

## RANGE ECOSYSTEM INVENTORY IN THE CHERRY-TATA

### CREEK RANGE UNIT

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#### INTRODUCTION

The Cherry-Tata Creek Range Unit includes approximately 115 km<sup>2</sup> in the East Kootenay Trench between Fort Steele and Wasa and West of the Kootenay River. It includes the Kootenay variant dry hot subzone of the Ponderosa Pine biogeoclimatic zone and the Kootenay variant of the dry mild subzone of the Interior Douglas Fir zone.

The Kootenay variant dry hot subzone of the Ponderosa pine biogeoclimatic zone includes several fenced pastures. East of highway 95A are five pasture units including:

Lost Spring, Airport, China, Cherry and Steer. West of the highway are Highway, Rock Lake and Beacon which has a minor component of the dry mild subzone of the Interior Douglas-fir zone.

Two pasture units including Goodwin and Lost Dog are dominantly the Kootenay variant of the dry mild subzone of the Interior Douglas-fir zone.

The Ponderosa Pine and Interior Douglas fir zones in the Cherry-Tata Range Unit have a history of wild fire. These fires helped maintain a strong grassland component within the study area. The open and dense Ponderosa pine forest contain significant populations of rough fescue (*Festuca campestris*), a long lived grass species adapted to open unforested rangeland. This is not a woodland grass but an indicator that much of the Ponderosa pine forest is a transitional community. It is probable that, periodically, when fire eliminated the woody species, this range was a fescue grassland. Rough fescue is very long-lived bunches could easily be 100 years old and possibly many decades older. This grass sets seed only periodically, generally every fourth year. Thus, transition is slow.

A second grass whose prominence was obvious throughout the study area is pine grass (*Calamagrostis rubescens*). This is a true woodland grass that prefers a dry semi open pine forest. It is the presence of these two species in close association which indicates this study area was in constant flux between forest and grassland.

The driest landscapes in the dry hot subzone of the Ponderosa Pine biogeoclimotic zone were a very minor component of the study area. These are the bluebunch wheat grass (*Agropyron spicatum*) range types common in the Kootenay trench. This type can be found along Cherry Creek described in the Cherry Creek pasture - CH7 site type.

A good part of the study area is in good condition, thus still close to the potential natural community of the biogeoclimatic zones. In the summary of each pasture, total cover is tabulated in two ways. First, total % prominence cover of all species grouped as grass, forb, seeded grass or forb, conifer shrub or non native.

The second total cover grouping includes decreaser, increaser and non native species which is, along with range condition class, a way of evaluating Potential Natural Community.

## RANGE INVENTORY TABLES

The following tables are a summary of the inventory data collected from each range site. The pastures are all evaluated separately and each is mapped according to prominent species. The maps and associated tables are located together and must be used in conjunction.

### The Maps

The maps are contained on air photos. Airport pasture, on photo 30BCC94133 No. 016, is divided into eight district vegetation polygons and twenty-two individual mapped units. The vegetation polygons include A1 through A8. On the maps are approximate acreages. Acreages were determined using a Tamaga Digital Planimeter model number Planix 6. Base line data was determined using the Cherry Tata Creek Range Unit Map, Ministry of Forests, Cranbrook, B.C. 1991, scale 1:20,000.

### Associated Table

The associated table contains a description of each vegetation polygon along with range condition and use descriptions. In order to understand the tables it is necessary to understand some abbreviations, definitions and the array. Thus, using Airport pasture as an example, and the vegetation polygon A1 as a specific case.

<p>Vegetation Polygon number</p> <p>↗</p> <p><b>A1 01 Py</b></p> <p>↘</p> <p>environmental table site serie &amp; phase (see appendix 1 of attached guide)</p> <p><b>primary /</b></p> <p>↖</p> <p>one of three range use categories</p>	<p><b>Vegetation description</b></p> <p>dominantly    less    least prominence</p> <p>↘                ↓                ↗</p> <p><b>Gr // C Sh</b></p> <p>↘                ↗</p> <p>one of four range use categories</p> <p>↘                ↗</p> <p><b>moderate / fair</b></p> <p>↖                ↗</p> <p>current vigor of vegetation</p>	<p>The transects data was collected from</p> <p>↓</p> <p><b>20 microplots D1 &amp; D4</b></p> <p>↗</p> <p><b>number of microplots within the polygon</b></p> <p>↘</p> <p>calculated % from the guide</p> <p>↘</p> <p><b>range condition 22.6% poor</b></p> <p>↖</p> <p>range condition rating</p>
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<b>tree cover</b> ↗	<b>actual species</b> ↓	<b>species status</b> ↓	<b>% Prominence</b> ↓	<b>species type</b> ↓
overstory	Pseudotsuga menziesii Pinus ponderosa			
prominent species ↖	Koeleria macratha Antennaria parvifolia	In In	29.7% 28.6%	G F
<b>generally greater than 10%</b>	Agropyron spicatum Festuca campestris Poa pratensis	De De In	10.6% 3.3% 1.2%	G G G
indicator species ↖	Plantago patagonica Orthocarpus tenuifolius	In In	0.1% 1.2%	F F
<b>species which are significant in determining range condition and P.N.C.</b>	Achillea millefolium Taraxacum officinale Agropyron repens Medicago lupulina Bromus tectorum	In NN NN NN NN	1.2% 0.8% 0.8% 2.9% T	F F G F G

#### Abbreviations and Definitions

Vegetation Polygon Number:	A1	Airport 1
	St 4	Steer 4
	Ch 9	Cherry 9

#### Environmental Table Site Series & Phase

A total of six units included in two Environmental Tables:

i)	PPdh2 Landscape profile	01 Py	ponderosa pine - bluebunch wheat grass moderate slopes, morainal parent material
ii)	PPdh2	01 Fes	rough fescue - ponderosa pine
iii)	PPdh2	04 Mix	mixed wood forest generally associated with creeks and rivers.
iv)	PPdh2	02ab	steep slopes with bluebunch wheat grass - June grass - ponderosa pine cover.
v)	IDFdm2	01 to 04 FdPILW	variable conifer forest cover on gentle to moderate topography with primarily forest rain cover (some bedrock)
vi)	IDFdm2	01 to 04 CC	clear cuts similar to the above site series and phase

## Vegetation description

Gr	Grassland	C.C.	clear cut
C	conifer	Mx	mixed wood
Sh	Shrub land		

Symbols: greater dominance // sub dominance  
          dominant / sub dominant  
          close to equal

## Number of Microplots

20 microplots There were generally 10 microplots per transect run. Thus the 20 microplots used to determine prominence in this polygon includes two transects.

## Transect Numbers

The D1 and D4 transects were those run to determine all descriptive data in this polygon.

## Range Use Categories

**Primary** These are preferred polygons which are used frequently and extensively. They may be associated with water, quality forage, salt grounds or over stocking.

**Secondary** These are the polygons whose access or species composition result in utilization less than optimum.

**Non Use** Sometimes called tertiary range, these are the polygons whose access or species composition results in livestock or other users ignoring or passing by without utilizing.

## Current Vigor

There are four vigor categories describing apparent current annual forage production. Vigor is described as **excellent, good, fair, or poor**. This ocular estimate relates to current production and health of the plants in a community. It also relates to use history, since past heavy utilization affects current potential and ability to respond to good moisture.

## Range condition

The calculated % and range condition rating relate directly to species composition. Using the Cherry Tata Range Condition Guide 1996 it is possible to determine the calculated % condition and then range condition rating.

The condition classes include: Excellent 75 - 100% or the late serial P.N.C.  
Good: 50 - 75% or the late serial P.N.C.  
Fair: 25 - 50% or the mid serial P.N.C.  
Poor: 0-25% or the early serial P.N.C.

### Overstory

The tree species which are common within the napped polygon.

### Actual Species

The latin name of species whether tree, grass or forb.

### Species Status

In - Increaser species that normally increase in relative abundance as decreasers decline. These are less productive species which generally have a reduced prominence in a climax population but increase dramatically in early serial populations.

Dc - Decreasers species decline in relative abundance under continued heavy use. They are productive palatable species which are prominent in climax vegetation populations.

NN - Non-native or invader species which are not indigenous or part of the climax vegetation population. They offset native decreasers and increasers species and generally have little grazing value.

Sd - Seeded species generally highly palatable.

### % prominence

The calculated prominence value using % frequency and % average cover data collected from the transects run in each vegetation polygon.

### Species Type

G - grass	Sh - Shrub
F - forb	C - conifer
PF - poisonous forb	

# AIRPORT PASTURE

**A1**                      **01 Py**                      **Gr// C/ Sh**                      **20 micro plots**                      **D1 & D4**  
**primary/ moderate/ fair**                      **Range condition: 22.6% poor**

Overstory:                      open Pseudotsuga menziesii  
Pinus ponderosa

Prominent species:	Koeleria macrantha	IN	29.7%	G
	Antennaria parvifolia	IN	28.6%	F
	Agropyron spicatum	De	10.6%	G
	Festuca campestris	De	3.3%	G

Indicator species:	Poa pratensis	IN	1.2%	G
	Plantago patagonica	IN	0.1%	F
	Orthocarpus tenuifolius	IN	1.2%	F
	Achillea millefolium	IN	1.2%	F
	Taraxacum officinale	NN	0.6%	F
	Agropyron repens	NN	0.8%	G
	Medicago lupulina	NN	2.9%	F
	Bromus tectorum	NN	T	G

Total Cover:    grass 44.8%, forb 50.9%, non native 4.3%  
decreaser 13.9%, increaser 81.8%, non native 4.3%

**A2**                      **01 Py**                      **C.C./Sh**                      **10 micro plots**                      **D2**  
**primary-secondary/ light /good to excellent**                      **Range condition: 54.5% good**

Prominent species:	Calamagrostis rubescens	IN	34.9%	G
	Arctostaphylos uva-ursi	IN	42.4%	Sh

Indicator species:	Antennaria parvifolia	IN	1.1%	F
	Festuca campestris	De	1.8%	G
	Stipa richardsonii	De	2.7%	G

Total Cover:    grass 56.5%, forb 1.1%, shrub 42.4%  
increaser 95.5%, decreaser 4.5%

**A3**                      **01 Py**                      **C// Sh**                      **10 micro plots**                      **D03**  
**secondary - non use/ light /good**                      **Range condition: 65.7% good**

Overstory:                      closed Pseudotsuga menziesii  
Pinus ponderosa

Prominent species:	Calamagrostis rubescens	IN	37.3%	G
	Arctostaphylos uva-ursi	IN	29.9%	Sh

Indicator species:	Festuca campestris	De	2.3%	G
	Antennaria parvifolia	IN	4.2%	F
	Stipa richardsonii	De	5.5%	G
	Astragalus miser	IN	1.8%	PF
	Penstemon confertus	IN	1.8%	F

Erigeron filifolius	IN	3.3%	F
Amelanchier alnifolia	De	1.1%	Sh

Total Cover: grass 45.1%, forb 23.9%, shrub 31.0%  
decreaser 8.9%, increaser 91.1%

**A4**      **01 Py**      **C// Gr - Sh**      **10 micro plots**      **D05**  
**secondary - non use/ light/ fair**      **Range condition: 72.2% high good**

Overstory: closed Pseudotsuga menziesii  
Pinus ponderosa  
Pinus contorta

Prominent species:	Calamagrostis rubescens	IN	44.5%	G
	Arctostaphylos uva-ursi	IN	30.1%	Sh

Indicator species:	Amelanchier alnifolia	De	10.2%	Sh
	Festuca campestris	De	5.1%	G
	Antennaria parvifolia	IN	0.4%	F
	Astragalus miser	IN	1.3%	PF
	Carex rossii	De	4.0%	G
	Penstemon confertus	IN	0.8%	F
	Fragaria virginiana	IN	0.8%	F
	Pseudotsuga menziesii	IN	0.8%	C

Total Cover: grass 53.6%, forb 5.3%, shrub 40.3%, conifer 0.8%  
decreaser 19.3%, increaser 80.7%

**A5**      **01 Py**      **CC (seeded)**      **D06**  
**primary/ moderate/ good**      **Range condition: 85.1% excellent**

Prominent species:	Medicago sativa	Sd	53.2%	F
	Bromus biebersteinii	Sd	31.9%	G

Indicator species:	Medicago lupulina	NN	12.8%	F
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**Total cover: seeded grass 53.2%, seed forb 31.9%, non native 12.8%**  
**seeded 87.2%, non native 12.8%**

**A6**      **01 Py**      **CC-Sh/ Gr**      **10 micro plots**      **D07**  
**primary/ moderate-light/ good**      **Range condition: 57.7% good**

Prominent species:	Symphoricarpos occidentalis	IN	15.1%	Sh
	Arctostaphylos uva-ursi	IN	12.8%	Sh
	Festuca campestris	De	12.5%	G
	Stipa richardsonii	De	12.5%	G

Indicator species:	Antennaria	IN	2.0%	F
	Poa pratensis	IN	2.6%	G
	Taraxacum officinale	NN	6.5%	F
	Agropyron smithii	De	0.7%	G
	Agropyron trachycaulum var.unilaterale	De	6.0%	G
	Galium boreale	IN	7.4%	F
	Astragalus dasyglottis	De	5.6%	F
	Oxytropis monticola	IN	2.0%	F

Total cover: grass 34.3%, forb 28.7%, shrub 27.9%, non native 9.1%  
decreaser 37.3%, increaser 53.6%, non native 9.1%

**A7**                      **01 Py**                      **Gr// C-Sh**                      **10 micro plots**                      **D8**  
**primary/ moderate to heavy/ good**                      **Range condition 77.6% excellent**

Overstory:	Pinus ponderosa Pseudotsuga menziesii			
Prominent species:	Stipa richardsonii	De	37.0%	G
	Astragalus miser	IN	24.8%	PF
	Festuca campestris	De	17.8%	G
Indicator species:	Arctostaphylos uva-ursi	IN	5.7%	Sh
	Achillea millefolium	IN	2.3%	F
	Antennaria parvifolia	IN	0.9%	F
	Koeleria macrantha	IN	1.7%	G
	Poa pratensis	IN	1.5%	G
	Taraxacum officinale	NN	3.0%	F
	Medicago lupulina	NN	0.1%	F
	Penstemon confertus	IN	2.7%	F
	Amelanchier alnifolia	De	0.6%	G
	Poa ampla	De	0.6%	G

Total cover: grass 59.2%, forb 32%, shrub 5.7%, non native 3.1%  
decreaser 56%, increaser 40.9%, non native 3.1%

**A8**                      **01 Py**                      **Gr-C/ Sh**                      **10 micro plots**                      **D09**  
**primary/ moderate to heavy/ good**                      **Range condition: 51.6% low good**

Overstory:	open Pinus ponderosa Pseudotsuga menziesii			
Prominent species:	Koeleria macrantha	IN	20.7%	G
	Festuca campestris	De	20.6%	G
	Taraxacum officinale	NN	17.7%	F
	Stipa richardsonii	De	12.6%	G
Indicator species:	Antennaria parvifolia	IN	3.8%	F
	Achillea millefolium	IN	1.0%	F
	Astragalus miser	IN	2.9%	PF
	Medicago lupulina	NN	3.8%	F
	Poa compressa	NN	4.2%	G
	Arctostaphylos uva-ursi	IN	4.8%	Sh
	Oxytropis monticola	IN	1.0%	F
	Festuca idahoensis	De	1.7%	G
	Aster laevis	De	1.0%	F
	Agropyron trachycaulum	De	1.0%	G
	Carex rossii	De	1.0%	G
	Penstemon confertus	IN	1.0%	F

Total cover: grass 57.6%, forb 11.9%, shrub 4.8%, non native 25.7%  
decreaser 37.9%, increaser 36.4%, non native 25.7%

# AIR STRIP

## AS 1

	Gr non use/	10 micro plots ungrazed-light/		PO1 good
prominent species:	Agropyron sibiricum	Sd	31.2%	G
	Bromus inermis	Sd	23.0%	G
	Poa pratensis	IN	11.5%	G
	Oxytropis monticola	IN	10.7%	F
indicator species:	Koeleria macrantha	IN	2.8%	G
	Astragalus miser	IN	3.7%	F
	Antennaria parvifolia	IN	1.6%	F
	Poa sandbergii	IN	1.0%	G
	Achillea millefolium	IN	0.2%	F
	Medicago lupulina	NN	1.6%	F
	Taraxacum lupulina	NN	1.0%	F
	Poa compressa	NN	7.1%	G
Heterotheca villosa	IN	2.8%	F	

**Total Cover: grass 15.3%, seeded grass 54.2%, forb 20.8%, non native 9.7%, seeded grass 54.2%, increaser 36.1%, non native 9.7%**

# BEACON PASTURE

<b>B1</b>	<b>CC - Sh</b>	<b>10 micro plots</b>		<b>FO6</b>
	<b>secondary/light to moderate/excellent</b>			
Overstory:	regeneration Pinus ponderosa	4, 8		
	Pinus conforta	4, 5		
	Pseudotsuga menziesii	4		
Prominent species:	Arctostaphylos uva-ursi	IN	31.9%	Sh
	Fragaria virginiana	IN	24.3%	F
	Festuca campestris	De	19.8%	G
Indicator:	Calamagrostis rubescens	IN	7.9%	G
	Achillea millefolium	IN	5.0%	F
	Aster ciliolatus	De	1.7%	F
	Astragalus miser	IN	0.7%	P
	Rosa Woodsii	IN	0.6%	Sh
	Galium boreale	IN	1.9%	F
	Symphoricarpos albus	IN	1.7%	Sh
	Penstemon confertus	IN	0.7%	F
	Hedysarum sulphurescens	De	1.9%	F
	Spiraea betulifolia	IN	0.7%	Sh
<b>Total Cover:</b>	<b>Grass 27.7%, forb 37.4%, shrub 34.9%</b>			
	<b>decreaser 23.4%, increaser 76.6%</b>			

<b>B3</b>	<b>Sh - Mx</b>	<b>10 micro plots</b>		<b>FO9</b>
	<b>primary/heavy/good</b>			
Overstory:	Abies lasiocarpa	7		
	Pinus ponderosa	4		
Shrubs:	Rosa woodsii	4, 5		
	Rubi oxyacanthoides	5		
	Cornus stolonifera	5		
	Betula papyrifera	4, 6		
	Betula occidentalis	4		
	Amelanchier alnifolia	5		
	Symphoricarpos albus	5		
	Salix bebbiana	4		
	Prunus virginiana	4		
Prominent species:	Poa pratensis	IN	43.2%	G
	Medicago lupulina	NN	37.0%	F
Indicator species:	Agrostis stolonifera	NN	2.0%	G
	Rosa woodsii	IN	0.4%	Sh
	Taraxacum officinale	NN	3.3%	F
	Stipa columbiana	De	0.1%	G
	Phleum pratense	Sd	4.3%	G
	Bromus inermis	Sd	5.7%	G
	Agropyron repens	NN	3.0%	G
	Medicago sativa	Sd	1.0%	F

**Total Cover:** grass 43.3%, seeded grass 10.0%, seeded forb 1.0%, shrub 0.4%, non native 45.3%, seeded 11%  
decreaser 0.1%, increaser 43.6%, non native 45.3%

<b>B2</b>	<b>Gr/ C primary/heavy/fair</b>	<b>10 micro plots</b>		<b>F07</b>
Overstory:	Pinus ponderosa	4		
	Pseudotsuga menziesii	4		
	Populus tremuloides	4		
Prominent species:	Poa pratensis	IN	22.7%	G
	Medicago lupulina	NN	21.4%	F
	Lupinus sericens	IN	11.9%	F
	Stipa columbiana	De	10.4%	G
	Stipa richardsonii	De	10.1%	G
Indicator species:	Taraxacum officinale	NN	1.8%	F
	Achillea millefolium	IN	2.5%	F
	Antennaria parvifolia	IN	2.5%	F
	Arctostaphylos uva-ursi	IN	5.0%	Sh
	Filago arvensis	NN	0.8%	F
	Koeleria marantha	IN	0.3%	G
	Festuca idahoensis & campestris	De	7.0%	G
	Elymus glaucus	De	0.3%	G

**Total Cover:** grass 50.5%, forb 20.7%, shrub 5%, non native 23.8%  
decreaser 27.8%, increaser 48.4%, non native 23.8%

<b>B3</b>	<b>Sh - Mx primary/heavy/good</b>	<b>10 micro plots</b>		<b>F09</b>
Overstory:	Abies lasiocarpa	7		
	Pinus ponderosa	4		
Shrubs:	Rosa woodsii	4, 5		
	Rubi oxyacanthoides	5		
	Cornus stolonifera	5		
	Betula papyrifera	4, 6		
	Betula occidentalis	4		
	Amelanchier alnifolia	5		
	Symphoricarpos albus	5		
	Salix bebbiana	4		
	Prunus virginiana	4		
Prominent species:	Poa pratensis	IN	43.2%	G
	Medicago lupulina	NN	37.0%	F
Indicator species:	Agrostis stolonifera	NN	2.0%	G
	Rosa woodsii	IN	0.4%	Sh
	Taraxacum officinale	NN	3.3%	F
	Stipa columbiana	De	0.1%	G
	Phleum pratense	Sd	4.3%	G
	Bromus inermis	Sd	5.7%	G

Agropyron repens	NN	3.0%	G
Medicago sativa	Sd	1.0%	F

**Total Cover:** grass 43.3%, seeded grass 10.0%, shrub 0.4%, non native 45.3%, seeded 11%  
decreaser 0.1%, increaser 43.6%, non native 45.3%

<b>B4</b>	<b>C/ Sh</b>	<b>10 micro plots</b>		<b>HO9</b>
	<b>secondary/light/excellent</b>			
Overstory:	Pseudotsuga menziesii	8		
	Pinus ponderosa	4, 5		
	Pinus contorta	4		
	Larix occidentalis	4		
	Populus tremuloides	4		
Shrub:	Arctostaphylos uva-ursi	8		
	Amelanchier alnifolia	5, 6		
	Spiraea betulifolia	8		
	Purshia tridentata	4		
	Berberis repens	6		
Prominent species:	Calamagrostis rubescens	IN	50.2%	G
	Spiraea betulifolia	IN	21.1%	Sh
Indicator species:	Arctostaphylos uva-ursi	IN	6.7%	Sh
	Fragaria virginiana	IN	2.1%	F
	Penstemon confertus	IN	3.0%	F
	Festuca campestris	De	3.2%	G
	Astragalus miser	IN	1.3%	F
	Antennaria umbrinella	IN	1.3%	F
	Berberis repens	IN	1.3%	Sh
	Medicago lupulina	NN	1.9%	F
	Pseudotsuga menziesii	IN	1.3%	C
Stipa columbiana	De	1.3%	G	

**Total Cover:** grass 54.7%, forb 13%, shrub 29.1%, conifer 1.3%, non native 1.9%  
decreaser 4.5%, increaser 93.6%, non native 1.9%

<b>B5</b>	<b>C/ Sh</b>	<b>10 micro plots</b>		<b>HO6</b>
	<b>secondary/light/excellent</b>			
Overstory:	Pseudotsuga menziesii	9		
	Pinus ponderosa	7, 5		
	Pinus contorta	2		
	Larix occidentalis	4		
	Populus tremuloides	4		
Shrub:	Berberis repens	6		
	Spiraea betulifolia	6		
	Purshia tridentata	4		
	Shepherdia canadensis	4		
	Amelanchier alnifolia	4		
Prominent species:	Calamagrostis rubescens	IN	38.4%	G
	Spiraea betulifolia	IN	12.7%	Sh
	Pseudotsuga menziesii	IN	12.7%	C





Overstory:	Pseudotsuga menziesii	7, 8		
	Pinus contorta	7		
	Pinus ponderosa	7, 6		
	Larix occidentalis	2		
Shrub:	Arctostaphylos uva-ursi	8		
	Amelanchier alnifolia	6		
	Spiraea betulifolia	5		
	Purshia tridentata			
Prominent species:	Arctostaphylos uva-ursi	IN	29.3%	Sh
	Calamagrostis rebenscens	IN	25.6%	G
	Festuca campestris	De	10.6%	G
	Stipa richardsonii	De	9.0%	G
Indicator species:	Fragaria virginiana	IN	1.0%	F
	Phlox hoodii	IN	3.6%	F
	Astragalus miser	IN	6.1%	Pf
	Amelanchier alnifolia	De	0.2%	Sh
	Penstemon confertus	IN	1.6%	F
	Pinus ponderosa	IN	1.0%	C
	Apocynum androsaemifolium	IN	.0%	F
	Spiraea betulifolia	IN	5.0%	Sh
	Pseudotsuga menziesii	IN	1.6%	C
	Hedysarum sulphurescens	De	1.0%	F

**Total Cover:** grass 45.2%, forb 17.7%, shrub 34.5%, conifer 2.6%  
decreaser 20.8%, increaser 79.2%

**B10**                      **Gr**                                      **10 micro plots**                      **HO3**  
**primary/heavy/good**

Overstory:	Populus tremuloides			
Prominent species:	Medicago lupulina	NN	41.9%	F
	Poa compressa	NN	32.5%	G
Indicator species:	Potentilla norvegica	IN	4.9%	F
	Taraxacum officinale	NN	2.0%	F
	Atrostis stolonifera	NN	6.2%	G
	Poa palustris	IN	5.4%	G
	Plantago major	NN	1.5%	F
	Phleum pratense	Sd	0.5%	G
	Juncus bufonius	IN	1.5%	G
	Hordeum jubatum	IN	0.5%	G

**Total Cover:** grass 7.4%, seeded 0.5%, forb 8.0%, non native 87.1%, seeded 0.5%  
increaser 15.4%, non native 84.1%

**B11**                      **C/ Sh - Gr**                                      **10 micro plots**                      **HO4**  
**primary/moderate to heavy/good**

Overstory:	Pseudotsuga menziesii	7, 8		
	Pinus ponderosa	4		

Shrub:	Spiraea betulifolia	8		
	Berberis repens	6		
	Arctostaphylos uva-ursi	6, 7		
	Rosa woodsii	4		
Prominent species:	Spiraea betulifolia	IN	21.8%	Sh
	Calamagrostis rubescens	IN	21.8%	G
	Penstemon confertus	IN	20.1%	F
Indicator species:	Achillea millefolium	IN	2.0%	F
	Stipa richardsonii	De	1.5%	G
	Rosa woodsii	IN	1.5%	Sh
	Festuca campestris	De	1.5%	G
	Antennaria parvifolia	IN	4.3%	F
	Arctostaphylos uva-ursi	IN	5.7%	Sh
	Stipa columbiana	De	2.5%	G
	Pseudotsuga menziesii	IN	7.9%	C
	Carex rossii	De	5.7%	G
	Galium boreale	IN	1.5%	F
	Lupinus sericens	IN	1.5%	F

**Total Cover:** grass 33.0%, forb 30.1%, shrub 29.0%, conifer 7.9%  
decreaser 11.2%, increaser 88.8%

<b>B12</b>	<b>C/Sh - Gr primary/moderate/good</b>	<b>10 micro plots</b>	<b>HO5</b>	
Overstory:	Pseudotsuga menziesii	4, 7		
	Pinus contorta	7, 6		
	Pinus ponderosa	4, 7		
Shrub:	Berberis repens	5		
	Spiraea betulifolia	6		
	Rosa woodsii	4		
	Arctostaphylos uva-ursi	6, 8		
	Amelanchier alnifolia	5		
Prominent species:	Stipa richardsonii	De	29.9%	G
	Arctostaphylos uva-ursi	IN	25.3%	Sh
	Spiraea betulifolia	IN	12.1%	Sh
Indicator species:	Calamagrostis rubescens	IN	3.1%	G
	Lupinus sericeus	IN	2.3%	F
	Antennaria parvifolia	IN	9.0%	F
	Medicago lupulina	NN	0.8%	F
	Festuca campestris	De	6.6%	G
	Penstemon confertus	IN	0.8%	F
	Astragalus miser	IN	0.8%	PF
	Castilleja miniata	IN	0.8%	F
	Achillea millefolium	IN	0.8%	F
	Agropyron trachycaulum	De	0.8%	G
	Stipa columbiana	De	0.8%	G
	Anemone multifida	IN	1.4%	F
	Rosa woodsii	IN	1.4%	F
	Galium boreale	IN	0.8%	F
	Koeleria macrantha	IN	0.8%	G
Tragopogon dubius	NN	0.8%	F	



Ground cover:

*Agrostis stolonifera*  
*Scirpus acutus*  
*Phalaris arundinacea*  
*Eleocharis palustris*  
*Juncus confusus*  
*Ranunculus sceleratus*  
*Ranunculus cymbalaria*  
*Potentilla anserina*  
*Hordeum jubatum*  
*Trifolium repens*  
*Taraxacum officinale*  
*Medicago lupulina*  
*Glyceria striata*  
*Calamagrostis inexpansa*

# CHERRY PASTURE

**CH 1**      **01 Py**      **Gr/ Sh// C-CC**      **10 micro plots**      **MO9**  
                  **primary/ heavy/ good**      **Range condition: 54.7% low good**

Prominent species:	Stipa richardsonii	De	21.9%	G
	Purshia tridentata	IN	16.3%	Sh
	Poa pratensis	IN	16.1%	G
	Agoseris glauca	IN	12.0%	F
	Stipa columbiana	De	10.0%	G
Indicator species:	Plantago patagonica	IN	0.1%	F
	Koeleria macrantha	IN	7.6%	G
	Arctostaphylos uva-ursi	IN	0.1%	Sh
	Astragalus miser	IN	2.0%	PF
	Delphinium bicolor	IN	T	PF
	Achillea millefolium	IN	1.9%	F
	Calamagrostis rubescens	IN	0.7%	G
	Taraxacum officinale	NN	1.1%	F
	Medicago lupulina	NN	2.9%	F

**Total Cover:**    **grass 56.3%, forb 23.3%, shrub 16.4%, non native 4.0%**  
                          **decreaser 31.9%, increaser 64.1%, non native 4.0%**

**CH 2**      **01 Fes**      **Gr// Sh - C**      **10 micro plots**      **M08**  
                  **primary/ heavy /poor**      **Range condition 20.3% poor**

Overstory:	open Pinus ponderosa			
Prominent species:	Koeleria macrantha	IN	30.3%	G
	Stipa comata	IN	27.5%	G
	Plantago patagonica	IN	18.8%	F
Indicator :species:	Antennaria parvifolia	IN	6.4%	F
	Astragalus miser	IN	4.4%	PF
	Festuca campestris	De	0.9%	G
	Delphinium bicolor	IN	T	PF
	Tragopogon dubius	NN	0.1%	F

**Total Cover:**    **grass 58.7%, forb 41.3%**  
                          **decreaser 0.9%, increaser 99.1%**

**CH 3**      **01 Py**      **Gr - CC**      **10 micro plots**      **MO6**  
                  **primary - secondary/ moderate/ good**      **Range condition: 90.7% excellent**

Prominent species:	Stipa richardsonii	De	36.3%	G
	Dactylis glomerata	Sd	13.7%	G
	Bromus biebersteinii	Sd	10.3%	G
	Calamagrostis rubescens	IN	10.3%	G

Indicator species:	Festuca campestris	De	1.3%	G
	Arctostaphylos uva-ursi	IN	8.1%	Sh
	Agropyron trachycaulum var.unilaterale	De	8.1%	G
	Astragalus miser	IN	1.3%	PF
	Trifolium repens	Sd	1.3%	F
	Medicago lupulina	NN	1.3%	F
	Taraxacum officinale	NN	0.2%	F

**Total Cover:** grass 56.0%, seeded grass 24%, forb 1.3%, seeded forb 1.3%, shrub 8.1%, non native 1.5%  
decreaser 45.7%, increaser 27.5%, seeded 25.3%, non native 1.5%

**CH 4**      **01 Py**      **Gr/ C - Sh**      **10 micro plots**      **MO7**  
primary/ moderate/ good      Range condition: 88.5% excellent

Prominent species:	Stipa richardsonii	De	48.2%	G
	Arctostaphylos uva-ursi	IN	19.4%	Sh

Indicator species:	Stipa columbiana	De	2.3%	G
	Festuca idahoensis	De	0.1%	G
	Festuca campestris	De	8.4%	G
	Achillea millefolium	IN	0.8%	F
	Koeleria macrantha	IN	6.1%	G
	Purshia tridentata	IN	5.9%	Sh
	Antennaria parvifolia	IN	2.3%	F
	Agropyron spicatum	De	0.1%	G
	Taraxacum officinale	NN	0.4%	F

**Total Cover:** grass 65.5%, forb 8.8%, shrub 25.3%, non native 0.4%  
decreaser 59.1%, increaser 40.5%, non native 0.4%

**CH 5**      **01 Fes**      **Gr// Sh**      **10 micro plots**      **MO5**  
primary/ heavy/ fair      Range condition: 17.6% poor

Prominent species:	Koeleria macrantha	IN	42.9%	G
	Heterotheca villosa	IN	24.3%	F
	Antennaria parvifolia	IN	10.3%	F

Indicator species:	Achillea millefolium	IN	0.6%	F
	Oxytropis monticola	IN	3.4%	F
	Festuca campestris	De	0.2%	G
	Agropyron spicatum	De	5.6%	G
	Orthocarpus tenifolius	IN	2.0%	F
	Astragalus miser	IN	1.2%	PF
	Cicuta mackenzienna	IN	T	PF
	Medicago lupulina	NN	1.2%	F

**Total Cover:** grass 48.7%, forb 50.1%, non native 1.2%  
decreaser 5.8%, increaser 93%, non native 1.2%

**CH 6**      **04 Mix**      **C - Sh// Gr**      **10 micro plots**      **MO3**  
primary/ heavy/ good      Range condition: 34.4% fair

Overstory:      Picea glauca// Abies-lasiocarpa

Shrub:	Cornus stoloniferna	De		
	Prunus virginiana	De		
	Rosa woodsii	De		
	Betula occidentalis	IN		
	Mahonia aquifolium	IN		
Prominent species:	Poa pratensis	IN	41.2%	G
	Phalaris arundinacea	De	14.4%	G
Indicator species:	Aster ciliolatus	De	6.5%	F
	Lathyrus ochroleucus	De	0.8%	F
	Vicia americana	De	1.9%	F
	Carex rossii	De	0.8%	G
	Taraxacum officinale	NN	1.4%	F
	Medicago lupulina	NN	1.9%	F
	Phleum pratense	NN	7.9%	G
	Cirsium arvense	NN	2.4%	F
	Plantago major	NN	0.8%	F

**Total Cover:** grass 56.4%, forb 29.2%, non native 14.4%  
decreaser 24.4%, increaser 61.2%, non native 14.4%

**CH 7**      **2abb Gr/ C// Sh**      **10 micro plots**      **MO4**  
**secondary & non use/light/good**      **Range condition: 80.7% excellent**

Overstory:	Pseudotsuga menziesii - Pinus ponderosa			
Prominent species:	Agropyron spicatum	De	58.1%	G
	Amelanchier alnifolia	De	10.3%	Sh
	Apocynum androsaemifolium	IN	10.3%	F
Indicator species:	Aster ciliatus	De	6.8%	F
	Hedysarum sulphurescens	De	0.7%	F
	Chenopodium pratericola	De	0.7%	F
	Artemisia frigida	IN	4.1%	F

**Total Cover:** grass 58.1%, forb 31.6%, shrub 10.3%  
decreaser 76.6%, increaser 23.4%

**CH 8**      **01 Fes & 2abb Gr// Sh - C**      **10 micro plots**      **MO2**  
**primary/ heavy/ poor**      **Range condition: 35.1% fair**

Overstory:	open Pinus ponderosa			
Prominent species:	Stipa comata	IN	28.0%	G
	Medicago lupulina	NN	20.8%	F
	Koeleria macrantha	IN	11.5%	G
	Plantago patagonica	IN	10.6%	F
Indicator species:	Astragalus miser	IN	0.3%	F
	Orthocarpus teuifolia	IN	0.1%	F
	Poa pratensis	IN	2.1%	G
	Artemisia frigida	IN	1.2%	F
	Stipa columbiana	De	0.7%	G
	Agropyron trachycaulum	De	1.9%	G

Achillea millefolium	IN	0.1%	F
Taraxacum officinale	NN	0.7%	F
Tragopogon dubius	NN	0.7%	F
Lappula squarrosa	NN	0.7%	F

**Total Cover** grass 44.2%, forb 33.1%, non native 22.7%  
decreaser 2.6%, increaser 74.7%, non native 22.7%

**CH 9** 01 Py C - Sh// Gr 10 frames MO1  
primary/ medium/ good Range condition: 53.9% good

Overstory:	closed Pseudotsuga menziesii//Pinus ponderosa		
Shrub cover:	Purshia tridentata	IN	
	Amelanchier alnifolia	De	
Prominent species:	Calamagrostis rubescens	IN	53.8%
	Festuca campestris	De	12.9%
	Arctostaphylos uva-ursi	IN	8.6%
Indicator species:	Antennaria parvifolia	IN	1.9%
	Stipa richardsonii	De	1.2%
	Koeleria macrantha	IN	1.2%
	Oxytropis monticola	IN	2.9%
	Medicago lupulina	NN	0.2%

**Total Cover:** grass 69.1%, forb 22.1%, shrub 8.6%, non native 0.2%  
decreaser 14.1%, increaser 85.7%, non native 0.2%

**CH 10** C// Sh - Gr MO1  
secondary - non use/ light/ good Range condition: good

Overstory:	dense Pseudotsuga menziesii	IN
	/Pinus ponderosa	IN
Shrub cover:	Arctostaphylos uva-ursi	IN
	Purshia tridentata	IN
	Amelanchier alnifolia	De
Prominent species:	Calamagrostis rubescens	IN
Indicator species:	Festuca campestris	De
	Antennaria parvifolia	F
	Oxytropis monticola	F

# CHINA PASTURE

**CA 1**      **01 Py**      **Gr-C/ Sh**      **10 micro plots**      **L07**  
**primary/ moderate/ good**      **Range condition**      **77.6% low excellent**

Overstory:              open Pinus ponderosa

Prominent species:	Arctostaphylos uva-ursi	IN	22.8%	Sh
	Stipa richardsonii	De	18.7%	G
	Festuca campestris	De	15.9%	G
	Astragalus miser	IN	10.1%	PF

Indicator Species:	Orthocarpus tennifolius	IN	0.1%	F
	Poa pratensis	IN	7.8%	G
	Antennaria parvifolia	IN	2.0%	F
	Koeleria macrantha	IN	2.0%	G
	Medicago lupulina	NN	2.6%	F
	Taraxacum officinale	NN	0.7%	F
	Penstemon confertus	IN	2.6%	F
	Amelanchier alnifolia	De	2.0%	Sh
	Clamagrostis rubescens	IN	2.6%	G
	Stipa columbiana	De	0.7%	G
Carex rossii	De	0.7%	G	

Total Cover:      grass 4.4%, forb 23.5%, shrub 24.8%, non native 3.3%  
decreaser 38%, increaser 58.7%, non native 3.3%

**CA 2**      **01 Py**      **Gr - C**      **10 micro plots**      **L08**  
**primary/ moderate to heavy/ good**      **Range condition**      **14.1% poor**

Overstory:              open Pinus ponderosa

Prominent species:	Poa pratensis	IN	53.8%	G
	Medicago lupulina	NN	24.6%	F

Indicator species:	Amelanchier alnifolia	De	0.7%	Sh
	Astragalus miser	IN	0.3%	PF
	Achillea millefolium	IN	2.0%	F
	Festuca campestris	De	1.7%	G
	Antennaria parvifolia	IN	1.1%	F
	Calamagrostis rubescens	IN	0.1%	G
	Stipa richardsonii	De	1.7%	G
	Stipa columbiana	De	2.6%	G
	Poa compressa	NN	4.2%	G
	Taraxacum officinale	NN	3.6%	F

Total Cover:      grass 59.9%, forb 7%, shrub 0.7%, non native 32.4%  
decreaser 6.7%, increaser 60.9%, non native 32.4%

**CA3**      **01 Py**      **C - Sh/ Gr**      **10 micro plots**      **NO6**  
**secondary/ light/ good to excellent**      **Range condition 88% excellent**

Overstory:      Pinus ponderosa

Prominent species:

Stipa richardsonii	De	29.3%	G
Calamagrostis rubescens	IN	16.4%	G
Astragalus miser	IN	19.7%	PF
Arctostaphylos uva-ursi	IN	14.4%	Sh

Indicator species:

Festuca campestris	De	9.3%	G
Antennaria parvifolia	IN	0.3%	F
Amelanchier alnifolia	De	1.2%	Sh
Koeleria macrantha	IN	0.1%	G
Achillea millefolium	IN	0.7%	F
Purshia tridentata	In	1%	Sh
Carex rossii	De	2.7%	G
Penstemon confertus	IN	2.7%	F

Total Cover:      grass 57.8%, forb 24.5%, shrub 17.7%  
decreaser 42.5%, increaser 57.5%

**CA 4**      **01 Py**      **C - Sh/ Gr**      **10 micro plots**      **N03**  
**secondary/ light/ good**      **Range condition 72.8% high good**

Overstory:      Pinus ponderosa - Pseudotsuga menziesii

Prominent species:

Clamagrostis rubescens	IN	48.9%	G
Arctostaphylos uva-ursi	IN	16.6%	Sh

Indicator species:

Astragalus miser	IN	0.8%	F
Antennaria parvifolia	IN	2.9%	F
Festuca campestris	De	8.1%	G
Amelanchier alnifolia	De	3.9%	Sh
Purshia tridentata	IN	8.3%	Sh
Achillea millefolium	IN	0.4%	F
Stipa richardsonii	De	2.2%	G
Koeleria macrantha	IN	0.8%	G
Carex rossii	De	2.0%	G
Fragaria virginiana	IN	2.2%	F
Aster ciliolatus	De	0.8%	F

Total Cover:      grass 62%, forb 9.2%, shrub 28.8%  
decreaser 17%, increaser 83%

**CA 5**      **01 Fes**      **Gr/ sh**      **10 micro plots**      **NO5**  
**primary/ heavy/ good**      **Range condition 63.7% good**

Primary species:

Stipa richardsonii	De	22.0%	G
Astragalus miser	IN	18.1%	F
Arctostaphylos uva-ursi	IN	21.0%	Sh

Indicator species:	Poa pratensis	IN	8.7%	G
	Koeleria macrantha	IN	9.0%	G
	Antennaria parvifolia	IN	0.3%	F
	Achillea millefolium	IN	0.6%	F
	Medicago lupulina	NN	0.1%	F
	Taraxacum officinale	NN	0.3%	F
	Penstemon confertus	IN	1.8%	F
	Festuca idahoensis	De	2.3%	G
	Stipa columbiana	De	5.0%	G
	Heterotheca villosa	IN	3.0%	F
	Festuca campestris	De	7.0%	G

Total Cover: grass 54%, forb 24.6%, shrub 21%, non native 0.4%  
decreaser 36.3%, increaser 63.3%, non native 0.4%

**CA 6**      01 Py Gr// Sh/ C      10 micro plots      NO4  
primary/ moderate to heavy/ good      Range condition 50.4% low good

Overstory: Pinus ponderosa/ Pseudotsuga menziesii

Prominent species:	Medicago lupulina	NN	15.9%	F
	Koeleria macrantha	IN	12.4%	G
	Erigeron filifolius	IN	10.0%	F
	Purshia tridentata	IN	9.8%	Sh

Indicator species:	Calamagrostis rubescens	IN	6.6%	G
	Festuca campestris	De	6.0%	G
	Amelanchier alnifolia	De	5.4%	Sh
	Achillea millefolium	IN	1.4%	F
	Agropyron spicatum	De	4.2%	G
	Stipa richardsonii	De	8.8%	G
	Astragalus miser	IN	4.4%	PF
	Antennaria parvifolia	IN	2.4%	F
	Plantago patagonica	IN	4.0%	F
	Orthocarpus tenuifolius	NN	0.4%	F
	Taraxacum officinale	NN	0.1%	F

Total Cover: grass 38%, forb 33.4%, shrub 11.2%, non native 17.4%  
decreaser 24.4%, increaser 58.2%, non native 17.4%

**CA 7**      01 Py C// Sh - Gr      10 micro plots      NO3  
secondary - non use/ light/ good      Range condition 72.4% good

Overstory: dense Pseudotsuga menziesii  
/Pinus ponderosa/ Pinus contorta

Prominent species:	Clamagrostis rubescens	IN	48.9%	G
	Arctostaphylos uva-ursi	IN	16.6%	Sh

Indicator species:	Carex rossii	De	2.0%	G
	Fragaria virginiana	IN	2.2%	F
	Astragalus miser	IN	0.8%	PF
	Antennaria parvifolia	IN	2.9%	F
	Festuca campestris	De	8.1%	G
	Purshia tridentata	IN	8.3%	Sh
	Amelanchier alnifolia	De	3.9%	Sh
	Aster ciliolatus	De	0.8%	F
	Pseudotsuga menziesii	IN	0.8%	F
	Stipa richardsonii	De	2.2%	G
	Koeleria macrantha	IN	0.8%	G

**Total Cover: grass 62%, forb 9.2%, shrub 28.8%**  
**decreaser 17%, increaser 83%**

# GOODWIN PASTURE

<b>Gd 1</b>	<b>Tata Lake</b> <b>secondary/ moderate/ excellent</b>	<b>Description</b>	<b>F1</b>
Obvious species:	Typha latifolia Glyceria striata Carex rostrata Carex praticola Phalaris arundinacea Carex interior Eleocharis palustris Juncus tenuis var.dudleyi Ranunculus sceleratus Calamagrostis inexpansa Pyrola asarifolia		
Shrubs:	Betula occidentalis Salix bebbiana	7 4, 5	
Trees:	Picea glauca Abies lasiocarpa Larix occidentalis	4, 5 4, 6 4	

Excellent wetland habitat, heavy use on adjoining upland area just above riparian edge.

<b>Gd 2</b>	<b>01 &amp; 04 Fd PI Lw</b> <b>F02</b> <b>secondary-non use/light/excellent</b>	<b>C/ Sh</b>	<b>10 micro plots</b>	
			<b>Range condition: 82.7% excellent</b>	
Overstory:	Abies lasiocarpa // Larix occidentalis, Pinus contorta Picea glauca			
Prominent species:	Arctostaphylos uva-ursi Festuca occidentalis Calamagrostis rubescens	IN De IN	31.4% 19.4% 18.7%	Sh G G
Indicator species:	Berberis repens Symphoricarpos albus Poa palustris Spiraea betulifolia Astragalus miser Vaccinium caespitosum Fragaria virginiana Linnaea borealis	IN IN De IN IN De IN IN	7.6% 5.9% 3.4% 1.2% 3.0% 1.2% 2.0% 3.0%	Sh Sh G Sh PF Sh F F
Total Cover:	grass 23.3%, forb 30.6%, shrub 46.1% decreaser 24%, increaser 76%			

<b>Gd 3</b>	<b>01 &amp; 04 CC</b>	<b>C.C.</b>	<b>10 micro plots</b>	<b>FO3</b>
	<b>primary/ light/ good</b>		<b>Range condition: 80.1% excellent</b>	
Overstory:	regeneration - <i>Pinus contorta</i> / <i>Pseudotsuga menziesii</i>	7, 9 4,	<i>Larix occidentalis</i>	2, 5
Prominent species:	<i>Calamagrostis rubescens</i>	IN	60.1%	G
	<i>Spiraea betlifolia</i>	IN	13.1%	Sh
Indicator species:	<i>Symphoricarpos albus</i>	IN	0.9%	Sh
	<i>Taraxacum officinale</i>	NN	3.5%	F
	<i>Arnica cordifolia</i>	IN	8.8%	F
	<i>Berberis repens</i>	IN	6.0%	Sh
	<i>Fragaria virginiana</i>	IN	3.2%	F
	<i>Cirsium vulgare</i>	NN	3.2%	F
Total Cover	grass 60.1%, forb 13.2%, shrub 20%, non native 6.7% increaser 93.3%, non native 6.7%			

<b>Gd 4</b>	<b>01 &amp; 04 CC</b>	<b>Gr</b>	<b>10 micro plots</b>	<b>FO4</b>
	<b>primary/ moderate - heavy/ fair</b>		<b>Range condition: 23.3% poor</b>	
Prominent species:	<i>Poa pratensis</i>	IN	44.2%	G
	<i>Medicago lupulina</i>	NN	23.9%	F
Indicator species:	<i>Poa compressa</i>	NN	2.1%	G
	<i>Taraxacum officinale</i>	NN	8.8%	F
	<i>Agrostis stolonifera</i>	NN	3.9%	G
	<i>Achillea millefolium</i>	IN	7.6%	F
	<i>Antennaria parvifolia</i>	IN	3.3%	f
	<i>Trifolium hybridum</i>	Sd	4.0%	F
	<i>Cirsium arvense</i>	NN	0.7%	F
	<i>Potentilla gracilis</i>	IN	0.4%	F
Total Cover:	grass 44.2%, forb 12.4%, seeded for 4.0%, non native 39.4% increaser 60.6%, non native 39.4%			

<b>Gd 5</b>	<b>01 &amp; 04 CC</b>	<b>C.C./ Sh</b>	<b>10 micro plots</b>	<b>FO8</b>
	<b>secondary/ light/ good</b>		<b>Range condition: 86.7% excellent</b>	
Prominent species:	<i>Calamagrostis rubescens</i>	IN	44.5%	G
	<i>Artostaphylos uva-ursi</i>	IN	34.4%	Sh
	<i>Fragaria virginiana</i>	IN	12.0%	F
Indicator species:	<i>Berberis repens</i>	IN	1.8%	Sh
	<i>Dactylis glomerata</i>	Sd	1.8%	G
	<i>Festuca campestris</i>	De	0.6%	G
	<i>Ceanothus velutinus</i>	IN	0.6%	Sh
	<i>Astragalus miser</i>	IN	0.6%	Pf
	<i>Amelanchier alnifolia</i>	De	0.6%	Sh
	<i>Rosa woodsii</i>	IN	0.6%	Sh
	<i>Symphoricarpos albus</i>	IN	1.8%	Sh
	<i>Achillea millefolium</i>	IN	0.6%	F

Total Cover grass 27.5%, seeded grass 15.9%, forb 24.8%, shrub 12.9%, non native 18.9%,  
seeded 16.3%  
decreaser 7.5%, increaser 57.3%, non native 18.9%

<b>Gd 6</b>	<b>04 MixSh - Mx/Gr primary/heavy/good</b>	<b>10 micro plots</b>	<b>FO5</b>
		<b>Range condition: 47.2% high fair</b>	
Overstory:	Picea glauca	4, 7	
	Populus balsamifera	4	
Shrubs:	Symphoricarpos albus	6, 8	
	Salix bebbiana	4, 5	
	Amelanchier alifolia	4	
	Alnus tennifolia	4	
	Lonicera involucrata	4	
	Rubus idaeus	5,	
	Ribes oxycanthoides	5	
Prominent species:	Poa pratensis	IN	27.5% G
	Phleum pratense	Sd	15.9% G
	Medicago lupulina	NN	13.5% F
	Symphoricarpos albus	IN	11.4% Sh
Indicator species:	Achillea millefolium	IN	1.0% F
	Rubus idaeus	IN	0.4% Sh
	Agrostis stolonifera	Sd	0.4% F
	Galium boreale	IN	2.8% F
	Aster ciliolatus	De	7.5% F
	Fragaria virginiana	IN	4.6% F
	Rosa woodsii	IN	0.7% Sh
	Berberis repens	IN	2.3% Sh
	Thalictrum venulosum	IN	2.2% F

Total Cover: grass 27.5%, seeded grass 16.3%, forb 24.4%, shrub 12.9% non native 18.9%,  
Seeded 16.3%,  
decreaser 7.5%, increaser 57.3%, non native 18.9%

<b>Gd 7</b>	<b>01 &amp; 04 F2 P1 Lw &amp; 01 Py secondary/ light - moderate/ good</b>	<b>C// Sh - Gr</b>	<b>10 micro plots</b>	<b>EO9</b>
			<b>Range condition: 59.9% good</b>	
Overstory:	Pseudotsuga menziesii	7, 6		
	Pinus contorta	7, 6		
	Pinus ponderosa	4		
	Populus tremuloides	6		
Shrub:	Arctostaphylos uva-ursi	8		
	Berberis repens	8		
	Spiraea betulifolia	7		
	Amelanchier alnifolia	5		
	Shepherdia canadensis	4		
Prominent species:	Berberis repens	IN	22.8% Sh	
	Festuca idahoensis	De	19.5% G	
	Calamagrostis rubescens	IN	12.6% G	

Indicator species:	Medicago lupulina	NN	0.9%	F
	Apocynum androsaemifolium	IN	7.1%	F
	Achillea millefolium	IN	4.1%	F
	Arctostaphylos uva-ursi	IN	6.9%	Sh
	Carex rossii	De	0.9%	G
	Symphoricarpos albus	IN	4.1%	Sh
	Poa pratensis	IN	2.5%	G
	Taraxacum officinale	NN	4.1%	F
	Populus tremuloides	IN	0.9%	Sh
	Agropyron spicatum	De	4.4%	G
	Stipa richardsonii	De	2.2%	G
	Agropyron repens	NN	2.5%	G
	Astragalus miser	IN	0.9%	PF

Total cover: grass 44.6%, forb 20.1%, shrub 27.8%, non native 7.5%  
decreaser 27%, increaser 65.5%, non native 7.5%

**Gd 8**      **01 Py- escarpment C// Sh - Gr (escarpment)**      **20 micro plots**      **E10**  
**secondary - non use/ light/ excellent**      **Range condition: 68.7% good**      **IO7**

Overstory:	Pseudotsuga menziesii	7, 5		
	Pinus ponderosa	7, 5		
	Pinus contorta	4		
	Abies lasiocarpa	2		

Shrub:	Amelanchier alnifolia	6		
	Spiraea betulifolia	6		
	Arctostaphylos uva-ursi	6		
	Shepherdia canadensis	5		
	Prunus virginiana	5		
	Symphoricarpos occidentalis			
	Juniperus communis	2		
	Ribes oxycanthoides	2		

Prominent species:	Agropyron spicatum	De	19.7%	G
	Amelanchier alnifolia	De	16.3%	Sh
	Fragaria virginiana	IN	14.9%	F
	Arctostaphylos uva-ursi	IN	9.8%	Sh

Indicator species:	Symphoricarpos albus	IN	9.3%	Sh
	Calamagrostis rubescens	IN	6.5%	G
	Antennaria parvifolia	IN	3.4%	F
	Spiraea betulifolia	IN	1.0%	Sh
	Campanula rotundifolia	IN	1.7%	F
	Berberis repens	IN	1.3%	Sh
	Carex rossii	De	3.2%	G
	Achillea millefolium	IN	2.4%	F
	Potentilla glandulosa	IN	1.7%	F
	Potentilla glandulosa	IN	1.7%	F
	Allium cernuum	De	0.5%	F
	Koeleria macrantha	IN	1.6%	G
	Festuca idahoensis	De	0.4%	G
	Bromus tectorum	NN	0.2%	G
	Lomatium triternatum	IN	1.4%	F
	Penstemon fruticosus	IN	0.2%	Sh

Total cover grass 31.6%, forb 30.3%, shrub 37.9%, non native 0.2%  
decreaser 40.1%, increaser 59.7%, non native 0.2%

<b>Gd 9</b>	<b>01 &amp; 04 CC CC</b>		<b>10 microplots</b>	<b>IO4</b>
	<b>secondary/light/excellent</b>		<b>Range condition: 91.2% excellent</b>	
Overstory:	Larix occidentalis	4		
	Pseudotsuga menziesii	4		
	Pinus contorta	2		
Shrub:	Spiraea betulifolia	7		
	Berberis repens	7		
	Arctostaphylos uva-ursi	7, 6		
	Shepherdia canadensis	4		
Prominent species:	Calamagrostis rubescens	IN	74.5%	G
Indicator species:	Arctostaphylos uva-ursi	IN	9.4%	Sh
	Symphoricarpos albus	IN	2.4%	Sh
	Berberis repens	IN	4.2%	Sh
	Apocynum androsaemifolium	IN	0.9%	F
	Rosa woodsii	IN	0.9%	Sh
	Pinus ponderosa	IN	0.1%	C
	Spiraea betulifolia	IN	6.8%	Sh
	Hedysarum sulphurescens	De	0.9%	F
Total Cover:	grass 74.5%, forb 1.8%, shrub 23.6%, conifer 0.1%			
	decreaser 0.9%, increaser 99.1%			

<b>Gd 10</b>	<b>01 &amp; 04 Fd P1 Lw C// Mx - Sh</b>		<b>10 micro plots</b>	<b>IO3</b>
	<b>secondary - non use/ light/ excellent</b>		<b>Range condition: 76.8% low excellent</b>	
Overstory:	Pseudotsuga menziesii	8		
	Larix occidentalis	4, 6		
	Pinus contorta	4, 5		
	Pinus ponderosa	4		
	Abies lasiocarpa	4		
	Populus tremuloides	5		
Shrub:	Berberis repens	6		
	Spiraea betulifolia	6, 7		
	Shepherdia canadensis	5		
	Arctostaphylos uva-ursi	5, 6		
Prominent species:	Calamagrostis rubescens	IN	88.8%	G
Indicator species:	Smilacina stellata	IN	0.9%	F
	Spiraea betulifolia	IN	6.9%	Sh
	Berberis repens	IN	2.5%	Sh
	Linnaea borealis	IN	0.9%	F
Total Cover:	grass 88.8%, forb 1.8%, shrub 9.4%			
	increasers 100%			

<b>Gd 11</b>	<b>01 &amp; 04 CC</b>	<b>CC</b>	<b>10 micro plots</b>	<b>IO2</b>
	<b>primary/</b>	<b>moderate/</b>	<b>good</b>	<b>Range condition: 67.5% good</b>
Overstory:	Pinus contorta		5, 4	
	Pseudotsuga menziesii		4	
	Larix occidentalis		4	
Shrub:	Calamagrostis rubescens	IN	54.8%	G
	Berberis repens	IN	24.4%	Sh
	Spiraea betulifolia	IN	9.8%	Sh
	Festuca rubra	Sd	0.8%	G
	Fragaria virginiana	IN	1.9%	F
	Cirsium arvense	NN	0.1%	F
	Shepherdia canadensis	IN	1.9%	Sh
Total Cover	grass 55.6%, forb 2.5%, shrub 41%, seeded 0.8%, non native 0.1% seeded 0.8% decreaser 1.3%, increaser 97.8%, non native 0.1%			

<b>Gd 12</b>	<b>01 &amp; 04 CC</b>	<b>CC// Sh - Gr</b>	<b>10 microplots</b>	<b>IO5</b>
	<b>primary/</b>	<b>moderate/</b>	<b>good</b>	<b>Range condition: 85% excellent</b>
Shrub:	Pinus contorta		4, 5 (regeneration)	
	Arctostaphylos uva-ursi		5	
	Symphoricarpos albus		5	
	Amelanchier alnifolia		6	
	Larix occidentalis		4	
	Shepherdia canadensis		5	
	Spiraea betulifolia		8	
	Berberis repens		8	
Prominent species:	Calamagrostis rubescens	IN	68%	G
	Fragaria virginiana	IN	10%	F
Indicator species:	Hieracium albiflorum	IN	1.0%	F
	Berberis repens	IN	7.4%	Sh
	Spiraea betulifolia	IN	2.6%	Sh
	Symphoricarpos albus	IN	0.9%	Sh
	Achillea millefolium	IN	0.9%	F
	Arnica cordifolia	IN	4.6%	F
	Cirsium arvense	NN	0.9%	F
	Poa interior	De	0.9%	F
	Vaccinium caespitosum	IN	0.9%	Sh
	Hedysarum sulphurescens	De	0.2%	F
	Linnaea borealis	IN	1.5%	F
Total Cover:	grass 68%, forb 20.2%, shrub 10.9%, non native 0.9% decreaser 1.1%, increaser 98%, non native 0.9%			

<b>Gd 13</b>	<b>01 &amp; 04 CC</b>	<b>CC// C - Sh</b>	<b>10 micro plots</b>	<b>IO6</b>
	<b>secondary/</b>	<b>light - moderate/</b>	<b>good</b>	<b>Range condition: 51.2% low good</b>
Overstory:	Pinus contorta		7, 5	
	Larix occidentalis		4	

Shrub:	Acer glabrum	7		
	Spiraea betulifolia	8		
	Berberis repens	8		
	Amelanchier alnifolia	5		
	Rosa woodsii	7		
Prominent species:	Berberis repens	IN	27.1%	Sh
	Calamagrostis rubescens	IN	23.2%	G
Indicator species:	Spiraea betulifolia	IN	6.2%	Sh
	Fragaria virginiana	IN	1.7%	F
	Acer glabrum	De	1.7%	Sh
	Symphoricarpos occidentalis	IN	17.1%	Sh
	Arnica cordifolia	IN	0.1%	F
	Ceanothus velutinus	De	5.6%	Sh
	Epilobium angustifolium	IN	0.6%	F
	Shepherdia canadensis	IN	8.3%	Sh
	Hedysarum sulphurescens	De	3.4%	F
	Elymus glauca	De	3.1%	G
	Amelanchier alnifolia	De	0.6%	Sh
	Poa pratensis	IN	0.6%	G
	Achillea millefolium	IN	0.6%	F
	Total Cover:	grass 26.3%, forb 7.1%, shrub 66.6%		
	decreaser 14.4%, increaser 85.6%			

**Gd 14**      **01 & 04 CC**      **CC// C - Sh**      **10 micro plots**      **IO8**  
**primary/ moderate/ good**      **Range conditon: 93.3% low excellent**

Overstory:	Pinus contorta	7, 6-8		
	Populus tremuloides	7, 6		
Shrub:	Shepherdia canadensis	7		
	Acer glabrum	7		
	Arctostaphylos uva-ursi	6		
	Rosa woodsii	7		
	Symphoricarpos occidentalis	7, 6		
	Salix scouleriana	7		
	Amelanchier alnifolia	5		
	Berberis repens	8		
Prominent species:	Calamagrostis rubescens	IN	45.4%	G
	Dactylis glomerata	Sd	21.9%	G
	Berberis repens	IN	3.9%	Sh
	Rosa woodsii	IN	3.8%	Sh
	Symphoricarpos occidentalis	In	5.9%	Sh
	Trifolium hybridum	Sd	1.9%	F
	Medicago lupulina	NN	0.8%	F
	Fragaria virginiana	IN	3.8%	F
	Arctostaphylos uva-ursi	IN	0.8%	F
	Shepherdia canadensis	IN	1.9%	Sh
	Hedysarum sulphurescens	De	2.2%	F
	Cirsium vulgare	NN	0.8%	F
	Amelanchier alnifolia	De	8.1%	Sh
	Spiraea betulifolia	IN	0.8%	Sh

Total Cover: grass 45.4%, seeded 23.8%, forbs 4.8%, shrub 24.4%, non native 1.6%, seeded 23.8%  
 decreaser 10.3%, increaser 64.3%, non native 1.6%

**Gd 15**      **01 & 04 Fd P1 Lw & 2 ab C/ Gr - Sh**      **10 micro plots**      **IO1**  
**primary & secondary/ light to heavy/ good**      **Range condition: 70.6% good**  
 A complex of steep grass and shrub slopes and mixed wood forest.

Overstory:              Pseudotsuga menziesii              4, 6-8  
                                  Pinus ponderosa                      4, 6-7  
                                  Populus tremuloides                5-6  
                                  Pinus contorta                        4-7

Shrub:                    Ceanothus velutinus                8-5  
                                  Berberis repens                      6  
                                  Amelanchier alnifolia               6-4  
                                  Symphoricarpos occidentalis      5  
                                  Salix scouleriana                    4

(density distribution - grassland and shrubland - mixed wood forest)

Prominent species:      Poa pratensis                        IN                      37.4%                      G  
 (grassland)              Calamagrostis rubescens            IN                      16.6%                      G  
                                  Arctostaphylos uva-ursi            IN                      10.6%                      Sh

Indicator species:        Tragopogon dubius                    NN                      1.1%                      F  
                                  Antennaria umbrinella                IN                      1.5%                      F  
                                  Antennaria parvifolia                IN                      0.7%                      F  
                                  Stipa columbiana                      De                      1.9%                      G  
                                  Epilobium angustifolium            IN                      1.9%                      F  
                                  Achillea millefolium                IN                      1.5%                      F  
                                  Ceanothus velutinus                De                      13.6%                      Sh  
                                  Berberis repens                        IN                      3.3%                      G  
                                  Agropyron smithii                    De                      3.3%                      G  
                                  Amelanchier alnifolia                De                      4.3%                      Sh  
                                  Fragaria virginiana                    IN                      0.7%                      F  
                                  Koeleria macrantha                    IN                      0.7%                      G  
                                  Apocynum androsaemifolium        IN                      0.7%                      F

Total Cover: grass 59.9%, forb 7.2%, shrub 31.8%, non native 1.1%  
 decreaser 21.2%, increaser 77.7%, non native 1.1%

# HIGHWAY

## Hw 1                      C - Gr                      10 micro plots                      F10 primary/light-moderate/good

Overstory:	Pinus ponderosa			
Prominent species:	Calamagrostis rubescens	IN	47.5%	G
	Lupinus sericeus	IN	25.0%	F
	Festuca idahoensis	De	10.1%	G
Indicator species:	Medicago lupulina	NN	3.4%	F
	Stipa richardsonii	De	8.7%	G
	Taraxacum officinale	NN	2.6%	F
	Speriaea betulifolia	IN	5.5%	Sh
	Antennaria parvifolia	IN	6.4%	F
	Penstemon confertus	IN	0.1%	F
	Lappula squarrosa	NN	1.1%	F
	Koeleria macrantha	IN	1.9%	F
	Stipa columbiana	De	0.7%	G

Total Cover: grass 67.7%, forb 19.7%, shrub 5.5%, non native 7.1%,  
decreaser 19.5%, increaser 73.4%, non native 7.1%

## Hw 2                      Wet - Gr                      10 micro plots                      F11 primary/moderate to heavy/good to fair

Prominent species:	Eleocharis palustris	IN	65.8%	G
	Agropyron repens	NN	13.0%	G
Indicator species:	Agrostis stolonifera	De	0.7%	G
	Medicago lupulina	NN	0.7%	F
	Potentilla anserina	IN	4.5%	F
	Juncus balticus	IN	0.7%	G
	Poa palustris	IN	7.8%	G
	Poa compressa	NN	2.9%	G
	Trifolium repens	NN	0.1%	F
	Carex aquatilis	De	2.0%	G

Total Cover: grass 77.0%, forb 6.3%, non native 16.7%,  
decreaser 2.7%, increaser 80.6%, non native 16.7%

## Hw 3                      Gr - Sd                      10 micro plots                      G1 + description

## Hw 4                      Gr// C                      10 micro plots                      JO1 primary/moderate to heavy/excellent

Overstory:	open Pinus ponderosa			
Prominent species:	Stipa richardsonii	De	36.5	G
	Poa pratensis	IN	23.0	G
	Lupinus sericens	IN	18.4	F

Indicator species:	Agropyron repens	NN	0.6	G
	Koeleria macrantha	IN	2.9	G
	Antennaria parvifolia	IN	1.6	F
	Rosa woodsii	IN	0.6	Sh
	Achillea millefolium	IN	0.9	F
	Mecicago lupulina	NN	1.2	F
	Astragalus miser	IN	0.1	PF
	Erigeron filifolius	IN	3.5	F
	Taraxacum officinale	NN	0.5	F
	Festuca campestris	De	5.3	G
	Penstemon confertus	IN	0.6	F
	Arctostaphylos uva-ursi	IN	1.6	Sh
	Calamagrostis rubescens	IN	0.6	G
	Stipa columbiana	De	0.6	G

**Total Cover: grass 68.9%, forb 26.6%, shrub 2.2%, non native 2.3%**  
**decreasers 42.4%, increasers 55.3%, non native 2.3%**

**Hw 5**                      **C// Sh - Gr**                      **10 micro plots**                      **JO2**  
**secondary/light/excellent**

Overstory:	Pinus ponderosa //Pseudotsuga menziesii Pinus contorta			
Prominent species:	Arctostaphylos uva-ursi	IN	21.5%	Sh
	Stipa richardsonii	De	15.6%	G
	Calamagrostis rubescens	IN	21.2%	G]
species:	Penstemon confertus	IN	1.8%	F
	Astragalus miser	IN	7.2%	Pf
	Achillea millefolium	IN	0.6%	F
	Antennaria parvifolia	IN	6.9%	F
	Poa pratensis	IN	2.4%	G
	Koeleria macrantha	IN	1.0%	G
	Festuca campestris	De	9.0%	G
	Hedysarum sulphurescens	De	0.6%	F
	Amelanchier alnifolia	De	0.8%	Sh
	Carex rossii	De	0.6%	G
	Purshia tridentata	IN	2.7%	Sh
	Agropyron trachycaulum var.unilaterale	De	3.2%	G
	Symphoricarpos occidentalis	IN	1.6%	Sh
	Astragalus dasyglottis	De	1.1%	F

**Total Cover: grass 53%, forb 20.6%, shrub 26.4%,  
decreaser 30.7%, increaser 69.3%**

**Hw 6**                      **Gr// Mx - Sh**                      **10 micro plots**                      **JO3**  
**primary/ moderate to heavy/good**

Overstory:	open Pinus ponderosa Populus tremuloides			
Prominent species:	Stipa richardsonii	De	35.2%	G
	Poa pratensis	IN	26.8%	G



# LOST DOG

**LD 1**      **01 & 04**      **CC/ Sh - Gr**      **10 micro plots**      **JO8**  
**primary - secondary/ light/ good**      **Range condition: 85.9% excellent**

Overstory:	Pinus contorta	7, 6 (regeneration)		
	Larix occidentalis	2		
Shrub:	Arctostaphylos uva-ursi	8		
	Spiraea betulifolia	4, 7		
	Rosa woodsii	4, 7		
	Shepherdia canadensis	7		
	Vaccinium caespitosum	4		
Prominent species:	Arctostaphylos uva-ursi	IN	38.7%	Sh
	Calamagrostis rubescens	IN	37.7%	G
Indicator species:	Fragaria virginiana	IN	5.6%	F
	Vaccinium caespitosum	IN	1.4%	Sh
	Rosa woodsii	IN	2.5%	Sh
	Shepherdia canadensis	IN	1.3%	Sh
	Achillea millefolium	IN	3.2%	F
	Pinus contorta	IN	1.3%	C
	Antennaria neglecta	IN	3.2%	F
	Spiraea betulifolia	IN	1.4%	Sh
	Penstemon confertus	IN	1.3%	F
	Stipa richardsonii	De	2.1%	G

Total Cover: grass 37.7%, forb 15.7%, shrub 45.3%, conifer 1.3%  
decreaser 2.1%, increaser 97.9%

**LD 2**      **02 ab/ 01 & 04 Fd P1 Lw**      **C/ Gr - Sh**      **10 microplots**  
**IO1**  
**primary & secondary/ light to heavy/ good**      **Range condition: 70.8% good**

A complex of steep grass and shrub slopes plus large areas of mixed wood forest.

Overstory:	patchy Pseudotsuga menziesii	4, 6-8
	Pinus ponderosa	4, 6-7
	Populus tremuloides	5-6
	Pinus contorta	4-7
Shrub:	Ceanothus velutinus	8-5
	Berberis repens	6
	Amelanchier alnifolia	6-4
	Symphoricarpos occidentalis	5
	Salix scouleriana	4

(density distribution - grassland and shrubland - mixed wood forest) grassland and shrubland

Prominent species:	Poa pratensis	IN	37.4%	G
	Calamagrostis rubescens	IN	16.6%	G
	Arctostaphylos uva-ursi	IN	10.6%	Sh
	Ceanothus velutinus	De	13.6%	Sh
Indicator species:	Tragopogon dubius	NN	1.1%	F
	Antennaria umbrinella	IN	1.5%	F
	Antennaria parvifolia	IN	0.7%	F
	Stipa columbiana	De	1.9%	G
	Epilobium angustifolium	IN	1.9%	F
	Achillea millefolium	IN	1.5%	F
	Berberis repens	IN	3.3%	Sh
	Agropyron smithii	De	3.3%	G
	Amelanchier alnifolia	De	4.3%	Sh
	Fragaria virginiana	IN	0.7%	F
	Koeleria macrantha	IN	0%	G
Apocynum androsaemifolium	IN	0.7%	F	
Total Cover:	grass 59.9%, forb 7.2%, shrub 31.8%, non native 1.1% decreaser 21.2%, increaser 77.7%, non native 1.1%			

**LD 3**      **01 & 04 Fd P1 Lw**      **C// Nx - Sh**      **10 micro plots**      **IO3**  
**secondary - non use/ light/ excellent**      **Range condition: 78.4% excellent**

Overstory:	dense Pseudotsuga menziesii	8		
	Larix occidentalis	4, 6		
	Pinus contorta	4, 5		
	Pinus ponderosa	4		
	Abies lasiocarpa	4		
	Populus tremuloides	5		
Shrub:	Berberis repens	6		
	Spiraea betulifolia	6, 7		
	Shepherdia canadensis	5		
	Arctostaphylos uva-ursi	5, 6		
Prominent species:	Calamagrostis rubescens	IN	88.8%	G
Indicator species:	Smilacina stellata	IN	0.9%	F
	Spiraea betulifolia	IN	6.9%	Sh
	Berberis repens	IN	2.5%	Sh
	Linnaea borealis	IN	0.9%	F
Total Cover:	grass 88.8%, forb 1.8%, shrub 9.4% increaser 100%			

# LOST SPRING PASTURE

**LS 1**      **01 Py Gr/ C - Sh**      **10 micro plots**      **B01**  
**primary/ moderate/ excellent**      **Range condition: 69.9% good**

Overstory:      open Pinus ponderosa  
Pseudotsuga menziesii  
Pinus contorta

Prominent species:      Agropyron spicatum      De      28.0%      G  
Koeleria macrantha      IN      19.4%      G  
Arctostaphylos uva-ursi      IN      11.8%      Sh

Indicator species:      Antennaria umbrinella      IN      0.2%      F  
Antennaria rosea      IN      1.2%      F  
Amelanchier alnifolia      De      7.5%      Sh  
Achillea millefolium      IN      0.6%      F  
Calamagrostis rubescens      IN      7.9%      G  
Bromus tectorum      NN      0.2%      G  
Festuca campestris      De      3.5%      G  
Purshia tridentata      IN      3.1%      Sh  
Astragalus miser      IN      1.2%      PF  
Medicago lupulina      NN      3.6%      F

Total Cover:      grass 59%, forbs 9.6%, shrubs 23.6%, non native 7.8%  
decreasers 39%, Increasers 53.2%, non native 7.8%

**LS 2**      **01 Py Gr/ C - Sh**      **10 micro plots**      **C02**  
**primary - secondary/light/good to excellent**      **Range condition: 86.6% excellent**

Overstory:      open: Pinus ponderosa  
Pseudotsuga menziesii  
Pinus contorta

Prominent species:      Festuca campestris      De      40.2%      G  
Arctostaphylos uva-ursi      IN      21.6%      Sh  
Calamagrostis rubescens      IN      17.4%      G

Indicator species:      Achillea millefolium      IN      0.5%      F  
Astragalus miser      IN      9.0%      PF  
Antennaria parvifolia      IN      1.7%      F  
Taraxacum officinale      NN      2.1%      F

Total cover:      grass 58.2%, forbs 8.1%, shrubs 21.6%, non natives 2.1%  
Decreasers 40.4%, Increasers 57.5%, non natives 2.1%



Prominent species:	<i>Heterotheca villosa</i>	IN	16.9%	F
	<i>Medicago lupulina</i>	NN	15.3%	F
	<i>Arctostaphylos uva-ursi</i>	IN	13.4%	Sh
	<i>Calamagrostis rubescens</i>	IN	11.9%	G
	<i>Agropyron spicatum</i>	De	10.3%	G

Indicator species:	<i>Alyssum alyssoides</i>	NN	1.4%	F
	<i>Bromus tectorum</i>	NN	6.1%	G
	<i>Taraxacum officinale</i>	NN	4.9%	F
	<i>Koeleria macrantha</i>	IN	9.8%	G
	<i>Antennaria parvifolia</i>	IN	6.1%	F
	<i>Agropyron repens</i>	NN	0.3%	G
	<i>Pseudotsuga menziesii</i>	IN	4.1%	C
	<i>Achillea millefolium</i>	IN	2.7%	F
	<i>Symphoricarpos albus</i>	IN	1.6%	Sh
	<i>Festuca campestris</i>	De	1.6%	G
	<i>Oxytropis monticola</i>	IN	0.8%	F
	<i>Stipa richardsonii</i>	De	0.3%	G
	<i>Stipa columbiana</i>	De	1.6%	G
	<i>Plantago patagonica</i>	IN	6.8%	F
	<i>Penstemon confertus</i>	IN	1.6%	F

Total Cover: grass 35.5%, forbs 17.4%, shrubs 15.0%, non native 28.0%, conifers 4.1%  
decreaser 13.8%, increaser 58.2%, non native 28.0%

**LS 6**      **01 Py C// Sh/ Gr**      **20 micro plots**      **C04 & C06**  
**secondary/ light/ excellent**      **Range condition: 63.6% good**

Overstory: closed *Pseudotsuga menziesii*  
*Pinus ponderosa*

Prominent species:	<i>Calamagrostis rubescens</i>	IN	47.2%	G
	<i>Festuca campestris</i>	De	12.2%	G

Indicator species:	<i>Taraxacum officinale</i>	NN	2.8%	F
	<i>Penstemon confertus</i>	IN	8.4%	F
	<i>Arctostaphylos uva-ursi</i>	IN	5.8%	Sh
	<i>Amelanchier alnifolia</i>	De	3.4%	Sh
	<i>Spiraea betulifolia</i>	IN	7.6%	Sh
	<i>Pseudotsuga menziesii</i>	IN	2.0%	C
	<i>Taraxacum officinale</i>	NN	0.2%	F
	<i>Symphoricarpos albus</i>	IN	2.2%	Sh
	<i>Stipa richardsonii</i>	De	0.6%	G
	<i>Antennaria parvifolia</i>	IN	1.5%	F
	<i>Koeleria macrantha</i>	IN	1.6%	G
	<i>Achillea millefolium</i>	IN	0.6%	F
	<i>Medicago lupulina</i>	NN	0.6%	F

Total Cover: grass 61.6%, forbs 13.8%, shrubs 19%, non native 3.6%, conifer 2.0%  
decreaser 16.2%, increaser 80.2%, non native 3.6%

**LS 7**      **01 Fes**      **Gr// Sh - C**      **10 micro plots**      **B04**  
**primary/ heavy/ good**      **Range condition: 21.7% poor**

Overstory:            open Pseudotsugo menziesii  
Pinus ponderosa

Prominent species:    Plantago patagonica            IN            33.9            F  
Stipa comata                    IN            27.7            G

Indicator species:     Stipa columbiana            De            0.7            G  
Achillea millefolium        IN            2.0            F  
Astragalus miser            IN            0.1            PF  
Antennaria parvifolia      IN            0.1            F  
Fragaria virginiana        IN            2.2            F  
Arctostaphylos uva-ursi    IN            1.4            Sh  
Calamagrostis rubescens    IN            2.4            G  
Penstemon confertus        IN            0.9            F  
Heterotheca villosa        IN            0.1            F  
Koeleria macrantha        IN            0.4            G  
Agropyron spicatum        De            3.6            G  
Medicago lupulina        NN            8.4            F  
Phacelia linearis            NN            0.1            F  
Poa compressa              NN            1.4            G  
Agropyron repens          NN            8.7            G  
Taraxacum officinale      NN            2.4            F  
Lappula squarrosa        NN            0.9            F  
Bromus tectorum            NN            0.1            F

Total Cover:    grass 27.6, forbs 49%, shrub 1.4%, non native 22%  
decreaser 4.3%, increaser 73.7%, non native 22%

**LS 8**      **01 Fes**      **S Gr**      **10 micro plots**      **C07**  
**primary/ moderate/ good**      **Range condition: 45.4% fair**

Prominent species:    Medicago lupulina            NN            24.6%            F  
Medicago sativa            Sd            20.6%            F  
Koeleria macrantha        IN            16.3%            G

Indicator species:     Antennaria parvifolia        IN            7.4%            F  
Astragalus miser            IN            7.6%            PF  
Erigeron pumilis            IN            0.7%            F  
Stipa comata                IN            0.7%            G  
Plantago patagonica        IN            5.3%            F  
Poa pratensis              IN            2.0%            G  
Agropyron repens          NN            2.6%            G  
Taraxacum officinale      NN            0.1%            F  
Lappula squarrosa        NN            0.6%            F  
Dactylis glomerata        Sd            0.7%            G  
Bromus biebersteinii      Sd            8.8%            G  
Bromus tectorum            NN            0.1%            G

Total Cover:    grass 21%, forbs 20.9%, seeded grass 9.5%, seeded forb 20.6%, non native 28%,  
decreaser 2.0%, increaser 39.9%, N.N. 28%, seeded 30.1%

**LS 9**      **01 Fes**      **Gr// C - Sh**      **10 micro plots**      **C05**  
**primary/moderate-heavy/excellent to good**      **Range condition: 50.1 % low good**

Prominent species:	Stipa richardsonii	De	31.5	G
	Poa pratensis	IN	31.1	G
	Poa compressa	NN	11.4	G
Indicator species:	Koeleria macrantha	IN	6.1	G
	Amelanchier alnifolia	De	0.8	Sh
	Antennaria parvifolia	IN	1.3	F
	Medicago lupulina	NN	1.8	F
	Stipa columbiana	De	2.2	G
	Taraxacum officinale	NN	4.4	F
	Achillea millefolium	IN	0.4	F
	Arctostaphylos uva-ursi	IN	3.0	Sh
	Astragalus miser	IN	0.4	PF
	Festuca campestris	De	0.8	G
	Agropyron repens	NN	0.1	G
	Hedysarum sulphurescens	De	0.8	F
	Penstemon confertus	IN	0.2	F

Total Cover: grass 71.7%, forb 6.8%, shrub 3.8%, non native 17.7%  
decreaser 36.1%, increaser 46.2%, non native 17.7%

**LS 10**      **01 Py**      **CC - Sh// C**      **Range condition: 77% excellent**  
**secondary/ light/ excellent to good**

Overstory:	seedling Pseudotsuga menziesii and Pinus ponderosa			
Prominent species:	Arctostaphylos uva-ursi	IN	35.1%	Sh
	Calamagrostis rubescens	IN	35.1%	G
	Festuca campestris	De	10.3%	G
Indicator species:	Agropyron repens	NN	1.3%	G
	Taraxacum officinale	NN	1.2%	F
	Amelanchier alnifolia	De	9.4%	Sh
	Agropyron trachycaulum var.unilaterale	De	1.3%	G
	Astragalus miser	IN	3.2%	PF
	Penstemon confertus	IN	1.3%	F
	Trifolium hybridum	Sd	0.2%	F
	Spiraea betulifolia	IN	1.3%	Sh

Total Cover: grass 46.7%, forbs 4.8%, shrub 45.8%, seeded forb 0.2%, non native 2.5%  
decreaser 21.0%, increaser 76.3%, seeded 0.2%, non native 2.5%

# ROCK LAKE PASTURE

## RI 1

cc  
E5  
secondary/moderate/fair

10 Micro plots

Overstory:	Pinus contorta	6, 8		
	Pinus ponderosa	2		
	Larix occidentalis	2		
Shrub:	Berberis repens	5		
	Arctostaphylos uva-ursi	6, 8		
	Rosa woodsii	7		
	Symphoricarpos occidentalis	5		
Prominent species:	Calamagrostis rubescens	IN	22.7%	G
	Arctostaphylos uva-ursi	In	22.6%	Sh
	Fragaria virginiana	IN	16.4%	F
	Poa pratensis	IN	12.0%	G
Indicator species:	Dactylis glomerata	Sd	1.9%	G
	Rosa woodsii	IN	6.8%	Sh
	Achillea millefolium	IN	2.9%	F
	Stipa richardsonii	De	0.6%	G
	Taraxacum officinale	NN	3.3%	F
	Cirsium arvense	NN	0.4%	F
	Festuca campestris	De	0.4%	F
	Galium boreale	IN	2.4%	F
	Lupinus sericeus	IN	0.8%	F
	Trifolium repens	NN	1.6%	F
	Aster laevis	De	0.4%	F
	Penstemon confertus	IN	0.4%	F

Total Cover: grass 37.6%, forb 25.8%, shrub 29.4%, seeded 1.9%, non native 5.3%, seeded 1.9%  
decreaser 1.4%, increaser 91.4%, non native 5.3%

## RL 2

Gr  
primary/heavy/good

10 micro plots

E03

Prominent species:	Poa pratensis	IN	62.1%	G
	potentilla anserina	IN	30.7%	F
Indicator species:	Agropyron dasystachyum	De	3.2%	G
	Taraxacum officinale	NN	2.1%	G
	Antennaria parvifolia	IN	0.4%	F
	Medicago lupulina	NN	0.8%	F

Total Cover: grass 65.3%, forb 31.8%, non native 2.9%  
decreaser 3.2%, increaser 93.9%, non native 2.9%

## RL 3

CC  
primary/heavy/fair

10 micro plots

E04

Overstory:	regeneration Pinus contorta	4		
Shrub:	Arctostaphylos uva-ursi	5		
	Rosa acicularis	4		
	Berberis repens	5		
Prominent species:	Poa pratensis	IN	50.3%	G
	Agropyron repens	NN	23.7%	G
	Medicago lupulina	NN	19.5%	F
Indicator species:	Achillea millefolium	IN	1.3%	F
	Taraxacum officinale	NN	0.9%	F
	Cactylis glomerata	Sd	0.6%	G
	Fragaria virginiana	IN	2.1%	F
	Antennaria parvifolia	IN	1.4%	F
Total Cover:	grass 50.3%, seeded grass 0.6%, forb 5%, non native 44.1%, seeded grass 0.6%, increaser 55.3%, non native 44.1%			

<b>RL 4</b>	<b>Gr// C - Sh</b>	<b>10 micro plots</b>	<b>E1</b>	
	<b>primary/moderate/good</b>			
Overstory:	Pinus ponderosa	4		
	Pseudotsugo menziesii	4		
	Populus tremuloides	2		
Shrub:	Berberis repens	5		
	Rosa woodsii	4		
	Symphoricarpos occidentalis	5		
	Arctostaphylos uva-ursi	6		
Prominent species:	Poa pratensis	IN	44.4%	G
	Stipa richardsonii	De	21.2%	G
	Taraxacum officinale	NN	11.2%	G
Indicator species:	Festuca campestris	De	2.8%	G
	Lupinus sericeus	IN	6.8%	F
	Achillea millefolium	IN	2.1%	F
	Tragopogon dubins	NN	3.1%	F
	Astragalus miser	IN	3.7%	PF
	Stipa columbiana	De	4.1%	G
Total Cover:	grass, forb, non native 14.3% decreaser 28.1%, increaser 57.6%, non native 14.3%			

<b>RL 5</b>	<b>C// Sh - Gr</b>	<b>20 micro plots</b>	<b>E06 &amp; E07</b>	
<b>primary-secondary/moderate/good</b>				
Overstory:	Pseudotsuga menziesii	7, 6		
	Pinus ponderosa	4, 7		
	Pinus contorta	7, 5		
Shrub:	Spiraea betulifolia	7		
	Rosa woodsii	4		
	Arctostaphylos uva-ursi	8, 7		
	Amelanchier alnifolia	4, 6		
	Berberis repens	2		
Prominent species:	Arctostaphylos uva-ursi	IN	27.4%	Sh
	Calamagrostis rubescens	IN	25.9%	G
	Poa pratensis	IN	17.4%	G
Indicator species:	Festuca campestris	De	3.7%	G
	Spiraea betulifolia	IN	1.7%	Sh
	Festuca idahoensis	De	3.7%	G
	Antennaria parvifolia	IN	0.8%	F
	Agropyron spicatum	De	1.5%	G
	Fragaria virginiana	IN	0.8%	F
	Taraxacum officinale	NN	0.3%	F
	Lupinus serecens	IN	0.4%	F
	Amelanchier alnifolia	De	0.4%	Sh
	Stipa richardsonii	De	4.5%	G
	Medicago lupulina	NN	0.4%	F
	Achillea millefolium	IN	1.6%	F
	Astragalus miser	IN	0.4%	F
	Geum triflorum	IN	0.4%	F
	Galium boreale	IN	0.8%	F
Total cover:	grass 58.2%, forb 11.6%, shrub 29.5%, non native 0.7%			
	decreaser 13.8%, increaser 85.5%, non native 0.7%			

<b>RL 6</b>	<b>C// Sh - G</b>	<b>10 micro plots</b>	<b>EO2</b>	
<b>secondary-non use/light/excellent - good</b>				
Overstory:	Pseudotsuga menziesii	7, 8		
	Pinus ponderosa	7		
	Pinus contorta	7, 8		
	Larix occidentalis	4		
Shrub:	Spiraea betulifolia	7		
	Arctostaphylos uva-ursi	7, 6		
	Symphoricarpos albus	4,		
	Shepherdia canadensis	4		
	Vaccinium caespitosum	2		
	Berberis repens	4		
Prominent species:	Calamagrostis rubescens	IN	45.6%	G
	Arctostaphylos uva-ursi	IN	19.3%	Sh
Indicator species:	Symphoricarpos albus	IN	1.8%	Sh
	Berberis repens	In	2.7%	Sh

<i>Antennaria parvifolia</i>	IN	6.8%	F
<i>Fragaria virginiana</i>	IN	4.0%	F
<i>Penstemon confertus</i>	IN	9.1%	F
<i>Taraxacum officinale</i>	NN	0.9%	F
<i>Festuca campestris</i>	De	\$0.0%	G
<i>Stipa richardsonii</i>	De	0.2%	G
<i>Koeleria marantha</i>	IN	0.5%	G
<i>Achillea millefolium</i>	IN	0.5%	F
<i>Pseudotsuga menziesii</i>	IN	1.1%	C
<i>Rosa woodsii</i>	IN	1.1%	C
<i>Hedysarum sulphurescens</i>	De	1.1%	Sh

Total Cover: grass 50.3%, forb 22.8%, shrub 24.9%, conifer 1.1%, non native 0.9%  
decreaser 5.3%, increaser 93.8%, non native 0.9%

# STEER PASTURE

**St 1**      **01 Py**      **Gr - Sh/ C**      **10 micro plots**      **L01**  
**primary/ light - moderate/ good**      **Range condition: 72.7% good**

Overstory:      Pseudotsuga menziesii  
Pinus ponderosa

Prominent species:      Festuca campestris      De      19.7%      G  
Agropyron spicatum      De      13.3%      G  
Amelanchier alnifolia      De      12.6%      Sh  
Purshia tridentata      IN      11.0%      Sh  
Arctostaphylos uva-ursi      IN      11.0%      Sh

Indicator species:      Calamagrostis rubescens      IN      4.7%      G  
Antennaria parvifolia      IN      8.9%      F  
Festuca idahoensis      De      2.7%      G  
Taraxacum officinale      NN      2.7%      F  
Stipa richardsonii      De      2.7%      G  
Bromus tectorum      NN      1.0%      G  
Potentilla anserina      IN      1.0%      F  
Spiraea betulifolia      IN      1.0%      Sh

Total Cover:      grass 43.1%, forb 4.3%, shrub 39.7%, non native 12.9%  
decreaser 51.0%, increasers 36.1%, non native 12.9%

**St 2**      **01 Py**      **Gr**      **10 micro plots**      **L02**  
**primary/ heavy/ fair**      **Range condition: 21.4% poor**

Prominent species:      Plantago patagonica      IN      34.6%      F  
Medicago lupulina      NN      28.9%      F  
Agropyron pectiniforme      Sd      11.6%      G

Indicator species:      Poa compressa      Sd      0.7%      G  
Koeleria macrantha      IN      0.1%      G  
Stipa columbiana      De      0.1%      G  
Filago arvensis      NN      9.0%      F  
Taraxacum officinale      NN      2.1%      F  
Lepidium densiflorum      IN      1.1%      F  
Penstemon confertus      IN      0.1%      F  
Festuca idahoensis      De      0.1%      G  
Heterotheca villosa      IN      0.7%      F  
Bromus biebersteinii      Sd      5.0%      G  
Agropyron intermedium      Sd      3.7%      G  
Crepis tectorum      NN      0.1%      F  
Achillea millefolium      IN      0.7%      F  
Tragopogon dubius      NN      0.3%      F  
Antennaria parvifolia      IN      0.7%      F

Total Cover:      grass 0.3%, forb 38.3%, seeded grass 21.0%, non native 40.4%  
decreaser 0.1%, increaser 38.5%, non native 40.4%, seeded 21%

**St 3**      **01 Py**      **C// Sh - Gr// CC**      **10 micro plots**      **LO4**  
**secondary/ moderate to light/ good**      **Range condition: 52.6% good**

Overstory:            dense Pseudotsuga menziesii  
Pinus ponderosa

Prominent species:	Calamagrostis rubescens	IN	77.2%	G
Indicator species:	Taraxacum officinale	NN	0.2%	F
	Penstemon confertus	IN	3.8%	F
	Antennaria parvifolia	IN	1.3%	F
	Festuca idahoensis	De	3.8%	G
	Spiraea betulifolia	IN	9.7%	Sh
	Pseudotsuga menziesii	IN	1.3%	C

Total Cover:    grass 81%, forb 8%, shrub 9.7%, conifer 1.3%  
decreaser 3.8%, increaser 96%, non native 0.2%

**St 4**      **01 Py**      **Gr// C**      **10 micro plots**      **LO3**  
**primary/ heavy/ poor**      **Range condition: 16.4% poor**

Overstory:            open Pseudotsuga menziesii  
Populus tremuloides

Prominent species:	Plantago patagonica	IN	31.0%	F
	Koeleria macrantha	IN	26.6%	G
	Filago arvensis	NN	9.9%	F
Indicator species:	Stipa comata	IN	6.8%	G
	Stipa columbiana	De	0.9%	G
	Lappula squarrosa	NN	4.3%	F
	Festuca campestris	De	0.2%	G
	Antennaria parvifolia	IN	1.5	F
	Taraxacum officinale	NN	0.6	F
	Linanthus septentrionalis	IN	0.2	F
	Potentilla arguta	IN	0.4	F
	Agropyron spicatum	De	3.4	G
	Potentilla norvegica	IN	1.5%	F
	Medicago lupulina	NN	5.2%	F
	Achillea millefolium	IN	0.2%	F
	Eriogonum flauum	IN	4.8%	F

Total Cover:    grass 37.9%, forb 42.1%, non native 20%  
decreaser 3.6%, increaser 76.4%, non native 20%

**St 5**      **01 Py**      **C/ Sh - Gr**      **10 micro plots**      **LO5**  
**primary/ moderate to heavy/ good to fair**      **Range condition: 32.5% fair**

Overstory:            Pinus ponderosa  
Pseudotsuga menziesii

Prominent species:	Koeleria macrantha	IN	18.5%	F
	Medicago lupulina	NN	21.3%	F
	Antennaria parvifolia	IN	14.6%	F
	Plantago patagonica	IN	11.2%	F
Indicator species:	Achillea millefolium	IN	0.4%	F

Agropyron trachycaulum var.unilaterale	De	4.3%	G
Stipa comata	IN	0.9%	G
Penstemon confertus	IN	4.7%	F
Symphoricarpos albus	IN	0.2%	Sh
Festuca idahoensis	De	4.7%	G
Festuca campestris	De	3.4%	G
Filago arvensis	NN	0.2%	F
Stipa columbiana	De	1.5%	G
Taraxacum officinale	NN	2.1%	F
Arctostaphylos uva-ursi	IN	5.2%	Sh
Purshia tridentata	IN	2.3%	Sh
Orthocarpus tenuifolius	NN	0.4	F

Total Cover: grass 14.8%, forb 53.5%, shrub 7.7%, non native 24.0%  
decreaser 10.5%, increaser 65.5%, non native 24.0%

**St 6**      **01 Py**      **C// Sh - Gr**      **10 micro plots**      **LO6**  
**primary/ moderate to heavy/ good**      **Range condition: 60.4% good**

Overstory:	Pseudotsuga menziesii			
	Pinus ponderosa			
Prominent species:	Lupinus sericeus	IN	21.7%	F
	Calamagrostis rubescens	IN	12.9%	G
	Stipa columbiana	De	12.6%	G
	Arctostaphylos uva-ursi	IN	11.5%	Sh
	Taraxacum officinale	NN	9.7%	F
Indicator species:	Antennaria parvifolia	IN	0.1%	F
	Koeleria macrantha	IN	3.4%	G
	Potentilla arguta	IN	1.2%	F
	Agropyron trachycaulum var.unilaterale	De	3.0%	G
	Poa pratensis	IN	1.2%	G
	Fragaria virginiana	IN	1.2%	F
	Penstemon confertus	IN	5.7%	F
	Achillea millefolium	IN	3.4%	F
	Festuca campestris	De	4.6%	G
	Festuca idahoensis	De	1.2%	G

Total Cover: grass 38.9%, forb 39.9%, shrub 11.5%, non native 9.7%  
decreaser 21.4%, increaser 68.9%, non native 9.7%

## Management Recommendations

The pasture units are generally in good condition with a few vegetation polygons in poor condition. The poor and fair range condition was most frequently associated with watering sites. However, some of the deteriorated range associated with primary access trails or old clearings which have a long grazing history, possibly salt grounds.

The Cherry pasture has two grassland polygons which are in poor condition. Both are dominated by June grass. the CH2 polygon is in relative close proximity to the northwest corner. The CH5 polygon is in the northeast corner of Cherry. Fair condition polygons CH8 and CH6 are both in the southeast corner and are in close association to Cherry Creek. The distribution problems within this pasture are typical of most of the pastures. The open grasslands contain higher proportions of palatable grasses than adjoining woodlands. In addition any given grass species' palatability is reduced under a forest canopy versus an open grassland. Thus the grasslands were typically grazed substantially heavier than the adjoining woodland.

In order to minimize the impact of grazing, the ranchers should continue to graze using a deferred rotation. The stocking of a larger number of livestock for short duration once a season will ensure better distribution within each pasture unit. Cattle will tend use the grasslands first but will by necessity use the woodland.

An example rotation would be:

Year	Lost Spring	Airport	China
1	Spring	Summer	Fall
2	Summer	Fall	Spring
3	Fall	Spring	Summer
4	Spring	Summer	Fall
5	Summer	Fall	Spring

The two pastures, Lost Dog and Goodwin, currently are dominated by large clear cuts which are supplying most of their grazing. These pastures with a large proportion of pine grass should be grazed early thus taking some of the early season use off the fescue grasslands in the pasture units to the West. It does not appear that stocking has been too heavy but distribution problems within each pasture is a concern.

## Proposed Enclosures

It is recommend that a number of range enclosures be built to help determine the rate of range recovery. The four sites used to determine range condition including S01, S02, S03 and S04 would be appropriate. Also, a site in the partially closed ponderosa pine forest S05 along with one in a closed ponderosa pine forest S06 would be suitable.

## Range Development

The conifer forests and grasslands in the Cherry Tata Range Unit have a long history of flux. Fires periodically removed the forest and grasslands dominate, then, with time and regeneration, the woodland is back. Since the understory of the ponderosa pine components contain a significant rough fescue population, it is possible to create additional grassland by removing the pine. Thus, selective clear-cuts would be appropriate. The pastures including Highway, Rock Lake, Cherry China, Steer, Airport, Lost Spring, and Beacon all have thin ponderosa pine stands which could be cleared.

The rough fescue would increase in prominence but also all forage would improve in quality and palatability. The pine grass component would not increase significantly if stocking rates are maintained at appropriate levels.

# **Cherry - Tata Range Condition Guide 1996**

**Eastern Slopes Rangeland Seeds Ltd  
Box 273  
Cremona, Alta  
T0M 0R0**

## Cherry - Tata Range Condition Guide 1996

### Introduction

The study area is located within the PPdh 2 - Kootenay Dry Hot Ponderosa Pine Variant.

Elevation: between 800 and 1000 meters.

Climate: dry Climatic Region with very hot dry summers & mild winters with light snowfall. Soil moisture deficits limit tree and forage growth.

Soils, geology and landforms: deep glacial sediments with minor fluvial deposits along Cherry and Tata Creeks. Calcareous subsoil horizons are common. Textures on the morainal sites are loamy or silty at the surface horizons.

Forest characteristics: A Ponderosa pine forest with an extensive fire and clear-cut history in association with a more complex conifer forest on moister sites. Over story includes in the order of prominence:

Pinus ponderosa - ponderosa pine  
Pseudotsuga menziesii - Douglas fir  
Pinus contorta - lodgepole pine  
Populus tremuloides - aspen poplar

### Purpose of the Guide

The purpose of this guide is to assign prominence values to forage and browse species in such a manner as to allow field workers to determine range condition class of a given site. Once a condition class of a site is known along with site characteristics, a suggested stocking rate can be assigned. Stocking rates can be defined as the desired utilization levels of livestock classes and wildlife species.

### Range Condition

The range condition of a site is the present species composition as compared to the climax population. Range condition can be divided into four major vegetation groupings:

Poor - early seral = 0 - 25% of P.N.C.  
Fair - mid seral = 26% - 50% of P.N.C.  
Good - late seral = 51% - 75% of P.N.C.  
Excellent - climax = 76% - 100% of P.N.C.

Each condition class contains an associated plant community which is composed of specific vascular plants adapted to its use history. In the guide, vascular plants are grouped into categories including decreaseers, seeded, increaseers and invaders based primarily on their response to grazing pressure by cattle and elk.

### Species Groupings

Decreasers: Species which, because of high palatability, are most frequently sought after by grazing ungulates. These are climax range species, usually predominantly long-lived grasses, frequently with a reproductive capacity inferior to increaseer and invader species. Their prominence is maximum in the good and excellent condition.

Seeded: Forage species seeded to improve productivity, palatability and/or stability of a range type or mapped polygon. Typically in the Cherry - Tata Creek Range Unit, some of the clear-cuts were seeded.

**Increasesers:** Species which increase in prominence to offset decreasesers as they decline. Increasesers may become abundant with grazing pressure but decline again if continued or increased utilization is sustained (Increaseer I). Other increasesers will steadily increase in prominence with grazing pressure(Increaseer II). Forbs, annuals and persistent grasses dominate.

**Invaders:** Non native grasses and forbs which are frequently noxious weeds. These weedy species are inherently aggressive and generally unpalatable or limited in productivity. In addition, they have the advantage of no insect parasites or natural pathogens which limit indigenous species competitiveness.

### Understanding Indicator Species

The following Species Association Table, Cherry Tata Range Condition classes and % of Prominence Of Six Indicator Species, are part of a Range Condition Study completed in 1995 by Steven Tannas. The study site included four transects immediately adjacent to the Cherry - Tata air strip. Each transect was to represent, as closely as could be predetermined, one of the four condition classes. These were four of the last transects completed in the Cherry - Tata Creek Range Unit and were chosen because they best represented the successional changes that had been observed in the previous four weeks of work. Steven completed the transects using two methods under the supervision of Kathy Tannas, our plant taxonomist. Steven completed a ten micro plot transect using 100% biomass estimates and then repeated using Daubenmire mid-point cover classes.

The four transects included:

**SO1** Located in the extreme Northwest corner of the China pasture and is the "Poor Condition" rangeland.

Appears to be an historic salting site where, over the decades, livestock and wildlife were salted.

Easily accessed from the highway plus old logging trails and two perimeter fence lines.

Relatively close in proximity to the fenced watering site to the east.

The site is open, thus enhancing palatability of forage species verses adjoining range in the China pasture which is predominantly forest covered.

total vegetation 77.2%                      exposed soil 34.8%

**SO3** Located along the West central perimeter of the Cherry pasture south of the air strip and is in "Fair Condition".

The close proximity to an access point and a watering site has resulted in extensive use by wildlife and livestock. It is also probable that it was a salting location since these open sites afforded management good opportunities to observe stock.

Access is excellent along the perimeter fence and a primary logging road.

This is an open grassland in a pasture which is predominantly forested.

total vegetation 81.8%                      exposed soil 23.2%

**SO4** Located at the south end of the Cherry - Tata air strip and has been ungrazed by livestock for several decades though elk continue to use this site.

This site is directly across the fence from the SO3 transect.

Excellent access from the air strip.

Site was probably used extensively in the past prior to the perimeter fence because of the close proximity to water in the Cherry pasture.

Open range with a few scattered ponderosa pine.

total vegetation 85.4%                      exposed soil 20.7%

SO2    Located west of the air strip along the Highway and has been ungrazed by livestock for several decades though some use by elk was noted.

Excellent access though close proximity to highway may intimidate elk from using site extensively. Also build-up of wolf plants may further lessen desirability of this range.

Open range with a few scattered ponderosa pine.

total vegetation 97.5%                      exposed soil 0%

The Species Association Table shows the Daubenmire mid-points from the forty micro plots completed on the four sites. The purpose of the table is to visually demonstrate the distribution of specific species as related to the various condition classes.

It is obvious from the table that no single species is prominent in both the excellent (S02 transect) and in the poor (S01 transect). In fact, only dandelion (Tara off) appears in all four transects. This can be seen in the second table entitled Cherry Tata Range Condition Classes with the % Prominence Shown for each species in the four condition classes.

Species which appeared to increase with grazing in the good and fair condition ranges then decline or disappear in the poor are the Increaser I Species. Increaser I species include timber milk vetch (Astr mis) and kinnikinnick (Arct uva). Timber milk vetch does not compete with the dense rough fescue stand but its palatability is lower than the grasses so it persists after the fescue declines. However, as forage becomes scarce, the alternatives become less desired and the timber milk vetch is grazed out. Kinnikinnick is an unpalatable low growing shrub which does not compete well with the excellent condition biomass. When grazing pressure increases, kinnikinnick does poorly, possibly because of trampling by increased ungulate hoof action.

Other increasers (Increaser II) includes those species which have very minor prominence in good or excellent condition classes but increase by increments with grazing pressure. In the Cherry - Tata range unit, species including June grass (Koel mac), woolly plantain (Plam pat) and pink owl-clover (Orth ten), all had their greatest cover values in the poor condition fescue range. The Species Association Table includes numerous forbs and grasses which fit this category. The second table, Cherry Tata Range Condition Classes, includes the same transects as shown in the Species Association Table but is summarized in actual % prominence values. It shows the distribution of species composition in the climax or excellent condition range only containing 0.3% dandelion and invader or non native weeds. The poor condition range contains five invader or non native weeds composing 60% of the vegetation prominence.

#### The Graph      % Prominence Of Six Indicator Species

The graph shows six species which field staff can readily use as indicator species. The rough fescue (Fest cam) totally dominates the excellent and good condition ranges. The invader species including medic (Medi lup) and Canada bluegrass (Poa comp) are most prominent in the fair and poor condition ranges. Increasers - June grass (Koel mac) and woolly plantain (Plan pat) also increase in prominence, especially in the poor condition range. Finally, the timber milk vetch does well on good and fair condition range but not well in the excellent and poor condition ranges.

These indicator species are obvious choices when ocular evaluations of native range occurs. Numerous native forbs and grasses can be extrapolated from the Table 2 to determine range condition.

## **Range Site Descriptions**

Names and descriptions of some of the range sites found in the Cherry - Tata Range Unit and the PPdh2 Landscape profile.

- 01 Fes            fescue grasslands and associated open ponderosa pine forests.  
Morain parent materials with lesser areas of fluvial and lacustrine deposits.  
soil textures are loams and silt loams.  
slope gradients gentle to moderate 0-30% & variable aspects.  
mesic moisture regime.
- 01 Py            ponderosa pine forests, associated Douglas fir open and closed.  
morain parent materials with lesser areas of fluvial & lacustrine deposits.  
soils are loams and silt loams.  
slope gradients gentle to moderate 0 - 3% & variable aspects.  
mesic moisture regime.
- 04 Mix            mixed wood forest associated white spruce and black poplar.  
fluvial parent materials along Cherry & Tata Creeks.  
soils are loams.  
slopes are level to very gentle.  
moisture sub hygric
- 02 a bb bluebunch wheat grass and associated ponderosa pine.  
upper and mid slopes, steep gradients 40 - 60%.  
morain parent material.  
soil textures are loams or loamy sands.  
the aspects are warm.  
moisture regime is xeric.

## **I D F dm2 Landscape profile**

- 01 & 04 Fd PI Lw            mixed conifer forests.  
morain parent material and exposed rock.  
moderate slopes (0-45%).  
variable slope positions.  
loam and clay loam textures.

01 & 04 C.C.

moisture regime sub mesic - mesic to sub hygric.

clear-cut.

morian parent material and exposed rock.

moderate slopes (0-45%).

variable slope position.

loam and clay loam textures.

moisture regime sub mesic to sub hygric.

## Use Of Field Guide \*

To use the field guide:

- identify the range site by observing and determining parent material, overstory, slope, soil texture and moisture regime.
- outlining or mapping vegetation boundaries.
- complete vegetation transects determining species prominence.
- list decreaser, increaser and non native species determining Daubenmire ranges and assigning mid points.
- total the percentages of the decreaser species, seeded species, and add the total of the maximum allowable percentages of increaser species. No value is given to any non native (invader) species.

\* The Guide is a modification of the Guide to Range Condition and Stocking Rates for Alberta Grasslands 1988, R.A. Wroe et al., Alta Agriculture.

# CHERRY TATA CREEK

## List of Vascular Plant Species Encountered in 1995 Range Survey

<i>Abies lasiocarpa</i>	Subalpine Fir	Tr
<i>Acer glabrum</i>	Rocky Mountain Maple	Sh
<i>Achillea millefolium</i>	Yarrow	F
<i>Actaea rubra</i>	Baneberry	F
<i>Agroseris glauca</i>	False Dandelion	F
<i>Agropyron intermedium</i>	Intermediate Wheat Grass	Gr
<i>Agropyron pectiniforme</i>	Crested Wheat Grass	Gr
<i>Agropyron repens</i>	Quack Grass	Gr
<i>Agropyron sibiricum</i>	Crested Wheat Grass (or Siberian)	Gr
<i>Agropyron spicatum</i>	Bluebunch Wheat Grass	Gr
<i>Agropyron trachycaulum</i> var. <i>trachycaulum</i> & <i>unilaterale</i>	Awned Wheat Grass	Gr
<i>Agropyron trichophorum</i>	Pubescent Wheat Grass	Gr
<i>Agrohordeum macounii</i>	Macoun's Wild Rye	Gr
<i>Agrostis scabra</i>	Hair or Tickle Grass	Gr
<i>Agrostis stolonifer</i>	Red Top	Gr
<i>Alisma plantago - aquatica</i>	Broad-leaved Water Plantain	F
<i>Allium cernuum</i>	Nodding Onion	F
<i>Alnus tenuifolia</i> = <i>incana</i>	River Alder	Sh
<i>Alopecurus aequalis</i>	Water Foxtail	Gr
<i>Alopecurus occidentalis</i>	Alpine Foxtail	Gr
<i>Alyssum alyssoides</i>	Alyssum	F
<i>Amelanchier alnifolia</i>	Saskatoon	Sh
<i>Anaphalis margaritacea</i>	Pearly Everlasting	F
<i>Anemone multifida</i>	Cut-leaved Anemone	F
<i>Anemone patens</i>	Prairie Crocus	F
<i>Angelica arguta</i>	White Angelica	F
<i>Antennaria neglecta</i>	Field Pussytoes	F
<i>Antennaria parvifolia</i> = <i>microphlla</i>	Pussytoes	F
<i>Antennaria racemosa</i>	Everlasting	F
<i>Antennaria rosea</i>	Rosy Pussytoes	F
<i>Antennaria umbrinella</i>	Umber Pussytoes	F
<i>Apocynum androsaemifolium</i>	Spreading Dogbane	F
<i>Arabis holboellii</i>	Holboell's Rock Cress	F
<i>Aralia nudicaulis</i>	Sarsaparilla	F

<i>Arctium minus</i>	Burdock	F
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick	Sh
<i>Arenaria serpyllifolia</i>	Sandwort	F
<i>Arnica cordifolia</i>	Heart-leaved Arnica	F
<i>Arnica sororia</i>	Shining Arnica	F
<i>Artemisia biennis</i>	Biennial Sagewort	F
<i>Artemisia campestris</i>	Field Wormwood	F
<i>Artemisia frigida</i>	Fringed or Pasture Sage	F
<i>Artemisia ludoviciana</i> (+ var. <i>latifolia</i> )	Prairie Sage	F
<i>Asclepias speciosa</i>	Showy Milk Weed	F
<i>Aster canescens</i> = <i>Machaeranthera canescens</i>	Canescent Aster	F
<i>Aster ciliolatus</i>	Lindley's Aster	F
<i>Aster conspicuus</i>	Showy Aster	F
<i>Aster falcatus</i>	Creeping White Prairie Aster	F
<i>Aster laevis</i>	Smooth Aster	F
<i>Aster modestus</i>	Large Northern Aster	F
<i>Astragalus dasyglottis</i>	Purple Milk vetch	F
<i>Astragalus miser</i>	Timber Milk Vetch	F
<i>Athyrium filix - femina</i>	Lady Fern	F
<i>Balsamorhiza sagittata</i>	Arrow-leaved Balsam-root	F
<i>Berberis repens</i> = <i>Mahonia aquifolium</i>	Tall Oregon Grape	F
<i>Berteroa incana</i>	Hoary Alyssum	F
<i>Betula occidentalis</i>	Water Birch	Sh
<i>Betula papyrifera</i>	Paper Birch	Tr
<i>Bromus biebersteinii</i>	Meadow Brome	Gr
<i>Bromus carinatus</i>	Mountain Brome	Gr
<i>Brom inermis</i>	Smooth Brome	Gr
<i>Bromus tectorum</i>	Cheatgrass	Gr
<i>Calamagrostis canadensis</i>	Bluejoint Reed Grass	Gr
<i>Calamagrostis inexpansa</i>	Northern Reed Grass	Gr
<i>Calamagrostis purpurascens</i>	Purple Reed Grass	Gr
<i>Calamagrostis rubescens</i>	Pine Grass	Gr
<i>Calochortus apiculatus</i>	Mariposa Lily	F
<i>Calochortus macrocarpus</i>	Sagebrush Mariposa Lily	F
<i>Campanula rotundifolia</i>	Harebell	F
<i>Carex aquatilis</i>	Water Sedge	Gr
<i>Carex aurea</i>	Sedge	Gr
<i>Carex athrostachya</i>	Sedge	Gr

<i>Carex concinnoides</i>	Northwestern Sedge	Gr
<i>Carex flava</i>	Sedge	Gr
<i>Carex hoodii</i>	Sedge	Gr
<i>Carex interior</i>	Sedge	Gr
<i>Carex lanuginosa</i>	Sedge	Gr
<i>Carex praticola</i>	Sedge	Gr
<i>Carex rossii</i>	Ross' Sedge	Gr
<i>Carex rostrata</i>	Beaked Sedge	Gr
<i>Castilleja lutescens</i>	Indian Paintbrush	F
<i>Castilleja miniata</i>	Scarlet Paintbrush	F
<i>Ceanothus velutinus</i> var. <i>laevigatus</i>	Snow-bush	Sh
<i>Centaurea maculata</i>	Spotted Knapweed	F
<i>Cerastium nutans</i>	Chickweed	F
<i>Cerastium vulgare</i>	Chickweed	F
<i>Chenopodium album</i>	Lamb's Quarters	F
<i>Chenopodium capitatum</i>	Strawberry Blight	F
<i>Chenopodium pratericola</i>	Goosefoot	F
<i>Chimaphila umbellata</i>	Prince's Pine	F
<i>Chrysanthemum leucanthemum</i>	Ox-eye Daisy	F
<i>Chrysothamnus nauseosus</i>	Rabbitbrush	Sh
<i>Cicuta maculata</i>	Water Hemlock	F
<i>Cirsium arvense</i>	Field Chickweed	F
<i>Cirsium undulatum</i>	Native Thistle	F
<i>Cirsium vulgare</i>	Bull Thistle	F
<i>Collinsia parviflora</i>	Blue-eyed Mary	F
<i>Collomia linearis</i>	Collomia	F
<i>Comandra umbellata</i>	Bastard Toad-flax	F
<i>Cornus stolonifera</i>	Red Osier Dogwood	Sh
<i>Crepis atratbarba</i>	Slender Hawksbeard	F
<i>Crepis tectorum</i>	Annual Hawksbeard	F
<i>Cynoglossum officinale</i>	Hound's-tongue	F
<i>Dactylis glomerata</i>	Orchard Grass	Gr
<i>Delphinium bicolor</i>	Low Larkspur	F
<i>Deschampsia elongata</i>	Slender Hair Grass	Gr
<i>Descurainia richardsonii</i>	Grey Tansy Mustard	F
<i>Disporum trachycarpum</i>	Fairybells	F
<i>Echium vulgare</i>	Blueweed	F
<i>Elaeagnus commutata</i>	Silver-berry	Sh

<i>Eleocharis palustris</i>	Spike Rush	Gr
<i>Elymus glaucus</i>	Blue Wild Rye Grass	Gr
<i>Elymus piperi</i> = <i>cinereus</i>	Giant Wild Rye Grass	Gr
<i>Ephilobium angustifolium</i>	Fireweed	F
<i>Epilobium ciliatum</i>	Willowherb	F
<i>Erigeron canadensis</i>	Horseweed	F
<i>Erigeron compositus</i>	Cut-leaved Fleabane	F
<i>Erigeron filifolius</i>	Fleabane	F
<i>Erigeron lonchophyllus</i>	Hirsute Fleabane	F
<i>Erigeron pumilus</i>	Hairy Daisy	F
<i>Erigeron speciosus</i>	Showy Fleabane	F
<i>Eriogonum flavum</i>	Yellow Umbrella Plant	F
<i>Erysimum inconspicuum</i>	Small-flowered Rocket	F
<i>Equisetum arvense</i>	Field Horsetail	F
<i>Equisetum hyemale</i>	Scouring Rush	F
<i>Equisetum laevigatum</i>	Horsetail	F
<i>Equisetum pratense</i>	Horsetail	F
<i>Festuca campestris</i>	Rough Fescue	Gr
<i>Festuca idahoensis</i>	Idaho or Bluebunch Fescue	Gr
<i>Festuca occidentalis</i>	Western Fescue	Gr
<i>Festuca pratensis</i>	Meadow Fescue	Gr
<i>Festuca rubra</i>	Creeping Red Fescue	Gr
<i>Festuca saximontana</i>	Sheep Fescue	Gr
<i>Filago arvensis</i>	Filago	F
<i>Fragaria virginiana</i>	Blue-leaved Strawberry	F
<i>Gaillardia aristata</i>	Brown-eyed Susan	F
<i>Galium boreale</i>	Northern Bedstraw	F
<i>Gayophytum nuttallii</i>	Gayophytum	F
<i>Geum macrophyllum</i>	Large-leaved Avens	F
<i>Geum triflorum</i>	Old Man's Whiskers	F
<i>Glyceria borealis</i>	Northern Manna Grass	Gr
<i>Glyceria grandis</i>	Tall Manna Grass	Gr
<i>Glyceria striata</i>	Fowl Manna Grass	Gr
<i>Gnaphalium microcephalum</i>	Cudweed	F
<i>Gnaphalium viscosum</i>	Cudweed	F
<i>Grindelia squarrosa</i>	Gumweed	F
<i>Juncus alpinoarticulatus</i>	Alpine Rush	Gr
<i>Juncus balticus</i>	Baltic Rush	Gr

<i>Juncus bufonius</i>	Toad Rush	Gr
<i>Juncus confusus</i>	Few-flowered Rush	Gr
<i>Juncus longistylis</i>	Long-styled Rush	Gr
<i>Juncus nodosus</i>	Knotted Rush	Gr
<i>Juncus tenuis</i> var. <i>dudleyi</i>	Slender Rush	Gr
<i>Juniperus communis</i>	Common Juniper	Sh
<i>Juniperus scopulorum</i>	Rocky Mountain Juniper	Sh
<i>Habenaria unalascensis</i>	Alaska Bog Orchid	F
<i>Hackelia americana</i>	Stick-seed	F
<i>Hedysarum sulphurescens</i>	Yellow Hedysarum	F
<i>Heterotheca villosa</i>	Golden Aster	F
<i>Heuchera cylindrica</i>	Round-leaved Alumroot	F
<i>Hieracium albiflorum</i>	White-flowered Hawkweed	F
<i>Hieracium cynoglossoides</i>	Woolly Hawkweed	F
<i>Hieracium triste</i>	Hawkweed	F
<i>Hieracium umbellatum</i>	Narrow-leaved Hawkweed	F
<i>Hippuris vulgaris</i>	Mare's Tail	F
<i>Hordeum jubatum</i>	Foxtail Barley	Gr
<i>Koeleria macrantha</i>	June Grass	Gr
<i>Lappula squarrosa</i>	Bluebur	F
<i>Larix occidentalis</i>	Western Larch	Tr
<i>Lathyrus ochroleucus</i>	Creamy Peavine	F
<i>Lepidium densiflorum</i>	Peppergrass	F
<i>Linanthus septentrionalis</i>	Linanthus	F
<i>Linaria dalmatica</i>	Toad-flax	F
<i>Linnaea borealis</i>	Twin-flower	Sh
<i>Linum lewisii</i>	Wild Blue Flax	F
<i>Listera cordata</i>	Heart-leaved Twayblade	F
<i>Lithospermum ruderales</i>	Columbia Gromwell	F
<i>Lolium species</i>	Ryegrass	Gr
<i>Lomatium macrocarpum</i>	Big-fruited Lomatium	F
<i>Lomatium triternatum</i>	Narrow-leaved Lomatium	F
<i>Lonicera involucrata</i>	Twinberry Honeysuckle	Sh
<i>Lupinus sericeus</i>	Silky Lupine	F
<i>Matricaria matricarioides</i>	Pineapple Weed	F
<i>Medicago lupulina</i>	Black Medick	F
<i>Medicago sativa</i>	Alfalfa	F
<i>Melampyrum lineare</i>	Cow-wheat	F

<i>Melilotus alba</i>	White Sweet Clover	F
<i>Melilotus officinalis</i>	Yellow Sweet Clover	F
<i>Mentha arvensis</i>	Wild Mint	F
<i>Microsteris gracilis</i>	Microsteris	F
<i>Muhlenbergia richardsonis</i>	Mat Muhly	Gr
<i>Orthilia secunda</i>	One-sided Wintergreen	F
<i>Orthocarpus tenuifolius</i>	Owl Clover	F
<i>Oryzopsis asperifolia</i>	Rice Grass	Gr
<i>Oryzopsis hymenoides</i>	Indian Rice Grass	Gr
<i>Osmorhiza depauperata</i>	Sweet Cicely	Gr
<i>Oxytropis monticola = campestris</i>	Late Yellow Locoweed	F
<i>Penstemon confertus</i>	Slender White Penstemon	F
<i>Penstemon fruticosus</i>	Shrubby Penstemon	F
<i>Phacelia linearis</i>	Thread-leaved Phacelia	F
<i>Phalaris arundinacea</i>	Reed Canary Grass	Gr
<i>Phleum pratense</i>	Timothy	Gr
<i>Phlox caespitosus</i>	Moss Phlox	F
<i>Picea glauca</i>	White Spruce	Tr
<i>Picris echioides</i>	Bristly Ox-tongue	F
<i>Pinus contorta</i>	Lodgepole Pine	Tr
<i>Plantago major</i>	Common Plantain	F
<i>Plantago patagonica</i>	Woolly Plantain	F
<i>Poa ampla</i>	Big Bluegrass	Gr
<i>Poa annua</i>	Annual Bluegrass	Gr
<i>Poa bulbosa</i>	Bluegrass	Gr
<i>Poa compressa</i>	Canada Bluegrass	Gr
<i>Poa palustris</i>	Fowl Bluegrass	Gr
<i>Poa pratensis</i>	Kentucky Bluegrass	Gr
<i>Poa sandbergii</i>	Sandberg Bluegrass	Gr
<i>Polygonum amphibium</i>	Lady's Thumb	F
<i>Polygonum douglasii</i>	Douglas Knotweed	F
<i>Populus balsamifera</i>	Balsam Poplar	Tr
<i>Populus tremuloides</i>	Trembling Aspen	Tr
<i>Potentilla anserina</i>	Silvery Cinquefoil	F
<i>Potentilla argentea</i>	Silvery Cinquefoil	F
<i>Potentilla arguta</i>	White Cinquefoil	F
<i>Potentilla fruticosus</i>	Shrubby Cinquefoil	F
<i>Potentilla glandulosa</i>	Sticky Cinquefoil	F

<i>Potentilla gracilis</i>	Graceful Cinquefoil	F
<i>Potentilla norvegica</i>	Rough Cinquefoil	F
<i>Potentilla pensylvanica</i>	Prairie Cinquefoil	F
<i>Prunella vulgaris</i>	Selfheal	F
<i>Prunus virginiana</i>	Choke Cherry	Sh
<i>Pseudotsuga menziesii</i>	Douglas Fir	Tr
<i>Psilocarphus elatior</i>	Woolly-heads	F
<i>Puccinellia nuttalliana</i>	Alkali Grass	Gr
<i>Purshia tridentata</i>	Antelopebrush	Sh
<i>Pyrola asarifolia</i>	Common Pink Wintergreen	F
<i>Ranunculus abortivus</i>	Small-flowered Crowfoot	F
<i>Ranunculus circinatus</i>	White Water Crowfoot	F
<i>Ranunculus cymbalaria</i>	Seaside Crowfoot	F
<i>Ranunculus gmelinii</i>	Yellow Water Crowfoot	F
<i>Ranunculus macounii</i>	Macoun's Buttercup	F
<i>Ranunculus sceleratus</i>	Cursed Crowfoot	F
<i>Rhus glabra</i>	Sumach	F
<i>Rhus radicans</i>	Poison Ivy	F
<i>Ribes oxycanthoides</i>	Wild Gooseberry	Sh
<i>Rosa acicularis</i>	Prickly Rose	Sh
<i>Rosa woodsii</i>	Prairie Rose	Sh
<i>Rubus idaeus</i>	Wild Raspberry	Sh
<i>Rubus parviflorus</i>	Thimbleberry	Sh
<i>Rubus pubescens</i>	Dwarf Red Raspberry	Sh
<i>Salix bebbiana</i>	Bebb's Willow	Sh
<i>Salix lucida ssp.lasiandra</i>	Shining Willow	Sh
<i>Salix scouleriana</i>	Scouler's Willow	Sh
<i>Scirpus acutus</i>	Great Bulrush	Gr
<i>Scirpus validus</i>	Common Great Bulrush	Gr
<i>Scutellaria galericulata</i>	Common Skullcup	F
<i>Sedum lanceolatum</i>	Common Stonecrop	F
<i>Selaginella densa</i>	Little Clubmoss	F
<i>Senecio pauperculus</i>	Ragwort	F
<i>Shepherdia canadensis</i>	Canadian Buffalo-berry	Sh
<i>Silene menziesii</i>	Douglas' Campion	F
<i>Sisymbrium altissimum</i>	Tumbling Mustard	F
<i>Smilacina stellata</i>	Star-flowered Solomon's-seal	F
<i>Solidago spathulata</i>	Spike Goldenrod	F

<i>Sonchus arvensis</i>	Perennial Sow Thistle	F
<i>Sonchus uliginosus</i>	Perennial Sow Thistle	F
<i>Spergularia diandra</i>	Sand Spurry	F
<i>Spiraea betulifolia</i>	Birch-leaved Spiraea	Sh
<i>Stachys palustris</i>	Hedge Nettle	F
<i>Stipa columbiana</i> = <i>occidentalis</i> var. <i>nelsonii</i>	Western Needle Grass	Gr
<i>Stipa comata</i>	Needle-and-Thread	GJ
<i>Stipa richardsonii</i>	Richardson's Needle Grass	Gr
<i>Symphoricarpos albus</i>	Common Snowberry	Sh
<i>Symphoricarpos occidentalis</i>	Western Snowberry	Sh
<i>Taraxacum officinale</i>	Common Dandelion	F
<i>Thalictrum venulosum</i>	Veiny Meadow-rue	F
<i>Thalspi arvense</i>	Stinkweed	F
<i>Tragopogon dubius</i>	Oysterplant	F
<i>Trifolium hybridum</i>	Alsike Clover	F
<i>Trifolium pratense</i>	Red Clover	F
<i>Trifolium repens</i>	White or Dutch Clover	F
<i>Triglochin palustris</i>	Slender Arrow Grass	F
<i>Typha latifolia</i>	Common Cattail	F
<i>Utricularia vulgaris</i>	Common Bladderwort	F
<i>Vaccinium caespitosum</i>	Dwarf Blueberry	Sh
<i>Vaccinium scoparium</i>	Grouseberry	Sh
<i>Verbascum thapsus</i>	Mullein	F
<i>Veronica americana</i>	American Brooklime	F
<i>Veronica perigrina</i>	Speedwell	F
<i>Virburnum edule</i>	High-bush Cranberry	Sh
<i>Viola adunca</i>	Vetchling	F
<i>Viola canadensis</i>	Early Blue Violet	F
<i>Vulpia octoflora</i>	Western Canada Violet	F
<i>Woodsii oregana</i>	Oregon Woodsia	F
<i>Zigadenus elegans</i>	Mountain Death Camas	F
<i>Zigadenus venenosus</i>	Meadow Death Camas	F

Tr = Tree

Sh = Shrub

F = Forb

Gr = Grass/Grass-like



1-10 Excellent (S02)

	SPECIES	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	FES CA	97.5	62.5	62.5	85	85	9	85		85	85	62.5	62.5	37.5	62.5
2	STI RI	2.5							37.5						
3	FES ID							2.5	15						
4	AST DA			2.5											
5	LUP SE		15					15			37.5				
6	GAL BO							2.5		15					
7	ARC UV			32.5	15		2.5		1				2.5		
8	PEN CO								2.5			2.5			
9	AST MI	2.5												37.5	37.5
10	POA PR		15				2.5			2.5					
11	TAR OF *	2.5							2.5						2.5
12	CAL RU														
13	AGO GL														
14	SOL SP														
15	ANE PA														
16	KOE MA											2.5		15	
17	ANT PA												2.5	15	2.5
18	MED LU *						15					15			15
19	STI CO														
20	AGR TR														
21	AME AL														
22	LIT RU														
23	ZIG VE														
24	ACH MI														
25	LIN SE														
26	ERI PU														
27	LAP SQ *														
28	FIL AR *														
29	POA CO *														
30	PLA PA														
31	AGR SM														
32	GEU TR														
33	POT GR														
34	LEP DE *														

S02

S04