry pasture sage timber milk-vetch showy aster junegrass Richardson's sedge <i>Tortula ruralis</i> <i>Cladonia spp.</i> lichens
Plots				C300	C747	C202, C220

Comments: The mature forest canopy is open and dominated by multi-sized, often large, Douglas-fir trees (crown closure <15%) with snags being common. Understory shrubs consist of common and Rocky Mtn. juniper, saskatoon and prickly rose. Pinegrass and bluebunch wheatgrass are common in the herb layer.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DS / 04

Douglas-fir – Juniper – Pasture Sage

Map Symbol	DS2, DSc2, DSg2, DSjs2, DSj2, DSs2, DSv2	DS3, DSc3, DSg3, DSjs3, DSj3, DSs3, DSv3	DS4, DSc4, DSg4, DSjs4, DSj4, DSs4, DSv4	DS5, DSc5, DSg5, DSjs5, DSj5, DSs5, DSv5	DS6, DSc6, DSg6, DSjs6, DSj6, DSs6, DSv6	DS7, DSc7, DSg7, DSjs7, DSj7, DSs7, DSv7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass bluebunch wheatgrass Rocky Mtn. fescue	saskatoon pinegrass bluebunch wheatgrass Rocky Mtn. fescue	Douglas-fir pinegrass bluebunch wheatgrass Rocky Mtn. fescue	Douglas-fir pinegrass bluebunch wheatgrass Rocky Mtn. fescue	Douglas-fir pinegrass bluebunch wheatgrass Rocky Mtn. fescue	Douglas-fir pinegrass bluebunch wheatgrass Rocky Mtn. fescue
Associates	pasture sage junegrass Richardson's sedge	Douglas-fir snowberry pasture sage junegrass pasture sage Richardson's sedge	saskatoon snowberry pasture sage junegrass Richardson's sedge	saskatoon snowberry pasture sage junegrass Richardson's sedge	saskatoon snowberry pasture sage junegrass Richardson's sedge	saskatoon snowberry pasture sage junegrass Richardson's sedge
Bear Forage Species	kinnikinnick pinegrass bluebunch wheatgrass Rocky Mtn. fescue junegrass Richardson's sedge	saskatoon kinnikinnick pinegrass junegrass bluebunch wheatgrass Rocky Mtn. fescue Richardson's sedge	saskatoon kinnikinnick pinegrass junegrass bluebunch wheatgrass Rocky Mtn. fescue Richardson's sedge	saskatoon kinnikinnick pinegrass junegrass bluebunch wheatgrass Rocky Mtn. fescue Richardson's sedge	saskatoon kinnikinnick pinegrass junegrass bluebunch wheatgrass Rocky Mtn. fescue Richardson's sedge	saskatoon kinnikinnick pinegrass junegrass bluebunch wheatgrass Rocky Mtn. fescue Richardson's sedge

Comments: Dry bony site that provides little in terms of bear habitat. Ungulate forage values are high due to abundance of palatable grasses and Douglas-fir needles, though open forest provides little in terms of security and thermal cover.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	DW / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass
	DWc / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass; coarse-textured soil
	DWg / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass; gullied
	DWhs / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass; hummocky terrain, shallow soil
	DWh / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass; hummocky terrain
	DWjs / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass; gentle slope, shallow soil
	DWj / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass; gentle slope
	DWr / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass; ridge
DWs / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass; shallow soil	
This ecosystem typically occurs on mid to upper slope positions with moderate warm aspects and deep medium-textured soils (DW). This type sometimes may have shallow soil (DWs, DWjs, DWhs). This site may also occur on coarse-textured soils (DWc). Occasionally this unit can be found on gentle slopes (DWj), ridge crests (DWr) and hummocks (DWh).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1500	1325
Slope (%)	25-102	40
Aspect (degrees)	145-295	
Moisture Regime	Nutrient Regime	
subxeric, submesic	medium, rich	
Drainage	moderate to well	
Surficial Material		
morainal blanket and veneers, some colluvial veneer blanket		
Soil Development		
brown gleysol		
	Range	Mean
Humus Depth (cm)	1-3	2
Coarse Fragments (%)	20-50	
Soil Texture	Humus Form	
loamy	hemimor, xeromor	

PLOT C638 DW7

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 DW / 05 Douglas-fir – Bluebunch Wheatgrass – Pinegrass

Map Symbol	DW2, DWc2, DWg2, DWhs2, DWh2, DWjs2, DWj2, DWr2, DWs2	DW3, DWc3, DWg3, DWhs3, DWh3, DWjs3, DWj3, DWr3, DWs3	DW4, DWc4, DWg4, DWhs4, DWh4, DWjs4, DWj4, DWr4, DWs4	DW5, DWc5, DWg5, DWhs5, DWh5, DWjs5, DWj5, DWr5, DWs5	DW6, DWc6, DWg6, DWhs6, DWh6, DWjs6, DWj6, DWr6, DWs6	DW7, DWc7, DWg7, DWhs7, DWh7, DWjs7, DWj7, DWr7, DWs7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluebunch wheatgrass kinnikinnick pinegrass fireweed	Douglas-fir common juniper kinnikinnick bluebunch wheatgrass pinegrass	Closed canopy of: Douglas-fir kinnikinnick bluebunch wheatgrass pinegrass	Closed canopy of: Douglas-fir kinnikinnick bluebunch wheatgrass pinegrass	Closed canopy of: Douglas-fir kinnikinnick bluebunch wheatgrass pinegrass	Closed canopy of: Douglas-fir kinnikinnick bluebunch wheatgrass pinegrass
Associates	timber milk-vetch pussytoes junegrass pasture sage <i>Peltigera spp.</i> <i>Cladonia spp.</i>	prickly rose creeping juniper timber milk-vetch pussytoes pasture sage fireweed <i>Fescue spp.</i> <i>Peltigera spp.</i> <i>Cladonia spp.</i>	common juniper creeping juniper prickly rose timber milk-vetch pussytoes pasture sage <i>Peltigera spp.</i> <i>Cladonia spp.</i>	common juniper creeping juniper prickly rose timber milk-vetch pussytoes <i>Peltigera spp.</i> <i>Cladonia spp.</i>	common juniper creeping juniper prickly rose timber milk-vetch pussytoes <i>Peltigera spp.</i> <i>Cladonia spp.</i>	common juniper creeping juniper prickly rose timber milk-vetch pussytoes pasture sage <i>Peltigera spp.</i> <i>Cladonia spp.</i>
Plots	C751	C499		9800457, C507	C347	C117, C226, C261, C638

Comments: The Douglas-fir dominated forest canopy is nearly continuous. Douglas-fir is the dominant species in the forest canopy (20-40% crown closure) and tree regeneration layers. The tree regeneration is often sparse. The understory has a very sparse shrub cover, and is dominated by bluebunch wheatgrass and pinegrass.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DW / 05

Douglas-fir – Bluebunch Wheatgrass – Pinegrass

Map Symbol	DW2, DWc2, DWg2, DWhs2, DWh2, DWjs2, DWj2, DWr2, DWs2	DW3, DWc3, DWg3, DWhs3, DWh3, DWjs3, DWj3, DWr3, DWs3	DW4, DWc4, DWg4, DWhs4, DWh4, DWjs4, DWj4, DWr4, DWs4	DW5, DWc5, DWg5, DWhs5, DWh5, DWjs5, DWj5, DWr5, DWs5	DW6, DWc6, DWg6, DWhs6, DWh6, DWjs6, DWj^6, DWk6, DWr6, DWs6	DW7, DWc7, DWg7, DWhs7, DWh7, DWjs7, DWj7, DWr7, DWs7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluebunch wheatgrass pinegrass fireweed	Douglas-fir bluebunch wheatgrass pinegrass	Douglas-fir bluebunch wheatgrass pinegrass	Douglas-fir bluebunch wheatgrass pinegrass	Douglas-fir bluebunch wheatgrass pinegrass	Douglas-fir bluebunch wheatgrass pinegrass
Associates	junegrass pasture sage	prickly rose fireweed pasture sage <i>Fescue spp.</i>	prickly rose pasture sage	prickly rose pasture sage	prickly rose pasture sage	prickly rose pasture sage
Bear Forage Species	kinnikinnick bluebunch wheatgrass pinegrass junegrass fireweed	kinnikinnick bluebunch wheatgrass pinegrass prickly rose fireweed <i>Fescue spp.</i>	kinnikinnick bluebunch wheatgrass pinegrass prickly rose	kinnikinnick bluebunch wheatgrass pinegrass prickly rose	kinnikinnick bluebunch wheatgrass pinegrass prickly rose	kinnikinnick bluebunch wheatgrass pinegrass prickly rose

Comments: Moderate to high ungulate habitat – good security and thermal habitat in older forests and moderate feeding habitat due to abundance of grasses.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	DW:wb / 05 Douglas fir – Bluebunch Wheatgrass – Pinegrass: Bluebunch Wheatgrass – Balsamroot Seral Association DWj:wb / 05 Douglas fir – Bluebunch Wheatgrass – Pinegrass: Bluebunch Wheatgrass – Balsamroot Seral Association; gentle slope DWs:wb / 05 Douglas fir – Bluebunch Wheatgrass – Pinegrass: Bluebunch Wheatgrass – Balsamroot Seral Association; shallow soil
Native IDFdk4 grasslands are found sporadically in the Churn Creek study area. Seral associations (DW:wb) are used to represent forest encroachment onto the grassland communities usually at the forest grassland transition area or forest edge. In this association new tree establishment is occurring in the Bluebunch Wheatgrass – Balsamroot site series (WB). This ecosystem typically occurs on moderate warm aspect mid to upper slopes with deep medium textured soils (DW:wb). This site series can also be found to occur on gentle slopes (DWj:wb) and shallow soils (DWs:wb).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1500	1325
Slope (%)	15-30	28
Aspect (degrees)	145-295	
Moisture Regime	Nutrient Regime	
subxeric, submesic	medium, rich	
Drainage	moderate to well	
Surficial Material		
morainal blanket veneer, colluvial blanket veneer		
Soil Development		
brunisol		
	Range	Mean
Humus Depth (cm)	1-3	2
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy	hemimor, xeromor	

PLOT C119 DW:wb3

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

DW:wb / 05

Douglas fir – Bluebunch Wheatgrass – Pinegrass: Bluebunch Wheatgrass – Balsamroot Seral Association

Map Symbol	DW3:wb, DWj3:wb, DWs3:wb
Plant species	Shrub
Dominants	Douglas-fir bluebunch wheatgrass <i>Cladonia cariosa</i>
Associates	junegrass pasture sage spike-like goldenrod showy daisy meadow salsify field chickweed rusty steppe moss
Plots	C119

Comments: These seral associations occur only as structural stage 3 with most trees under 10m tall and 10-15% cover. The seral associations maybe a result of fire supression on the grasslands. If the established trees reach structural stage 4, a forest understory starts to replace the grassland community as site conditions (microclimate, soil acidity etc.) change due to the dominance of trees.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

DW:wb / 05

Douglas fir – Bluebunch Wheatgrass – Pinegrass: Bluebunch Wheatgrass – Balsamroot Seral Association

Map Symbol	DW:wb3, DWj:wb3, DWs:wb3
Plant Species	Shrub
Ungulate Forage Species - Dominants	Douglas-fir bluebunch wheatgrass
Ungulate Forage Species - Associates	junegrass pasture sage
Bear Forage Species	bluebunch wheatgrass junegrass

Comments: Moderate to high ungulate habitat –moderate- high feeding habitat due to abundance of grasses and close proximity to security and thermal cover of the forest.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	<p>JP/ 02 Douglas-fir – Juniper – <i>Peltigera</i> JPv/ 02 Douglas-fir – Juniper – <i>Peltigera</i>; very shallow soil JPvw/ 02 Douglas-fir – Juniper – <i>Peltigera</i>; very shallow soil, warm aspect JPw/ 02 Douglas-fir – Juniper – <i>Peltigera</i>; warm aspect JPz/ 02 Douglas-fir – Juniper – <i>Peltigera</i>; very steep warm aspect</p>
<p>This ecosystem typically occurs on crest and upper slope positions with shallow soils (<50cm) over bedrock (JP). Soils can be very shallow (JPv, JPvw). This type may occur warm aspects (JPw, JPvw) or steep warm aspects (JPz). This type is rare in the Churn Creek study area and was not extensively sampled.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1300-1500	1400
Slope (%)	0-45	20
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
xeric	very poor to rich	
Drainage	rapid to well	
Surficial Material		
colluvial veneer, blanket over rock, weathered bedrock, rock morainal veneer, blanket over rock		
Soil Development		
brunisols		
	Range	Mean
Humus Depth (cm)	0-4	2
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy often gravelly	xeromor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

JP/ 02

Douglas-fir – Juniper – *Peltigera*

Map Symbol	JP2, JPv2, JPvw2, JPw2, JPz2	JP3, JPv3, JPvw3, JPw3, JPz3	JP4, JPv4, JPvw4, JPw4, JPz4	JP5, JPv5, JPvw5, JPw5, JPz5	JP6, JPv6, JPvw6, JPw6, JPz6	JP7, JPv7, JPvw7, JPw7, JPz7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick compact selaginella <i>Cladonia spp.</i> <i>Peltigera spp.</i>	common juniper kinnikinnick compact selaginella <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Very open canopy of: Douglas-fir common juniper kinnikinnick compact selaginella <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Very open canopy of: Douglas-fir common juniper kinnikinnick compact selaginella <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Very open canopy of: Douglas-fir common juniper kinnikinnick compact selaginella <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Very open canopy of: Douglas-fir common juniper kinnikinnick compact selaginella <i>Cladonia spp.</i> <i>Peltigera spp.</i>
Associates	shrubby penstemon bluebunch wheatgrass spike-like goldenrod yarrow	Douglas-fir shrubby penstemon bluebunch wheatgrass spike-like goldenrod	shrubby penstemon bluebunch wheatgrass spike-like goldenrod	shrubby penstemon bluebunch wheatgrass spike-like goldenrod	shrubby penstemon bluebunch wheatgrass spike-like goldenrod	shrubby penstemon bluebunch wheatgrass spike-like goldenrod
Plots	C853					

Comments: The forest canopy is very open and patchy dominated by multi-sized Douglas-fir (<15% crown closure). A few trembling aspen can be found in the subcanopy. There is a moderate shrub layer of mostly juniper. Patchy lichen and kinnikinnick cover is common while exposed rock and mineral soil is frequent.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

JP / 02

Douglas-fir – Juniper – *Peltigera*

Map Symbol	JP2, Jpv2, Jpvw2, JPw2, JPz2	JP3, Jpv3, Jpvw3, JPw3, JPz3	JP4, Jpv4, Jpvw4, JPw4, JPz4	JP5, Jpv5, Jpvw5, JPw5, JPz5	JP6, Jpv6, Jpvw6, JPw6, JPz6	JP7, Jpv7, Jpvw7, JPw7, JPz7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants			Douglas-fir	Douglas-fir	Douglas-fir	Douglas-fir
Associates	bluebunch wheatgrass	Douglas-fir bluebunch wheatgrass	bluebunch wheatgrass	bluebunch wheatgrass	bluebunch wheatgrass	bluebunch wheatgrass
Bear Forage Species	kinnikinnick bluebunch wheatgrass	kinnikinnick bluebunch wheatgrass	kinnikinnick bluebunch wheatgrass	kinnikinnick bluebunch wheatgrass	kinnikinnick bluebunch wheatgrass	kinnikinnick bluebunch wheatgrass

Comments: This ecosystem is very dry and bony. Tree cover is sparse and therefore so is security and thermal cover. Cover of forage species is low even though some preferred species occur here.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	LC / 06 Lodgepole Pine – Kinnikinnick – <i>Cladonia</i> LCt / 06 Lodgepole Pine – Kinnikinnick – <i>Cladonia</i> ; terrace
This ecosystem typically occurs on level to gentle slopes on deep coarse-textured soils (LC) and can also be found on sandy gravelly glaciofluvial terraces (LCt).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1300	1225
Slope (%)	0-15	8
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
submesic	very poor, poor	
Drainage	well, moderate	
Surficial Material		
fluvial, glaciofluvial, morainal		
Soil Development		
regosol		
	Range	Mean
Humus Depth (cm)	1-3	2
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
sandy	hemimor, xeromor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LC / 06

Lodgepole Pine – Kinnikinnick – *Cladonia*

Map Symbol	LC2, LCt2	LC3, LCt3	LC4, LCt4	LC5, LCt5	LC6, LCt6	LC7, LCt7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i> firemoss	lodgepole pine kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Closed canopy of: lodgepole pine kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Closed canopy of: lodgepole pine kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Closed canopy of: lodgepole pine kinnikinnick <i>Cladonia spp.</i> <i>Cladina spp.</i> <i>Peltigera spp.</i>	Closed canopy of: lodgepole pine kinnikinnick <i>Cladonia spp.</i> <i>Cladina spp.</i> <i>Peltigera spp.</i>
Associates	Richardson's sedge <i>Cladina spp.</i>	soopolallie prickly rose Richardson's sedge purple reedgrass spike-like goldenrod <i>Cladina spp.</i>	soopolallie prickly rose Richardson's sedge purple reedgrass spike-like goldenrod <i>Cladina spp.</i>	soopolallie prickly rose Richardson's sedge purple reedgrass spike-like goldenrod <i>Cladina spp.</i>	Douglas-fir soopolallie prickly rose Richardson's sedge purple reedgrass spike-like goldenrod <i>Cladina spp.</i>	Douglas-fir soopolallie prickly rose Richardson's sedge purple reedgrass spike-like goldenrod <i>Cladina spp.</i>
Plots						

Comments: Forests are dominated by lodgepole pine. Douglas-fir is uncommon in the forest canopy but is often scattered in the regeneration layer, with lodgepole pine being the most abundant species of tree regeneration. Kinnikinnick and lichens dominate the understory.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LC / 06

Lodgepole Pine – Kinnikinnick – *Cladonia*

Map Symbol	LC2, LCt2	LC3, LCt3	LC4, LCt4	LC5, LCt5	LC6, LCt6	LC7, LCt7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	firemoss					
Associates	Richardson's sedge	soopolallie prickly rose Richardson's sedge	soopolallie prickly rose Richardson's sedge	soopolallie prickly rose Richardson's sedge	Douglas-fir soopolallie prickly rose Richardson's sedge	Douglas-fir soopolallie prickly rose Richardson's sedge
Bear Forage Species	kinnikinnick firemoss Richardson's sedge	kinnikinnick soopolallie prickly rose Richardson's sedge	kinnikinnick soopolallie prickly rose Richardson's sedge	kinnikinnick soopolallie prickly rose Richardson's sedge	kinnikinnick soopolallie prickly rose Richardson's sedge	kinnikinnick soopolallie prickly rose Richardson's sedge

Comments: The thick lodgepole pine canopy allows for little development of understory forage species. Even though security/thermal values are high, feeding values are marginal. If CWD is high this unit may serve as good Fisher habitat.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	<p>LP / 01 Douglas-fir – Lodgepole Pine – Pinegrass - Feathermoss</p> <p>LPa / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; active floodplain LPct / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; coarse-textured soil, terrace LPc / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; coarse-textured soil LPf / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; fine-textured soil LPg / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; gullied LPh / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; hummocky LPht / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; hummocky, terrace LPhs / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; hummocky, shallow soil LPk / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; cool aspect LPks / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; cool aspect, shallow soil LPn / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; fan LPnw / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; fan, warm aspect LPs / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; shallow soil LPt / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; terrace LPw / 01 Douglas-fir – Lodgepole Pine – Pinegrass – Feathermoss; warm aspect</p>
<p>These sites are mesic forests on level to gentle slopes with deep medium-textured soils(LP). Coarse-textures soils (LPc) are found on glaciofluvial material; fine textured soils (LPf) are found on glaciolacustrine material. On some sites, gullyng may occur (LPg). This type may appear on some moderate cool aspects, where the moss cover is higher (LPk, LPks). This unit can also be found on hummocky terrain (LPh, LPhs) and on colluvial or fluvial fans (LPn, LPnw). May also be found on warm aspects (LPw) and shallow soil sites where the canopy may be more open and understory vegetation of drier nature. Occasionally this unit is found on active floodplains (LPa), as well as being found on terraced material (LPt) with either coarse-textured soil (LPct) or hummocks (LPht). It can also be found on shallow soil (LPs).</p>	

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LP /01

Douglas-fir – Lodgepole Pine – Pinegrass - Feathermoss

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1450	1300
Slope (%)	0-30	15
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic (submesic)	poor to rich	
Drainage	moderate	
Surficial Material		
morainal blanket, some morainal veneers		
Soil Development		
orthic dystic brunisol, orthic gray luvisol, orthic eutric brunisol		
	Range	Mean
Humus Depth (cm)	2-5	3
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy	hemimor	

Plot 9800440 LP6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LP / 01

Douglas-fir – Lodgepole Pine – Pinegrass - Feathermoss

Map Symbol	LP2, LPa2, LPct2, LPc2, LPf2, LPg2, LPh2, LPht2, LPhs2, LPk2, LPks2, LPn2, LPnw2, LPS2, LPt2, LPw2	LP3, LPa3, LPct3, LPc3, LPf3, LPg3, LPh3, LPht3, LPhs3, LPk3, LPks3, LPn3, LPnw3, LPS3, LPt3, LPw3	LP4, LPa4, LPct4, LPc4, LPf4, LPg4, LPh4, LPht4, LPhs4, LPk4, LPks4, LPn4, LPnw4, LPS4, LPt4, LPw4	LP5, LPa5, LPct5, LPc5, LPf5, LPg5, LPh5, LPht5, LPhs5, LPk5, LPks5, LPn5, LPnw5, LPS5, LPt5, LPw5	LP6, LPa6, LPct6, LPc6, LPf6, LPg6, LPh6, LPht6, LPhs6, LPk6, LPks6, LPn6, LPnw6, LPS6, LPt6, LPw6	LP7, LPa7, LPct7, LPc7, LPf7, LPg7, LPh7, LPht7, LPhs7, LPk7, LPks7, LPn7, LPnw7, LPS7, LPt7, LPw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick pinegrass fireweed	lodgepole pine kinnikinnick pinegrass	Closed canopy of: lodgepole pine kinnikinnick pinegrass wild strawberry red-stemmed feathermoss	Closed canopy of: lodgepole pine kinnikinnick pinegrass showy aster red-stemmed feathermoss	Closed canopy of: Douglas-fir kinnikinnick pinegrass twinlineflower red-stemmed feathermoss	Closed canopy of: Douglas-fir kinnikinnick pinegrass twinlineflower red-stemmed feathermoss
Associates	wild strawberry firemoss showy aster twinlineflower <i>Peltigera spp</i>	trembling aspen prickly rose willow soopolallie showy aster wild strawberry fireweed twinlineflower red-stemmed feathermoss <i>Peltigera spp</i>	Douglas-fir trembling aspen prickly rose soopolallie willow common juniper prickly rose timber-milk vetch fireweed showy aster twinlineflower <i>Peltigera spp.</i>	Douglas-fir trembling aspen soopolallie willow common juniper prickly rose timber-milk vetch twinlineflower <i>Peltigera spp.</i>	lodgepole pine trembling aspen soopolallie willow common juniper prickly rose timber-milk vetch step moss <i>Peltigera spp.</i>	lodgepole pine trembling aspen soopolallie willow common juniper prickly rose step moss <i>Peltigera spp.</i>
Plots			9800412, C210, C509	9800455, C275, C276, C358, C371, C515, C634, C655, C746	9800426, 9800439, 9800440, C24, C291, C298, C348, C356, C750, C761	9800421, C512, C744, C781, C785, C797

Comments: Mature forests are usually dominated by Douglas-fir (up to 45% crown closure) and abundant with minor amounts of lodgepole pine. Lodgepole pine is the dominant species in seral stands, with varying amounts of trembling aspen, but these species are gradually replaced by Douglas-fir over time. In both the young and mature forests the understory is dominated by pinegrass and mosses. Only scattered shrubs are present.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LP / 01

Douglas-fir – Lodgepole Pine – Pinegrass - Feathermoss

Map Symbol	LP2, LPa2, LPct2, LPc2, LPf2, LPg2, LPh2, LPht2, LPhs2, LPk2, LPks2, LPn2, LPnw2, LPS2, Lpt2, LPw2	LP3, LPa3, LPct3, LPc3, LPf3, LPg3, LPh3, LPht3, LPhs3, LPk3, LPks3, LPn3, LPnw3, LPS3, Lpt3, LPw3	LP4, LPa4, LPct4, LPc4, LPf4, LPg4, LPh4, LPht4, LPhs4, LPk4, LPks4, LPn4, LPnw4, LPS4, Lpt4, LPw4	LP5, LPa5, LPct5, LPc5, LPf5, LPg5, LPh5, LPht5, LPhs5, LPk5, LPks5, LPn5, LPnw5, LPS5, Lpt5, LPw5	LP6, LPa6, LPct6, LPc6, LPf6, LPg6, LPh6, LPht6, LPhs6, LPk6, LPks6, LPn6, LPnw6, LPS6, Lpt6, LPw6	LP7, LPa7, LPct7, LPc7, LPf7, LPg7, LPh7, LPht7, LPhs7, LPk7, LPks7, LPn7, LPnw7, LPS7, Lpt7, LPw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass fireweed	pinegrass	pinegrass	pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass
Associates		trembling aspen prickly rose willow soopolallie fireweed	Douglas-fir trembling aspen prickly rose willow soopolallie fireweed	Douglas-fir trembling aspen prickly rose willow soopolallie	trembling aspen prickly rose willow soopolallie	trembling aspen prickly rose willow soopolallie
Bear Forage Species	kinnikinnick pinegrass fireweed wild strawberry	prickly rose willow soopolallie kinnikinnick pinegrass fireweed wild strawberry	prickly rose willow soopolallie kinnikinnick pinegrass fireweed wild strawberry	prickly rose willow soopolallie kinnikinnick pinegrass	prickly rose willow soopolallie kinnikinnick pinegrass	trembling aspen prickly rose willow soopolallie kinnikinnick pinegrass

Comments: Multi-aged Douglas-fir stands provide very good security/thermal cover for ungulates and bears. This closed canopy prevents extensive development of the understory and therefore feeding values are low to moderate at best.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	LP:wb /01 Douglas-fir – Lodgepole Pine – Feathermoss: Bluebunch Wheatgrass - Balsamroot Seral Association LPs:wb /01 Douglas-fir – Lodgepole Pine – Feathermoss: Bluebunch Wheatgrass - Balsamroot Seral Association; shallow soil
Native grasslands often occur in the IDFdk4 subzone. Seral associations (LP:wb) are used to represent recent forest encroachment onto the established grassland community.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1450	1300
Slope (%)	0-30	15
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic (submesic)	poor to rich	
Drainage	moderate	
Surficial Material		
colian veneer over morainal blanket morainal blanket, some morainal veneers		
Soil Development		
orthic dystric brunisol, orthic eutric brunisol, orthic gray luvisol		
	Range	Mean
Humus Depth (cm)	2-5	3
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy	hemimor, rhizomull	

Plot C783 LP:wb3

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 LP:wb / 01 Douglas-fir – Lodgepole Pine – Feathermoss: Bluebunch Wheatgrass - Balsamroot Seral Association

Map Symbol	LP3:wb, LP3s:wb
Plant species	Shrub
Dominants	Douglas-fir bluebunch wheatgrass junegrass <i>Cladonia cariosa</i>
Associates	lodgepole pine needle-and-thread grass balsamroot northern sweet-vetch pasture sage spike-like goldenrod showy daisy pussytoes rabbitbrush Pennsylvanian cinquefoil <i>Tortula ruralis</i> <i>Collema spp.</i>
Plots	C783

Comments: Three invasion onto the native grasslands like the Bluebunch Wheatgrass – Balsamroot Site Series (WB), results in the LP:wb seral association. These seral associations occur only as structural stage 3 with most trees under 10 meters height. However, units may be considered in these seral association if they have less than 10% tree cover but succession is obviously toward a forest. Once structural stage 4 (Pole Sapling) is reached, a forest understory begins replacing the grassland community as site conditions (microclimate, soil acidity etc.) change due to the dominance of trees.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

LP:wb / 01

Douglas-fir – Lodgepole Pine – Feathermoss: Bluebunch Wheatgrass - Balsamroot Seral Association

Map Symbol	LP3:wb, LPs3:wb
Plant Species	
Ungulate Forage Species - Dominants	Douglas-fir bluebunch wheatgrass junegrass
Ungulate Forage Species - Associates	pasture sage rabbitbrush
Bear Forage Species	bluebunch wheatgrass junegrass pasture sage

Comments: Relatively abundant forage for ungulates in the form of palatable grasses. Usually close to forest for security/thermal purposes.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	<p>SF / 09 Hybrid White Spruce – Feathermoss – <i>Brachythecium</i> SFa / 09 Hybrid White Spruce – Feathermoss – <i>Brachythecium</i>; active floodplain SFg / 09 Hybrid White Spruce – Feathermoss – <i>Brachythecium</i>; gullying SFk / 09 Hybrid White Spruce – Feathermoss – <i>Brachythecium</i>; cool aspect SFt / 09 Hybrid White Spruce – Feathermoss – <i>Brachythecium</i>; terrace SFw / 09 Hybrid White Spruce – Feathermoss – <i>Brachythecium</i>; warm aspect</p>
<p>This ecosystem typically occurs on moist lower and toe slopes bordering stream channels. Soils are deep and coarse-textured (SF). It generally doesn't occur adjacent to non-forested wetlands and shrub cars. This type frequently occurs in gullies (SFg) and may occur on cool aspects (SFk) or warm aspects (SFw). This site may also be found on terraced landscape (SFt). It is also possible to find this site on active floodplains (SFa) where the vegetation will vary with the degree and severity of the flooding.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1400	1275
Slope (%)	0-10	5
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric	medium to very rich	
Drainage	moderate to imperfect	
Surficial Material		
morainal blanket, glaciofluvial, glaciolacustrine		
Soil Development		
	Range	Mean
Humus Depth (cm)	0-10	5
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
loamy, sandy	hemimor, humimor	

Plot C307 SF6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SF / 09

Hybrid White Spruce – Feathermoss – Brachythecium

Map Symbol	SF2, SFa2, SFg2, SFk2, Sft2, SFw2	SF3, SFa3, SFg3, SFk3, Sft3, SFw3	SF4, SFa4, SFg4, SFk4, Sft4, SFw4	SF5, SFa5, SFg5, SFk5, Sft5, SFw5	SF6, SFa6, SFg6, SFk6, Sft6, SFw6	SF7, SFa7, SFg7, SFk7, Sft7, SFw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass	trembling aspen lodgepole pine <i>Rosa spp.</i> pinegrass soopolallie black twinberry	Closed canopy of: trembling aspen lodgepole pine <i>Rosa spp.</i> pinegrass	Closed canopy of: lodgepole pine hybrid white spruce <i>Rosa spp.</i> snowberry pinegrass	Closed canopy of: hybrid white spruce lodgepole pine trembling aspen pinegrass	Closed canopy of: hybrid white spruce pinegrass
Associates	palmate coltsfoot star-flowered false Solomon's-seal twinflinger fireweed western meadowrue step moss red-stemmed feathermoss	variable willow hybrid white spruce western meadowrue palmate coltsfoot star-flowered false Solomon's-seal twinflinger fireweed step moss red-stemmed feathermoss	variable willow hybrid white spruce soopolallie black twinberry palmate coltsfoot star-flowered false Solomon's-seal twinflinger step moss red-stemmed feathermoss	trembling aspen Douglas-fir variable willow soopolallie black twinberry palmate coltsfoot star-flowered false Solomon's-seal twinflinger step moss red-stemmed feathermoss	Douglas-fir <i>Rosa spp.</i> snowberry soopolallie black twinberry variable willow palmate coltsfoot star-flowered false Solomon's-seal twinflinger step moss red-stemmed feathermoss <i>Brachythecium spp.</i>	<i>Rosa spp.</i> snowberry soopolallie star-flowered false Solomon's-seal black twinberry palmate coltsfoot twinflinger step moss red-stemmed feathermoss <i>Brachythecium spp.</i>
Plots		C118			C307, C497, C667, C759	

Comments: Logging and/or burning creates structural stages 2 and 3. Trembling aspen dominates pole sapling and young forest stages. Forest canopies are closed (35-50% crown closure), and dominated by hybrid white spruce and minor amounts of Douglas-fir. The shrub layer is well developed. The herb layer is dominated by pinegrass while the moss layer has abundant step moss and red-stemmed feathermoss.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
SF / 09

Name
Hybrid White Spruce – Feathermoss – Brachythecium

Map Symbol	SF2, SFa2, SFg2, SFk2, SFt2, SFw2	SF3, SFa3, SFg3, SFk3, SFt3, SFw3	SF4, SFa4, SFg4, SFk4, SFt4, SFw4	SF5, SFa5, SFg5, SFk5, SFt5, SFw5	SF6, SFa6, SFg6, SFk6, SFt6, SFw6	SF7, SFa7, SFg7, SFk7, SFt7, SFw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	trembling aspen <i>Rosa spp.</i> pinegrass soopolallie black twinberry	trembling aspen <i>Rosa spp.</i> pinegrass	<i>Rosa spp.</i> snowberry pinegrass	trembling aspen pinegrass	pinegrass
Associates	fireweed	variable willow	variable willow soopolallie black twinberry	trembling aspen Douglas-fir variable willow soopolallie black twinberry	Douglas-fir <i>Rosa spp.</i> snowberry soopolallie black twinberry variable willow	<i>Rosa spp.</i> snowberry soopolallie black twinberry
Bear Forage Species	pinegrass fireweed star-flowered false Solomon's-seal	variable willow <i>Rosa spp.</i> soopolallie black twinberry star-flowered false Solomon's-seal pinegrass	variable willow soopolallie black twinberry <i>Rosa spp.</i> star-flowered false Solomon's-seal pinegrass	variable willow soopolallie black twinberry <i>Rosa spp.</i> star-flowered false Solomon's-seal pinegrass	variable willow soopolallie black twinberry <i>Rosa spp.</i> star-flowered false Solomon's-seal pinegrass	soopolallie black twinberry <i>Rosa spp.</i> star-flowered false Solomon's-seal pinegrass

Comments: This is an important habitat for riparian species such as moose and white-tailed deer due to the significant cover provided by the forest as well as the availability of shrubby browse. Bear will take advantage of the shrubby browse coupled with emergent vegetation and the cover values provided by this unit.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	SH / 10 Hybrid White Spruce – Horsetail – Glow Moss SHa / 10 Hybrid White Spruce – Horsetail – Glow Moss; active floodplain
This ecosystem typically occurs on wet toe slope positions and depressions. Soils are deep and medium-textured. The water table is within 50cm of the surface. This unit may occur along active floodplains (SHa) where vegetation composition will vary with degree and frequency of floods. This type is uncommon in the Churn Creek study area and was not sampled.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1300	1225
Slope (%)	0-5	2
Aspect (degrees)	none	
Moisture Regime	Nutrient Regime	
hygric, suhydric	poor to very rich	
Drainage	poor to very poor	
Surficial Material		
fluvial, lacustrine, morainal		
Soil Development		
gleysols		
	Range	Mean
Humus Depth (cm)	25-40	30
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
loamy, silty	hemimor, hemihumimor, humimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SH / 10

Hybrid White Spruce – Horsetail – Glow Moss

Map Symbol	SH2	SH3	SH4	SH5	SH6	SH7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	common horsetail dwarf scouring rush twinflower glow moss sedges bluejoint	common horsetail dwarf scouring rush twinflower glow moss sedges	Open canopy: hybrid white spruce common horsetail dwarf scouring rush glow moss step moss	Open canopy: hybrid white spruce common horsetail dwarf scouring rush glow moss step moss	Open canopy: hybrid white spruce common horsetail dwarf scouring rush glow moss step moss	Open canopy: hybrid white spruce common horsetail dwarf scouring rush glow moss step moss
Associates	common mitrewort soft-leaved sedge palmate coltsfoot	hybrid white spruce prickly rose black twinberry palmate coltsfoot hybrid white spruce common mitrewort bluejoint soft-leaved sedge step moss	prickly rose black twinberry palmate coltsfoot common mitrewort twinflower soft-leaved sedge	prickly rose black twinberry palmate coltsfoot common mitrewort twinflower soft-leaved sedge	prickly rose black twinberry palmate coltsfoot common mitrewort twinflower soft-leaved sedge	prickly rose black twinberry palmate coltsfoot common mitrewort twinflower soft-leaved sedge
Plots						

Comments: These sites are forested wetlands, with a moderately closed to open hybrid white spruce canopy. The understory vegetation is dominated by an abundance of horsetail and other wet site indicator species. Logging and/or burning creates structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SH / 10

Hybrid White Spruce – Horsetail – Glow Moss

Map Symbol	SH2	SH3	SH4	SH5	SH6	SH7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	common horsetail sedges bluejoint	common horsetail sedges	common horsetail sedges	common horsetail sedges	common horsetail sedges	common horsetail sedges
Associates	soft-leaved sedge	prickly rose black twinberry soft-leaved sedge	prickly rose black twinberry soft-leaved sedge	prickly rose black twinberry soft-leaved sedge	prickly rose black twinberry soft-leaved sedge	prickly rose black twinberry soft-leaved sedge
Bear Forage Species	common horsetail dwarf scouring rush sedges bluejoint soft-leaved sedge	common horsetail prickly rose black twinberry dwarf scouring rush sedges soft-leaved sedge	common horsetail prickly rose black twinberry dwarf scouring rush sedges soft-leaved sedge	common horsetail prickly rose black twinberry dwarf scouring rush sedges soft-leaved sedge	common horsetail prickly rose black twinberry dwarf scouring rush sedges soft-leaved sedge	common horsetail prickly rose black twinberry dwarf scouring rush sedges soft-leaved sedge

Comments: The abundance of horsetail coupled with the closed canopy makes this unit valuable bear habitat during the spring green up.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	SS / 08 Hybrid White Spruce – Scrub birch – Feathermoss SSa / 08 Hybrid White Spruce – Scrub birch – Feathermoss; active floodplain SSf / 08 Hybrid White Spruce – Scrub birch – Feathermoss; fine-textured soils SSk / 08 Hybrid White Spruce – Scrub birch – Feathermoss; cool aspect
This ecosystem typically occurs on lower slope positions at the perimeter of cold air accumulation basins occupied by non-forested wetlands or shrub cars. Soils are deep and coarse-textured and often moist but the water table is not within 50cm of the surface. This unit can be found to occur on fine-textured soils (SSf) and cool aspects (SSk). This unit may occur along active floodplains (SHa) where vegetation composition will vary with degree and frequency of floods.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1300	1225
Slope (%)	0-10	5
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric	poor to medium	
Drainage	moderate - poor	
Surficial Material		
fluvial, lacustrine, morainal		
Soil Development		
	Range	Mean
Humus Depth (cm)	5-18	11
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
loamy, sand	hemimor	

Plot C659 SSa5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 SS / 08 Hybrid Spruce – Scrub birch – Feathermoss

Map Symbol	SS2, SSa2, SSf2, SSk2	SS3, SSa3, SSf3, SSk3	SS4, SSa4, SSf4, SSk4	SS5, SSa5, SSf5, SSk5	SS6, SSa6, SSf6, SSk6	SS7, SSa7, SSf7, SSk7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass red-stemmed feathermoss <i>Peltigera spp.</i>	lodgepole pine trembling aspen prickly rose soopolallie scrub birch pinegrass red-stemmed feathermoss <i>Peltigera spp.</i>	Moderately open canopy: lodgepole pine trembling aspen pinegrass red-stemmed feathermoss <i>Peltigera spp.</i>	Moderately open canopy: hybrid white spruce lodgepole pine trembling aspen pinegrass red-stemmed feathermoss <i>Peltigera spp.</i>	Moderately open canopy: hybrid white spruce pinegrass red-stemmed feathermoss <i>Peltigera spp.</i>	Moderately open canopy: hybrid white spruce pinegrass red-stemmed feathermoss <i>Peltigera spp.</i>
Associates	prickly rose soopolallie saskatoon kinnikinnick twinflower pusseytoes timber milk vetch step moss <i>Cladonia spp.</i>	hybrid white spruce common juniper saskatoon kinnikinnick twinflower pusseytoes timber milk vetch step moss <i>Cladonia spp.</i>	hybrid white spruce common juniper prickly rose soopolallie saskatoon scrub birch kinnikinnick twinflower pusseytoes timber milk vetch step moss <i>Cladonia spp.</i>	common juniper prickly rose soopolallie saskatoon scrub birch kinnikinnick twinflower pusseytoes timber milk vetch step moss <i>Cladonia spp.</i>	lodgepole pine common juniper trembling aspen prickly rose soopolallie saskatoon scrub birch kinnikinnick twinflower pusseytoes timber milk vetch step moss <i>Cladonia spp.</i>	lodgepole pine common juniper trembling aspen prickly rose soopolallie saskatoon scrub birch kinnikinnick twinflower pusseytoes timber milk vetch step moss <i>Cladonia spp.</i>
Plots				C659	C404	

Comments: These forests, have a moderately closed to open hybrid white spruce, lodgepole pine canopy (crown closure of < 25%). The understory vegetation is dominated by an abundance of pinegrass, twinflower as well as soopolallie and prickly rose. The moss layer has abundant red-stemmed feathermoss and lichens. Logging and/or burning creates structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
SS / 08

Name
Hybrid White Spruce – Scrub birch – Feathermoss

Map Symbol	SS2, SSa2, SSf2, SSk2	SS3, SSa3, SSf3, SSk3	SS4, SSa4, SSf4, SSk4	SS5, SSa5, SSf5, SSk5	SS6, SSa6, SSf6, SSk6	SS7, SSa7, SSf7, SSk7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	trembling aspen prickly rose soopolallie pinegrass	trembling aspen pinegrass	trembling aspen pinegrass	pinegrass	pinegrass
Associates	prickly rose soopolallie saskatoon	saskatoon	prickly rose soopolallie saskatoon	prickly rose soopolallie saskatoon	trembling aspen prickly rose soopolallie saskatoon	trembling aspen prickly rose soopolallie saskatoon
Bear Forage Species	pinegrass prickly rose soopolallie saskatoon kinnikinnick	pinegrass prickly rose soopolallie saskatoon kinnikinnick	pinegrass prickly rose soopolallie saskatoon kinnikinnick	pinegrass prickly rose soopolallie saskatoon kinnikinnick	pinegrass prickly rose soopolallie saskatoon kinnikinnick	pinegrass prickly rose soopolallie saskatoon kinnikinnick

Comments: The abundance of horsetail coupled with the closed canopy makes this unit valuable bear habitat during the spring green up.

5.2 IDFdk4 - Grassland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	NR / 00 Spreading Needlegrass – Baltic Rush NR:bb / 00 Spreading Needlegrass – Baltic Rush: Kentucky Bluegrass Seral Association NRf:bb / 00 Spreading Needlegrass – Baltic Rush: Kentucky Bluegrass Seral Association; fine-textured soil
This unit typically occurs in moist depressions, toe slopes, and moisture receiving sites adjacent to wet meadows or wetlands. Soils are typically deep and medium-textured. Extensive grazing has promoted the seral association (NR:bb) dominated by cultivated and weedy plant species. Sites can also be found on fine-textured soils (NRf:bb) such as glaciolacustrine parent material.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1400	1280
Slope (%)	0-5	3
Aspect (degrees)	none	
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	poor to imperfect	
Surficial Material		
glaciolacustrine, lacustrine		
Soil Development		
dystric brunisol, luvisol		
	Range	Mean
Humus Depth (cm)	0-3	2
Coarse Fragments (%)	< 20	
Soil Texture	Humus Form	
silt loam	rhizomull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

NR / 00

Spreading Needlegrass – Baltic Rush

Map Symbol	NR2	NR2:bb, NRf2:bb
Plant species	Herb Climax / Late Seral	Herb Seral Association
Dominants	spreading needlegrass Baltic rush	Kentucky bluegrass smooth brome
Associates		Baltic rush salsify slender wheatgrass sweet-clover alfalfa
Plots		

Comments: Intensive grazing has promoted the development of the seral association (NR:bb) dominated by Kentucky bluegrass and weedy plant species. No sites with climax vegetation were observed, since this ecosystem is generally heavily grazed and has dense, vigorous cover of Kentucky bluegrass and other variable introduced herbs.

Map Symbol	NR2	NR2:bb NRf2:bb
Plant Species	Herb Climax / Late Seral	Herb Seral Association
Ungulate Forage Species - Dominants		Kentucky bluegrass
Ungulate Forage Species - Associates		slender wheatgrass sweet-clover alfalfa
Bear Forage Species	Baltic rush	slender wheatgrass sweet-clover alfalfa Kentucky bluegrass

Comments: The seral association sees the development of many of the domestic species that ungulates prefer such as bluegrasses, clovers, and alfalfa thereby making it a good feeding site for ungulates and bears. The typical situation is not as favorable but may see some use for feeding on its scattered shrubs.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	PP / 00 Short-awned Porcupinegrass – Pussytoes PPs / 00 Short-awned Porcupinegrass – Pussytoes shallow soil PP:pj / 00 Short-awned Porcupinegrass – Pussytoes: Pussytoes – Junegrass Seral Association
This unit typically occurs in very gentle swales with deep medium-textured soils (PP). No climax or late seral plant communities were observed in the Churn Creek study area. This unit can occasionally be found on sites with shallow soil (PPs). The PP ecosystem unit is described as having moderate grazing pressure. Heavier grazing has promoted the development of seral association (PP:pj) that is dominated by cultivated and weedy plant species.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1300	1225
Slope (%)	0-5	2
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic to submesic	medium	
Drainage	well to moderate	
Surficial Material		
eolian veneer over morainal blanket		
Soil Development		
dystric brunisol		
	Range	Mean
Humus Depth (cm)	0-3	2
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
silt loam	rhizomull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

PP / 00

Short-awned Porcupinegrass – Pussytoes

Map Symbol	PP2, PPs2	PP2:pj
Plant species	Herb Climax / Late Seral	Herb Seral Association
Dominants	short-awned porcupinegrass junegrass stiff needlegrass <i>Cladonia cariosa</i>	pussytoes junegrass stiff needlegrass
Associates	spreading needlegrass pussytoes pasture sage old man's whiskers trailing fleabane	Kentucky bluegrass short-awned porcupinegrass Rocky Mtn. fescue rabbitbrush pasture sage salsify <i>Cladonia cariosa</i> <i>Collema spp.</i>
Plots		

Comments: Climax and late seral vegetation is dominated by a nearly continuous cover of short-awned porcupinegrass with a thick litter buildup and only scattered forbs and lichens. Disturbance species such as field chickweed, Kentucky bluegrass, pasture sage, woolly cinquefoil, northern wormwood, and pale comandra can be locally abundant. Grazing promotes establishment of weedy forbs. In the absence of burning, tree establishment is frequent near forest edges.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

PP / 00

Short-awned Porcupinegrass – Pussytoes

Map Symbol	PP2, PPs2	PP2:pj
Plant Species	Herb Climax / Late Seral	Herb Seral Association
Ungulate Forage Species - Dominants	junegrass	junegrass
Ungulate Forage Species - Associates	pasture sage	Kentucky bluegrass Rocky Mtn. fescue rabbitbrush pasture sage
Bear Forage Species		Kentucky bluegrass Rocky Mtn. fescue

Comments: In the typical situation the relative abundance of preferred forage species is rather low. In the seral association the cultivated and weedy species are more abundant and favorable as forage species and will therefore receive more use by ungulates and bears.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	<p>WB / 00 Bluebunch Wheatgrass – Balsamroot WBcs / 00 Bluebunch Wheatgrass – Balsamroot; coarse-textured, shallow soil WBf / 00 Bluebunch Wheatgrass – Balsamroot; fine-textured soils WBh / 00 Bluebunch Wheatgrass – Balsamroot; hummocky WBS / 00 Bluebunch Wheatgrass – Balsamroot; shallow soil WBv / 00 Bluebunch Wheatgrass – Balsamroot; very shallow soil WB:pj / 00 Bluebunch Wheatgrass – Balsamroot: Needle-and-thread grass Seral Association WBf:pj / 00 Bluebunch Wheatgrass – Balsamroot: Needle-and-thread grass Seral Association; fine-textured soils WBS:pj / 00 Bluebunch Wheatgrass – Balsamroot: Needle-and-thread grass Seral Association; shallow soils</p>
<p>This ecosystem occurs on gentle to moderately sloping sites primarily on south and west facing aspects from mid to upper slope positions. These sites have deep medium-textured soils (WB). Occasionally these sites will have shallow soil (WBs, WBcs) or very shallow soil (WBv). This unit can be found on fine-textured soil (WBf) or hummocked terrain (WBh). Heavily grazed grasslands do occur. Here, gentle warm aspects resemble early seral stages of the WY/33 in the IDFXm (WB:pj). The seral association can be found on fine-textured soil (WBf:pj) and on shallow soils (WBS:pj).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1450	1300
Slope (%)	0-30	18
Aspect (degrees)	100-295	
Moisture Regime	Nutrient Regime	
mesic to submesic	medium - rich	
Drainage	moderate to well	
Surficial Material		
eolian veneer over morainal blankets		
Soil Development		
dark brown chernozem, eutric brunisol		
	Range	Mean
Humus Depth (cm)	0-2	1
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
sandy clay loam, silt loam, fine sandy loam		

Plot 9800411 WB2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WB / 00

Bluebunch Wheatgrass – Balsamroot

Map Symbol	WB2, WBcs2, WBf2, WBh2, WBS2, WBv2	WB2:pj, WBf2:pj, WBS2:pj
Plant species	Herb Climax / Late Seral	Herb Seral Association
Dominants	bluebunch wheatgrass timber milk-vetch pussytoes <i>Cladonia cariosa</i>	Kentucky bluegrass meadow salsify junegrass pussytoes <i>Cladonia cariosa</i>
Associates	arrow-leaved balsamroot spreading needlegrass junegrass stiff needlegrass pasture sage yarrow showy daisy meadow salsify California comandra <i>Peltigera spp.</i> rusty steppe moss	bluebunch wheatgrass Rocky Mtn. fescue Pennsylvanian cinquefoil yarrow <i>Potentilla spp.</i> trailing fleabane rusty steppe moss <i>Peltigera spp.</i>
Plots	9800411, C263, C637	9800033, C284, C292, C361, C664

Comments: Late seral and climax vegetation is dominated by bluebunch wheatgrass with a very diverse grass, forb, and a moderate cryptogram community (WB). The grasses and herbs in these seral associations are mostly increased with grazing while lichen cover is decreased.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WB / 00

Bluebunch Wheatgrass – Balsamroot

Map Symbol	WB2, WBf2, WBh2, WBS2, WBv2	WB2:pj, WBf2:pj, WBS2:pj
Plant Species	Herb Climax / Late Seral	Herb Seral Association
Ungulate Forage Species - Dominants	bluebunch wheatgrass	Kentucky bluegrass junegrass
Ungulate Forage Species - Associates	junegrass pasture sage	bluebunch wheatgrass Rocky Mtn. fescue
Bear Forage Species	junegrass	junegrass Rocky Mtn. fescue bluebunch wheatgrass

Comments: Both the typic and seral ecosystems present moderate feeding habitat to deer and elk. This habitat is marginal for bear yet may be at the upper limit of big horn sheep range.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	<p>WP / 00 Bluebunch Wheatgrass – Pasture Sage</p> <p>WPc / 00 Bluebunch Wheatgrass – Pasture Sage; coarse-textured soil</p> <p>WPhs / 00 Bluebunch Wheatgrass – Pasture Sage; hummocky, shallow soil</p> <p>WPs / 00 Bluebunch Wheatgrass – Pasture Sage; shallow soil</p> <p>WPv / 00 Bluebunch Wheatgrass – Pasture Sage; very shallow soil</p>
<p>This ecosystem is typically found on mid to upper slopes with a significant warm aspect and deep medium-textured soils. It is not uncommon to find this unit on shallow soils (WPhs, WPs) very shallow soils (WPv) as well as occasionally occurring coarse-textured soils (WPc). Surface soils are often unstable and are actively eroding.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1500	1325
Slope (%)	25-60	40
Aspect (degrees)	130-275	
Moisture Regime	Nutrient Regime	
subxeric to xeric	poor - medium	
Drainage	well - rapid	
Surficial Material		
colluvial veneer over rock		
morainal blanket veneer over rock		
Soil Development		
eutric brunisol		
	Range	Mean
Humus Depth (cm)	0-3	2
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy	rhizomull	

Plot C309 WP2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WP / 00

Bluebunch Wheatgrass – Pasture Sage

Map Symbol	WP2, WPC2, WPhs2, WPs2, WPv2
Plant species	Herb Climax / Late Seral
Dominants	bluebunch wheatgrass pussytoes
Associates	meadow salsify pasture sage purse-milk vetch northern bedstraw western blue flax stiff needlegrass needle-and-thread grass serviceberry chokecherry showy daisy
Plots	C309

Comments: Bluebunch wheatgrass clumps are usually sparse and widely spaced, but can be fairly continuous with up to 60% cover. Lichen cover is typically very low and exposed mineral soil or rocks cover 10-40% of the ground surface.

Map Symbol	WP2, WPC2, WPhs2, WPs2, WPv2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass
Ungulate Forage Species - Associates	service berry chokecherry
Bear Forage Species	bluebunch wheatgrass service berry chokecherry

Comments: Moderate forage availability for both ungulates and bears. May receive use in spring due to warm aspect allowing for early green up.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	WT / 00 Bluebunch Wheatgrass – Pussytoes WTv / 00 Bluebunch Wheatgrass – Pussytoes; very shallow soil WTvw / 00 Bluebunch Wheatgrass – Pussytoes; very shallow soil, warm aspect WTw / 00 Bluebunch Wheatgrass – Pussytoes; warm aspect
Typically occurs on gentle upper-crest on bedrock outcrops with shallow, usually rocky soils. This unit also occurs on very shallow soils (DTv) and warm aspects (DTw, DTvw).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1500	1325
Slope (%)	0-40	30
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subxeric - xeric	poor to rich	
Drainage	well to rapid	
Surficial Material		
eolian veneer over rock, morainal veneer over rock eolian veneer over morainal veneer		
Soil Development		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy		

Plot C299 WT2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WT / 00

Bluebunch Wheatgrass – Pussytoes

Map Symbol	WT2, WTv2, WTvw2, WTw2
Plant species	Herb Climax / Late Seral
Dominants	bluebunch wheatgrass junegrass
Associates	pussytoes pasture sage salsify compact selaginella timber milk-vetch yarrow <i>Collema spp.</i> <i>Cladonia spp.</i>
Plots	C299

Comments: Vegetation cover is sparse, dominated by widely spaced clumps of bluebunch wheatgrass with minor amounts of needle-and-thread grass, pasture sage, and scattered other herbs.

Map Symbol	WT2, WTv2, WTvw2, WTw2
Plant Species	Herb Climax / Late Seral
Ungulate Forage Species - Dominants	bluebunch wheatgrass junegrass
Ungulate Forage Species - Associates	pasture sage
Bear Forage Species	bluebunch wheatgrass junegrass

Comments: Moderate availability of forage grasses for deer and elk on typic. Shallow and very shallow soils will have more sparse cover of grasses.

5.3 IDFdk4 - Wetland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	AF / 00 Nuttall's Alkaligrass – Foxtail Barley Wet Meadow
<p>These meadow ecosystems occur on deep medium-textured mineral soils, that are often saline, at the upland edge of wetlands. Standing water is seldom present: these units are periodically saturated but rarely inundated. Meadows received most of their water from runoff and seepage from other areas. This unit is uncommon in the Churn Creek study area and was not sampled.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1500	1325
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric	rich	
Drainage	imperfect to poor	
Surficial Material		
lacustrine		
Soil Development		
orthic gleysol, orthic humic gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
silty clay, silty clay loam		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series **Name**
 AF / 00 Nuttall's Alkaligrass – Foxtail Barley Wet Meadow

Map Symbol	AF2
Plant species	Herb Climax
Dominants	Nuttall's alkaligrass foxtail barley
Associates	Nevada bulrush
Plots	

Comments: Vegetation cover is usually >50% where alkaligrass is dominant in wetter situations and foxtail barley where it is drier or more disturbed. On occasion these grasses codominate.

Map Symbol	AF2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	
Ungulate Forage Species - Associates	
Bear Forage Species	

Comments: Limited available ungulate and bear forage.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	CM/00 Common Spike-rush Marsh
This marsh is usually inundated most of the year. It is a shallow water marsh often between the deep marsh NM unit, and a wet meadow or the TS wetland unit. The deep fine-textured mineral soil may be somewhat alkaline.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1400	1275
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hydric	rich to very rich	
Drainage	very poor	
Surficial Material		
lacustrine, lacustrine veneer/morainal blanket		
Soil Development		
orthic gleysol, humic gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
silt loam, silty clay loam		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 CM / 00 Common Spike-rush Marsh

Map Symbol	CM2
Plant species	Herb Climax
Dominants	common spike-rush beaked sedge
Associates	Baltic rush northern mannagrass water smartweed bluejoint reedgrass duckweed
Plots	

Comments: Emergent plant cover is always in excess of 10% and is dominated by common spike-rush and beaked sedge.

Map Symbol	CM2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	
Ungulate Forage Species - Associates	
Bear Forage Species	

Comments: Moderate habitat for heron and teal. Short eared owl may feed here. Ungulate forage are low, but like bear may feed on spring growth.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	BU / 00 Great Bulrush Marsh
These deep marshes usually surround shallow open water and are permanently inundated. The soil is a mixture of fine-textured mineral sediments and organic material from 0 to over 25cm thick with shells frequently present, but are typically fine-textured. Surfaces are often carbonated.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1500	1325
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hydric	rich	
Drainage	poor to very poor	
Surficial Material		
organic veneer over lacustrine, silty lacustrine blanket		
Soil Development		
orthic gleysol, humic gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
silty clay loam		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series **Name**
 BU / 00 Great Bulrush Marsh

Map Symbol	BU2
Plant species	Herb Climax
Dominants	great bulrush
Associates	greater bladderwort duckweed water smartweed
Plots	

Comments: This ecosystem is usually dominated by pure stands of great bulrush with minor amounts of aquatic plants such as greater bladderwort and duckweed.

Map Symbol	BU2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	
Ungulate Forage Species - Associates	
Bear Forage Species	

Comments: Good habitat for teal, sandhill crane and occasionally great blue heron. Limited habitat for moose due to the lack of preferred forage species.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	SM / 00 Beaked Sedge – Water Sedge Fen SMa / 00 Beaked Sedge – Water Sedge Fen active floodplain
This wetland is inundated (up to 40cm) early in the growing season, but standing water usually disappears by mid-August. Soil organic accumulations are mostly greater than 50cm over mineral soil. This unit is occasionally found on active floodplains (SMa).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1250	1250
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric to hydric	rich to very rich	
Drainage	very poor	
Surficial Material		
organic blanket, organic veneer over lacustrine		
Soil Development		
typic mesisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
organic, silt loam		

Plot C514 SM2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SM / 00

Beaked Sedge – Water Sedge Fen

Map Symbol	SM2, SMa2
Plant species	Herb Climax
Dominants	beaked sedge water sedge sickle moss
Associates	northern mannagrass Baltic rush common spike-rush buttercups water-milfoil bladderwort duckweed water smartweed
Plots	C514

Comments: This ecosystem is characterized by a continuous cover of beaked sedge with some water sedge in lesser amounts.

Map Symbol	SM2, SMa2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	
Ungulate Forage Species - Associates	buttercups water-milfoil
Bear Forage Species	buttercups

Comments: Standing water combined with vegetative cover allows for good bird habitat such as teal and heron. Moose may use this fen for feeding but forage value is low.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	NM / 00 Northern Mannagrass Marsh
This fresh water marsh commonly fringes shallow open water and remains inundated most of the year. It is generally a deep water marsh. Soils are typically deep and fine-textured, organic accumulations are quite variable, from 0 cm to over 40 cm.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1400	1275
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hydric	rich	
Drainage	poor to very poor	
Surficial Material		
lacustrine blanket, lacustrine blanket over morainal blanket		
Soil Development		
orthic gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
silty clay loam, silt loam		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

NM / 00

Northern Mannagrass Marsh

Map Symbol	NM2
Plant species	Herb Climax
Dominants	northern mannagrass common spike-rush
Associates	water smartweed sedges wapato (arrowhead) field mint
Plots	

Comments: Emergent vegetative cover >10% with northern mannagrass and common spike-rush dominating. Some sedges and horsetail associated with this unit.

Map Symbol	NM2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	
Ungulate Forage Species - Associates	sedges field mint horsetail
Bear Forage Species	sedges field mint horsetail

Comments: Moderate abundance of preferred forage for ungulates and bears especially in spring season.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	RF / 00 Baltic Rush – Field Sedge Moist Meadow
These are moist meadow complexes which are rarely inundated, but are usually wet early in the growing season. Water is received from runoff and seepage from surrounding areas. They often have gleyed mineral soils that are strongly carbonated. Soils are typically deep and medium-textured..	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1500	1350
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric (hygric)	rich	
Drainage	imperfect to poor	
Surficial Material		
lacustrine		
Soil Development		
gleysols		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
silt loam, silty clay loam		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

RF / 00

Baltic Rush – Field Sedge Moist Meadow

Map Symbol	RF2
Plant species	Herb Climax
Dominants	Baltic rush field sedge
Associates	foxtail barley silverweed slender wheatgrass white prairie aster Nuttall's alkaligrass alkali bluegrass Kentucky bluegrass
Plots	

Comments: Rushes and sedges are the dominant species in this moderately diverse plant association. These sites are often heavily grazed which increases the representation of introduced species like Kentucky bluegrass. Mosses, if present, have a low percent cover.

Map Symbol	RF2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	
Ungulate Forage Species - Associates	
Bear Forage Species	

Comments: Ungulate and bear forage is low to moderate due to the limited availability for preferred forage.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk4	TS / 00 Tall Willow – Sedge Swamp TSa / 00 Tall Willow – Sedge Swamp; active floodplain TSp / 00 Tall Willow – Sedge Swamp; peaty material
These swamps are associated with streams and rivers and are enriched by surface and subsurface water flow which brings sediments and nutrients, but may also occur as a shrub fringe around waterbodies and wetlands. Small channels and pools are often evident. Soils are often saturated near the surface throughout the growing season. Soils are typically deep and medium-textured.. Organic accumulations are 0 to 150cm.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1150-1400	1275
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to hydric	rich	
Drainage	poor to very poor	
Surficial Material		
organic blanket or veneer over moraine morainal blanket, fluvial plain		
Soil Development		
humic mesisol, humic gleysol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	variable	
Soil Texture	Humus Form	
variable		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

TS / 00

Tall Willow – Sedge Swamp

Map Symbol	TS3b, TSa3b, TSp3b
Plant species	Herb Climax
Dominants	tea-leaved willow Drummond's willow slimstem reedgrass beaked sedge water sedge
Associates	willows Baltic rush Kentucky bluegrass glow moss sickle moss <i>Mnium rugicum</i>
Plots	

Comments: This usually rich species association is dominated by all willows in the shrub layer and sedges in the herb layer. Mosses are almost always present.

Map Symbol	TS3b, TSa3b, TSp3b
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	tea-leaved willow Drummond's willow beaked sedge water sedge
Ungulate Forage Species - Associates	willows Kentucky bluegrass
Bear Forage Species	

Comments: The tall willows proved excellent feeding opportunities for ungulates, specifically moose. The undergrowth vegetation is also favorable not only to ungulates but to bear.

6.0 SBPSxc - Sub-boreal Pine - Spruce Very Dry Cold Subzone

6.1 SBPSxc - Forested Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	<p>LC / 02 Lodgepole Pine - Kinnikinnick - Cladonia</p> <p>LCks / 02 Lodgepole Pine - Kinnikinnick - <i>Cladonia</i>; cool aspect, shallow soil</p> <p>LCms / 02 Lodgepole Pine - Kinnikinnick - <i>Cladonia</i>; medium-textured, shallow soil</p> <p>LCs / 02 Lodgepole Pine - Kinnikinnick - <i>Cladonia</i>; shallow soil</p> <p>LCsw / 02 Lodgepole Pine - Kinnikinnick - <i>Cladonia</i>; shallow soil, warm aspect</p> <p>LCt / 02 Lodgepole Pine - Kinnikinnick - <i>Cladonia</i>; terrace</p> <p>LCv / 02 Lodgepole Pine - Kinnikinnick - <i>Cladonia</i>; very shallow soil</p> <p>LCvw / 02 Lodgepole Pine - Kinnikinnick - <i>Cladonia</i>; very shallow soil, warm aspect</p> <p>LCvz / 02 Lodgepole Pine - Kinnikinnick - <i>Cladonia</i>; very shallow soil, very steep warm aspect</p> <p>LCw / 02 Lodgepole Pine - Kinnikinnick - <i>Cladonia</i>; warm aspect</p>
<p>This ecosystem includes all sites drier than LK/01. It typically occurs on gentle slopes with deep, coarse-textured soil (LC), but is also common on crests and shallow to very shallow soils on steep slopes (LCks, LCms, LCsw, LCs, LCv, LCvw, LCvz). On south and west aspects deeper soils are more common (LCw). This type also occurs on sandy, gravelly, glaciofluvial terraces (LCt).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	0 - >15	10
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
xeric to submesic	very poor to medium (rich)	
Drainage	well to rapid	
Surficial Material		
glaciofluvial, morainal and colluvial veneer over bedrock		
Soil Development		
	Range	Mean
Humus Depth (cm)	0-3	1
Coarse Fragments (%)	0-70+	
Soil Texture	Humus Form	
sand, loamy sand	xeromor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

LC / 02

Lodgepole Pine - Kinnikinnick - *Cladonia*

Map Symbol	LC2, LCks2, LCms2, LCs2, LCsw2, LCt2, LCv2, LCvw2, LCvz2, LCw2	LC3, LCks3, LCms3, LCs3, LCsw3, LCt3, LCv3, LCvw3, LCvz3, LCw3	LC4, LCks4, LCms4, LCs4, LCsw4, LCt4, LCv4, LCvw4, LCvz4, LCw4	LC5, LCks5, LCms5, LCs5, LCsw5, LCt5, LCv5, LCvw5, LCvz5, LCw5	LC6, LCks6, LCms6, LCs6, LCsw6, LCt6, LCv6, LCvw6, LCvz6, LCw6	LC7, LCks7, LCms7, LCs7, LCsw7, LCt7, LCv7, LCvw7, LCvz7, LCw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick <i>Cladonia spp.</i>	lodgepole pine soopolallie common juniper kinnikinnick <i>Cladonia spp.</i>	Open forests of: lodgepole pine kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Open forests of: lodgepole pine kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Open forests of: lodgepole pine kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Open forests of: lodgepole pine kinnikinnick <i>Cladonia spp.</i> <i>Peltigera spp.</i>
Associates	wild strawberry short-awned ricegrass pinegrass spike-like goldenrod <i>Cladina spp.</i> <i>Peltigera spp.</i>	trembling aspen pinegrass short-awned ricegrass spike-like goldenrod <i>Cladina spp.</i> <i>Peltigera spp.</i>	trembling aspen common juniper soopolallie twinlineflower pinegrass short-awned ricegrass spike-like goldenrod <i>Cladina spp.</i>	trembling aspen common juniper soopolallie twinlineflower pinegrass short-awned ricegrass spike-like goldenrod <i>Cladina spp.</i>	common juniper soopolallie twinlineflower pinegrass short-awned ricegrass spike-like goldenrod <i>Cladina spp.</i>	common juniper soopolallie twinlineflower pinegrass short-awned ricegrass spike-like goldenrod <i>Cladina spp.</i>
Plots						

Comments: The open, patchy lodgepole pine canopy has an understory dominated by lichens, kinnikinnick and patches of pinegrass.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

LC / 02

Lodgepole Pine - Kinnikinnick - *Cladonia*

Map Symbol	LC2, LCks2, LCms2, LCs2, LCsw2, LCt2, LCv2, LCvw2, LCvz2, LCw2	LC3, LCks3, LCms3, LCs3, LCsw3, LCt3, LCv3, LCvw3, LCvz3, LCw3	LC4, LCks4, LCms4, LCs4, LCsw4, LCt4, LCv4, LCvw4, LCvz4, LCw4	LC5, LCks5, LCms5, LCs5, LCsw5, LCt5, LCv5, LCvw5, LCvz5, LCw5	LC6, LCks6, LCms6, LCs6, LCsw6, LCt6, LCv6, LCvw6, LCvz6, LCw6	LC7, LCks7, LCms7, LCs7, LCsw7, LCt7, LCv7, LCvw7, LCvz7, LCw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	short-awned ricegrass	soopolallie				
Associate	pinegrass wild strawberry	short-awned ricegrass pinegrass trembling aspen	soopolallie pinegrass short-awned ricegrass trembling aspen	soopolallie pinegrass short-awned ricegrass	soopolallie pinegrass short-awned ricegrass	soopolallie pinegrass short-awned ricegrass
Bear Forage Species	kinnikinnick pinegrass short-awned ricegrass wild strawberry	soopolallie kinnikinnick pinegrass short-awned ricegrass	kinnikinnick soopolallie pinegrass short-awned ricegrass	kinnikinnick soopolallie pinegrass short-awned ricegrass	kinnikinnick soopolallie pinegrass short-awned ricegrass	kinnikinnick soopolallie pinegrass short-awned ricegrass

Comments: This ecosystem may be used for security and thermal cover while providing some forage species.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	<p>LK / 01 Lodgepole Pine - Kinnikinnick - Feathermoss LKg / 01 Lodgepole Pine - Kinnikinnick - Feathermoss; gullied LKgs / 01 Lodgepole Pine - Kinnikinnick - Feathermoss; gullied, shallow soil LKh / 01 Lodgepole Pine - Kinnikinnick - Feathermoss; hummocky LKk / 01 Lodgepole Pine - Kinnikinnick - Feathermoss; cool aspect LKks / 01 Lodgepole Pine - Kinnikinnick - Feathermoss; cool aspect with shallow soil LKs / 01 Lodgepole Pine - Kinnikinnick - Feathermoss; shallow soil LKsw / 01 Lodgepole Pine - Kinnikinnick - Feathermoss; shallow soil on warm aspect LKw / 01 Lodgepole Pine - Kinnikinnick - Feathermoss; warm aspect</p>
<p>The zonal site series typically occur on gently sloping sites with deep, medium-textured soils (LK). It is also found on upper to lower slope positions on all aspects (LKk, LKks, LKsw, LKw), although not on steep south or west aspects. The surficial material may be gullied (LKg, LKgs) or hummocky (LKh) and occasionally shallow (LKgs, LKs).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	0-30	10
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic to submesic	medium (poor to rich)	
Drainage	moderately well	
Surficial Material		
morainal, glaciofluvial		
Soil Development		
orthic gray luvisol		
	Range	Mean
Humus Depth (cm)	2-5	
Coarse Fragments (%)		
Soil Texture	Humus Form	
loamy	mormoder, rhizomull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

LK / 01

Lodgepole Pine - Kinnikinnick - Feathermoss

Map Symbol	LK2, LKg2, LKgs2, LKh2, LKk2, LKks2, LKs2, LKs2, LKsw2	LK3, LKg3, LKgs3, LKh3, LKk3, LKks3, LKs3, LKs3, LKsw3	LK4, LKg4, LKgs4, LKh4, LKk4, LKks4, LKs4, LKs4, LKsw4	LK5, LKg5, LKgs5, LKh5, LKk5, LKks5, LKs5, LKs5, LKsw5	LK6, LKg6, LKgs6, LKh6, LKk6, LKks6, LKs6, LKs6, LKsw6	LK7, LKg7, LKgs7, LKh7, LKk7, LKks7, LKs7, LKs7, LKsw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick pinegrass <i>Cladonia spp.</i>	lodgepole pine soopolallie prickly rose kinnikinnick pinegrass <i>Cladonia spp.</i>	Closed forests of: lodgepole pine kinnikinnick pinegrass <i>Cladonia spp.</i>	Closed forests of: lodgepole pine kinnikinnick pinegrass <i>Cladonia spp.</i>	Closed forests of: lodgepole pine kinnikinnick pinegrass <i>Cladonia spp.</i>	Closed forests of: lodgepole pine common juniper kinnikinnick pinegrass <i>Cladonia spp.</i>
Associates	short-awned ricegrass twinflower <i>Cladina spp.</i> <i>Peltigera spp.</i>	common juniper twinflower short-awned ricegrass <i>Cladina spp.</i> <i>Peltigera spp.</i>	trembling aspen common juniper soopolallie prickly rose twinflower short-awned ricegrass spike-like goldenrod red-stemmed feathermoss <i>Cladina spp.</i> <i>Peltigera spp.</i>	trembling aspen common juniper soopolallie prickly rose twinflower short-awned ricegrass spike-like goldenrod red-stemmed feathermoss <i>Cladina spp.</i> <i>Peltigera spp.</i>	white spruce common juniper soopolallie prickly rose twinflower short-awned ricegrass spike-like goldenrod red-stemmed feathermoss <i>Cladina spp.</i> <i>Peltigera spp.</i>	white spruce soopolallie prickly rose twinflower short-awned ricegrass spike-like goldenrod red-stemmed feathermoss <i>Cladina spp.</i> <i>Peltigera spp.</i>
Plots						

Comments: The forest canopy consists of even-aged lodgepole pine in a patchwork of age classes and densities, depending on fire history. Scattered trembling aspen are the only other tree species with white spruce occurring in the tree regeneration layer of older forests. Common juniper increases in older forests. The low undergrowth is dominated by kinnikinnick, pinegrass patches and lichens, with sparse moss cover. (Steen and Coupe 1997)

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

LK / 01

Lodgepole Pine - Kinnikinnick - Feathermoss

Map Symbol	LK2, LKg2, LKgs2, LKh2, LKk2, LKks2, LKs2, LKs2, LKsw2	LK3, LKg3, LKgs3, LKh3, LKk3, LKks3, LKs3, LKs3, LKsw3	LK4, LKg4, LKgs4, LKh4, LKk4, LKks4, LKs4, LKs4, LKsw4	LK5, LKg5, LKgs5, LKh5, LKk5, LKks5, LKs5, LKs5, LKsw5	LK6, LKg6, LKgs6, LKh6, LKk6, LKks6, LKs6, LKs6, LKsw6	LK7, LKg7, LKgs7, LKh7, LKk7, LKks7, LKs7, LKs7, LKsw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	soopolallie prickly rose pinegrass	pinegrass	pinegrass	pinegrass	pinegrass
Associate	short-awned ricegrass	short-awned ricegrass	soopolallie prickly rose short-awned ricegrass	soopolallie prickly rose short-awned ricegrass	soopolallie prickly rose short-awned ricegrass	soopolallie prickly rose short-awned ricegrass
Bear Forage Species	kinnikinnick pinegrass short-awned ricegrass	soopolallie prickly rose kinnikinnick pinegrass short-awned ricegrass	kinnikinnick pinegrass soopolallie prickly rose short-awned ricegrass	kinnikinnick pinegrass soopolallie prickly rose short-awned ricegrass	kinnikinnick pinegrass soopolallie prickly rose short-awned ricegrass	kinnikinnick pinegrass soopolallie prickly rose short-awned ricegrass

Comments: This ecosystem provides some forage species for bear and ungulates. It may also be used for security and thermal cover.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	SB / 03 Hybrid White Spruce - Scrub Birch - Fen Moss
These sites occur on gentle lower and toe slopes around wetlands and shrub-carrs with cold air accumulation. Soils are typically deep and medium-textured (SB), and are moist in the spring but may be dry on the surface by summer.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	0-10	3
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric	poor	
Drainage	poor - imperfect	
Surficial Material		
glaciofluvial		
Soil Development		
	Range	Mean
Humus Depth (cm)	1-4	2
Coarse Fragments (%)		
Soil Texture	Humus Form	
loamy	hemimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

SB / 03

Hybrid White Spruce - Scrub Birch - Fen Moss

Map Symbol	SB2	SB3	SB4	SB5	SB6	SB7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick dwarf scouring rush mosses	grey-leaved willow scrub birch soopolallie prickly rose kinnikinnick mosses	Open forests of: lodgepole pine white spruce scrub birch grey-leaved willow kinnikinnick	Very open forests of: white spruce grey-leaved willow scrub birch kinnikinnick	Very open forests of: white spruce grey-leaved willow scrub birch kinnikinnick	Very open forests of: white spruce grey-leaved willow scrub birch kinnikinnick
Associates	twinflower yarrow fireweed	lodgepole pine white spruce trembling aspen willows twinflower dwarf scouring rush fireweed	trembling aspen soopolallie prickly rose twinflower dwarf scouring rush fireweed <i>Peltigera spp.</i> golden fuzzy fen moss	lodgepole pine soopolallie prickly rose common juniper twinflower dwarf scouring rush fireweed <i>Peltigera spp.</i> golden fuzzy fen moss	soopolallie prickly rose common juniper twinflower dwarf scouring rush fireweed <i>Peltigera spp.</i> golden fuzzy fen moss	soopolallie prickly rose common juniper twinflower dwarf scouring rush fireweed <i>Peltigera spp.</i> golden fuzzy fen moss
Plots						

Comments: Mature forests have a very open canopy of short hybrid white spruce and lodgepole pine. Abundant scrub birch and willows form the understory. Lichens are less abundant than on drier sites, although scattered *Cladonia* lichens are present..

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

SB / 03

Hybrid White Spruce - Scrub Birch - Fen Moss

Map Symbol	SB2	SB3	SB4	SB5	SB6	SB7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	dwarf scouring rush	grey-leaved willow scrub birch soopolallie prickly rose	scrub birch grey-leaved willow	grey-leaved willow scrub birch	grey-leaved willow scrub birch	grey-leaved willow scrub birch
Associate	fireweed	trembling aspen willows fireweed dwarf scouring rush	trembling aspen soopolallie prickly rose fireweed dwarf scouring rush	soopolallie prickly rose fireweed dwarf scouring rush	soopolallie prickly rose fireweed dwarf scouring rush	soopolallie prickly rose fireweed dwarf scouring rush
Bear Forage Species	kinnikinnick fireweed dwarf scouring rush	soopolallie prickly rose kinnikinnick fireweed dwarf scouring rush	soopolallie prickly rose kinnikinnick fireweed dwarf scouring rush	soopolallie prickly rose kinnikinnick fireweed dwarf scouring rush	soopolallie prickly rose kinnikinnick fireweed dwarf scouring rush	soopolallie prickly rose kinnikinnick fireweed dwarf scouring rush

Comments: This ecosystem provides good forage for bears and ungulates.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	SF / 04 Hybrid White Spruce - Scrub Birch - Feathermoss
These sites occur on gentle lower and toe slopes adjacent to herbaceous wetlands or upslope from SB/03. Soils are typically deep and medium-textured (SF), with intermittent to persistent seepage.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	0-25	10
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric	medium to rich	
Drainage	imperfect to poor	
Surficial Material		
glaciofluvial, morainal		
Soil Development		
gleysols with water table >50cm deep		
	Range	Mean
Humus Depth (cm)	2-10	
Coarse Fragments (%)		
Soil Texture	Humus Form	
loamy	hemimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

SF / 04

Hybrid White Spruce - Scrub Birch - Feathermoss

Map Symbol	SF2	SF3	SF4	SF5	SF6	SF7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	palmate coltsfoot wild strawberry mosses	black twinberry soopolallie prickly rose palmate coltsfoot red-stemmed feathermoss glow moss	Closed canopy of: white spruce lodgepole pine palmate coltsfoot red-stemmed feathermoss step moss	Closed canopy of: white spruce palmate coltsfoot red-stemmed feathermoss step moss	Closed canopy of: white spruce black twinberry palmate coltsfoot red-stemmed feathermoss step moss	Closed canopy of: white spruce black twinberry palmate coltsfoot red-stemmed feathermoss step moss
Associates	twinflower common horsetail fireweed	twinflower wild strawberry common horsetail	black twinberry soopolallie prickly rose twinflower wild strawberry glow moss freckle pelt	lodgepole pine black twinberry soopolallie prickly rose twinflower wild strawberry glow moss freckle pelt	soopolallie prickly rose twinflower wild strawberry glow moss freckle pelt	soopolallie prickly rose twinflower wild strawberry glow moss freckle pelt
Plots						

Comments: The mature forest canopy of hybrid white spruce and lodgepole pine is moderately open to closed. There is a moderate cover of low shrubs and variety of forbs. Scrub birch and/or common horsetail may be absent.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

SF / 04

Hybrid White Spruce - Scrub Birch - Feathermoss

Map Symbol	SF2	SF3	SF4	SF5	SF6	SF7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	common horsetail wild strawberry	black twinberry soopolallie prickly rose				
Associate	common horsetail fireweed	common horsetail wild strawberry	black twinberry soopolallie prickly rose wild strawberry	black twinberry soopolallie prickly rose wild strawberry	black twinberry soopolallie prickly rose wild strawberry	black twinberry soopolallie prickly rose wild strawberry
Bear Forage Species	common horsetail wild strawberry	black twinberry soopolallie prickly rose common horsetail wild strawberry	black twinberry soopolallie prickly rose wild strawberry common horsetail	black twinberry soopolallie prickly rose wild strawberry common horsetail	black twinberry soopolallie prickly rose wild strawberry common horsetail	black twinberry soopolallie prickly rose wild strawberry common horsetail

Comments: This unit provides suitable cover along some forage species for bears and ungulates.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	SH / 05 Hybrid White Spruce - Horsetail - Glow Moss SHp / 05 Hybrid White Spruce - Horsetail - Glow Moss; peaty soil
These sites occur on toe slopes and in depressions with high (<50cm) water tables. Soils are typically deep and medium-textured (SH). Occasionally peat accumulations may be >15cm (SHp). This type includes small forested wetlands within the forest or more rarely, above shrubby or herbaceous wetlands, but it seldom occurs adjacent to permanent streams.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	0-10	3
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric to hygric	poor to rich	
Drainage	poor	
Surficial Material		
morainal, glaciofluvial		
Soil Development		
gleysols with water table <50cm deep		
	Range	Mean
Humus Depth (cm)	6-20	10
Coarse Fragments (%)		
Soil Texture	Humus Form	
loamy, silty (sand)	hemimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

SH / 05

Hybrid White Spruce - Horsetail - Glow Moss

Map Symbol	SH2, SHp2	SH3, SHp3	SH4, SHp4	SH5, SHp5	SH6, SHp6	SH7, SHp7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	common horsetail bluejoint dwarf scouring-rush sedges glow moss	black twinberry prickly rose common horsetail trailing raspberry bluejoint glow moss	Open canopy of: white spruce black twinberry common horsetail trailing raspberry step moss glow moss	Open canopy of: white spruce black twinberry common horsetail trailing raspberry step moss glow moss	Open canopy of: white spruce common horsetail step moss glow moss	Open canopy of: white spruce common horsetail step moss glow moss
Associates	soft-leaved sedge bunchberry twinflower palmate coltsfoot leafy mosses	soft-leaved sedge dwarf scouring rush bunchberry twinflower palmate coltsfoot sedges leafy mosses	prickly rose soft-leaved sedge bluejoint palmate coltsfoot dwarf scouring-rush twinflower bunchberry leafy mosses	prickly rose soft-leaved sedge bluejoint palmate coltsfoot dwarf scouring-rush twinflower bunchberry leafy mosses	black twinberry prickly rose trailing raspberry soft-leaved sedge bluejoint palmate coltsfoot dwarf souring-rush twinflower leafy mosses	black twinberry prickly rose trailing raspberry soft-leaved sedge bluejoint palmate coltsfoot dwarf souring-rush twinflower leafy mosses
Plots						

Comments: Short hybrid white spruce form a relatively open canopy, with lodgepole pine being uncommon. The diverse understory is dominated by common horsetail and other moist to wet site indicators. Moss cover is high.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series
SH / 05

Name
Hybrid White Spruce - Horsetail - Glow Moss

Map Symbol	SH2, SHp2	SH3, SHp3	SH4, SHp4	SH5, SHp5	SH6, SHp6	SH7, SHp7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	common horsetail bluejoint dwarf scouring-rush sedges	black twinberry prickly rose common horsetail bluejoint	black twinberry common horsetail	black twinberry common horsetail	common horsetail	common horsetail
Associate	soft-leaved sedge	soft-leaved sedge dwarf scouring-rush sedges	prickly rose soft-leaved sedge bluejoint dwarf scouring-rush	prickly rose soft-leaved sedge bluejoint dwarf scouring-rush	black twinberry prickly rose soft-leaved sedge bluejoint dwarf scouring-rush	black twinberry prickly rose soft-leaved sedge bluejoint dwarf scouring-rush
Bear Forage Species	common horsetail bluejoint dwarf scouring-rush soft-leaved sedge bunchberry	black twinberry prickly rose common horsetail trailing raspberry bluejoint soft-leaved sedge dwarf scouring-rush bunchberry	black twinberry common horsetail trailing raspberry prickly rose soft-leaved sedge bluejoint dwarf scouring-rush bunchberry	black twinberry common horsetail trailing raspberry prickly rose soft-leaved sedge bluejoint dwarf scouring-rush bunchberry	common horsetail black twinberry prickly rose trailing raspberry soft-leaved sedge bluejoint dwarf-scouring-rush	common horsetail black twinberry prickly rose trailing raspberry soft-leaved sedge bluejoint dwarf-scouring-rush

Comments: This ecosystem provides forage species for bears and ungulates with some security and thermal cover.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	SM / 06 Hybrid White Spruce - Horsetail - Meadowrue SMg / 06 Hybrid White Spruce - Horsetail - Meadowrue; gullied
These rich, productive sites occur adjacent to stream channels where there is persistent seepage. Soils are typically deep and medium-textured (SM). This type frequently occurs in gullies where the stream channel is incised (SMg).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	0-15	5
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric to hygric	rich to very rich	
Drainage	poor	
Surficial Material		
fluvial		
Soil Development		
gleysols		
	Range	Mean
Humus Depth (cm)	6-20	10
Coarse Fragments (%)		
Soil Texture	Humus Form	
loamy, silty	hemimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SM/06

Hybrid White Spruce - Horsetail - Meadowrue

Map Symbol	SM2, SMg2	SM3, SMg3	SM4, SMg4	SM5, SMg5	SM6, SMg6	SM7, SMg7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	sedges twinflower bluejoint common horsetail mosses	black twinberry northern black currant twinflower bluejoint common horsetail sedges leafy mosses	Closed canopy of: hybrid white spruce black twinberry soft-leaved sedge leafy mosses	Closed canopy of: hybrid white spruce black twinberry soft-leaved sedge leafy mosses	Closed canopy of: hybrid white spruce black twinberry soft-leaved sedge leafy mosses	Closed canopy of: hybrid white spruce black twinberry soft-leaved sedge leafy mosses
Associates	bunchberry soft-leaved sedge trailing raspberry	trailing raspberry bunchberry soft-leaved sedge golden fuzzy fen moss red-stemmed feathermoss sickle moss	northern black currant bunchberry twinflower common horsetail trailing raspberry bluejoint common mitrewort golden fuzzy fen moss red-stemmed feathermoss sickle moss	northern black currant bunchberry twinflower common horsetail trailing raspberry bluejoint common mitrewort golden fuzzy fen moss red-stemmed feathermoss sickle moss	northern black currant bunchberry twinflower common horsetail trailing raspberry bluejoint common mitrewort golden fuzzy fen moss red-stemmed feathermoss sickle moss	northern black currant bunchberry twinflower common horsetail trailing raspberry common mitrewort golden fuzzy fen moss red-stemmed feathermoss sickle moss
Plots						

Comments: There is a moderate cover of shrubs, especially black twinberry, and herbs such as bunchberry, common mitrewort, soft-leaved sedge and bluejoint and a high cover of mosses.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

SM / 06

Hybrid White Spruce - Horsetail - Meadowrue

Map Symbol	SM2, SMg2	SM3, SMg3	SM4, SMg4	SM5, SMg5	SM6, SMg6	SM7, SMg7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluejoint common horsetail sedges	black twinberry northern black currant bluejoint sedges common horsetail	black twinberry soft-leaved sedge	black twinberry soft-leaved sedge	black twinberry soft-leaved sedge	black twinberry soft-leaved sedge
Associate	soft-leaved sedge	soft-leaved sedge	northern black currant common horsetail bluejoint	northern black currant common horsetail bluejoint	northern black currant common horsetail bluejoint	northern black currant common horsetail
Bear Forage Species	soft-leaved sedge bluejoint common horsetail trailing raspberry	black twinberry northern black currant bunchberry soft-leaved sedge bluejoint common horsetail trailing raspberry	black twinberry soft-leaved sedge northern black currant bunchberry common horsetail trailing raspberry bluejoint	black twinberry soft-leaved sedge northern black currant bunchberry common horsetail trailing raspberry bluejoint	black twinberry soft-leaved sedge northern black currant bunchberry common horsetail trailing raspberry bluejoint	black twinberry soft-leaved sedge northern black currant bunchberry common horsetail trailing raspberry bluejoint

Comments: The moderate cover of shrubs and herbs may provide suitable forage for ungulates and bears.

6.2 SBPSxc - Grassland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	WP / 00 Bluebunch Wheatgrass - Pasture Sage WPs / 00 Bluebunch Wheatgrass - Pasture Sage; shallow soil
These grasslands typically occur on warm aspects sufficiently steep to be characterized by sheet or gully erosion. Soils are typically deep and coarse-textured (WP), but can be shallow (WPs). Grasslands are very rare in the SBPSxc; they occur only on steep south aspects. This unit is adapted from the IDFdk4.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	30-70+	50
Aspect (degrees)	160-230	
Moisture Regime	Nutrient Regime	
subxeric to xeric	poor	
Drainage	well	
Surficial Material		
undifferentiated, colluvium, morainal		
Soil Development		
regosol		
	Range	Mean
Humus Depth (cm)	0	0
Coarse Fragments (%)	0-70	
Soil Texture	Humus Form	
medium	absent	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series **Name**
 WP / 00 Bluebunch Wheatgrass - Pasture Sage

Map Symbol	WP2, WPs2
Plant species	Herb Climax
Dominants	bluebunch wheatgrass
Associates	saskatoon pasture sage purse milk-vetch northern bedstraw stiff needlegrass junegrass
Plots	

Comments: Bluebunch wheatgrass clumps are usually sparse and widely spaced, but can be fairly continuous with up to 60% cover. Forbs are diverse but, due to erosion, lichen cover is low.

Map Symbol	WP2, WPs2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	bluebunch wheatgrass
Ungulate Forage Species - Associates	saskatoon pasture sage purse milk-vetch stiff needlegrass junegrass
Bear Forage Species	bluebunch wheatgrass saskatoon purse milk-vetch stiff needlegrass junegrass

Comments: This ecosystem may provide spring forage species for Mule Deer while providing some security cover as it is a steep unit.

6.3 SBPSxc - Wetland Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	BS / 00 Sedge - Grass Fen
These wetlands are inundated (up to 40cm) early in the growing season, but standing water may be absent by late summer. Soils typically consist of a variable organic accumulation (30-150+cm) over mineral soil (BS). The water source is primarily groundwater and runoff from adjacent mineral uplands.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric to hydric	medium-very rich	
Drainage	very poor	
Surficial Material		
organic blanket over lacustrine		
Soil Development		
typic mesisol, fibrisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
organic		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series **Name**
 BS / 00 Sedge - Grass Fen

Map Symbol	BS2
Plant species	Herb Climax
Dominants	water sedge beaked sedge
Associates	willows scrub birch marsh cinquefoil sedges bluejoint glowmoss <i>Drepanocladus aduncus</i>
Plots	

Comments: These wetlands are dominated by graminoids with some willows and scrub birch. Water sedges include beaked sedge, water sedge (*Carex aquatilis*), slender sedge, shore sedge and awned sedge.

Map Symbol	BS2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	water sedge beaked sedge
Ungulate Forage Species - Associates	willows scrub birch marsh cinquefoil sedges bluejoint glowmoss <i>Drepanocladus aduncus</i>
Bear Forage Species	sedges willows bluejoint

Comments: This wetland provides moderate to high feeding values for bear in early spring when horsetail are newly sprouted and tender. Moose will feed on the willow year round.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	WB / 00 Willow - Scrub birch Shrub Carr
These sites are periodically saturated but rarely inundated. Soils are typically medium-textured (WB). The surface is usually hummocky with drier hummocks and moist depressions. This ecosystem frequently forms a zone around Sedge - Grass Fens (BS) or Willow - Sedge Fens (WT).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric (hygric)	rich to very rich	
Drainage	imperfect to poor	
Surficial Material		
lacustrine, fluvial		
Soil Development		
orthic humic gleysols, gleyed melanic and eutric brunisols, orthic melanic brunisol		
	Range	Mean
Humus Depth (cm)	0-10	5
Coarse Fragments (%)		
Soil Texture	Humus Form	
clayey, silty to loamy		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 WB / 00 Willow - Scrub birch Shrub Carr

Map Symbol	WB3a
Plant species	Low Shrub Climax
Dominants	scrub birch grey-leaved willow short-fruited willow
Associates	white spruce kinnikinnick mat muhly slender wheatgrass field sedge yarrow wild strawberry baltic rush
Plots	

Comments: The vegetation may be dominated by either scrub birch or willows, which grow mainly on hummocks. Water tolerant herbs grow in the depressions, while dry-land forbs such as kinnikinnick grow under shrubs on the hummocks.

Map Symbol	WB3a
Plant Species	Low Shrub Climax
Ungulate Forage Species - Dominants	scrub birch grey-leaved willow short-fruited willow
Ungulate Forage Species - Associates	mat muhly slender wheatgrass field sedge
Bear Forage Species	kinnikinnick slender wheatgrass field sedge

Comments: Willows provide abundant feeding habitat to moose all year. Bear will feed on sedge in spring when they are succulent and tender.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
SBPSxc	WT/00 Willow - Sedge Fen
<p>These wetlands are inundated (up to 20cm) early in the growing season, but standing water is usually absent by mid-summer. However, soils are permanently saturated and are typically deep organic layers 100 - 150+cm (WT) which are usually not carbonated. The water source is primarily groundwater and runoff from adjacent mineral uplands.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1500	1450
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric (hydric)	rich	
Drainage	very poor	
Surficial Material		
organic blanket over lacustrine		
Soil Development		
typic fibrisol, typic (limno) mesisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
N/A		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 WT / 00 Willow - Sedge Fen

Map Symbol	WT3a
Plant species	Low Shrub Climax
Dominants	hoary willow bog willow McCall's willow scrub birch beaked sedge water sedges
Associate	swamp horsetail marsh cinquefoil bluejoint <i>Drepanocladus aduncus</i> <i>Brachythecium spp.</i>
Plots	

Comments: These sites are densely shrubby, usually dominated by willows and often with some scrub birch. Water sedges include slender sedge, water sedge (*Carex aquatilis*), shore sedge. The moss layer is well developed; sphagnum sometimes occurs on the periphery.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series **Name**
 WT / 00 Willow - Sedge Fen

Map Symbol	WT3a
Plant Species	Low Shrub Climax
Ungulate Forage Species - Dominants	hoary willow bog willow McCall's willow scrub birch water sedge beaked sedge
Ungulate Forage Species - Associates	swamp horsetail bluejoint
Bear Forage Species	swamp horsetail bluejoint

Comments: Abundance of willows provide good feeding habitat for moose while providing marginal cover. Bear will feed here early in the growing season when horsetails are succulent and easily digested.

7.0 MSxk - Montane Spruce Very Dry Cool Subzone

7.1 MSxk - Forested Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	<p>DA / 05 Douglas-fir - Lodgepole Pine - Pinegrass - Arnica</p> <p>DAc / 05 Douglas-fir - Lodgepole Pine - Pinegrass - Arnica; coarse-textured soils DAhs / 05 Douglas-fir - Lodgepole Pine - Pinegrass - Arnica; hummocky terrain, shallow soil DAhv / 05 Douglas-fir - Lodgepole Pine - Pinegrass - Arnica; hummocky terrain, very shallow soil DArS / 05 Douglas-fir - Lodgepole Pine - Pinegrass - Arnica; ridged shallow soil DAs / 05 Douglas-fir - Lodgepole Pine - Pinegrass - Arnica; shallow soil DAv / 05 Douglas-fir - Lodgepole Pine - Pinegrass - Arnica; very shallow soil</p>
<p>This ecosystem is typically found on mid to upper slope positions on moderate to steep warm aspects with deep medium textured soils. This unit is common in the Churn Creek study area. This unit is commonly found on shallow soils (DAs) or very shallow soils (DAv) or shallow and very shallow soil on hummocked terrain (DAhs, DAhv) or ridge crests (DArS).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1450-1700	1585
Slope (%)	0-70	35
Aspect (degrees)	135-295	
Moisture Regime	Nutrient Regime	
submesic (subxeric)	very poor to rich	
Drainage	moderate to well	
Surficial Material		
Morainal blanket, morainal veneer over moderate - steep sloping rock		
Soil Development		
gray luvisol, orthic dystric brunisol		
	Range	Mean
Humus Depth (cm)	0-3	2
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy	moder (leptomoder)	

Plot 9800424 DA7

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

DA / 05

Douglas-fir - Lodgepole Pine - Pinegrass - Arnica

Map Symbol	DA2, DAc2, DAhs2, DAhv2, DArS2, DAs2, DAv2	DA3, DAc3, DAhs3, DAhv3, DArS3, DAs3, DAv3	DA4, DAc4, DAhs4, DAhv4, DArS4, DAs4, DAv4	DA5, DAc5, DAhs5, DAhv5, DArS5, DAs5, DAv5	DA6, DAc6, DAhs6, DAhv6, DArS6, DAs6, DAv6	DA7, DAc7, DAhs7, DAhv7, DArS7, DAs7, DAv7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass kinnikinnick showy aster	lodgepole pine pinegrass soopolallie	Moderately open canopy of: Douglas-fir lodgepole pine pinegrass red-stemmed feathermoss	Open canopy of: Douglas-fir pinegrass red-stemmed feathermoss	Open canopy of: Douglas-fir pinegrass red-stemmed feathermoss	Open canopy of: Douglas-fir pinegrass red-stemmed feathermoss
Associates	fireweed twinflor heart-leaved arnica	Douglas-fir common juniper saskatoon heart-leaved arnica prickly rose timber-milk vetch kinnikinnick showy aster <i>Peltigera spp.</i> fireweed	common juniper soopolallie saskatoon heart-leaved arnica prickly rose timber-milk vetch kinnikinnick showy aster <i>Peltigera spp.</i>	lodgepole pine common juniper soopolallie saskatoon heart-leaved arnica prickly rose timber-milk vetch kinnikinnick showy aster <i>Peltigera spp.</i>	lodgepole pine common juniper soopolallie saskatoon heart-leaved arnica prickly rose timber-milk vetch kinnikinnick showy aster <i>Peltigera spp.</i>	lodgepole pine common juniper soopolallie saskatoon heart-leaved arnica prickly rose timber-milk vetch kinnikinnick showy aster <i>Peltigera spp.</i>
Plots				C82		9800424

Comments: Recent logging or fires result in structural stage 2 and/or 3. Open mature seral forests of Douglas-fir dominate the landscape. These forests typically have 25-35% crown closure, with a sparse shrub layer. Pinegrass and patches of red-stemmed feathermoss dominate the herb and moss layers. On shallow and very shallow soils the canopy is more open <25% crown closure with a more sparse understory.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

DA / 05

Douglas-fir - Lodgepole Pine - Pinegrass - Arnica

Map Symbol	DA2, DAc2, DAhs2, DAhv2, DArS2, DAs2, DAv2	DA3, DAc3, DAhs3, DAhv3, DArS3, DAs3, DAv3	DA4, DAc4, DAhs4, DAhv4, DArS4, DAs4, DAv4	DA5, DAc5, DAhs5, DAhv5, DArS5, DAs5, DAv5	DA6, DAc6, DAhs6, DAhv6, DArS6, DAs6, DAv6	DA7, DAc7, DAhs7, DAhv7, DArS7, DAs7, DAv7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	pinegrass soopolallie	Douglas-fir pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass	Douglas-fir pinegrass
Associates	fireweed	Douglas-fir prickly rose saskatoon fireweed	prickly rose saskatoon fireweed	prickly rose saskatoon fireweed	prickly rose saskatoon fireweed	prickly rose saskatoon fireweed
Bear Forage Species	pinegrass fireweed Kentucky bluegrass	pinegrass soopolallie prickly rose fireweed saskatoon	pinegrass kinnikinnick soopolallie prickly rose saskatoon	pinegrass kinnikinnick soopolallie prickly rose saskatoon	pinegrass kinnikinnick soopolallie prickly rose saskatoon	pinegrass kinnikinnick soopolallie prickly rose saskatoon

Comments: Abundance of pinegrass coupled with Douglas-fir needles makes this unit suitable for ungulate use in spring in typical situation and on cool aspect slopes the closed canopy provides good security and thermal cover.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	DAk/05 Douglas-fir - Pinegrass - Arnica; cool aspect DAks/05 Douglas-fir - Pinegrass - Arnica; cool aspect, shallow soil DAj/05 Douglas-fir - Pinegrass - Arnica; gentle slope DAjs/05 Douglas-fir - Pinegrass - Arnica; gentle slope, shallow soil
This ecosystem occurs on the same terrain as the typical DA/05 unit, with deep, medium textured soils on mid to upper slope positions. The difference is found in the vegetation communities that occur on the cool aspects and cool aspects with shallow soils (DAk, DAks) and gentle slopes and gentle slopes with shallow soils (DAj, DAjs). The cool aspect and gentle slope situations are common in the study area.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1450-1700	1585
Slope (%)	0-70	35
Aspect (degrees)	295-135	
Moisture Regime	Nutrient Regime	
submesic	very poor to rich	
Drainage	moderate to well	
Surficial Material		
morainal blanket, morainial veneer over moderate to steep sloping rock		
Soil Development		
orthic dystic brunisol, gray luvisol		
	Range	Mean
Humus Depth (cm)	0-3	2
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy	moder	

Plot C626 DAks4

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

DAk / 05

Douglas-fir - Lodgepole Pine - Arnica cool aspect/gentle slope

Map Symbol	DAk2, DAks2, DAj2, DAjs2	DAk3, DAks3, DAj3, DAjs3	DAk4, DAks4, DAj4, DAjs4	DAk5, DAks5, DAj5, DAjs5	DAk6, DAks6, DAj6, DAjs6	DAk7, DAks7, DAj7, DAjs7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass fireweed	lodgepole pine Sitka alder pinegrass red-stemmed feathermoss	Dense closed canopy of: lodgepole pine Sitka alder pinegrass red-stemmed feathermoss	Closed canopy of: lodgepole pine pinegrass red-stemmed feathermoss	Closed canopy of: lodgepole pine pinegrass red-stemmed feathermoss	Moderately closed canopy: lodgepole pine pinegrass red-stemmed feathermoss
Associates	twinflower kinnikinnick heart-leaved arnica	birch-leaved spirea common juniper heart-leaved arnica kinnikinnick twinflower <i>Peltigera spp</i>	Douglas-fir birch-leaved spirea common juniper heart-leaved arnica kinnikinnick twinflower <i>Peltigera spp.</i>	Douglas-fir Sitka alder birch-leaved spirea common juniper heart-leaved arnica kinnikinnick twinflower <i>Peltigera spp.</i>	Douglas-fir birch-leaved spirea common juniper heart-leaved arnica kinnikinnick twinflower <i>Peltigera spp.</i>	Douglas-fir birch-leaved spirea common juniper heart-leaved arnica kinnikinnick twinflower <i>Peltigera spp.</i>
Plots			C626	91MK079, C625		

Comments: The cool aspects and gentle slopes of the DA unit appear to be floristically different from the typical situation. On these aspects lodgepole pine, rather than Douglas-fir, forms a closed canopy (35-50% crown closure) with a sparse shrub layer. Like the typical, pinegrass and red-stemmed feathermoss dominate the understory vegetation, but moss cover is generally more continuous than on warm aspects.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

DAk / 05

Douglas-fir - Lodgepole Pine - Arnica cool aspect/gentle slope

Map Symbol	DAk2, DAks2, DAj2, DAjs2	DAk3, DAks3, DAj3, DAjs3	DAk4, DAks4, DAj4, DAjs4	DAk5, DAks5, DAj5, DAjs5	DAk6, DAks6, DAj6, DAjs6	DAk7, DAks7, DAj7, DAjs7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass fireweed	pinegrass	pinegrass	pinegrass	pinegrass	pinegrass
Associates			Douglas-fir	Douglas-fir	Douglas-fir	Douglas-fir
Bear Forage Species	pinegrass fireweed	kinnikinnick	kinnikinnick	kinnikinnick	kinnikinnick	kinnikinnick

Comments: The closed canopy of lodgepole pine does provide security and thermal cover yet it prevents development of suitable understory forage. Pinegrass could be used in the spring. If coarse woody debris loading is high this unit could be used by marten or fisher.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	DJ / 02 Douglas-fir - Juniper - Grouseberry DJk / 02 Douglas-fir - Juniper - Grouseberry; cool aspect DJr / 02 Douglas-fir - Juniper - Grouseberry; ridged DJv / 02 Douglas-fir - Juniper - Grouseberry; very shallow soil
This ecosystem is typically found on mid, upper and crest slope positions with shallow soils and moderate to steep warm aspects (DJ). This ecosystem can occur on cool aspects (DJk) as well as on ridge crests (DAr) and on very shallow soils (DJv).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1600-1700	1650
Slope (%)	25-75	50
Aspect (degrees)	135-285	
Moisture Regime	Nutrient Regime	
very xeric to subxeric	very poor to poor	
Drainage	well to rapid	
Surficial Material		
colluvial veneer over rock morainal veneer over rock		
Soil Development		
orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)	0-2	1
Coarse Fragments (%)	<50	
Soil Texture	Humus Form	
loamy	mull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

DJ / 02

Douglas-fir - Juniper - Grouseberry

Map Symbol	DJ2, DJk2, DJr2, DJv2	DJ3, DJk3, DJr3, DJv3	DJ4, DJk4, DJr4, DJv4	DJ5, DJk5, DJr5, DJv5	DJ6, DJk6, DJr6, DJv6	DJ7, DJk7, DJr7, DJv7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick pinegrass	lodgepole pine common juniper kinnikinnick	Very open canopy of: Douglas-fir lodgepole pine common juniper kinnikinnick	Very open canopy of: Douglas-fir lodgepole pine common juniper kinnikinnick	Very open canopy of: Douglas-fir common juniper kinnikinnick	Very open canopy of: Douglas-fir common juniper kinnikinnick
Associates	birch-leaved spirea twinflower arctic lupine <i>Cladonia spp.</i> <i>Peltigera spp.</i>	Douglas-fir birch-leaved spirea pinegrass twinflower arctic lupine <i>Cladonia spp.</i> <i>Peltigera spp.</i>	birch-leaved spirea pinegrass twinflower arctic lupine <i>Cladonia spp.</i> <i>Peltigera spp.</i>	birch-leaved spirea pinegrass twinflower arctic lupine <i>Cladonia spp.</i> <i>Peltigera spp.</i>	lodgepole pine birch-leaved spirea pinegrass twinflower arctic lupine <i>Cladonia spp.</i> <i>Peltigera spp.</i>	lodgepole pine birch-leaved spirea pinegrass twinflower arctic lupine <i>Cladonia spp.</i> <i>Peltigera spp.</i>
Plots						

Comments: The dry, nutrient poor nature of this site causes development of a very open Douglas-fir and lodgepole pine canopy (<15% crown closure). These conditions may cause the forest to be stunted at the tall shrub structural stage (3) less than 10m tall. The understory is poorly developed, dominated by kinnikinnick, some pinegrass and lichens. Grouseberry is generally uncommon in this part of the MSxk. Exposed mineral soil or rock (<30% ground cover) is common.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

DJ / 02

Douglas-fir - Juniper - Grouseberry

Map Symbol	DJ2, DJk2, DJr2, DJv2	DJ3, DJk3, DJr3, DJv3	DJ4, DJk4, DJr4, DJv4	DJ5, DJk5, DJr5, DJv5	DJ6, DJk6, DJr6, DJv6	DJ7, DJk7, DJr7, DJv7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass		Douglas-fir	Douglas-fir	Douglas-fir	Douglas-fir
Associates		Douglas-fir pinegrass	pinegrass	pinegrass	pinegrass	pinegrass
Bear Forage Species	kinnikinnick pinegrass	kinnikinnick pinegrass	kinnikinnick pinegrass	kinnikinnick pinegrass	kinnikinnick pinegrass	kinnikinnick pinegrass

Comments: This unit is very dry and has limited undergrowth. Deer may find the moderate to steep slopes favorable for feeding on exposed grasses and Douglas-fir needles but this unit is of little value to other ungulates and bear.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	<p>LL / 01 Lodgepole Pine - Pinegrass - Lupine</p> <p>LLc / 01 Lodgepole Pine - Pinegrass - Lupine; coarse-textured soils</p> <p>LLch / 01 Lodgepole Pine - Pinegrass - Lupine; coarse-textured soils, hummocky terrain</p> <p>LLh / 01 Lodgepole Pine - Pinegrass - Lupine; hummocky terrain</p> <p>LLhs / 01 Lodgepole Pine - Pinegrass - Lupine; hummocky terrain, shallow soils</p> <p>LLk / 01 Lodgepole Pine - Pinegrass - Lupine; cool aspect</p> <p>LLks / 01 Lodgepole Pine - Pinegrass - Lupine; cool aspect, shallow soils</p> <p>LLs / 01 Lodgepole Pine - Pinegrass - Lupine; shallow soils</p> <p>LLsw / 01 Lodgepole Pine - Pinegrass - Lupine; shallow soils, warm aspect</p> <p>LLt / 01 Lodgepole Pine - Pinegrass - Lupine; terrace</p> <p>LLw / 01 Lodgepole Pine - Pinegrass - Lupine; warm aspect</p>
<p>Comments: This unit is typically found on gently sloping, mid slopes with deep medium textured soils. This unit can be found in areas with coarse-textured soils (LLc, LLch) as well as on hummocked terrain (LLh, LLhs). It is also commonly found on shallow soils (LLs). This unit can also occur on warm (LLw, LLsw) and cool aspects (LLk, LLks) usually occurring below the DA unit. Occasionally this unit is found on glaciofluvial terraces (LLt).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1450-1700	1600
Slope (%)	5-27	16
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic to submesic	poor to rich	
Drainage	moderate-well	
Surficial Material		
morainal blanket		
Soil Development		
	Range	Mean
Humus Depth (cm)	0-5	2
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
sandy loam	hemimor	

Plot C305 LL6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

LL / 01

Lodgepole Pine - Pinegrass - Lupine

Map Symbol	LL2, LLc2, LLch2, LLh2, LLhs2, LLk2, LLks2, LLs2, LLsw2, LLt2, LLw2	LL3, LLc3, LLch3, LLh3, LLhs3, LLk3, LLks3, LLs3, LLsw3, LLt3, LLw3	LL4, LLc4, LLch4, LLh4, LLhs4, LLk4, LLks4, LLs4, LLsw4, LLt4, LLw4	LL5, LLc5, LLch5, LLh5, LLhs5, LLk5, LLks5, LLs5, LLsw5, LLt5, LLw5	LL6, LLc6, LLch6, LLh6, LLhs6, LLk6, LLks6, LLs6, LLsw6, LLt6, LLw6	LL7, LLc7, LLch7, LLh7, LLhs7, LLk7, LLks7, LLs7, LLsw7, LLt7, LLw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass	lodgepole pine pinegrass twinflower	Closed canopy of: lodgepole pine pinegrass twinflower red-stemmed feathermoss	Closed canopy of: lodgepole pine pinegrass red-stemmed feathermoss	Closed canopy of: lodgepole pine pinegrass red-stemmed feathermoss	Closed canopy of: lodgepole pine pinegrass red-stemmed feathermoss
Associates	Richardson's sedge twinflower fireweed junegrass kinnikinnick dwarf blueberry soopolallie	Sitka alder common juniper soopolallie prickly rose dwarf blueberry grouseberry kinnikinnick fireweed red-stemmed feathermoss	soopolallie common juniper prickly rose Sitka alder dwarf blueberry grouseberry kinnikinnick dog pelt freckle pelt	common juniper prickly rose soopolallie Sitka alder dwarf blueberry grouseberry kinnikinnick twinflower dog pelt freckle pelt	hybrid white spruce common juniper prickly rose soopolallie Sitka alder dwarf blueberry grouseberry kinnikinnick twinflower dog pelt freckle pelt	hybrid white spruce common juniper prickly rose soopolallie Sitka alder dwarf blueberry grouseberry kinnikinnick twinflower dog pelt freckle pelt
Plots	C888		C889, C411	C254, C492, C500	C302, C305, C412, C493	C258

Comments: This is typically a closed canopy lodgepole pine stand (35-50% crown closure). Understory shrub layer is generally less than 10% cover dominated by common juniper and prickly rose. Pinegrass and red-stemmed feathermoss covers dominate the understory herb layer. Clearcut logging produces structural stage 2 immediately following the cut for up to 10 years. Grouseberry is generally less common and more sporadically distributed compared to other areas of the MSxk.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

LL / 01

Lodgepole Pine - Pinegrass - Lupine

Map Symbol	LL2, LLc2, LLch2, LLh2, LLhs2, LLk2, LLks2, LLs2, LLsw2, LLt2, LLw2	LL3, LLc3, LLch3, LLh3, LLhs3, LLk3, LLks3, LLs3, LLsw3, LLt3, LLw3	LL4, LLc4, LLch4, LLh4, LLhs4, LLk4, LLks4, LLs4, LLsw4, LLt4, LLw4	LL5, LLc5, LLch5, LLh5, LLhs5, LLk5, Lks5, LLs5, LLsw5, LLt5, LLw5	LL6, LLc6, LLch6, LLh6, LLhs6, LLk6, LLks6, LLs6, LLsw6, LLt6, LLw6	LL7, LLc7, LLch7, LLh7, LLhs7, LLk7, LLks7, LLs7, LLsw7, LLt7, LLw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	pinegrass	pinegrass	pinegrass	pinegrass	pinegrass
Associates	Richardson's sedge fireweed junegrass soopolallie	fireweed soopolallie prickly rose	soopolallie prickly rose	soopolallie prickly rose	soopolallie prickly rose	soopolallie prickly rose
Bear Forage Species	Richardson's sedge fireweed junegrass grouseberry dwarf blueberry kinnikinnick pinegrass soopolallie	grouseberry dwarf blueberry kinnikinnick pinegrass soopolallie prickly rose	grouseberry dwarf blueberry kinnikinnick pinegrass soopolallie prickly rose	grouseberry dwarf blueberry kinnikinnick pinegrass soopolallie prickly rose	grouseberry dwarf blueberry kinnikinnick pinegrass soopolallie prickly rose	grouseberry dwarf blueberry kinnikinnick pinegrass soopolallie prickly rose

Comments: Closed canopy provides reasonable security and thermal cover but only limited forage values.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	<p>SG / 08 Hybrid White Spruce - Gooseberry - Grouseberry SGa / 08 Hybrid White Spruce - Gooseberry - Grouseberry; active floodplain SGg / 08 Hybrid White Spruce - Gooseberry - Grouseberry;gullied SGgk / 08 Hybrid White Spruce - Gooseberry - Grouseberry; gullied, cool aspect SGk / 08 Hybrid White Spruce - Gooseberry - Grouseberry;cool aspect SGks / 08 Hybrid White Spruce - Gooseberry - Grouseberry;cool aspect shallow soil SGs / 08 Hybrid White Spruce - Gooseberry - Grouseberry; shallow soil</p>
<p>This ecosystem is typically found on gentle lower slopes and on moisture receiving sites. The soils are typically deep and medium textured. This site can occasionally be found on active floodplains (SGa) on gullied terrain (SGg, SGgk) and on cool aspect toe slopes (SGk).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1450-1700	1580
Slope (%)	0-25	12
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric to hygric	poor to very rich	
Drainage	moderate to poor	
Surficial Material		
morainal blanket, fluvial blanket or plain glaciofluvial		
Soil Development		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 SG / 08 Hybrid White Spruce - Gooseberry - Grouseberry

Map Symbol	SG2, SGa2, SGg2, SGgk2, SGk2, SGks2, SGs2	SG3, SGa3, SGg3, SGgk3, SGk3, SGks3, SGs3	SG4, SGa4, SGg4, SGgk4, SGk4, SGks4, SGs4	SG5, SGa5, SGg5, SGgk5, SGk5, SGks5, SGs5	SG6, SGa6, SGg6, SGgk6, SGk6, SGks6, SGs6	SG7, SGa7, SGg7, SGgk7, SGk7, SGks7, SGs7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	twinflower grouseberry fireweed	lodgepole pine soopolallie prickly rose twinflower	Dense canopy of: lodgepole pine soopolallie prickly rose twinflower red-stemmed feathermoss	Closed canopy of: hybrid white spruce lodgepole pine soopolallie prickly rose twinflower red-stemmed feathermoss.	Closed canopy of: hybrid white spruce lodgepole pine twinflower red-stemmed feathermoss	Closed canopy of: hybrid white spruce lodgepole pine twinflower red-stemmed feathermoss
Associates	heart-leaved arnica bunchberry	grouseberry black gooseberry fireweed heart-leaved arnica one-sided wintergreen bunchberry <i>Peltigera spp.</i>	hybrid white spruce subalpine fir black gooseberry heart-leaved arnica one-sided wintergreen grouseberry bunchberry <i>Peltigera spp.</i>	subalpine fir black gooseberry heart-leaved arnica one-sided wintergreen grouseberry bunchberry <i>Peltigera spp.</i>	subalpine fir soopolallie prickly rose black gooseberry heart-leaved arnica one-sided wintergreen grouseberry bunchberry <i>Peltigera spp.</i>	subalpine fir soopolallie prickly rose black gooseberry heart-leaved arnica one-sided wintergreen grouseberry bunchberry <i>Peltigera spp.</i>
Plots				C306, 91MK092		

Comments: Mature and old growth forests are typically dominated by a closed canopy (crown closure >35%) of lodgepole pine and hybrid white spruce with a poorly developed shrub layer. The understory is dominated by twinflower, grouseberry and red-stemmed feathermoss. Seral stands that develop after disturbance are dominated by dense lodgepole pine stands with some soopolallie and prickly rose in the shrub layer. Clearcut logging results in a sparsely vegetated landscape consisting of scattered herbs that after 5 to 10 years develop into a shrub stage of scattered lodgepole pine, soopolallie and prickly rose.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series
SG / 08

Name
Hybrid White Spruce - Gooseberry - Grouseberry

Map Symbol	SG2, SGa2, SGg2, SGgk2, SGk2, SGks2, SGs2	SG3, SGa3, SGg3, SGgk3, SGk3, SGks3, SGs3	SG4, SGa4, SGg4, SGgk4, SGk4, SGks4, SGs4	SG5, SGa5, SGg5, SGgk5, SGk5, SGks5, SGs5	SG6, SGa6, SGg6, SGgk6, SGk6, SGks6, SGs6	SG7, SGa7, SGg7, SGgk7, SGk7, SGks7, SGs7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	fireweed	soopolallie prickly rose	soopolallie prickly rose	soopolallie prickly rose		
Associates					soopolallie prickly rose	soopolallie prickly rose
Bear Forage Species	grouseberry fireweed	soopolallie prickly rose grouseberry black gooseberry	soopolallie prickly rose grouseberry black gooseberry	soopolallie prickly rose grouseberry black gooseberry	soopolallie prickly rose grouseberry black gooseberry	soopolallie prickly rose grouseberry black gooseberry

Comments: Closed canopies provide security and thermal cover yet this site has a poorly developed understory. Therefore feeding activity in this ecosystem is limited.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	SH / 09 Hybrid White Spruce - Horsetail - Leafy Moss SHa / 09 Hybrid White Spruce - Horsetail - Leafy Moss; active floodplain SHp / 09 Hybrid White Spruce - Horsetail - Leafy Moss; peaty material
Typically this ecosystem is found on lower slopes to level sites that are receiving moisture, and have deep medium textured soils. The water table is generally within 50cm of the soil surface. This site is commonly found along active floodplains (SHa) or on organic parent material (SHp).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1450-1600	1525
Slope (%)	0	0
Aspect (degrees)	none	
Moisture Regime	Nutrient Regime	
hygric to subhydric	poor to very rich	
Drainage		
Surficial Material	fluvial blanket or plain, morainal blanket, organic veneer blankets	
Soil Development	gleysols	
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	

Plot 9800445 SH7

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 SH / 09 Hybrid White Spruce - Horsetail - Leafy Moss

Map Symbol	SH2, SHa2, SHp2	SH3, SHa3, SHp3	SH4, SHa4, SHp4	SH5, SHa5, SHp5	SH6, SHa6, SHp6	SH7, SHa7, SHp7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluejoint sedges common horsetail	black twinberry mountain alder common horsetail grey-leaved willow	hybrid white spruce black twinberry common horsetail grey-leaved willow glow moss <i>Mnium spp.</i>	Open canopy of: hybrid white spruce common horsetail glow moss <i>Mnium spp.</i>	Open canopy of: hybrid white spruce subalpine fir common horsetail glow moss <i>Mnium spp.</i>	Open canopy of: hybrid white spruce subalpine fir common horsetail glow moss <i>Mnium spp.</i>
Associates	twinflor bunchberry western meadowrue glow moss	lodgepole pine hybrid white spruce <i>Salix spp.</i> bunchberry twinflor western meadowrue sedges glow moss	lodgepole pine mountain alder <i>Salix spp.</i> bunchberry twinflor western meadowrue	black twinberry mountain alder grey-leaved willow <i>Salix spp.</i> bunchberry twinflor western meadowrue	subalpine fir black twinberry mountain alder grey-leaved willow <i>Salix spp.</i> bunchberry twinflor western meadowrue	subalpine fir black twinberry mountain alder grey-leaved willow <i>Salix spp.</i> bunchberry twinflor grouseberry western meadowrue
Plots						9800445

Comments: This ecosystem forms a relatively open canopy (<30% crown closure) with an understory dominated by common horsetail and leafy mosses. When found on active floodplains the vegetation composition may vary with degree and periodicity of floods. When found on organic substrate (SHp) this unit is often stunted at structural stage 3 with trees under 10m tall.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

SH / 09

Hybrid White Spruce - Horsetail - Leafy Moss

Map Symbol	SH2, SHa2, SHp2	SH3, SHa3, SHp3	SH4, SHa4, SHp4	SH5, SHa5, SHp5	SH6, SHa6, SHp6	SH7, SHa7, SHp7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluejoint sedges common horsetail	grey-leaved willow black twinberry common horsetail	grey-leaved willow black twinberry common horsetail	common horsetail	common horsetail	common horsetail
Associates		<i>Salix spp.</i> sedges	<i>Salix spp.</i>	black twinberry <i>Salix spp.</i>	black twinberry <i>Salix spp.</i>	black twinberry <i>Salix spp.</i>
Bear Forage Species	bluejoint blue wildrye grouseberry common horsetail	black twinberry grouseberry common horsetail	black twinberry grouseberry common horsetail	black twinberry grouseberry common horsetail	black twinberry grouseberry common horsetail	black twinberry grouseberry common horsetail

Comments: These units provide suitable cover as well as spring forage. This unit may serve as an important travel corridor for moose.

7.2 MSxk - Grassland Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	<p>JK / 00 Juniper - Kinnikinnick</p> <p>JKhs / 00 Juniper - Kinnikinnick; hummocky terrain, shallow soil JKks / 00 Juniper - Kinnikinnick; cool aspect, shallow soil JKrs / 00 Juniper - Kinnikinnick; ridged, shallow soil JKs / 00 Juniper - Kinnikinnick; shallow soil JKv / 00 Juniper - Kinnikinnick; very shallow soil</p>
<p>This is a non-forested ecosystem that is typically found on mid, upper and crest slopes of steep warm aspects with deep medium textured soils (JK). This unit can be found on both shallow and very shallow soils (JKs, JKv) as well as on hummocky terrain (JKhs) and on cool aspects (JKks). It is also possible to find this unit on shallow soil ridges (JKrs).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1450-1700	1580
Slope (%)	35-70	50
Aspect (degrees)	135-285	
Moisture Regime	Nutrient Regime	
xeric to subxeric	very poor to rich	
Drainage	well to rapid	
Surficial Material		
colluvial veneers and blankets, some morainal veneers and blankets		
Soil Development		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	

Plot C303 JK2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series **Name**
 JK / 00 Juniper - Kinnikinnick

Map Symbol	JK2, JKhs2, JKks2, JKrs2, JKs2, JKv2	JK3a, JKhs3a, JKks3a, JKrs3a, JKs3a, JKv3a
Plant species	Herb Climax	Low Shrub Climax
Dominants	kinnikinnick	common juniper kinnikinnick
Associates	showy Jacob's-ladder spotted saxifrage pussytoes lance-leaved stone crop yarrow junegrass northern goldenrod pinegrass	scattered lodgepole pine trembling aspen showy Jacob's-ladder spotted saxifrage pussytoes lance-leaved stone crop yarrow junegrass northern goldenrod pinegrass
Plots	C303, C491	

Comments: This is a non-forested ecosystem that may have scattered lodgepole pine or trembling aspen that are less than 10m tall. The herb structural stage has an almost continuous cover of kinnikinnick while the low shrub has a continuous cover of common juniper with some kinnikinnick. Minor amounts of low growing herbs are present in both structural stages. Exposed mineral soil or rock accounting for up to 30% ground cover may occur. Occasionally the herb stage of this ecosystem is dominated by graminoids.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series **Name**
 JK / 00 Juniper - Kinnikinnick

Map Symbol	JK2, JKhs2, JKks2, JKrs2, JKs2, JKv2	JK3a, JKhs3a, JKks3a, JKrs3a, JKs3a, JKv3a
Plant Species	Herb Climax	Low Shrub Climax
Ungulate Forage Species - Dominant	kinnikinnick	kinnikinnick
Ungulate Forage Species - Associates	pinegrass junegrass	pinegrass junegrass
Bear Forage Species	kinnikinnick pinegrass junegrass	kinnikinnick pinegrass junegrass

Comments: This unit provides only limited forage opportunity for ungulates as grass cover is commonly very low. Bear may make use of kinnikinnick berries.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	<p>WJ / 03 Bluebunch Wheatgrass - Junegrass</p> <p>WJk / 03 Bluebunch Wheatgrass - Junegrass; cool aspect WJks / 03 Bluebunch Wheatgrass - Junegrass; cool aspect shallow soil WJs / 03 Bluebunch Wheatgrass - Junegrass; shallow soil WJsw / 03 Bluebunch Wheatgrass - Junegrass; shallow soil, warm aspect WJv / 03 Bluebunch Wheatgrass - Junegrass; very shallow soil WJvw / 03 Bluebunch Wheatgrass - Junegrass; very shallow soil, warm aspect WJw / 03 Bluebunch Wheatgrass - Junegrass; warm aspect</p>
<p>This ecosystem typically is found on upper and crest slope positions with gentle to moderate warm aspects. The soils are deep and medium textured. This unit is commonly found on significant warm (WJw) and cool aspect slopes (WJk). It is also common to find this unit on shallow (WJs, WJks, WJsw) and very shallow soils (WJv, WJvw).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1450-1700	1580
Slope (%)	0-27	14
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
xeric to subxeric	medium to rich	
Drainage	well to rapid	
Surficial Material		
morainal blanket veneer, colluvial blanket veneer		
Soil Development		
brunisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WJ / 03

Bluebunch Wheatgrass - Junegrass

Map Symbol	WJ2, WJk2, WJks2, WJs2, WJsw2, WJv2, WJvw2, WJw2	WJ3a, WJk3a, WJks3a, WJs3a, WJsw3a, WJv3a, WJvw3a, WJw3a
Plant species	Herb Climax	Low Shrub Climax
Dominants	bluebunch wheatgrass junegrass	common juniper bluebunch wheatgrass junegrass
Associate	<i>Poa spp.</i> yarrow <i>Festuca spp.</i> old man's whiskers nodding onion pussytoes common juniper	creeping juniper <i>Poa spp.</i> yarrow <i>Festuca spp.</i> old man's whiskers nodding onion pussytoes
Plots	C340, 91-MK-080	C260

Comments: This ecosystem can occur as a grassland or low shrub dominated ecosystem. As a grassland it is dominated by bluebunch wheatgrass and junegrass where as in the low shrub stage continuous mats of common juniper dominate.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WJ / 03

Bluebunch Wheatgrass - Junegrass

Map Symbol	WJ2, WJk2, WJks2, WJs2, WJsw2, WJv2, WJvw2, WJw2	WJ3a, WJk3a, WJks3a, WJs3a, WJsw3a, WJv3a, WJvw3a, WJw3a
Plant Species	Herb Climax	Low Shrub Climax
Ungulate Forage Species - Dominants	bluebunch wheatgrass junegrass	bluebunch wheatgrass junegrass
Ungulate Forage Species - Associates	<i>Poa spp.</i> <i>Festuca spp.</i>	<i>Poa spp.</i> <i>Festuca spp.</i>
Bear Forage Species	bluebunch wheatgrass junegrass <i>Poa spp.</i> <i>Festuca spp.</i> nodding onion	bluebunch wheatgrass junegrass <i>Poa spp.</i> <i>Festuca spp.</i> nodding onion

Comments: The abundance of preferred graminoids make this site a valuable site for ungulate feeding. Bear may also take advantage of these grasses in early spring.

7.3 MSxk - Wetland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	SM / 00 Sedge - Glow Moss Fen SMa / 00 Sedge - Glow Moss Fen; active floodplain
<p>This unit is used to represent a generalized graminoid fen ecosystem unit. Soils are typically 'peaty' (organic). Generally these ecosystems are usually inundated early in the growing season and standing water disappears by mid August. Water source is primarily from ground water and run off from adjacent mineral uplands. Organic accumulations are typically derived from mosses and sedges and are greater than 40cm thick (SM). This unit can also occur on actively flooded sites (SMa).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1450-1550	1500
Slope (%)	0	0
Aspect (degrees)	none	
Moisture Regime	Nutrient Regime	
hygric to subhygric	poor to rich	
Drainage	very poor to poor	
Surficial Material		
organic blanket or plain, or veneer over morainal blanket or fluvial blanket or plain		
Soil Development		
humisol, mesisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
organic		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 SM / 00 Sedge - Glow Moss Fen

Map Symbol	SM2, SMa2
Plant species	Herb Climax
Dominants	beaked sedge water sedge glow moss
Associates	scrub birch willows marsh cinquefoil bluejoint sedges old man's whiskers golden fuzzy fen moss <i>Sphagnum spp.</i>
Plots	C341

Comments: This vegetative community often has a low species diversity with herb layer cover being (approximately 60% cover), dominated by *Carex* species.

Map Symbol	SM2, SMa2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	sedges
Ungulate Forage Species - Associates	willows scrub birch bluejoint
Bear Forage Species	willows sedges

Comments: Sedges are only palatable to ungulates and bears early in the growing season when succulent new growth appears. Shrub layer may provide forage year round.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxk	WB / 00 Willow - Scrub Birch - Sedge - Fen WBa / 00 Willow - Scrub Birch - Sedge - Fen; active floodplain WBks / 00 Willow - Scrub Birch - Sedge - Fen; cool aspect, shallow soils WBm / 00 Willow - Scrub Birch - Sedge - Fen; medium-textured soils
This unit is used to represent a generalized shrub dominated fen ecosystem. Soils are typically 'peaty' (organic). This ecosystem may be inundated early in the growing season but standing water disappears by August. Soils are saturated within the rooting zone. This shrub dominated association may occur along active floodplains (WBa) on cool aspects with shallow soil (WBks) and occasionally on medium-textured soils (WBm).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1450-1550	1500
Slope (%)	0	0
Aspect (degrees)	none	
Moisture Regime	Nutrient Regime	
hygic to subhydic	poor to rich	
Drainage	poor to very poor	
Surficial Material		
organic blanket or plain or veneer over morainal blanket or organic veneer over fluvial blanket or plain		
Soil Development		
humisol, mesisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
organic		

Plot C304 WB3a

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WB/00

Willow - Scrub Birch - Sedge - Fen

Map Symbol	WB3a, WBa3a, WBks3a, WBm3a	WB3b, WBa3b, WBks3b, WBm3b
Plant species	Low Shrub Climax	Tall Shrub Climax
Dominants	grey-leaved willow tea-leaved willow MacCall's willow <i>Salix spp.</i> scrub birch beaked sedge water sedge <i>Sphagnum spp.</i> glow moss	grey-leaved willow tea-leaved willow MacCall's willow <i>Salix spp.</i> scrub birch beaked sedge water sedge <i>Sphagnum spp.</i> glow moss
Associates	hoary willow <i>Carex spp.</i> bluejoint golden fuzzy fen moss	hoary willow <i>Carex spp.</i> bluejoint golden fuzzy fen moss
Plots	C304, C640, C887	

Comments: The vegetation in this ecosystem is characterized by a high cover of shrubs (60% cover) with beaked sedge and water sedge growing in wet depressions. Most other herbaceous growth is found to occur on the hummocks associated with shrubs. The moss layer is diverse and extensive with abundance of *Sphagnum* occurring on poorer fens.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WB / 00

Willow - Scrub Birch - Sedge - Fen

Map Symbol	WB3a, WBa3a, WBks3a, WBm3a	WB3b, WBa3b, WBks3b, WBm3b
Plant Species	Low Shrub Climax	Tall Shrub Climax
Ungulate Forage Species - Dominants	grey-leaved willow tea-leaved willow MacCall's willow <i>Salix spp.</i>	grey-leaved willow tea-leaved willow MacCall's willow <i>Salix spp.</i>
Ungulate Forage Species - Associates	hoary willow <i>Carex spp.</i> bluejoint	hoary willow <i>Carex spp.</i> bluejoint
Bear Forage Species	<i>Carex spp.</i> <i>Salix spp.</i> bluejoint	<i>Carex spp.</i> <i>Salix spp.</i> bluejoint

Comments: The abundance and diversity of willow species provide excellent forage for ungulates, especially for moose. Sedge species can be fed upon in early spring when it is succulent and tender.

8.0 MSxv - Montane Spruce Very Dry Very Cold Subzone

8.1 MSxv - Forested Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	<p>GK / 04 Lodgepole Pine – Grouseberry – Kinnikinnick</p> <p>GKgs / 04 Lodgepole Pine – Grouseberry – Kinnikinnick; gullied, shallow soil GKk / 04 Lodgepole Pine – Grouseberry – Kinnikinnick; cool aspect GKs / 04 Lodgepole Pine – Grouseberry – Kinnikinnick; shallow soil GKsw / 04 Lodgepole Pine – Grouseberry – Kinnikinnick; shallow soil, warm aspect GKw / 04 Lodgepole Pine – Grouseberry – Kinnikinnick; warm aspect</p>
<p>This ecosystem occurs on a wide range of sites drier than mesic from lower slopes thru crest slope positions. This unit typically occurs on gentle slopes with deep medium-textured soils. In the Churn Creek study area this unit is only found to occur in the Chilcotin Plateau (CHP) ecosection. In the CCR ecosection similar sites are mapped as the PK unit. Steep north facing slopes (>30%) (GKk) and moderate south facing slopes (GKw) are quite common. This unit can also be found on shallow soils (GKs, GKsw) as well as gullied terrain (GKgs).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1700	1550
Slope (%)	5-50	25
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
submesic (mesic)	poor to rich	
Drainage	well	
Surficial Material		
morainal blankets or veneers, glaciofluvial colluvial blankets or veneers		
Soil Development		
	Range	Mean
Humus Depth (cm)	2-5	3
Coarse Fragments (%)		
Soil Texture	Humus Form	
sandy, loamy	hemimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

GK / 04

Lodgepole Pine – Grouseberry – Kinnikinnick

Map Symbol	GKgs2, GKk2, GKs2, GKsw2, GKw2	GKgs3, GKk3, GKs3, GKsw3, GKw3	GKgs4, GKk4, GKs4, GKsw4, GKw4	GKgs5, GKk5, GKs5, GKsw5, GKw5	GKgs6, GKk6, GKs6, GKsw6, GKw6	GKgs7, GKk7, GKs7, GKsw7, GKw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	fireweed kinnikinnick yarrow	lodgepole pine soopolallie prickly rose common juniper	Moderately closed canopy of: lodgepole pine soopolallie <i>Cladonia spp.</i> <i>Dicranum spp.</i>	Moderately closed canopy of: lodgepole pine common juniper kinnikinnick <i>Cladonia spp.</i> <i>Dicranum spp.</i>	Moderately closed canopy of: lodgepole pine common juniper kinnikinnick <i>Cladonia spp.</i> <i>Dicranum spp.</i>	Moderately closed canopy of: lodgepole pine common juniper kinnikinnick <i>Cladonia spp.</i> <i>Dicranum spp.</i>
Associates	grouseberry heart-leaved arnica bunchberry twinline pinegrass common juniper soopolallie	kinnikinnick heart-leaved arnica grouseberry bunchberry twinline pinegrass yarrow	common juniper prickly rose grouseberry crowberry kinnikinnick twinline heart-leaved arnica pinegrass bunchberry <i>Cladina spp.</i> <i>Peltigera spp.</i> red-stemmed feathermoss	soopolallie prickly rose twinline heart-leaved arnica grouseberry crowberry bunchberry <i>Cladina spp.</i> <i>Peltigera spp.</i> red-stemmed feathermoss	hybrid white spruce soopolallie prickly rose twinline heart-leaved arnica grouseberry crowberry bunchberry <i>Cladina spp.</i> <i>Peltigera spp.</i> red-stemmed feathermoss	hybrid white spruce subalpine fir soopolallie prickly rose twinline heart-leaved arnica grouseberry crowberry bunchberry <i>Cladina spp.</i> <i>Peltigera spp.</i> red-stemmed feathermoss
Plots						

Comments: The canopy is dominated by a moderate cover (<40%) of lodgepole pine. The undergrowth consists of scattered low growing shrubs and dwarf shrubs such as common juniper, crowberry, grouseberry and kinnikinnick. Generally lichen cover is greater than moss cover. Logging activity and fire leave the landscape at structural stages 2 and 3. Although this ecosystem was not sampled in the study area, it is likely that crowberry cover is highly variable and grouseberry cover is lower than in other areas of the MSxv based on our LG / 01 plot data.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

GK / 04

Lodgepole Pine – Grouseberry – Kinnikinnick

Map Symbol	GKgs2, GKk2, GKs2, GKsw2, GKw2	GKgs3, GKk3, GKs3, GKsw3, GKw3	GKgs4, GKk4, GKs4, GKsw4, GKw4	GKgs5, GKk5, GKs5, GKsw5, GKw5	GKgs6, GKk6, GKs6, GKsw6, GKw6	GKgs7, GKk7, GKs7, GKsw7, GKw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	fireweed	soopolallie prickly rose	soopolallie prickly rose			
Associates	soopolallie			soopolallie prickly rose	soopolallie prickly rose	soopolallie prickly rose
Bear Forage Species	grouseberry kinnikinnick fireweed	soopolallie prickly rose grouseberry kinnikinnick	crowberry soopolallie prickly rose grouseberry kinnikinnick	crowberry soopolallie prickly rose grouseberry kinnikinnick	crowberry soopolallie prickly rose grouseberry kinnikinnick	crowberry soopolallie prickly rose grouseberry kinnikinnick

Comments: Older lodgepole pine stands may provide moderate cover opportunities for ungulates – while only providing limited feeding habitat. Bear may scavenge for berries on low growing shrubby vegetation. Younger structural stages (2 and 3) may have more palatable greenery for both bear and ungulates.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	<p>LG / 01 Lodgepole Pine – Grouseberry – Feathermoss</p> <p>LGc / 01 Lodgepole Pine – Grouseberry – Feathermoss; coarse-textured soil LGcw / 01 Lodgepole Pine – Grouseberry – Feathermoss; coarse-texture soil, warm aspect LGgk / 01 Lodgepole Pine – Grouseberry – Feathermoss; gullied, cool aspect LGh / 01 Lodgepole Pine – Grouseberry – Feathermoss; hummocky LGhs / 01 Lodgepole Pine – Grouseberry – Feathermoss; hummocky, shallow soil LGht / 01 Lodgepole Pine – Grouseberry – Feathermoss; hummocky, terraced LGk / 01 Lodgepole Pine – Grouseberry – Feathermoss; cool aspect LGks / 01 Lodgepole Pine – Grouseberry – Feathermoss; cool aspect, shallow soil LGn / 01 Lodgepole Pine – Grouseberry – Feathermoss; fan LGs / 01 Lodgepole Pine – Grouseberry – Feathermoss; shallow soil LGsw / 01 Lodgepole Pine – Grouseberry – Feathermoss; shallow soil, warm aspect LGt / 01 Lodgepole Pine – Grouseberry – Feathermoss; terraced LGw / 01 Lodgepole Pine – Grouseberry – Feathermoss; warm aspect</p>
<p>This ecosystem is the predominant site unit of the MSxv landscape. This unit is typically found to occur on deep medium-textured soils on gentle upper to lower slopes on all aspects (LG). This unit can also be found on coarse-textured soils (LGc, LGcw) as well as moderate warm (LGw) and cool aspect slopes (LGk, LGgk). It can also occur on sites with shallow soils (that are generally > 50 cm deep) (LGhs, LGs, LGks, LGsw) as well as on fans (LGN) terraced (LGt), hummocked (LGh, LGhs, LGht) landscape.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1700	1550
Slope (%)	0-30	15
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic (submesic)	poor to rich	
Drainage	moderate	
Surficial Material	morainal blanket	
Soil Development	luvisols	
	Range	Mean
Humus Depth (cm)	3-5	4
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy (clay loam)	hemimor, humimor	

Plot C408 LG6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LG / 01

Lodgepole Pine - Grouseberry - Feathermoss

Map Symbol	LGc2, LGcw2, LGgk2, LGh2, LGhs2, LGht2, LGk2, LGks2, LGn2, LGs2, LGsw2, LGt2, LGw2	LGc3, LGcw3, LGgk3, LGh3, LGhs3, LGht3, LGk3, LGks3, LGn3, LGs3, LGsw3, LGt3, LGw3	LGc4, LGcw4, LGgk4, LGh4, LGhs4, LGht4, LGk4, LGks4, LGn4, LGs4, LGsw4, LGt4, LGw4	LGc5, LGcw5, LGgk5, LGh5, LGhs5, LGht5, LGk5, LGks5, LGn5, LGs5, LGsw5, LGt5, LGw5	LGc6, LGcw6, LGgk6, LGh6, LGhs6, LGht6, LGk6, LGks6, LGn6, LGs6, LGsw6, LGt6, LGw6	LGc7, LGcw7, LGgk7, LGh7, LGhs7, LGht7, LGk7, LGks7, LGn7, LGs7, LGsw7, LGt7, LGw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	fireweed pinegrass	lodgepole pine soopolallie prickly rose common juniper	Closed canopy: lodgepole pine red-stemmed feathermoss	Closed canopy: lodgepole pine red-stemmed feathermoss	Closed canopy: lodgepole pine red-stemmed feathermoss	Closed canopy: lodgepole pine red-stemmed feathermoss
Associates	twinflower kinnikinnick grouseberry Richardson's sedge heart-leaved arnica common juniper soopolallie	twinflower kinnikinnick grouseberry Richardson's sedge pinegrass fireweed heart-leaved arnica	soopolallie common juniper prickly rose crowberry pinegrass kinnikinnick twinflower grouseberry Richardson's sedge <i>Dicranum spp.</i> Knight's plume <i>Peltigera spp.</i>	hybrid white spruce soopolallie common juniper prickly rose crowberry pinegrass kinnikinnick twinflower grouseberry Richardson's sedge <i>Dicranum spp.</i> Knight's plume <i>Peltigera spp.</i>	hybrid white spruce soopolallie common juniper prickly rose crowberry pinegrass kinnikinnick twinflower grouseberry Richardson's sedge <i>Dicranum spp.</i> Knight's plume <i>Peltigera spp.</i>	hybrid white spruce subalpine fir soopolallie common juniper prickly rose crowberry pinegrass kinnikinnick twinflower grouseberry Richardson's sedge <i>Dicranum spp.</i> Knight's plume <i>Peltigera spp.</i>
Plots	C847		C631, C832, C837, C844	C841, 98143, 98336, 98MD014, 98MD015, 98047	C408, 98046	C898

Comments: The climax forest canopy is typically dominated by hybrid white spruce with some sub alpine fir but due to frequent wildfires and the slow rates of succession natural forest stands are most often dominated by lodgepole pine less than 200 years old. Lodgepole pine and hybrid white spruce regeneration are present. The undergrowth is dominated by low growing forbs, dwarf shrubs, mosses and lichens. Grouseberry and crowberry are common species but the abundance of crowberry is highly variable in the Schraeder Lake area and in turn the entire study area. Grouseberry is typically not as abundant as in the other areas of the MSxv. Red-stemmed feathermoss forms an almost continuous cover in combination with some Knights plume moss and *Dicranum* moss. Clearcut logging and forest fires produce structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LG / 01

Lodgepole Pine - Grouseberry - Feathermoss

Map Symbol	LGc2, LGcw2, LGgk2, LGh2, LGhs2, LGht2, LGk2, LGks2, LGn2, LGS2, LGsw2, LGt2, LGw2	LGc3, LGcw3, LGgk3, LGh3, LGhs3, LGht3, LGk3, LGks3, LGn3, LGS3, LGsw3, LGt3, LGw3	LGc4, LGcw4, LGgk4, LGh4, LGhs4, LGht4, LGk4, LGks4, LGn4, LGS4, LGsw4, LGt4, LGw4	LGc5, LGcw5, LGgk5, LGh5, LGhs5, LGht5, LGk5, LGks5, LGn5, LGS5, LGsw5, LGt5, LGw5	LGc6, LGcw6, LGgk6, LGh6, LGhs6, LGht6, LGk6, LGks6, LGn6, LGS6, LGsw6, LGt6, LGw6	LGc7, LGcw7, LGgk7, LGh7, LGhs7, LGht7, LGk7, LGks7, LGn7, LGS7, LGsw7, LGt7, LGw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	fireweed pinegrass	soopolallie prickly rose fireweed				
Associates	Richardson's sedge soopolallie	Richardson's sedge pinegrass fireweed	soopolallie prickly rose pinegrass Richardson's sedge	soopolallie prickly rose pinegrass Richardson's sedge	soopolallie prickly rose pinegrass Richardson's sedge	soopolallie prickly rose pinegrass Richardson's sedge
Bear Forage Species	fireweed pinegrass kinnikinnick grouseberry Richardson's sedge soopolallie	soopolallie prickly rose fireweed pinegrass kinnikinnick grouseberry Richardson's sedge	soopolallie prickly rose pinegrass kinnikinnick grouseberry Richardson's sedge	soopolallie prickly rose pinegrass kinnikinnick grouseberry Richardson's sedge	soopolallie prickly rose pinegrass kinnikinnick grouseberry Richardson's sedge	soopolallie prickly rose pinegrass kinnikinnick grouseberry Richardson's sedge

Comments: Ungulate feeding activity is limited to the sparse understory shrubs and grasses. Bear will make use of dwarf shrub's berries as well as the fruit of the shrub layers and some understory herbs. This unit provides moderate security/thermal cover.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	<p>LK / 03 Lodgepole Pine – Kinnikinnick – <i>Cladonia</i> LKk / 03 Lodgepole Pine –Kinnikinnick – <i>Cladonia</i>; cool aspect LKv / 03 Lodgepole Pine – Kinnikinnick – <i>Cladonia</i>; very shallow soil LKvw / 03 Lodgepole Pine – Kinnikinnick – <i>Cladonia</i>; very shallow soil, warm aspect LKw / 03 Lodgepole Pine – Kinnikinnick – <i>Cladonia</i>; warm aspect</p>
<p>This ecounit is typically found on ridge crests and hilltops where soils are generally shallow (<50cm over bedrock). It can also be found on gentle mid to upper slope positions with shallow soils (LK). This unit can also occur on slopes (>30%) on warm (LKw) and cool aspects (LKk). This unit s also found on very shallow soil sites (LKvw, LKv).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1550-1700	1625
Slope (%)	10-30	20
Aspect (degrees)	all but mainly	135-285
Moisture Regime	Nutrient Regime	
xeric to subxeric	poor to rich	
Drainage	well to rapid	
Surficial Material		
colluvial veneer or blanket, morainal veneer or blanket		
Soil Development		
brunisol		
	Range	Mean
Humus Depth (cm)	2-5	3
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
gravelly sandy (loamy)	xeromor, velomor	

Plot C904 LK3

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LK / 03

Lodgepole Pine – Kinnikinnick – *Cladonia*

Map Symbol	LK2, LKk2, LKv2, LKvw2, LKw2	LK3, LKk3, LKv3, LKvw3, LKw3	LK4, LKk4, LKv4, LKvw4, LKw4	LK5, LKk5, LKv5, LKvw5, LKw5	LK6, LKk6, LKv6, LKvw6, LKw6	LK7, LKk7, LKv7, LKvw7, LKw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick pinegrass	lodgepole pine common juniper soopolallie kinnikinnick	Open canopy of: lodgepole pine common juniper soopolallie kinnikinnick frog pelt	Open canopy of: lodgepole pine common juniper kinnikinnick frog pelt	Open canopy of: lodgepole pine common juniper kinnikinnick frog pelt	Open canopy of: lodgepole pine common juniper kinnikinnick frog pelt
Associates	twinflower dwarf blueberry common juniper <i>Cladonia spp.</i> <i>Cladina spp.</i>	pinegrass twinflower dwarf blueberry wild strawberry <i>Cladonia spp.</i> <i>Cladina spp.</i>	soopolallie pinegrass twinflower dwarf blueberry wild strawberry dog pelt <i>Cladonia spp.</i> <i>Cladina spp.</i> <i>Dicranum spp.</i> red- stemmed feathermoss	soopolallie pinegrass twinflower dwarf blueberry wild strawberry dog pelt <i>Cladonia spp.</i> <i>Cladina spp.</i> <i>Dicranum spp.</i> red- stemmed feathermoss	soopolallie pinegrass twinflower dwarf blueberry wild strawberry dog pelt <i>Cladonia spp.</i> <i>Cladina spp.</i> <i>Dicranum spp.</i> red- stemmed feathermoss	hybrid white spruce soopolallie pinegrass twinflower dwarf blueberry wild strawberry dog pelt <i>Cladonia spp.</i> <i>Cladina spp.</i> <i>Dicranum spp.</i> red- stemmed feathermoss
Plots		98242, C904		91MK067, 98243, 98MD001	98141	

Comments: The forest canopy of this unit is moderately open (<20% crown closure) and comprised of almost entirely lodgepole pine. The understory vegetation is sparse and characterized by scattered juniper and soopolallie and dwarf shrub such as kinnikinnick and twinflower. Ground lichens and *Dicranum* mosses are common.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LK / 03

Lodgepole Pine – Kinnikinnick – *Cladonia*

Map Symbol	LK2, LKk2, LKv2, LKvw2, LKw2	LK3, LKk3, LKv3, LKvw3, LKw3	LK4, LKk4, LKv4, LKvw4, LKw4	LK5, LKk5, LKv5, LKvw5, LKw5	LK6, LKk6, LKv6, LKvw6, LKw6	LK7, LKk7, LKv7, LKvw7, LKw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	soopolallie				
Associates		pinegrass	pinegrass soopolallie	pinegrass soopolallie	pinegrass soopolallie	pinegrass soopolallie
Bear Forage Species	kinnikinnick dwarf blueberry pinegrass	soopolallie kinnikinnick dwarf blueberry pinegrass	soopolallie kinnikinnick dwarf blueberry pinegrass	soopolallie kinnikinnick dwarf blueberry pinegrass	soopolallie kinnikinnick dwarf blueberry pinegrass	soopolallie kinnikinnick dwarf blueberry pinegrass

Comments: Dry open nature of this ecounit provides only a sparse cover of understory herbs and shrubs and therefore only limited feeding habitat to ungulates and bears. The open nature of the canopy provides only moderate security/thermal cover value.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	<p>PK / 00 Lodgepole Pine – Pinegrass – Kinnikinnick</p> <p>PKh / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; hummocky</p> <p>PKhs / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; hummocky, shallow soil</p> <p>PKht / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; hummocky, terraced</p> <p>PKk / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; cool aspect</p> <p>PKks / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; cool aspect, shallow soil</p> <p>PKkv / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; cool aspect, very shallow soil</p> <p>PKs / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; shallow soil</p> <p>PKsw / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; shallow soil, warm aspect</p> <p>PKt / 00 Lodgepole Pine – Pinegrass – Kinnikinnick, terraced</p> <p>PKv / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; very shallow soil</p> <p>PKvw / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; very shallow soil, warm aspect</p> <p>PKw / 00 Lodgepole Pine – Pinegrass – Kinnikinnick, warm aspect</p>
<p>This ecosystem is found to occur on a wide variety of sites that are drier than mesic – from lower slopes to crest slope positions. The soils are typically deep and medium-textured and slopes are gentle. This site is also commonly found on moderate to steep cool aspects (PKk) and warm aspects (PKw). This site can also occur on shallow soil (PKs, PKhs, PKks, PKsw) and very shallow soils (PKv, PKkv, PKvw) as well as on hummocky terrain (Pkh, PKht) and terraced terrain (PKt). This unit is only mapped in the southern portion of the study area in the CCR ecoregion, where it is used to replace the GK / 04 ecosystem unit.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1700	1550
Slope (%)	5-30	20
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
submesic (mesic)	poor to rich	
Drainage	well	
Surficial Material	morainal blankets or veneers, colluvial blankets or veneers glaciofluvial	
Soil Development	dystric brunisol	
	Range	Mean
Humus Depth (cm)	2-5	3
Coarse Fragments (%)		
Soil Texture	Humus Form	
sandy, loamy	hemimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

PK / 00

Lodgepole Pine – Pinegrass – Kinnikinnick

Map Symbol	PK2, PKh2, PKhs2, PKht2, PKk2, PKks2, PKkv2, PKs2, PKsw2, PKt2, PKv2, PKvw2, PKw2	PK3, PKh3, PKhs3, PKht3, PKk3, PKks3, PKkv3, PKs3, PKsw3, PKt3, PKv3, PKvw3, PKw3	PK4, PKh4, PKhs4, PKht4, PKk4, PKks4, PKkv4, PKs4, PKsw4, PKt4, PKv4, PKvw4, PKw4	PK5, PKh5, PKhs5, PKht5, PKk5, PKks5, PKkv5, PKs5, PKsw5, PKt5, PKv5, PKvw5, PKw5	PK6, PKh6, PKhs6, PKht6, PKk6, PKks6, PKkv6, PKs6, PKsw6, PKt6, PKv6, PKvw6, PKw6	PK7, PKh7, PKhs7, PKht7, PKk7, PKks7, PKkv7, PKs7, PKsw7, PKt7, PKv7, PKvw7, PKw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass kinnikinnick	lodgepole pine soopolallie prickly rose pinegrass kinnikinnick common juniper	Moderately open canopy of: lodgepole pine soopolallie common juniper kinnikinnick pinegrass red-stemmed feathermoss	Moderately open canopy of: lodgepole pine soopolallie common juniper kinnikinnick pinegrass red-stemmed feathermoss	Moderately open canopy of: lodgepole pine soopolallie common juniper kinnikinnick pinegrass red-stemmed feathermoss	Moderately open canopy of: lodgepole pine soopolallie common juniper kinnikinnick pinegrass red-stemmed feathermoss
Associates	fireweed kinnikinnick twinflower dwarf blueberry wild strawberry showy aster soopolallie common juniper	twinflower dwarf blueberry wild strawberry showy aster fireweed red-stemmed feathermoss	prickly rose twinflower dwarf blueberry wild strawberry showy aster frog pelt <i>Peltigera spp.</i> <i>Dicranum spp.</i> <i>Cladonia spp.</i>	prickly rose twinflower dwarf blueberry wild strawberry showy aster frog pelt <i>Peltigera spp.</i> <i>Dicranum spp.</i> <i>Cladonia spp.</i>	prickly rose twinflower dwarf blueberry wild strawberry showy aster frog pelt <i>Peltigera spp.</i> <i>Dicranum spp.</i> <i>Cladonia spp.</i>	hybrid white spruce prickly rose twinflower dwarf blueberry wild strawberry showy aster frog pelt <i>Peltigera spp.</i> <i>Dicranum spp.</i> <i>Cladonia spp.</i>
Plots				91MK066, 98140	98226, 98241, C331	

Comments: The forest canopy of this unit is dominated by a moderately open canopy (<25% crown closure) of lodgepole pine. The shrub layer is well developed and dominated by soopolallie and common juniper. The herb layer is also well developed with significant cover of kinnikinnick and pinegrass. In comparison with the GK / 04 unit pinegrass is typically more consistently present in the PK / 00 while grouseberry is only infrequently found. Abundant cover of red-stemmed feathermoss dominates the moss layer.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

PK / 00

Lodgepole Pine – Pinegrass – Kinnikinnick

Map Symbol	PK2, PKh2, PKhs2, PKht2, PKk2, PKks2, PKkv2, PKs2, PKsw2, PKt2, PKv2, PKvw2, PKw2	PK3, PKh3, PKhs3, PKht3, PKk3, PKks3, PKkv3, PKs3, PKsw3, PKt3, PKv3, PKvw3, PKw3	PK4, PKh4, PKhs4, PKht4, PKk4, PKks4, PKkv4, PKs4, PKsw4, PKt4, PKv4, PKvw4, PKw4	PK5, PKh5, PKhs5, PKht5, PKk5, PKks5, PKkv5, PKs5, PKsw5, PKt5, PKv5, PKvw5, PKw5	PK6, PKh6, PKhs6, PKht6, PKk6, PKks6, PKkv6, PKs6, PKsw6, PKt6, PKv6, PKvw6, PKw6	PK7, PKh7, PKhs7, PKht7, PKk7, PKks7, PKkv7, PKs7, PKsw7, PKt7, PKv7, PKvw7, PKw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	soopolallie prickly rose pinegrass	soopolallie pinegrass	soopolallie pinegrass	soopolallie pinegrass	soopolallie pinegrass
Associates		fireweed	prickly rose	prickly rose	prickly rose	prickly rose
Bear Forage Species	fireweed kinnikinnick dwarf blueberry wild strawberry pinegrass fireweed soopolallie	soopolallie prickly rose kinnikinnick dwarf blueberry wild strawberry pinegrass fireweed	soopolallie prickly rose kinnikinnick dwarf blueberry wild strawberry pinegrass	soopolallie prickly rose kinnikinnick dwarf blueberry wild strawberry pinegrass	soopolallie prickly rose kinnikinnick dwarf blueberry wild strawberry pinegrass	soopolallie prickly rose kinnikinnick dwarf blueberry wild strawberry pinegrass

Comments: This ecounit provides moderate spring forage and security thermal cover to both ungulates and bears.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	<p>SC / 06 Hybrid White Spruce – Crowberry – Knight Plume</p> <p>SCa / 06 Hybrid White Spruce – Crowberry – Knight Plume; active floodplain SCg / 06 Hybrid White Spruce – Crowberry – Knight Plume; gullied SCk / 06 Hybrid White Spruce – Crowberry – Knight Plume; cool aspect SCt / 06 Hybrid White Spruce – Crowberry – Knight Plume; terraced</p>
<p>This ecosystem is typically found on lower and toe slopes with deep medium-textured soils, moistened by intermittent seepage. It is common to find this unit along drainage tracks (SC). This site is also associated with active floodplains (SCa) and on gullied terrain where moisture is likely to accumulate (SCg). Occasionally this ecosystem will occur on cool aspects (SCk) or on terraced parent material (SCt).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1600	1500
Slope (%)	0-20	10
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric (mesic)	medium to very rich	
Drainage	moderate to imperfect	
Surficial Material		
morainal		
Soil Development		
brunisol		
	Range	Mean
Humus Depth (cm)	3-6	4
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy	hemimor, mormoder	

Plot 9800903 SC5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SC / 06

Hybrid White Spruce – Crowberry – Knight Plume

Map Symbol	SC2, SCa2, SCg2, SCK2, SCT2	SC3, SCa3, SCg3, SCK3, SCT3	SC4, SCa4, SCg4, SCK4, SCT4	SC5, SCa5, SCg5, SCK5, SCT5	SC6, SCa6, SCg6, SCK6, SCT6	SC7, SCa7, SCg7, SCK7, SCT7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass fireweed	lodgepole pine pinegrass red-stemmed feathermoss	Closed canopy of: lodgepole pine crowberry red-stemmed feathermoss step moss	Closed canopy of: lodgepole pine crowberry red-stemmed feathermoss step moss	Closed canopy of: lodgepole pine crowberry red-stemmed feathermoss step moss	Closed canopy of: hybrid white spruce crowberry red-stemmed feathermoss step moss
Associates	bunchberry twinflower grouseberry heart-leaved arnica wild strawberry palmate coltsfoot	grey-leaved willow black twinberry soopolallie prickly rose common juniper fireweed twinflower showy aster heart-leaved arnica bunchberry grouseberry	hybrid white spruce common juniper black twinberry soopolallie prickly rose pinegrass twinflower grouseberry showy aster heart-leaved arnica bunchberry wild strawberry <i>Peltigera spp.</i>	hybrid white spruce subalpine fir common juniper black twinberry soopolallie prickly rose pinegrass twinflower grouseberry showy aster heart-leaved arnica bunchberry wild strawberry <i>Peltigera spp.</i>	hybrid white spruce subalpine fir common juniper black twinberry soopolallie prickly rose pinegrass twinflower grouseberry showy aster heart-leaved arnica bunchberry wild strawberry <i>Peltigera spp.</i>	lodgepole pine subalpine fir common juniper black twinberry soopolallie prickly rose pinegrass twinflower grouseberry showy aster heart-leaved arnica bunchberry wild strawberry <i>Peltigera spp.</i>
Plots		C406		9800903, C405	98333	

Comments: A mature forest, of this ecosystem, is dominated by a moderately closed canopy (25-35% crown closure) of hybrid white spruce and lodgepole pine with the occasional scattered subalpine fir. The undergrowth consists primarily of low shrubs, dwarf shrubs and low forbs and mosses. The principle undergrowth species include crowberry, grouseberry, twinflower, heart-leaved arnica, red-stemmed feathermoss and step moss. Logging and fire result in structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
SC / 06

Name
Hybrid White Spruce – Crowberry – Knight Plume

Map Symbol	SC2, SCa2, SCg2, SCK2, SCT2	SC3, SCa3, SCg3, SCK3, SCT3	SC4, SCa4, SCg4, SCK4, SCT4	SC5, SCa5, SCg5, SCK5, SCT5	SC6, SCa6, SCg6, SCK6, SCT6	SC7, SCa7, SCg7, SCK7, SCT7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass fireweed	pinegrass				
Associates		grey-leaved willow black twinberry soopolallie prickly rose fireweed	black twinberry soopolallie prickly rose pinegrass	black twinberry soopolallie prickly rose pinegrass	black twinberry soopolallie prickly rose pinegrass	black twinberry soopolallie prickly rose pinegrass
Bear Forage Species	bunchberry grouseberry wild strawberry pinegrass fireweed	black twinberry soopolallie prickly rose bunchberry grouseberry wild strawberry pinegrass fireweed	black twinberry soopolallie grouseberry wild strawberry prickly rose pinegrass	black twinberry soopolallie grouseberry wild strawberry prickly rose pinegrass	black twinberry soopolallie grouseberry wild strawberry prickly rose pinegrass	black twinberry soopolallie grouseberry wild strawberry prickly rose pinegrass

Comments: The forested stage of this ecocount provides only low feeding opportunities for ungulates and bears while providing moderate security/thermal cover. Structural stage 3 is moderate for feeding activity.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	SG / 07 Hybrid White Spruce – Crowberry – Glow Moss SGa / 07 Hybrid White Spruce – Crowberry – Glow Moss; active floodplain SGk / 07 Hybrid White Spruce – Crowberry – Glow Moss; cool aspect
This ecosystem is typically found on lower, toe and depression slope positions with deep medium-textured soils. These units are commonly found at the perimeter of wetlands. Ground water seepage is persistent but there is no water table within 50cm of the soil surface (SG). This unit can occur on active floodplains (SGa) and on moderate cool aspect slopes (SGk).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1600	1500
Slope (%)	0-20	10
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric (hygric)	poor (medium)	
Drainage	moderate to poor	
Surficial Material		
morainal blanket		
Soil Development		
dystric brunisol, gray luvisol		
	Range	Mean
Humus Depth (cm)	3-10	6
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
fine loamy	hemihumimor, hydromor	

Plot C902 SG7

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
SG / 07

Name
Hybrid White Spruce – Crowberry – Glow Moss

Map Symbol	SG2, SGa2, SGk2	SG3, SGa3, SGk3	SG4, SGa4, SGk4	SG5, SGa5, SGk5	SG6, SGa6, SGk6	SG7, SGa7, SGk7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bunchberry	lodgepole pine willows scrub birch bunchberry glow moss	Closed canopy of: lodgepole pine hybrid white spruce willows scrub birch glow moss	Closed canopy of: lodgepole pine hybrid white spruce willows scrub birch glow moss	Closed canopy of: lodgepole pine hybrid white spruce willows scrub birch glow moss	Closed canopy of: lodgepole pine hybrid white spruce willows scrub birch glow moss
Associates	yarrow twinflower sedges wild strawberry western meadowrue dwarf scouring rush scrub birch willows glow moss	hybrid white spruce black twinberry prickly rose crowberry palmate coltsfoot twinflower dwarf scouring rush common horsetail sedges bunchberry red-stemmed feathermoss step moss	black twinberry kinnikinnick crowberry palmate coltsfoot twinflower dwarf scouring rush common horsetail sedges bunchberry red-stemmed feathermoss step moss	black twinberry kinnikinnick crowberry palmate coltsfoot twinflower dwarf scouring rush common horsetail sedges bunchberry red-stemmed feathermoss step moss	black twinberry kinnikinnick crowberry palmate coltsfoot twinflower dwarf scouring rush common horsetail sedges bunchberry red-stemmed feathermoss step moss	black twinberry kinnikinnick crowberry palmate coltsfoot twinflower dwarf scouring rush common horsetail sedges bunchberry red-stemmed feathermoss step moss
Plots					98142	C902, 98MR012

Comments: The forest canopy of this ecosystem is dominated by hybrid white spruce and lodgepole pine (crown closure < 40%). Low shrub cover is low and includes species such as scrub birch, willow and black twinberry. Several low forbs and a well-developed moss layer are present. It is the presence of scrub birch and willows and low cover of horsetail that distinguish this site series. Logging activity creates structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series
SG / 07

Name
Hybrid White Spruce – Crowberry – Glow Moss

Map Symbol	SG2, SGa2, SGk2	SG3, SGa3, SGk3	SG4, SGa4, SGk4	SG5, SGa5, SGk5	SG6, SGa6, SGk6	SG7, SGa7, SGk7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants		scrub birch willows	scrub birch willows	scrub birch willows	scrub birch willows	scrub birch willows
Associates	scrub birch willows dwarf scouring rush	black twinberry prickly rose dwarf scouring rush common horsetail sedge spp.	black twinberry prickly rose dwarf scouring rush common horsetail sedge spp.	black twinberry prickly rose dwarf scouring rush common horsetail sedge spp.	black twinberry prickly rose dwarf scouring rush common horsetail sedge spp.	black twinberry prickly rose dwarf scouring rush common horsetail sedge spp.
Bear Forage Species	kinnikinnick wild strawberry dwarf scouring rush	black twinberry prickly rose dwarf scouring rush common horsetail sedges.	black twinberry prickly rose kinnikinnick dwarf scouring rush common horsetail sedges	black twinberry prickly rose kinnikinnick dwarf scouring rush common horsetail sedges	black twinberry prickly rose kinnikinnick dwarf scouring rush common horsetail sedges	black twinberry prickly rose kinnikinnick dwarf scouring rush common horsetail sedges

Comments: The abundance of willow and scrub birch coupled with the closed canopy make this site good ungulate feeding and security/thermal habitat. Bear will also take advantage of the understory vegetation (horsetails) and cover.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	SH / 08 Hybrid White Spruce – Horsetail – Crowberry SHa / 08 Hybrid White Spruce – Horsetail – Crowberry; active floodplain SHt / 08 Hybrid White Spruce – Horsetail – Crowberry; terraced
Typically, this unit is found on toe slopes and depressions with a near surface (<50cm) water table. These sites have gentle slopes and deep medium- textured soils. Most stands of this site series are small in size, and are often found as small forested wet sites with in an upland forest matrix but on occasion can be found adjacent to non-forested wetlands (SH). It is also possible to find this site on active floodplains (SHa) as well as terraced landscapes (SHt).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1600	1500
Slope (%)	0-5	2
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to subhydic	poor to very rich	
Drainage	moderate to poor	
Surficial Material		
morainal blanket, fluvial plain, glaciofluvial terrace		
Soil Development		
gleysols		
	Range	Mean
Humus Depth (cm)	5-30	17
Coarse Fragments (%)	30	
Soil Texture	Humus Form	
loamy, silty and clayey	hydromoder	

Plot C848 SH6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SH / 08

Hybrid White Spruce – Horsetail – Crowberry

Map Symbol	SH2, SHa2, SHt2	SH3, SHa3, SHt3	SH4, SHa4, SHt4	SH5, SHa5, SHt5	SH6, SHa6, SHt6	SH7, SHa7, SHt7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	sedges common horsetail bluejoint	high-bush cranberry black twinberry	Open canopy of: hybrid white spruce common horsetail leafy moss glow moss	Open canopy of: hybrid white spruce common horsetail sitka alder leafy moss glow moss	Open canopy of: hybrid white spruce common horsetail leafy moss glow moss	Open canopy of: hybrid white spruce common horsetail leafy moss glow moss
Associates	blue wildrye bunchberry twinflower palmate coltsfoot willows	hybrid white spruce willows bunchberry twinflower blue wildrye sedges bluejoint palmate coltsfoot leafy mosses golden fuzzy fen moss step moss red-stemmed feathermoss	mountain alder high-bush cranberry black twinberry willows bunchberry palmate coltsfoot twinflower golden fuzzy fen moss step moss red-stemmed feathermoss	mountain alder high-bush cranberry black twinberry bunchberry palmate coltsfoot twinflower golden fuzzy fen moss step moss red-stemmed feathermoss	mountain alder high-bush cranberry black twinberry bunchberry palmate coltsfoot twinflower golden fuzzy fen moss step moss red-stemmed feathermoss	mountain alder high-bush cranberry black twinberry bunchberry palmate coltsfoot twinflower golden fuzzy fen moss step moss red-stemmed feathermoss
Plots					C848	

Comments: The mature forest canopy is relatively open (<25% crown closure) and is dominated by hybrid white spruce. Lodgepole pine is seldom present. The undergrowth is dominated by common horsetail and glow moss.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SH / 08

Hybrid White Spruce – Horsetail – Crowberry

Map Symbol	SH2, SHa2, SHt2	SH3, SHa3, SHt3	SH4, SHa4, SHt4	SH5, SHa5, SHt5	SH6, SHa6, SHt6	SH7, SHa7, SHt7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	common horsetail sedges bluejoint	high-bush cranberry black twinberry				
Associates	blue wildrye willows	blue wildrye willows sedges bluejoint	high-bush cranberry black twinberry willows	high-bush cranberry black twinberry	high-bush cranberry black twinberry	high-bush cranberry black twinberry
Bear Forage Species	blue wildrye common horsetail	high-bush cranberry black twinberry blue wildrye	high-bush cranberry black twinberry	high-bush cranberry black twinberry	high-bush cranberry black twinberry	high-bush cranberry black twinberry

Comments: The abundance of horsetail provides a good source of spring forage for ungulates and bears. This unit also provides some coverage.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	SW / 00 Hybrid White Spruce – Willow – Scrub Birch SWa / 00 Hybrid White Spruce – Willow – Scrub Birch; active floodplain SWt / 00 Hybrid White Spruce – Willow – Scrub Birch; terraced
This ecosystem is typically found on level terrain, lower slope positions or deep depressions all with a near surface (<50cm) water table. This site is found on deep soils with organic veneers (SW). These sites generally experience frequent growing season frosts. This unit may also be found on active floodplains (as very thin organics over fluvial material SWa) as well as occasionally being found on terraced landscape (SWt),	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1600	1500
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to subhydric	very poor to medium	
Drainage	poor; imperfect	
Surficial Material		
organic veneer over fluvial, and fluvial or morainal materials on seepage tracks		
Soil Development		
organic		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
organic		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name

SW / 00 Hybrid White Spruce – Willow – Scrub Birch

Map Symbol	SW2, SWa2, SWt2	SW3, SWa3, SWt3	SW4, SWa4, SWt4	SW5, SWa5, SWt5	SW6, SWa6, SWt6	SW7, SWa7, SWt7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	bluejoint common horsetail	willows scrub birch common horsetail bluejoint glow moss	Open canopy of: lodgepole pine willows scrub birch common horsetail glow moss	Open canopy of: lodgepole pine willows scrub birch common horsetail glow moss	Open canopy of: hybrid white spruce willows scrub birch common horsetail glow moss	Open canopy of: hybrid white spruce willows scrub birch common horsetail glow moss
Associates	twinflower palmate coltsfoot arrow-leaved groundsel dwarf scouring rush dwarf blueberry fireweed willows	lodgepole pine hybrid white spruce twinflower palmate coltsfoot arrow-leaved groundsel dwarf scouring rush dwarf blueberry	hybrid white spruce twinflower palmate coltsfoot arrow-leaved groundsel globeflower dwarf scouring rush dwarf blueberry bluejoint	hybrid white spruce twinflower palmate coltsfoot arrow-leaved groundsel globeflower dwarf scouring rush dwarf blueberry bluejoint	lodgepole pine twinflower palmate coltsfoot arrow-leaved groundsel globeflower dwarf scouring rush dwarf blueberry bluejoint	lodgepole pine twinflower palmate coltsfoot arrow-leaved groundsel globeflower dwarf scouring rush dwarf blueberry bluejoint
Plots		98148				

Comments: Typical forests consist of open stands of (<20% crown closure) of lodgepole pine with minor amounts of hybrid white spruce. The understory is dominated by scrub birch and willow with a herb layer of horsetail and coltsfoot. Glow moss commonly dominated the moss layer.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SW / 00

Hybrid White Spruce – Willow – Scrub Birch

Map Symbol	SW2, SWa2, SWt2	SW3, SWa3, SWt3	SW4, SWa4, SWt4	SW5, SWa5, SWt5	SW6, SWa6, SWt6	SW7, SWa7, SWt7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	bluejoint common horsetail	willows scrub birch common horsetail bluejoint	willows scrub birch common horsetail	willows scrub birch common horsetail	willows scrub birch common horsetail	willows scrub birch common horsetail
Associates	dwarf scouring rush fireweed	dwarf scouring rush	dwarf scouring rush bluejoint	dwarf scouring rush bluejoint	dwarf scouring rush bluejoint	dwarf scouring rush bluejoint
Bear Forage Species	bluejoint common horsetail dwarf scouring rush dwarf blueberry fireweed willows	bluejoint common horsetail dwarf scouring rush dwarf blueberry	bluejoint common horsetail dwarf scouring rush dwarf blueberry	bluejoint common horsetail dwarf scouring rush dwarf blueberry	bluejoint common horsetail dwarf scouring rush dwarf blueberry	bluejoint common horsetail dwarf scouring rush dwarf blueberry

Comments: The abundance of willow, scrub birch and horsetail make this site moderate to high feeding habitat for ungulate (especially moos) and moderate for bear feeding.

8.2 MS_{xv} - Grassland Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	<p>JK / 00 Juniper – Kinnikinnick</p> <p>JKhs / 00 Juniper – Kinnikinnick; hummocky, shallow soil JKks / 00 Juniper – Kinnikinnick; cool aspect, shallow soil JKr / 00 Juniper – Kinnikinnick; ridged, shallow soil JKs / 00 Juniper – Kinnikinnick; shallow soil JKt / 00 Juniper – Kinnikinnick; terraced JKv / 00 Juniper – Kinnikinnick; very shallow soil</p>
<p>This ecosystem is typically found on moderate to steep warm aspect, on mid to upper slopes with deep medium-textured soils (JK). This unit commonly occurs on shallow soils (JKs) or a variety of landscapes with shallow soils such as hummocked terrain (JKhs), ridged terrain (JKr) and cool aspects (JKks). This unit is occasionally found on very shallow soil (JKv) and on glaciofluvial terraces (JKt).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1700	1550
Slope (%)	25-50	35
Aspect (degrees)	135-285	
Moisture Regime	Nutrient Regime	
subxeric - xeric	poor to rich	
Drainage	(moderate) well (rapid)	
Surficial Material		
colluvial veneers and blankets, morainal veneers and blankets glaciofluvial terraces		
Soil Development		
brunisol		
	Range	Mean
Humus Depth (cm)	0-1	0.5
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

JK / 00

Juniper – Kinnikinnick

Map Symbol	JKhs2, JKks2, JKr2, JKs2, JKt2, JKv2	JKhs3a, JKks3a, JKr3a, JKs3a, JKt3a, JKv3a
Plant species	Herb Climax	Low Shrub Climax
Dominants	kinnikinnick	common juniper kinnikinnick
Associates	bluebunch wheatgrass shrubby penstemon northwestern sedge yarrow purple reedgrass common juniper	soopolallie trembling aspen bluebunch wheatgrass shrubby penstemon northwestern sedge yarrow purple reedgrass
Plots		

Comments: These sites are dominated in the herb climax by an almost continuous cover of kinnikinnick. The shrub climax generally has a continuous cover of common juniper mixed with kinnikinnick, but occasionally, stunted trembling aspen can be found to occur in the shrub climax. Both structural stages have minor amounts of herb development. It is not uncommon to have the herb stage of this ecosystem dominated by graminoids.

Map Symbol	JKhs2, JKks2, JKr2, JKs2, JKt2, JKv2	JKhs3a, JKks3a, JKr3a, JKs3a, JKt3a, JKv3a
Plant Species	Herb Climax	Low Shrub Climax
Ungulate Forage Species - Dominants		
Ungulate Forage Species - Associates	bluebunch wheatgrass northwestern sedge	Douglas-fir soopolallie trembling aspen bluebunch wheatgrass northwestern sedge
Bear Forage Species	kinnikinnick	kinnikinnick soopolallie

Comments: The herb structural stage provides only limited forage for ungulates while bear may take advantage of feeding on kinnikinnick berries. The shrub stage provides minor amounts of shrubby forage.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	WJ/ 00 Bluebunch Wheatgrass – Junegrass WJsw / 00 Bluebunch Wheatgrass – Junegrass; shallow soil, warm aspect WJv / 00 Bluebunch Wheatgrass – Junegrass; very shallow soil WJvw / 00 Bluebunch Wheatgrass – Junegrass; very shallow soil, warm aspect WJw / 00 Bluebunch Wheatgrass – Junegrass; warm aspect
This ecosystem is typically found on upper slope positions with gentle to moderate warm aspect slopes. Soils are deep and medium textured. This unit was created to include bluebunch wheatgrass dominated slopes at or near the transition zone between the MSxk and MSxv subzones. This unit can commonly be found on warm aspect slopes (WJw) as well as warm aspects with shallow (WJsw) and very shallow soils (WJvw). Occasionally this unit can be found on gentle slopes with very shallow soils (WJv).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1700	1550
Slope (%)	0-27	14
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
xeric to subxeric	medium to rich	
Drainage	well to rapid	
Surficial Material		
morainal blanket veneer colluvial blanket veneers		
Soil Development		
brunisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WJ / 00

Bluebunch Wheatgrass – Junegrass

Map Symbol	WJ2, WJsw2, WJv2, WJvw2, WJw2	WJ3a, WJsw3a, WJv3a, WJvw3a, WJw3a
Plant species	Herb Climax	Low Shrub Climax
Dominants	bluebunch wheatgrass junegrass	common juniper bluebunch wheatgrass junegrass
Associates	bluegrass Rocky Mtn. fescue yarrow old man's whiskers timber milk-vetch pussytoes nodding onion common juniper	bluegrass Rocky Mtn. fescue yarrow old man's whiskers timber milk-vetch pussytoes nodding onion
Plots	C334, C335	

Comments: This ecosystem can occur as a grassland or low shrub dominated ecosystem. As a grassland it is dominated by bluebunch wheatgrass and junegrass whereas in the low shrub stage, continuous mats of common juniper dominate.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WJ / 00

Bluebunch Wheatgrass – Junegrass

Map Symbol	WJ2, WJsw2, WJv2, WJvw2, WJw2	WJ3a, WJsw3a, WJv3a, WJvw3a, WJw3a
Plant Species	Herb Climax	Low Shrub Climax
Ungulate Forage Species - Dominants	bluebunch wheatgrass junegrass	bluebunch wheatgrass junegrass
Ungulate Forage Species - Associate	bluegrass Rocky Mtn. fescue	bluegrass Rocky Mtn. fescue
Bear Forage Species	bluebunch wheatgrass junegrass nodding onion Kentucky bluegrass <i>Festuca spp.</i>	bluebunch wheatgrass junegrass nodding onion Kentucky bluegrass <i>Festuca spp.</i>

Comments: The abundance of preferred graminoids make this site a valuable site for ungulate feeding. Bear may also take advantage of these grasses in early spring.

8.3 MSxv - Wetland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	BS /00 Sedge – Bluejoint – Fen
<p>These wetlands are usually inundated early in the growing season, but standing water may be absent by late August. Soils are typically variable organic accumulation (form 30 to 150+ cm deep) over mineral soil (BS). The water source for this wetland is primarily groundwater and runoff from adjacent upland material.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1600	1500
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric to hydric	rich-very rich	
Drainage	very poor	
Surficial Material		
organic blanket over lacustrine, morainal or fluvial		
Soil Development		
typic mesisol, fibrisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
organic	hydromull	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

BS / 00

Sedge – Bluejoint – Fen

Map Symbol	BS2
Plant species	Herb Climax
Dominants	beaked sedge bluejoint
Associates	small-flowered willowherb scouring rush water sedge <i>Brachythecium spp.</i> <i>Polygonum spp.</i> <i>Drepanocladus spp.</i>
Plots	98334, C328

Comments: These are typically graminoid dominated wetlands with sedge forming up to 60% ground cover.

Map Symbol	BS2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	bluejoint
Ungulate Forage Species - Associates	scouring rush water sedge small-flowered willowherb
Bear Forage Species	scouring rush water sedge bluejoint small-flowered willowherb

Comments: These sites could be used for feeding in early spring when succulent new growth appears.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
MSxv	WS / 00 Willow – Scrub Birch – Sedge Fen WSa / 00 Willow – Scrub Birch – Sedge Fen; active floodplain WSf / 00 Willow – Scrub Birch – Sedge Fen; fine-textured soil
This ecosystem typically occurs as a shrub dominated fen, that is shallowly inundated early in the growing season but standing water is gone by late August. Soils are saturated within the rooting zone and organic accumulations may be up to 1m deep. This unit may also be found along active floodplains (WSa) on fine-textured soils (WSf).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1400-1600	1500
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to subhydric	poor to rich	
Drainage	poor to very poor (imperfect)	
Surficial Material		
organic blanket plain or veneer over morainal or fluvial material fluvial plain, morainal with seepage		
Soil Development		
humisol, mesisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	0	
Soil Texture	Humus Form	
organic		

Plot C630 WS3a

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WS / 00

Willow – Scrub Birch – Sedge Fen

Map Symbol	WS3a, WSA3a, WSf3a, WSp3a	WS3b, WSA3b, WSf3b, WSp3b
Plant species	Low Shrub Climax	Tall Shrub Climax
Dominants	grey-leaved willow tea-leaved willow Maccall's willow scrub birch beaked sedge water sedge <i>Sphagnum spp.</i>	grey-leaved willow tea-leaved willow Maccall's willow scrub birch beaked sedge water sedge <i>Sphagnum spp.</i>
Associates	hoary willow sedges palmate coltsfoot large-leaved avens hooked spring moss lawn mosses leafy mosses golden fuzzy fen moss	hoary willow sedge spp. palmate coltsfoot large-leaved avens hooked spring moss lawn mosses leafy mosses golden fuzzy fen moss
Plots	98147, C630, C632	C839, C407, C333

Comments: The vegetation in this ecosystem is characterized by a high cover of shrubs (60% cover of various species composition) with an abundance of sedges growing in depressions. Other herbaceous vegetation is found growing on hummocks associated with shrubs. The moss layer is extensive but variable, being dominated by either Sphagnums or brown mosses.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

WS / 00

Willow – Scrub Birch – Sedge Fen

Map Symbol	WS3a, WSA3a, WSf3a, WSp3a	WS3b, WSA3b, WSf3b, WSp3b
Plant Species	Low Shrub Climax	Tall Shrub Climax
Ungulate Forage Species - Dominants	grey-leaved willow tea-leaved willow Maccall's willow scrub birch beaked sedge water sedge	grey-leaved willow tea-leaved willow Maccall's willow scrub birch beaked sedge water sedge
Ungulate Forage Species - Associates	hoary willow sedges	
Bear Forage Species	beaked sedge water sedge sedge spp.	

Comments: The abundance and diversity of willow species provide excellent forage for ungulates (especially moose). Sedge species will be used in the spring when it is succulent and tender by bears and ungulates.

9.0 ESSFxv2 - Engelmann Spruce - Subalpine Fir Very Dry Very Cold Subzone Big Creek Variant

9.1 ESSFxv2 - Forested Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	<p>FA / 01 Subalpine fir – Arnica – Cladonia</p> <p>FAa / 01 Subalpine fir – Arnica – <i>Cladonia</i>; active floodplain FAc / 01 Subalpine fir – Arnica – <i>Cladonia</i>; coarse-textured soil FAch / 01 Subalpine fir – Arnica – <i>Cladonia</i>; coarse-textured soil, hummocky FAct / 01 Subalpine fir – Arnica – <i>Cladonia</i>; coarse-textured, terraced FAh / 01 Subalpine fir – Arnica – <i>Cladonia</i>; hummocky FAhs / 01 Subalpine fir – Arnica – <i>Cladonia</i>; hummocky, shallow soil FAK / 01 Subalpine fir – Arnica – <i>Cladonia</i>; cool aspect FAKs / 01 Subalpine fir – Arnica – <i>Cladonia</i>; cool aspect, shallow soil FAs / 01 Subalpine fir – Arnica – <i>Cladonia</i>; shallow soil FAsw / 01 Subalpine fir – Arnica – <i>Cladonia</i>; shallow soil, warm aspect FAw / 01 Subalpine fir – Arnica – <i>Cladonia</i>, warm aspect</p>
<p>The zonal ecosystem of the ESSFxv2 is typically found on mid slope sites with gentle slopes. The typic ecosystem can also extend to upper and lower slope positions, in each case having deep medium-textured soils (FA). This site is common on moderate cool aspects (FAK). This site can also be found on moderate warm aspects (FAw). This unit is also found on terrain with shallow soil, although generally > 50cm deep (FAs, FAhs, FAKs, FAsw), while it can occasionally be found on coarse-textured soils (FAc) and terraced terrain (FAct) or hummocky terrain (FAch, FAh). Rarely this unit occurs on active floodplains (FAa).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1700-2100	1900
Slope (%)	0-25	12
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
mesic (submesic)	poor to rich	
Drainage	moderate - well	
Surficial Material		
morainal blanket		
Soil Development		
orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)	0-4	2
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy (sandy loam)	hemimor, mormoder	

Plot C464 FA6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FA / 01

Subalpine fir – Arnica – *Cladonia*

Map Symbol	FA2, FAa2, FAc2, FAch2, FAct2, FAh2, FAhs2, FAk2, FAKs2, FAs2, FAsw2, FAw2	FA3, FAa3, FAc3, FAch3, FAct3, FAh3, FAhs3, FAK3, FAKs3, FAs3, FAsw3, FAw3	FA4, FAa4, FAc4, FAch4, FAct4, FAh4, FAhs4, FAK4, FAKs4, FAs4, FAsw4, FAw4	FA5, FAa5, FAc5, FAch5, FAct5, FAh5, FAhs5, FAK5, FAKs5, FAs5, FAsw5, FAw5	FA6, FAa6, FAc6, FAch6, FAct6, FAh6, FAhs6, FAK6, FAKs6, FAs6, FAsw6, FAw6	FA7, FAa7, FAc7, FAch7, FAct7, FAh7, FAhs7, FAK7, FAKs7, FAs7, FAsw7, FAw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	twinflower arctic lupine	lodgepole pine soopolallie black huckleberry	Moderately closed canopy of: lodgepole pine soopolallie	Moderately closed canopy of: lodgepole pine grouseberry	Moderately closed canopy of: lodgepole pine grouseberry	Moderately closed canopy of: lodgepole pine grouseberry
Associates	yarrow northwestern sedge bracted lousewort mtn. sagewort heart-leaved arnica crowberry common juniper <i>Peltigera spp.</i> <i>Cladonia spp.</i>	common juniper mtn. sagewort twinflower arctic lupine crowberry bracted lousewort heart-leaved arnica northwestern sedge <i>Dicranum spp.</i> <i>Brachythecium spp.</i> <i>Peltigera spp.</i> <i>Cladonia spp.</i>	common juniper mtn. sagewort black huckleberry twinflower arctic lupine crowberry bracted lousewort heart-leaved arnica northwestern sedge <i>Dicranum spp.</i> <i>Brachythecium spp.</i> <i>Peltigera spp.</i> <i>Cladonia spp.</i>	Engelmann spruce subalpine fir common juniper soopolallie mtn. sagewort black huckleberry twinflower arctic lupine crowberry bracted lousewort heart-leaved arnica northwestern sedge <i>Dicranum spp.</i> <i>Brachythecium spp.</i> <i>Peltigera spp.</i> <i>Cladonia spp.</i>	Engelmann spruce subalpine fir common juniper soopolallie mtn. sagewort black huckleberry twinflower arctic lupine crowberry bracted lousewort heart-leaved arnica northwestern sedge <i>Dicranum spp.</i> <i>Brachythecium spp.</i> <i>Peltigera spp.</i> <i>Cladonia spp.</i>	Engelmann spruce subalpine fir common juniper soopolallie mtn. sagewort black huckleberry twinflower arctic lupine crowberry bracted lousewort heart-leaved arnica northwestern sedge <i>Dicranum spp.</i> <i>Brachythecium spp.</i> <i>Peltigera spp.</i> <i>Cladonia spp.</i>
Plots	C385		9800039	98DL005, 908DL043, C469, C905	9800433, 9800905, 98045, C255, C398, C420, C421, C464	

Comments: Although Engelmann spruce and subalpine fir are the climax species past fire history and a slow rate of succession in this dry, cold climate has resulted in , most mature stands being dominated by lodgepole pine. The undergrowth has a moderate to high cover of herbaceous species but relatively few shrubs. Predominant herb species include arctic lupine, twinflower and heart-leaved arnica. The moss layer is moderate with *Peltigera* and *Cladonia* species as well as *Dicranum* species. Structural stage 2 commonly occurs as a result of clearcut logging while 3 will develop several years after logging or fire has disturbed a site..

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FA / 01

Subalpine fir – Arnica – *Cladonia*

Map Symbol	FA2, FAa2, FAc2, FAch2, FAct2, FAh2, FAhs2, FAK2, FAKs2, FAs2, FAsw2, FAw2	FA3, FAa3, FAc3, FAch3, FAct3, FAh3, FAhs3, FAK3, FAKs3, FAs3, FAsw3, FAw3	FA4, FAa4, FAc4, FAch4, FAct4, FAh4, FAhs4, FAK4, FAKs4, FAs4, FAsw4, FAw4	FA5, FAa5, FAc5, FAch5, FAct5, FAh5, FAhs5, FAK5, FAKs5, FAs5, FAsw5, FAw5	FA6, FAa6, FAc6, FAch6, FAct6, FAh6, FAhs6, FAK6, FAKs6, FAs6, FAsw6, FAw6	FA7, FAa7, FAc7, FAch7, FAct7, FAh7, FAhs7, FAK7, FAKs7, FAs7, FAsw7, FAw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	fireweed	soopolallie black huckleberry	soopolallie	grouseberry	grouseberry	grouseberry
Associates	northwestern sedge	northwestern sedge	black huckleberry northwestern sedge	soopolallie black huckleberry northwestern sedge	soopolallie black huckleberry northwestern sedge	soopolallie black huckleberry northwestern sedge
Bear Forage Species	fireweed northwestern sedge	soopolallie black huckleberry northwestern sedge	soopolallie black huckleberry northwestern sedge	grouseberry soopolallie black huckleberry northwestern sedge	grouseberry soopolallie black huckleberry northwestern sedge	grouseberry soopolallie black huckleberry northwestern sedge

Comments: The forested structural stages provide security/thermal habitat but only low-moderate feeding habitat. The herb and shrub stages provide moderate feeding habitat due to the higher abundance of the shrub layer.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	FH / 00 Subalpine Fir – Horsetail FHa / 00 Subalpine Fir – Horsetail; active floodplain FHk / 00 Subalpine Fir – Horsetail; cool aspect
This ecosystem is typically found on gently sloping lower or toe slope position, but can also be found on level terrain or in moisture depression. Soils on these sites are generally deep and fine-textured and may have a near surface water table (<50cm). Most often this site is found in valley bottoms (FH). The site is commonly found on active flood plains (FHa). Occasionally this site is found on cool aspect slopes (FHk).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1700-1900	1800
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to subhydric	poor to rich	
Drainage	imperfect to poor	
Surficial Material		
fluvial blanket or plain morainal blanket		
Soil Development		
gleysols		
	Range	Mean
Humus Depth (cm)	0-20	10
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
loamy and silty	hemimor	

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FH /00

Subalpine Fir – Horsetail

Map Symbol	FH2, FHa2, FHk2	FH3, FHa3, FHk3	FH4, FHa4, FHk4	FH5, FHa5, FHk5	FH6, FHa6, FHk6	FH7, FHa7, FHk7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	common horsetail dwarf scouring-rush sedges	lodgepole pine black twinberry common horsetail glow moss	Moderately open canopy of: Engelmann spruce lodgepole pine common horsetail glow moss	Moderately open canopy of: Engelmann spruce lodgepole pine common horsetail glow moss	Moderately open canopy of: Engelmann spruce lodgepole pine common horsetail glow moss	Moderately open canopy of: Engelmann spruce lodgepole pine common horsetail glow moss
Associates	pink wintergreen twinflower wild strawberry fireweed western meadowrue black twinberry glow moss	Engelmann spruce dwarf scouring-rush twinflower fireweed western meadowrue sedges	black twinberry dwarf scouring-rush twinflower fireweed pink wintergreen western meadowrue wild strawberry red-stemmed feathermoss step moss	subalpine fir black twinberry dwarf scouring-rush twinflower fireweed pink wintergreen western meadowrue wild strawberry red-stemmed feathermoss step moss	subalpine fir black twinberry dwarf scouring-rush twinflower fireweed pink wintergreen western meadowrue wild strawberry red-stemmed feathermoss step moss	subalpine fir black twinberry dwarf scouring-rush twinflower fireweed pink wintergreen western meadowrue wild strawberry red-stemmed feathermoss step moss
Plots					98145	C207

Comments: The mature forest canopy of this unit, is moderately open (<25% crown closure) and dominated by lodgepole pine and hybrid white spruce. Common horsetail is the most abundant understory species. Clearcut logging and wildfires produce structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FH / 00

Subalpine Fir – Horsetail

Map Symbol	FH2, FHa2, FHk2	FH3, FHa3, FHk3	FH4, FHa4, FHk4	FH5, FHa5, FHk5	FH6, FHa6, FHk6	FH7, FHa7, FHk7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	common horsetail dwarf scouring-rush sedges	common horsetail black twinberry	common horsetail	common horsetail	common horsetail	common horsetail
Associates	fireweed	dwarf souring rush fireweed	black twinberry dwarf scouring-rush fireweed	black twinberry dwarf scouring-rush fireweed	black twinberry dwarf scouring-rush fireweed	black twinberry dwarf scouring-rush fireweed
Bear Forage Species	common horsetail dwarf scouring-rush fireweed sedges wild strawberry black twinberry	common horsetail black twinberry dwarf souring rush fireweed sedges	common horsetail black twinberry wild strawberry dwarf scouring-rush fireweed	common horsetail black twinberry wild strawberry dwarf scouring-rush fireweed	common horsetail black twinberry wild strawberry dwarf scouring-rush fireweed	common horsetail black twinberry wild strawberry dwarf scouring-rush fireweed

Comments: Common horsetail provides valuable forage for bear and moderate forage for ungulates early in the growing season.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	FL / 00 Subalpine Fir – Bracted Lousewort – Glow Moss FLg / 00 Subalpine Fir – Bracted Lousewort – Glow Moss; gullied FLk / 00 Subalpine Fir – Bracted Lousewort – Glow Moss; cool aspect FLw / 00 Subalpine Fir – Bracted Lousewort – Glow Moss; warm aspect
This ecosystem typically occurs on gently sloping terrain, at mid to lower slope positions, with deep, medium-textured soils (FL). This unit can also be found on gullied terrain (FLg) and on moderate (<30% slope) warm (FLw) and cool (FLk). aspects that are receiving some seepage.	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1700-2000	1850
Slope (%)	0-25	12
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
subhygric (mesic)	medium to rich	
Drainage	moderate to imperfect	
Surficial Material		
silty morainal blanket		
Soil Development		
orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)	0-2	1
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy	mor (hemimor)	

Plot C386 FL5

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FL / 00

Subalpine Fir – Bracted Lousewort – Glow Moss

Map Symbol	FL2, FLg2, FLk2, FLw2	FL3, FLg3, FLk3, FLw3	FL4, FLg4, FLk4, FLw4	FL5, FLg5, FLk5, FLw5	FL6, FLg6, FLk6, FLw6	FL7, FLg7, FLk7, FLw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	grouseberry bracted lousewort arctic lupine	lodgepole pine black huckleberry soopolallie grouseberry bracted lousewort arctic lupine fireweed	Moderately closed canopy of: lodgepole pine bracted lousewort glow moss	Moderately closed canopy of: lodgepole pine bracted lousewort glow moss	Moderately closed canopy of: lodgepole pine bracted lousewort glow moss	Moderately closed canopy of: lodgepole pine Engelmann spruce bracted lousewort glow moss
Associates	fireweed red columbine twinflower heart-leaved arnica globeflower western meadowrue arrow-leaved groundsel <i>Peltigera spp.</i> glow moss	Engelmann spruce white-flowered rhododendron red columbine twinflower heart-leaved arnica western meadowrue arrow-leaved groundsel <i>Peltigera spp.</i> glow moss	subalpine fir Engelmann spruce common juniper black huckleberry soopolallie grouseberry white-flowered rhododendron arctic lupine red columbine twinflower heart-leaved arnica fireweed pink wintergreen globeflower <i>Brachythecium spp.</i> step moss sickle moss frog pelt <i>Peltigera spp.</i>	subalpine fir Engelmann spruce common juniper black huckleberry soopolallie grouseberry white-flowered rhododendron arctic lupine red columbine twinflower heart-leaved arnica fireweed pink wintergreen globeflower <i>Brachythecium spp.</i> step moss sickle moss frog pelt <i>Peltigera spp.</i>	subalpine fir Engelmann spruce common juniper black huckleberry soopolallie grouseberry white-flowered rhododendron arctic lupine red columbine twinflower heart-leaved arnica fireweed pink wintergreen globeflower <i>Brachythecium spp.</i> step moss sickle moss frog pelt <i>Peltigera spp.</i>	subalpine fir common juniper black huckleberry soopolallie grouseberry white-flowered rhododendron arctic lupine red columbine twinflower heart-leaved arnica fireweed pink wintergreen globeflower <i>Brachythecium spp.</i> step moss sickle moss frog pelt <i>Peltigera spp.</i>
Plots					9800434, 98146, 98244, C386, C397, C472, C474, C483	

Comments: Mature forests of this ecosystem are dominated by moderately closed stands (<35% crown closure) of lodgepole pine. Subalpine fir and hybrid white spruce may occur in minor amounts. The understory vegetation of this site is not very distinctive and may vary from site to site. Generally, the shrub layer is of low cover (<10% cover). Rhododendron may be present in small amounts. In the herb layer, arctic lupine and bracted lousewort are commonly found along with a sparse to moderate cover of moist indicator plants. A diverse moss layer may be found, composed of a variety of species.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FL / 00

Subalpine Fir – Bracted Lousewort – Glow Moss

Map Symbol	FL2, FLg2, FLk2, FLw2	FL3, FLg3, FLk3, FLw3	FL4, FLg4, FLk4, FLw4	FL5, FLg5, FLk5, FLw5	FL6, FLg6, FLk6, FLw6	FL7, FLg7, FLk7, FLw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants		black huckleberry soopolallie fireweed				
Associates	fireweed		black huckleberry soopolallie fireweed	black huckleberry soopolallie fireweed	black huckleberry soopolallie fireweed	black huckleberry soopolallie fireweed
Bear Forage Species	grouseberry fireweed	black huckleberry soopolallie grouseberry fireweed	black huckleberry soopolallie grouseberry fireweed	black huckleberry soopolallie grouseberry fireweed	black huckleberry soopolallie grouseberry fireweed	black huckleberry soopolallie grouseberry fireweed

Comments: Closed canopy provides good security/thermal habitat. Diversity of understory vegetation can provide moderate feeding opportunities.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	<p>FP / 00 Subalpine fir – <i>Brachythecium</i> – <i>Peltigera</i></p> <p>FPh / 00 Subalpine fir – <i>Brachythecium</i> – <i>Peltigera</i>; hummocky</p> <p>FPhs / 00 Subalpine fir – <i>Brachythecium</i> – <i>Peltigera</i>; hummocky, shallow soil</p> <p>FPj / 00 Subalpine fir – <i>Brachythecium</i> – <i>Peltigera</i>; gentle slope</p> <p>FPjs / 00 Subalpine fir – <i>Brachythecium</i> – <i>Peltigera</i>; gentle slope, shallow soil</p> <p>FPjv / 00 Subalpine fir – <i>Brachythecium</i> – <i>Peltigera</i>; gentle slope, very shallow soil</p> <p>FPm / 00 Subalpine fir – <i>Brachythecium</i> – <i>Peltigera</i>; medium-textured soil</p> <p>FPq / 00 Subalpine fir – <i>Brachythecium</i> – <i>Peltigera</i>; very steep cool aspect</p> <p>FPs / 00 Subalpine fir – <i>Brachythecium</i> – <i>Peltigera</i>; shallow soil</p>
<p>This ecosystem typically occurs on moderate to steep cool aspect slopes with deep coarse-textured soils. This unit is found most commonly on mid to upper slopes above 1800m elevation (FP). This ecosystem commonly occurs on terrain with shallow soils (FPs) such as shallows with hummocks (FPh, FPhs). It may also be found on gentle slopes (FPj) and gentle slopes with shallow soil (FPjs) and very shallow soil (FPjv). May also occur on medium-textured soils (FPm). Occasionally this unit can occur on very steep cool aspect slopes (FPq).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1800-2100	1750
Slope (%)	35-60	45
Aspect (degrees)	290-135	
Moisture Regime	Nutrient Regime	
submesic - subxeric	poor to medium	
Drainage	well	
Surficial Material		
morainal blanket veneer, colluvial blanket veneer		
Soil Development		
orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)	0-3	1
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
sandy loam	hemimor	

Plot 9800437 FP6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FP / 00

Subalpine fir – *Brachythecium* – *Peltigera*

Map Symbol	FP2, FPh2, FPhs2, FPj2, FPjs2, FPjv2, FPM2, FPq2, FPs2	FP3, FPh3, FPhs3, FPj3, FPjs3, FPjv3, FPM3, FPq3, FPs3	FP4, FPh4, FPhs4, FPj4, FPjs4, FPjv4, FPM4, FPq4, FPs4	FP5, FPh5, FPhs5, FPj5, FPjs5, FPjv5, FPM5, FPq5, FPs5	FP6, FPh6, FPhs6, FPj6, FPjs6, FPjv6, FPM6, FPq6, FPs6	FP7, FPh7, FPhs7, FPj7, FPjs7, FPjv7, FPM7, FPq7, FPs7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	grouseberry	lodgepole pine black huckleberry common juniper grouseberry	Moderately closed canopy of: lodgepole pine black huckleberry grouseberry	Moderately closed canopy of: lodgepole pine	Moderately closed canopy of: lodgepole pine	Moderately closed canopy of: lodgepole pine Engelmann spruce
Associates	dwarf blueberry arctic lupine heart-leaved arnica bracted lousewort twinflower <i>Dicranum spp.</i> <i>Cladonia spp.</i> <i>Peltigera spp.</i>	dwarf blueberry arctic lupine heart-leaved arnica bracted lousewort twinflower <i>Dicranum spp.</i> <i>Cladonia spp.</i> <i>Peltigera spp.</i>	common juniper dwarf blueberry arctic lupine heart-leaved arnica bracted lousewort twinflower <i>Dicranum spp.</i> <i>Brachythecium spp.</i> <i>Cladonia spp.</i> <i>Peltigera spp.</i>	subalpine fir Engelmann spruce common juniper black huckleberry dwarf blueberry grouseberry arctic lupine silky lupine heart-leaved arnica bracted lousewort mountain sagewort twinflower <i>Dicranum spp.</i> <i>Brachythecium spp.</i> <i>Cladonia spp.</i> <i>Peltigera spp.</i>	subalpine fir Engelmann spruce common juniper black huckleberry dwarf blueberry grouseberry arctic lupine silky lupine heart-leaved arnica bracted lousewort mountain sagewort twinflower <i>Dicranum spp.</i> <i>Brachythecium spp.</i> <i>Cladonia spp.</i> <i>Peltigera spp.</i>	subalpine fir common juniper black huckleberry dwarf blueberry grouseberry arctic lupine heart-leaved arnica bracted lousewort mountain sagewort twinflower <i>Dicranum spp.</i> <i>Brachythecium spp.</i> <i>Cladonia spp.</i> <i>Peltigera spp.</i>
Plots			C73	9800431	9800038, 9800437, C377, C399, C463, C466, C321	

Comments: The mature forest canopy is typically a moderately closed canopy (<35% crown closure) multistoried, multiaged stand of lodgepole pine, subalpine fir and hybrid white spruce. Sites found on shallow and very shallow soils generally have a more open canopy (usually <25% crown closure) dominated by lodgepole pine. The typic understory has limited shrub development (usually <7% cover), with common juniper and black huckleberry as commonly found species. The herb layer is diverse yet limited with bracted lousewort and lupines having frequent representation. Moss and lichen layers also have adverse species composition with an abundance of pelt lichens.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FP / 00

Subalpine fir – *Brachythecium* – *Peltigera*

Map Symbol	FP2, FPh2, FPhs2, FPj2, FPjs2, FPjv2, FPm2, FPq2, FPs2	FP3, FPh3, FPhs3, FPj3, FPjs3, FPjv3, FPm3, FPq3, FPs3	FP4, FPh4, FPhs4, FPj4, FPjs4, FPjv4, FPm4, FPq4, FPs4	FP5, FPh5, FPhs5, FPj5, FPjs5, FPjv5, FPm5, FPq5, FPs5	FP6, FPh6, FPhs6, FPj6, FPjs6, FPjv6, FPm6, FPq6, FPs6	FP7, FPh7, FPhs7, FPj7, FPjs7, FPjv7, FPm7, FPq7, FPs7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants		black huckleberry	black huckleberry			
Associates				black huckleberry	black huckleberry	black huckleberry
Bear Forage Species	dwarf blueberry grouseberry	black huckleberry grouseberry dwarf blueberry	black huckleberry grouseberry dwarf blueberry	black huckleberry grouseberry dwarf blueberry	black huckleberry grouseberry dwarf blueberry	black huckleberry grouseberry dwarf blueberry

Comments: This unit provides moderate ungulate security thermal habitat. The limited distribution of preferred forage species results in only low to moderate feeding values.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	<p>FR / 00 Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss</p> <p>FRh / 00 Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss; hummocky FRhs / 00 Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss; hummocky, shallow soil FRj / 00 Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss; gentle slope FRjs / 00 Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss; gentle slope, shallow soil FRq / 00 Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss; very steep cool aspect FRs / 00 Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss; shallow soil FRv / 00 Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss; very shallow soil</p>
<p>This ecosystem typically occurs on moderate to steep cool aspect slopes in upper and lower slope positions mostly below 1800m elevation. This unit typically occurs on sites with deep medium-textured soils (FR). This ecosystem may be found on hummocked terrain (FRh) as well as on gentle slopes (FRj). This community can also occur on shallow soil terrain (FRs, FRhs, FRjs) and terrain with very shallow soils (FRv). This unit may also be found on very steep cool aspects (FRq). Site features overlap with the FA (/01) unit and the FP unit which can be difficult to distinguish in certain areas.</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1700-1800	1750
Slope (%)	10-50	30
Aspect (degrees)	290-135	
Moisture Regime	Nutrient Regime	
submesic (mesic)	poor to medium	
Drainage	well to moderate	
Surficial Material		
morainal blanket veneer, colluvial blanket veneer		
Soil Development		
gray luvisol, orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)	0-3	1
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
loamy	mor	

Plot 9800423 FR6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FR / 00

Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss

Map Symbol	FR2, FRh2, FRhs2, FRj2, FRjs2, FRq3, FRs2, FRv2	FR3, FRh3, FRhs3, FRj3, FRjs3, FRq3, FRs3, FRv3	FR4, FRh4, FRhs4, FRj4, FRjs4, FRq4, FRs4, FRv4	FR5, FRh5, FRhs5, FRj5, FRjs5, FRq5, FRs5, FRv5	FR6, FRh6, FRhs6, FRj6, FRjs6, FRq6, FRs6, FRv6	FR7, FRh7, FRhs7, FRj7, FRjs7, FRq7, FRs7, FRv7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	grouseberry heart-leaved arnica	lodgepole pine white-flowered rhododendron	Closed canopy of: lodgepole pine white-flowered rhododendron red- stemmed feathermoss <i>Peltigera spp.</i>	Closed canopy of: lodgepole pine white-flowered rhododendron red- stemmed feathermoss <i>Peltigera spp.</i>	Closed canopy of: lodgepole pine white-flowered rhododendron red- stemmed feathermoss <i>Peltigera spp.</i>	Closed canopy of: lodgepole pine white-flowered rhododendron red- stemmed feathermoss <i>Peltigera spp.</i>
Associates	twinflower bunchberry showy aster fireweed whit-flowered rhododendron dog pelt	soopolallie black huckleberry common juniper grouseberry twinflower heart-leaved arnica showy aster fireweed dog pelt <i>Dicranum spp.</i> <i>Cladonia spp</i>	Engelmann spruce common juniper soopolallie black huckleberry grouseberry crowberry twinflower bracted lousewort mountain sagewort heart-leaved arnica step moss <i>Dicranum spp.</i> <i>Cladonia spp</i>	subalpine fir Engelmann spruce common juniper soopolallie grouseberry crowberry twinflower bracted lousewort mountain sagewort heart-leaved arnica step moss <i>Dicranum spp.</i> <i>Cladonia spp.</i>	subalpine fir Engelmann spruce common juniper soopolallie grouseberry crowberry twinflower bracted lousewort mountain sagewort heart-leaved arnica step moss <i>Dicranum spp.</i> <i>Cladonia spp.</i>	subalpine fir Engelmann spruce common juniper soopolallie grouseberry crowberry twinflower bracted lousewort mountain sagewort heart-leaved arnica step moss <i>Dicranum spp.</i> <i>Cladonia spp.</i>
Plots		C257, C256	C206, C72, C489	C488, C486	98144, 9800423, 91MK089, 91MK091, C422, C77	C426

Comments: The typical mature forest canopy is dominated by a moderately closed canopy (25-45% crown closure) of lodgepole pine with minor amounts of subalpine fir and hybrid white spruce. These sites are characterized by the constant occurrence of white-flowered rhododendron and black huckleberry in the shrub layer. Low shrubby herbs such as grouseberry, crowberry and twinflower are common. Red-stemmed feathermoss and pelt are both common and relatively abundant. Logging activity and wildfire produce structural stages 2 and 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FR / 00

Subalpine Fir – White-flowered Rhododendron – Red-stemmed Feathermoss

Map Symbol	FR2, FRh2, FRhs2, FRj2, FRjs2, FRs2, FRv2	FR3, FRh3, FRhs3, FRj3, FRjs3, FRs3, FRv3	FR4, FRh4, FRhs4, FRj4, FRjs4, FRs4, FRv4	FR5, FRh5, FRhs5, FRj5, FRjs5, FRs5, FRv5	FR6, FRh6, FRhs6, FRj6, FRjs6, FRs6, FRv6	FR7, FRh7, FRhs7, FRj7, FRjs7, FRs7, FRv7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	fireweed pinegrass					
Associates	black huckleberry	black huckleberry soopolallie fireweed	black huckleberry soopolallie	black huckleberry soopolallie	black huckleberry soopolallie	black huckleberry soopolallie
Bear Forage Species	grouseberry fireweed pinegrass	soopolallie grouseberry black huckleberry fireweed	soopolallie grouseberry black huckleberry	soopolallie grouseberry black huckleberry	soopolallie grouseberry black huckleberry	soopolallie grouseberry black huckleberry

Comments: This units closed canopy forest provides good security/thermal habitat for ungulates and bears. Feeding activity is limited due to the relative lack of preferred forage species growing in the understory.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	<p>LJ / 00 Lodgepole Pine – Juniper – Cladonia</p> <p>Ljcw / 00 Lodgepole Pine – Juniper – <i>Cladonia</i>; coarse-textured, warm aspect LJh / 00 Lodgepole Pine – Juniper – <i>Cladonia</i>; hummocky LJhv / 00 Lodgepole Pine – Juniper – <i>Cladonia</i>; hummocky, very shallow soil Ljk / 00 Lodgepole Pine – Juniper – <i>Cladonia</i>; cool aspect LJkv / 00 Lodgepole Pine – Juniper – <i>Cladonia</i>; cool aspect, very shallow soil LJrv / 00 Lodgepole Pine – Juniper – <i>Cladonia</i>; ridged, very shallow soil LJv / 00 Lodgepole Pine – Juniper – <i>Cladonia</i>; very shallow soil LJvw / 00 Lodgepole Pine – Juniper – <i>Cladonia</i>; very shallow soil, warm aspect LJw / 00 Lodgepole Pine – Juniper – <i>Cladonia</i>; warm aspect</p>
<p>This ecosystem is typically found on gently sloping crest and upper slope positions with shallow soils (LJ). This unit can occur on a number of different terrain types from warm (LJw) and cool aspect (Ljk) slopes to hummocked terrain (LJh). This unit has been mapped on a variety of sites with very shallow soils (LJv) including both warm (LJvw) and cool aspects (Ljkv) hummocked terrain (LJhv) and on ridge crests (LJrv). This unit can occasionally be found on warm aspects with coarse-textured soils (Ljcw).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1800-2100	1900
Slope (%)	0-25	12
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
xeric to very xeric	poor to rich	
Drainage	well to rapid	
Surficial Material		
colluvial veneer, morainal veneer weathered bedrock		
Soil Development		
orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	>70	
Soil Texture	Humus Form	
sandy loam	xeromor	

Plot C416 LJ3

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LJ / 00

Lodgepole Pine – Juniper – *Cladonia*

Map Symbol	LJ2, LJcw2, LJh2, LJhv2, LJK2, LJKv2, LJrv2, LJv2, LJvw2, LJw2	LJ3, LJcw3, LJh3, LJhv3, LJK3, LJKv3, LJrv3, LJv3, LJvw3, LJw3	LJ4, LJcw4, LJh4, LJhv4, LJK4, LJKv4, LJrv4, LJv4, LJvw4, LJw4	LJ5, LJcw5, LJh5, LJhv5, LJK5, LJKv5, LJrv5, LJv5, LJvw5, LJw5	LJ6, LJcw6, LJh6, LJhv6, LJK6, LJKv6, LJrv6, LJv6, LJvw6, LJw6	LJ7, LJcw7, LJh7, LJhv7, LJK7, LJKv7, LJrv7, LJv7, LJvw7, LJw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	kinnikinnick	Very open canopy of: lodgepole pine <i>Cladonia spp.</i>	Very open canopy of: lodgepole pine <i>Cladonia spp.</i>	Very open canopy of: lodgepole pine <i>Cladonia spp.</i>	Very open canopy of: lodgepole pine <i>Cladonia spp.</i>	Very open canopy of: lodgepole pine <i>Cladonia spp.</i>
Associates	compact selaginella twinflower yarrow lance-leaved stonecrop pusseytoes heart-leaved arnica <i>Peltigera spp.</i> <i>Stereocaulon spp.</i> <i>Cladina spp.</i>	whitebark pine common juniper soopolallie kinnikinnick lance-leaved stonecrop twinflower yarrow pusseytoes heart-leaved arnica <i>Peltigera spp.</i> <i>Stereocaulon spp.</i> <i>Cladina spp.</i>	whitebark pine common juniper soopolallie kinnikinnick lance-leaved stonecrop twinflower yarrow pusseytoes heart-leaved arnica <i>Peltigera spp.</i> <i>Stereocaulon spp.</i> <i>Cladina spp.</i>	whitebark pine common juniper soopolallie kinnikinnick lance-leaved stonecrop twinflower yarrow pusseytoes heart-leaved arnica <i>Peltigera spp.</i> <i>Stereocaulon spp.</i> <i>Cladina spp.</i>	whitebark pine common juniper soopolallie kinnikinnick lance-leaved stonecrop twinflower yarrow pusseytoes heart-leaved arnica <i>Peltigera spp.</i> <i>Stereocaulon spp.</i> <i>Cladina spp.</i>	whitebark pine common juniper soopolallie kinnikinnick lance-leaved stonecrop twinflower yarrow pusseytoes heart-leaved arnica <i>Peltigera spp.</i> <i>Stereocaulon spp.</i> <i>Cladina spp.</i>
Plots	C415	C416, C376			98246	C427

Comments: The plant community is characterized by a very open canopy (<20% crown closure) of lodgepole pine and potentially whitebark pine. The understory is generally sparse with common juniper and a minor amount of dry site herbs. *Cladonia* and *Peltigera spp.* are the most abundant non-vascular plants. Patches of exposed soil or rock are common. This unit is often stunted at structural stage 3.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LJ / 00

Lodgepole Pine – Juniper – *Cladonia*

Map Symbol	LJ2, LJcw2, LJh2, LJhv2, LK2, LKv2, LJrv2, LJv2, LJvw2, LJw2	LJ3, LJcw3, LJh3, LJhv3, LK3, LKv3, LJrv3, LJv3, LJvw3, LJw3	LJ4, LJcw4, LJh4, LJhv4, LK4, LKv4, LJrv4, LJv4, LJvw4, LJw4	LJ5, LJcw5, LJh5, LJhv5, LK5, LKv5, LJrv5, LJv5, LJvw5, LJw5	LJ6, LJcw6, LJh6, LJhv6, LK6, LKv6, LJrv6, LJv6, LJvw6, LJw6	LJ7, LJcw7, LJh7, LJhv7, LK7, LKv7, LJrv7, LJv7, LJvw7, LJw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants						
Associates		soopolallie	soopolallie	soopolallie	soopolallie	soopolallie
Bear Forage Species	kinnikinnick	soopolallie kinnikinnick	soopolallie kinnikinnick	soopolallie kinnikinnick	soopolallie kinnikinnick	soopolallie kinnikinnick

Comments: The very open nature of the forest canopy provides little to no cover values. While the dry bony nature of the sparse understory vegetation provide only limited feeding habitat at best.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	<p>LP / 00 Lodgepole Pine – Pinegrass – Kinnikinnick</p> <p>LPhs / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; hummocky, shallow soil</p> <p>LPhv / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; hummocky, very shallow soil</p> <p>LPj / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; gentle slope</p> <p>LPjs / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; gentle slope, shallow soil</p> <p>LPjv / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; gentle slope, very shallow soil</p> <p>LPk / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; cool aspect</p> <p>LPks / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; cool aspect, shallow soil</p> <p>LPkv / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; cool aspect, very shallow soil</p> <p>LPr / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; ridged</p> <p>LPrs / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; ridged, shallow soil</p> <p>LPs / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; shallow soil</p> <p>LPt / 00 Lodgepole Pine – Pinegrass – Kinnikinnick, terraced</p> <p>LPv / 00 Lodgepole Pine – Pinegrass – Kinnikinnick; very shallow soil</p>
<p>This ecosystem is typically found on mid to upper slopes, with moderate to steep warm aspect slopes and deep coarse-textured soils (LP). It may be found on gentle slopes (LPj), particularly in the southern portion of the study area. It is also possible to find this ecosystem on shallow soils (LPs) or very shallow soils (LPv) or a variety of landscapes with hummocked terrain (LPhs, LPhv), gentle slopes (LPj, LPjs, LPjv), ridges (LPrs, LPr) or cool aspects (usually east facing slopes LPk, LPks, LPkv). On occasion this unit will be found on glaciofluvial terraces (LPt).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1700-2100	1900
Slope (%)	25-60	40
Aspect (degrees)	135-285	
Moisture Regime	Nutrient Regime	
submesic to subxeric	poor to rich	
Drainage	well	
Surficial Material		
morainal blanket veneer, colluvial blanket veneer glaciofluvial terrace		
Soil Development		
orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)	0-3	1
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
sandy loam	hemimor	

Plot 9800430 LP6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LP / 00

Lodgepole Pine – Pinegrass – Kinnikinnick

Map Symbol	LP2, LPhs2, LPhv2, LPj2, LPjs2, LPjv2, LPk2, LPks2, LPkv2, LPr2, LPrs2, LPs2, LPt2, LPv2	LP3, LPhs3, LPhv3, LPj3, LPjs3, LPjv3, LPk3, LPks3, LPkv3, LPr3, LPrs3, LPs3, LPt3, LPv3	LP4, LPhs4, LPhv4, LPj4, LPjs4, LPjv4, LPk4, LPks4, LPkv4, LPr4, LPrs4, LPs4, LPt4, LPv4	LP5, LPhs5, LPhv5, LPj5, LPjs5, LPjv5, LPk5, LPks5, LPkv5, LPr5, LPrs5, LPs5, LPt5, LPv5	LP6, LPhs6, LPhv6, LPj6, LPjs6, LPjv6, LPk6, LPks6, LPkv6, LPr6, LPrs6, LPs6, LPt6, LPv6	LP7, LPhs7, LPhv7, LPj7, LPjs7, LPjv7, LPk7, LPks7, LPkv7, LPr7, LPrs7, LPs7, LPt7, LPv7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	pinegrass kinnikinnick	lodgepole pine soopolallie pinegrass	Moderately open canopy of: lodgepole pine common juniper	Moderately open canopy of: lodgepole pine	Moderately open canopy of: lodgepole pine	Moderately open canopy of: lodgepole pine
Associates	twinflower northwestern sedge fireweed yarrow dwarf blueberry grouseberry <i>Cladonia spp.</i> <i>Peltigera spp.</i>	common juniper prickly rose black huckleberry kinnikinnick twinflower dwarf blueberry northwestern sedge grouseberry fireweed yarrow broom moss <i>Cladonia spp.</i> <i>Peltigera spp.</i>	soopolallie prickly rose black huckleberry kinnikinnick pinegrass twinflower dwarf blueberry northwestern sedge grouseberry fireweed yarrow broom moss <i>Cladonia spp.</i> <i>Peltigera spp.</i>	common juniper soopolallie prickly rose black huckleberry kinnikinnick pinegrass twinflower dwarf blueberry northwestern sedge grouseberry fireweed yarrow broom moss <i>Cladonia spp.</i> <i>Peltigera spp.</i>	common juniper soopolallie prickly rose black huckleberry kinnikinnick pinegrass twinflower dwarf blueberry northwestern sedge grouseberry fireweed yarrow broom moss <i>Cladonia spp.</i> <i>Peltigera spp.</i>	common juniper soopolallie prickly rose black huckleberry kinnikinnick pinegrass twinflower dwarf blueberry northwestern sedge grouseberry fireweed yarrow broom moss <i>Cladonia spp.</i> <i>Peltigera spp.</i>
Plots			C208, C487	9800427, 98DL042, 98DL004, C315, C317, C381	9800430, 9800432, 91MK090, C414, C418, C490, C828, C830, C831, 98044	C410, C475

Comments: These ecosystems are dominated by moderately open stands (usually <30% crown closure) of lodgepole pine. In shrub layer, common juniper and soopolallie are commonly found. The herb layer is characterized as having abundant pinegrass and kinnikinnick with some northwestern sedge and dwarf blueberry. *Cladonia* is common in the moss lichen layer.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

LP / 00

Lodgepole Pine – Pinegrass – Kinnikinnick

Map Symbol	LP2, LPhs2, LPhv2, LPj2, LPjs2, LPjv2, LPk2, LPks2, LPkv2, LPr2, LPrs2, LPs2, LPt2, LPv2	LP3, LPhs3, LPhv3, LPj3, LPjs3, LPjv3, LPk3, LPks3, LPkv3, LPr3, LPrs3, LPs3, LPt3, LPv3	LP4, LPhs4, LPhv4, LPj4, LPjs4, LPjv4, LPk4, LPks4, LPkv4, LPr4, LPrs4, LPs4, LPt4, LPv4	LP5, LPhs5, LPhv5, LPj5, LPjs5, LPjv5, LPk5, LPks5, LPkv5, LPr5, LPrs5, LPs5, LPt5, LPv5	LP6, LPhs6, LPhv6, LPj6, LPjs6, LPjv6, LPk6, LPks6, LPkv6, LPr6, LPrs6, LPs6, LPt6, LPv6	LP7, LPhs7, LPhv7, LPj7, LPjs7, LPjv7, LPk7, LPks7, LPkv7, LPr7, LPrs7, LPs7, LPt7, LPv7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	pinegrass	soopolallie pinegrass				
Associates	northwestern sedge fireweed	prickly rose northwestern sedge fireweed	soopolallie pinegrass prickly rose northwestern sedge fireweed	soopolallie pinegrass prickly rose northwestern sedge fireweed	soopolallie pinegrass prickly rose northwestern sedge fireweed	soopolallie pinegrass prickly rose northwestern sedge fireweed
Bear Forage Species	kinnikinnick pinegrass northwestern sedge fireweed dwarf blueberry grouseberry	soopolallie prickly rose black huckleberry pinegrass kinnikinnick dwarf blueberry northwestern sedge grouseberry fireweed	soopolallie prickly rose black huckleberry pinegrass kinnikinnick dwarf blueberry northwestern sedge grouseberry fireweed	soopolallie prickly rose black huckleberry pinegrass kinnikinnick dwarf blueberry northwestern sedge grouseberry fireweed	soopolallie prickly rose black huckleberry pinegrass kinnikinnick dwarf blueberry northwestern sedge grouseberry fireweed	soopolallie prickly rose black huckleberry pinegrass kinnikinnick dwarf blueberry northwestern sedge grouseberry fireweed

Comments: This ecosystem provides moderate security/thermal habitat for bear and ungulates while also providing sufficient understory forage. This unit may be favored (in the ESSFxv2) for its warm aspect.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	<p>SW / 00 Englemann Spruce – Willow – Scrub Birch</p> <p>SWa / 00 Englemann Spruce – Willow – Scrub Birch; active floodplain SWm / 00 Englemann Spruce – Willow – Scrub Birch; medium-textured soils SWw / 00 Englemann Spruce – Willow – Scrub Birch; warm aspect</p>
<p>Typically this ecosystem is located on level terrain or in depressions with a near surface water table or near surface seepage flow. These sites commonly occur on deep soils with organic materials on the surface (SW). It is not uncommon to find this unit along active floodplains (SWa). Occasionally this site occurs on non organic seepage areas, with deep medium-textured soils (SWm). In very rare cases this unit will be found on gentle warm aspects (SWw).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1700-1900	1800
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
hygric to subhydric	medium to rich	
Drainage	poor to very poor	
Surficial Material		
organic blanket-veneer over fluvial or lacustrine or morainal fluvial blanket of plain, glaciolacustrine, morainal blanket with seepage		
Soil Development		
gleysol organic		
	Range	Mean
Humus Depth (cm)	0-15	8
Coarse Fragments (%)	20-35	
Soil Texture	Humus Form	
silt loam, organic	leptomoder	

Plot 9800438 SW6

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 SW / 00 Englemann Spruce – Willow – Scrub Birch

Map Symbol	SW2, SWa2, SWm2, SWw2	SW3, SWa3, SWm3, SWw3	SW4, SWa4, SWm4, SWw4	SW5, SWa5, SWm5, SWw5	SW6, SWa6, SWm6, SWw6	SW7, SWa7, SWm7, SWw7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants	common horsetail dwarf scouring-rush sedges	willows scrub birch lodgepole pine glow moss	Moderately open canopy of: lodgepole pine grey-leaved willow scrub birch glow moss	Moderately open canopy of: lodgepole pine grey-leaved willow scrub birch glow moss	Moderately open canopy of: lodgepole pine grey-leaved willow scrub birch glow moss	Moderately open canopy of: lodgepole pine grey-leaved willow scrub birch glow moss
Associates	grouseberry dwarf blueberry mountain sagewort palmate coltsfoot willows fireweed globeflower western meadowrue	dwarf blueberry black twinberry grouseberry common horsetail palmate coltsfoot sedges dwarf scouring-rush western meadowrue <i>Solidago spp.</i> mountain sagewort Sibbaldia globeflower red-stemmed feathermoss <i>Polytrichum spp.</i>	dwarf blueberry black twinberry grouseberry common horsetail palmate coltsfoot sedges dwarf scouring-rush western meadowrue <i>Solidago spp.</i> mountain sagewort Sibbaldia globeflower red-stemmed feathermoss <i>Polytrichum spp.</i>	Englemann spruce dwarf blueberry black twinberry grouseberry common horsetail palmate coltsfoot sedges dwarf scouring-rush western meadowrue <i>Solidago spp.</i> mountain sagewort Sibbaldia globeflower red-stemmed feathermoss <i>Polytrichum spp.</i>	Englemann spruce dwarf blueberry black twinberry grouseberry common horsetail palmate coltsfoot sedges dwarf scouring-rush western meadowrue <i>Solidago spp.</i> mountain sagewort Sibbaldia globeflower red-stemmed feathermoss <i>Polytrichum spp.</i>	Englemann spruce dwarf blueberry black twinberry grouseberry common horsetail palmate coltsfoot sedges dwarf scouring-rush western meadowrue <i>Solidago spp.</i> mountain sagewort Sibbaldia globeflower red-stemmed feathermoss <i>Polytrichum spp.</i>
Plots					9800438	

Comments: The mature forest of this ecosystem is dominated by a moderately open canopy (25% crown closure) of lodgepole pine and Englemann spruce. The understory shrub layer has various willows and scrub birch (sometimes reaching 60% cover). The herb layer contains a variety of wet site indicator plants such as horsetail and coltsfoot. Glow moss and red-stemmed feathermoss are the most consistent and common mosses.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

SW / 00

Englemann Spruce – Willow – Scrub Birch

Map Symbol	SW2, SWa2, SWm2, SWw2	SW3, SWa3, SWm3, SWw3	SW4, SWa4, SWm4, SWw4	SW5, SWa5, SWm5, SWw5	SW6, SWa6, SWm6, SWw6	SW7, SWa7, SWm7, SWw7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants	common horsetail	willows. scrub birch	grey-leaved willow scrub birch	grey-leaved willow scrub birch	grey-leaved willow scrub birch	grey-leaved willow scrub birch
Associates	dwarf scouring-rush sedges willows fireweed	black twinberry common horsetail sedges dwarf scouring-rush	black twinberry common horsetail sedges dwarf scouring-rush	black twinberry common horsetail sedges dwarf scouring-rush	black twinberry common horsetail sedges dwarf scouring-rush	black twinberry common horsetail sedges dwarf scouring-rush
Bear Forage Species	grouseberry dwarf blueberry common horsetail dwarf scouring-rush sedges fireweed	grouseberry dwarf blueberry black twinberry common horsetail sedges dwarf scouring-rush	grouseberry dwarf blueberry black twinberry common horsetail sedges dwarf scouring-rush	grouseberry dwarf blueberry black twinberry common horsetail sedges dwarf scouring-rush	grouseberry dwarf blueberry black twinberry common horsetail sedges dwarf scouring-rush	grouseberry dwarf blueberry black twinberry common horsetail sedges dwarf scouring-rush

Comments: The abundance of willow and scrub birch provides good feeding habitat for ungulates – especially moose and deer. Bear will also feed here – focusing efforts toward the herbaceous vegetation – specifically horsetails and succulent new growth in the spring.

9.2 ESSFxv2 - Grassland Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSF _{xv} 2	<p>JK / 00 Juniper – Kinnikinnick</p> <p>JKhs / 00 Juniper – Kinnikinnick; hummocky, shallow soil JKhv / 00 Juniper – Kinnikinnick; hummocky, very shallow soil JKjs / 00 Juniper – Kinnikinnick; gentle slope, shallow soil JKjv / 00 Juniper – Kinnikinnick, gentle slope, very shallow soil JKks / 00 Juniper – Kinnikinnick, cool aspect, shallow soil JKrv / 00 Juniper – Kinnikinnick; ridged, very shallow soil JKs / 00 Juniper – Kinnikinnick; shallow soil JKv / 00 Juniper – Kinnikinnick; very shallow soil</p>
<p>This non-forested ecosystem typically is found on steep, south facing slopes on crests, upper and mid slope positions. These sites have deep medium-textured soils. Cryoturbation and/or surface erosion may be present (JK). This plant community is commonly found on shallow and very shallow soils (JKs, JKv) or various terrain types with shallow or very shallow soils such as hummocked terrain (JKhs, JKhv), gentle slopes (JKjs, JKjv), ridges (JKrv) or cool aspect slopes (JKks).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1800-2100	1950
Slope (%)	0-60	30
Aspect (degrees)	135-285	
Moisture Regime	Nutrient Regime	
subxeric to xeric	poor to rich	
Drainage	well to rapid	
Surficial Material		
colluvial blanket veneer, morainal blanket veneer weathered bedrock		
Soil Development		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
sandy loam		

Plot C74 JK2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

JK / 00

Juniper – Kinnikinnick

Map Symbol	JK2, JKhs2, JKhv2, JKjs2, JKjv2, JKks2, JKrv2, JKs2, JKv2	JK3a, JKhs3a, JKhv3a, JKjs3a, JKjv3a, JKks3a, JKrv3a, JKs3a, JKv3a
Plant species	Herb Climax	Low Shrub Climax
Dominants	kinnikinnick crustose lichen	common juniper kinnikinnick
Associates	lance-leaved stonecrop common juniper pussytoes yarrow northwestern sedge wild strawberry purple reedgrass spotted saxifrage junegrass field locoweed short-beaked agoseris	lodgepole pine whitebark pine trembling aspen lance-leaved stonecrop pussytoes yarrow northwestern sedge wild strawberry purple reedgrass spotted saxifrage junegrass field locoweed short-beaked agoseris
Plots	98043, C74, C313, C314, C320, C324, C374, C378, C395, C419, C424, C829	C316

Comments: These sites are non-forested scrub land that may have scattered lodgepole pine (or whitebark pine at higher elevations) stems. Sites are dominated by continuous cover of common juniper or kinnikinnick depending on structural stage. Scattered dry site indicator plants such as stonecrop, pussytoes and yarrow may be present. Occasionally, this unit may be represented as a graminoid dominated community. It is not uncommon to find patches of exposed soil or bedrock.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series

Name

JK / 00

Juniper – Kinnikinnick

Map Symbol	JK2, JKhs2, JKhv2, JKjs2, JKjv2, JKks2, JKrv2, JKs2, JKv2	JK3a, JKhs3a, JKhv3a, JKjs3a, JKjv3a, JKks3a, JKrv3a, JKs3a, JKv3a
Plant Species	Herb Climax	Low Shrub Climax
Ungulate Forage Species - Dominants		
Ungulate Forage Species - Associates	junegrass northwestern sedge	junegrass northwestern sedge
Bear Forage Species	kinnikinnick wild strawberry junegrass northwestern sedge	kinnikinnick wild strawberry junegrass northwestern sedge

Comments: Generally ungulate and bear forage are quite limited on these ecosystems due to the low shrubby nature of the predominant vegetation.

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	WP / 00 Old man's Whiskers – Small-flowered Penstemon WPm / 00 Old man's Whiskers – Small-flowered Penstemon; medium-textured soil
This ecosystem typically occurs on either toe slopes or level areas with fine-textured soils. This unit is typically located in areas of cold air drainage thereby receiving frosts during the growing season (WP). This unit was not sampled and is irregular in its distribution. It can also be found on medium-textured soil (WPm).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1700-1900	1800
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhygric to mesic	medium	
Drainage	moderate to imperfect	
Surficial Material		
fluvial, glaciolacustrine		
Soil Development		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
silty to clayey		

NO PHOTO

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 WP / 00 Old man's Whiskers – Small-flowered Penstemon

Map Symbol	WP2, WPm2
Plant species	Herb Climax
Dominants	sedges old man's whiskers
Associates	scrub birch willows dwarf blueberry thread-leaved sandwort showy jacob's ladder <i>Festuca spp.</i> yarrow spiked trisetum cinquefoils goldenrods orange agrositis fragile sourweed woolly coral lichen <i>Cladonia spp.</i> <i>Brachythecium spp.</i> <i>Dicranum spp.</i>
Plots	

Comments: This is a non-forested cold grassland site that is predominated by herbaceous vegetation. This site is dominated by a wide variety of herbaceous vegetation such as dwarf blueberry, old man's whiskers, fragile sourweed and thread-leaved sandwort. A variety of moss species also occurs including *Brachythecium spp.* and *Dicranum spp.* Occasionally stunted and scattered scrub birch may occur.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 WP / 00 Old man's Whiskers – Small-flowered Penstemon

Map Symbol	WP2m WPm2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	sedges
Ungulate Forage Species - Associates	willows <i>Festuca spp.</i> spiked trisetum
Bear Forage Species	sedges <i>Festuca spp.</i> spiked trisetum

Comments: Variety of herbaceous vegetation provides some forage for ungulates and bear but this unit will not be a focus of intense feeding pressure.

9.3 ESSF_{xv2} - Wetland Units

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxv2	SG / 00 Sedge – Glow Moss SGm / 00 Sedge – Glow Moss; medium-textured soils
This unit is used to represent generalized graminoid dominated wetland. Water source is primarily from groundwater and runoff from adjacent mineral uplands. The unit is level with organic soils (SG). On occasion the unit can be found on sites with medium-textured soils (SGm).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1700-2000	1850
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric	medium to very rich	
Drainage	poor to very poor	
Surficial Material		
organic blanket veneer over either fluvial lacustrine or morainal material		
Soil Development		
typic mesisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)		
Soil Texture	Humus Form	
organic		

Plot C467 SG2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 SG / 00 Sedge – Glow Moss

Map Symbol	SG2, SGm2
Plant species	Herb Climax
Dominants	sedges glow moss <i>Sphagnum spp.</i>
Associates	willows scrub birch <i>Poa spp.</i> golden fuzzy fen moss mountain sagewort
Plots	C467

Comments: This is a non forested wetland ecosystem dominated by a variable cover of various sedges. Willows and scrub birch are a very minor component of the vegetative matrix on these sites. Sphagnum mosses and glow moss are both common and abundant.

Map Symbol	SG2, SGm2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	sedges
Ungulate Forage Species - Associates	willows scrub birch <i>Poa sp.</i>
Bear Forage Species	Sedge spp. small-flowered wood-rush Kentucky bluegrass <i>Poa sp.</i> common timothy

Comments: This is a good feeding site for ungulates and bear especially early in the growing season.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxx2	WB / 00 Willow – Scrub Birch WBa / 00 Willow – Scrub Birch; active floodplain WBc / 00 Willow – Scrub Birch; coarse-textured soil WBkm / 00 Willow – Scrub Birch; cool aspect, medium-textured soil WBm / 00 Willow – Scrub Birch; medium-textured soil
This unit is used to represent a shrub-dominated wetland ecosystem. This ecosystem is typically found on level sites and in moisture receiving depressions. Soils are typically organic accumulations (WB). This unit can be found along active floodplains (WBa) as well as on coarse-textured soils (WBc) and medium-textured soil (WBm).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	1700-1900	1800
Slope (%)	0	0
Aspect (degrees)	level	
Moisture Regime	Nutrient Regime	
subhydric	medium to rich	
Drainage	imperfect to poor	
Surficial Material		
organic blanket, plain fluvial, morainal with seepage		
Soil Development		
mesisol, humisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	<20	
Soil Texture	Humus Form	
organic		

Plot C396 WB3a

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

WB / 00

Willow – Scrub Birch

Map Symbol	WB3a,WBa3a, Wbc3a, WBkm3a, WBm3a	WB3b,WBa3b, Wbc3b, WBkm3b, WBm3b
Plant species	Low Shrub Climax	Tall Shrub Climax
Dominants	scrub birch willows glow moss <i>Sphagnum spp.</i>	scrub birch willows glow moss <i>Sphagnum spp.</i>
Associates	Englemann spruce sedges bluejoint bluegrasses cinquefoil spp. western meadowrue wild strawberry purple-leaved willowherb dwarf scouring-rush <i>Drepanocladus spp.</i>	Englemann spruce sedges common timothy bluejoint bluegrasses cinquefoil spp. western meadowrue wild strawberry purple-leaved willowherb dwarf scouring-rush <i>Drepanocladus spp.</i>
Plots	C396	C484

Comments: This is a non forested wetland ecosystem dominated by scrub birch and/or a variety of willow species. Englemann spruce do occur here but are usually scattered and stunted with <5% cover. A variety of sedge species also occur over a moss layer that is commonly composed of an abundance of glow moss and/or sphagnum mosses

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP UNIT

Symbol /Site Series Name
 WB / 00 Willow – Scrub Birch

Map Symbol	WB3a,WBa3a, Wbc3a, WBkm3a, WBm3a	WB3b,WBa3b, Wbc3b, WBkm3b, WBm3b
Plant Species	Low Shrub Climax	Tall Shrub Climax
Ungulate Forage Species - Dominants	scrub birch willows	scrub birch willows
Ungulate Forage Species - Associate	sedges dwarf scouring-rush	sedgespp. common timothy dwarf scouring-rush
Bear Forage Species	wild strawberry sedges common timothy dwarf scouring-rush	wild strawberry sedges common timothy dwarf scouring-rush

Comments: The abundance of willow and other palatable herbaceous vegetation makes this unit a valuable security habitat for ungulate and bear feeding. Structural stage 3b will provide some security cover values to feeding ungulates.

10.0 ESSFxvp2 - Engelmann Spruce - Subalpine Fir Very Dry Very Cold Parkland Subzone Big Creek Variant

10.1 ESSF_{xvp2} - Forested Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxvp2	FL / 00 Lodgepole Pine – Subalpine Fir – Arctic Lupine FLd / 00 Lodgepole Pine – Subalpine Fir – Arctic Lupine; deep soil FLk / 00 Lodgepole Pine – Subalpine Fir – Arctic Lupine; cool aspect FLv / 00 Lodgepole Pine – Subalpine Fir – Arctic Lupine; very shallow soil
This parkland unit is typically found on moderate to steep slopes of all aspects with shallow soils (FL). It can occur on deep soil (FLd) as well as on very shallow soils (FLv). It was commonly found on cool aspect slopes (FLk).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	>2100	
Slope (%)	25-50	35
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
submesic to subxeric	poor to rich	
Drainage	moderate to well	
Surficial Material		
morainal blanket veneer		
colluvial blanket veneer		
Soil Development		
orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
loamy		

Plot C462 FL3

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FL / 00

Lodgepole Pine – Subalpine Fir – Arctic Lupine

Map Symbol	FL2, FLd2, FLk2, FLv2	FL3, FLd3, FLk3, FLv3	FL4, FLd4, FLk4, FLv4	FL5, FLd5, FLk5, FLv5	FL6, FLd6, FLk6, FLv6	FL7, FLd7, FLk7, FLv7
Plant species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Dominants		Open canopy of : lodgepole pine white mountain avens	Open canopy of : lodgepole pine white mountain avens	Open canopy of : lodgepole pine white mountain avens	Open canopy of : lodgepole pine white mountain avens	Open canopy of : lodgepole pine white mountain avens
Associates	common juniper mountain avens twinflower kinnikinnick pussytoes mountain sagewort field locoweed spike-like goldenrod bracted lousewort cottontail coral <i>Peltigera spp.</i> <i>Cladonia spp.</i>	subalpine fir Englemann spruce whitebark pine common juniper twinflower mountain avens kinnikinnick pussytoes mountain sagewort field locoweed spike-like goldenrod bracted lousewort cottontail coral <i>Peltigera spp.</i> <i>Cladonia spp.</i>	Englemann spruce whitebark pine common juniper twinflower mountain avens kinnikinnick pussytoes mountain sagewort field locoweed spike-like goldenrod bracted lousewort cottontail coral <i>Peltigera spp.</i> <i>Cladonia spp.</i>	Englemann spruce whitebark pine common juniper twinflower mountain avens kinnikinnick pussytoes mountain sagewort field locoweed spike-like goldenrod bracted lousewort cottontail coral <i>Peltigera spp.</i> <i>Cladonia spp.</i>	subalpine fir Englemann spruce whitebark pine common juniper twinflower mountain avens kinnikinnick pussytoes mountain sagewort field locoweed spike-like goldenrod bracted lousewort cottontail coral <i>Peltigera spp.</i> <i>Cladonia spp.</i>	subalpine fir Englemann spruce whitebark pine common juniper twinflower mountain avens kinnikinnick pussytoes mountain sagewort field locoweed spike-like goldenrod bracted lousewort cottontail coral <i>Peltigera spp.</i> <i>Cladonia spp.</i>
Plots	C462					

Comments: This parkland forest can occur as all structural stages but is commonly found at structural stage 3 due to the harsh climactic conditions it is growing under. This forest typically has an open to very open canopy (usually <20% crown closure) dominated by lodgepole pine and subalpine fir. Minor amounts of whitebark pine and Englemann spruce may also be found. Mountain avens and kinnikinnick are the most common understory plants.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

FL / 00

Lodgepole Pine – Subalpine Fir – Arctic Lupine

Map Symbol	FL2, FLd2, FLk2, FLv2	FL3, FLd3, FLk3, FLv3	FL4, FLd4, FLk4, FLv4	FL5, FLd5, FLk5, FLv5	FL6, FLd6, FLk6, FLv6	FL7, FLd7, FLk7, FLv7
Plant Species	Herb	Shrub	Pole Sapling	Young Forest	Mature Forest	Old Forest
Ungulate Forage Species - Dominants						
Associates						
Bear Forage Species	kinnikinnick	kinnikinnick whitebark pine	kinnikinnick whitebark pine	kinnikinnick whitebark pine	kinnikinnick whitebark pine	kinnikinnick whitebark pine

Comments: This site provides very limited feeding and cover values to bear and ungulates.

10.1 ESSFxvp2 - Meadow Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxp2	AH / 00 Mountain Avens – Heather AHh / 00 Mountain Avens – Heather; hummocky AHk / 00 Mountain Avens – Heather; cool aspect AHw / 00 Mountain Avens – Heather; warm aspect
This parkland ecosystem is typically found as variable dry meadows on very thin soils with gentle slopes (AH). Occasionally this unit can be on hummocked terrain (AHh) or on moderate warm (AHw) and cool aspects (AHk).	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	>2100	
Slope (%)	0-25	12
Aspect (degrees)	all	
Moisture Regime	Nutrient Regime	
xeric to subxeric	poor to medium	
Drainage	well to rapid	
Surficial Material		
morainal thin veneer over rock, weathered bedrock colluvial thin veneer over rock		
Soil Development		
orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
silty		

Plot C458 AH2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series

Name

AH / 00

Mountain Avens – Heather

Map Symbol	AH2, AHh2, AHk2, AHw2
Plant species	Herb Climax
Dominants	white mountain avens alpine bluegrass Bellard's kobresia ragged snow
Associates	compact selaginella mountain sagewort two-toned sedge white mountain heather field locoweed diverse-leaved cinquefoil spotted saxifrage lance-leaved stonecrop
Plots	C458

Comments: Alpine plant community dominated by mountain avens and alpine bluegrass. Some communities may have an abundance of heather but this situation wasn't sampled. Lichen cover is variable. It is not uncommon to find exposed mineral soil or bedrock.

Map Symbol	AH2, AHh2, AHk2, AHw2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	alpine bluegrass
Ungulate Forage Species - Associates	two-toned sedge
Bear Forage Species	alpine bluegrass two-toned sedge

Comments: Dry nature of this site produces mainly unpalatable herbs. Deer may be found on alpine bluegrass.

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxvp2	<p>KC / 00 Kinnikinnick – <i>Cladonia</i> KCdj / 00 Kinnikinnick – <i>Cladonia</i>; deep soil, gentle slope KCh / 00 Kinnikinnick – <i>Cladonia</i>; hummocky KCj / 00 Kinnikinnick – <i>Cladonia</i>; gentle slope KCjv / 00 Kinnikinnick – <i>Cladonia</i>; gentle slope, very shallow soil KCK / 00 Kinnikinnick – <i>Cladonia</i>; cool aspect KCv / 00 Kinnikinnick – <i>Cladonia</i>; very shallow soil</p>
<p>This alpine ecosystem is typically found on moderate warm aspect slopes with shallow soils, from mid to upper slope positions. This site also occurs on cool aspects (KCK) and on sites with deep soils (KCd) and very shallow soils (KCv). This site can also be found on gentle slopes (KCj) and gentle slopes with deep soil (KCdj) and gentle slopes with very shallow soil (KCjv).</p>	

SITE DESCRIPTION

	Range	Mean
Elevation (m)	>2100	
Slope (%)	25-50	35
Aspect (degrees)	135-285	
Moisture Regime	Nutrient Regime	
submesic to subxeric	poor to rich	
Drainage	well to rapid	
Surficial Material		
morainal veneer blanket colluvial veneer blanket		
Soil Development		
orthic dystic brunisol		
	Range	Mean
Humus Depth (cm)		
Coarse Fragments (%)	35-70	
Soil Texture	Humus Form	
sandy loam, loamy		

Plot C461 KCw2

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

MAP

Symbol /Site Series Name
 KC / 00 Kinnikinnick – *Cladonia*

Map Symbol	KC2, KCdj2, KCh2, KCj2, KCjv2, KCK2, KCv2
Plant species	Herb Climax
Dominants	kinnikinnick
Associates	Pyrenean sedge two-toned sedge junegrass diverse-leaved cinquefoil pussytoes Parry's campion <i>Cladonia spp.</i> ragged snow
Plots	C461

Comments: This alpine ecosystem is typically dominated by a continuous cover of kinnikinnick with scattered high elevation herbs and mosses.

Map Symbol	KC2, KCdj2, KCh2, KCj2, KCjv2, KCK2, KCv2
Plant Species	Herb Climax
Ungulate Forage Species - Dominants	kinnikinnick
Ungulate Forage Species - Associates	Pyrenean sedge two-toned sedge junegrass
Bear Forage Species	kinnikinnick Pyrenean sedge two-toned sedge junegrass

Comments: The dry nature of these sites provides little forage. Bear may use kinnikinnick berries and ungulates the few grass species.

11.0 Non-vegetated, Sparsely Vegetated, and Anthropogenic Units

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
IDFdk3	BF Blockfields BFk Blockfields; cool aspect
<p>These mainly nonvegetated sites occur on gentle terrain covered by large blocky boulders which result from the bedrock weathering in place. Some moss and crustose lichens grow on the rocks, but there is very sparse vascular plant cover with scattered ferns and some raspberry. A large blockfield occurs on a cool aspect (BFk) near French Bar Creek. Ungulate and bear values are low for this unit, although some species of wildlife such as bats and snakes may use the crevices between the rocks for habitat.</p>	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
BGxh3, BGxw2, IDfxm, IDFdk3, IDFdk4	CF Cultivated Field CFn Cultivated Field; fan CFt Cultivated Field; terrace
<p>These are flat or gently sloped, nonforested open areas subject to human agricultural practices which often result in long term soil and vegetation changes. In the Churn Creek study area, ranches are concentrated along the larger drainages such as the Fraser River, Koster and Grinder Creek in the Empire Valley, and Lone Cabin Creek. Cultivated fields are generally irrigated alfalfa hay fields on the valley bottom (CF) or on lower terraces and fans (CFn, CFt). California bighorn sheep and wintering mule deer forage extensively in the cultivated fields, especially in the Empire valley where there is nearby escape terrain.</p>	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
BGxh3, BGxw2, IDfxm, IDFdk3, IDFdk4, SBPSxc, ESSFxv2	CL Cliff CLg Cliff; gullied CLq Cliff; very steep cool aspect CLz; Cliff; very steep warm aspect
<p>These very steep, vertical, or overhanging rock faces are primarily nonvegetated, but trees and other plants can occur in low covers (<10%) on ledges and in crevices. Cliffs may have very steep cool (CLq) or warm (CLz) aspects, or some bedrock types may be gullied (CLg). Cliffs of Miocene basalt lava flows occur along the eastern rim of the Fraser canyon and its tributaries, while localized pockets of other volcanic and sedimentary rocks form cliff faces sporadically along most drainages and on the Fraser Plateau. Cliffs provide important escape terrain for California bighorn sheep, but are generally too steep for other ungulates and bears. Warm aspect cliffs form nesting and roosting habitat for other wildlife such as raptors, swifts, and bats.</p>	

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
BGxh3, BGxw2, IDfxm, IDfdk3, IDfdk4, SBPSxc, MSxv, ESSF xv2	ES Exposed Soil ESg Exposed Soil; gullied ESk Exposed Soil; cool aspect ESq Exposed Soil; very steep cool aspect ESr Exposed Soil; ridged ESw Exposed Soil; warm aspect ESz Exposed Soil; very steep warm aspect
This is primarily a non-vegetated unit (ES). It is affiliated with the very dry steep terrain on undifferentiated surficial materials along the Fraser River canyon and the lower sections of its tributaries (ESk, ESq, ESw, ESz). Surface erosion is a common site feature (ESg, ESr). These areas may provide important escape terrain for California bighorn sheep.	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
BGxh3, BGxw2, IDfxm	GB Gravel Bar
These sites are mostly non-vegetated coarse-textured fluvial material on active floodplains along the Fraser River, Churn Creek and some of the larger tributaries (GB). Annual flooding prevents establishment of plant communities and may shift the form and location of these features from year to year.	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
BGxw2, IDfxm, IDfdk4, SBPSxc, MSxv	LA Lake
These large (greater than 50 ha.) deep (greater than 2 m.) static bodies of water that occur along larger streams such as Koster Creek. They are important as watering areas for wildlife. Ungulates and bears forage around the perimeter, and waterfowl and bats forage in, on, or over lakes. Certain lakes, notably Brown Lake, contain fish which are important for certain wildlife species.	

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
ESSFxp2	MI Mine
This is an unvegetated area used for the extraction of ore. The Black Dome Mine, where gold-bearing ore is mined, is located near the summit of Black Dome Mountain.	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
ESSFxv2, ESSFxp2	MS Rubbly Mine Spoils MSw Rubbly Mine Spoils; warm aspect
This is the discarded overburden or waste rock moved so that ore can be extracted in a mining operation (MS). The Black Dome Mine has a fairly large tailings area of rubbly mine spoils, which spill onto a warm aspect (MSw).	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
BGxh3, IDfxm, IDfdk4, SBPSxc, MSxk, MSxv, ESSFxv2	OW Shallow Open Water
These are wetlands consisting of permanent shallow open water less than 2 m. deep and lacking extensive emergent plant cover (OW). Submergent and floating aquatic plants such as duckweed may be quite dense. Water depth, and hence the extent of these ecosystems, may vary considerably from year to year and during the season depending on precipitation. Wetland complexes with shallow open water are uncommon in the study area and form important wildlife habitat, especially for waterfowl. They are also heavily impacted by cattle and horses when used as watering holes.	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
IDfdk4, MSxk, MSxv, ESSFxv2	PD Pond
These are small bodies of water greater than 2 m. deep but less than 50 ha. in area (ie. smaller than a lake). They are uncommon in the study area.	

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
BGxh3, BGxv2, IDfxm, MSxv	RI River
<p>These are perennial or intermittent watercourses formed when water flows between continuous, definable banks. In this study area rivers that are mappable include the Fraser River and Churn Creek. These are sufficiently swift and rapid that wildlife use of the actual river is somewhat restricted. However, the river corridor and its banks are important focal points for resident and migratory birds and wildlife, especially during the annual salmon run on the Fraser River. They may be barriers to some wildlife species such as ground squirrels, which occur east of the Fraser but not on the west side.</p>	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
ESSF xv2, ESSF xvp2	RM Reclaimed Mine RMw Reclaimed Mine warm aspect
<p>This is a mined area or tailings that has been planted with agronomic or native grasses, forbs and shrubs. The Black Dome Mine has a reclaimed mine area.</p>	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
BGxh3, IDfxm, IDf dk3, IDf dk4, SPBSxc, MSxk, MXxv, ESSF xv2, ESSF xvp2	RO Rock Outcrop ROh Rock Outcrop; hummocky ROk Rock Outcrop; cool aspect ROw Rock Outcrop; warm aspect
<p>These are typically gently sloping bedrock outcrops with little soil development and sparse vegetative cover (RO). Some rock types may be hummocky (ROh). They are frequently steep (ROk, ROw), but those greater than 100% slope are defined as cliffs (CLq, CLz). Steep rock outcrops may form escape terrain for California bighorn sheep and mule deer.</p>	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
BGxh3, BGxw2, IDfxm, IDf dk4, MSxk, MXxv, ESSF xv2, ESSF xvp2	RP Road Surface
<p>These are areas cleared and compacted for the purpose of transporting goods and services by vehicles. All roads in the study area are surfaced with gravel or dirt.</p>	

CHURN CREEK TERRESTRIAL ECOSYSTEM MAPPING PROJECT - 1998

BIOGEOCLIMATIC UNIT	MAP Symbol /Site Series Name
BGxw2	RR Rural
<p>These are areas where residences and other human developments are scattered and intermingled with forest, range, farm land, and native vegetation or cultivated crops. The main ranches in the study area are the Empire Ranch, the Koster Ranch, and a small ranch at Lone Cabin Creek.</p>	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
IDFdk4, ESSFxvp2	<p>RU Rubble RUK Rubble; cool aspect RUW Rubble; warm aspect</p>
<p>These are unsorted weathered rock fragments, typically due to the effects of frost heaving on gentle slopes (RU), but they may occur on steeper slopes (RUK, RUW).</p>	

BIOGEOCLIMATIC UNITS	MAP Symbol /Site Series Name
ALL	<p>TA Talus TAK Talus; cool aspect TAKn Talus; cone on cool aspect TANq Talus; cone on very steep cool aspect TAq Talus; very steep cool aspect TAw Talus; warm aspect</p>
<p>These are angular rock fragments of any size accumulated at the foot of steep rock slopes as a result of successive rock falls, ie. a type of colluvium (TA). It occurs on various slopes and aspects and may form cones (TAK, TAKn, TANq, TAq, TAw). Stable talus may have some lichens or mosses growing on the rocks, and widely scattered vascular plants such as Douglas-fir, ferns or shrubs growing in small pockets of soil. Areas with current colluvial activity support little plant growth. Some species of wildlife, such as bats and snakes, use the crevices between the rocks for habitat, while California bighorn sheep may use some talus slopes for escape terrain.</p>	