



# **Technical Data Report**

## **Vegetation**

### **ENBRIDGE NORTHERN GATEWAY PROJECT**

**AMEC EARTH & ENVIRONMENTAL**  
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## **Preface**

This technical data report (TDR) relies primarily on data collected up to September 2008. These data are used in the vegetation environmental and socio-economic assessment (ESA) for the Enbridge Northern Gateway Project, Volume 6A Part 1, Section 8, which also includes more recent data collected up to June 2009. Some minor discrepancies may occur between this TDR and the ESA because of the different datasets.



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## Abbreviations

AAFRD	Alberta Agriculture, Food and Rural Development
AARD	Alberta Agriculture and Rural Development
AMEC	AMEC Earth & Environmental
ANHIC	Alberta Natural Heritage Information Centre
ASRD	Alberta Sustainable Resource Development
AT	Alpine Tundra
AVI	Alberta Vegetation Inventory
BC MAL	British Columbia Ministry of Agriculture and Lands
BC MELP	British Columbia Ministry of Environment, Lands and Parks
BC MoE	British Columbia Ministry of Environment
BC MoF	British Columbia Ministry of Forests and Range
BCCDC	British Columbia Conservation Data Centre
BEC	Biogeoclimatic Ecosystem Classification
BGC	biogeoclimatic (units)
BWBS	Boreal White and Black Spruce Zone
CFS	Canadian Forest Services
CMA	Coastal Mountain Alpine Zone
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CRGB	Crown Registry and Geographic Base
CWH	Coastal Western Hemlock
ELC	Ecological Land Classification
ESA	environmental and socio-economic assessment
ESCC	Endangered Species Conservation Committee
ESSF	Engelmann Spruce-Subalpine Fir Zone
GIS	geographic information system
GPS	Global Positioning System
KP	kilometre post
MH	Mountain Hemlock Zone
MPB	mountain pine beetle
NDT	natural disturbance types
NSR	Natural Subregions
PDA	project development area
PEAA	project effects assessment area
Project	Enbridge Northern Gateway Project
RIC	Resources Inventory Committee
RISC	Resource Information Standards Committee
RoW	right-of-way
SARA	<i>Species at Risk Act</i>
SBS	Sub-boreal Spruce Zone
SWB	Spruce-Willow-Birch Zone



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TDA.....	Timber Damage Assessment
TDR.....	technical data report
TEM .....	Terrestrial Ecosystem Mapping
TRIM.....	Terrain Resource Information Management
TSA .....	Timber Supply Area
VRI.....	Vegetation Resource Inventory

## Glossary

Biogeoclimatic Ecosystem Classification	Interacting complexes of living organisms and their physical and chemical environment. For purposes of the biogeoclimatic ecosystem classification system, an ecosystem is a plant community plus the soil type on which it occurs.
diversity	The degree to which a unit is composed of distinct or unlike elements or qualities (diversity is measurable at several levels of biological organization, including genes, species, habitats or communities and landscapes).
Ecological Land Classification	A means of classifying landscapes by integrating landforms, soils and vegetation components.
ecosite	Ecological units that develop under similar environmental influences (climate, moisture and nutrient regime).
ecosite phase	An ecosite phase is a subdivision of an ecosite based on the dominant species in the canopy.
ecosystem units	Within ecosection and biogeoclimatic units, local and vegetation developmental-level units termed ecosystem units are defined. Ecosystem units are generally derived from the Biogeoclimatic Ecosystem Classification (BEC), by being further differentiated according to more specific site conditions (thus defining more homogeneous site units) and structural developmental stages (thus defining more homogeneous vegetation structural stages).
fluvial	Processes associated with rivers and streams and the deposits and landforms created by them.
graminoid	All grasses (Poaceae) and grass-like plants, including sedges (Cyperaceae) and rushes (Juncaceae).
non-native weed species	Plants not indigenous to a given place or area but instead have been accidentally or deliberately transported to this new location, usually by human activity. In this assessment, weeds defined by the Alberta or British Columbia <i>Weed Control Acts</i> , or known to be problematic in a particular ecological community type.
noxious species	An alien, introduced or exotic undesirable species that is aggressive and overly competitive with more desirable native species.
phase (of a variant)	A significant, extensive area of ecosystems that is, for topographic or soil reasons, atypical for the regional climate.

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physiographic region	A geographic designation or division based on an area's topography, soil, moisture levels and drainage.
regen	Communities dominated by shrub layer vegetation less than 10 m tall.
restricted weed	Non-native species that pose a serious threat because of their ability to spread rapidly and out-compete natural vegetation.
riparian vegetation	Vegetation growing adjacent to lakes, streams, river margins, wetlands, etc.; transition zone between the upland and aquatic ecosystems.
site association	Site association in the BEC system is a category defined as all sites that are ecologically equivalent (as reflected in the vegetation), but represent different relative soil moisture and nutrient regimes when comparing subzones.
site modifiers	Ecosystems with the same vegetation potential are grouped and classified to the site-series level in the BEC system. However, compensating effects of different environmental characteristics can result in some site series having a wide range of physical site conditions. This variation is dealt with by defining the “typical” conditions for a site series and then using site modifiers, a set of descriptive terms for certain site conditions, to describe conditions outside those considered typical. The typical environmental conditions were determined by reviewing each of the Ministry of Forests’ Regional Field Guides and selecting the “typical” characteristics of each site series.
site series	All sites capable of producing the same mature or climax plant communities within a biogeoclimatic subzone or variant.
structural stages	Structural stages describe the existing dominant stand appearance or physiognomy for the ecosystem unit. Stand structure substages and additional modifiers can be used to better differentiate non-forested categories (e.g., forb-dominated versus graminoid-dominated herb stage) and forested categories (e.g., single storeyed, multi-storeyed, coniferous versus broadleaf forests).
subzone	A subdivision of a zone that is the basic and most commonly used unit in BEC. Geographic areas influenced by one regional climate and a characteristic plant association on zonal sites.
succession	A directional non-seasonal cumulative change in the types of plant species that occupy a given areas through time.
Terrestrial Ecosystem Mapping	The detailed process that organizes ecological information by classifying, identifying and naming distinct ecological units within the BEC zones.

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Universal Transverse Mercator	A system of plane coordinates based upon 60 north-south trending zones, each 6 degrees of longitude wide that circle the globe. Used to derive geographic coordinates, normally in metres, east and north of an origin that is defined uniquely as a grid for each zone.
variant	Describes more specific differences in climate within the BEC zone.
zone	Generalized units representing extensive areas of broad, homogeneous macroclimates in the BEC system. A zone is characterised by, and typically named after, mostly shade-tolerant climax tree species. Exceptions are grasslands and alpine areas.





# 1 Introduction

This technical data report (TDR) describes baseline vegetation conditions in the project effects assessment area (PEAA). The contents of this report are provided in support of the environmental and socio-economic assessment (ESA) for the Enbridge Northern Gateway Project (Project). Information for this TDR was generated from:

- Alberta Ecological Land Classification (ELC) mapping
- British Columbia Terrestrial Ecosystem Mapping (TEM)
- field surveys
- existing literature sources

Key data categories include:

- baseline ecosystem units (ecosite phases and site series)
- baseline wetlands and old-growth forests
- identification of rare plants, rare ecological communities, non-native weed species
- calculation of timber resources

## 1.1 Spatial Boundaries

The spatial boundaries for this report are described using terms consistent with the Vegetation ESA. The use of these terms in this technical data report is not intended to convey any assessment of residual or cumulative effects.

### 1.1.1 Project Development Area

The project development area (PDA) comprises the pipeline route, including the right-of-way (RoW), the Kitimat Terminal and associated infrastructure (e.g., powerlines, permanent and temporary access roads, pump stations, staging areas, construction camps, stockpile sites and spoil sites for the tunnels). It includes a permanent 25-m-wide RoW and up to 25 m of temporary workspace. Extra temporary workspace, totalling 10% of the construction RoW, will be added at specific locations for a total RoW of 55 m. Roadways and approaches to watercourse crossings are possible locations. Although riparian areas will generally be avoided, extra temporary workspace at the edge of watercourse crossings will involve 5 m of the riparian zone at 10% of riparian areas.

The portion of the PDA that comprises the Kitimat Terminal includes the actual cleared area of the terminal.

### 1.1.2 Project Effects Assessment Area

The PEAA is 1-km-wide along the pipeline route that fully encompasses the PDA and includes a defined area around the PDA where project environmental effects might occur. The potential effects on vegetation within the boundaries of the PEAA are evaluated at community and species levels.

## 1.2 Physiographic Regions

The PEAA crosses six physiographic regions (see Figure 1-1). Each region encompasses areas of similar climate, soils, terrain and vegetation (Holland 1964; Pettapiece 1986a, 1986b). From east to west these regions and the corresponding province are as follows:

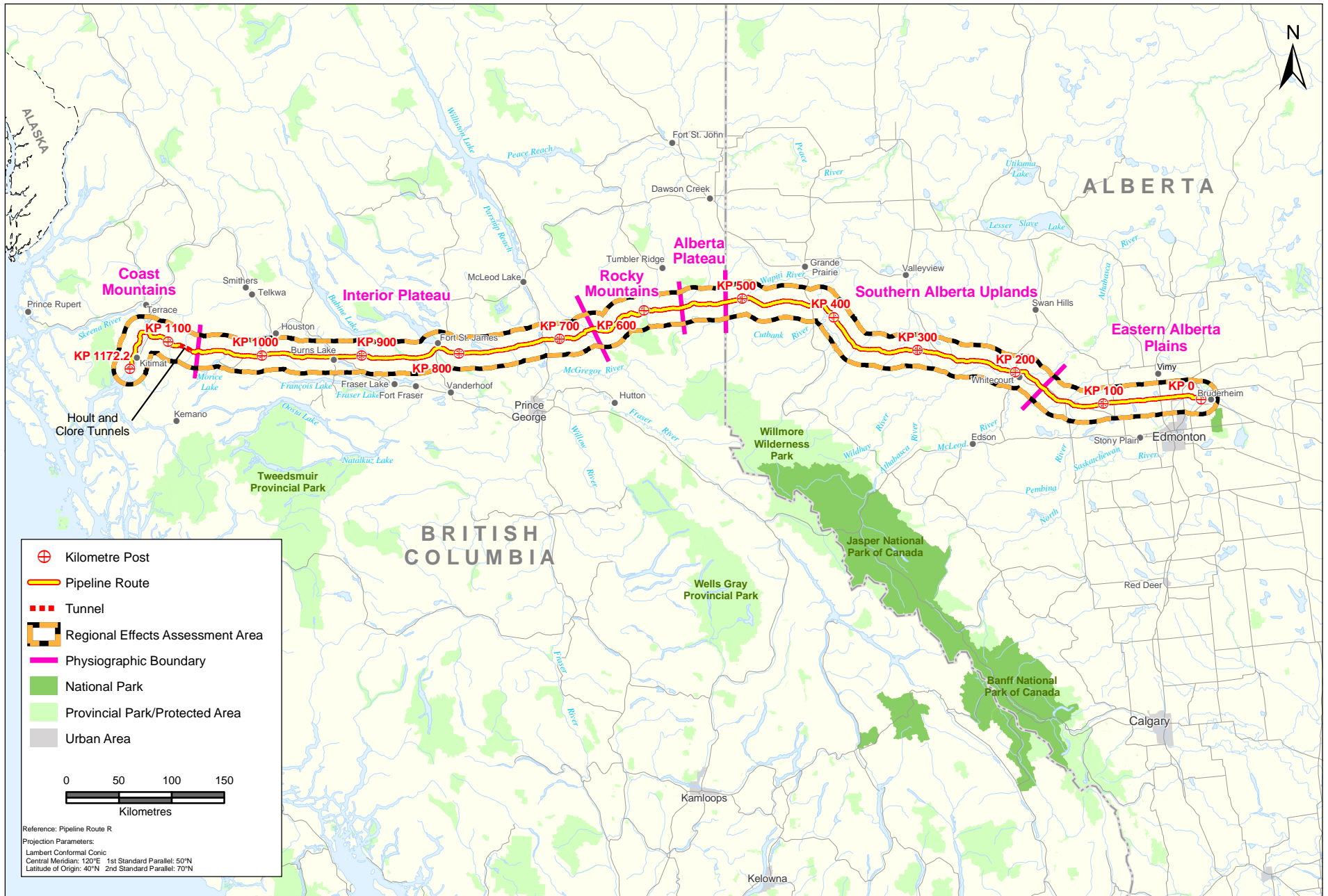
- Eastern Alberta Plains; Alberta
- Southern Alberta Uplands; Alberta
- Alberta Plateau; Alberta and British Columbia
- Rocky Mountains; British Columbia
- Interior Plateau; British Columbia
- Coast Mountains; British Columbia

Figure 1-1 shows the regional effects assessment area (REAA) boundary that was used to assess the cumulative effects of the Project (see Volume 6A, Part 1, Section 8 for further information).

The Eastern Alberta Plains physiographic region extends from near Bruderheim (Kilometre Post [KP] 0) to Whitecourt (KP 165.9). The Southern Alberta Uplands physiographic region extends from Whitecourt to the Alberta-British Columbia Border (KP 516.5) and forms a buffer between the Interior Plains to the east and the Canadian Cordillera to the west. The Alberta Plateau physiographic region extends from just before the British Columbia-Alberta border to Stony Lake (KP 560.4). The Rocky Mountains physiographic region extends from Stony Lake to Parsnip River (KP 663.4). The Interior Plateau physiographic region extends from Parsnip River to Morice Lake (KP 1066.9). The Coast Mountains physiographic region extends from Morice Lake to the end of the pipeline RoW at the Kitimat Terminal on Douglas Channel (KP 1172.2).

## 1.3 Ecosystem Classification

The pipeline route extends across Alberta and British Columbia; therefore, two ecosystem classifications were used. Ecosystems are described in detail using the Natural Subregions (NSR) classification in Alberta (Natural Regions Committee 2006) and the Biogeoclimatic Ecosystem Classification (BEC) in British Columbia (British Columbia Ministry of Forests and Range [BC MoF] 2009a, Internet site), defines biogeoclimatic (BGC) units (see Figure 1-2) and ecosystems.



⊕ Kilometre Post  
 — Pipeline Route  
 - - - Tunnel  
 [ ] Regional Effects Assessment Area  
 [ ] Physiographic Boundary  
 [ ] National Park  
 [ ] Provincial Park/Protected Area  
 [ ] Urban Area

0 50 100 150  
 Kilometres

Reference: Pipeline Route R  
 Projection Parameters:  
 Lambert Conformal Conic  
 Central Meridian: 120°E 1st Standard Parallel: 50°N  
 Latitude of Origin: 40°N 2nd Standard Parallel: 70°N

REFERENCES: ESRI, BC MOF, MCMOE, SRD, GEOBASE, Spatial Data Warehouse Ltd.

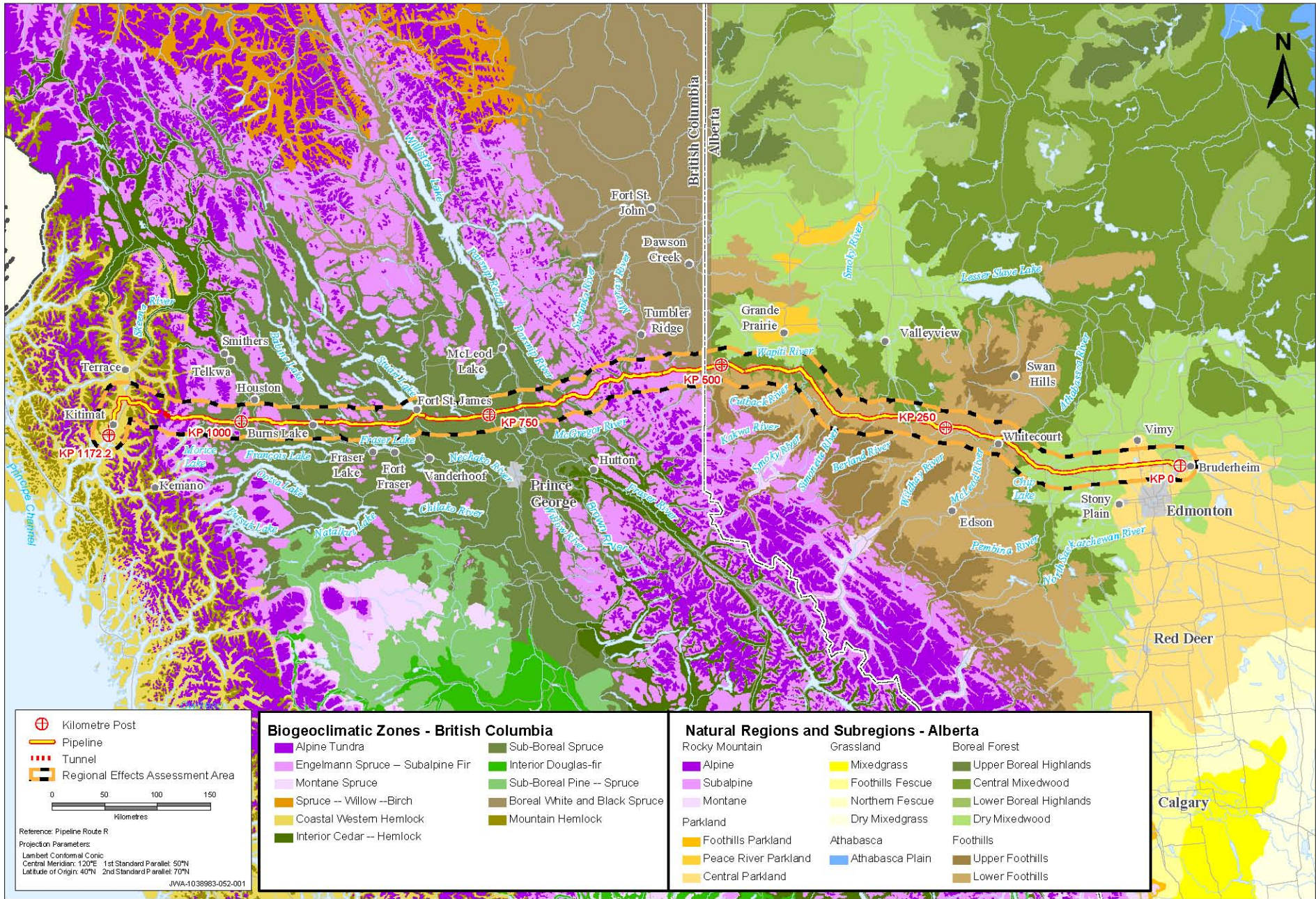
CONTRACTOR: <b>AMEC</b>	
PREPARED BY: 	PREPARED FOR: 

# ENBRIDGE NORTHERN GATEWAY PROJECT

## Physiographic Regions Within the PEAA

FIGURE NUMBER: <b>1-1</b>	DATE: <b>20090707</b>
SCALE: <b>1:5,000,000</b>	AUTHOR: <b>JNB</b>
PROJECTION: <b>LCC</b>	DATUM: <b>NAD 83</b>
	APPROVED BY: <b>CT</b>

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CONTRACTOR:  
 Jacques Whitford AXYS Ltd.

PREPARED BY:

PREPARED FOR:

# ENBRIDGE NORTHERN GATEWAY PROJECT

## Natural Regions and Subregions of Alberta and Biogeoclimatic Zones of British Columbia along the Pipeline Route

FIGURE NUMBER:  
**1-2**

DATE:  
 20100112

SCALE:  
 1:5,000,000

AUTHOR:  
 JP2

APPROVED BY:  
 DC

PROJECTION:  
 LCC

DATUM:  
 NAD 83

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See Table 1-1 for the hierarchical classifications in Alberta and British Columbia. A comparison between the two systems is not implied or represented in the table.

**Table 1-1 Alberta and British Columbia Ecosystem Classification Terminology**

Alberta Ecological Land Classification	BC Biogeoclimatic Ecosystem Classification
Natural Region	Zone
Natural Subregion	Subzone
Ecosite	Variant
Ecosite Phase	Site Association
	Site Series

In Alberta, the PEAA crosses four natural subregions within two physiographic regions (see Table 1-2).

**Table 1-2 Natural Subregions by Physiographic Region**

Physiographic Region	Natural Subregion
Eastern Alberta Plains	Central Parkland
	Dry Mixedwood
Southern Alberta Uplands	Lower Foothills
	Dry Mixedwood
	Central Mixedwood

In British Columbia, within the four physiographic regions, 21 BGC Units (see Table 1-3) occur along the route, as well as one natural subregion.

**Table 1-3 Biogeoclimatic Units by Physiographic Region**

Physiographic Region	Biogeoclimatic Unit	Symbol
Alberta Plateau	Peace Moist Warm Boreal White and Black Spruce Variant	BWBSmw1
Alberta Plateau	Murray Wet Cool Boreal White and Black Spruce Variant	BWBSwk1
Alberta Plateau	Bullmoose Moist Very Cold Engelmann Spruce - Subalpine Fir Variant	ESSFmv2
Alberta Plateau	Lower Foothills	-
Rocky Mountains	Peace Moist Warm Boreal White and Black Spruce Variant	BWBSmw1
Rocky Mountains	Murray Wet Cool Boreal White and Black Spruce Variant	BWBSwk1
Rocky Mountains	Cariboo Wet Cold Engelmann Spruce - Subalpine Fir Variant	ESSFwc3
Rocky Mountains	Wet Cold Parkland Engelmann Spruce - Subalpine Fir	ESSFwcp
Rocky Mountains	Misinchinka Wet Cool Engelmann Spruce - Subalpine Fir Variant	ESSFwk2
Rocky Mountains	Very Wet Cool Sub-Boreal Spruce Subzone	SBSvk
Rocky Mountains	Finlay-Peace Wet Cool Sub-Boreal Spruce Variant	SBSwk2

**Table 1-3 Biogeoclimatic Units by Physiographic Region (cont'd)**

<b>Physiographic Region</b>	<b>Biogeoclimatic Unit</b>	<b>Symbol</b>
Interior Plateau	Moist Cold Engelmann Spruce - Subalpine Fir Subzone	ESSFmc
Interior Plateau	Moist Cool Engelmann Spruce - Subalpine Fir Subzone	ESSFmk
Interior Plateau	Nechako Moist Very Cold Engelmann Spruce - Subalpine Fir Variant	ESSFmv1
Interior Plateau	Misinchinka Wet Cool Engelmann Spruce - Subalpine Fir Variant	ESSFwk2
Interior Plateau	Dry Cool Sub-Boreal Spruce Subzone	SBSdk
Interior Plateau	Stuart Dry Warm Sub-Boreal Spruce Variant	SBSdw3
Interior Plateau	Babine Moist Cold Sub-Boreal Spruce Variant	SBSmc2
Interior Plateau	Mossvale Moist Cool Sub-Boreal Spruce Variant	SBSmk1
Interior Plateau	Willow Wet Cool Sub-Boreal Spruce Variant	SBSwk1
Coast Mountains	Submontane Very Wet Maritime Coastal Western Hemlock Variant	CWHvm1
Coast Mountains	Montane Very Wet Maritime Coastal Western Hemlock Variant	CWHvm2
Coast Mountains	Submontane Wet Submaritime Coastal Western Hemlock Variant	CWHws1
Coast Mountains	Montane Wet Submaritime Coastal Western Hemlock Variant	CWHws2
Coast Mountains	Leeward Moist Maritime Mountain Hemlock Variant	MHmm2
Coast Mountains	Moist Cool Engelmann Spruce - Subalpine Fir Subzone	ESSFmk

## 2 Methods

### 2.1 Protocols

#### 2.1.1 Alberta

The following sources of information were used in the naming conventions and identification of Alberta plant species:

- Alberta Natural Heritage Information Centre (ANHIC) Element List (ANHIC 2006, Internet site)
- Rare Vascular Plants of Alberta (Kershaw et al. 2001)

The level of protection for rare plants and rare ecological communities and the control of non-native species protocols follow:

- ANHIC tracking or watch list (Gould 2006; Gould 2000; Allen 2008)
- Alberta Sustainable Resource Development (ASRD) (2005, Internet site)
- Alberta Endangered Species Conservation Committee (ESCC 2007, Internet site)
- *Species at Risk Act (SARA)* (Government of Canada 2009, Internet site)
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC)
- *Alberta Weed Control Act, 2001* (Alberta Agriculture and Rural Development [AARD] 2009, Internet site)

Pre-typing of ecosite phases within the PEAA followed classification as defined by the natural regions, subregions and natural history themes of Alberta (Natural Regions Committee 2006). Further to this classification system, the following references were used:

- Field Guide to Ecosites of West-Central Alberta (Beckingham et al. 1996)
- Field Guide to Ecosites of Northern Alberta (Beckingham and Archibald 1996)
- A Preliminary Classification of Plant Communities in the Central Parkland (Wheatley and Bentz 2002)

#### 2.1.2 British Columbia

The following sources of information were used in the naming conventions and identification of British Columbia plant species:

- Illustrated Flora of British Columbia, Volumes 1 to 6 (Douglas et al. 1998a, 1998b, 1999a, 1999b, 2000, 2001)
- Rare Native Vascular Plants of British Columbia (Douglas et al. 1998c)
- VENUS 5.1 (British Columbia Ministry of Environment [BC MoE], 2009, Internet site)

The level of protection for rare plants and rare ecological communities and the control of non-native species protocols follow:

- British Columbia Conservation Data Centre (BCCDC)
- SARA (Government of Canada 2009, Internet site)
- COSEWIC
- British Columbia *Weed Control Act* (British Columbia Ministry of Agriculture and Lands [BC MAL] 2001, Internet site)

Fieldwork and terrestrial ecosystem mapping of ecosystems within the PEAA followed established practices as defined by the Resource Inventory Committee (RIC) of British Columbia. These include:

- Field Manual for Describing Terrestrial Ecosystems (British Columbia Ministry of Environment, Lands and Parks [BC MELP] and British Columbia Ministry of Forests [BC MoF] 1998)
- Standards for Terrestrial Ecosystem Mapping in British Columbia (RIC 1998, Internet site)

Ecosystem classification was based on the BEC system developed by the British Columbia Ministry of Forests (2009a, Internet site; Meidinger and Pojar 1991). The BEC system is described in the following forest region site identification and interpretation manuals:

- A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region: Part 1: Land Management Handbook No. 26 (Banner et al. 1993a)
- A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region: Part 2: Land Management Handbook No. 26 (Banner et al. 1993b)
- A Field Guide for Identification and Interpretation of Seral Aspen Ecosystems of the BWBSc1, Prince George Forest Region: Land Management Handbook No. 16 (DeLong 1998)
- A Field Guide for Identification and Interpretation of Ecosystems of the Northeast Portion of the Prince George Forest Region: Land Management Handbook No. 22 (DeLong et. al. 1990)
- A Field Guide for Site Identification and Interpretation for the Southwest Portion of the Prince George Forest Region: Land Management Handbook No. 24 (DeLong et al. 1993)
- A Field Guide for Site Identification and Interpretation for the Northern Rockies Portion of the Prince George Forest Region: Land Management Handbook No. 29 (DeLong et al. 1994)
- A Field Guide to Site Identification and Interpretation for the Southeast Portion of the Prince George Forest Region: Land Management Handbook No. 51 (DeLong 2003)
- A Field Guide for Site Identification and Interpretation for the North Central Portion of the Northern Interior Forest Region: Land Management Handbook No. 54 (DeLong 2004)
- Wetlands of British Columbia (Mackenzie and Moran 2004)



## 2.2 Existing Data Sources

### 2.2.1 Alberta

Existing data sources for ecosystems specific to the PEAA within Alberta included:

- Alberta Vegetation Inventory (AVI) (ASRD 2009a, Internet site)
- aerial photographs of the PEAA (ASRD 2009b, Internet site)
- forest tenure holders (see Section 2.7)

The AVI and aerial photographs provided the base information for desktop vegetation classification of the ecosystems within the PEAA.

Rare plant and rare ecological communities was based on existing literature, ecosystem mapping of the PEAA and expert opinion. ANHIC was contacted for a list of rare plant species and rare plant communities and their locations relative to the PEAA (Rintoul 2006, pers. comm.; Proudfoot 2008, pers. comm.).

### 2.2.2 British Columbia

Existing data sources for ecosystems specific to the PEAA within British Columbia included:

- aerial photographs (Integrated Land Management Bureau, Crown Registry and Geographic Base [CRGB] 2009a, Internet site)
- Vegetation Resource Inventory (VRI) data; scale 1:20,000 (BC MoF 2009b, Internet site)
- Terrain Resource Information Management (TRIM) mapping (CRGB 2009b, Internet site)
- biogeoclimatic subzone/variant mapping Version 7.0 (BC MoF 2009c, Internet site)
- 2006 SPOT imagery (5-m resolution) (Lunctus Geomatics Corp. 2006)
- average timber volumes (see Section 2.7)
- forest tenure holders (see Section 2.7)

The VRI, aerial photographs and BGC linework provided the base information for desktop vegetation classification of the ecosystems within the PEAA.

Rare plant and rare ecological community potential was based on existing literature, ecosystem mapping of the PEAA and expert opinion. The BC MoE Conservation Data Centre (BCCDC) was contacted for a list of rare plant species and rare plant communities and their locations relative to the PEAA (Prescott 2008, pers. comm.; Stipek 2008, pers. comm.).

## 2.3 Vegetation Classification

Alberta and British Columbia use an ecological approach to map vegetation, although several differences reflect the unique characteristics of the resources in each province. In this TDR, vegetation mapping in Alberta followed the ELC approach. In British Columbia, the TEM approach was used based on the British Columbia BEC system.

The following steps were used to classify and map ecosystem units in the PEAA:

- preliminary ecosystem unit mapping
- collection and quality control of field data to verify mapping and describe ecosystem units
- map revision and finalization

Although different systems of classification were used in Alberta and British Columbia, several components of the British Columbia system were incorporated into the mapping for Alberta. This was done to increase mapping consistency across provinces and consistency of secondary mapping products, including wildlife habitat analysis (described in ESA Volume 6A Part 2, Section 9 Wildlife).

## 2.3.1 Preliminary Ecosystem Mapping

### 2.3.1.1 Aerial Photograph Interpretation

Preliminary ecosystem mapping involved the interpretation of aerial photographs. For British Columbia, available photography included black and white coverage as well as colour photographs. The scales of aerial photos were 1:15,000, 1:30,000 and 1:40,000, taken between 1996 and 2005. Photography scales for Alberta were 1:60,000, 1:30,000 and 1:20,000 black and white ranging from 1983 to 2001 (see Table 2-1). Mapping was conducted using a softcopy approach where digital scans of aerial photography (stereographic pairs) were interpreted using PurView™. The PurView™ system presents the aerial photographs in three dimensions and allows the ecosystem unit classification to be directly attributed. Spot imagery was used to update the disturbance layer.

**Table 2-1 Baseline Photography used for Mapping by Physiographic Region**

Physiographic Region	Year of Photography	Scale of Photography	Colour
Eastern Alberta Plains	2001	1:20,000	Black and White
Southern Alberta Uplands	1983	1:60,000	Black and White
	1995	1:60,000	
	2001	1:30,000	
Alberta Plateau Rocky Mountains Interior Plateau (KP 663.4 to KP 942.5)	2005	1:30,000	Colour; Tumbler Ridge Area
	1997	1:40,000 (TRIM dataset)	Black and White
	1996	1:40,000 (TRIM dataset)	Black and White
Interior Plateau (KP 942.5 to KP 1066.9) and Coast Mountains	1997	1:15,000	Colour
	2001	1:30,000	Colour
	2001	1:40,000 (TRIM dataset)	Black and White
	2001	1:30,000	Black and White
	2003	1:30,000	Black and White

### 2.3.1.2 Alberta

Alberta Vegetation Inventory was available at a scale of 1:15,000 to 1:20,000 for most areas of the PEEA in Alberta. These polygons formed the basis for the mapped ecosystem units. AVI provides a consistent level of information on vegetation in the province’s green area, under standards set by ASRD (1991).

A combination of air photo interpretation and AVI data information was used to classify map units to an ecosite phase and structural stage. The ecosite phases were mapped following the Field Guides to Ecosites of Northern Alberta (Beckingham and Archibald 1996) for Boreal Mixedwood areas and the Field Guide to Ecosites of West-Central Alberta (Beckingham et al. 1996) for the Foothills areas. Classification of the forested AVI polygons to ecosite phases was completed by integrating information on overstorey tree species and covers, moisture regime and stand height and density to determine the most likely ecosite phase for each inventoried polygon. Structural stage codes, based on British Columbia TEM standards, were added to each ecosite phase (see Table 2-2). Structural stages describe the existing dominant stand appearance for the ecosystem unit (RIC 1998, Internet site). Table 2-2 shows the stand age and the corresponding structural stage for various ecosystems for the Boreal Mixedwood and Lower Foothills Regions in Alberta.

**Table 2-2 Stand Age and Corresponding Structural Stage Codes for Alberta**

<b>Boreal Mixedwood Region</b>	<b>Structural Stage (years)</b>				
<b>Ecosystems</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
Aspen and/or Balsam Poplar	0–20	21–40	41–60	61–100	>100
Mixedwood	0–20	21–40	41–60	61–100	>100
Pine	0–20	21–40	41–60	61–100	>120
White spruce	0–20	21–40	41–80	81–140	>140
Black spruce or Tamarack	0–20	21–40	41–80	81–140	>140
<b>Lower Foothills Region</b>	<b>Structural Stage (years)</b>				
<b>Ecosystems</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
Aspen and/or Balsam Poplar	0–20	21–40	41–80	80–120	>120
Mixedwood	0–20	21–40	41–80	80–120	>120
Pine	0–20	21–40	41–80	81–180	>180
White spruce	0–20	21–40	41–100	101–180	>180
Black spruce or Tamarack	0–20	21–40	41–100	101–180	>180

A modified list of potential site modifiers denoting specific site conditions based on the bioterrain map, were also added to the ecosite phases (see Table 2-3).

**Table 2-3 Site Modifiers for Alberta**

Site Modifier Codes	Criteria
a	active floodplain
k	cool aspect
q	very steep cool aspect
r	ridge
w	warm aspect
z	very steep warm aspect (greater than 100%) on warm southerly or westerly aspects (135 degrees to 285 degrees)

Non-vegetated, sparsely vegetated and anthropogenic units were classified based on the TEM standards (RIC 1998, Internet site) and information provided in the AVI.

AVI was not available within the largely agricultural Central Parkland NSR and a classification guide for ecosite phases has not been completed for this area. These areas were delineated directly on air photos using a softcopy approach. A preliminary map legend (see Table 2-4) consisting of seven broad habitat classes was developed for the Central Parkland. The preliminary mapping for Alberta was a 1:20,000 scale Ecological Unit map.

**Table 2-4 Mapping Legend for Central Parkland NSR in Alberta**

Symbol	Vegetation Type
1	Jack Pine
2	Aspen and balsam poplar
3	Mixed aspen and white spruce
4	White spruce
5	Black spruce
6	Willow shrub
7	Marsh

### 2.3.1.3 British Columbia

The British Columbia TEM system is the stratification of a landscape into map units according to a combination of ecological features, primarily climate, physiography, surficial material, bedrock geology, soil and vegetation (RIC 1998, Internet site). The hierarchical approach combines ecosections (ecoregion classification by the BC MoE), BGC zones, subzones and variants (BGC classification by the BC MoF) and ecosystem units. An ecosystem unit combines site series or site associations, site modifiers (denotes site conditions), structural stages and seral community types (if applicable).

Initially, relatively homogeneous bioterrain units were delineated based on parent materials, slope, surface expression, drainage, texture and geologic modifying processes. If necessary, the terrain polygons were subdivided using air photo interpretation into discrete, relatively homogeneous ecological units based on succession. VRI digital maps at a scale of 1:20,000 provided information on tree species, heights

and ages. The site series were derived from a series of BC MoF BEC field guides (Banner et al. 1993a, 1993b; DeLong 2003, 2004; DeLong et al. 1990, 1993, 1994). Site modifiers and structural stages were added to the site series. The site modifiers and structural stage protocols are listed in Standard for Terrestrial Ecosystem Mapping in British Columbia (RIC 1998, Internet site). Seral community types were added to the BGC units BWBSmw1 and BWBSwk1, when seral deciduous tree canopy dominated (DeLong 1998; BC MoF 2009d, Internet site).

### 2.3.2 Field Surveys

Vegetation field sampling had two main objectives:

- confirm ecosystem unit designation and boundaries
- collect data to develop detailed descriptions for ecosystem units

AMEC Earth & Environmental (AMEC) collected vegetation field data from 2005 to 2008. Before initiating field programs, a sampling strategy was devised based on the British Columbia TEM inventory standards for 1:20,000 scale mapping (RIC 1998, Internet site). A Survey Intensity Level 5 was chosen, therefore 5% to 14% of polygons should be sampled to verify the map accuracy.

The following three levels of plot detail were collected according to the Field Manual for Describing Terrestrial Ecosystems (BC MELP and BC MoF 1998):

- detailed plots
- ground inspection plots
- visual plots

Following fieldwork, all plot data from Alberta and British Columbia were entered into a database program referred to as VENUS (BC MoE 2009, Internet site) for processing and distribution between disciplines. Using the VENUS database is consistent with TEM standards (RIC 1998, Internet site). The data entry was checked by a qualified plant ecologist.

Following fieldwork, the ecosystem designations were reviewed, unknown plant species were identified or sent to a specialist for identification and GIS (geographic information system) locations were plotted along the PEAA.

### 2.3.3 Map Revision and Finalization

The preliminary vegetation maps were reviewed and revised following the field program. The additional data was correlated with the existing data, and a mapping legend for each BGC unit was drafted. This legend was used to verify or to remap the ecosystem unit for each polygon. Following completion of the mapping, a qualified mapper (referred to as a correlator) checked 10% of the polygons in each BGC unit. Suggestions from the qualified mapper were incorporated into the mapping.

After the map revisions were completed, the effect of mountain pine beetle (MPB) in British Columbia was addressed. The objective of the process was to identify and change the structural stage of ecosystem units considered to be altered because of MPB attack. The process involved eliminating those BGC ecological units within the TEM that have absolutely no risk (zero percent possibility) of being affected by MPB and proceeding to those units that are somewhat less certain of MPB infection risk. A risk

assessment was drafted based on the “expected” amount of intermediate-to-mature lodgepole pine occurrence as described in the regional BEC guidebooks and interpreted based on field information and expert opinion. Spatial coverage of the MPB infestation was received from BC MoF (2007, Internet site). The severity classes of severe (31% to 50% attack) and very severe (greater than 50% attack) were selected to show the potential area of forest likely to die within the next two to three years. These areas were spatially overlain on the TEM ecosystem units to determine the extent of mortality by MPB. The stands were then assumed to be regenerating forest or shrub, rather than mature trees. For the complete methodology, see Appendix A.

The final step in map revision was to update the mapping with the most recent areas of timber harvesting. The extent of these disturbances was determined using 2006 SPOT imagery, supplemented by harvest records from the forest companies.

## 2.4 Old-Growth Forests

Age-based definitions of old-growth forest differ among forest communities, because different tree species mature and undergo canopy breakup at different rates. In Alberta, old-growth forests were determined using Alberta Vegetation Inventory stand-origin data. Schneider (2001) and Bonar et al. (2003) developed age-based definitions based on established relationships between stand age and successional stage. These species-specific age definitions are used to identify AVI polygons most likely to support old-growth forests. Structural stage codes, based on British Columbia TEM standards, were added to each ecosite phase during mapping. Generally, old-growth forests range from greater than 100 to greater than 180 years in Alberta (see Table 2-2). Old-growth forests were defined as having a structural stage of 7 (RIC 1998, Internet site).

In British Columbia, areas of old-growth forest are determined using Vegetation Resource Inventory stand-origin data. In addition, the assessment of old-growth forests is based on natural disturbance regimes and structural features. These regimes include fire, wind, insects and disease. Natural disturbance types aid in defining mature and old-growth forests. There are five natural disturbance types (see Table 2-5).

**Table 2-5 Natural Disturbance Types<sup>a</sup>**

Natural Disturbance Type (NDT)	Definition
NDT1	Ecosystems with rare stand-initiating events
NDT2	Ecosystems with infrequent stand-initiating events
NDT3	Ecosystem with frequent stand-initiating events
NDT4	Ecosystem with frequent stand-maintaining events
NDT5	Alpine Tundra and Subalpine Parkland ecosystems
SOURCE: <sup>a</sup> RIC 1998, Internet site	

Old-growth forests in British Columbia range from greater than 140 years to greater than 250 years. Ecosystems falling within the biogeoclimatic unit listed under NDT3 are recognized as being mature starting at 80 to 140 years and old at greater than 140 years (100 years for the Boreal White and Black Spruce Zone [BWBS]; see Table 2-6). Other ecosystems within NDT1, NDT2, NDT4 and NDT5 are considered mature starting at 80 to 250 years and old at greater than 250 years.

**Table 2-6 Old-Growth Forests as Defined by Natural Disturbance Types**

BGC Units	NDT 3 - Old Growth Greater than 140 years	NDT 1, 2, 4, & 5 - Old Growth Greater than 250 years
BWBS <sup>1</sup>	BWBSmw1 BWBSwk1	
CWH		CWHws1 CWHws2 CWHvm1 CWHvm2
ESSF		ESSFmc ESSFmk ESSFmv1 EFFmv2 ESSFwc3 ESSFwcp ESSFwk2
MH		MHmm2
SBS	SBSdk SBSdw3 SBSmc2 SBSmk1 SBSwk1	SBSwk2 SBSvk
NOTE: <sup>1</sup> BWBS stands are considered old starting at 100 years		
SOURCE: RIC 1998, Internet site		

## 2.5 Rare Plants and Rare Ecological Communities

The potential for an ecosystem unit to have rare plants was based on literature review, experience of investigators and uniqueness of the ecosystem. ANHIC (Rintoul 2006, pers. comm.; Proudfoot 2008, pers. comm.) and BCCDC (Prescott 2008, pers. comm.; Stipek 2008, pers. comm.) provided lists of known and potential rare plant species and rare ecological communities and their locations relative to the PEAA. Prior to field work, based on available information, lists of potential rare plant species (see Appendix B) and rare ecological communities (see Appendix C) were compiled by physiographic region.

For this TDR, rare plant species and rare ecological communities in Alberta are defined as:

- species listed by ANHIC on the tracking or watch list for vascular plants and mosses, liverworts and hornworts (Gould 2006) as well as lichens (Gould 2000)
- species listed within Alberta as “At Risk” by ASRD (2005, Internet site)
- species listed within Alberta as “Species at Risk” by Alberta Endangered Species Conservation Committee (ESCC 2007, Internet site)
- species listed as Special Concern, Threatened, or Endangered under the federal *Species at Risk Act* (Government of Canada 2009, Internet site) and COSEWIC
- rare ecological communities listed on ANHIC’s preliminary tracking list (Allen 2008)

For this TDR, rare plant species and rare ecological communities in British Columbia are defined as:

- species listed on the BCCDC database as tracked, red listed or blue listed (BCCDC 2009, Internet site)
- species listed as Special Concern, Threatened, or Endangered under the *SARA* (Government of Canada 2009, Internet site) and by COSEWIC
- rare ecological communities listed on the BCCDC database as tracked, red listed (BCCDC 2009a, Internet site)

ANHIC has developed a preliminary tracking list of rare ecological communities in Alberta (Allen 2008). Rare ecological communities in British Columbia are listed on the BCCDC database as red listed or blue listed (BCCDC 2009, Internet site).

ANHIC and the BCCDC provided lists of known and potential rare plant species and rare ecological communities and their locations relative to the PEAA. Prior to fieldwork, based on the information available, lists of potential rare plant species (see Appendix B) and rare ecological communities (see Appendix C) were compiled by physiographic region. The potential for an ecosystem unit to have rare plants was based on literature review, experience of investigators and uniqueness of the ecosystem.



## 2.5.1 Rare Plant Field Surveys

Rare plant field surveys in the PEAA were completed in June, July and August 2006, and July of 2008. High priority areas (e.g., Kitimat Terminal and reroutes in Alberta), were targeted in the spring of 2009. Spring surveys were conducted to observe early flowering plants and summer surveys were undertaken to observe late flowering plants. Plot locations were chosen in ecosystem units with high rare plant potential and in unique vegetation communities.

The surveys were done primarily within the PDA along the proposed route. Surveys were occasionally performed outside of the PDA (constrained to the PEAA) if the potential survey sites were deemed to be of importance (e.g., having high potential for rare plants).

Rare plant surveying was performed using the “random-meander” technique. Emphasis was placed on ecosystems with high potential for rare plants. A meander within and along the edge of the ecosystem in search of rare species was conducted. The following information was collected at each plot:

- site characteristics including location (easting and northing), slope, aspect, structural stage, health or disease, moisture and nutrient regime
- list of tree and shrub species present and their abundance (abundance was recorded as dominant, common, rare or trace)
- list of herbaceous species and their abundance
- list of non-vascular species and their abundance

Any rare species or ecological communities found during the vegetation surveys were recorded and included as part of the rare plant data set. If a rare plant or rare ecological community was found in Alberta, an ANHIC Rare Plant Field Survey Form was completed (ANHIC 2008, Internet site). If a rare plant was found in British Columbia, a BCCDC Rare Plant Observation Form was completed (BCCDC 2009, Internet site).

## 2.6 Wetlands

### 2.6.1 Alberta

The wetland AVI polygons in Alberta were classified into ecosite phases, and a structural stage code based on British Columbia TEM standards was added to each ecosite phase.

For the Alberta ecosite phases classified as bog, fen, marsh or swamp, see Table 2-7.

**Table 2-7 Ecosite Phases and Wetland Class**

Wetland Type	Lower Foothills	Central Mixedwood	Dry Mixedwood	Central Parkland
Bog	k1, k2	i1, i2	i1, i2	-
Fen	l1, l2, m1, m2, m3	j1, j2, k1, k2, k3	j1, j2, k1, k2, k3	-
Marsh	n1	l1	l1	7
Swamp	j1	h1	h1	-

## 2.6.2 British Columbia

Wetlands were mapped based on the guide to Wetlands of British Columbia (Mackenzie and Moran 2004) as well as the BC MoF field guides (Banner et al. 1993a, 1993b; DeLong 2003, 2004; DeLong et al. 1990, 1993, 1994) (see Table 2-8). Wetland site associations are described by Mackenzie and Moran (2004). Site associations represent sites capable of producing the same near-climax vegetation, regardless of biogeoclimatic unit (Banner et al. 1993a).

**Table 2-8 Site Series and the Corresponding Wetland Class**

BGC Zone, Subzone, Variant	Site Series	Map Code	Name	Wetland Type
BWBSmw1	11	BH	Black spruce - Common horsetail - Peat-moss	bog
BWBSmw1	08	BT	Black spruce - Labrador tea - Peat-moss	bog
BWBSmw1	00	DS	Drummond's willow - Beaked sedge	swamp
BWBSmw1	00	OS	Willows - Scrub birch - Water sedge	fen
BWBSmw1	00	SE	Sedge fen	fen
BWBSmw1	10	TS	Tamarack - Sedge	bog
BWBSmw1	07	SH	White spruce - Currant - Horsetail	swamp
BWBSwk1	00	BB	Black spruce - Buckbean - Peat-moss	bog
BWBSwk1	07	BH	Black spruce - Horsetail - Peat-moss	bog
BWBSwk1	00	BS	Bebb's willow - Bluejoint	swamp
BWBSwk1	00	BT	Black spruce - Lingonberry - Peat-moss	bog
BWBSwk1	08	BW	Black spruce - Willow - Glow moss	bog
BWBSwk1	00	FH	Few-flowered spike rush - Hook-moss	fen
BWBSwk1	00	MB	MacCalla's willow - Beaked sedge	swamp
BWBSwk1	00	OS	Scrub birch - Water sedge - Peat-moss	fen
BWBSwk1	00	SE	Water sedge - Beaked sedge	fen
BWBSwk1	06	SH	White spruce - Currant - Horsetail	swamp
BWBSwk1	09	TS	Tamarack - Water sedge - Fen moss	bog
BWBSwk1	00	WM	Beaked sedge - Water sedge	marsh
CWHvm1	00	FS	Sedge fen	fen
CWHvm1	00	HF	Hardhack - Sedge fen	fen
CWHvm1	13	LS	Lodgepole pine - Sphagnum	bog
CWHvm1	14	RC	Western redcedar Sitka spruce - Skunk cabbage	swamp
CWHvm1	12	YG	Western redcedar Yellow-cedar - Goldthread	bog
CWHws1	10	LS	Lodgepole pine - Sphagnum	bog
CWHws1	11	RC	Western redcedar Sitka spruce - Skunk cabbage	swamp
CWHws1	00	RS	Red alder - Skunk cabbage	swamp

**Table 2-8 Site Series and the Corresponding Wetland Class (cont'd)**

BGC Zone, Subzone, Variant	Site Series	Map Code	Name	Wetland Type
CWHws1	00	SF	Sedge fen	fen
CWHws1	00	SH	Sedge - Hardhack fen/marsh	fen
CWHws2	11	RC	Western redcedar Sitka spruce - Skunk cabbage	swamp
CWHws2	00	SF	Sedge fen	fen
ESSFmc	10	FH	Subalpine fir - Horsetail - Leafy moss	swamp
ESSFmc	09	HG	Subalpine fir - Horsetail - Glow moss	swamp
ESSFmc	00	BH	Black spruce - Common horsetail - Peat-moss	bog
ESSFmc	00	NS	Narrow-leaved cotton-grass - Shore sedge	fen
ESSFmc	00	SB	Shore sedge - Buckbean - Hook-moss	fen
ESSFmc	00	SE	Water sedge - Beaked sedge	fen
ESSFmc	00	WP	Water sedge - Peat-moss	fen
ESSFmc	00	WS	Scrub birch - Water sedge	fen
ESSFmk	00	BH	Black spruce - Common horsetail - Peat-moss	bog
ESSFmk	00	BK	Beaked sedge - Water sedge	marsh
ESSFmk	06	FH	Subalpine fir - Horsetail - Leafy moss	swamp
ESSFmk	00	NS	Narrow-leaved cotton-grass - Shore sedge	fen
ESSFmk	00	SE	Water sedge - Beaked sedge	fen
ESSFmk	00	TS	Tufted clubrush - Star moss	fen
ESSFmk	00	WS	Scrub birch - Water sedge	fen
ESSFmv1	05	FH	Subalpine fir - Horsetail - Glow moss	swamp
ESSFmv1	00	WS	Willow - Sedge fen	fen
ESSFmv2	06	FH	Subalpine fir - Alder - Horsetail	swamp
ESSFmv2	00	OT	Black spruce - Common horsetail - Peat-moss	bog
ESSFmv2	00	TS	Tamarack - Water sedge - Fen moss	bog
ESSFmv2	00	WS	Willow - Sedge fen	fen
ESSFwc3	03	FG	Subalpine fir - Globeflower - Horsetail	swamp
ESSFwc3	00	SS	Water sedge - Peat-moss poor fen	fen
ESSFwk2	00	BB	Scrub birch - Sedge - Peat-moss	fen
ESSFwk2	06	FH	Subalpine fir - Horsetail - Sphagnum	swamp
ESSFwk2	00	OT	Black spruce - Willow - Water sedge	bog
ESSFwk2	00	SG	Water sedge - Glowmoss fen	fen
ESSFwk2	00	WS	Water sedge - Peat-moss	fen
SBSdk	00	BP	Scrub birch - Water sedge	fen

**Table 2-8 Site Series and the Corresponding Wetland Class (cont'd)**

BGC Zone, Subzone, Variant	Site Series	Map Code	Name	Wetland Type
SBSdk	00	FS	Sedge fen	fen
SBSdk	07	SH	Hybrid white spruce - Horsetail	swamp
SBSdk	10	SS	Black spruce - Soft-leaved sedge - Peat-moss	bog
SBSdk	00	TB	Black twinberry - Bluejoint	swamp
SBSdk	00	WF	Willow - Sitka sedge	swamp
SBSdk	00	WS	Drummond's willow - Sitka sedge	swamp
SBSdk	09	BS	Black spruce - Creeping-snowberry - Peat-moss	bog
SBSdk	00	BK	Beaked sedge - Water sedge	marsh
SBSdw3	00	BK	Beaked sedge - Water sedge	marsh
SBSdw3	00	BP	Scrub birch - Water sedge	fen
SBSdw3	10	BS	Black spruce - Soft-leaved sedge - Peat-moss	bog
SBSdw3	00	FS	Water sedge - Beaked sedge	fen
SBSdw3	00	SF	Willow-Sedge - Golden fen moss	fen
SBSdw3	09	SH	Hybrid white spruce - Horsetail - Glow moss	swamp
SBSdw3	00	TB	Bebb's willow - Bluejoint	swamp
SBSmc2	00	BB	Scrub birch - Bog willow - Water sedge	swamp
SBSmc2	00	BK	Beaked sedge - Water sedge	marsh
SBSmc2	00	FS	Sedge fen	fen
SBSmc2	00	LS	Lodgepole pine - Scrub birch - Water sedge - Peat-moss	fen
SBSmc2	10	SH	Hybrid white spruce - Horsetail	swamp
SBSmc2	12	SS	Black spruce Hybrid white spruce - Scrub birch - Sedge	bog
SBSmc2	00	WF	Mountain alder - Pink spirea - Sitka sedge	swamp
SBSmc2	00	WS	Drummond's willow - Sitka sedge	swamp
SBSmk1	00	AS	Mountain alder - Skunk cabbage - Lady Fern	swamp
SBSmk1	10	BB	Black spruce - Scrub birch - Sedge	bog
SBSmk1	00	BS	Scrub birch - Sedge poor fen	fen
SBSmk1	00	MA	Beaked sedge - Water sedge	marsh
SBSmk1	09	SH	Hybrid white spruce - Horsetail	swamp
SBSmk1	00	WB	Willow - Bluejoint floodplain	swamp
SBSmk1	00	WH	Willow - Hardhack	swamp
SBSmk1	00	WS	Water sedge fen	fen
SBSvk	00	AS	Mountain alder - Skunk cabbage - Ladyfern	swamp

**Table 2-8 Site Series and the Corresponding Wetland Class (cont'd)**

BGC Zone, Subzone, Variant	Site Series	Map Code	Name	Wetland Type
SBSvk	00	BB	Scrub birch - Beaked sedge - Peat-moss	fen
SBSvk	08	BS	Black spruce Lodgepole pine - Bog-laurel - Peat-moss	bog
SBSvk	00	SP	Scheuchzeria - Shore sedge - Rusty peat-moss	bog
SBSvk	00	WF	Water sedge fen	fen
SBSvk	00	WB	Willow - Water sedge - Bluejoint	fen
SBSvk	06	SH	Hybrid white spruce - Horsetail	swamp
SBSwk1	00	AS	Mountain alder - Skunk cabbage	swamp
SBSwk1	11	BB	Black spruce Hybrid white spruce - Scrub birch - Sedge	bog
SBSwk1	00	BH	Black spruce - Common horsetail - Feathermoss	swamp
SBSwk1	00	BS	Scrub birch - Sedge - Peat-moss poor fen	fen
SBSwk1	09	SH	Hybrid white spruce - Horsetail	swamp
SBSwk1	00	WB	Pacific willow - Beaked sedge	swamp
SBSwk1	00	WF	Water sedge fen	fen
SBSwk1	00	WS	Sitka willow - Beaked sedge	swamp
SBSwk2	00	BB	Black spruce - Water sedge - Peat-moss	bog
SBSwk2	00	FE	Water sedge - Beaked sedge - Golden fuzzy fen moss	fen
SBSwk2	00	OS	Scrub birch - Water sedge - Golden fuzzy fen moss	fen
SBSwk2	06	SH	Hybrid white spruce - Horsetail	swamp
SBSwk2	00	SM	Beaked sedge - Water sedge	marsh
SBSwk2	00	TF	Tamarack - Water sedge - Fen moss	bog

## 2.7 Timber Resources

The Project is located mainly on forested lands and will result in timber clearing and salvage requirements. The volume and location of the merchantable timber to be salvaged have not been finalized and will be mutually resolved with the regional authorities and forest tenure holders along the route. In Alberta, average merchantable timber volumes were based on ASRD Timber Damage Assessment (TDA) tables (ASRD 2008). In British Columbia, average timber volumes were obtained from the BC MoF Forest Analysis and Inventory Branch - Timber Supply Areas (TSAs) - average merchantable volumes (BC MoF 2009e, Internet site) as well as forestry tenure holders (see Table 2-9).

**Table 2-9 Forest Tenure Holders in Alberta and British Columbia**

Forest Tenure Holders	Woodlots	Community Forests
<b>Alberta</b>		
Weyerhaeuser Company Ltd. (Grande Prairie)		
Canadian Forest Products (Canfor Corporation - Grande Prairie)		
ANC Timber Ltd.		
Blue Ridge Lumber Inc.		
Millar Western Forest Products Ltd.		
<b>British Columbia</b>		
Canfor (Chetwynd)	0701308 BC Ltd	Burns Lake Community Forest Ltd.
Coast Tsimshian (Brink)	Andrew Hoy	District of Fort St. James
West Fraser (Skeena, Eurocan)	Burkhard Lepka	Terrace Community Forest Partnership
	Craig Stoltenberg	
	Ecotone Consulting	
	Henning Larsen	
	Keith Playfair	
	Louis Gauthier	
	Mabel Lloyd	
	Marjolaine Hart	
	Riverrun Tree Farms Inc.	
	Ross Hamilton	

## 2.8 Non-native Weed Species

Weeds species are defined and classified in Alberta by the *Weed Control Act* and regulations (Alberta Agriculture, Food and Rural Development [AAFRD] 2001, Internet site) and include Restricted, Noxious and Nuisance weeds. Weed species were recorded on the plot sheets during field surveys for the Project.

In Alberta, 23 noxious weeds were identified as having the potential to occur on or near the PEAA and have the potential to invade disturbed areas (see Table 2-10).

In British Columbia, the *Weed Control Act* and regulations define noxious weeds (British Columbia Ministry of Agriculture and Lands [BC MAL] 2001, Internet site). In addition to these species, other species may become invasive in certain conditions. Weed species were recorded on the plot sheets during field surveys for the Project.

Twenty-four noxious weeds were identified as having the potential to occur on or near the PEAA in British Columbia and typically invade disturbed areas (see Table 2-11).

**Table 2-10 Potential Non-native Weeds in or Near the PEAA in Alberta**

Common Name	Scientific Name	Status
Bladder campion	<i>Silene cucubalus</i>	Noxious
Blueweed	<i>Echium vulgare</i>	Noxious
Creeping thistle	<i>Cirsium arvense</i>	Noxious
Cleavers	<i>Galium aparine and Galium spurium</i>	Noxious
Common tansy	<i>Tanacetum vulgare</i>	Noxious
Cypress spurge	<i>Euphorbia cyparissias</i>	Noxious
Field bindweed	<i>Convolvulus arvensis</i>	Noxious
Field scabious	<i>Knautia arvensis</i>	Noxious
Hoary cress	<i>Cardaria spp.</i>	Noxious
Hound's-tongue	<i>Cynoglossum officinale</i>	Noxious
Knawel	<i>Scleranthus annuus</i>	Noxious
Leafy spurge	<i>Euphorbia esula</i>	Noxious
Oxeye daisy	<i>Chrysanthemum leucanthemum</i>	Noxious
Perennial sow thistle	<i>Sonchus arvensis</i>	Noxious
Persian darnel	<i>Lolium persicum</i>	Noxious
Purple loosestrife	<i>Lythrum salicaria</i>	Noxious
Russian knapweed	<i>Centaurea repens</i>	Noxious
Scentless chamomile	<i>Matricaria maritima</i>	Noxious
Spreading dogbane <sup>a</sup>	<i>Apocynum androsaemifolium</i>	Noxious
Stork's bill	<i>Erodium cicutarium</i>	Noxious
Tall buttercup	<i>Ranunculus acris</i>	Noxious
Toadflax	<i>Linaria vulgaris</i>	Noxious
White cockle	<i>Lychnis alba</i>	Noxious
NOTES: Data source is AAFRD 2001, Internet site. <sup>a</sup> This species, while considered a noxious weed, is also a native plant.		

**Table 2-11 Potential Non-native Weeds in or Near the PEAA in British Columbia**

Common Name	Scientific Name	Status
Annual sow thistle	<i>Sonchus oleraceus</i>	Noxious
Canada thistle	<i>Cirsium arvense</i>	Noxious
Crupina	<i>Crupina vulgaris</i>	Noxious
Dalmatian toadflax	<i>Linaria dalmatica</i>	Noxious
Diffuse knapweed	<i>Centaurea diffusa</i>	Noxious
Dodder	<i>Cuscuta spp.</i>	Noxious
Gorse	<i>Ulex europaeus</i>	Noxious
Hound's-tongue	<i>Cynoglossum officinale</i>	Noxious
Jointed goat grass	<i>Aegilops cylindrica</i>	Noxious
Leafy spurge	<i>Euphorbia esula</i>	Noxious
Orange-red king devil	<i>Hieracium aurantiacum</i>	Noxious
Oxeye daisy	<i>Leucanthemum vulgare</i>	Noxious
Perennial sow thistle	<i>Sonchus arvensis</i>	Noxious
Purple nut-sedge	<i>Cyperus rotundus</i>	Noxious
Quack grass	<i>Elymus repens</i>	Noxious
Rush skeletonweed	<i>Chondrilla juncea</i>	Noxious
Scentless chamomile	<i>Matricaria maritima</i>	Noxious
Spotted knapweed	<i>Centaurea maculosa</i>	Noxious
Tansy ragwort	<i>Senecio jacobaea</i>	Noxious
Velvetleaf	<i>Abutilon theophrasti</i>	Noxious
Wild oats	<i>Avena fatua</i>	Noxious
Yellow nut-sedge	<i>Cyperus esculentus</i>	Noxious
Yellow star-thistle	<i>Centaurea solstitialis</i>	Noxious
Yellow toadflax	<i>Linaria vulgaris</i>	Noxious

SOURCE: BC MAL 2001, Internet site



### 3 Results

The following sections summarize the data collected during field surveys (rare plant, TEM mapping and ecosite mapping) from 2006, 2008 and 2009. The data is summarized by physiographic region within the PEAA. Due to rounding errors, the values presented in the following tables may not add up to the totals.

Appendix D lists the plant species documented during field surveys (rare plant, TEM mapping and ecosite mapping) from 2006 and 2008 by physiographic region.

#### 3.1 Vegetation of the Eastern Alberta Plains in the PEAA

##### 3.1.1 Sampling Effort

A total of 76 vegetation survey plots were sampled in the Eastern Alberta Plains between 2006 and 2008 (see Table 3-1).

**Table 3-1 Number of Sampling Plots in the Eastern Alberta Plains**

Plot Type	Survey Year	Eastern Alberta Plains
Rare Plant Survey	2006	0
	2008	0
Vegetation Survey	2006	76
	2008	0
<b>Total</b>		76

##### 3.1.2 Ecosystem Units - Ecosite Phases

The portion of the PEAA within the Eastern Alberta Plains physiographic region crosses two NSRs: Central Parkland and Dry Mixedwood. The Dry Mixedwood NSR is dominant with 11,899 ha. See Table 3-2 for the existing area of each ecosite phase (including shallow open water and anthropogenic categories) within the PEAA.

Anthropogenic units (4,117 ha) are dominant in the Central Parkland NSR. Other ecosystems are regenerating stands (regen) with an extent of 49 ha, ecosite phase 3 (mixed aspen and white spruce) with 41 ha, and ecosite phase 4 (white spruce) with 21 ha.

In the Dry Mixedwood NSR, the anthropogenic units are dominant with 8,450 ha. The dominant ecosystem is regenerating stands (regen), which occupy 1,092 ha, ecosite phase e2 (dogwood - balsam poplar - white spruce) with 808 ha, ecosite phase e1 (dogwood - balsam poplar - aspen) with 385 ha and ecosite phase d1 (low-bush cranberry - aspen) with 223 ha.

Within the Eastern Alberta Plains physiographic region, shallow open water occupies 24 ha, or less than 1% of the PEAA. Non-vegetated, sparsely vegetated and anthropogenic units cover 12,567 ha, or 78% of the PEAA. In all NSRs within the Eastern Alberta Plains, the anthropogenic category is mainly a result of agricultural activities. These activities represent 98% of the anthropogenic category; few areas of native vegetation remain.

**Table 3-2 Ecosite Phases in the Eastern Alberta Plains**

Natural Subregion	Ecosite Phase	Ecosite Phase Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
Central Parkland	2	aspen - balsam poplar	17	<1	0	0
	3	mixed aspen - white spruce	41	<1	2	5
	4	white spruce	21	<1	1	6
	4- riparian	white spruce riparian	1	0	0	0
	5	black spruce	16	<1	1	6
	6	willow shrub	1	0	0	0
	6- riparian	willow shrub riparian	7	0	<1	2
	7	marsh	20	<1	2	8
	Regen		49	<1	2	3
	Regen-riparian		17	<1	<1	3
	Shallow Open Water		3	0	<1	3
Anthropogenic		4,117	25	257	6	
Dry Mixedwood	b2	blueberry - aspen (white birch)	16	<1	0	0
	d1	low-bush cranberry - aspen	223	1	13	6
	d2	low-bush cranberry - aspen - white spruce	173	1	6	4
	d3	low-bush cranberry - white spruce	13	<1	1	5
	e1	dogwood - balsam poplar - aspen	385	2	20	5
	e1- riparian	dogwood - balsam poplar - aspen riparian	8	0	<1	4
	e2	dogwood - balsam poplar - white spruce	808	5	38	5
	e2- riparian	dogwood - balsam poplar - white spruce riparian	8	<1	<1	4
	e3	dogwood - white spruce	7	0	0	0
	e4	shrub (willow)	61	<1	3	5
	e4- riparian	shrub (willow) riparian	1	0	0	0
	f1	horsetail - balsam poplar - aspen	1	0	<1	17
	f1- riparian	horsetail - balsam poplar - aspen: riparian	6	0	0	0

**Table 3-2 Ecosite Phases in the Eastern Alberta Plains (cont'd)**

Natural Subregion	Ecosite Phase	Ecosite Phase Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
Dry Mixedwood (cont'd)	f2	horsetail - balsam poplar - white spruce	9	<1	2	19
	f2- riparian	horsetail - balsam poplar - white spruce riparian	2	0	<1	13
	f3	horsetail - white spruce	48	<1	3	6
	f4	riparian shrub	42	<1	2	6
	f4- riparian	riparian shrub	6	0	<1	4
	f5	riparian graminoid	41	<1	2	6
	f5- riparian	riparian graminoid	33	<1	1	3
	g1	Labrador tea - subhygric black spruce - Jack pine	68	<1	2	2
	h1	Labrador tea/horsetail - white spruce - black spruce	151	1	5	3
	i1	treed bog	27	<1	1	5
	i2	shrubby bog	8	<1	<1	5
	j1	treed poor fen	25	<1	<1	2
	j2	shrubby poor fen	38	<1	1	2
	k2	shrubby rich fen	9	<1	<1	3
	k3	graminoid rich fen	69	<1	2	3
	l1	marsh	42	<1	4	10
	Regen		1,092	7	61	6
	Regen- riparian		7	0	<1	6
	Shallow open water		21	<1	2	11
	Anthropogenic		8,450	52	505	6
<b>Subtotal Native Vegetation</b>			<b>2,452</b>	<b>15</b>	<b>114</b>	<b>5</b>
<b>Subtotal Regen</b>			<b>1,141</b>	<b>7</b>	<b>62</b>	<b>5</b>
<b>Subtotal Regen - Riparian</b>			<b>24</b>	<b>&lt;1</b>	<b>1</b>	<b>4</b>
<b>Subtotal Shallow Open Water</b>			<b>24</b>	<b>&lt;1</b>	<b>2</b>	<b>10</b>
<b>Subtotal Anthropogenic</b>			<b>12,567</b>	<b>78</b>	<b>762</b>	<b>6</b>
<b>Total</b>			<b>16,209</b>	<b>100</b>	<b>942</b>	<b>6</b>
NOTES:						
<sup>a</sup> Data from 2008 and 2009 ecosite phase mapping						
<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA ecosite phase/total) x 100						
<sup>c</sup> PDA percentage is calculated as follows: (PDA ecosite phase/PEAA ecosite phase) x 100						

### 3.1.3 Old-Growth Forests

Old growth forests were not identified through mapping in the Eastern Alberta Plains.

### 3.1.4 Rare Plants and Rare Ecological Communities

No rare plants or rare ecological communities were found in the Eastern Alberta Plains during field surveys in 2006 and 2008. ANHIC reported seven species that had been previously recorded within the PEAA boundaries (see Table 3-3). None of the species was listed by COSEWIC or SARA. Before construction begins, detailed rare plant surveys and an effects assessment will be completed and site-specific mitigation will be identified.

**Table 3-3 Rare Plants in the PEAA in the Eastern Alberta Plains**

Common Name	Scientific Name	Provincial/ Global Rank		ANHIC Status	ASRD Status <sup>1</sup>
		S	G		
lakeshore sedge <sup>a</sup>	Carex lacustris	S2	G5	Tracked	May Be at Risk
poverty oat grass <sup>a</sup>	Danthonia spicata	S1S2	G5	Tracked	May Be at Risk
tall blue lettuce <sup>a</sup>	Lactuca biennis	S2	G5	Tracked	May Be at Risk
urn moss <sup>a</sup>	Physcomitrium pyriforme	S1	G5	Tracked	Not Listed
flagon-fruited splachnum <sup>a</sup>	Splachnum ampullaceum	S2	G5	Tracked	Not Listed
lichen <sup>a</sup>	Trapeliopsis flexuosa	S1	G?	Tracked	Not Listed
narrow-fruited fork moss <sup>a</sup>	Trichodon cylindricus	S1	G4G5	Tracked	Not Listed
NOTE: <sup>a</sup> ANHIC data request					
<sup>1</sup> SOURCE: ASRD 2005, Internet site					

### 3.1.5 Wetlands

Wetlands cover 475 ha or 3% of the PEAA. The dominant wetland classes are swamp (213 ha) and fen (141 ha). Shallow open water wetlands occupy 24 ha (less than 1%) of the PEAA (see Table 3-4).

**Table 3-4 Wetlands in the Eastern Alberta Plains**

Wetland Classes	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
	ha	%	ha	%
Bog	36	<1	2	5
Fen	141	1	4	3
Marsh	61	<1	6	10
Swamp	213	1	8	4

**Table 3-4 Wetlands in the Eastern Alberta Plains (cont'd)**

Wetland Classes	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
	ha	%	ha	%
Shallow Open Water	24	<1	2	10
<b>Subtotal Wetlands</b>	<b>475</b>	<b>3</b>	<b>21</b>	<b>4</b>
<b>Subtotal Non-wetlands</b>	<b>15,733</b>	<b>97</b>	<b>921</b>	<b>6</b>
<b>Total</b>	<b>16,209</b>	<b>100</b>	<b>942</b>	<b>6</b>

NOTES:  
<sup>a</sup> Data from 2008 and 2009 ecosite phase mapping  
<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA wetland class/total) x 100  
<sup>c</sup> PDA percentage is calculated as follows: (PDA wetland class/PEAA wetland class) x 100

### 3.1.6 Timber Resources

There are no merchantable timber resources in the Eastern Alberta Plains physiographic region

### 3.1.7 Non-native Weed Species

Twenty-three noxious weeds were identified as having the potential to occur on or near the PEAA in Alberta and to invade disturbed areas. No regulated weed species were observed in the Eastern Alberta Plains physiographic region during field surveys in 2006 and 2008.

## 3.2 Vegetation of the Southern Alberta Uplands in the PEAA

### 3.2.1 Sampling Effort

A total of 623 plots, including rare plant and vegetation survey plots, were sampled in the Southern Alberta Uplands between 2006, 2008 and 2009 (see Table 3-5).

**Table 3-5 Number of Sampling Plots in the Southern Alberta Uplands**

Plot Type	Survey Year	Southern Alberta Uplands
Rare Plant Survey	2006	138
	2008	35
	2009	48
Vegetation Survey	2006	179
	2008	223
<b>Total</b>		<b>623</b>

### 3.2.2 Ecosystem Units - Ecosite Phases

In the Southern Alberta Uplands, the PEAA crosses the Central Mixedwood, Dry Mixedwood and Lower Foothills NSRs. The Central Mixedwood and Lower Foothills NSRs are dominant with 14,241 and 19,819 ha, respectively. See Table 3-6 for the existing area of each ecosite phase (including shallow open water and anthropogenic categories) within the PEAA.

The dominant ecosite phases in the Central Mixedwood are: d1 low-bush cranberry - aspen (4,067 ha), e1 dogwood - balsam poplar - aspen (1,522 ha), d2 low-bush cranberry - aspen - white spruce (1,520 ha) and Regen (1,363 ha). In the Dry Mixedwood, d1 (low-bush cranberry - aspen), the dominant ecosite phase occupies 173 ha. Anthropogenic occupies 49 ha along with moister ecosite phases, e1 dogwood - balsam poplar - aspen (36 ha) and e2 dogwood - balsam poplar - white spruce (25 ha), which occur in lesser amounts.

Low-bush cranberry - aspen - white spruce - lodgepole pine (2,935 ha), ecosite phase e3, is the dominant ecosystem in the Lower Foothills. Other ecosite phases occurring are e2 low-bush cranberry - aspen (2,680 ha), Regen with 2,468 ha and e1 low-bush cranberry - lodgepole pine (1,589 ha).

In the Southern Alberta Uplands, shallow open water occupies 103 ha or less than 1% of the PEAA. Non-vegetated, sparsely vegetated and anthropogenic units cover 2,615 ha or 8% of the PEAA (see Table 3-6).

**Table 3-6 Ecosite Phases in the Southern Alberta Uplands**

Natural Subregion	Ecosite Phase	Ecosite Phase Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
Central Mixedwood	b1	blueberry - Jack pine - aspen	6	0	0	0
	b2	blueberry - aspen (white birch)	9	0	<1	2
	b3	blueberry - aspen - white spruce	2	0	0	0
	b4	blueberry - white spruce - Jack pine	9	0	0	0
	c1	Labrador tea-mesic Jack pine - black spruce	303	1	17	5
	d1	low-bush cranberry - aspen	4,067	12	268	7
	d2	low-bush cranberry - aspen - white spruce	1,520	4	96	6
	d3	low-bush cranberry - white spruce	221	1	14	6
	e1	dogwood - balsam poplar - aspen	1,522	4	82	5
	e1- riparian	dogwood - balsam poplar - aspen riparian	14	0	2	18
	e2	dogwood - balsam poplar - white spruc	1,020	3	48	5
	e2- riparian	dogwood - balsam poplar - white spruce riparian	22	<1	2	9
	e3	dogwood - white spruce	280	1	18	7
	e3- riparian	dogwood - white spruce riparian	3	0	0	0
	e4	shrub (willow)	46	<1	2	5
	f1	horsetail - balsam poplar - aspen	143	<1	7	5
	f1- riparian	horsetail - balsam poplar - aspen riparian	1	0	0	0
	f2	horsetail - balsam poplar - white spruce	170	<1	13	8
	f3	horsetail - white spruce	80	<1	3	3
	f3 - riparian	horsetail - white spruce riparian	<1	0	0	0

**Table 3-6 Ecosite Phases in the Southern Alberta Uplands (cont'd)**

Natural Subregion	Ecosite Phase	Ecosite Phase Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
Central Mixedwood (cont'd)	f4	riparian shrub	95	<1	6	6
	f4- riparian	riparian shrub	23	<1	1	4
	f5	riparian graminoid	209	1	37	18
	f5- riparian	riparian graminoid	10	0	1	7
	g1	Labrador tea-subhygric black spruce - Jack pine	268	1	18	7
	g1- riparian	Labrador tea-subhygric black spruce - Jack pine riparian	3	0	0	0
	h1	Labrador tea/horsetail - white spruce - black spruce	536	2	29	5
	i1	treed bog	109	<1	4	4
	i2	shrubby bog	18	<1	1	5
	j1	treed poor fen	556	2	22	4
	j2	shrubby poor fen	67	<1	3	4
	k1	treed rich fen	80	<1	4	5
	k2	shrubby rich fen	58	<1	2	4
	k3	graminoid rich fen	30	<1	2	7
	Regen		1,363	4	73	5
Dry Mixedwood	Regen- riparian		1	0	<1	5
	Shallow open water		38	<1	2	4
	Anthropogenic		1,339	4	138	10
	d1	low-bush cranberry - aspen	173	1	13	8



**Table 3-6 Ecosite Phases in the Southern Alberta Uplands (cont'd)**

Natural Subregion	Ecosite Phase	Ecosite Phase Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
Dry Mixedwood (cont'd)	e1	dogwood - balsam poplar - aspen	36	<1	5	13
	e2	dogwood - balsam poplar - white spruce	25	<1	1	3
	e4	shrub (willow)	5	0	1	14
	f2	horsetail - balsam poplar - white spruce	24	<1	1	4
	f3	horsetail - white spruce	10	0	<1	2
	f4- riparian	riparian shrub	2	0	<1	9
	f5	riparian graminoid	9	0	2	27
	f5- riparian	riparian graminoid	4	0	<1	6
	h1	Labrador tea/horsetail - white spruce - black spruce	10	0	0	0
	k2	shrubby rich fen	1	0	<1	16
	Regen- riparian		1	0	0	<1
	Shallow open water		2	0	<1	17
	Anthropogenic		49	<1	16	32
Lower Foothills	b1	bearberry/lichen lodgepole pine	11	0	<1	1
	c1	hairy wild rye - lodgepole pine	1	0	10	1,385
	c2	hairy wild rye - aspen	29	<1	1	2
	c3	hairy wild rye - aspen - white spruce - lodgepole pine	41	<1	<1	<1
	c4	hairy wild rye - white spruce	12	0	0	0
	d1	Labrador tea-mesic lodgepole pine - black spruce	514	1	21	4
	e1	low-bush cranberry - lodgepole pine	1,589	5	75	5

**Table 3-6 Ecosite Phases in the Southern Alberta Uplands (cont'd)**

Natural Subregion	Ecosite Phase	Ecosite Phase Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
Lower Foothills (cont'd)	e1- riparian	low-bush cranberry - lodgepole pine riparian	<1	0	0	0
	e2	low-bush cranberry - aspen	2,680	8	151	6
	e3	low-bush cranberry - aspen - white spruce - lodgepole pine	2,935	9	245	8
	e3- riparian	low-bush cranberry aspen - white spruce - lodgepole pine riparian	3	0	<1	19
	e4	low-bush cranberry - white spruce	822	2	54	7
	e4- riparian	low-bush cranberry - white spruce riparian	1	0	0	0
	f1	bracted honeysuckle - lodgepole pine	340	1	24	7
	f2	bracted honeysuckle - aspen - balsam poplar	733	2	66	9
	f3	bracted honeysuckle - aspen - white spruce - lodgepole pine	845	2	51	6
	f3- riparian	bracted honeysuckle - aspen - white spruce - lodgepole pine riparian	10	0	<1	3
	f4	bracted honeysuckle - white spruce	706	2	39	6
	f4- riparian	bracted honeysuckle - white spruce riparian	9	0	1	8
	f5	bracted honeysuckle shrub	236	1	12	5
	f5- riparian	bracted honeysuckle shrub riparian	4	0	<1	5
	g1	shrubby meadow	11	0	0	0
	g2	forb meadow	697	2	34	5
	g2- riparian	forb meadow riparian	26	<1	1	4

**Table 3-6 Ecosite Phases in the Southern Alberta Uplands (cont'd)**

Natural Subregion	Ecosite Phase	Ecosite Phase Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
Lower Foothills (cont'd)	h1	Labrador tea-subhygric black spruce - lodgepole pine	774	2	46	6
	i1	horsetail - balsam poplar - aspen	68	<1	4	5
	i1- riparian	horsetail - balsam poplar - aspen riparian	1	0	0	0
	i2	horsetail - balsam poplar - white spruce	154	<1	13	8
	i2- riparian	horsetail - balsam poplar - white spruce riparian	6	0	<1	4
	i3	horsetail - white spruce	124	<1	5	4
	i3- riparian	horsetail - white spruce riparian	11	0	<1	3
	i4	riparian shrub - willow	61	<1	4	7
	i4- riparian	riparian shrub - willow	33	<1	1	2
	i5	riparian graminoid	4	0	2	54
	i5- riparian	riparian graminoid	6	0	<1	2
	j1	Labrador tea/horsetail - black spruce - white spruce	801	2	39	5
	k1	treed bog	118	<1	6	5
	k2	shrubby bog	<1	0	0	0
	l1	treed poor fen	1,220	4	66	5
	l2	shrubby poor fen	126	<1	8	6
	m1	treed rich fen	122	<1	7	6
	m2	shrubby rich fen	100	<1	3	3
	m3	graminoid rich fen	64	<1	7	11
	n1	marsh	7	0	1	16



**Table 3-6 Ecosite Phases in the Southern Alberta Uplands (cont'd)**

Natural Subregion	Ecosite Phase	Ecosite Phase Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
Lower Foothills (cont'd)	Regen		2,468	7	176	7
	Regen- riparian		11	0	1	9
	Shallow open water		63	<1	4	6
	Anthropogenic		1,226	4	59	5
<b>Subtotal Native Vegetation</b>			<b>27,850</b>	<b>81</b>	<b>1,726</b>	<b>6</b>
<b>Subtotal Regen</b>			<b>3,831</b>	<b>11</b>	<b>249</b>	<b>7</b>
<b>Subtotal Regen - Riparian</b>			<b>13</b>	<b>0</b>	<b>1</b>	<b>7</b>
<b>Subtotal Shallow Open Water</b>			<b>103</b>	<b>&lt;1</b>	<b>6</b>	<b>6</b>
<b>Subtotal Anthropogenic</b>			<b>2,615</b>	<b>8</b>	<b>213</b>	<b>8</b>
<b>Total</b>			<b>34,412</b>	<b>100</b>	<b>2,195</b>	<b>6</b>

NOTES:

<sup>a</sup> Data from 2008 ecosite phase mapping

<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA ecosite phase/total)\*100

<sup>c</sup> PDA percentage was calculated as follows: (PDA ecosite phase/PEAA ecosite phase)\*100

### 3.2.3 Old-Growth Forest

There are 2,999 ha of old growth forests in the Southern Alberta Uplands (see Table 3-7). Old growth forests are found in the Central Mixedwood and Lower Foothills NSRs and are dominant in the Central Mixedwood. In the PEAA, old growth forests cover 9% of the area.

**Table 3-7 Old-Growth Forests in the PEAA in the Southern Alberta Uplands**

Natural Subregion	PEAA <sup>a,b</sup>	
	ha	%
Central Mixedwood	1,973	6
Lower Foothills	1,026	3
<b>Subtotal Old-Growth Forests</b>	<b>2,999</b>	<b>9</b>
<b>Subtotal Non-Old-Growth Forests</b>	<b>31,413</b>	<b>91</b>
<b>Total</b>	<b>34,412</b>	<b>100</b>

NOTES:  
<sup>a</sup> Data from 2008 ecosite phase mapping.  
<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA ecosite phase/total)\*100.

### 3.2.4 Rare Plants and Rare Ecological Communities

Twenty-four rare plant species were found during field surveys or are recorded by ANHIC within the PEAA (see Table 3-8). None of the species was listed by COSEWIC or SARA. No rare ecological communities were identified for the Southern Alberta Uplands.

Detailed rare plant and rare ecological community surveys, an effects assessment and site-specific mitigation will be done before construction.

**Table 3-8 Rare Plants in the PEAA in the Southern Alberta Uplands**

Common Name	Scientific Name	Provincial/ Global Rank		ANHIC Status	ASRD Status <sup>1</sup>
		S	G		
Spike redtop <sup>a,b</sup>	<i>Agrostis exarata</i>	S2	G5	Tracked	May Be at Risk
Short-beaked rigid screw moss <sup>a</sup>	<i>Aloina brevirostris</i>	S2	G3G5	Tracked	Not Listed
Aloe-like rigid screw moss <sup>a</sup>	<i>Aloina rigida</i>	S2	G3G5	Tracked	Not Listed
Sharp-pointed weissia <sup>a</sup>	<i>Blindia acuta</i>	S2	G5	Tracked	Not Listed
Lapland reed grass <sup>a,b</sup>	<i>Calamagrostis lapponica</i>	S1	G5	Tracked	Sensitive
Small bitter cress <sup>b</sup>	<i>Cardamine parviflora</i>	S1	G5	Tracked	May Be at Risk
Hairy-fruited sedge <sup>b</sup>	<i>Carex lasiocarpa</i>	S4	G5	Watch List	Not Listed

**Table 3-8 Rare Plants in the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name	Provincial/ Global Rank		ANHIC Status	ASRD Status <sup>1</sup>
Golden saxifrage <sup>c,d</sup>	<i>Chrysosplenium iowense</i>	S3	G3	Tracked	Sensitive
Green saxifrage <sup>a,d</sup>	<i>Chrysosplenium tetrandrum</i>	S3	G5	Tracked	Not Listed
Goldthread <sup>c</sup>	<i>Coptis trifolia</i>	S3	G5	Watch List	Not Listed
Awl-leaved fork moss <sup>a</sup>	<i>Dicranella subulata</i>	S2	G5?	Tracked	Not Listed
Nevada rush <sup>b</sup>	<i>Juncus nevadensis</i>	S1	G5	Tracked	May Be at Risk
Tall blue lettuce <sup>a,b,c</sup>	<i>Lactuca biennis</i>	S2	G5	Tracked	May Be at Risk
Lichen <sup>a</sup>	<i>Lecania dubitans</i>	S2	G?	Tracked	Not Listed
Yellow monkeyflower <sup>a,b</sup>	<i>Mimulus guttatus</i>	SU	G5	Tracked	Not Listed
Pinesap <sup>a</sup>	<i>Monotropa hypopithys</i>	S2	G5	Tracked	May Be at Risk
Small northern grass-of-parnassus <sup>b</sup>	<i>Parnassia parviflora</i>	S2	G4	Watch List	Sensitive
Northern beech fern <sup>a</sup>	<i>Phegopteris connectilis</i>	S2	G5	Tracked	May Be at Risk
Lichen <sup>a</sup>	<i>Physcia tenella</i>	S2	G4	Tracked	Not Listed
Leafy pondweed <sup>a,b</sup>	<i>Potamogeton foliosus</i>	S2	G5	Tracked	Not Listed
Hairy buttercup <sup>b</sup>	<i>Ranunculus uncinatus</i>	S2	G5	Watch List	Sensitive
Prairie wedge grass <sup>b</sup>	<i>Sphenopholis obtusata</i>	S2	G5	Tracked	May Be at Risk
Wavy-leaved chickweed <sup>a</sup>	<i>Stellaria crispa</i>	S2	G5	Tracked	May Be at Risk
Smooth woodsia <sup>c</sup>	<i>Woodsia glabella</i>	S1	G5	Tracked	May Be at Risk

NOTES:

<sup>a</sup> ANHIC data request

<sup>b</sup> Data from 2006 field surveys

<sup>c</sup> Data from 2008 field surveys

<sup>d</sup> Data from 2009 field surveys

SOURCE: <sup>1</sup>ASRD 2005, Internet site

### 3.2.5 Wetlands

Wetlands cover 4,372 ha in the PEAA. The dominant wetland class is fen, occupying 2,423 ha or 7% of the PEAA. Shallow open water wetlands occupy 103 ha (less than 1%) of the PEAA (see Table 3-9).

**Table 3-9 Wetlands in the PEAA in the Southern Alberta Uplands**

Wetland Class	PEAA <sup>a,b</sup>	
	ha	%
Bog	245	1
Fen	2,423	7
Marsh	7	0
Swamp	1,594	5
Shallow Open Water	103	<1
<b>Subtotal Wetlands</b>	<b>4,372</b>	<b>13</b>
<b>Subtotal Non-wetlands</b>	<b>30,040</b>	<b>87</b>
<b>Total</b>	<b>34,412</b>	<b>100</b>

NOTES:  
<sup>a</sup> Data from 2008 ecosite phase mapping  
<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA wetland class/total) x 100

### 3.2.6 Timber Resources

The merchantable timber volume in the Southern Alberta Uplands physiographic region was calculated at 338,000 m<sup>3</sup>.

### 3.2.7 Non-native Weed Species

Twenty-three noxious weeds were identified as having the potential to occur on or near the PEAA in Alberta and to invade disturbed areas. In the Southern Alberta Uplands, ten nuisance and six noxious weed species were observed during field surveys in 2006 and 2008 within the PEAA (see Table 3-10).

**Table 3-10 Non-native Weed Species in the Southern Alberta Uplands Recorded during Field Surveys**

Common Name	Scientific Name	Status <sup>a</sup>
Annual hawk's-beard	<i>Crepis tectorum</i>	Nuisance
Annual sow-thistle	<i>Sonchus oleraceus</i>	Nuisance
Cleavers	<i>Galium aparine</i>	Noxious
Common dandelion	<i>Taraxacum officinale</i>	Nuisance
Creeping thistle	<i>Cirsium arvense</i>	Noxious
Field mouse-ear chickweed	<i>Ceratum arvense</i>	Nuisance
Hemp-nettle	<i>Galeopsis tetrahit</i>	Nuisance

**Table 3-10 Non-native Weed Species in the Southern Alberta Uplands Recorded during Field Surveys (cont'd)**

Common Name	Scientific Name	Status <sup>a</sup>
Perennial sow-thistle	<i>Sonchus arvensis</i>	Noxious
Quack grass	<i>Elytrigia repens/Elymus repens</i>	Nuisance
Rough cinquefoil	<i>Potentilla norvegica</i>	Nuisance
Shepherd's-purse	<i>Capsella bursa-pastoris</i>	Nuisance
Spreading dogbaneb	<i>Apocynum androsaemifolium</i>	Noxious
Stinkweed	<i>Thlaspi arvense</i>	Nuisance
Tall buttercup	<i>Ranunculus acris</i>	Noxious
Toadflax	<i>Linaria vulgaris</i>	Noxious
Wormseed mustard	<i>Erysimum cheiranthoides</i>	Nuisance

NOTES:  
<sup>a</sup> Data source is AAFRD 2001, Internet site.  
<sup>b</sup> This species, while considered a noxious weed, is also a native plant.

### 3.3 Vegetation of the Alberta Plateau in the PEAA

#### 3.3.1 Sampling Effort

A total of 95 plots, including rare plant and vegetation survey plots, were sampled in the Alberta Plateau between 2006 and 2008 (see Table 3-11). (The Alberta Plateau physiographic region is defined as occurring within northeast British Columbia.)

**Table 3-11 Number of Sampling Plots in the Alberta Plateau**

Plot Type	Survey Year	Alberta Plateau
Rare Plant Survey	2006	34
	2008	6
Vegetation Survey	2006	19
	2008	36
<b>Total</b>		<b>95</b>

#### 3.3.2 Ecosystem Units - Site Series

In the Alberta Plateau physiographic region, the PEAA includes:

- the Lower Foothills NSR and the Peace Moist Warm Boreal White and Black Spruce Variant (BWBSmw1)



- Murray Wet Cool Boreal White and Black Spruce Variant (BWBSwk1)
- Bullmoose Moist Very Cold Engelmann Spruce – Subalpine Fir Variant (ESSFmv2)

The BWBSwk1 and ESSFmv2 are dominant with 2,938 and 1,363 ha, respectively. See Table 3-12 for the existing area of each ecosite phase or site series (including shallow open water and anthropogenic categories) within the PEAA.

A small margin of Lower Foothills occurs with ecosite phase d1 (Labrador tea-mesic lodgepole pine – black spruce) is the dominant ecosystem, occupying 16 ha.

In the BWBSmw1, site series 04 (Black spruce - Lingonberry - Coltsfoot), which is the dominant site series, occupies 314 ha. Also dominant are site series 10 Tamarack - Sedge (84 ha) and site series 08 Black spruce - Labrador tea - Peat-moss (79 ha).

The dominant site series in the BWBSwk1 are site series 03 Black spruce - Lingonberry - Coltsfoot (1,417 ha), site series 01 White spruce - Huckleberry - Step moss (377 ha), Regen (236 ha) and site series 09 Tamarack - Water Sedge - Fen moss (186 ha).

The low nutrient site series 03 Subalpine fir Black spruce - Labrador tea (617 ha) is dominant in the ESSFmv2, as well as site series 01 Subalpine fir - Rhododendron - Feathermoss (357 ha) and regenerating stands (Regen) (178 ha).

Shallow open water covers 4 ha (less than 1%) of the PEAA. Non-vegetated, sparsely vegetated and anthropogenic units cover 47 ha or 1% of the PEAA (see Table 3-12).

**Table 3-12 Site Series in the PEAA in the Alberta Plateau**

Natural Subregion/ Biogeoclimatic Unit	Ecosite Phase/ Site Series No. and Map Code	Ecosite Phase/ Site Series Name	PEAA <sup>a,b</sup>	
			ha	%
Lower Foothills	d1	Labrador tea-mesic lodgepole pine - black spruce	16	<1
	h1	Labrador tea-subhygric black spruce - lodgepole pine	<1	0
	l1	Treed poor fen	4	<1
BWBSmw1	00 DS - riparian	Drummond's willow - Beaked sedge riparian	6	<1
	00 OS	Willows - Scrub birch - Water sedge	13	<1
	00 WF - riparian	Pacific willow - Red-osier dogwood - Horsetail riparian	5	<1
	01 AM	White spruce Trembling aspen - Step moss	73	1
	01 AM - Atcp	Trembling aspen - Creamy peavine seral association	14	<1
	02 LL	Lodgepole pine - Lingonberry - Velvet-leaved blueberry	10	<1

**Table 3-12 Site Series in the PEAA in the Alberta Plateau (cont'd)**

Natural Subregion/ Biogeoclimatic Unit	Ecosite Phase/ Site Series No. and Map Code	Ecosite Phase/ Site Series Name	PEAA <sup>a,b</sup>	
			ha	%
BWBSmw1 (cont'd)	02 LL – Atsk	Trembling aspen - Soopolallie - Kinnikinnick seral association	1	0
	03 SW	White spruce - Wildrye - Peavine	32	1
	03 SW - Atsw	Trembling aspen - Soopolallie - Wildrye seral association	7	<1
	04 BL	Black spruce - Lingonberry - Coltsfoot	314	6
	04 BL - Atlt	Trembling aspen - Labrador tea seral association	6	<1
	06 SC	White spruce - Currant - Bluebells	18	<1
	07 SH	White spruce - Currant - Horsetail	22	<1
	07 SH - riparian	White spruce - Currant - Horsetail riparian	1	0
	08 BT	Black spruce - Labrador tea - Peat-moss	79	2
	10 TS	Tamarack - Sedge	84	2
	11 BH	Black spruce - Common horsetail - Peat-moss	6	<1
	Regen		10	<1
	Anthropogenic		3	<1
BWBSwk1	00 BB	Black spruce - Buckbean - Peat-moss	9	<1
	00 BS	Bebb's willow - Bluejoint	1	0
	00 BT	Black spruce - Lingonberry - Peat-moss	53	1
	00 DB	Drummond's willow - Bluejoint	12	<1
	00 DB - riparian	Drummond's willow - Bluejoint riparian	5	<1
	00 FH	Few-flowered spike-rush - Hook-moss	1	0
	00 KC	Scrub birch - Kinnikinnick	9	<1
	00 MB	MacCalla's willow - Beaked sedge	4	<1
	00 OS	Scrub birch-Water sedge - Peat-moss.	93	2
	00 SE	Water sedge-Beaked sedge	16	<1
	00 WM	Beaked sedge-Water sedge	19	<1
	00 WM - riparian	Beaked sedge-Water sedge - riparian	5	<1
	01 SM	White spruce - Huckleberry - Step moss	377	8
	01 SM - Athc	Trembling aspen - Highbush-cranberry seral association	43	1
	01 SM - riparian	White spruce - Huckleberry - Step moss riparian	2	0
	02 LL	Lodgepole pine - Lingonberry - Velvet-leaved blueberry	11	<1

**Table 3-12 Site Series in the PEAA in the Alberta Plateau (cont'd)**

Natural Subregion/ Biogeoclimatic Unit	Ecosite Phase/ Site Series No. and Map Code	Ecosite Phase/ Site Series Name	PEAA <sup>a,b</sup>	
			ha	%
BWBSwk1 (cont'd)	03 BL	Black spruce - Lingonberry - Coltsfoot	1,417	28
	03 BL - Atlt	Trembling aspen - Labrador tea seral association	10	<1
	04 SW	White spruce - Wildrye - Peavine	105	2
	05 SC	White spruce - Currant - Bluebells	80	2
	05 SC - Atof	Trembling aspen - Oak fern seral association	2	0
	06 SH	White spruce - Currant - Horsetail	71	1
	06 SH - riparian	White spruce - Currant - Horsetail riparian	2	0
	07 BH	Black spruce - Horsetail – Peat-moss	64	1
	08 BW	Black spruce - Willow - Glow moss	57	1
	09 TS	Tamarack - Water sedge - Fen moss	186	4
	Regen		236	5
	Shallow Open Water		4	<1
	Anthropogenic		44	1
ESSFmv2	00 OT	Black spruce - Common horsetail – Peat-moss	54	1
	00 TS	Tamarack - Water sedge - Fen moss	7	<1
	00 WS	Willow - Sedge fen	4	<1
	01 FR	Subalpine fir - Rhododendron - Feathermoss	357	7
	02 FL	Subalpine fir - Lingonberry	4	<1
	03 BT	Subalpine fir - Black spruce - Labrador tea	617	12
	04 FO	Subalpine fir - Oak fern - Knight's plume	61	1
	05 FD	Subalpine fir - Devil's club - Rhododendron	48	1
	06 FH	Subalpine fir - Alder - Horsetail	35	1
	Regen		178	4
<b>Subtotal Native Vegetation</b>			<b>4,550</b>	<b>91</b>
<b>Subtotal Regen</b>			<b>424</b>	<b>8</b>
<b>Subtotal Shallow Open Water</b>			<b>4</b>	<b>&lt;1</b>
<b>Subtotal Anthropogenic</b>			<b>47</b>	<b>1</b>
<b>Total</b>			<b>5,025</b>	<b>100</b>
NOTES:				
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping				
<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA site series/total) x 100				

### 3.3.3 Old-Growth Forest

There are 325 ha of old growth forests in the Alberta Plateau physiographic region. Old forests are found in all three of the BGC units, BWBSmw1, BWBSwk1 and ESSFmv2, and are most common in BWBSwk1 and ESSFmv2. Old growth forests occupy 6% of the PEAA in the Alberta Plateau (see Table 3-13).

**Table 3-13 Old-Growth Forests in the PEAA in the Alberta Plateau**

BCG Unit	PEAA <sup>a,b</sup>	
	ha	%
BWBSmw1	41	1
BWBSwk1	178	4
ESSFmv2	106	2
<b>Subtotal Old-Growth Forests</b>	<b>325</b>	<b>6</b>
<b>Subtotal Non-Old-Growth Forests</b>	<b>4,699</b>	<b>94</b>
<b>Total</b>	<b>5,025</b>	<b>100</b>

NOTES:

<sup>a</sup> Data from 2008 terrestrial ecosystem mapping

<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA site series/total)\*100

### 3.3.4 Rare Plants and Rare Ecological Communities

Five rare species are present in the PEAA (see Table 3-14). None of the species was listed by COSEWIC or SARA. A detailed rare plant and rare ecological community survey, effects assessment and site-specific mitigation will be completed before construction.

**Table 3-14 Rare Plants in the PEAA in the Alberta Plateau**

Common Name	Scientific Name	Provincial/ Global Rank		CDC Status	BC MoE Status
Northern bog bedstraw <sup>a</sup>	<i>Galium labradoricum</i>	S2S3	G5	Tracked	Blue
Whitish rush <sup>a</sup>	<i>Juncus albescens</i>	S2S3	G5	Tracked	Blue
Arctic rush <sup>b</sup>	<i>Juncus arcticus ssp. alaskanus</i>	S2S3	G5T4T5	Tracked	Blue
Marsh muhly <sup>a</sup>	<i>Muhlenbergia glomerata</i>	S3	G5	Tracked	Blue
Small-flowered lousewort <sup>a,b</sup>	<i>Pedicularis parviflora ssp. parviflora</i>	S3	G4T4	Tracked	Blue

NOTES:

<sup>a</sup> Data from 2006 field surveys

<sup>b</sup> Data from 2008 field surveys

Rare ecological communities occurred in all four of the BGC units; however, the dominant community was BWBSwk1 site series 01 (438 ha) (see Table 3-15). In total, the rare ecological communities cover 575 ha or 12% of the PEAA. The BC MoE status of the ecological communities is also listed in Table 3-15.

**Table 3-15 Rare Ecological Communities in the PEAA in the Alberta Plateau**

Biogeoclimatic Unit	Site Series No. and Map Code	Rare Ecological Community	BC MoE Status	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
				ha	%	ha	%
BWBSmw1	06 SC	White spruce/ Red swamp currant/ Tall bluebells	Blue	18	<1	0	<1
BWBSwk1	01 SM	White spruce/Black huckleberry/Step moss	Blue	438	9	30	7
BWBSwk1	05 SC	White spruce/Red swamp currant/Tall bluebells	Blue	76	2	6	7
ESSFmv2	06 FH	Subalpine fir/Alders/ Horsetails	Blue	43	1	1	2
<b>Subtotal Rare Ecological Communities</b>				<b>575</b>	<b>12</b>	<b>36</b>	<b>6</b>
<b>Subtotal Non-rare Ecological Communities</b>				<b>4,446</b>	<b>88</b>	<b>280</b>	<b>6</b>
<b>Total</b>				<b>5,025</b>	<b>100</b>	<b>316</b>	<b>6</b>

NOTES:  
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping  
<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA site series/total) x 100  
<sup>c</sup> PDA area percentage was calculated as follows: (PDA site series/PEAA site series) x 100

### 3.3.5 Wetlands

Wetlands cover 917 ha (18%) of the PEAA in the Alberta Plateau. The dominant wetland is bog, which occupies 599 ha, followed by swamp at 160 ha, then fen (130 ha) (see Table 3-16). Shallow open water wetlands occupy 4 ha (less than 1%) of the PEAA.

**Table 3-16 Wetlands in the PEAA in the Alberta Plateau**

Wetland Class	PEAA <sup>a,b</sup>	
	ha	%
Bog	599	12
Fen	130	3
Marsh	23	<1
Swamp	160	3

**Table 3-16 Wetlands in the PEAA in the Alberta Plateau (cont'd)**

Wetland Class	PEAA <sup>a,b</sup>	
	ha	%
Shallow Open Water	4	<1
<b>Subtotal Wetlands</b>	<b>917</b>	<b>18</b>
<b>Subtotal Non-wetlands</b>	<b>4,108</b>	<b>82</b>
<b>Total</b>	<b>5,025</b>	<b>100</b>

NOTES:  
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping  
<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA wetland class/total) x 100

### 3.3.6 Timber Resources

The merchantable timber volume in the portion of the PDA within the Alberta Plateau was calculated at 56,989 m<sup>3</sup>.

### 3.3.7 Non-native Weed Species

Twenty-four noxious weeds were identified as having the potential to occur on or near the PEAA in British Columbia and all have the potential to invade disturbed areas. No regulated weed species were observed in the Alberta Plateau physiographic region during field surveys in 2006 and 2008.

## 3.4 Vegetation of the Rocky Mountains in the PEAA

### 3.4.1 Sampling Effort

A total of 182 plots, including rare plant and vegetation survey plots, were sampled in the Rocky Mountains physiographic region between 2006 and 2008 (see Table 3-17).

**Table 3-17 Number of Sampling Plots in the Rocky Mountains**

Plot Type	Survey Year	Rocky Mountains
Rare Plant Survey	2006	81
	2008	15
Vegetation Survey	2006	43
	2008	43
<b>Total</b>		<b>182</b>

### 3.4.2 Ecosystem Units - Site Series

In the Rocky Mountains physiographic region, the PEAA includes seven BGC units:

- BWBSmw1, BWBSwk1, Cariboo Wet Cold Engelmann Spruce - Subalpine Fir Variant (ESSFwc3)
- Wet Cold Parkland Engelmann Spruce - Subalpine Fir (ESSFwcp)
- Misinchinka Wet Cool Engelmann Spruce - Subalpine Fir Variant (ESSFwk2)
- Very Wet Cool Sub-Boreal Spruce Subzone (SBSvk)
- Finlay-Peace Wet Cool Sub-Boreal Spruce Subzone Variant (SBSwk2)

ESSFwk2, SBSwk2 and SBSvk are dominant, with 2,299, 2,707 and 2,988 ha, respectively. See Table 3-18 for the existing area of each site series (including shallow open water and anthropogenic categories) within the PEAA.

In the BWBSmw1, the two dominant site series are seral associations: site series 01 (Trembling aspen - Creamy peavine seral association) occupies 270 ha and site series 03 (Trembling aspen - Soopolallie - Wildrye seral association) occupies 219 ha. Also occurring are site series 04 Black spruce - Lingonberry - Coltsfoot (150 ha) and site series 01 White spruce Trembling aspen - Step moss (73 ha).

Only three ecosystems occur with area values over 10 ha in the BWBSwk1 BGC unit. These are site series 01 Trembling aspen - Highbush-cranberry seral association (44 ha), site series 04 Trembling aspen - Soopolallie - Sarsaparilla seral association (26 ha) and site series 02 Lodgepole pine - Lingonberry - Velvet-leaved blueberry (19 ha).

The dominant site series in ESSFwc3 is site series 01 Subalpine fir - Rhododendron - Oak fern (147 ha). Regen covers 109 ha and site series 02 Subalpine fir - Rhododendron - Queen's cup occupies 81 ha.

The area values in the ESSFwcp BGC unit are negligible.

Four ecosystems are dominant in ESSFwk2: site series 01 Subalpine fir - Oak fern - Knight's plume (756 ha), site association 00 Subalpine fir - Valerian - Arnica (686 ha), site series 03 Subalpine fir - Oak fern - Bluebells (145 ha) and site association 00 Water sedge - Glowmoss fen (124 ha).

Site series 01 Hybrid white spruce - Devil's club is the dominant ecosystem (1,058 ha) in the SBSvk. Regen (989 ha), 04 Hybrid white spruce - Oak fern (320 ha) and site series 06 Hybrid white spruce - Horsetail (219 ha) also occur in lesser amounts.

In the SBSwk2 BGC unit, 01 Hybrid white spruce - Oak fern has the highest area at 828 ha. The other dominant ecosystems are stands affected by mountain pine beetle, now classified as Regen-MPB (587 ha), Regen (417 ha) and 03 Hybrid white spruce - Huckleberry - Highbush-cranberry (205 ha).

In the Rocky Mountains physiographic region, shallow open water covers 26 ha, or less than 1% of the PEAA, and non-vegetated, sparsely vegetated and anthropogenic units cover 228 ha, or 1% of the PEAA (see Table 3-18).

**Table 3-18 Site Series in the Rocky Mountains**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
BWBSmw1	00 AH	Mountain alder - Common horsetail	7	<1	0	0
	00 DB	Drummond's willow - Bluejoint	4	0	0	0
	00 DB - riparian	Drummond's willow - Bluejoint riparian	5	<1	0	0
	00 DS	Drummond's willow - Beaked sedge	7	<1	0	0
	00 OS	Willows - Scrub birch - Water sedge	14	<1	0	0
	00 SE	Sedge fen	3	0	0	0
	00 WF - riparian	Pacific willow - Red-osier dogwood - Horsetail riparian	<1	0	0	0
	01 AM	White spruce Trembling aspen - Step moss	73	1	6	8
	01 AM - Atcp	Trembling aspen - Creamy peavine seral association	270	3	30	11
	02 LL	Lodgepole pine - Lingonberry - Velvet-leaved blueberry	6	<1	0	0
	02 LL - Atsk	Trembling aspen - Soopolallie - Kinnikinnick seral association	23	<1	2	7
	03 SW	White spruce - Wildrye - Peavine	46	<1	3	6
	03 SW - Atsw	Trembling aspen - Soopolallie - Wildrye seral association	219	2	19	9
	04 BL	Black spruce - Lingonberry - Coltsfoot	150	2	7	4
	04 BL - Atlt	Trembling aspen - Labrador tea seral association	53	1	4	7
	05 SC - Atof	Trembling aspen - Oak fern seral association	68	1	3	4
	06 SC	White spruce - Currant - Bluebells	50	1	3	5
	07 SH	White spruce - Currant - Horsetail	52	1	1	1
	07 SH - Accp	Black cottonwood - Cow parsnip seral association	40	<1	4	10
	08 BT	Black spruce - Labrador tea - Peat-moss	61	1	1	2
10 TS	Tamarack - Sedge	24	<1	<1	1	
Regen		54	1	2	4	
Regen - riparian		1	0	0	2	
Anthropogenic		38	<1	4	10	



**Table 3-18 Site Series in the Rocky Mountains (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
BWBSwk1	00 OS	Scrub birch - Water sedge - Peat-moss	1	0	0	0
	01 SM	White spruce - Huckleberry - Step moss	4	0	0	0
	01 SM - Athc	Trembling aspen - Highbush-cranberry seral association	44	<1	<1	<1
	02 LL	Lodgepole pine - Lingonberry - Velvet-leaved blueberry	19	<1	0	0
	03 BL	Black spruce - Lingonberry - Coltsfoot	4	0	0	0
	03 BL - Atlt	Trembling aspen – Labrador tea seral association	2	0	0	0
	04 SW	White spruce - Wildrye - Peavine	6	<1	0	0
	04 SW - Atss	Trembling aspen - Soopolallie - Sarsaparilla seral association	26	<1	0	<1
	05 SC - Atof	Trembling aspen - Oak fern seral association	2	0	0	0
	06 SH	White spruce - Currant - Horsetail	7	<1	0	<1
	08 BW	Black spruce - Willow - Glow moss	3	0	0	0
	Regen		1	0	0	0
	Anthropogenic		9	<1	0	0
	ESSFwc3	00 AF	Alder - Fern avalanche tract	12	<1	0
00 SM		Sedge - Marsh marigold wet meadow	7	<1	<1	2
00 SS		Water sedge - Peat-moss poor fen	6	<1	<1	5
00 SU		Willow - Common horsetail - Water sedge	14	<1	0	<1
00 VD		Valerian - Subalpine daisy meadow	30	<1	1	2
00 VG		Valerian - Arrow-leaved groundsel avalanche tract	2	0	0	<1
01 FR		Subalpine fir - Rhododendron - Oak fern	147	1	10	7
02 FQ		Subalpine fir - Rhododendron - Queen's cup	81	1	3	4
03 FG		Subalpine fir - Globeflower - Horsetail	15	<1	2	11
Regen			109	1	4	4
Anthropogenic			13	<1	1	6

**Table 3-18 Site Series in the Rocky Mountains (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
ESSFwcp	00 FV	Subalpine fir - Valerian	1	0	0	0
ESSFwk2	00 AL	Sitka alder - Lady fern	109	1	4	4
	00 AT	Avalanche track	35	<1	<1	1
	00 FV	Subalpine fir - Valerian - Arnica	686	7	37	5
	00 OT	Black spruce - Willow - Water sedge	<1	0	0	0
	00 SG	Water sedge - Glowmoss fen	124	1	8	7
	00 VD	Valerian - Subalpine daisy meadow	2	0	0	0
	00 WC	Barclay's willow - Arrow-leaved groundsel	32	<1	<1	1
	00 WC - riparian	Barclay's willow - Arrow-leaved groundsel riparian	1	0	0	1
	00 WS	Water sedge - Peat-moss	84	1	2	2
	01 FO	Subalpine fir - Oak fern - Knight's plume	756	8	42	6
	02 FS	Subalpine fir - Oak fern - Sarsaparilla	110	1	5	5
	03 FB	Subalpine fir - Oak fern - Bluebells	145	1	14	10
	04 FD	Subalpine fir - Devil's club - Rhododendron	77	1	1	2
	05 FR	Subalpine fir - Rhododendron - Lady fern	16	<1	<1	2
	06 FH	Subalpine fir - Horsetail - Sphagnum	11	<1	<1	4
		Regen	87	1	7	8
		Anthropogenic	25	<1	1	6
SBSvk	00 AS		1	0	<1	28
	00 BB	Scrub birch - Beaked sedge - Peat-moss	3	0	0	0
	00 DR	Drummond's willow - Bluejoint	38	<1	0	0
	00 DR - riparian	Drummond's willow - Bluejoint riparian	6	<1	<1	2
	00 SP	Scheuchzeria - Shore sedge - Rusty Peat-moss	19	<1	0	0
	00 WB	Willow - Water sedge - Bluejoint	4	0	0	0
	00 WF	Water sedge fen	9	<1	0	0
	00 WF - riparian	Water sedge fen riparian	<1	0	0	0
	01 SD	Hybrid white spruce - Devil's club	1,058	11	67	6
	04 SO	Hybrid white spruce - Oak fern	320	3	19	6

**Table 3-18 Site Series in the Rocky Mountains (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
SBSvk (cont'd)	05 SS	Hybrid white spruce - Devil's club - Spiny wood fern	129	1	10	7
	06 SH	Hybrid white spruce - Horsetail	219	2	4	2
	06 SH - riparian	Hybrid white spruce - Horsetail riparian	<1	0	0	0
	07 SF	Hybrid white spruce - Devil's club - Ostrich fern	5	<1	1	13
	08 BS	Black spruce Lodgepole pine - Bog-laurel - Peat-moss	95	1	0	0
	09 LH	Lodgepole pine - Huckleberry - Cladina	7	<1	1	9
	11 AL	Alder - Lady fern	35	<1	2	5
	Regen		989	10	87	9
	Shallow open water		5	<1	<1	3
	Anthropogenic		44	<1	1	2
SBSwk2	00 BB	Black spruce - Water sedge - Peat-moss	18	<1	0	0
	00 FE	Water sedge - Beaked sedge - Golden fuzzy fen moss	20	<1	<1	1
	00 OS	Scrub birch - Water sedge - Golden fuzzy fen moss	8	<1	1	7
	00 SM	Beaked sedge - Water sedge	21	<1	0	0
	00 TF	Tamarack - Water sedge Fen moss	9	<1	<1	1
	00 WB	Drummond's willow - Bluejoint	31	<1	<1	1
	00 WW	Fuzzy-spiked wildrye - Coyote willow	2	0	<1	7
	01 SO	Hybrid white spruce - Oak fern	828	8	42	5
	02 LH	Lodgepole pine - Huckleberry - Cladina	100	1	20	20
	03 SC	Hybrid white spruce - Huckleberry - Highbush-cranberry	205	2	20	10
	04 BF	Black spruce Lodgepole pine - Feathermoss	122	1	13	11
	05 SD	Hybrid white spruce - Devil's club	135	1	7	5
	06 SH	Hybrid white spruce - Horsetail	64	1	2	3
	06 SH - riparian	Hybrid white spruce - Horsetail riparian	11	<1	1	10
	Regen		417	4	27	7

**Table 3-18 Site Series in the Rocky Mountains (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
SBSwk2 (cont'd)	Regen - riparian		11	<1	0	0
	Regen - MPB		587	6	43	7
	Shallow open water		21	<1	<1	1
	Anthropogenic		97	1	5	5
<b>Subtotal Native Vegetation</b>			<b>7,314</b>	<b>74</b>	<b>422</b>	<b>6</b>
<b>Subtotal Regen</b>			<b>1,658</b>	<b>17</b>	<b>128</b>	<b>8</b>
<b>Subtotal Regen - Riparian</b>			<b>13</b>	<b>&lt;1</b>	<b>0</b>	<b>&lt;1</b>
<b>Subtotal Regen - MPB</b>			<b>587</b>	<b>6</b>	<b>43</b>	<b>7</b>
<b>Subtotal Shallow Open Water</b>			<b>26</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>1</b>
<b>Subtotal Anthropogenic</b>			<b>228</b>	<b>2</b>	<b>12</b>	<b>5</b>
<b>Total</b>			<b>9,826</b>	<b>100</b>	<b>605</b>	<b>6</b>

NOTES:

<sup>a</sup> Data from 2008 terrestrial ecosystem mapping

<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100

<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100

### 3.4.3 Old-Growth Forest

There are 709 ha of old growth forests in the Rocky Mountains physiographic region. Old growth forests are found in four of the BGC units: BWBSmw1, ESSFwk2, SBSvk and SBSwk2. However, old growth forests are dominant in ESSFwk2. In the Rocky Mountains physiographic region, old growth forests represent 7% in relation to the non-old growth forests (see Table 3-19).

**Table 3-19 Old-Growth Forests in the Rocky Mountains**

BGC Unit	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
	ha	%	ha	%
BWBSmw1	65	1	1	1
ESSFwk2	428	4	32	8
SBSvk	67	1	1	2
SBSwk2	150	2	9	6
<b>Subtotal Old Growth Forests</b>	<b>709</b>	<b>7</b>	<b>43</b>	<b>6</b>
<b>Subtotal Non-old Growth Forests</b>	<b>9,116</b>	<b>93</b>	<b>561</b>	<b>6</b>
<b>Total</b>	<b>9,826</b>	<b>100</b>	<b>605</b>	<b>6</b>

NOTES:

<sup>a</sup> Data from 2008 terrestrial ecosystem mapping

<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100

<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100

### 3.4.4 Rare Plants and Rare Ecological Communities

Fifteen rare species were found within the Rocky Mountains physiographic region during the 2006 and 2008 field surveys (see Table 3-20). All the species listed occur in the PEAA. None of the species was listed by COSEWIC or SARA. A detailed rare plant and rare ecological community survey, effects assessment and site-specific mitigation will be completed before construction.

**Table 3-20 Rare Plants in the PEAA in the Rocky Mountains**

Common Name	Scientific Name	Provincial/ Global Rank		CDC Status	BC MoE Status
Nuttall's orache <sup>a</sup>	<i>Atriplex nuttallii</i>	S1	G5	Tracked	Red
Dainty moonwort <sup>a</sup>	<i>Botrychium crenulatum</i>	S2S3	G3	Tracked	Blue
Least moonwort <sup>b</sup>	<i>Botrychium simplex</i>	S2S3	G5	Tracked	Blue
Yellow marsh-marigold <sup>b</sup>	<i>Caltha palustris</i> var. <i>palustris</i>	S2S3	G5T5	Tracked	Blue
Iowa golden-saxifrage <sup>a</sup>	<i>Chrysosplenium iowense</i>	S2S3	G3?	Tracked	Blue
Small-fruited willowherb <sup>a</sup>	<i>Epilobium leptocarpum</i>	S2S3	G5	Tracked	Blue
Northern bog bedstraw	<i>Galium labradoricum</i>	S2S3	G5	Tracked	Blue
Slender-spiked mannagrass	<i>Glyceria leptostachya</i>	S2S3	G3	Tracked	Blue
Whitish rush <sup>a</sup>	<i>Juncus albescens</i>	S2S3	G5	Tracked	Blue
Bog rush <sup>a</sup>	<i>Juncus stygius</i>	S2S3	G5	Tracked	Blue
Marsh muhly <sup>a</sup>	<i>Muhlenbergia glomerata</i>	S3	G5	Tracked	Blue
Northern Jacob's-ladder <sup>a</sup>	<i>Polemonium boreale</i>	S2S3	G5	Tracked	Blue
Birdfoot buttercup <sup>b</sup>	<i>Ranunculus pedatifidus</i> ssp. <i>affinis</i>	S2S3	G5T5	Tracked	Blue
Meadow willow <sup>a</sup>	<i>Salix petiolaris</i>	S2S3	G5	Tracked	Blue
Rock selaginella <sup>a</sup>	<i>Selaginella rupestris</i>	S1	G5	Tracked	Red

NOTES:

<sup>a</sup> Data from 2006 field surveys

<sup>b</sup> Data from 2008 field surveys

Rare ecological communities were mapped within four of the seven BGC units occurring in the Rocky Mountains physiographic region (see Table 3-21). Within the PEAA, the three dominant rare ecological communities are: SBSwk1 site series 02 (170 ha), SBSvk site series 08 (95 ha) and BWBSmw1 site series 06 (64 ha). In total, the rare ecological communities cover 408 ha or 4% of the PEAA. The BC MoE status of the ecological communities is also listed in Table 3-21.

**Table 3-21 Rare Ecological Communities in the Rocky Mountains**

Biogeoclimatic Unit	Site Series No. and Map Code	Rare Ecological Community	BC MoE Status	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
				ha	%	ha	%
BWBSmw1	06 SC	White spruce/ Red swamp currant/ Tal bluebells	Blue	64	1	3	5
BWBSwk1	01 SM	White spruce/ Black huckleberry/ Step moss	Blue	48	<1	<1	<1
SBSvk	00 SP	Scheuchzeria/ Peat-mosses	Blue	19	<1	0	0
	08 BS	Black spruce - Lodgepole pine/ Kalmias/ Peat-mosses	Blue	95	1	0	0
	09 LH	Lodgepole pine/ Black huckleberry/ Reindeer lichens	Blue	11	0	1	3
SBSwk1	02 LH	Lodgepole pine/ Black huckleberry/ Reindeer lichens	Blue	170	1	24	2
<b>Subtotal Rare Plant Ecological Communities</b>				<b>408</b>	<b>4</b>	<b>28</b>	<b>7</b>
<b>Subtotal Non-rare Plant Ecological Communities</b>				<b>9,418</b>	<b>96</b>	<b>576</b>	<b>6</b>
<b>Total</b>				<b>9,826</b>	<b>100</b>	<b>605</b>	<b>6</b>
NOTES:							
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping							
<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100							
<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100							

### 3.4.5 Wetlands

Wetlands cover 1,142 ha (12%) of the PEAA. Swamps (590 ha) are the dominant wetlands in the PEAA (see Table 3-22). Shallow open water occurs in minor amounts (26 ha).

**Table 3-22 Wetlands in the PEAA in the Rocky Mountains**

Wetland Classes	PEAA <sup>a,b</sup>	
	ha	%
Bog	230	2
Fen	275	3
Marsh	21	<1
Swamp	590	6

**Table 3-22 Wetlands in the PEAA in the Rocky Mountains (cont'd)**

Wetland Classes	PEAA <sup>a,b</sup>	
	ha	%
Shallow Open Water	26	<1
<b>Subtotal Wetlands</b>	<b>1,142</b>	<b>12</b>
<b>Subtotal Non-wetland</b>	<b>8,684</b>	<b>88</b>
<b>Total</b>	<b>9,826</b>	<b>100</b>

NOTES:  
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping  
<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA wetland class/total)\*100

### 3.4.6 Timber Resources

The merchantable timber volume in the portion of the PDA within the Rocky Mountains physiographic region was calculated at 133,038 m<sup>3</sup>.

### 3.4.7 Non-native Weed Species

Twenty-four noxious weeds were identified as having the potential to occur on or near the PEAA in British Columbia and all have the potential to invade disturbed areas. One noxious weed (quack grass) was found during field surveys in 2006 and 2008 within the Rocky Mountains physiographic region (see Table 3-23).

**Table 3-23 Non-native Weed Species in the Rocky Mountains Recorded During Field Surveys**

Common Name	Scientific Name	Status <sup>a</sup>
quack grass	<i>Elytrigia repens/Elymus repens</i>	Noxious within BC Districts of Peace River

NOTE:  
<sup>a</sup> Data source is BC *Weed Control Act*.

## 3.5 Vegetation of the Interior Plateau in the PEAA

### 3.5.1 Sampling Effort

A total of 432 plots, including rare plant and vegetation survey plots, were sampled in the Interior Plateau between 2006, 2008 and 2009 (see Table 3-24).

**Table 3-24 Number of Sampling Plots in the Interior Plateau**

Plot Type	Survey Year	Interior Plateau
Rare Plant Survey	2006	147
	2008	20
	2009	20
Vegetation Survey	2006	102
	2008	143
<b>Total</b>		<b>432</b>

### 3.5.2 Ecosystem Unit - Site Series

In the Interior Plateau physiographic region, the PEAA includes nine BGC units:

- Moist Cold Engelmann Spruce - Subalpine fir Subzone (ESSFmc)
- Moist Cool Engelmann Spruce - Subalpine fir Subzone (ESSFmk)
- Nechako Moist Very Cold Engelmann Spruce - Subalpine fir Variant (ESSFmv1)
- Misinchinka Wet Cool Engelmann Spruce - Subalpine Fir Variant (ESSFwk2)
- Dry Cool Sub-Boreal Spruce Subzone (SBSdk)
- Stuart Dry Warm Sub-Boreal Spruce Variant (SBSdw3)
- Babine Moist Cold Sub-Boreal Spruce Variant (SBSmc2)
- Mossvale Moist Cool Sub-Boreal Spruce Variant (SBSmk1)
- Willow Wet Cool Sub-Boreal Spruce Variant (SBSwk1)

The dominant BGC units occur in the Sub-Boreal Spruce as follows: SBSmc2 (12,533 ha), SBSmk1 (7,580 ha) and SBSwk1 (5,102 ha). See Table 3-25 for the existing area of each site series (including shallow open water and anthropogenic categories) within the PEAA.

In ESSFmc, site series 04 (Subalpine fir - Huckleberry - Heron’s-bill) covers 244 ha, site series 06 (Subalpine fir - Oak fern - Heron’s-bill) covers 586 ha, Regen covers 671 ha and the dominant site series 01 (Subalpine fir - Huckleberry - Leafy liverwort) covers 1,767 ha.

The ESSFmk only covers 34 ha and is represented by three site series. In ESSFmv1, two site series, 01 Subalpine fir - Rhododendron - Feathermoss (314 ha) and 04 Subalpine fir - Huckleberry - Gooseberry (125 ha), as well as Regen (249 ha) and Regen - MPB (227 ha) are dominant.

In ESSFwk2, site series 01 Subalpine fir - Oak fern - Knight’s plume (104 ha) is dominant with lesser amounts of Regen (74 ha) and site association 00 Sitka alder - Lady fern (17 ha).

Four dominant ecosystems occur in the SBSdk: two site series, as well as anthropogenic (251 ha), Regen - MPB (1,429 ha), and Regen (417 ha). The site series are 01 Hybrid white spruce - Spirea - Purple peavine (1,018 ha) and 06 Hybrid white spruce - Twinberry - Coltsfoot (404 ha).

Two site series, 01 Hybrid white spruce Douglas-fir - Pinegrass (946 ha) and 06 Hybrid white spruce - Pink spirea - Prickly rose (482 ha), as well as anthropogenic (487 ha) and Regen (607 ha) are dominant in SBSdw3.



In the SBSmc2 BGC unit, site series 01 Hybrid white spruce - Huckleberry has the highest area value (4,624 ha). The other dominant ecosystems are: Regen (2,169 ha) followed by Regen - MPB (2,034 ha) and site series 06 Hybrid white spruce - Oak fern (566 ha).

Regen - MPB (2,321 ha) and site series 01 Hybrid white spruce - Black huckleberry - Highbush-cranberry (2,043 ha) are the dominant ecosystems in the SBSmk1. Regen (910 ha) and site series 07 Hybrid white spruce - Oak fern (707 ha) also occur in the SBSmk1.

In the SBSwk1 BGC unit, the prevalent site series is 01 Hybrid white spruce - Oak fern (2,050 ha). Regen (1,384 ha) is also dominant, along with site series 08 Hybrid white spruce - Devil's club (455 ha) and site series 05 Hybrid white spruce - Huckleberry - Highbush-cranberry (333 ha).

In the Interior Plateau physiographic region, shallow open water covers 84 ha, or less than 1% of the PEAA, and non-vegetated, sparsely vegetated and anthropogenic units cover 1,109 ha or 3% of the PEAA (see Table 3-25).

**Table 3-25 Site Series in the Interior Plateau**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
ESSFmc	00 BH	Black spruce - Common horsetail - Peat-moss	20	<1	<1	1
	00 CA	Cow parsnip - Large-leaved avens	15	0	<1	1
	00 DB - riparian	Drummond's willow - Bluejoint riparian	4	0	<1	4
	00 MH	Mountain alder - Common horsetail	5	0	<1	5
	00 NS	Narrow-leaved cotton-grass - Shore sedge	30	<1	1	2
	00 SB	Shore sedge - Buckbean - Hook-moss	7	0	0	0
	00 SE	Water sedge - Beaked sedge	51	<1	1	2
	00 SL	Sitka alder - Lady fern avalanche track	<1	0	0	0
	00 WP	Water sedge - Peat-moss	17	0	<1	3
	00 WS	Scrub birch - Water sedge	92	<1	2	2
	01 FB	Subalpine fir - Huckleberry - Leafy liverwort	1,767	5	111	6
	02 LC	Subalpine fir Lodgepole pine - Juniper - Cladonia	30	<1	<1	1
	03 FC	Subalpine fir - Huckleberry - Crowberry	128	<1	4	3
	04 HH	Subalpine fir - Huckleberry - Heron's-bill	244	1	11	5
	06 FO	Subalpine fir - Oak fern - Heron's-bill	586	2	40	7



**Table 3-25 Site Series in the Interior Plateau (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
ESSFmc (cont'd)	07 FD	Subalpine fir - Devil's club - Lady fern	49	<1	1	3
	08 FV	Subalpine fir - Valerian - Sickie moss	20	<1	<1	2
	09 HG	Subalpine fir - Horsetail - Glow moss	77	<1	4	6
	10 FH	Subalpine fir - Horsetail - Leafy moss	181	<1	10	5
	10 FH - riparian	Subalpine fir - Horsetail - Leafy moss riparian	26	<1	1	3
	Regen		671	2	36	5
	Regen - riparian		1	0	0	0
	Regen - MPB		19	0	0	0
	Shallow open water		8	0	0	0
	Anthropogenic		35	<1	2	6
ESSFmk	01 MT	Subalpine fir Mountain hemlock - Twistedstalk	17	0	2	11
	02 WC	Subalpine fir Whitebark pine - Cladonia	5	0	<1	5
	03 MC	Subalpine fir Mountain hemlock - Cladonia	12	0	<1	4
ESSFmv1	00 WS	Willow - Sedge fen	12	0	<1	4
	01 FR	Subalpine fir - Rhododendron - Feathermoss	314	1	17	5
	02 LC	Lodgepole pine - Huckleberry - Cladonia	2	0	<1	5
	03 FF	Subalpine fir - Huckleberry - Feathermoss	21	<1	1	6
	04 FG	Subalpine fir - Huckleberry - Gooseberry	125	<1	7	6
	05 FH	Subalpine fir - Horsetail - Glow moss	18	0	1	6
	Regen		249	1	19	7
	Regen - MPB		227	1	11	5
ESSFwk2	00 AL	Sitka alder - Lady fern	17	0	<1	3
	00 BB	Scrub birch - Sedge - Peat-moss	<1	0	0	0
	00 WS	Water sedge - Peat-moss	2	0	0	0
	01 FO	Subalpine fir - Oak fern - Knight's plume	104	<1	8	8

**Table 3-25 Site Series in the Interior Plateau (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
ESSFwk2 (cont'd)	03 FB	Subalpine fir - Oak fern - Bluebells	13	0	1	6
	04 FD	Subalpine fir - Devil's club - Rhododendron	12	0	2	13
	Regen		74	<1	2	3
SBSdk	00 BK	Beaked sedge - Water sedge	27	<1	1	3
	00 BP	Scrub birch - Water sedge	16	0	<1	2
	00 CA	Cow parsnip - Large leaved avens meadow	4	0	<1	4
	00 CA - riparian	Cow parsnip - Large leaved avens meadow riparian	7	0	1	7
	00 DB	Drummond's willow - Bluejoint	6	0	<1	6
	00 DB - riparian	Drummond's willow - Bluejoint riparian	23	<1	1	4
	00 FS	Sedge Fen	24	<1	<1	2
	00 TB	Bebb's willow - Black twinberry - bluejoint	41	<1	3	8
	00 WF	Willow - Sitka sedge	4	0	<1	3
	00 WS	Drummonds willow - Sitka sedge	36	<1	2	6
	00 WS - riparian	Drummonds willow - Sitka sedge riparian	4	0	<1	12
	01 SP	Hybrid white spruce - Spirea - Purple peavine	1,018	3	90	11
	02 LJ	Lodgepole pine - Juniper - Ricegrass	3	0	<1	10
	03 LC	Lodgepole pine - Feathermoss - Cladina	78	<1	4	5
	04 DS	Douglas-fir - Soopolallie - Feathermoss	2	0	0	0
	05 SF	Hybrid white spruce - Spirea - Feathermoss	170	<1	15	9
	06 ST	Hybrid white spruce - Twinberry - Coltsfoot	404	1	29	11
	07 SH	Hybrid white spruce - Horsetail	166	<1	10	6
	07 SH - riparian	Hybrid white spruce - Horsetail riparian	8	0	1	9
	08 CD - riparian	Black cottonwood - Dogwood - Prickly rose riparain	5	0	0	0
09 BS	Black spruce - Creeping-snowberry - Peat-moss	18	0	7	37	
10 SS	Black spruce - Soft-leaved sedge - Peat-moss	11	0	<1	4	



**Table 3-25 Site Series in the Interior Plateau (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
SBSdk (cont'd)	81 SW	Saskatoon - Slender wheatgrass	1	0	0	0
	82 BW	Bluegrass - Slender wheatgrass	1	0	0	0
	Regen		417	1	67	16
	Regen - riparian		17	0	8	44
	Regen - MPB		1,429	4	98	7
	Shallow open water		8	0	0	0
	Anthropogenic		251	1	14	6
SBSdw3	00 BK	Beaked sedge - Water sedge	12	0	<1	2
	00 BP	Scrub birch - Water sedge	21	<1	1	5
	00 CS	Cottonwood - Spruce - Red-osier dogwood	7	0	<1	2
	00 DB - riparian	Drummond's willow - Bluejoint riparian	12	0	1	5
	00 FS	Water sedge - Beaked sedge	26	<1	2	8
	00 SF	Willow - Sedge - Golden moss fen	13	0	1	5
	00 SW	Saskatoon - Slender wheatgrass	2	0	0	0
	00 TB	Bebb's willow - Bluejoint	19	0	<1	2
	01 SP	Hybrid white spruce Douglas-fir - Pinegrass	946	2	58	6
	02 DC	Douglas-fir Lodgepole pine - Cladonia	31	<1	0	0
	03 LC	Lodgepole pine - Feathermoss - Cladina	21	<1	1	6
	04 SR	Hybrid white spruce Douglas-fir - Ricegrass	82	<1	4	5
	05 BF	Lodgepole pine Black spruce - Feathermoss	151	<1	7	4
	06 SS	Hybrid white spruce - Pink spirea - Prickly rose	482	1	27	6
	07 ST	Hybrid white spruce - Twinberry	165	<1	8	5
	08 SO	Hybrid white spruce - Oak fern	21	<1	1	5
	09 SH	Hybrid white spruce - Horsetail - Glow moss	72	<1	3	5
	10 BS	Black spruce - Soft-leaved sedge - Peat-moss	45	<1	1	3
	Regen		607	2	38	6
	Regen - riparian		4	0	0	0

**Table 3-25 Site Series in the Interior Plateau (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
SBSdw3 (cont'd)	Regen - MPB		1	0	0	0
	Shallow open water		11	0	<1	1
	Anthropogenic		487	1	48	10
SBSmc2	00 BB	Scrub birch - Bog willow - Water sedge	40	<1	1	2
	00 BK	Beaked sedge - Water sedge	7	0	<1	1
	00 BW	Bluegrass - Slender wheatgrass	1	0	0	0
	00 CA	Cow parsnip - Large leaved avens meadow	6	0	0	<1
	00 CS	Cottonwood - Spruce - Red-osier dogwood	65	<1	<1	<1
	00 DB	Drummond's willow - Bluejoint	41	<1	1	1
	00 DB - riparian	Drummond's willow - Bluejoint riparian	<1	0	0	0
	00 FS	Sedge fen	169	<1	4	2
	00 LS	Lodgepole pine - Scrub birch - Water sedge - Peat-moss	87	<1	2	2
	00 WF	Willow - Sedge	3	0	<1	10
	00 WS	Drummond's willow - Sitka sedge	29	<1	0	0
	00 WT	Willow carr	2	0	0	<1
	01 SB	Hybrid white spruce - Huckleberry	4,624	12	292	6
	02 PH	Lodgepole pine - Huckleberry - Cladonia	524	1	23	4
	03 BM	Black spruce Lodgepole pine - Feathermoss	215	1	8	4
	04 HB	Hybrid white spruce - Huckleberry - Dwarf blueberry	28	<1	<1	1
	05 TC	Hybrid white spruce - Twinberry - Coltsfoot	418	1	21	5
	06 SO	Hybrid white spruce - Oak fern	566	1	30	5
	07 BF	Hybrid white spruce - Scrub birch - Feathermoss	223	1	12	5
	08 ST	Hybrid white spruce - Twinberry - Oak fern	180	<1	7	4
09 SD	Hybrid white spruce - Devil's club	374	1	17	24	
09 SD - riparian	Hybrid white spruce - Devil's club riparian	6	0	<1	5	
10 SH	Hybrid white spruce - Horsetail	336	1	16	5	

**Table 3-25 Site Series in the Interior Plateau (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
SBSmc2 (cont'd)	10 SH - riparian	Hybrid white spruce - Horsetail riparian	25	<1	1	4
	11 HG	Hybrid white spruce - Horsetail - Glow moss	53	<1	2	4
	12 SS	Black spruce Hybrid white spruce - Scrub birch - Sedge	156	<1	6	4
	81 SW	Saskatoon - Slender wheatgrass	5	0	0	0
	Regen		2,169	6	199	9
	Regen - MPB		2,034	5	110	5
	Shallow open water		27	<1	<1	<1
	Anthropogenic		119	<1	2	1
SBSmk1	00 AS	Mountain alder - Skunk cabbage - Lady fern	4	0	<1	7
	00 BS	Scrub birch - Sedge poor fen	152	<1	5	3
	00 MA	Beaked sedge - Water sedge	2	0	0	0
	00 WB	Willow - Bluejoint floodplain	70	<1	3	4
	00 WB - Riparian	Willow - Bluejoint floodplain riparian	17	0	1	3
	00 WH	Willow - Hardhack	104	<1	4	3
	00 WS	Water sedge fen	78	<1	<1	1
	01 SB	Hybrid white spruce - Black huckleberry - Highbush-cranberry	2,043	5	160	8
	02 LM	Lodgepole pine - Cladina - Step moss	9	0	0	0
	03 LC	Lodgepole pine - Feathermoss - Cladina	14	0	2	16
	04 DK	Hybrid white spruce Douglas-fir - Knight's plume	37	<1	1	3
	05 ST	Hybrid white spruce Douglas-fir-Toad-flax	218	1	13	6
	06 BH	Black spruce - Huckleberry - Spirea	108	<1	6	6
	07 SO	Hybrid white spruce - Oak fern	707	2	42	6
	08 SD	Hybrid white spruce - Devil's club	107	<1	9	8
	09 SH	Hybrid white spruce - Horsetail	337	1	19	6
	10 BB	Black spruce - Scrub birch - Sedge	150	<1	6	4
	Regen		910	2	76	8
Regen - MPB		2,321	6	148	6	

**Table 3-25 Site Series in the Interior Plateau (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
SBSmk1 (cont'd)	Shallow open water		29	<1	<1	1
	Anthropogenic		164	<1	4	2
SBSwk1	00 AS	Mountain alder - Skunk cabbage	8	0	0	0
	00 BS	Scrub birch - Sedge - Peat-moss - poor fen	50	<1	1	2
	00 WD	Sitka willow - Red-osier dogwood	90	<1	1	1
	00 WD - Riparian	Sitka willow - Red-osier dogwood riparian	8	0	0	0
	00 WF	Water sedge fen	49	<1	3	7
	00 WS	Sitka willow - Beaked Sedge	16	0	<1	3
	01 SO	Hybrid white spruce - Oak fern	2,050	5	125	6
	02 LH	Lodgepole pine - Huckleberry - Cladina	6	0	0	0
	03 LV	Lodgepole pine - Huckleberry - Velvet-leaved blueberry	29	<1	2	8
	04 DK	Hybrid white spruce Douglas-fir - Knight's plume	74	<1	2	3
	05 SC	Hybrid white spruce - Huckleberry - Highbush-cranberry	333	1	17	5
	06 SS	Hybrid white spruce - Pink spirea - Oak fern	29	<1	<1	1
	07 ST	Hybrid white spruce - Twinberry - Oak fern	113	<1	4	3
	08 SD	Hybrid white spruce - Devil's club	455	1	22	5
	09 SH	Hybrid white spruce - Horsetail	206	1	5	3
	10 SL	Hybrid white spruce - Devil's club - Lady fern	18	0	1	7
	11 BB	Black spruce Hybrid white spruce - Scrub birch - Sedge	90	<1	7	8
	12 BF	Black spruce Lodgepole pine - Feathermoss	32	<1	3	8
	Regen		1,384	4	135	10
	Regen - MPB		8	0	1	14
Shallow open water		1	0	0	0	



**Table 3-25 Site Series in the Interior Plateau (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
SBSwk1 (cont'd)	Anthropogenic		53	<1	1	2
<b>Subtotal Native Vegetation</b>			<b>24,219</b>	<b>64</b>	<b>1,419</b>	<b>6</b>
<b>Subtotal Regen</b>			<b>6,480</b>	<b>17</b>	<b>571</b>	<b>9</b>
<b>Subtotal Regen - Riparian</b>			<b>22</b>	<b>0</b>	<b>8</b>	<b>34</b>
<b>Subtotal Regen - MPB</b>			<b>6,039</b>	<b>16</b>	<b>369</b>	<b>6</b>
<b>Subtotal Shallow Open Water</b>			<b>84</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>&lt;1</b>
<b>Subtotal Anthropogenic</b>			<b>1,109</b>	<b>3</b>	<b>70</b>	<b>6</b>
<b>Total</b>			<b>37,954</b>	<b>100</b>	<b>2,438</b>	<b>6</b>

NOTES:  
<sup>a</sup> Data from 2008 and 2009 terrestrial ecosystem mapping  
<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100  
<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100

**3.5.3 Old-Growth Forest**

There are 2,094 ha of old growth forests in the Interior Plateau physiographic region. Old growth forests are found in seven of the BGC units, ESSFmc, ESSFmv1, SBSdk, SBSdw3, SBSmc2, SBSmk1 and SBSwk1. These forests are dominant in ESSFmc and SBSmc2. Old growth forests cover 6% of the PEAA in the Interior Plateau physiographic region (see Table 3-26).

**Table 3-26 Old Growth Forests in the Interior Plateau**

Biogeoclimatic Unit	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
	ha	%	ha	%
ESSFmc	661	2	42	6
ESSFmv1	57	<1	3	5
SBSdk	207	1	10	4
SBSdw3	52	<1	2	3
SBSmc2	839	2	42	5
SBSmk1	43	<1	2	4
SBSwk1	212	1	12	6
<b>Subtotal Old Growth Forests</b>	<b>2,094</b>	<b>6</b>	<b>112</b>	<b>5</b>
<b>Subtotal Non-old Growth Forests</b>	<b>35,859</b>	<b>94</b>	<b>2,362</b>	<b>6</b>
<b>Total</b>	<b>37,954</b>	<b>100</b>	<b>2,438</b>	<b>6</b>

NOTES:  
<sup>a</sup> Data from 2008 and 2009 terrestrial ecosystem mapping  
<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100  
<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100



### 3.5.4 Rare Plants and Rare Ecological Communities

All thirteen rare plant species listed were located within the PEAA (see Table 3-27). None of the species were listed by COSEWIC or SARA. A detailed rare plant and rare ecological community survey, effects assessment and site-specific mitigation will be completed before construction.

**Table 3-27 Rare Plants in the PEAA in the Interior Plateau**

Common Name	Scientific Name	Provincial/ Global Rank		CDC Status	BC MoE Status
American sweet-flag <sup>a</sup>	<i>Acorus americanus</i>	S2S3	G5	Tracked	Blue
Canada anemone <sup>b</sup>	<i>Anemone canadensis</i>	S2S3	G5	Tracked	Blue
Holboell's rockcress <sup>b</sup>	<i>Arabis holboellii</i> var. <i>pinetorum</i>	S2S3	G5T5?	Tracked	Blue
Long-bracted frog orchid <sup>a</sup>	<i>Coeloglossum viride</i> var. <i>virescens</i>	S3S4	G5T5	Watch List	Yellow
Arctic rush <sup>b</sup>	<i>Juncus arcticus</i> ssp. <i>alaskanus</i>	S2S3	G5T4T5	Tracked	Blue
Oniongrass <sup>b</sup>	<i>Melica bulbosa</i> var. <i>bulbosa</i>	S2	G5TNRQ	Tracked	Red
Northern Jacob's-ladder <sup>a</sup>	<i>Polemonium boreale</i>	S2S3	G5	Tracked	Blue
Birdfoot buttercup <sup>c</sup>	<i>Ranunculus pedatifidus</i> ssp. <i>affinis</i>	S2S3	G5T5	Tracked	Blue
Snow bramble <sup>b</sup>	<i>Rubus nivalis</i>	S2	G4?	Tracked	Blue
Alpine sorrel <sup>a</sup>	<i>Rumex paucifolius</i>	S2S3	G5	Tracked	Blue
Rivergrass <sup>b</sup>	<i>Scolochloa festucacea</i>	S2	G5	Tracked	Red
Thick-leaved thelypody <sup>a</sup>	<i>Thelypodium laciniatum</i> var. <i>laciniatum</i>	S2S3	G5T5	Tracked	Blue
Alpine cliff fern <sup>a</sup>	<i>Woodsia alpina</i>	S2S3	G4	Tracked	Blue

NOTES:  
<sup>a</sup> Data from 2008 field surveys  
<sup>b</sup> Data from 2006 field surveys  
<sup>c</sup> Data from 2009 field surveys

Rare ecological communities were mapped within six of the nine BGC units that occur in the Interior Plateau physiographic region (see Table 3-28). Two rare ecological communities are dominant within the PEAA: SBSdw3 site series 06 (830 ha) and site series 05 (151 ha). In total, rare ecological communities cover 1,479 ha or 4% of the PEAA.

**Table 3-28 Rare Ecological Communities in the PEAA in the Interior Plateau**

Biogeoclimatic Unit	Site Series No. and Map Code	Rare Ecological Community	BC MoE Status	PEAA <sup>a,b</sup>	
				ha	%
ESSFmc	00 NS	Narrow-leaved cotton-grass - Shore sedge	Blue	30	<1
ESSFmk	02 WC	Whitebark pine/Clad lichens - Curly heron's-bill moss	Blue	5	0

**Table 3-28 Rare Ecological Communities in the PEAA in the Interior Plateau (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Rare Ecological Community	BC MoE Status	PEAA <sup>a,b</sup>	
				ha	%
	03 MC	Whitebark pine/Clad lichens - Curly heron's-bill moss	Blue	12	0
SBSdk	00 DB	Drummond's willow/Bluejoint reedgrass	Blue	23	<1
	00 TB	Bebb's willow/Bluejoint reedgrass	Blue	41	<1
	02 LJ	Lodgepole pine/Common juniper/ Rough-leaved ricegrass	Blue	12	0
	08 CD	(Balsam poplar, Black cottonwood) - Spruces/Red-osier dogwood	Red	22	<1
	09 BS	Black spruce/Creeping-snowberry/ Peat-mosses	Blue	18	0
	81 SW	Saskatoon/Slender wheatgrass	Red	1	0
	82 BW	Sandberg's bluegrass - Slender wheatgrass	Red	1	0
SBSdw3	00 DB	Drummond's willow/Bluejoint reedgrass	Blue	12	0
	02 DC	Douglas-fir - Lodgepole pine/Clad lichens	Blue	31	<1
	05 BF	Lodgepole pine - Black spruce/ Red-stemmed feathermoss	Blue	151	<1
	06 SS	Hybrid white spruce/Hardhack - Prickly rose	Blue	830	2
SBSmc2	00 BW	Sandberg's bluegrass - Slender wheatgrass	Red	1	0
SBSmk1	04 DK	Douglas-fir - Hybrid white spruce/ Knight's plume	Blue	53	<1
	00 WS	Sitka willow/Sitka sedge	Blue	39	<1
	02 LH	Lodgepole pine/Black huckleberry/ Reindeer lichens	Blue	13	0
	03 LV	Lodgepole pine/Black huckleberry - Velvet-leaved blueberry	Blue	48	<1
	04 DK	Douglas-fir - Hybrid white spruce/ Knight's plume	Blue	97	<1
	06 SS	Hybrid white spruce/Hardhack/ Oak fern	Blue	39	<1
<b>Subtotal Rare Ecological Community</b>				<b>1,479</b>	<b>4</b>
<b>Subtotal Non-rare Ecological Community</b>				<b>36,514</b>	<b>96</b>
<b>Total</b>				<b>37,954</b>	<b>100</b>
NOTES:					
<sup>a</sup> Data from 2008 and 2009 terrestrial ecosystem mapping					
<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA site series/total) x 100					

### 3.5.5 Wetlands

Wetlands cover 3,507 ha in the PEAA. Swamps (1,988 ha) are the dominant wetlands. Shallow open water (84 ha) occurs in small amounts (see Table 3-29).

**Table 3-29 Wetlands in the Interior Plateau**

Wetland Class	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
	ha	%	ha	%
Bog	490	1	27	6
Fen	897	2	24	3
Marsh	48	<1	1	2
Swamp	1,988	5	92	5
Shallow Open Water	84	<1	<1	<1
<b>Subtotal Wetlands</b>	<b>3,507</b>	<b>9</b>	<b>145</b>	<b>4</b>
<b>Subtotal Non-wetlands</b>	<b>34,446</b>	<b>91</b>	<b>2,293</b>	<b>7</b>
<b>Total</b>	<b>37,954</b>	<b>100</b>	<b>2,438</b>	<b>6</b>

NOTES:

<sup>a</sup> Data from 2008 and 2009 terrestrial ecosystem mapping

<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA wetland class/total) x 100

<sup>c</sup> PDA area percentage is calculated as follows: (PDA wetland class/PEAA wetland class) x 100

### 3.5.6 Timber Resources

The merchantable timber volume in the portion of the PDA within the Interior Plateau physiographic region is calculated at 664,990 m<sup>3</sup>.

### 3.5.7 Non-native Weed Species

Twenty-four noxious weeds were identified as having the potential to occur on or near the PEAA in British Columbia, all of which have the potential to invade disturbed areas. In the Interior Plateau physiographic region, three noxious weeds (Canada thistle, orange-red king devil and oxeye daisy) were observed during field surveys in 2006 and 2008 (see Table 3-30).

**Table 3-30 Non-native Weed Species in the Interior Plateau Recorded during Field Surveys**

Common Name	Scientific Name	Status <sup>a</sup>
Canada thistle	<i>Cirsium arvense</i>	Noxious in the province of BC
Orange-red king devil	<i>Hieracium aurantiacum</i>	Noxious within BC Districts of Bulkley-Nechako, Cariboo, Central Kootenay, Columbia-Shuswap, East Kootenay, Thompson-Nicola
Oxeye daisy	<i>Leucanthemum vulgare</i>	Noxious within BC Districts of Cariboo, North Okanagan, Peace River
NOTE: <sup>a</sup> Data source is BC <i>Weed Control Act</i> .		

### 3.6 Vegetation of the Coast Mountains in the PEAA

#### 3.6.1 Sampling Effort

A total of 163 plots, including rare plant and vegetation survey plots, were sampled in the Coast Mountains between 2006, 2008 and 2009 (see Table 3-31).

**Table 3-31 Number of Sampling Plots in the Coast Mountains**

Plot Type	Survey Year	Coast Mountains
Rare Plant Survey	2006	67
	2008	10
	2009	4
Vegetation Survey	2006	17
	2008	41
	2009	24
<b>Total</b>		<b>163</b>

#### 3.6.2 Ecosystem Unit - Site Series

In the Coast Mountains, the PEAA includes six BGC units:

- Submontane Very Wet Maritime Coastal Western Hemlock Variant (CWHvm1)
- Montane Very Wet Maritime Coastal Western Hemlock Variant (CWHvm2)
- Submontane Wet Submaritime Coastal Western Hemlock Variant (CWHws1)
- Montane Wet Submaritime Coastal Western Hemlock Variant (CWHws2)
- ESSFmk and Leeward Moist Maritime Mountain Hemlock (MHmm2)

The CWHws1 and CWHvm1 BGC units are dominant with 4,973 ha and 3,012 ha, respectively. See Table 3-32 for the existing area of each site series (including shallow open water and anthropogenic categories) within the PEAA.

In the CWHvm1, site series 01 (Western hemlock Amabilis fir - Blueberry) is the dominant site series, occupying 917 ha. The other prevalent site series is 05 Amabilis fir Western redcedar - Foamflower (310 ha). Regen (529 ha) and anthropogenic units (268 ha) are also dominant ecosystems.

Two site series with areal values over 10 ha occur in the CWHvm2: site series 01 Western hemlock Amabilis fir - Blueberry (26 ha) and site series 03 Western hemlock Western redcedar - Salal (13 ha).

The dominant ecosystems in the CWHws1 are 01 Western hemlock Amabilis fir - Bramble (1,813 ha) and regenerating stands (Regen) (976 ha). In addition, site series 04 Amabilis fir Western redcedar - Oak fern (619 ha) and site series 06 Amabilis fir Western redcedar - Devil's club (359 ha) are also prevalent in the CWHws1.

Three site series as well as Regen are dominant in the CWHws2. Regen covers 495 ha, site series 01 (Western hemlock Amabilis fir - Bramble) occupies 434 ha, site series 04 (Amabilis fir Western redcedar - Oak fern) occupies 277 ha, and site series 06 (Amabilis fir Western redcedar - Devil's club) occupies 182 ha.

The dominant site series in ESSFmk are 01 Subalpine fir Mountain hemlock - Twistedstalk (712 ha), site series 03 Subalpine fir Mountain hemlock - Cladonia (408 ha) and 05 Subalpine fir Mountain hemlock - Devil's club - Lady fern (113 ha).

In the smaller Mountain Hemlock BGC unit, (MHmm2) the following three site series occur with an areal extent of over 10 ha: site association 00 Sitka alder - Salmonberry avalanche chute (71 ha), site series 01 Mountain hemlock Amabilis fir - blueberry (87) and site series 03 (Amabilis fir Mountain hemlock - Oak fern), covering 26 ha.

Shallow open water covers 14 ha, or less than 1% of the PEAA, and non-vegetated, sparsely vegetated and anthropogenic units cover 617 ha or 5% of the PEAA (see Table 3-32).

**Table 3-32 Site Series in the Coast Mountains**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
CWHvm1	00 FS	Sedge fen	2	0	1	26
	00 HF	Hardhack - Sedge fen	35	<1	1	3
	00 SA	Sitka alder - Salmonberry avalanche chute	1	0	0	0
	01 AB	Western hemlock Amabilis fir - Blueberry	917	8	294	32
	02 LC	Western hemlock Lodgepole pine - Cladina	<1	0	0	0
	03 HS	Western hemlock Western redcedar - Salal	116	1	34	29
	05 AF	Amabilis fir Western redcedar - Foamflower	310	3	51	16
	06 HD	Western hemlock Amabilis fir - Deer fern	173	1	44	26



**Table 3-32 Site Series in the Coast Mountains (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
CWHvm1 (cont'd)	08 AD	Amabilis fir Sitka spruce - Devil's club	158	1	22	14
	09 SS	Sitka spruce - Salmonberry	285	2	17	6
	10 CD	Black cottonwood - Red-osier dogwood	20	<1	<1	2
	11 CW	Black cottonwood - Willow	4	0	<1	1
	12 YG	Western redcedar Yellow-cedar - Goldthread	70	1	3	4
	13 LS	Lodgepole pine - Sphagnum	9	<1	3	28
	14 RC	Western redcedar Sitka spruce - Skunk cabbage	67	1	5	8
	Regen		529	4	122	23
	Regen - Riparian		43	<1	2	4
	Shallow open water		3	0	<1	8
	Anthropogenic		268	2	13	5
CWHvm2	01 AB	Western hemlock Amabilis fir - Blueberry	26	<1	0	0
	03 HS	Western hemlock Western redcedar - Salal	13	<1	0	0
	Anthropogenic		2	0	0	0
CWHws1	00 SA	Sitka alder - Salmonberry	<1	0	0	0
	00 SF	Sedge fen	17	<1	<1	3
	00 SH	Sedge - Hardhack fen/marsh	31	<1	2	6
	01 AB	Western hemlock Amabilis fir - Bramble	1,813	15	140	8
	02 LK	Lodgepole pine - Kinnikinnick	6	0	<1	5
	03 HM	Western hemlock Lodgepole pine - Feathermoss	76	1	4	5
	04 AO	Amabilis fir Western redcedar - Oak fern	619	5	40	7
	05 HQ	Western hemlock Amabilis fir - Queen's cup	224	2	14	6
	06 AD	Amabilis fir Western redcedar - Devil's club	359	3	22	6
	07 SS	Sitka spruce - Salmonberry	208	2	7	3
	07 SS - riparian	Sitka spruce - Salmonberry riparian	14	<1	0	0
	08 CD	Black cottonwood - Red-osier dogwood	111	1	1	1
	08 CD - riparian	Black cottonwood - Red-osier dogwood riparian	7	<1	0	0
	09 CW - riparian	Black cottonwood - Willow riparian	4	0	0	0
10 LS	Lodgepole pine - Sphagnum	16	<1	1	5	

**Table 3-32 Site Series in the Coast Mountains (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
CWHws1 (cont'd)	11 RC	Western redcedar Sitka spruce - Skunk cabbage	74	1	4	6
	Regen		976	8	82	8
	Regen - Riparian		228	2	2	1
	Shallow open water		2	0	0	0
	Anthropogenic		189	2	2	1
	00 IF	Indian hellebore - Fern	8	<1	<1	2
CWHws2	00 SA	Sitka alder - Salmonberry	134	1	3	2
	00 SF	Sedge fen	2	0	0	0
	01 AB	Western hemlock Amabilis fir - Bramble	434	4	7	2
	03 HM	Western hemlock Lodgepole pine - Feathermoss	18	<1	3	16
	04 AO	Amabilis fir Western redcedar - Oak fern	277	2	20	7
	05 HQ	Western hemlock Amabilis fir - Queen's cup	25	<1	0	0
	06 AD	Amabilis fir Western redcedar - Devil's club	182	2	3	2
	07 SS	Sitka spruce - Salmonberry riparian	43	<1	0	0
	08 CD - riparian	Black cottonwood - Red-osier dogwood riparian	3	0	0	0
	11 RC	Western redcedar Sitka spruce - Skunk cabbage	12	<1	0	0
	Regen		495	4	127	26
	Regen - Riparian		34	<1	0	0
	Anthropogenic		42	<1	0	0
	00 AC	Sitka alder - Cow-parsnip avalanche track	28	<1	3	10
ESSFmk	00 BH	Black spruce - Common horsetail - Peat-moss	2	0	0	0
	00 BK	Beaked sedge - Water sedge	6	<1	<1	1
	00 CA	Cow parsnip - Large-leaved Avens	1	0	0	0
	00 CS	Cottonwood - Spruce - Red-osier dogwood	6	<1	1	9
	00 DB	Drummond's willow - Bluejoint	2	0	0	0
	00 MH	Mountain alder - Horsetail	11	<1	1	10
	00 MH - riparian	Mountain alder - Horsetail riparian	1	0	0	0
	00 NS	Narrow-leaved cotton-grass - Shore sedge	2	0	<1	8



**Table 3-32 Site Series in the Coast Mountains (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
ESSFmk (cont'd)	00 SE	Water sedge - Beaked sedge	42	<1	<1	0
	00 TS	Tufted clubrush - Star moss	3	0	<1	3
	00 WS	Scrub birch - Water sedge	1	0	0	0
	01 MT	Subalpine fir Mountain hemlock - Twistedstalk	712	6	41	6
	02 WC	Subalpine fir Whitebark pine - Cladonia	96	1	6	6
	03 MC	Subalpine fir Mountain hemlock - Cladonia	408	3	24	6
	04 FO	Subalpine fir Mountain hemlock - Oak fern	83	1	5	6
	05 FD	Subalpine fir Mountain hemlock - Devil's club - Lady fern	133	1	8	6
	05 FD - riparian	Subalpine fir Mountain hemlock - Devil's club - Lady fern riparian	2	0	0	0
	06 FH	Subalpine fir - Horsetail - Leafy moss	81	1	9	11
	07 FL	Subalpine fir - Lady fern - Horsetail	54	<1	3	6
	07 FL - riparian	Subalpine fir - Lady fern - Horsetail riparian	21	<1	0	0
	Regen		40	<1	0	0
	Shallow open water		10	<1	<1	2
	Anthropogenic		103	1	2	2
00 SA	Sitka alder - Salmonberry avalanche chute	71	1	1	2	
MHmm2	01 MB	Mountain hemlock Amabilis fir - Blueberry	87	1	6	7
	02 MM	Mountain hemlock Amabilis fir - Mountain-heather	<1	0	<1	186
	03 MO	Amabilis fir Mountain hemlock - Oak fern	26	<1	2	6
	05 MT	Amabilis fir Mountain hemlock - Twistedstalk	9	<1	2	17
	06 MD	Mountain hemlock Yellow-cedar - Deer cabbage	<1	0	0	0
	07 YH	Yellow-cedar Mountain hemlock - Hellebore	1	0	0	0



**Table 3-32 Site Series in the Coast Mountains (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Site Series Name	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
			ha	%	ha	%
MHmm2 (cont'd)	Anthropogenic		13	<1	<1	3
<b>Subtotal Native Vegetation</b>			<b>8,814</b>	<b>75</b>	<b>859</b>	<b>10</b>
<b>Subtotal Regen</b>			<b>2,040</b>	<b>17</b>	<b>330</b>	<b>16</b>
<b>Subtotal Regen - Riparian</b>			<b>305</b>	<b>3</b>	<b>4</b>	<b>1</b>
<b>Subtotal Shallow Open Water</b>			<b>14</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>3</b>
<b>Subtotal Anthropogenic</b>			<b>617</b>	<b>5</b>	<b>18</b>	<b>3</b>
<b>Total</b>			<b>11,789</b>	<b>100</b>	<b>1,211</b>	<b>10</b>

NOTES:  
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping  
<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100  
<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100

### 3.6.3 Old-Growth Forest

There are 1,545 ha of old growth forests in the PEAA. Old forests are found in five of the BGC units, CWHvm1, CWHws1, CWHws2, ESSFmk and MHmm2, but are dominant in the CWHws2 and ESSFmk. Old growth forests represent 13% of the PEAA in the Coast Mountains physiographic region (see Table 3-33).

**Table 3-33 Old-Growth Forests in the Coast Mountains**

Biogeoclimatic Unit	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
	ha	%	ha	%
CWHvm1	242	2	125	52
CWHws1	359	3	13	4
CWHws2	496	4	18	4
ESSFmk	409	3	25	6
MHmm2	38	<1	0	0
<b>Subtotal Old Growth</b>	<b>1,545</b>	<b>13</b>	<b>181</b>	<b>12</b>
<b>Subtotal Non-old Growth</b>	<b>10,244</b>	<b>87</b>	<b>1,031</b>	<b>10</b>
<b>Total</b>	<b>11,789</b>	<b>100</b>	<b>1,212</b>	<b>10</b>

NOTES:  
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping  
<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100  
<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100

### 3.6.4 Rare Plants and Rare Ecological Communities

One rare plant was located within the PEAA (see Table 3-34). No COSEWIC or SARA listed species were found. A detailed rare plant and rare ecological community survey, effects assessment and site-specific mitigation will be completed before construction.

Rare ecological communities were mapped within four of the six BGC units that occur in the Coast Mountains physiographic region (see Table 3-35). The dominant rare ecological communities within the PEAA are: CWHvm1 site series 09 (285 ha); CWHws1 site series 04 (831 ha), site series 06 (445 ha) and site series 07 (260 ha); and CWHws2 site series 04 (277 ha). In total, rare ecological communities cover 3,520 ha or 30% of the PEAA.

**Table 3-34 Rare Plants in the Coast Mountains**

Common Name	Scientific Name	Provincial/ Global Rank		BCCDC Status	BC MOE Status
Holboell's rockcress <sup>b</sup>	<i>Arabis holboellii</i> var. <i>pinetorum</i>	S2S3	G5T5?	Tracked	Blue

NOTE:  
<sup>a</sup> Data from 2006 field surveys.

**Table 3-35 Rare Ecological Communities in the Coast Mountains**

Biogeoclimatic Unit	Site Series No. and Map Code	Rare Ecological Community	BC MoE Status	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
				ha	%	ha	%
CWHvm1	03 HS	Western hemlock - Western redcedar/ Salal Very Wet Maritime	Blue	201	2	71	35
	08 AD	Amabilis fir - Sitka spruce/Devil's club	Blue	205	2	38	18
	09 SS	Sitka spruce/ Salmonberry Very Wet Maritime	Red	285	2	15	6
	10 CD	Black cottonwood - Red alder/ Salmonberry	Blue	58	<1	2	4
	14 RC	Western redcedar - Sitka spruce/ Skunk cabbage	Blue	110	1	7	6
CWHws1	02 LK	Lodgepole pine/ Kinnikinnick	Red	9	<1	<1	3
	04 AO	Amabilis fir - Western redcedar/Oak fern	Blue	831	7	64	8
	06 AD	Amabilis fir - Western redcedar/Devil's club Moist Submaritime	Blue	445	4	23	5
	07 SS	Sitka spruce/ Salmonberry Wet Submaritime 1	Red	260	2	9	3
	08 CD	Black cottonwood - Red alder/ Salmonberry	Blue	168	1	2	1
	11 RC	Western redcedar - Sitka spruce/ Skunk cabbage	Blue	103	1	6	5

**Table 3-35 Rare Ecological Communities in the Coast Mountains (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Rare Ecological Community	BC MoE Status	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
				ha	%	ha	%
CWHws2	04 AO	Amabilis fir - Western redcedar/Oak fern	Blue	277	2	20	7
	07 SS	Sitka spruce/ Salmonberry Wet Submaritime 2	Blue	43	<1	0	0
	08 CD	Black cottonwood - Red alder/ Salmonberry	Blue	3	0	0	0
ESSFmk	02 WC	Whitebark pine/ Clad lichens - Curly heron's-bill moss	Blue	100	1	6	6
	03 MC	Whitebark pine/ Clad lichens - Curly heron's-bill moss	Blue	422	4	24	6
<b>Subtotal Rare Ecological Community</b>				<b>3,520</b>	<b>30</b>	<b>285</b>	<b>8</b>
<b>Subtotal Non-rare Ecological Community</b>				<b>8,269</b>	<b>70</b>	<b>927</b>	<b>11</b>
<b>Total</b>				<b>11,789</b>	<b>100</b>	<b>1,212</b>	<b>10</b>
NOTES:							
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping							
<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100							
<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100							

### 3.6.5 Wetlands

Wetlands cover 562 ha in the PEAA. Swamps (314 ha) are dominant. Shallow open water wetlands (14 ha) occur in minor amounts (see Table 3-36).

**Table 3-36 Wetlands in the Coast Mountains**

Wetland Class	PEAA <sup>a,b</sup>		PDA <sup>c</sup>	
	ha	%	ha	%
Bog	98	1	6	6
Fen	135	1	4	3
Marsh	6	<1	<1	1
Swamps	314	3	21	7
Shallow Open Water	14	<1	<1	3
<b>Subtotal Wetlands</b>	<b>562</b>	<b>5</b>	<b>26</b>	<b>5</b>
<b>Subtotal Non-wetlands</b>	<b>11,227</b>	<b>95</b>	<b>1,185</b>	<b>11</b>
<b>Total</b>	<b>11,789</b>	<b>100</b>	<b>1,212</b>	<b>10</b>
NOTES:				
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping				
<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA wetland class/total) x 100				
<sup>c</sup> PDA area percentage is calculated as follows: (PDA wetland class/PEAA wetland class) x 100				

### 3.6.6 Timber Resources

Within the PDA in the Coast Mountains, the merchantable timber volume is 304,982 m<sup>3</sup>.

### 3.6.7 Non-native Weed Species

Twenty-four noxious weeds were identified as having the potential to occur on or near the PEAA in British Columbia and have the potential to invade disturbed areas. In the Coast Mountains physiographic region (including the Kitimat Terminal) one noxious weed was observed, oxeye daisy, during field surveys in 2006 and 2008 (see Table 3-37).

**Table 3-37 Non-native Weed Species in the Coastal Mountains Recorded during Field Surveys**

Common Name	Scientific Name	Status <sup>a</sup>
oxeye daisy	Leucanthemum vulgare	Noxious within BC Districts of Cariboo, North Okanagan, Peace River
NOTE: <sup>a</sup> Data source is BC <i>Weed Control Act</i> .		

### 3.6.8 Kitimat Terminal

#### 3.6.8.1 Sampling Effort

A total of 24 including rare plant plots and vegetation survey plots, were sampled in the Kitimat Terminal between 2006 and 2009 (see Table 3-38).

**Table 3-38 Number of Sampling Plots in the Kitimat Terminal**

Plot Type	Survey Year	Coast Mountains
Rare Plant Survey	2006	8
	2008	0
	2009	2
Vegetation Survey	2006	0
	2008	0
	2009	24
<b>Total</b>		<b>34</b>

### **3.6.8.2 Ecosystem Units - Site Series**

The Kitimat Terminal is within the Coast Mountains physiographic region. The data is a subset of the Coastal Mountains physiographic region. The PEAA includes one BGC unit, CWHvm1, occupying 3,009 ha. See Table 3-39 for the existing area of each site series (including shallow open water and anthropogenic categories) within the PEAA.

In the CWHvm1, site series 01 (Western hemlock Amabilis fir - Blueberry) is the dominant site series, occupying 917 ha. The other prevalent site series is 05 Amabilis fir Western redcedar - Foamflower (310 ha). Regen (529 ha) and anthropogenic units (268 ha) are also dominant ecosystems.

Shallow open water covers 3 ha, or less than 1% of the PEAA, and non-vegetated, sparsely vegetated and anthropogenic units cover 268 ha, or 2% of the PEAA (see Table 3-39).

### **3.6.8.3 Old Growth Forests**

There are 242 ha of old growth forests in the PEAA (CWHvm1). Old growth forests represent 2% of the PEAA in the Coast Mountains physiographic region (see Table 3-40).

### **3.6.8.4 Rare Plants and Rare Ecological Communities**

No rare plants were located within the CWHvm1. One red-listed and four blue-listed rare ecological communities were mapped within the CWHvm1 (see Table 3-41). The dominant rare ecological community within the PEAA is site series 09 (285 ha). In total, rare ecological communities within the CWHvm1 cover 859 ha, or 7% of the PEAA. A detailed rare plant and rare ecological community survey, effects assessment and site-specific mitigation will be completed before construction.

**Table 3-39 Site Series – Kitimat Terminal**

Biogeoclimatic Unit	Site Series and Map Code	Site Series Name	PEAA <sup>a,b</sup>		Terrestrial PDA <sup>c</sup>			
			PEAA <sup>a,b</sup>		Area Within the Security Fence		Area Outside the Security Fence	
			ha	%	ha	%	ha	%
CWHvm1	00 FS	Carex fen	2	0	<1	17	0	0
	00 HF	Hardhack - Sedge fen	35	<1	0	0	0	0
	00 SA	Sitka alder - Salmonberry avalanche chute	1	0	0	0	0	0
	01 AB	Western hemlock Amabilis fir - Blueberry	917	8	96	10	144	16
	02 LC	Western hemlock Lodgepole pine - Cladina	<1	0	0	0	0	0
	03 HS	Western hemlock Western redcedar - Salal	116	1	14	12	17	14
	05 AF	Amabilis fir Western redcedar - Foamflower	310	3	21	7	12	4
	06 HD	Western hemlock Amabilis fir - Deer fern	173	1	26	15	16	9
	08 AD	Amabilis fir Sitka spruce - Devil's club	158	1	2	2	9	6
	09 SS	Sitka spruce - Salmonberry riparian	285	2	1	0	0	0
	10 CD	Black cottonwood - Red-osier dogwood riparian	20	<1	0	0	0	0
	11 CW	Black cottonwood - Willow riparian	4	0	0	0	0	0
	12 YG	Western redcedar Yellow-cedar - Goldthread	70	1	3	4	0	0
	13 LS	Lodgepole pine - Sphagnum	9	<1	1	13	1	12
	14 RC	Western redcedar Sitka spruce - Skunk cabbage	67	1	0	0	0	0
		Regen		529	4	50	9	46
	Regen - Riparian		43	<1	0	0	0	0

**Table 3-39 Site Series – Kitimat Terminal (cont'd)**

Biogeoclimatic Unit	Site Series and Map Code	Site Series Name	PEAA <sup>a,b</sup>		Terrestrial PDA <sup>c</sup>			
					Area Within the Security Fence		Area Outside the Security Fence	
			ha	%	ha	%	ha	%
CWHvm1 (cont'd)	Shallow Open Water		3	0	0	0	0	0
	Anthropogenic		268	2	0	<1	2	1
CWHvm2	01 AB	Western hemlock Amabilis fir - Blueberry	26	<1	0	0	0	0
	03 HS	Western hemlock Western redcedar - Salal	13	<1	0	0	0	0
	Anthropogenic		2	0	0	0	0	0
CWHws1	00 SA	Sitka alder - Salmonberry	<1	0	0	0	0	0
	00 SF	Sedge fen	17	<1	0	0	0	0
	00 SH	Sedge - Hardhack fen/marsh	31	<1	0	0	0	0
	01 AB	Western hemlock Amabilis fir - Bramble	1,813	15	0	0	0	0
	02 LK	Lodgepole pine - Kinnikinnick	6	0	0	0	0	0
	03 HM	Western hemlock Lodgepole pine - Feathermoss	76	1	0	0	0	0
	04 AO	Amabilis fir Western redcedar - Oak fern	619	5	0	0	0	0
	05 HQ	Western hemlock Amabilis fir - Queen's cup	224	2	0	0	0	0
	06 AD	Amabilis fir Western redcedar - Devil's club	359	3	0	0	0	0
	07 SS	Sitka spruce - Salmonberry	208	2	0	0	0	0
	07 SS - riparian	Sitka spruce - Salmonberry riparian	14	<1	0	0	0	0
	08 CD	Black cottonwood - Red-osier dogwood	111	1	0	0	0	0

**Table 3-39 Site Series – Kitimat Terminal (cont'd)**

Biogeoclimatic Unit	Site Series and Map Code	Site Series Name	PEAA <sup>a,b</sup>		Terrestrial PDA <sup>c</sup>			
					Area Within the Security Fence		Area Outside the Security Fence	
			ha	%	ha	%	ha	%
CWHws1 (cont'd)	08 CD - riparian	Black cottonwood - Red-osier dogwood riparian	7	<1	0	0	0	0
	09 CW - riparian	Black cottonwood - Willow riparian	4	0	0	0	0	0
	10 LS	Lodgepole pine - Sphagnum	16	<1	0	0	0	0
	11 RC	Western redcedar Sitka spruce - Skunk cabbage	74	1	0	0	0	0
	Regen		976	8	0	0	0	0
	Regen - Riparian		228	2	0	0	0	0
	Shallow open water		2	0	0	0	0	0
	Anthropogenic		189	2	0	0	0	0
CWHws2	00 IF	Indian hellebore - Fern	8	<1				
	00 SA	Sitka alder - Salmonberry	134	1	0	0	0	0
	00 SF	Sedge fen	2	0	0	0	0	0
	01 AB	Western hemlock Amabilis fir - Bramble	434	4	0	0	0	0
	03 HM	Western hemlock Lodgepole pine - Feathermoss	18	<1	0	0	0	0
	04 AO	Amabilis fir Western redcedar - Oak fern	277	2	0	0	0	0
	05 HQ	Western hemlock Amabilis fir - Queen's cup	25	<1	0	0	0	0
	06 AD	Amabilis fir Western redcedar - Devil's club	182	2	0	0	0	0



**Table 3-39 Site Series – Kitimat Terminal (cont'd)**

Biogeoclimatic Unit	Site Series and Map Code	Site Series Name	PEAA <sup>a,b</sup>		Terrestrial PDA <sup>c</sup>			
					Area Within the Security Fence		Area Outside the Security Fence	
			ha	%	ha	%	ha	%
CWHws2 (cont'd)	07 SS	Sitka spruce - Salmonberry riparian	43	<1	0	0	0	0
	08 CD - riparian	Black cottonwood - Red-osier dogwood riparian	3	0	0	0	0	0
	11 RC	Western redcedar Sitka spruce - Skunk cabbage	12	<1	0	0	0	0
	Regen		495	4	0	0	0	0
	Regen - Riparian		34	<1	0	0	0	0
	00 MH	Mountain alder - Horsetail	11	<1	0	0	0	0
	Anthropogenic		42	<1	0	0	0	0
ESSFmk	00 AC	Sitka alder - Cow-parsnip avalanche track	28	<1	0	0	0	0
	00 BH	Black spruce - Common horsetail - Peat-moss	2	0	0	0	0	0
	00 BK	Beaked sedge - Water sedge	6	<1	0	0	0	0
	00 CA	Cow parsnip - Large-leaved Avens	1	0	0	0	0	0
	00 CS	Cottonwood - Spruce - Red-osier dogwood	6	<1	0	0	0	0
	00 DB	Drummond's willow - Bluejoint	2	0	0	0	0	0
	00 MH - riparian	Mountain alder - Horsetail riparian	1	0	0	0	0	0
	00 NS	Narrow-leaved cotton-grass - Shore sedge	2	0	0	0	0	0
	00 SE	Water sedge - Beaked sedge	42	<1	0	0	0	0

**Table 3-39 Site Series – Kitimat Terminal (cont'd)**

Biogeoclimatic Unit	Site Series and Map Code	Site Series Name	Terrestrial PDA <sup>c</sup>					
			PEAA <sup>a,b</sup>		Area Within the Security Fence		Area Outside the Security Fence	
			ha	%	ha	%	ha	%
ESSFmk (cont'd)	00 TS	Tufted clubrush - Star moss	3	0	0	0	0	0
	00 WS	Scrub birch - Water sedge	1	0	0	0	0	0
	01 MT	Subalpine fir Mountain hemlock - Twistedstalk	712	6	0	0	0	0
	02 WC	Subalpine fir Whitebark pine - Cladonia	96	1	0	0	0	0
	03 MC	Subalpine fir Mountain hemlock - Cladonia	408	3	0	0	0	0
	04 FO	Subalpine fir Mountain hemlock - Oak fern	83	1	0	0	0	0
	05 FD	Subalpine fir Mountain hemlock - Devil's club - Lady fern	133	1	0	0	0	0
	05 FD - riparian	Subalpine fir Mountain hemlock - Devil's club - Lady fern riparian	2	0	0	0	0	0
	06 FH	Subalpine fir - Horsetail - Leafy moss	81	1	0	0	0	0
	07 FL	Subalpine fir - Lady fern - Horsetail	54	<1	0	0	0	0
	07 FL - riparian	Subalpine fir - Lady fern - Horsetail riparian	21	<1	0	0	0	0
	Regen		40	<1	0	0	0	0
	Shallow open water		10	<1	0	0	0	0
	Anthropogenic		103	1	0	0	0	0

**Table 3-39 Site Series – Kitimat Terminal (cont'd)**

Biogeoclimatic Unit	Site Series and Map Code	Site Series Name	Terrestrial PDA <sup>c</sup>					
			PEAA <sup>a,b</sup>		Area Within the Security Fence		Area Outside the Security Fence	
			ha	%	ha	%	ha	%
MHmm2	00 SA	Sitka alder - Salmonberry avalanche chute	71	1	0	0	0	0
	01 MB	Mountain hemlock Amabilis fir - Blueberry	87	1	0	0	0	0
	02 MM	Mountain hemlock Amabilis fir - Mountain-heather	<1	0	0	0	0	0
	03 MO	Amabilis fir Mountain hemlock - Oak fern	26	<1	0	0	0	0
	05 MT	Amabilis fir Mountain hemlock - Twistedstalk	9	<1	0	0	0	0
	06 MD	Mountain hemlock Yellow-cedar - Deer cabbage	<1	0	0	0	0	0
	07 YH	Yellow-cedar Mountain hemlock - Hellebore	1	0	0	0	0	0
	Anthropogenic		13	<1				
<b>Subtotal Native Vegetation</b>			<b>8,814</b>	<b>75</b>	<b>163</b>	<b>2</b>	<b>198</b>	<b>2</b>
<b>Subtotal Regen</b>			<b>2,040</b>	<b>17</b>	<b>50</b>	<b>2</b>	<b>46</b>	<b>2</b>
<b>Subtotal Regen - Riparian</b>			<b>305</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Subtotal Shallow Open Water</b>			<b>14</b>	<b>&lt;1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Subtotal Anthropogenic</b>			<b>617</b>	<b>5</b>	<b>1</b>	<b>&lt;1</b>	<b>2</b>	<b>&lt;1</b>
<b>Total</b>			<b>11,789</b>	<b>100</b>	<b>214</b>	<b>2</b>	<b>246</b>	<b>2</b>

NOTES:

<sup>a</sup> Data from 2008 terrestrial ecosystem mapping

<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100

<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100

**Table 3-40 Old Growth Forests in the Kitimat Terminal**

Biogeoclimatic Units	PEAA <sup>a,b</sup>		Terrestrial PDA <sup>c</sup>			
			Area Within the Security Fence		Area Outside the Security Fence	
	ha	%	ha	%	ha	%
CWHvm1	242	2	17	7	105	44
CWHws1	359	3	0	0		0
CWHws2	496	4	0	0		0
ESSFmk	409	3	0	0		0
MHm2	38	<1	0	0		0
<b>Subtotal Old Growth Forests</b>	<b>1,545</b>	<b>13</b>	<b>17</b>	<b>1</b>	<b>105</b>	<b>7</b>
<b>Subtotal Non-old Growth Forests</b>	<b>10,244</b>	<b>87</b>	<b>197</b>	<b>2</b>	<b>140</b>	<b>1</b>
<b>Total</b>	<b>11,789</b>	<b>100</b>	<b>214</b>	<b>2</b>	<b>245</b>	<b>2</b>

NOTES:

<sup>a</sup> Data from 2008 terrestrial ecosystem mapping

<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100

<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100

**Table 3-41 Rare Ecological Communities in the Kitimat Terminal**

Biogeoclimatic Unit	Site Series No. and Map Code	Rare Ecological Community	BC MoE Status	PEAA <sup>a,b</sup>		Terrestrial PDA <sup>c</sup>			
						Area Within the Security Fence		Area Outside the Security Fence	
				ha	%	ha	%	ha	%
CWHvm1	03 HS	Western hemlock - Western redcedar/Salal Very Wet Maritime	Blue	201	2	14	7	17	8
	08 AD	Amabilis fir - Sitka spruce/ Devil's club	Blue	205	2	2	1	9	4
	09 SS	Sitka spruce/Salmonberry Very Wet Maritime	Red	285	2	0	0	0	0
	10 CD	Black cottonwood - Red alder/ Salmonberry	Blue	58	<1	0	0	0	0
	14 RC	Western redcedar - Sitka spruce/Skunk cabbage	Blue	110	1	0	0	0	0
CWHws1	02 LK	Lodgepole pine/Kinnikinnick	Red	9	<1	0	0	0	0
	04 AO	Amabilis fir - Western redcedar/Oak fern	Blue	831	7	0	0	0	0
	06 AD	Amabilis fir - Western redcedar/Devil's club Moist Submaritime	Blue	445	4	0	0	0	0
	07 SS	Sitka spruce/Salmonberry Wet Submaritime 1	Red	260	2	0	0	0	0
	08 CD	Black cottonwood - Red alder/ Salmonberry	Blue	168	1	0	0	0	0

**Table 3-41 Rare Ecological Communities in the Kitimat Terminal Terrestrial PDA (cont'd)**

Biogeoclimatic Unit	Site Series No. and Map Code	Rare Ecological Community	BC MoE Status	PEAA <sup>a,b</sup>		Terrestrial PDA <sup>c</sup>			
						Area Within the Security Fence		Area Outside the Security Fence	
				ha	%	ha	%	ha	%
CWHws1 (cont'd)	11 RC	Western redcedar - Sitka spruce/Skunk cabbage	Blue	103	1	0	0	0	0
CWH ws2	04 AO	Amabilis fir - Western redcedar/Oak fern	Blue	277	2	0	0	0	0
	07 SS	Sitka spruce/Salmonberry Wet Submaritime 2	Blue	43	<1	0	0	0	0
	08 CD	Black cottonwood - Red alder/Salmonberry	Blue	3	0	0	0	0	0
ESSFmk	02 WC	Whitebark pine/Clad lichens - Curly heron's-bill moss	Blue	100	1	0	0	0	0
	03 MC	Whitebark pine/Clad lichens - Curly heron's-bill moss	Blue	422	4	0	0	0	0
<b>Subtotal Rare Ecological Community</b>				<b>3,520</b>	<b>30</b>	<b>17</b>	<b>&lt;1</b>	<b>25</b>	<b>1</b>
<b>Subtotal Non-rare Ecological Community</b>				<b>8,269</b>	<b>70</b>	<b>198</b>	<b>2</b>	<b>221</b>	<b>3</b>
<b>Total</b>				<b>11,789</b>	<b>100</b>	<b>214</b>	<b>2</b>	<b>246</b>	<b>2</b>

NOTES:

<sup>a</sup> Data from 2008 terrestrial ecosystem mapping

<sup>b</sup> PEAA area percentage is calculated as follows: (PEAA site series/total) x 100

<sup>c</sup> PDA area percentage is calculated as follows: (PDA site series/PEAA site series) x 100

### 3.6.8.5 Wetlands

Wetlands in the CWHvm1 cover 186 ha in the PEAA. The wetland classes occurring in the CWHvm1 are bog, (79 ha), fen (37 ha) and swamp (67 ha). Shallow open water wetlands (3 ha) occur in minor amounts. Table 3-42 depicts the areas by wetland class for the PEAA.

**Table 3-42 Wetlands in the Kitimat Terminal**

Wetland Class	PEAA <sup>a,b</sup>		Terrestrial PDA <sup>c</sup>			
			Area Within the Security Fence		Area Outside the Security Fence	
	ha	%	ha	%	ha	%
Bog	98	1	4	4	1	1
Fen	135	1	<1	<1	0	0
Marsh	6	<1	0	0	0	0
Swamp	314	3	0	0	0	0
Shallow Open Water	14	<1	0	0	0	0
<b>Subtotal Wetlands</b>	<b>562</b>	<b>5</b>	<b>5</b>	<b>&lt;1</b>	<b>1</b>	<b>&lt;1</b>
<b>Subtotal Non-Wetlands</b>	<b>11,227</b>	<b>95</b>	<b>210</b>	<b>2</b>	<b>245</b>	<b>2</b>
<b>Total</b>	<b>11,789</b>	<b>100</b>	<b>214</b>	<b>2</b>	<b>246</b>	<b>2</b>

NOTES:  
<sup>a</sup> Data from 2008 terrestrial ecosystem mapping  
<sup>b</sup> PEAA area percentage was calculated as follows: (PEAA site series/total) x 100  
<sup>c</sup> PDA area percentage is calculated as follows: (PDA wetland class/PEAA wetland class) x 100

### 3.6.8.6 Timber Resources

Within the PDA, the merchantable timber volume is reported within the Coast Mountains physiographic region.

### 3.6.8.7 Non-native Weed Species

Non-native weed species were recorded for the Coastal Mountain physiographic region in Section 3.6.7.





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## **Appendix A Mountain Pine Beetle Protocol**





## Terrestrial Ecosystem Mapping Mountain Pine Beetle Modeling

This document describes the BC MoF mountain pine beetle (MPB) mapping data and the process for incorporating this information into the TEM project for determining the impact of MPB on previously mapped structural stage in the BC\_TEM dataset. The objective is to identify structural stage changes as the forest is killed because of catastrophic MPB infestation.

The essence of the approach is to combine the available BC MoF 2007 (Internet site) (Provincial level) MPB data with the mapped TEM unit (stand level) information whereby senior ecologists then identified mapped ecosystems that are highly susceptible to MPB as they will very likely contain a significant portion of lodgepole pine. The document first describes the BC MoF forest health dataset, followed by the key decision protocol and rules made for identifying susceptible ecosystem units (predicting specific ecosystems that would 'likely' be significantly affected by the MPB forest stand changing infestation) and concludes with the resulting altered BC\_TEM dataset for 2008.

### ***Overview of Ministry of Forests Forest Health Aerial Survey Methods***

All the information provided below is published by the Ministry of Forests on their website and only altered for context as it relates to the mountain pine beetle assessment model.

With the Canadian Forest Services' (CFS) assistance, the Ministry of Forests has produced a standardized aerial overview survey method and digital mapping protocol that was approved by the Provincial Resources Inventory Committee (RIC - now the Resource Information Standards Committee [RISC]) in 1997 and revised and approved in 2000 (see <http://ilmbwww.gov.bc.ca/risc/pubs/teveg/foresthealth/index.htm>).

Aerial overview surveys are usually performed from fixed-wing aircraft flown at altitudes ranging 500 to 1,000m (1,500 to 3,000 ft.) at speeds of 80 to 90 knots. The survey is designed to cover as much area as possible while retaining the ability to identify and map infested stands at map scales of 1:100,000 to 1:250,000. Overview data only provides sufficient detail to describe gross area damaged, general location of the damage, and, when compared to previous year's data, the trend in damage (increasing, decreasing or static). The survey maps red attack mountain pine beetle infestation on general topographic maps. The survey is not normally accurate enough to direct operational activities, but it can identify general areas of interest to direct more detailed detection. On a much smaller area, forest districts and licensees collect more accurate aerial data with rotary or fixed-wing aircraft, often aided with Global Positioning System (GPS) navigation equipment. The official species code list is available from the BC MoF Integrated Data Dictionary.

The 2007 survey also includes some tree species information (a field to record tree species attacked, particularly for pests that attack multiple species like the mountain pine beetle).

The following describe (i) the key points pertaining to the survey, (ii) the assumptions made in the forest health survey and (iii) the current mortality severity codes used by the BC MoF.

**MOF Key Points:**

- Record only red trees representing recent damage that is visible from the air (it does not include older grey attacks, current or green attacks).
- Rely heavily on the skill of the person mapping to determine the tree species, damaging agent, location and severity of observed disturbances and so is subject to variation due to the mapper's abilities. Personal preference of surveyors is most evident in their habit of either "lumping" damage into large polygons or "splitting" the same disturbances into many smaller polygons or spots.
- The overview is recognized as being far less accurate in both positioning and severity rating than detailed operational surveys conducted at lower elevations and slower air speeds (usually from helicopters).
- Tend to over-estimate the numbers of trees killed particularly as the scale decreases (mapping at 1:250,000 is less accurate than 1:100,000).
- By compromising accuracy (versus detailed operational surveys), the overview has the advantage of being the fastest, most efficient method of annually surveying the entire province using the same method. It is usually compiled well before the detailed aerial survey data, thus the summary maps and tabulated data are available much sooner, usually by early November, and provide vital information for strategic decisions by the Ministry of Forests.

**MOF Key Assumptions:**

- Areas and volumes presented in the tables represent the gross forested land base (e.g., no net downs by operability, riparian areas) unless otherwise specified.
- Very few air calls are verified from the ground. They rely on the accuracy of local knowledge and historic pest activity.
- Data is assumed to be collected in the same manner province-wide. For the last 10 years, damage caused by major bark beetle species in some of the regions has been recorded using operational survey methods while other regions have been surveyed using the FIDS overview method. The data summaries combined the detailed aerial survey information with overview survey data. An assessment of infestation growth can only be made in areas where surveys were conducted using the same methodology from year-to-year.
- The entire forested area of the province is surveyed annually by air, however, weather, funding, availability of surveyors and aircraft may not permit this to happen in all areas. Responsibility for the survey was transferred from the CFS in 1995. The current survey is the most comprehensive survey of the province since 2000.

**MOF Mortality Codes:**

The severity codes used in the BC MoF survey are provide in the below table. Since 2004, due to widespread mountain pine beetle outbreak, aerial overview severity codes include two new classes for bark beetles: Trace (T) (less than 1% attack); and Very Severe (V) (greater than 50% attack). Severe (S) class was modified to include 31% to 50% attack.

**Table A-1 Mortality Severity Codes**

Severity	Code	Percent of Trees in Polygon With Red Attack
Trace	T	<1% attack
Light	L	1% to 10% attack
Moderate	M	11% to 30% attack
Severe	S	31% to 50% attack
Very Severe	V	>50% attack

***BC\_TEM Ecosystem Unit Susceptibility Risk Knowledge Rules:***

The MPB susceptible and MPB high-risk ecosystems were identified based on the following TEM-mapped attributes/criteria:

- BEC zone
- BEC subzone
- BEC variant
- site series or map unit
- ecosystem unit modifiers (such as warm and cool aspect)
- seral map unit
- structural stage
- structural stage modifier
- stand composition

The hierarchical process involves eliminating those biogeoclimatic ecological units within the TEM that have absolutely no risk (zero percent possibility) of being affected by MPB and proceeding to those units that are somewhat less certain of MPB infection risk. However, every decision was documented (see Table A-2) and can be altered as more information becomes available. Additional detail might be added if a probability matrix/index is warranted. The knowledge reflected here is a simple risk assessment based on the expected amount of intermediate to mature lodgepole pine occurrence as described in the regional BEC guidebooks and interpreted based on field information and expert opinion.

***BC\_TEM Key Model Decisions and Rules***

The table below presents various TEM attributes used to assess the overall MPB risk of attack (susceptibility of the resulting TEM Map Unit). The specific attributes are organized from the more general (above) to the more specific (below) and the knowledge rules applied in the order presented (from top to bottom - regardless of which column the individual rule is presented). Note that the reference to site series refers to the numbered forest site unit in the TEM (Site\_\*):



**Table A-2 Attributes for Mountain Pine Beetle Risk Modelling**

<b>RISK OF MPB ATTACK</b> (Susceptible)	<b>NO RISK OF MPB ATTACK</b> (Not Susceptible)
	BEC zones CWH, CMA, AT, & MH
	All '00' site series
	All broadleaf stands (Stand Composition = 'B') & all seral associations in the BWBS BEC zone
	All BEC units of the ESSFwc3, ESSFwcp & ESSFwk2
	ESSF BEC zone – cool aspects, exceptions some 02 and 03 site series in various variants
	All 'very moist to very wet' ESSF site series
All ESSF '02' site series units	
	BWBS & ESSF BEC zones that are structural stage 7
	Structural stage = 3 <sup>(1)</sup>
ESSFmv - structural stage = 5s, 5t, or 6 & warm aspects	
	ESSFmc – site series '06 to 10'
	ESSF mc – structural stage 7 on site series = '01'
	ESSFmk – site series = 01, 04 to 07; & site series = 03 & structural stage = 7
ESSFmk – site series 03 on warm aspects	ESSFmk – site series 03 structural stage 6, except on warm aspects
SBSvk – site series 09 and SBSwk1 site series 12	SBS BEC zone – all subzones, site series # 08 to 12, 81 & 82 except for SBSvk site series 09 and SBSwk1 site series 12
	SBS – all subzones series 07 (subhygric to hydric) and structural stage 6 or 7
	SBSvk site series 06
	SBSwk2 - 06 site series

**Table A-2 Attributes for Mountain Pine Beetle Risk Modelling (cont'd)**

RISK OF MPB ATTACK (Susceptible)	NO RISK OF MPB ATTACK (Not Susceptible)
	SBS subzones - 06 site series & structural stage 6i, 6m & 7
	SBS BEC Zone - all subzones, site series 07
SBS Zone - all subzones, 06 site series & structural stage 6s, 6t, & 6s and Stand Composition = 'C'	
	SBS k & SBS wk - site series 01 & structural stage 6m, 6i, & 7
SBSvk & SBSwk subzones – site series 01 w & 4s, 4t, 5s, 5t & Stand = C	
	All SBS subzones site series 01 & structural stage 7
	All SBS subzones where stand composition is MIXED (M)
	SBSvk site series 04 & structural stage 6
SBSwk2 – site series 05 & warm aspects & all structural stage = 5s	
	SBSwk1 – site series 05 & structural stage 7
	SBSwk1 – site series 05 & structural stage 6m & 6i not on warm aspects
	SBSvk – site series 05
SBSmc2 – site series 05 & warm aspect or all aspects & structural stage = 4, 5s, 5t, & 6s	
<b>ALL REMAINING TEM UNITS ARE INCLUDED and are susceptible to significant pine beetle attack.</b>	
<p>NOTES:</p> <p>If the TEM has already mapped structural stage = '3' then no change to MPB structural stage 3. Although many plantations of lodgepole pine could be affected or dead, it is anticipated that the overall structural stage impact will be minimal from a wildlife perspective.</p>	

### ***Application of the MPB Rules and Changes to BC\_TEM Database***

The objective of the process is to identify and change the structural stage of those ecosystem units that are considered to be altered because of MPB attack. Therefore, in applying the above rule sets each unique TEM unit was assigned/flagged as to whether it is susceptible or not. The result is every TEM unit in the BC\_TEM dataset (whether it be unit decile 1, 2 or 3) is flagged with “Y” as susceptible to MPB attack.

For the BC MoF 2007 spatial coverage of MPB infestation it was determined that we should use the severe (S) and very severe (V) mortality to identify areas of potential stand changing occurrence – although not all stands within this general mapping would be susceptible. Therefore, using GIS, we combined this MOF MPB “severe & very severe” spatial layer with the BC\_TEM layer (with the MPB identified ecosystem units identified). Wherever the BC MoF severe and very severe mortality mapping overlapped at least 30% of the individual BC\_TEM polygon area, the specific TEM polygon was flagged as “MPB”. Once flagged, the susceptible rule system came into effect, and polygons identified as having both MPB severe and very severe. The polygons identified previously as MPB susceptible were assigned “Y” in the new field by decile (MPB\_1, MPB\_2, or MPB\_3). The result is that these identified ecosystem units (each decile) were given a new structural stage (Strct\_MPB\_S\* = 3) and a structural stage modifier (Strct\_MPB\_M\* = mpb) to reflect the changes in forest cover because of the death of the existing stand.

## **Appendix B Potential Rare Plant Species**





**Table B-1 Potential Rare Plant Species of the Eastern Alberta Plains<sup>a</sup>**

Common Name	Scientific Name	Global Rank	Prov Rank	ASRD	Habitat
Herriot's sagewort	<i>Artemisia tilesii</i>	G5	S2	Sensitive	open woods and river flats
Low milkweed	<i>Asclepias ovalifolia</i>	G5?	S3	Sensitive	open woods and slopes
Flat-topped white aster	<i>Aster umbellatus</i>	G5	S2	May be at risk	moist woodlands and swampy sites
American winter cress	<i>Barbarea orthoceras</i>	G5	S3	Sensitive	streambanks, wet meadows and moist woods
River bulrush	<i>Bolboschoenus fluviatilis</i>	G5	S1	May be at risk	margins of ponds, lakes and rivers
Leather grape fern	<i>Botrychium multifidum</i>	G5	S2	May be at risk	moist meadows and along edges of wetlands; dry fields and roadside ditches
Pale moonwort	<i>Botrychium pallidum</i>	S1	G3	May be at risk	Fields and other open sites kept open by regular disturbance
Back's sedge	<i>Carex backii</i>	G4	S2	May be at risk	dry (to moist) shady woods
Hooker's sedge	<i>Carex hookerana</i>	G4?	S2	Sensitive	prairies, dry banks and in open woods
Porcupine sedge	<i>Carex hystericina</i>	G5	S1	May be at risk	heavy shade on muck soils
Lakeshore sedge	<i>Carex lacustris</i>	G5	S4	May be at risk	marshes and swampy woods
Few-flowered sedge	<i>Carex pauciflora</i>	G5	S3	-	sphagnum bogs
Cyperus-like sedge	<i>Carex pseudocyperus</i>	G5	S3	Sensitive	swamps and marshes
Turned sedge	<i>Carex retrorsa</i>	G5	S3	Sensitive	swampy woods and wet meadows
Beaked sedge	<i>Carex rostrata</i>	G5	S3	Sensitive	floating fens at the edges of ponds and lakes
Bald sedge	<i>Carex tonsa</i>	G5T4T5	S3	-	open woods (particularly pine) and sandy, disturbed areas
Three-seeded sedge	<i>Carex trisperma</i>	G5	S3	-	bogs, swamps and wet woods
Fox sedge	<i>Carex vulpinoidea</i>	G5	S2	May be at risk	swamps and wet meadows, requires non-saline and non-acid soils
Narrow-leaved goosefoot	<i>Chenopodium leptophyllum</i>	G5	SU	-	open, slightly disturbed, sandy areas

**Table B-1 Potential Rare Plant Species of the Eastern Alberta Plains<sup>a</sup>**  
(cont'd)

Common Name	Scientific Name	Global Rank	Prov Rank	ASRD	Habitat
Goldthread	<i>Coptis trifolia</i>	G5	S3	-	damp, mossy woods
Hound's-tongue	<i>Cynoglossum virginianum</i>	G5	S1	May be at risk	dry woods
California oat grass	<i>Danthonia californica</i>	G5	S3	-	open, grassy meadows and on rock ridges
Poverty oat grass	<i>Danthonia spicata</i>	G5	S1S2	May be at risk	sandy and rocky sites, mostly dry woods but sometimes in moist meadows
Oblong-leaved sundew	<i>Drosera anglica</i>	G5	S3	-	peaty, usually calcareous sites in swamps and fens
Slender-leaved sundew	<i>Drosera linearis</i>	G4	S2	Sensitive	bogs, often on marly sites; wet, calcareous shores
Crested shield fern	<i>Dryopteris cristata</i>	G5	S1	May be at risk	marshes, swamps and moist woods and thickets
Slender spike-rush	<i>Eleocharis elliptica/ Eleocharis compressa</i>	G5T5	S1	-	wet places, usually neutral or calcareous conditions
Two-leaved waterweed	<i>Elodea bifoliata</i>	G4G5	S1	May be at risk	sloughs, ponds and lakes, in quiet or running water
Carolina wild geranium	<i>Geranium carolinianum</i>	G5	S1	Sensitive	clearings and disturbed sites; granite outcrops and in dry, rocky woods, often on sandy soil
Clammy hedge-hyssop	<i>Gratiola neglecta</i>	G5	S2S3	Sensitive	wet, muddy sites, often in shallow water
Long-leaved bluets	<i>Hedyotis longifolia</i>	G4G5	S2	May be at risk	sandy soil in open woods and on dunes
Large St. John's-wort	<i>Hypericum majus</i>	G5	S2	Sensitive	wet sites in the plains, foothills and boreal forest
American water-horehound	<i>Lycopus americanus</i>	G5	S3	May be at risk	marshy sites and moist, low ground along streams
Lance-leaved loosestrife	<i>Lysimachia hybrida</i>	G5	S2	May be at risk	moist meadows and shores; thickets, dry to moist open woods and swamps
White adder's-mouth	<i>Malaxis brachypoda</i>	G5	S2	Sensitive	damp woods, thickets and drier parts of bogs and fens
Bog adder's-mouth	<i>Malaxis paludosa</i>	G4	S1	May be at risk	mossy ground (usually on peat-moss) in bogs and fens
Marsh muhly	<i>Muhlenbergia racemosa</i>	G5	S1	May be at risk	dry sand hills, slopes and eroded banks

**Table B-1 Potential Rare Plant Species of the Eastern Alberta Plains<sup>a</sup>**  
(cont'd)

Common Name	Scientific Name	Global Rank	Prov Rank	ASRD	Habitat
Slender naiad	<i>Najas flexilis</i>	G5	S1S2	May be at risk	ponds and streams
Pygmy water-lily	<i>Nymphaea leibergii</i>	G5	S1	May be at risk	quiet streams, ponds and lakes, usually in deep water
Smooth sweet cicely	<i>Osmorhiza longistylis</i>	S2	G5	May be at risk	moist woods in the parkland and prairies
Canadian rice grass	<i>Oryzopsis canadensis</i>	G5	S1	-	open woods and on hillsides away from the mountains
Lleiberg's millet	<i>Panicum leibergii</i>	G5	S1	May be at risk	dry, sandy soil in grasslands and open woods
False dragonhead	<i>Physostegia ledinghamii</i>	G3?	S2	May be at risk	moist woods and streambanks
Robbin's pondweed	<i>Potamogeton robinsii</i>	G5	S1	Sensitive	shallow to deep (1-3 m) quiet water in lakes and ponds, usually growing on organic material or muck
Linear-leaved pondweed	<i>Potamogeton strictifolius</i>	G5	S2	Sensitive	shallow lakes and ponds
Slender beak-rush	<i>Rhynchospora capillacea</i>	G4	S1	May be at risk	calcareous fens
Widgeon grass	<i>Ruppia cirrhosa</i>	S1S2	G5	Sensitive	saline and alkaline lakes, ponds and ditches
Pale bulrush	<i>Scirpus pallidus</i>	G5	S1	May be at risk	marshes and wet meadows
Pale blue-eyed grass	<i>Sisyrinchium septentrionale</i>	G3G4	S2S3	Sensitive	moist meadows and grassy streambanks
Globe bur-reed	<i>Sparganium glomeratum</i>	G4?	S1	May be at risk	cool lakes, ponds and slow streams, often in water 1–2 m deep
Clinton's club-rush	<i>Trichophorum clintonii</i>	G4	S1	May be at risk	calcareous fens
Dwarf bulrush	<i>Trichophorum pumilum</i>	S2	G5	Sensitive	calcareous fens
Northern white violet	<i>Viola pallens</i>	G5T5	S2	-	wet ground in moist woods; coniferous stands and bogs
Watermeal	<i>Wolffia columbiana</i>	G5	S2	Sensitive	beaver ponds in hummocky moraines
NOTE: <sup>a</sup> Data source is Kershaw et al. 2001.					

**Table B-2 Potential Rare Plant Species of the Southern Alberta Uplands<sup>a</sup>**

Common Name	Scientific Name	Global Rank	Prov Rank	ASRD	Habitat
Spike redtop	<i>Agrostis exarata</i>	G5	S2	May be at risk	moist alpine slopes
Northern bent grass	<i>Agrostis mertensii</i>	G5	S2	Sensitive	moist alpine slopes
One-headed everlasting	<i>Antennaria monocephala</i>	G4G5	SNR	-	alpine slopes and ledges
Alpine sweetgrass	<i>Anthoxanthum monticola/ Hierochloa alpina</i>	G5	S2	Sensitive	dry alpine slopes
Sitka columbine	<i>Aquilegia formosa</i>	G5	S2	Sensitive	open woods and rocky slopes; moist sites on partly shaded roadsides and in woods, subalpine meadows and thickets
Stem-clasping arnica	<i>Arnica amplexicaulis</i>	G4G5	S2	May be at risk	moist woods and streambanks
Forked wormwood	<i>Artemisia furcata</i>	G4	S1	May be at risk	rocky alpine slopes
American winter cress	<i>Barbarea orthoceras</i>	G5	S3	Sensitive	streambanks, wet meadows and moist woods
Lapland reed grass	<i>Calamagrostis lapponica</i>	G5	S1	Sensitive	moist to dry, gravelly alpine slopes and ridges
Small bitter cress	<i>Cardamine parviflora</i>	G5	S1	May be at risk	sandy ground and dry, open, mixed woodland; seepage areas and on rocky outcrops, rocky or sandy shores, solifluction soil and scree slopes
Mountain bitter cress	<i>Cardamine umbellata/ Cardamine oligosperma var. kamtschatica</i>	G5T3T5	S2	Sensitive	moist mountain sites
Browned sedge	<i>Carex adusta</i>	G5	S1	May be at risk	dry, acidic, usually sandy soil, often under pine trees; generally confined to sandy, disturbed areas
Narrow sedge	<i>Carex arcta</i>	G5	S1	May be at risk	moist woods
Capitate sedge	<i>Carex capitata</i>	G5	S2	Sensitive	wet sites, often in calcareous fens
Sand sedge	<i>Carex houghtoniana</i>	G5	S2	May be at risk	dry, acidic, sandy or gravelly places, often in pine woods

**Table B-2 Potential Rare Plant Species of the Southern Alberta Uplands<sup>a</sup>**  
(cont'd)

Common Name	Scientific Name	Global Rank	Prov Rank	ASRD	Habitat
Lakeshore sedge	<i>Carex lacustris</i>	G5	S4	May be at risk	marshes and swampy woods
Rye-grass sedge	<i>Carex loliacea</i>	G5	S3	-	marshes and moist banks
Purple sedge	<i>Carex mertensii</i>	G5	S1	Sensitive	moist montane woods and streambanks
Few-flowered sedge	<i>Carex pauciflora</i>	G5	S3	-	sphagnum bogs
Turned sedge	<i>Carex retrorsa</i>	G5	S3	Sensitive	swampy woods and wet meadows
Bald sedge	<i>Carex tonsa</i>	G5T4T5	S3	-	open woods (particularly pine) and sandy, disturbed areas
Three-seeded sedge	<i>Carex trisperma</i>	G5	S3	-	bogs, swamps and wet woods
Umbellate sedge	<i>Carex umbellata</i>	G5	S1	-	open woods (particularly pine) and sandy, disturbed areas
Goldthread	<i>Coptis trifolia</i>	G5	S3	-	damp, mossy woods
Mountain bladder fern	<i>Cystopteris montana</i>	G5	S2	May be at risk	damp, calcareous sites, often by springs or along streams in mixed or coniferous forest
Slender hair grass	<i>Deschampsia elongata</i>	G5	S1	May be at risk	meadows and open slopes
Bog club-moss	<i>Diphasiastrum sitchense</i>	G5	S2	May be at risk	sphagnum bogs
Oblong-leaved sundew	<i>Drosera anglica</i>	G5	S3	-	peaty, usually calcareous sites in swamps and fens
Slender-leaved sundew	<i>Drosera linearis</i>	G4	S2	Sensitive	bogs, often on marly sites; wet, calcareous shores
Club willowherb	<i>Epilobium clavatum</i>	S2	G5	Sensitive	moist alpine slopes
Slender-fruited willowherb	<i>Epilobium leptocarpum</i>	G5	S1	May be at risk	moist ground
Trifid-leaved fleabane	<i>Erigeron trifidus</i>	G2G3Q	S1S2	Sensitive	alpine slopes
Northern rough fescue	<i>Festuca altaica</i>	G5	S2	Sensitive	boreal and alpine grasslands
Alpine gentian	<i>Gentiana glauca</i>	G4G5	S3	-	moist subalpine and alpine meadows and slopes

**Table B-2 Potential Rare Plant Species of the Southern Alberta Uplands<sup>a</sup>**  
(cont'd)

Common Name	Scientific Name	Global Rank	Prov Rank	ASRD	Habitat
Tufted tall manna grass	<i>Glyceria elata</i>	G4G5	S2	Sensitive	stream edges and wet meadows
Thread rush	<i>Juncus filiformis</i>	G5	S3	Sensitive	fens and marshes
Marsh rush	<i>Juncus stygius</i> ssp. <i>americanus</i>	G5T5	S2	May be at risk	fens
Sharp-pointed wood-rush	<i>Luzula acuminata</i>	G5	S1	May be at risk	moist woodland, often on disturbed sites
Reddish wood-rush	<i>Luzula rufescens</i>	G5	S1	Sensitive	damp grassy slopes, on the edges of bogs and marshes and on moist sand and gravel bars
Bog adder's-mouth	<i>Malaxis paludosa</i>	G4	S1	May be at risk	mossy ground (usually on peat-moss) in bogs and fens
Pine-sap	<i>Monotropa hypopitys</i>	G5	S2	May be at risk	rich, shady coniferous forests on humus
Devil's club	<i>Oplopanax horridus</i>	G4	S3	Sensitive	moist to wet, shady sites
Small northern grass-of-parnassus	<i>Parnassia parviflora</i>	G4	S2	Sensitive	bogs and streambanks
Large-flowered lousewort	<i>Pedicularis capitata</i>	G5	S2	Sensitive	calcareous alpine slopes
Arctic lousewort	<i>Pedicularis langsдорфii</i>	G5	S2	Sensitive	moist alpine slopes
Northern beech fern	<i>Phegopteris connectilis</i>	G5	S2	May be at risk	moist woodlands, on moderately to strongly acidic soil
Linear-leaved pondweed	<i>Potamogeton strictifolius</i>	G5	S2	Sensitive	shallow lakes and ponds
Western white lettuce	<i>Prenanthes alata</i>	S1	G5	May be at risk	edges of moist woods and thickets
Alpine buttercup	<i>Ranunculus gelidus</i>	G4	S3	-	dry, rocky alpine slopes
Hairy buttercup	<i>Ranunculus uncinatus</i>	G5	S2	Sensitive	moist, shady woodlands
Raup's willow	<i>Salix raupii</i>	G2	S1	May be at risk	mountain meadows and willow fens
Sitka Willow	<i>Salix sitchensis</i>	G5	S1	May be at risk	alluvial soils on the Athabasca River floodplain
Cordate-leaved saxifrage	<i>Saxifraga nelsoniana</i>	S2	G5	Sensitive	moist, rocky sites and along streams in alpine areas

**Table B-2 Potential Rare Plant Species of the Southern Alberta Uplands<sup>a</sup>**  
**(cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	ASRD	Habitat
Northern bur-reed	<i>Sparganium hyperboreum</i>	G5	S1	Sensitive	alpine lakes, in shallow water up to 50 cm deep
Prairie wedge grass	<i>Sphenopholis obtusata</i>	G5	S2	May be at risk	moist sites in meadows and open woods and on shores
Wavy-leaved chickweed	<i>Stellaria crispa</i>	G5	S2	May be at risk	moist woods and clearings
Rose mandarin	<i>Streptopus roseus</i>	G5	S1	May be at risk	moist, coniferous woods and streambanks
Clinton's club-rush	<i>Trichophorum clintonii</i>	G4	S1	May be at risk	calcareous fens
Thyme-leaved speedwell	<i>Veronica serpyllifolia</i>	G5	S3	Sensitive	moist, montane slopes

NOTE:  
<sup>a</sup> Data source is Kershaw et al. 2001.

**Table B-3 Potential Rare Plant Species of the Alberta Plateau<sup>a</sup>**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat Type
Alpine meadow-foxtail	<i>Alopecurus alpinus</i>	G5	S1S3	Red	palustrine; terrestrial
Canada anemone	<i>Anemone canadensis</i>	G5	S2S3	Blue	palustrine; terrestrial
Riverbank anemone	<i>Anemone virginiana</i> var. <i>cylindroidea</i>	G5T4T5	S1	Red	palustrine; terrestrial
Western dogbane	<i>Apocynum x floribundum</i>	GNA	S2S3	Blue	terrestrial
Sickle-pod rockcress	<i>Arabis sparsiflora</i>	G5	S1	Red	terrestrial
Meadow arnica	<i>Arnica chamissonis</i> ssp. <i>incana</i>	G5T3T5	S2S3	Blue	palustrine; terrestrial
Long-leaved mugwort	<i>Artemisia longifolia</i>	G5	S2	Red	terrestrial
Purple-stemmed aster	<i>Aster puniceus</i> var. <i>puniceus</i>	G5T5	S2S3	Blue	palustrine; terrestrial
Bent-flowered milk-vetch	<i>Astragalus vexilliflexus</i> var. <i>vexilliflexus</i>	G4T4	S2S3	Blue	terrestrial
Nuttall's orache	<i>Atriplex nuttallii</i>	G5	S1	Red	terrestrial
Least moonwort	<i>Botrychium simplex</i>	G5	S2S3	Blue	palustrine; riverine; terrestrial
Plains reedgrass	<i>Calamagrostis montanensis</i>	G5	S3	Blue	terrestrial

**Table B-3 Potential Rare Plant Species of the Alberta Plateau<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat Type
Two-coloured sedge	<i>Carex bicolor</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Enander's sedge	<i>Carex lenticularis</i> var. <i>dolia</i>	G5T3Q	S2S3	Blue	lacustrine; palustrine riverine; terrestrial
Pointed broom sedge	<i>Carex scoparia</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Tender sedge	<i>Carex tenera</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Torrey's sedge	<i>Carex torreyi</i>	G4	S2S3	Blue	terrestrial
Dry-land sedge	<i>Carex xerantica</i>	G5	S2	Red	terrestrial
Iowa golden-saxifrage	<i>Chrysosplenium iowense</i>	G3?	S2S3	Blue	palustrine
European water-hemlock	<i>Cicuta virosa</i>	G4G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Drummond's thistle	<i>Cirsium drummondii</i>	G5	S1	Red	terrestrial
Alpine draba	<i>Draba alpina</i>	G4G5	S2S3	Blue	terrestrial
Milky draba	<i>Draba lactea</i>	G4	S2S3	Blue	riverine; terrestrial
Small-fruited willowherb	<i>Epilobium leptocarpum</i>	G5	S2S3	Blue	palustrine; riverine; terrestrial
Northern bog bedstraw	<i>Galium labradoricum</i>	G5	S2S3	Blue	palustrine
Slender mannagrass	<i>Glyceria pulchella</i>	G5	S2S3	Blue	lacustrine; palustrine
Nuttall's sunflower	<i>Helianthus nuttallii</i> var. <i>nuttallii</i>	G5T5	S1	Red	palustrine; terrestrial
Spike-oat	<i>Helictotrichon hookeri</i>	G5	S2S3	Blue	terrestrial
Arctic rush	<i>Juncus arcticus</i> ssp. <i>alaskanus</i>	G5T4T5	S2S3	Blue	lacustrine; palustrine; riverine; terrestrial
Fennel-leaved desert-parsley	<i>Lomatium foeniculaceum</i> var. <i>foeniculaceum</i>	G5T5	S1	Red	terrestrial
Arctic wood-rush	<i>Luzula nivalis</i>	G5	S2S3	Blue	palustrine; terrestrial
Rusty wood-rush	<i>Luzula rufescens</i>	G5	S2S3	Blue	palustrine; terrestrial
Davis' locoweed	<i>Oxytropis campestris</i> var. <i>davisii</i>	G5T3	S3	Blue	palustrine; terrestrial
Slender penstemon	<i>Penstemon gracilis</i>	G5	S2	Red	terrestrial
Hairy butterwort	<i>Pinguicula villosa</i>	G4	S2S3	Blue	palustrine; riverine; terrestrial



**Table B-3 Potential Rare Plant Species of the Alberta Plateau<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat Type
Northern Jacob's-ladder	<i>Polemonium boreale</i>	G5	S2S3	Blue	terrestrial
Western Jacob's-ladder	<i>Polemonium occidentale</i> <i>ssp. occidentale</i>	G5?T5?	S2S3	Blue	palustrine; terrestrial
Seneca-snakeroot	<i>Polygala senega</i>	G4G5	S1	Red	terrestrial
Siberian polypody	<i>Polypodium sibiricum</i>	G5?	SH	Red	terrestrial
Purple rattlesnake-root	<i>Prenanthes racemosa</i> <i>ssp. multiflora</i>	G5T4?	SH	Red	terrestrial
White wintergreen	<i>Pyrola elliptica</i>	G5	S2S3	Blue	palustrine; terrestrial
Heart-leaved buttercup	<i>Ranunculus cardiophyllus</i>	G4G5	S1	Red	terrestrial
Birdfoot buttercup	<i>Ranunculus pedatifidus</i> <i>ssp. affinis</i>	G5T5	S2S3	Blue	palustrine; terrestrial
Prairie buttercup	<i>Ranunculus rhomboideus</i>	G5	S1	Red	terrestrial
Arkansas rose	<i>Rosa arkansana</i> <i>var. arkansana</i>	G5T4T5	S2S3	Blue	palustrine; riverine; terrestrial
Arctic dock	<i>Rumex arcticus</i>	G5	S3	Blue	lacustrine; palustrine; terrestrial
Meadow willow	<i>Salix petiolaris</i>	G5	S2S3	Blue	palustrine
Raup's willow	<i>Salix raupii</i>	G2	S1	Red	lacustrine; palustrine; terrestrial
Autumn willow	<i>Salix serissima</i>	G4	S2S3	Blue	palustrine
Common pitcher-plant	<i>Sarracenia purpurea</i> <i>ssp. gibbosa</i>	G5T5	S2S3	Blue	palustrine
Dotted saxifrage	<i>Saxifraga nelsoniana</i> <i>ssp. carlottae</i>	G5T3?	S3	Blue	palustrine; terrestrial
Rivergrass	<i>Scolochloa festucacea</i>	G5	S2	Red	lacustrine; palustrine; terrestrial
Rock selaginella	<i>Selaginella rupestris</i>	G5	S1	Red	terrestrial
Marsh fleabane	<i>Senecio congestus</i>	G5	S1S3	Red	lacustrine; palustrine
Plains butterweed	<i>Senecio plattensis</i>	G5	S2S3	Blue	palustrine; terrestrial
Mount Sheldon butterweed	<i>Senecio sheldonensis</i>	G3	S2S3	Blue	palustrine; riverine; terrestrial
Pink campion	<i>Silene repens</i>	G5	S1S3	Red	terrestrial
Slender wedgrass	<i>Sphenopholis intermedia</i>	G5	S3	Blue	lacustrine; palustrine; riverine; terrestrial

**Table B-3 Potential Rare Plant Species of the Alberta Plateau<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat Type
Sheathing pondweed	<i>Stuckenia vaginata</i>	G5	S2S3	Blue	lacustrine; riverine
Prairie golden bean	<i>Thermopsis rhombifolia</i>	G5	S1	Red	terrestrial
NOTE:					
<sup>a</sup> Data source is BCCDC 2009, Internet site.					

**Table B-4 Potential Rare Plant Species of the Rocky Mountains<sup>a</sup>**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat Type
Alpine meadow-foxtail	<i>Alopecurus alpinus</i>	G5	S1S3	Red	palustrine; terrestrial
Canada anemone	<i>Anemone canadensis</i>	G5	S2S3	Blue	palustrine; terrestrial
Riverbank anemone	<i>Anemone virginiana</i> var. <i>cylandroidea</i>	G5T4T5	S1	Red	palustrine; terrestrial
Western dogbane	<i>Apocynum x floribundum</i>	GNA	S2S3	Blue	terrestrial
Sickle-pod rockcress	<i>Arabis sparsiflora</i>	G5	S1	Red	terrestrial
Meadow arnica	<i>Arnica chamissonis</i> ssp. <i>incana</i>	G5T3T5	S2S3	Blue	palustrine; terrestrial
Long-leaved mugwort	<i>Artemisia longifolia</i>	G5	S2	Red	terrestrial
Purple-stemmed aster	<i>Aster puniceus</i> var. <i>puniceus</i>	G5T5	S2S3	Blue	palustrine; terrestrial
Bent-flowered milk-vetch	<i>Astragalus vexilliflexus</i> var. <i>vexilliflexus</i>	G4T4	S2S3	Blue	terrestrial
Nuttall's orache	<i>Atriplex nuttallii</i>	G5	S1	Red	terrestrial
Least moonwort	<i>Botrychium simplex</i>	G5	S2S3	Blue	palustrine; riverine; terrestrial
Plains reedgrass	<i>Calamagrostis montanensis</i>	G5	S3	Blue	terrestrial
Two-coloured sedge	<i>Carex bicolor</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Enander's sedge	<i>Carex lenticularis</i> var. <i>dolia</i>	G5T3Q	S2S3	Blue	lacustrine; palustrine; riverine; terrestrial
Pointed broom sedge	<i>Carex scoparia</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Tender sedge	<i>Carex tenera</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial

**Table B-4 Potential Rare Plant Species of the Rocky Mountains<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat Type
Torrey's sedge	<i>Carex torreyi</i>	G4	S2S3	Blue	terrestrial
Dry-land sedge	<i>Carex xerantica</i>	G5	S2	Red	terrestrial
Iowa golden-saxifrage	<i>Chrysosplenium iowense</i>	G3?	S2S3	Blue	palustrine
European water-hemlock	<i>Cicuta virosa</i>	G4G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Drummond's thistle	<i>Cirsium drummondii</i>	G5	S1	Red	terrestrial
Alpine draba	<i>Draba alpina</i>	G4G5	S2S3	Blue	terrestrial
Austrian draba	<i>Draba fladnizensis</i>	G4	S2S3	Blue	terrestrial
Milky draba	<i>Draba lactea</i>	G4	S2S3	Blue	riverine; terrestrial
Small-fruited willowherb	<i>Epilobium leptocarpum</i>	G5	S2S3	Blue	palustrine; riverine; terrestrial
Northern bog bedstraw	<i>Galium labradoricum</i>	G5	S2S3	Blue	palustrine
Slender mannagrass	<i>Glyceria pulchella</i>	G5	S2S3	Blue	lacustrine; palustrine
Nuttall's sunflower	<i>Helianthus nuttallii</i> var. <i>nuttallii</i>	G5T5	S1	Red	palustrine; terrestrial
Spike-oat	<i>Helictotrichon hookeri</i>	G5	S2S3	Blue	terrestrial
Arctic rush	<i>Juncus arcticus</i> ssp. <i>alaskanus</i>	G5T4T5	S2S3	Blue	lacustrine; palustrine; riverine; terrestrial
Bog rush	<i>Juncus stygius</i>	G5	S2S3	Blue	lacustrine; palustrine
Fennel-leaved desert-parsley	<i>Lomatium foeniculaceum</i> var. <i>foeniculaceum</i>	G5T5	S1	Red	terrestrial
Arctic wood-rush	<i>Luzula nivalis</i>	G5	S2S3	Blue	palustrine; terrestrial
Rusty wood-rush	<i>Luzula rufescens</i>	G5	S2S3	Blue	palustrine; terrestrial
Davis' locoweed	<i>Oxytropis campestris</i> var. <i>davisii</i>	G5T3	S3	Blue	palustrine; terrestrial
Small-flowered lousewort	<i>Pedicularis parviflora</i> ssp. <i>parviflora</i>	G4T4	S3	Blue	palustrine; riverine; terrestrial
Slender penstemon	<i>Penstemon gracilis</i>	G5	S2	Red	terrestrial
Hairy butterwort	<i>Pinguicula villosa</i>	G4	S2S3	Blue	palustrine; riverine; terrestrial
Northern Jacob's-ladder	<i>Polemonium boreale</i>	G5	S2S3	Blue	terrestrial
Western Jacob's-ladder	<i>Polemonium occidentale</i> ssp. <i>occidentale</i>	G5?T5?	S2S3	Blue	palustrine; terrestrial
Seneca-snakeroot	<i>Polygala senega</i>	G4G5	S1	Red	terrestrial

**Table B-4 Potential Rare Plant Species of the Rocky Mountains<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat Type
Black knotweed	<i>Polygonum paronychia</i>	G5	S3	Blue	terrestrial
Siberian polypody	<i>Polypodium sibiricum</i>	G5?	SH	Red	terrestrial
Purple rattlesnake-root	<i>Prenanthes racemosa</i> ssp. <i>multiflora</i>	G5T4?	SH	Red	terrestrial
White wintergreen	<i>Pyrola elliptica</i>	G5	S2S3	Blue	palustrine; terrestrial
Heart-leaved buttercup	<i>Ranunculus cardiophyllus</i>	G4G5	S1	Red	terrestrial
Birdfoot buttercup	<i>Ranunculus pedatifidus</i> ssp. <i>affinis</i>	G5T5	S2S3	Blue	palustrine; terrestrial
Prairie buttercup	<i>Ranunculus rhomboideus</i>	G5	S1	Red	terrestrial
Arkansas rose	<i>Rosa arkansana</i> var. <i>arkansana</i>	G5T4T5	S2S3	Blue	palustrine; riverine; terrestrial
Arctic dock	<i>Rumex arcticus</i>	G5	S3	Blue	lacustrine; palustrine; terrestrial
Meadow willow	<i>Salix petiolaris</i>	G5	S2S3	Blue	palustrine
Raup's willow	<i>Salix raupii</i>	G2	S1	Red	lacustrine; palustrine; terrestrial
Net-veined willow	<i>Salix reticulata</i> ssp. <i>glabellcarpa</i>	G5T2	S2	Red	terrestrial
Autumn willow	<i>Salix serissima</i>	G4	S2S3	Blue	palustrine
Common pitcher-plant	<i>Sarracenia purpurea</i> ssp. <i>gibbosa</i>	G5T5	S2S3	Blue	palustrine
Dotted saxifrage	<i>Saxifraga nelsoniana</i> ssp. <i>carlottae</i>	G5T3?	S3	Blue	palustrine; terrestrial
Rivergrass	<i>Scolochloa festucacea</i>	G5	S2	Red	lacustrine; palustrine; terrestrial
Rock selaginella	<i>Selaginella rupestris</i>	G5	S1	Red	terrestrial
Marsh fleabane	<i>Senecio congestus</i>	G5	S1S3	Red	lacustrine; palustrine
Plains butterweed	<i>Senecio plattensis</i>	G5	S2S3	Blue	palustrine; terrestrial
Mount Sheldon butterweed	<i>Senecio sheldonensis</i>	G3	S2S3	Blue	palustrine; riverine; terrestrial
Pink campion	<i>Silene repens</i>	G5	S1S3	Red	terrestrial
Water bur-reed	<i>Sparganium fluctuans</i>	G5	S2S3	Blue	lacustrine; riverine
Slender wedgrass	<i>Sphenopholis intermedia</i>	G5	S3	Blue	lacustrine; palustrine; riverine; terrestrial

**Table B-4 Potential Rare Plant Species of the Rocky Mountains<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat Type
Sheathing pondweed	<i>Stuckenia vaginata</i>	G5	S2S3	Blue	lacustrine; riverine
Prairie golden bean	<i>Thermopsis rhombifolia</i>	G5	S1	Red	terrestrial
NOTE:					
<sup>a</sup> Data source is BCCDC 2009, Internet site.					

**Table B-5 Potential Rare Plant Species of the Interior Plateau<sup>a</sup>**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat
American sweet-flag	<i>Acorus americanus</i>	G5	S2S3	Blue	lacustrine
Canada anemone	<i>Anemone canadensis</i>	G5	S2S3	Blue	palustrine; terrestrial
Western dogbane	<i>Apocynum x floribundum</i>	GNA	S2S3	Blue	terrestrial
Holboell's rockcress	<i>Arabis holboellii</i> var. <i>pinetorum</i>	G5T5?	S2S3	Blue	terrestrial
Woody-branched rockcress	<i>Arabis lignifera</i>	G5	S2S3	Blue	terrestrial
Meadow arnica	<i>Arnica chamissonis</i> ssp. <i>incana</i>	G5T3T5	S2S3	Blue	palustrine; terrestrial
Bourgeau's milk-vetch	<i>Astragalus bourgovii</i>	G5	S3	Blue	terrestrial
Haller's apple moss	<i>Bartramia halleriana</i>	G4G5	S2	Red	terrestrial
Boreal moonwort	<i>Botrychium boreale</i>	GNR	S1	Red	palustrine; terrestrial
Dainty moonwort	<i>Botrychium crenulatum</i>	G3	S2S3	Blue	palustrine; riverine; terrestrial
Linear-leaf moonwort	<i>Botrychium lineare</i>	G2?	S1	Red	
Short-flowered evening-primrose	<i>Camissonia breviflora</i>	G5	S1	Red	palustrine; terrestrial
Back's sedge	<i>Carex backii</i>	G4	S2S3	Blue	lacustrine; palustrine; terrestrial
Two-coloured sedge	<i>Carex bicolor</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Swollen beaked sedge	<i>Carex rostrata</i>	G5	S2S3	Blue	palustrine
Pointed broom sedge	<i>Carex scoparia</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial

**Table B-5 Potential Rare Plant Species of the Interior Plateau<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat
Tender sedge	<i>Carex tenera</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Bald sedge	<i>Carex tonsa</i> var. <i>tonsa</i>	G5T4T5	S2S3	Blue	terrestrial
Montana larkspur	<i>Delphinium bicolor</i> ssp. <i>bicolor</i>	G4G5T4T5	S2S3	Blue	terrestrial
Alpine draba	<i>Draba alpina</i>	G4G5	S2S3	Blue	terrestrial
Gray-leaved draba	<i>Draba cinerea</i>	G5	S2S3	Blue	terrestrial
Baffin Bay draba	<i>Draba corymbosa</i>	G4G5	S2S3	Blue	riverine; terrestrial
Austrian draba	<i>Draba fladnizensis</i>	G4	S2S3	Blue	terrestrial
Austrian draba	<i>Draba fladnizensis</i>	G4	S2S3	Blue	terrestrial
Lance-fruited draba	<i>Draba lonchocarpa</i> var. <i>vestita</i>	G5T3	S2S3	Blue	terrestrial
Coast mountain draba	<i>Draba ruaxes</i>	G4	S2S3	Blue	terrestrial
Slender-leaf sundew	<i>Drosera linearis</i>	G4	S1	Red	
Crested wood fern	<i>Dryopteris cristata</i>	G5	S2S3	Blue	palustrine; terrestrial
Slender spike-rush	<i>Eleocharis elliptica</i>	G5	S2S3	Blue	lacustrine; palustrine
Purple-leaved willowherb	<i>Epilobium ciliatum</i> ssp. <i>watsonii</i>	G5T3T5	S2S3	Blue	estuarine; palustrine; terrestrial
Three-lobed daisy	<i>Erigeron trifidus</i>	G2G3Q	S2	Red	terrestrial
Little fescue	<i>Festuca minutiflora</i>	G5	S2S3	Blue	terrestrial
Northern bog bedstraw	<i>Galium labradoricum</i>	G5	S2S3	Blue	palustrine
Slender mannagrass	<i>Glyceria pulchella</i>	G5	S2S3	Blue	lacustrine; palustrine
Bog rush	<i>Juncus stygius</i>	G5	S2S3	Blue	lacustrine; palustrine
Alp lily	<i>Lloydia serotina</i> var. <i>flava</i>	G5T3	S3	Blue	palustrine; riverine; terrestrial
White adder's-mouth orchid	<i>Malaxis brachypoda</i>	G4Q	S2S3	Blue	estuarine; lacustrine; palustrine; riverine; terrestrial
Water marigold	<i>Megalodonta beckii</i> var. <i>beckii</i>	G4G5T4T5	S3	Blue	lacustrine; palustrine; riverine
Oniongrass	<i>Melica bulbosa</i> var. <i>bulbosa</i>	G5TNRQ	S2	Red	terrestrial
Purple oniongrass	<i>Melica spectabilis</i>	G5	S2S3	Blue	palustrine; riverine; terrestrial

**Table B-5 Potential Rare Plant Species of the Interior Plateau<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat
Small white waterlily	<i>Nymphaea leibergii</i>	G5	S1S3	Red	lacustrine; palustrine; riverine
Pygmy waterlily	<i>Nymphaea tetragona</i>	G5	S2S3	Blue	lacustrine; riverine
Maydell's locoweed	<i>Oxytropis maydelliana</i>	G5	S2S3	Blue	palustrine; terrestrial
Small-flowered lousewort	<i>Pedicularis parviflora</i> ssp. <i>parviflora</i>	G4T4	S3	Blue	palustrine; riverine; terrestrial
Abbreviated bluegrass	<i>Poa abbreviata</i> ssp. <i>pattersonii</i>	G5T5	S2S3	Blue	terrestrial
Northern Jacob's-ladder	<i>Polemonium boreale</i>	G5	S2S3	Blue	terrestrial
Elegant Jacob's-ladder	<i>Polemonium elegans</i>	G4	S2S3	Blue	terrestrial
Black knotweed	<i>Polygonum paronychia</i>	G5	S3	Blue	terrestrial
Siberian polypody	<i>Polypodium sibiricum</i>	G5?	SH	Red	terrestrial
Kruckeberg's holly fern	<i>Polystichum kruckebergii</i>	G4	S2S3	Blue	terrestrial
White wintergreen	<i>Pyrola elliptica</i>	G5	S2S3	Blue	palustrine; terrestrial
Birdfoot buttercup	<i>Ranunculus pedatifidus</i> ssp. <i>affinis</i>	G5T5	S2S3	Blue	palustrine; terrestrial
Birdfoot buttercup	<i>Ranunculus pedatifidus</i> ssp. <i>affinis</i>	G5T5	S2S3	Blue	palustrine; terrestrial
Snow pearlwort	<i>Sagina nivalis</i>	G5	S2S3	Blue	palustrine; terrestrial
Meadow willow	<i>Salix petiolaris</i>	G5	S2S3	Blue	palustrine
Net-veined willow	<i>Salix reticulata</i> ssp. <i>glabellicarpa</i>	G5T2	S2	Red	terrestrial
Plains butterweed	<i>Senecio plattensis</i>	G5	S2S3	Blue	palustrine; terrestrial
Drummond's campion	<i>Silene drummondii</i> var. <i>drummondii</i>	G5T5	S3	Blue	terrestrial
Water bur-reed	<i>Sparganium fluctuans</i>	G5	S2S3	Blue	lacustrine; riverine
Umbellate starwort	<i>Stellaria umbellata</i>	G5	S2S3	Blue	palustrine; riverine; terrestrial
Sheathing pondweed	<i>Stuckenia vaginata</i>	G5	S2S3	Blue	lacustrine; riverine
Fernald's false manna	<i>Torreyochloa pallida</i>	G5	S1	Red	lacustrine; palustrine

**Table B-5 Potential Rare Plant Species of the Interior Plateau<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat
Dwarf clubrush	<i>Trichophorum pumilum</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Alpine cliff fern	<i>Woodsia alpina</i>	G4	S2S3	Blue	terrestrial

NOTE:  
<sup>a</sup> Data source is BCCDC 2009, Internet site.

**Table B-6 Potential Rare Plant Species of the Coast Mountains<sup>a</sup>**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat
Dune bentgrass	<i>Agrostis pallens</i>	G4G5	S3	Blue	palustrine; terrestrial
Western dogbane	<i>Apocynum x floribundum</i>	GNA	S2S3	Blue	terrestrial
Woody-branched rockcress	<i>Arabis lignifera</i>	G5	S2S3	Blue	terrestrial
Upswept moonwort	<i>Botrychium ascendens</i>	G2G3	S2	Red	palustrine; terrestrial
Dainty moonwort	<i>Botrychium crenulatum</i>	G3	S2S3	Blue	palustrine; riverine; terrestrial
Stalked moonwort	<i>Botrychium pedunculatum</i>	G2G3	S2	Red	palustrine; terrestrial
Two-edged water-starwort	<i>Callitriche heterophylla</i> ssp. <i>heterophylla</i>	G5T5	S2S3	Blue	estuarine; lacustrine; palustrine
Yellow marsh-marigold	<i>Caltha palustris</i> var. <i>palustris</i>	G5T5	S2S3	Blue	estuarine; palustrine
Gmelin's sedge	<i>Carex gmelinii</i>	G4G5	S2S3	Blue	estuarine; palustrine; terrestrial
Krause's sedge	<i>Carex krausei</i>	G4	S2S3	Blue	palustrine
Enander's sedge	<i>Carex lenticularis</i> var. <i>dolia</i>	G5T3Q	S2S3	Blue	lacustrine; palustrine; riverine; terrestrial
Tender sedge	<i>Carex tenera</i>	G5	S2S3	Blue	lacustrine; palustrine; terrestrial
Dwarf bog bunchberry	<i>Cornus suecica</i>	G5	S1S3	Red	terrestrial
Gray-leaved draba	<i>Draba cinerea</i>	G5	S2S3	Blue	terrestrial
Baffin Bay draba	<i>Draba corymbosa</i>	G4G5	S2S3	Blue	riverine; terrestrial
Austrian draba	<i>Draba fladnizensis</i>	G4	S2S3	Blue	terrestrial
Milky draba	<i>Draba lactea</i>	G4	S2S3	Blue	riverine; terrestrial
Lance-fruited draba	<i>Draba lonchocarpa</i> var. <i>thompsonii</i>	G5T3T4	S2S3	Blue	terrestrial



**Table B-6 Potential Rare Plant Species of the Coast Mountains<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat
Lance-fruited draba	<i>Draba lonchocarpa</i> var. <i>vestita</i>	G5T3	S2S3	Blue	terrestrial
Coast mountain draba	<i>Draba ruaxes</i>	G4	S2S3	Blue	terrestrial
Star-flowered draba	<i>Draba stenopetala</i>	G3G4	S1	Red	terrestrial
Wind River draba	<i>Draba ventosa</i>	G3	S2S3	Blue	terrestrial
Crested wood fern	<i>Dryopteris cristata</i>	G5	S2S3	Blue	palustrine; terrestrial
Kamchatka spike-rush	<i>Eleocharis kamtschatica</i>	G4	S2S3	Blue	estuarine; lacustrine; palustrine
Hornemann's willowherb	<i>Epilobium hornemannii</i> ssp. <i>behringianum</i>	G5T4	S2S3	Blue	palustrine; riverine; terrestrial
Small-fruited willowherb	<i>Epilobium leptocarpum</i>	G5	S2S3	Blue	palustrine; riverine; terrestrial
Northern daisy	<i>Erigeron uniflorus</i> ssp. <i>eriocephalus</i>	G5T4	S2S3	Blue	riverine; terrestrial
Pallas' wallflower	<i>Erysimum pallasii</i>	G4	S1S3	Red	terrestrial
Edwards wallflower	<i>Eutrema edwardsii</i>	G4	S2S3	Blue	palustrine; riverine; terrestrial
Little fescue	<i>Festuca minutiflora</i>	G5	S2S3	Blue	terrestrial
Ross' avens	<i>Geum rossii</i> var. <i>rossii</i>	G5T5	S1S3	Red	terrestrial
Nahanni oak fern	<i>Gymnocarpium jessoense</i> ssp. <i>parvulum</i>	G5T4	S3	Blue	palustrine; terrestrial
Whitish rush	<i>Juncus albescens</i>	G5	S2S3	Blue	lacustrine; palustrine; riverine; terrestrial
Arctic rush	<i>Juncus arcticus</i> ssp. <i>alaskanus</i>	G5T4T5	S2S3	Blue	lacustrine; palustrine; riverine; terrestrial
Bog rush	<i>Juncus stygius</i>	G5	S2S3	Blue	lacustrine; palustrine
Iceland koenigia	<i>Koenigia islandica</i>	G4	S2S3	Blue	palustrine; riverine; terrestrial
Arctic daisy	<i>Leucanthemum arcticum</i>	G5	SH	Red	estuarine
Yukon lupine	<i>Lupinus kuschei</i>	G3	S2S3	Blue	palustrine; terrestrial
Northern wood-rush	<i>Luzula confusa</i>	G5	S2S3	Blue	terrestrial
Arctic wood-rush	<i>Luzula nivalis</i>	G5	S2S3	Blue	palustrine; terrestrial
White adder's-mouth orchid	<i>Malaxis brachypoda</i>	G4Q	S2S3	Blue	estuarine; lacustrine; palustrine; riverine; terrestrial
Bog adder's-mouth orchid	<i>Malaxis paludosa</i>	G4	S2S3	Blue	palustrine

**Table B-6 Potential Rare Plant Species of the Coast Mountains<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat
Cryptic Paw	<i>Nephroma occultum</i>	G4	S2S3	Blue	terrestrial
Maydell's locoweed	<i>Oxytropis maydelliana</i>	G5	S2S3	Blue	palustrine; terrestrial
Small-flowered lousewort	<i>Pedicularis parviflora</i> ssp. <i>parviflora</i>	G4T4	S3	Blue	palustrine; riverine; terrestrial
Whorled lousewort	<i>Pedicularis verticillata</i>	G4	S2S3	Blue	lacustrine; palustrine; terrestrial
Hairy butterwort	<i>Pinguicula villosa</i>	G4	S2S3	Blue	palustrine; riverine; terrestrial
Eminent bluegrass	<i>Poa eminens</i>	G5	S2S3	Blue	estuarine
Northern Jacob's-ladder	<i>Polemonium boreale</i>	G5	S2S3	Blue	terrestrial
Western Jacob's-ladder	<i>Polemonium occidentale</i> ssp. <i>occidentale</i>	G5?T5?	S2S3	Blue	palustrine; terrestrial
Meadow bistort	<i>Polygonum bistorta</i> ssp. <i>plumosum</i>	G5T5	S1S3	Red	palustrine; terrestrial
Alaska holly fern	<i>Polystichum setigerum</i>	G3	S2S3	Blue	palustrine; terrestrial
Oldgrowth specklebelly	<i>Pseudocyphellaria rainierensis</i>	G3G4	S1	Red	terrestrial
Birdfoot buttercup	<i>Ranunculus pedatifidus</i> ssp. <i>affinis</i>	G5T5	S2S3	Blue	palustrine; terrestrial
Sulphur buttercup	<i>Ranunculus sulphureus</i>	G5	S2S3	Blue	riverine; terrestrial
Arctic dock	<i>Rumex arcticus</i>	G5	S3	Blue	lacustrine; palustrine; terrestrial
Snow pearlwort	<i>Sagina nivalis</i>	G5	S2S3	Blue	palustrine; terrestrial
Meadow willow	<i>Salix petiolaris</i>	G5	S2S3	Blue	palustrine
Dotted saxifrage	<i>Saxifraga nelsoniana</i> ssp. <i>carlottae</i>	G5T3?	S3	Blue	palustrine; terrestrial
Thyme-leaved saxifrage	<i>Saxifraga serpyllifolia</i>	G5	S2S3	Blue	riverine; terrestrial
Frosted Glass-whiskers	<i>Sclerophora peronella</i>	GNR	S1	Red	terrestrial
Ogotoruk Creek butterweed	<i>Senecio ogotorukensis</i>	G3G5	S1S3	Red	palustrine; terrestrial
Mount Sheldon butterweed	<i>Senecio sheldonensis</i>	G3	S2S3	Blue	palustrine; riverine; terrestrial
Drummond's campion	<i>Silene drummondii</i> var. <i>drummondii</i>	G5T5	S3	Blue	terrestrial

**Table B-6 Potential Rare Plant Species of the Coast Mountains<sup>a</sup> (cont'd)**

Common Name	Scientific Name	Global Rank	Prov Rank	BC Status	Habitat
Arctic campion	<i>Silene involucrata</i> ssp. <i>involucrata</i>	G5T5	S2S3	Blue	terrestrial
Alpine cliff fern	<i>Woodsia alpina</i>	G4	S2S3	Blue	terrestrial
NOTE: <sup>a</sup> Data source is BCCDC 2009, Internet site.					



## **Appendix C Potential Rare Ecological Communities**



**Table C-1 Potential Rare Ecological Communities of the Eastern Alberta Plains<sup>a</sup>**

Natural Subregion	Community Name	Provincial/ Global Rank	ANHIC Status	Class
Dry Mixedwood/ Central Mixedwood/Central Parkland	Alaska birch/common Labrador tea	S1S2	Tracked	Forest/ Woodland
Central Parkland	Alkali cord grass - (western wheat grass)	S2S3	Tracked	Sparsely Vegetated
Dry Mixedwood/ Central Mixedwood	Aspen/beaked willow - beaked hazelnut/bluejoint - ostrich fern	S1	Tracked	Forest/ Woodland
Dry Mixedwood/ Central Mixedwood	Aspen/common blueberry woodland	S2?	Tracked	Forest/ Woodland
Central Parkland	Aspen/creeping juniper/hay sedge	S2S3	Tracked	Forest/ Woodland
Dry Mixedwood/ Central Mixedwood	Aspen/prickly rose/spreading dogbane	SU	Tracked	Forest/ Woodland
Central Mixedwood	Aspen/thimbleberry/wild sarsaparilla	S2S3	Tracked	Forest/ Woodland
Central Mixedwood	Balsam poplar/alder-leaved buckthorn	S1	Tracked	Forest/ Woodland
Dry Mixedwood/ Central Mixedwood	Balsam poplar/high-bush cranberry/ostrich fern	S1S2	Tracked	Forest/ Woodland
Dry Mixedwood/ Central Mixedwood	Balsam poplar/river alder - red-osier dogwood/meadow horsetail	S3	Tracked	Forest/ Woodland
Dry Mixedwood/ Central Mixedwood	Beaked sedge marsh	S2	Tracked	Herbaceous
Central Parkland	Beaked willow/red-osier dogwood	S3?	Tracked	Shrubland
Dry Mixedwood/ Central Mixedwood/ Central Parkland	Black spruce/red-osier dogwood/feathermoss	S1S2	Tracked	Forest/ Woodland
Central Mixedwood	Bog rosemary/pitcher-plant/ peat-moss	S1S2	Tracked	Shrubland
Central Parkland	Creeping juniper - (June grass)/ green reindeer lichen	S1S2	Tracked	Sparsely Vegetated
Central Parkland	Creeping juniper/sand grass - sun-loving sedge	S2S3	Tracked	Dwarf Shrubland
Dry Mixedwood/ Central Mixedwood/ Central Parkland	Cypress-like sedge - water arum	S1S2	Tracked	Herbaceous

**Table C-1 Potential Rare Ecological Communities of the Eastern Alberta Plains<sup>a</sup> (cont'd)**

Natural Subregion	Community Name	Provincial/ Global Rank	ANHIC Status	Class
Central Mixedwood	Diatom ponds	S1S3	Tracked	Aquatic
Dry Mixedwood/Central Mixedwood	Drummond's willow/small-fruited bulrush - bluejoint	S1	Tracked	Shrubland
Central Mixedwood	Few-fruited sedge/twisted bog moss	S1S2	Tracked	Herbaceous
Central Parkland	June grass - western wheat grass	S1S2	Tracked	Herbaceous
Central Mixedwood	Leatherleaf - northern laurel/ green reindeer lichen	S1S2	Tracked	Shrubland
Central Parkland	Manitoba maple/choke cherry	S1S2/G?	Tracked	Forest/ Woodland
Central Mixedwood	Mud sedge - buck-bean - meadow bitter cress	S1S2	Tracked	Herbaceous
Central Mixedwood	Mud sedge - scheuchzeria/ peat-moss	S1	Tracked	Herbaceous
Central Mixedwood	Narrow reed grass - seaside arrowgrass string fen	S1S3	Tracked	Herbaceous
Central Parkland	Nevada bulrush - (seaside arrow grass)	S2S3	Tracked	Sparsely Vegetated
Central Mixedwood	Northern quillwort aquatic community	S1	Tracked	Aquatic
Dry Mixedwood	Northern wheat grass - western wheat grass	S2?	Tracked	Herbaceous
Central Mixedwood	Nuttall's salt meadow grass - western sea blite - salt-marsh sand spurry barren	S2	Tracked	Sparsely Vegetated
Central Parkland	Paper birch/buffaloberry	S1S2	Tracked	Forest/ Woodland
Central Parkland	Plains rough fescue - green needle grass/forbs	S1	Tracked	Herbaceous
Central Parkland	Plains rough fescue - June grass/creeping juniper/forbs	S2	Tracked	Herbaceous
Central Parkland	Plains rough fescue - sand grass	S1	Tracked	Herbaceous
Central Parkland	Plains rough fescue - sedges/ common bearberry	S1	Tracked	Herbaceous
Central Parkland	Plains rough fescue grassland	S1	Tracked	Herbaceous



**Table C-1 Potential Rare Ecological Communities of the Eastern Alberta Plains<sup>a</sup> (cont'd)**

Natural Subregion	Community Name	Provincial/ Global Rank	ANHIC Status	Class
Dry Mixedwood/ Central Mixedwood	River alder/ostrich fern shrubland	S2?	Tracked	Shrubland
Central Parkland	Salt grass - western wheat grass	S2	Tracked	Herbaceous
Dry Mixedwood/Central Mixedwood/Central Parkland	Samphire emergent marsh	S2 / G2G3	Tracked	Sparsely Vegetated
Central Parkland	Sand dropseed semi-active dune	S2	Tracked	Sparsely Vegetated
Central Parkland	Sand grass - sand dropseed	S2S3	Tracked	Herbaceous
Dry Mixedwood/Central Mixedwood	Saskatoon/common bearberry/northern rice grass	S2S3	Tracked	Shrubland
Central Parkland	Scratch grass - Nevada bulrush - salt grass	S1S2	Tracked	Herbaceous
Central Parkland	Seaside arrow grass emergent marsh	S2?	Tracked	Sparsely Vegetated
Central Parkland	Silverberry - chokecherry/hay sedge	S2S3	Tracked	Shrubland
Central Mixedwood	Slender wheat grass - salt grass	S1	Tracked	Herbaceous
Dry Mixedwood/Central Mixedwood	Slender wheat grass - sweet grass	SU	Tracked	Herbaceous
Central Mixedwood	Spearscale saltbrush - Nuttall's salt-meadow grass - slender arrow grass	S1S3	Tracked	Herbaceous
Dry Mixedwood/Central Mixedwood/Central Parkland	Tamarack - black spruce/red-osier dogwood - wild red raspberry	S1S2	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Tamarack/prairie sedge	S1	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Upland sedge - western porcupine grass - intermediate oat grass grassland	S1?	Tracked	Herbaceous
Central Parkland	Water birch/creeping juniper	S2S3	Tracked	Shrubland
Dry Mixedwood	Western porcupine grass - green needle grass - sedges	S2S3	Tracked	Herbaceous
Central Parkland	Western wheat grass - foxtail barley	S1	Tracked	Herbaceous

**Table C-1 Potential Rare Ecological Communities of the Eastern Alberta Plains<sup>a</sup> (cont'd)**

Natural Subregion	Community Name	Provincial/ Global Rank	ANHIC Status	Class
Dry Mixedwood	Western wheat grass - Herriot's sagewort - pasture sagewort	S1	Tracked	Herbaceous
Central Mixedwood	White spruce/lichen ( <i>Cetraria islandica</i> )	S1?	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	White spruce/river alder - Alaska birch/meadow horsetail/ stair-step moss	S3	Tracked	Forest/ Woodland
NOTE: <sup>a</sup> Data source is Allen 2008.				

**Table C-2 Potential Rare Ecological Communities of the Southern Alberta Uplands<sup>a</sup>**

Natural Subregion	Community Name	Provincial/ Global Rank	ANHIC Status	Class
Dry Mixedwood/Central Mixedwood	Alaska birch/common Labrador tea	S1S2	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Aspen/beaked willow - beaked hazelnut/bluejoint - ostrich fern	S1	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Aspen/common blueberry woodland	S2?	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Aspen/prickly rose/spreading dogbane	SU	Tracked	Forest/ Woodland
Central Mixedwood/Lower Foothills	Aspen/thimbleberry/wild sarsaparilla	S2S3	Tracked	Forest/ Woodland
Central Mixedwood	Balsam poplar/alder-leaved buckthorn	S1	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Balsam poplar/high-bush cranberry/ostrich fern	S1S2	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Balsam poplar/river alder - red-osier dogwood/meadow horsetail	S3	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Beaked sedge marsh	S2	Tracked	Herbaceous
Dry Mixedwood/Central Mixedwood	Black spruce/red-osier dogwood/feathermoss	S1S2	Tracked	Forest/ Woodland
Lower Foothills	Bog birch/mountain rough fescue	S2S3	Tracked	Shrubland

**Table C-2 Potential Rare Ecological Communities of the Southern Alberta Uplands<sup>a</sup> (cont'd)**

Natural Subregion	Community Name	Provincial/ Global Rank	ANHIC Status	Class
Central Mixedwood	Bog rosemary/pitcher-plant/ peat-moss	S1S2	Tracked	Shrubland
Dry Mixedwood/Central Mixedwood	Cypress-like sedge - water arum	S1S2	Tracked	Herbaceous
Central Mixedwood	Diatom ponds	S1S3	Tracked	Aquatic
Dry Mixedwood/Central Mixedwood/Lower Foothills	Drummond's willow/small- fruited bulrush - bluejoint	S1	Tracked	Shrubland
Lower Foothills	Dwarf birch/common Labrador tea/wire rush/golden moss - stair-step moss slope fen	S1?	Tracked	Shrubland
Central Mixedwood	Few-fruited sedge/twisted bog moss	S1S2	Tracked	Herbaceous
Central Mixedwood	Leatherleaf - northern laurel/ green reindeer lichen	S1S2	Tracked	Shrubland
Central Mixedwood	Mud sedge - buck-bean - meadow bitter cress	S1S2	Tracked	Herbaceous
Central Mixedwood	Mud sedge - scheuchzeria/ peat-moss	S1	Tracked	Herbaceous
Central Mixedwood	Narrow reed grass - seaside arrowgrass string fen	S1S3	Tracked	Herbaceous
Central Mixedwood	Northern quillwort aquatic community	S1	Tracked	Aquatic
Dry Mixedwood	Northern wheat grass - western wheat grass	S2?	Tracked	Herbaceous
Central Mixedwood	Nuttall's salt meadow grass - western sea blite - salt-marsh sand spurry barren	S2	Tracked	Sparsely Vegetated
Dry Mixedwood/Central Mixedwood	River alder/ostrich fern shrubland	S2?	Tracked	Shrubland
Dry Mixedwood/Central Mixedwood	Samphire emergent marsh	S2/G2G3	Tracked	Sparsely Vegetated
Dry Mixedwood/Central Mixedwood	Saskatoon/common bearberry/ northern rice grass	S2S3	Tracked	Shrubland
Lower Foothills	Silverberry riparian shrubland	SU/G2Q	Tracked	Shrubland
Central Mixedwood	Slender wheat grass - salt grass	S1	Tracked	Herbaceous
Dry Mixedwood/Central Mixedwood	Slender wheat grass - sweet grass	SU	Tracked	Herbaceous

**Table C-2 Potential Rare Ecological Communities of the Southern Alberta Uplands<sup>a</sup> (cont'd)**

Natural Subregion	Community Name	Provincial/ Global Rank	ANHIC Status	Class
Central Mixedwood	Spearscale saltbrush - Nuttall's salt-meadow grass - slender arrow grass	S1S3	Tracked	Herbaceous
Dry Mixedwood/Central Mixedwood	Tamarack - black spruce/red-osier dogwood - wild red raspberry	S1S2	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Tamarack/prairie sedge	S1	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	Upland sedge - western porcupine grass - intermediate oat grass grassland	S1?	Tracked	Herbaceous
Dry Mixedwood	Western porcupine grass - green needle grass - sedges	S2S3	Tracked	Herbaceous
Dry Mixedwood	Western wheat grass - Herriot's sagewort - pasture sagewort	S1	Tracked	Herbaceous
Central Mixedwood	White spruce/lichen ( <i>Cetraria islandica</i> )	S1?	Tracked	Forest/ Woodland
Dry Mixedwood/Central Mixedwood	White spruce/river alder - Alaska birch/meadow horsetail/ stair-step moss	S3	Tracked	Forest/ Woodland

NOTE:  
<sup>a</sup> Data source is Allen 2008.

**Table C-3 Potential Rare Ecological Communities of the Alberta Plateau<sup>a</sup>**

BGC Unit	Community Name	Global Rank	Prov Rank	BC Status	Ecosystem Group
BWBS mw 1	White spruce - Red swamp currant - Oak fern	G3	S3	Blue	Forest, Riparian
BWBS mw 1	White spruce - Red swamp currant - Tall bluebells	G3	S3	Blue	Forest, Riparian
BWBS mw 1	Balsam poplar - Spruces - Red-osier dogwood	GNR	S2	Red	Riparian, Forest
BWBS mw 1	White spruce - Red swamp currant - Oak fern	G3	S3	Blue	Forest, Riparian
BWBS mw 1	White spruce - Red swamp currant - Tall bluebells	G3	S3	Blue	Forest, Riparian

**Table C-3 Potential Rare Ecological Communities of the Alberta Plateau<sup>a</sup>  
(cont'd)**

BGC Unit	Community Name	Global Rank	Prov Rank	BC Status	Ecosystem Group
BWBS mw 1	Balsam poplar - Spruces - Red-osier dogwood	GNR	S2	Red	Riparian, Forest
BWBS wk 1	White spruce - Red swamp currant - Tall bluebells	G3	S3	Blue	Forest, Riparian
BWBS wk 1	White spruce - Black huckleberry - Step moss	G3	S3	Blue	Forest
BWBS wk 1	White spruce - Red swamp currant - Tall bluebells	G3	S3	Blue	Forest, Riparian
BWBS wk 1	White spruce - Black huckleberry - Step moss	G3	S3	Blue	Forest
ESSF mv 2	Subalpine fir - Alders - Horsetails	GNR	S3	Blue	Forest
NOTE: <sup>a</sup> Data source is BCCDC 2009, Internet site.					

**Table C-4 Potential Rare Ecological Communities of the Rocky Mountains<sup>a</sup>**

BGC Unit	Community Name	Global Rank	Prov Rank	BC Status	Ecosystem Group
BWBS mw 1	White spruce - Red swamp currant - Oak fern	G3	S3	Blue	Forest, Riparian
BWBS mw 1	White spruce - Red swamp currant - Tall bluebells	G3	S3	Blue	Forest, Riparian
BWBS mw 1	Balsam poplar - Spruces- Red-osier dogwood	GNR	S2	Red	Riparian, Forest
BWBS wk 1	White spruce - Red swamp currant - Tall bluebells	G3	S3	Blue	Forest, Riparian
BWBS wk 1	White spruce - Black huckleberry - Step moss	G3	S3	Blue	Forest
SBS vk	Black spruce - Lodgepole pine - Kalmias - Peat-mosses	GNR	S3	Blue	Forest
SBS vk	Lodgepole pine - Black huckleberry - Reindeer lichens	G3	S3	Blue	Woodland, Forest
SBS vk	Scheuchzeria - Peat-mosses	G3	S3	Blue	Wetland, Herbaceous
SBS wk 2	Lodgepole pine - Black huckleberry - Reindeer lichens	G3	S3	Blue	Woodland, Forest
NOTE: <sup>a</sup> Data source is BC Conservation Data Centre, Internet site.					

**Table C-5 Potential Rare Ecological Communities of the Interior Plateau<sup>a</sup>**

<b>BGC Unit</b>	<b>Community Name</b>	<b>Global Rank</b>	<b>Prov Rank</b>	<b>BC Status</b>	<b>Ecosystem Group</b>
CWH ws 2	Amabilis fir - Western redcedar - Oak fern	GNR	S3	Blue	Forest
CWH ws 2	Sitka spruce - Salmonberry Wet Submaritime 2	G3	S3	Blue	Riparian, Forest
CWH ws 2	Black cottonwood - Red alder - Salmonberry	GNR	S3	Blue	Riparian, Forest
ESSF mc	Narrow-leaved cotton-grass - Shore sedge	G3	S3	Blue	Wetland, Herbaceous
ESSF mk	Whitebark pine - Clad lichens - Curly heron's-bill moss	GNR	S3	Blue	Forest, Woodland
SBS dk	Saskatoon - Slender wheatgrass	G2	S2	Red	Shrub, Herbaceous, Grassland
SBS dk	Black spruce - Creeping-snowberry - Peat-mosses	GNR	S2S3	Blue	Wetland, Forest
SBS dk	Lodgepole pine - Common juniper - Rough-leaved ricegrass	GNR	S3	Blue	Woodland, Forest
SBS dk	Sandberg's bluegrass - Slender wheatgrass	GNR	S1	Red	Grassland, Herbaceous
SBS dk	Balsam poplar - Spruces - Red-osier dogwood	GNR	S2	Red	Riparian, Forest
SBS dk	Bebb's willow - Bluejoint reedgrass	G3	S3	Blue	Wetland, Shrub
SBS dk	Drummond's willow - Bluejoint reedgrass	G3	S2S3	Blue	
SBS dw 3	Hybrid white spruce - Hardhack - Prickly rose	GNR	S2S3	Blue	Forest
SBS dw 3	Lodgepole pine - Black spruce - Red-stemmed feathermoss	G3	S3	Blue	Forest
SBS dw 3	Douglas-fir - Lodgepole pine - Clad lichens	GNR	S3	Blue	Forest, Woodland
SBS dw 3	Drummond's willow - Bluejoint reedgrass	G3	S2S3	Blue	
SBS mc 2	Sandberg's bluegrass - Slender wheatgrass	GNR	S1	Red	Grassland, Herbaceous
SBS mk 1	Douglas-fir - Hybrid white spruce - Knight's plume	G3	S3	Blue	Forest
SBS vk	Black spruce - Lodgepole pine - Kalmias - Peat-mosses	GNR	S3	Blue	Forest

**Table C-5 Potential Rare Ecological Communities of the Interior Plateau<sup>a</sup>**  
(cont'd)

BGC Unit	Community Name	Global Rank	Prov Rank	BC Status	Ecosystem Group
SBS vk	Lodgepole pine - Black huckleberry - Reindeer lichens	G3	S3	Blue	Woodland, Forest
SBS vk	Scheuchzeria - Peat-mosses	G3	S3	Blue	Wetland, Herbaceous
SBS wk 1	Hybrid white spruce - Hardhack - Oak fern	GNR	S3	Blue	Forest
SBS wk 1	Lodgepole pine - Black huckleberry - Reindeer lichens	G3	S3	Blue	Woodland, Forest
SBS wk 1	Lodgepole pine - Black huckleberry - Velvet-leaved blueberry	GNR	S3	Blue	Forest
SBS wk 1	Douglas-fir - Hybrid white spruce - Knight's plume	G3	S3	Blue	Forest
SBS wk 1	Sitka willow - Sitka sedge	G3	S3	Blue	Wetland, Shrub, Riparian
NOTE:					
<sup>a</sup> Data source is BCCDC 2009, Internet site.					

**Table C-6 Potential Rare Ecological Communities of the Coast Mountains<sup>a</sup>**

BGC Unit	Community Name	Global Rank	Prov Rank	BC Status	Ecosystem Group
CWH vm 1	Amabilis fir - Sitka spruce - Devil's club	GNR	S3	Blue	Riparian, Forest
CWH vm 1	Sitka spruce - Salmonberry Very Wet Maritime	G3	S2	Red	Riparian, Forest
CWH vm 1	Black cottonwood - Red alder - Salmonberry	GNR	S3	Blue	Riparian, Forest
CWH vm 1	Western redcedar - Sitka spruce - skunk cabbage	G3?	S3?	Blue	Wetland, Forest
CWH vm 1	Western redcedar - Western hemlock - Sword fern	GNR	S3?	Blue	Forest
CWH vm 1	Western hemlock - Western redcedar - Salal Very Wet Maritime	G3	S3	Blue	Forest
CWH ws 1	Amabilis fir - Western redcedar - Oak fern	GNR	S3	Blue	Forest
CWH ws 1	Amabilis fir - Western redcedar - Devil's club Moist Submaritime	G3G4	S3	Blue	Forest
CWH ws 1	Lodgepole pine - Kinnikinnick	GNR	S2	Red	Woodland, Forest

**Table C-6 Potential Rare Ecological Communities of the Coast Mountains<sup>a</sup>**

<b>BGC Unit</b>	<b>Community Name</b>	<b>Global Rank</b>	<b>Prov Rank</b>	<b>BC Status</b>	<b>Ecosystem Group</b>
CWH ws 1	Black cottonwood - Red alder - Salmonberry	GNR	S3	Blue	Riparian, Forest
CWH ws 1	Western redcedar - Sitka spruce - Skunk cabbage	G3?	S3?	Blue	Wetland, Forest
CWH ws 1	Sitka spruce - Salmonberry Wet Submaritime 1	G3	S2	Red	Riparian, Forest
CWH ws 2	Amabilis fir - Western redcedar - Oak fern	GNR	S3	Blue	Forest
CWH ws 2	Sitka spruce - Salmonberry Wet Submaritime 2	G3	S3	Blue	Riparian, Forest
CWH ws 2	Black cottonwood - Red alder - Salmonberry	GNR	S3	Blue	Riparian, Forest
NOTE: <sup>a</sup> Data source is BCCDC 2009, Internet site.					



## Appendix D Plant Species Lists



**Table D-1 Plant Species Recorded During Field Surveys in the PEAA of the Eastern Alberta Plains**

Common Name	Scientific Name
<b>Trees</b>	
White birch	<i>Betula papyrifera</i>
Tamarack	<i>Larix laricina</i>
White spruce	<i>Picea glauca</i>
Black spruce	<i>Picea mariana</i>
Jack pine	<i>Pinus banksiana</i>
Balsam poplar	<i>Populus balsamifera</i>
Aspen	<i>Populus tremuloides</i>
<b>Shrubs</b>	
Alder	<i>Alnus</i> sp.
Green alder	<i>Alnus viridis</i> ssp. <i>crispa</i>
Red-osier dogwood	<i>Cornus stolonifera</i>
Common Labrador tea	<i>Ledum groenlandicum</i>
Prickly rose	<i>Rosa acicularis</i>
Willow	<i>Salix</i> sp.
<b>Graminoids</b>	
Sedge	<i>Carex</i> sp.
<b>Forbs</b>	
Common nettle	<i>Urtica dioica</i>
<b>Mosses</b>	
Moss	<i>Amblystegium</i> sp.

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands**

Common Name	Scientific Name
<b>Trees</b>	
Balsam fir	<i>Abies balsamea</i>
Subalpine fir	<i>Abies lasiocarpa</i>
Alaska birch	<i>Betula neoalaskana</i>
Water birch	<i>Betula occidentalis</i>
White birch	<i>Betula papyrifera</i>
Tamarack	<i>Larix laricina</i>
White spruce	<i>Picea glauca</i>
Black spruce	<i>Picea mariana</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Trees (cont'd)</b>	
Jack pine	<i>Pinus banksiana</i>
Lodgepole pine	<i>Pinus contorta</i>
Balsam poplar	<i>Populus balsamifera</i>
Aspen	<i>Populus tremuloides</i>
<b>Shrubs</b>	
River alder	<i>Alnus incana</i> ssp. <i>tenuifolia</i>
Green alder	<i>Alnus viridis</i> ssp. <i>crispa</i>
Saskatoon	<i>Amelanchier alnifolia</i>
Bog rosemary	<i>Andromeda polifolia</i>
Wild sarsaparilla	<i>Aralia nudicaulis</i>
Alpine bearberry	<i>Arctostaphylos rubra</i>
Common bearberry	<i>Arctostaphylos uva-ursi</i>
Bog birch	<i>Betula glandulosa</i>
Dwarf birch	<i>Betula pumila</i>
Bunchberry	<i>Cornus canadensis</i>
Red-osier dogwood	<i>Cornus stolonifera</i>
Beaked hazelnut	<i>Corylus cornuta</i>
Silverberry	<i>Elaeagnus commutata</i>
Crowberry	<i>Empetrum nigrum</i>
Creeping snowberry	<i>Gaultheria hispidula</i>
Ground juniper	<i>Juniperus communis</i>
Juniper	<i>Juniperus</i> sp.
Mountain laurel	<i>Kalmia microphylla</i>
Glandular Labrador tea	<i>Ledum glandulosum</i>
Common Labrador tea	<i>Ledum groenlandicum</i>
Twinflower	<i>Linnaea borealis</i>
Fly honeysuckle	<i>Lonicera caerulea</i>
Twining honeysuckle	<i>Lonicera dioica</i>
Bracted honeysuckle	<i>Lonicera involucrata</i>
Devil's-club	<i>Oplopanax horridus</i>
Small bog cranberry	<i>Oxycoccus microcarpus</i>
Pin cherry	<i>Prunus pensylvanica</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Choke cherry	<i>Prunus virginiana</i>
Skunk currant	<i>Ribes glandulosum</i>
Wild gooseberry	<i>Ribes hirtellum</i>
Northern black currant	<i>Ribes hudsonianum</i>
Bristly black currant	<i>Ribes lacustre</i>
Northern gooseberry	<i>Ribes oxycanthoides</i>
Wild red currant	<i>Ribes triste</i>
Prickly rose	<i>Rosa acicularis</i>
Common wild rose	<i>Rosa woodsii</i>
Dwarf raspberry	<i>Rubus arcticus</i>
Cloudberry	<i>Rubus chamaemorus</i>
Wild red raspberry	<i>Rubus idaeus</i>
Thimbleberry	<i>Rubus parviflorus</i>
Dwarf bramble	<i>Rubus pedatus</i>
Dewberry	<i>Rubus pubescens</i>
Shrubby willow	<i>Salix arbusculooides</i>
Beaked willow	<i>Salix bebbiana</i>
Short-capsuled willow	<i>Salix brachycarpa</i>
Hoary willow	<i>Salix candida</i>
Pussy willow	<i>Salix discolor</i>
Drummond's willow	<i>Salix drummondiana</i>
Sandbar willow	<i>Salix exigua</i>
Shining willow	<i>Salix lucida</i>
Velvet-fruited willow	<i>Salix maccalliana</i>
Myrtle-leaved willow	<i>Salix myrtillifolia</i>
Bog willow	<i>Salix pedicellaris</i>
Basket willow	<i>Salix petiolaris</i>
Flat-leaved willow	<i>Salix planifolia</i>
False mountain willow	<i>Salix pseudomonticola</i>
Balsam willow	<i>Salix pyrifolia</i>
Scouler's willow	<i>Salix scouleriana</i>
Red elderberry	<i>Sambucus racemosa</i>
Canada buffaloberry	<i>Shepherdia canadensis</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Western mountain-ash	<i>Sorbus scopulina</i>
Sitka mountain-ash	<i>Sorbus sitchensis</i>
White meadowsweet	<i>Spiraea betulifolia</i>
Snowberry	<i>Symphoricarpos albus</i>
Buckbrush	<i>Symphoricarpos occidentalis</i>
Buckbrush	<i>Symphoricarpos</i> sp.
Dwarf bilberry	<i>Vaccinium caespitosum</i>
Tall bilberry	<i>Vaccinium membranaceum</i>
Common blueberry	<i>Vaccinium myrtilloides</i>
Low bilberry	<i>Vaccinium myrtillus</i>
Bog bilberry	<i>Vaccinium uliginosum</i>
Bog cranberry	<i>Vaccinium vitis-idaea</i>
Low-bush cranberry	<i>Viburnum edule</i>
High-bush cranberry	<i>Viburnum opulus</i>
<b>Graminoids</b>	
Spike redtop	<i>Agrostis exarata</i>
Rough hair grass	<i>Agrostis scabra</i>
Redtop	<i>Agrostis stolonifera</i>
Short-awned foxtail	<i>Alopecurus aequalis</i>
Slough grass	<i>Beckmannia syzigachne</i>
Fringed brome	<i>Bromus ciliatus</i>
Hairy chess	<i>Bromus commutatus</i>
Awnless brome	<i>Bromus inermis</i>
Woodland brome	<i>Bromus vulgaris</i>
Bluejoint	<i>Calamagrostis canadensis</i>
Northern reed grass	<i>Calamagrostis inexpansa</i>
Lapland reed grass	<i>Calamagrostis lapponica</i>
Purple reed grass	<i>Calamagrostis purpurascens</i>
Narrow reed grass	<i>Calamagrostis stricta</i>
Sand grass	<i>Calamovilfa longifolia</i>
Silvery-flowered sedge	<i>Carex aenea</i>
Water sedge	<i>Carex aquatilis</i>
Awned sedge	<i>Carex atherodes</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Long-bracted sedge	<i>Carex athrostachya</i>
Dark-scaled sedge	<i>Carex atosquama</i>
Golden sedge	<i>Carex aurea</i>
Bebb's sedge	<i>Carex bebbii</i>
Short sedge	<i>Carex canescens</i> ssp. <i>canescens</i>
Hair-like sedge	<i>Carex capillaris</i>
Prostrate sedge	<i>Carex chordorrhiza</i>
Beautiful sedge	<i>Carex concinna</i>
Crawford's sedge	<i>Carex crawfordii</i>
Dewey's sedge	<i>Carex deweyana</i>
Two-stamened sedge	<i>Carex diandra</i>
Two-seeded sedge	<i>Carex disperma</i>
Elk sedge	<i>Carex garberi</i>
Northern bog sedge	<i>Carex gynocrates</i>
Inland sedge	<i>Carex interior</i>
Hairy-fruited sedge	<i>Carex lasiocarpa</i>
Sedge	<i>Carex lenticularis</i>
Kellogg's sedge	<i>Carex lenticularis</i> var. <i>lipocarpa</i>
Bristle-stalked sedge	<i>Carex leptalea</i>
Mud sedge	<i>Carex limosa</i>
Livid sedge	<i>Carex livida</i>
Rye-grass sedge	<i>Carex loliacea</i>
Thick-spike sedge	<i>Carex macloviana</i>
Short-awned sedge	<i>Carex microglochin</i>
Norway sedge	<i>Carex norvegica</i>
Sedge	<i>Carex pachystachya</i>
Few-flowered sedge	<i>Carex pauciflora</i>
Poor sedge	<i>Carex paupercula</i>
Graceful sedge	<i>Carex praegracilis</i>
Prairie sedge	<i>Carex prairea</i>
Raymond's sedge	<i>Carex raymondii</i>
Turned sedge	<i>Carex retrorsa</i>
Sartwell's sedge	<i>Carex sartwellii</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Broom sedge	<i>Carex scoparia</i>
Hay sedge	<i>Carex siccata</i>
Sedge	<i>Carex sitchensis</i>
Awl-fruited sedge	<i>Carex stipata</i>
Broad-fruited sedge	<i>Carex tenera</i>
Thin-flowered sedge	<i>Carex tenuiflora</i>
Small bottle sedge	<i>Carex utriculata</i>
Sheathed sedge	<i>Carex vaginata</i>
Drooping wood-reed	<i>Cinna latifolia</i>
Orchard grass	<i>Dactylis glomerata</i>
Tufted hair grass	<i>Deschampsia cespitosa</i>
Needle spike-rush	<i>Eleocharis acicularis</i>
Flattened spike-rush	<i>Eleocharis compressa</i> var. <i>borealis</i>
Creeping spike-rush	<i>Eleocharis palustris</i>
Canada wild rye	<i>Elymus canadensis</i>
Smooth wild rye	<i>Elymus glaucus</i>
Northern wheat grass	<i>Elymus lanceolatus</i>
Slender wheat grass	<i>Elymus trachycaulus</i>
Slender wheat grass	<i>Elymus trachycaulus</i> ssp. <i>subsecundus</i>
Slender wheat grass	<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>
Quack grass	<i>Elytrigia repens</i>
Cotton grass	<i>Eriophorum angustifolium</i>
Close-sheathed cotton grass	<i>Eriophorum brachyantherum</i>
Russett cotton grass	<i>Eriophorum chamissonis</i>
Sheathed cotton grass	<i>Eriophorum vaginatum</i>
Thin-leaved cotton grass	<i>Eriophorum viridi-carinatum</i>
Red fescue	<i>Festuca rubra</i>
Fescue	<i>Festuca subulata</i>
Northern manna grass	<i>Glyceria borealis</i>
Tufted tall manna grass	<i>Glyceria elata</i>
Common tall manna grass	<i>Glyceria grandis</i>
Graceful manna grass	<i>Glyceria pulchella</i>
Fowl manna grass	<i>Glyceria striata</i>



**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Sweet grass	<i>Hierochloe hirta</i>
Foxtail barley	<i>Hordeum jubatum</i>
White rush	<i>Juncus albescens</i>
Alpine rush	<i>Juncus alpinoarticulatus</i>
Wire rush	<i>Juncus balticus</i>
troad rush	<i>Juncus bufonius</i>
Few-flowered rush	<i>Juncus confusus</i>
Nevada rush	<i>Juncus nevadensis</i>
Knotted rush	<i>Juncus nodosus</i>
Slender rush	<i>Juncus tenuis</i>
Hairy wild rye	<i>Leymus innovatus</i>
Field wood-rush	<i>Luzula multiflora</i>
Small-flowered wood-rush	<i>Luzula parviflora</i>
Bog muhly	<i>Muhlenbergia glomerata</i>
White-grained mountain rice grass	<i>Oryzopsis asperifolia</i>
Northern rice grass	<i>Oryzopsis pungens</i>
Reed canary grass	<i>Phalaris arundinacea</i>
Moss	<i>Philonotis fontana</i>
Timothy	<i>Phleum pratense</i>
Reed	<i>Phragmites australis</i>
Alpine bluegrass	<i>Poa alpina</i>
Timberline bluegrass	<i>Poa glauca</i>
Fowl bluegrass	<i>Poa palustris</i>
Kentucky bluegrass	<i>Poa pratensis</i>
Scheuchzeria	<i>Scheuchzeria palustris</i>
Purple oat grass	<i>Schizachne purpurascens</i>
Tufted bulrush	<i>Scirpus cespitosus</i>
Wool-grass	<i>Scirpus cyperinus</i>
Hudson Bay bulrush	<i>Scirpus hudsonianus</i>
Small-fruited bulrush	<i>Scirpus microcarpus</i>
Slender wedge grass	<i>Sphenopholis intermedia</i>
Prairie wedge grass	<i>Sphenopholis obtusata</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Trisetum	<i>Trisetum</i> sp.
Common cattail	<i>Typha latifolia</i>
<b>Forbs</b>	
Common yarrow	<i>Achillea millefolium</i>
Many-flowered yarrow	<i>Achillea sibirica</i>
Monkshood	<i>Aconitum delphinifolium</i>
Red and white baneberry	<i>Actaea rubra</i>
Moschatel	<i>Adoxa moschatellina</i>
Round-leaved orchid	<i>Amerorchis rotundifolia</i>
Pearly everlasting	<i>Anaphalis margaritacea</i>
Canada anemone	<i>Anemone canadensis</i>
Long-fruited anemone	<i>Anemone cylindrica</i>
Cut-leaved anemone	<i>Anemone multifida</i>
Small wood anemone	<i>Anemone parviflora</i>
Wood anemone	<i>Anemone quinquefolia</i>
Virginia anemone	<i>Anemone virginiana</i>
Kneeling angelica	<i>Angelica genuflexa</i>
Broad-leaved everlasting	<i>Antennaria neglecta</i>
Spreading dogbane	<i>Apocynum androsaemifolium</i>
Blue columbine	<i>Aquilegia brevistyla</i>
Sitka columbine	<i>Aquilegia formosa</i>
Rock cress	<i>Arabis</i> sp.
Leafy arnica	<i>Arnica chamissonis</i>
Heart-leaved arnica	<i>Arnica cordifolia</i>
Biennial sagewort	<i>Artemisia biennis</i>
Plains wormwood	<i>Artemisia campestris</i>
Dragonwort	<i>Artemisia dracunculus</i>
Pasture sagewort	<i>Artemisia frigida</i>
Goat's-beard	<i>Aruncus sylvester</i>
Marsh aster	<i>Aster borealis</i>
Lindley's aster	<i>Aster ciliolatus</i>
Showy aster	<i>Aster conspicuus</i>
Tufted white prairie aster	<i>Aster ericoides</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Large northern aster	<i>Aster modestus</i>
Purple-stemmed aster	<i>Aster puniceus</i>
Arctic aster	<i>Aster sibiricus</i>
American milk vetch	<i>Astragalus americanus</i>
Bourgov's milk vetch	<i>Astragalus bourgovii</i>
Cicer milk vetch	<i>Astragalus cicer</i>
Purple milk vetch	<i>Astragalus dasyglottis</i>
Milk vetch	<i>Astragalus eucosmus</i>
Milk vetch	<i>Astragalus</i> sp.
Winter cress	<i>Barbarea</i> sp.
Nodding beggarticks	<i>Bidens cernua</i>
Mustard	<i>Brassica</i> sp.
Water arum	<i>Calla palustris</i>
Northern water-starwort	<i>Callitriche hermaphroditica</i>
Vernal water-starwort	<i>Callitriche verna</i>
Floating marsh-marigold	<i>Caltha natans</i>
Marsh-marigold	<i>Caltha palustris</i>
Venus'-slipper	<i>Calypso bulbosa</i>
Harebell	<i>Campanula rotundifolia</i>
Shepherd's-purse	<i>Capsella bursa-pastoris</i>
Small bitter cress	<i>Cardamine parviflora</i>
Bitter cress	<i>Cardamine pennsylvanica</i>
Thistle	<i>Carduus</i> sp.
Common red paintbrush	<i>Castilleja miniata</i>
Long-stalked mouse-ear chickweed	<i>Cerastium nutans</i>
Strawberry blite	<i>Chenopodium capitatum</i>
Golden saxifrage	<i>Chrysosplenium iowense</i>
Green saxifrage	<i>Chrysosplenium tetrandrum</i>
Bulb-bearing water-hemlock	<i>Cicuta bulbifera</i>
Water-hemlock	<i>Cicuta maculata</i>
Narrow-leaved water-hemlock	<i>Cicuta virosa</i>
Small enchanter's nightshade	<i>Circaea alpina</i>
Creeping thistle	<i>Cirsium arvense</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEEA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Drummond's thistle	<i>Cirsium drummondii</i>
Bracted bog orchid	<i>Coeloglossum viride</i>
Spotted coralroot	<i>Corallorhiza maculata</i>
Striped coralroot	<i>Corallorhiza striata</i>
Pale coralroot	<i>Corallorhiza trifida</i>
Golden corydalis	<i>Corydalis aurea</i>
Green hawk's-beard	<i>Crepis capillaris</i>
Youngia	<i>Crepis elegans</i>
Annual hawk's-beard	<i>Crepis tectorum</i>
Lady's-slipper	<i>Cypripedium parviflorum</i>
Sparrow's-egg lady's-slipper	<i>Cypripedium passerinum</i>
Low larkspur	<i>Delphinium bicolor</i>
Tall larkspur	<i>Delphinium glaucum</i>
Larkspur	<i>Delphinium sp.</i>
Fairybells	<i>Disporum trachycarpum</i>
Whitlow-grass	<i>Draba sp.</i>
Oblong-leaved sundew	<i>Drosera anglica</i>
Round-leaved sundew	<i>Drosera rotundifolia</i>
Yellow mountain avens	<i>Dryas drummondii</i>
Common fireweed	<i>Epilobium angustifolium</i>
Northern willowherb	<i>Epilobium ciliatum</i>
Broad-leaved fireweed	<i>Epilobium latifolium</i>
Narrow-leaved willowherb	<i>Epilobium leptophyllum</i>
Marsh willowherb	<i>Epilobium palustre</i>
Northern daisy fleabane	<i>Erigeron acris</i>
Golden fleabane	<i>Erigeron aureus</i>
Philadelphia fleabane	<i>Erigeron philadelphicus</i>
Wormseed mustard	<i>Erysimum cheiranthoides</i>
Eyebright	<i>Euphrasia arctica</i>
Woodland strawberry	<i>Fragaria vesca</i>
Wild strawberry	<i>Fragaria virginiana</i>
Hemp-nettle	<i>Galeopsis tetrahit</i>
Cleavers	<i>Galium aparine</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Northern bedstraw	<i>Galium boreale</i>
Labrador bedstraw	<i>Galium labradoricum</i>
Small bedstraw	<i>Galium trifidum</i>
Sweet-scented bedstraw	<i>Galium triflorum</i>
Felwort	<i>Gentianella amarella</i>
Northern bastard toadflax	<i>Geocaulon lividum</i>
Bicknell's geranium	<i>Geranium bicknellii</i>
Wild white geranium	<i>Geranium richardsonii</i>
Yellow avens	<i>Geum aleppicum</i>
Large-leaved yellow avens	<i>Geum macrophyllum</i>
Purple avens	<i>Geum rivale</i>
Three-flowered avens	<i>Geum triflorum</i>
Lesser rattlesnake plantain	<i>Goodyera repens</i>
Spurred gentian	<i>Halenia deflexa</i>
Alpine hedysarum	<i>Hedysarum alpinum</i>
Northern hedysarum	<i>Hedysarum boreale</i>
Cow parsnip	<i>Heracleum lanatum</i>
Woolly hawkweed	<i>Hieracium cynoglossoides</i>
Narrow-leaved hawkweed	<i>Hieracium umbellatum</i>
Common mare's-tail	<i>Hippuris vulgaris</i>
Spotted touch-me-not	<i>Impatiens capensis</i>
Western jewelweed	<i>Impatiens noli-tangere</i>
Tall blue lettuce	<i>Lactuca biennis</i>
Common blue lettuce	<i>Lactuca pulchella</i>
Cream-colored vetchling	<i>Lathyrus ochroleucus</i>
Purple peavine	<i>Lathyrus venosus</i>
Western wood lily	<i>Lilium philadelphicum</i>
Mudwort	<i>Limosella aquatica</i>
Toadflax	<i>Linaria vulgaris</i>
Wild blue flax	<i>Linum lewisii</i>
Northern twayblade	<i>Listera borealis</i>
Broad-lipped twayblade	<i>Listera convallarioides</i>
Heart-leaved twayblade	<i>Listera cordata</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Northern water-horehound	<i>Lycopus uniflorus</i>
Hoary aster	<i>Machaeranthera canescens</i>
Wild lily-of-the-valley	<i>Maianthemum canadense</i>
Pineappleweed	<i>Matricaria matricarioides</i>
Black medick	<i>Medicago lupulina</i>
Cow-wheat	<i>Melampyrum lineare</i>
White sweet-clover	<i>Melilotus alba</i>
Yellow sweet-clover	<i>Melilotus officinalis</i>
Wild mint	<i>Mentha arvensis</i>
Buck-bean	<i>Menyanthes trifoliata</i>
Tall lungwort	<i>Mertensia paniculata</i>
Yellow monkeyflower	<i>Mimulus guttatus</i>
Bishop's-cap	<i>Mitella nuda</i>
Bishop's-cap	<i>Mitella pentandra</i>
Blunt-leaved sandwort	<i>Moehringia lateriflora</i>
One-flowered wintergreen	<i>Moneses uniflora</i>
Indian-pipe	<i>Monotropa uniflora</i>
Sainfoin	<i>Onobrychis viciifolia</i>
One-sided wintergreen	<i>Orthilia secunda</i>
Spreading sweet cicely	<i>Osmorhiza depauperata</i>
Purple sweet cicely	<i>Osmorhiza purpurea</i>
Reflexed locoweed	<i>Oxytropis deflexa</i>
Early yellow locoweed	<i>Oxytropis sericea</i>
Showy locoweed	<i>Oxytropis splendens</i>
Northern grass-of-parnassus	<i>Parnassia palustris</i>
Small northern grass-of-parnassus	<i>Parnassia parviflora</i>
Elephant's-head	<i>Pedicularis groenlandica</i>
Labrador lousewort	<i>Pedicularis labradorica</i>
Swamp lousewort	<i>Pedicularis parviflora</i>
Sweet coltsfoot	<i>Petasites frigidus</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>frigidus</i>
Palmate-leaved coltsfoot	<i>Petasites frigidus</i> var. <i>palmatus</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Arrow-leaved coltsfoot	<i>Petasites frigidus</i> var. <i>sagittatus</i>
Vine-leaved coltsfoot	<i>Petasites frigidus</i> var. <i>x vitifolius</i>
Common butterwort	<i>Pinguicula vulgaris</i>
Saline plantain	<i>Plantago eriopoda</i>
Common plantain	<i>Plantago major</i>
Leafy northern green orchid	<i>Platanthera aquilonis</i>
Tall white bog orchid	<i>Platanthera dilatata</i>
Tall northern green orchid	<i>Platanthera huronensis</i>
Blunt-leaved bog orchid	<i>Platanthera obtusata</i>
Round-leaved bog orchid	<i>Platanthera orbiculata</i>
Water smartweed	<i>Polygonum amphibium</i>
Silvery cinquefoil	<i>Potentilla argentea</i>
White cinquefoil	<i>Potentilla arguta</i>
Graceful cinquefoil	<i>Potentilla gracilis</i>
Rough cinquefoil	<i>Potentilla norvegica</i>
Marsh cinquefoil	<i>Potentilla palustris</i>
Mealy primrose	<i>Primula incana</i>
Common pink wintergreen	<i>Pyrola asarifolia</i>
Greenish-flowered wintergreen	<i>Pyrola chlorantha</i>
Lesser wintergreen	<i>Pyrola minor</i>
Small-flowered buttercup	<i>Ranunculus abortivus</i>
Tall buttercup	<i>Ranunculus acris</i>
Large-leaved white water crowfoot	<i>Ranunculus aquatilis</i>
Seaside buttercup	<i>Ranunculus cymbalaria</i>
Yellow water crowfoot	<i>Ranunculus gmelinii</i>
Lapland buttercup	<i>Ranunculus lapponicus</i>
Macoun's buttercup	<i>Ranunculus macounii</i>
Bristly buttercup	<i>Ranunculus pensylvanicus</i>
Celery-leaved buttercup	<i>Ranunculus sceleratus</i>
Hairy buttercup	<i>Ranunculus uncinatus</i>
Yellow rattle	<i>Rhinanthus minor</i>
Marsh yellow cress	<i>Rorippa palustris</i>
Curled dock	<i>Rumex crispus</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Golden dock	<i>Rumex maritimus</i>
Western dock	<i>Rumex occidentalis</i>
Water dock	<i>Rumex orbiculatus</i>
Narrow-leaved dock	<i>Rumex triangulivalvis</i>
Marsh skullcap	<i>Scutellaria galericulata</i>
Few-flowered ragwort	<i>Senecio pauciflorus</i>
Balsam groundsel	<i>Senecio pauperculus</i>
Water parsnip	<i>Sium suave</i>
False Solomon's-seal	<i>Smilacina racemosa</i>
Star-flowered Solomon's-seal	<i>Smilacina stellata</i>
Three-leaved Solomon's-seal	<i>Smilacina trifolia</i>
Canada goldenrod	<i>Solidago canadensis</i>
Late goldenrod	<i>Solidago gigantea</i>
Alpine goldenrod	<i>Solidago multiradiata</i>
Showy goldenrod	<i>Solidago nemoralis</i>
Mountain goldenrod	<i>Solidago simplex</i> ssp. <i>simplex</i>
Perennial sow-thistle	<i>Sonchus arvensis</i>
Annual sow-thistle	<i>Sonchus oleraceus</i>
Hooded ladies'-tresses	<i>Spiranthes romanzoffiana</i>
Marsh hedge-nettle	<i>Stachys palustris</i>
Northern stitchwort	<i>Stellaria calycantha</i>
Fleshy stitchwort	<i>Stellaria crassifolia</i>
Long-leaved chickweed	<i>Stellaria longifolia</i>
Long-stalked chickweed	<i>Stellaria longipes</i>
Clasping-leaved twisted-stalk	<i>Streptopus amplexifolius</i>
Common dandelion	<i>Taraxacum officinale</i>
Tall meadow rue	<i>Thalictrum dasycarpum</i>
Western meadow rue	<i>Thalictrum occidentale</i>
Flat-fruited meadow rue	<i>Thalictrum sparsiflorum</i>
Veiny meadow rue	<i>Thalictrum venulosum</i>
Laceflower	<i>Tiarella trifoliata</i>
Sticky false asphodel	<i>Tofieldia glutinosa</i>
Alsike clover	<i>Trifolium hybridum</i>



**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Red clover	<i>Trifolium pratense</i>
White clover	<i>Trifolium repens</i>
Seaside arrow-grass	<i>Triglochin maritima</i>
Slender arrow-grass	<i>Triglochin palustris</i>
Common nettle	<i>Urtica dioica</i>
Northern valerian	<i>Valeriana dioica</i>
Green false hellebore	<i>Veratrum eschscholtzii</i>
American brooklime	<i>Veronica americana</i>
Hairy speedwell	<i>Veronica peregrina</i>
Wild vetch	<i>Vicia americana</i>
Early blue violet	<i>Viola adunca</i>
Western Canada violet	<i>Viola canadensis</i>
Bog violet	<i>Viola nephrophylla</i>
Marsh violet	<i>Viola palustris</i>
Kidney-leaved violet	<i>Viola renifolia</i>
Great-spurred violet	<i>Viola selkirkii</i>
<b>Ferns &amp; Fern Allies</b>	
Lady fern	<i>Athyrium filix-femina</i>
Virginia grape fern	<i>Botrychium virginianum</i>
Fragile bladder fern	<i>Cystopteris fragilis</i>
Ground-cedar	<i>Diphasiastrum complanatum</i>
Broad spinulose shield fern	<i>Dryopteris assimilis</i>
Narrow spinulose shield fern	<i>Dryopteris carthusiana</i>
Common horsetail	<i>Equisetum arvense</i>
Swamp horsetail	<i>Equisetum fluviatile</i>
Common scouring-rush	<i>Equisetum hyemale</i>
Marsh horsetail	<i>Equisetum palustre</i>
Meadow horsetail	<i>Equisetum pratense</i>
Dwarf scouring-rush	<i>Equisetum scirpoides</i>
Woodland horsetail	<i>Equisetum sylvaticum</i>
Variegated horsetail	<i>Equisetum variegatum</i>
Oak fern	<i>Gymnocarpium dryopteris</i>
Stiff club-moss	<i>Lycopodium annotinum</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Ferns and Fern Allies (cont'd)</b>	
Running club-moss	<i>Lycopodium clavatum</i>
Ground-pine	<i>Lycopodium obscurum</i>
Ostrich fern	<i>Matteuccia struthiopteris</i>
Smooth woodsia	<i>Woodsia glabella</i>
<b>Aquatics</b>	
hornwort	<i>Ceratophyllum demersum</i>
Common duckweed	<i>Lemna minor</i>
Spiked water-milfoil	<i>Myriophyllum exallescens</i>
Water-milfoil	<i>Myriophyllum verticillatum</i>
Yellow pond-lily	<i>Nuphar lutea</i>
Pygmy water-lily	<i>Nymphaea leibergii</i>
Alpine pondweed	<i>Potamogeton alpinus</i>
Thread-leaved pondweed	<i>Potamogeton filiformis</i>
Leafy pondweed	<i>Potamogeton foliosus</i>
Various-leaved pondweed	<i>Potamogeton gramineus</i>
Small-leaf pondweed	<i>Potamogeton pusillus</i>
Clasping-leaf pondweed	<i>Potamogeton richardsonii</i>
Narrow-leaved bur-reed	<i>Sparganium angustifolium</i>
Giant bur-reed	<i>Sparganium eurycarpum</i>
Flat-leaved bladderwort	<i>Utricularia intermedia</i>
Common bladderwort	<i>Utricularia vulgaris</i>
<b>Mosses</b>	
Moss	<i>Abietinella abietina</i>
Tufted moss	<i>Aulacomnium palustre</i>
Ragged moss	<i>Brachythecium sp.</i>
Thread moss	<i>Bryum pseudotriquetrum</i>
Moss	<i>Calliergon giganteum</i>
Moss	<i>Calliergon stramineum</i>
Moss	<i>Campylium stellatum</i>
Tree moss	<i>Climacium dendroides</i>
Fuscous moss	<i>Dicranum fuscescens</i>
Dicranum	<i>Dicranum sp.</i>
Brown moss	<i>Drepanocladus sp.</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Mosses (cont'd)</b>	
Moss	<i>Helodium blandowii</i>
Stair-step moss	<i>Hylocomium splendens</i>
Mnium	<i>Mnium</i> sp.
Moss	<i>Paludella squarrosa</i>
Moss	<i>Plagiomnium ellipticum</i>
Moss	<i>Plagiomnium medium</i>
Leafy moss	<i>Plagiomnium</i> sp.
Schreber's moss	<i>Pleurozium schreberi</i>
Common hair-cap	<i>Polytrichum commune</i>
Juniper hair-cap	<i>Polytrichum juniperinum</i>
Slender hair-cap	<i>Polytrichum strictum</i>
Moss	<i>Pterygoneurum</i> sp.
Knight's plume moss	<i>Ptilium crista-castrensis</i>
Pipecleaner moss	<i>Rhytidiadelphus</i> sp.
Peat-moss	<i>Sphagnum angustifolium</i>
Acute-leaved peat-moss	<i>Sphagnum capillifolium</i>
Rusty peat-moss	<i>Sphagnum fuscum</i>
Midway peat-moss	<i>Sphagnum magellanicum</i>
Peat-moss	<i>Sphagnum warnstorffii</i>
Golden moss	<i>Tomentypnum falcifolium</i>
Golden moss	<i>Tomentypnum nitens</i>
<b>Liverworts</b>	
Liverwort	<i>Marchantia polymorpha</i>
Liverwort	<i>Ptilidium ciliare</i>
<b>Lichens</b>	
Dark old-man's beard	<i>Bryoria</i> sp.
Reindeer lichen	<i>Cladina mitis</i>
Reindeer lichen	<i>Cladina rangiferina</i>
Reindeer lichen	<i>Cladina stellaris</i>
Lichen	<i>Cladonia crispata</i>
Graceful pyxie cup	<i>Cladonia gracilis</i>
Lichen	<i>Cladonia scabriuscula</i>
Lichen	<i>Hypogymnia physodes</i>

**Table D-2 Plant Species Recorded During Field Surveys in the PEAA of the Southern Alberta Uplands (cont'd)**

Common Name	Scientific Name
<b>Lichens (cont'd)</b>	
Lichen	<i>Icmadophila ericetorum</i>
Lichen	<i>Parmelia sulcata</i>
Studded leather lichen	<i>Peltigera aphthosa</i>
Dog lichen	<i>Peltigera canina</i>
Powdered sunshine lichen	<i>Tuckermannopsis pinastri</i>
Lichen	<i>Varicellaria</i> sp.

**Table D-3 Plant Species Recorded During Field Surveys in the PEAA of the Alberta Plateau**

Common Name	Scientific Name
<b>Trees</b>	
Subalpine fir	<i>Abies lasiocarpa</i> var. <i>lasiocarpa</i>
Tamarack	<i>Larix laricina</i>
Hybrid white spruce	<i>Picea engelmannii</i> x <i>glauca</i>
White spruce	<i>Picea glauca</i>
Black spruce	<i>Picea mariana</i>
Whitebark pine	<i>Pinus albicaulis</i>
Shore pine	<i>Pinus contorta</i> var. <i>contorta</i>
Lodgepole pine	<i>Pinus contorta</i> var. <i>latifolia</i>
Balsam poplar	<i>Populus balsamifera</i> ssp. <i>balsamifera</i>
Trembling aspen	<i>Populus tremuloides</i>
<b>Shrubs</b>	
Mountain alder	<i>Alnus incana</i> ssp. <i>tenuifolia</i>
Green alder	<i>Alnus viridis</i> ssp. <i>crispa</i>
Saskatoon	<i>Amelanchier alnifolia</i> var. <i>alnifolia</i>
Bog-rosemary	<i>Andromeda polifolia</i>
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>
Alpine bearberry	<i>Arctous alpinus</i>
Low birch	<i>Betula pumila</i> var. <i>glandulifera</i>
Bunchberry	<i>Cornus canadensis</i>
Silverberry	<i>Elaeagnus commutata</i>
Crowberry	<i>Empetrum nigrum</i>
Creeping-snowberry	<i>Gaultheria hispidula</i>

**Table D-3 Plant Species Recorded During Field Surveys in the PEAA of the Alberta Plateau (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Alpine-wintergreen	<i>Gaultheria humifusa</i>
Western bog-laurel	<i>Kalmia microphylla</i> ssp. <i>microphylla</i>
Labrador tea	<i>Ledum groenlandicum</i>
Twinflower	<i>Linnaea borealis</i> ssp. <i>longiflora</i>
Black twinberry	<i>Lonicera involucrata</i>
Utah honeysuckle	<i>Lonicera utahensis</i>
White-flowered rhododendron	<i>Rhododendron albiflorum</i>
Northern blackcurrant	<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>
Black gooseberry	<i>Ribes lacustre</i>
Northern gooseberry	<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>
Red swamp currant	<i>Ribes triste</i>
Prickly rose	<i>Rosa acicularis</i> ssp. <i>sayi</i>
Nagoonberry	<i>Rubus arcticus</i> ssp. <i>acaulis</i>
Cloudberry	<i>Rubus chamaemorus</i>
Red raspberry	<i>Rubus idaeus</i> ssp. <i>strigosus</i>
Five-leaved bramble	<i>Rubus pedatus</i>
Dwarf red raspberry	<i>Rubus pubescens</i> var. <i>pubescens</i>
Northern bush willow	<i>Salix arbusculoides</i>
Barclay's willow	<i>Salix barclayi</i>
Bebb's willow	<i>Salix bebbiana</i>
Short-fruited willow	<i>Salix brachycarpa</i>
Sage willow	<i>Salix candida</i>
Drummond's willow	<i>Salix drummondiana</i>
Grey-leaved willow	<i>Salix glauca</i> var. <i>villosa</i>
Bilberry willow	<i>Salix myrtilifolia</i>
Bog willow	<i>Salix pedicellaris</i>
Plane-leaved willow	<i>Salix planifolia</i>
Serviceberry willow	<i>Salix pseudomonticola</i>
Scouler's willow	<i>Salix scouleriana</i>
Soopolallie	<i>Shepherdia canadensis</i>
Western mountain-ash	<i>Sorbus scopulina</i> var. <i>scopulina</i>
Birch-leaved spirea	<i>Spiraea betulifolia</i> ssp. <i>lucida</i>
Dwarf blueberry	<i>Vaccinium caespitosum</i>

**Table D-3 Plant Species Recorded During Field Surveys in the PEAA of the Alberta Plateau (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Black huckleberry	<i>Vaccinium membranaceum</i>
Velvet-leaved blueberry	<i>Vaccinium myrtilloides</i>
Lingonberry	<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>
Highbush-cranberry	<i>Viburnum edule</i>
<b>Graminoids</b>	
Wheatgrass	<i>Agropyron</i> sp.
Spike bentgrass	<i>Agrostis exarata</i>
Hair bentgrass	<i>Agrostis scabra</i>
Little meadow-foxtail	<i>Alopecurus aequalis</i>
American sloughgrass	<i>Beckmannia syzigachne</i>
Fringed brome	<i>Bromus ciliatus</i>
Bluejoint reedgrass	<i>Calamagrostis canadensis</i> var. <i>canadensis</i>
Bluejoint reedgrass	<i>Calamagrostis canadensis</i> var. <i>langsдорffii</i>
Pinegrass	<i>Calamagrostis rubescens</i>
Slimstem reedgrass	<i>Calamagrostis stricta</i> ssp. <i>inexpansa</i>
Slimstem reedgrass	<i>Calamagrostis stricta</i> ssp. <i>stricta</i>
Water sedge	<i>Carex aquatilis</i> ssp. <i>aquatilis</i>
Slender-beaked sedge	<i>Carex athrostachya</i>
Golden sedge	<i>Carex aurea</i>
Brownish sedge	<i>Carex brunnescens</i> ssp. <i>alaskana</i>
Grey sedge	<i>Carex canescens</i> ssp. <i>canescens</i>
Hairlike sedge	<i>Carex capillaris</i>
Cordroot sedge	<i>Carex chordorrhiza</i>
Low northern sedge	<i>Carex concinna</i>
Lesser-panicked sedge	<i>Carex diandra</i>
Soft-leaved sedge	<i>Carex disperma</i>
Yellow bog sedge	<i>Carex gynocrates</i>
Inland sedge	<i>Carex interior</i>
Slender sedge	<i>Carex lasiocarpa</i> ssp. <i>americana</i>
Bristle-stalked sedge	<i>Carex leptalea</i> ssp. <i>leptalea</i>
Shore sedge	<i>Carex limosa</i>
Pale sedge	<i>Carex livida</i> var. <i>radiculis</i>
Poor sedge	<i>Carex magellanica</i> ssp. <i>irrigua</i>

**Table D-3 Plant Species Recorded During Field Surveys in the PEAA of the Alberta Plateau (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Small-awned sedge	<i>Carex microchaeta</i> ssp. <i>microchaeta</i>
Parry's sedge	<i>Carex parryana</i>
Few-flowered sedge	<i>Carex pauciflora</i>
Ross' sedge	<i>Carex rossii</i>
Sparse-flowered sedge	<i>Carex tenuiflora</i>
Tracy's sedge	<i>Carex tracyi</i>
Beaked sedge	<i>Carex utriculata</i>
Sheathed sedge	<i>Carex vaginata</i>
Green sedge	<i>Carex viridula</i> ssp. <i>viridula</i>
Nodding wood-reed	<i>Cinna latifolia</i>
Spike-rush	<i>Eleocharis</i> sp.
Blue wildrye	<i>Elymus glaucus</i> ssp. <i>glaucus</i>
Slender wheatgrass	<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>
Annual wheatgrass	<i>Eremopyrum triticeum</i>
Narrow-leaved cotton-grass	<i>Eriophorum angustifolium</i>
Slender cotton-grass	<i>Eriophorum gracile</i>
Green-keeled cotton-grass	<i>Eriophorum viridicarinatum</i>
Tall mannagrass	<i>Glyceria elata</i>
Slender mannagrass	<i>Glyceria pulchella</i>
Mannagrass	<i>Glyceria</i> sp.
Fowl mannagrass	<i>Glyceria striata</i>
Common sweetgrass	<i>Hierochloa hirta</i> ssp. <i>arctica</i>
Whitish rush	<i>Juncus albescens</i>
Arctic rush	<i>Juncus arcticus</i> ssp. <i>alaskanus</i>
Baltic rush	<i>Juncus balticus</i>
Simple kobresia	<i>Kobresia simpliciuscula</i>
Fuzzy-spiked wildrye	<i>Leymus innovatus</i>
Many-flowered wood-rush	<i>Luzula multiflora</i> ssp. <i>multiflora</i>
Small-flowered wood-rush	<i>Luzula parviflora</i>
Marsh muhly	<i>Muhlenbergia glomerata</i>
Reed canarygrass	<i>Phalaris arundinacea</i>
Common timothy	<i>Phleum pratense</i>
Glaucous bluegrass	<i>Poa glauca</i> ssp. <i>glauca</i>

**Table D-3 Plant Species Recorded During Field Surveys in the PEAA of the Alberta Plateau (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Fowl bluegrass	<i>Poa palustris</i>
False melic	<i>Schizachne purpurascens</i>
Hudson Bay clubrush	<i>Trichophorum alpinum</i>
<b>Forbs</b>	
Yarrow	<i>Achillea millefolium</i> var. <i>lanulosa</i>
Baneberry	<i>Actaea rubra</i>
Round-leaved orchis	<i>Amerorchis rotundifolia</i>
Kneeling angelica	<i>Angelica genuflexa</i>
Showy pussytoes	<i>Antennaria pulcherrima</i> var. <i>pulcherrima</i>
Rosy pussytoes	<i>Antennaria rosea</i>
Dogbane	<i>Apocynum</i> sp.
Columbine	<i>Aquilegia</i> sp.
Rockcress	<i>Arabis</i> sp.
Meadow arnica	<i>Arnica chamissonis</i> ssp. <i>chamissonis</i>
Meadow arnica	<i>Arnica chamissonis</i> ssp. <i>incana</i>
Heart-leaved arnica	<i>Arnica cordifolia</i>
Rush aster	<i>Aster borealis</i>
Lindley's aster	<i>Aster ciliolatus</i>
Showy aster	<i>Aster conspicuus</i>
Great northern aster	<i>Aster modestus</i>
American milk-vetch	<i>Astragalus americanus</i>
Winter cress	<i>Barbarea</i> sp.
Wild calla	<i>Calla palustris</i>
Spring water-starwort	<i>Callitriche palustris</i>
Fairy-slipper	<i>Calypto bulbosa</i> var. <i>americana</i>
Pennsylvanian bitter-cress	<i>Cardamine pensylvanica</i>
Scarlet paintbrush	<i>Castilleja miniata</i>
Queen's cup	<i>Clintonia uniflora</i>
Long-bracted frog orchid	<i>Coeloglossum viride</i> var. <i>virescens</i>
Pale comandra	<i>Comandra umbellata</i> var. <i>pallida</i>
Marsh cinquefoil	<i>Comarum palustre</i>
Pink corydalis	<i>Corydalis sempervirens</i>
Smooth hawksbeard	<i>Crepis capillaris</i>



**Table D-3 Plant Species Recorded During Field Surveys in the PEAA of the Alberta Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Tall larkspur	<i>Delphinium glaucum</i>
Spiny wood fern	<i>Dryopteris expansa</i>
Fireweed	<i>Epilobium angustifolium</i> ssp. <i>angustifolium</i>
Purple-leaved willowherb	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>
Broad-leaved willowherb	<i>Epilobium latifolium</i>
Swamp willowherb	<i>Epilobium palustre</i>
Bitter fleabane	<i>Erigeron acris</i> var. <i>kamtschaticus</i>
Wormseed mustard	<i>Erysimum cheiranthoides</i>
Wood strawberry	<i>Fragaria vesca</i> var. <i>americana</i>
Wild strawberry	<i>Fragaria virginiana</i> var. <i>glauca</i>
Northern bedstraw	<i>Galium boreale</i>
Northern bog bedstraw	<i>Galium labradoricum</i>
Small bedstraw	<i>Galium trifidum</i> ssp. <i>columbianum</i>
Sweet-scented bedstraw	<i>Galium triflorum</i>
Northern gentian	<i>Gentianella amarella</i> ssp. <i>acuta</i>
False toad-flax	<i>Geocaulon lividum</i>
Large-leaved avens	<i>Geum macrophyllum</i> ssp. <i>perincisum</i>
Water avens	<i>Geum rivale</i>
Rattlesnake-plantain	<i>Goodyera oblongifolia</i>
Dwarf rattlesnake orchid	<i>Goodyera repens</i>
Alpine hedysarum	<i>Hedysarum alpinum</i>
Northern hedysarum	<i>Hedysarum boreale</i> ssp. <i>mackenzii</i>
Yellow hedysarum	<i>Hedysarum sulphurescens</i>
Cow-parsnip	<i>Heracleum maximum</i>
Hawkweed	<i>Hieracium</i> sp.
Common mare's-tail	<i>Hippuris vulgaris</i>
Creamy peavine	<i>Lathyrus ochroleucus</i>
Heart-leaved twayblade	<i>Listera cordata</i>
Wild lily-of-the-valley	<i>Maianthemum canadense</i>
Star-flowered false Solomon's-seal	<i>Maianthemum stellatum</i>
Three-leaved false Solomon's-seal	<i>Maianthemum trifolium</i>
Field mint	<i>Mentha arvensis</i>
Buckbean	<i>Menyanthes trifoliata</i>

**Table D-3 Plant Species Recorded During Field Surveys in the PEEA of the Alberta Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Tall bluebells	<i>Mertensia paniculata</i> var. <i>paniculata</i>
Bog sandwort	<i>Minuartia dawsonensis</i>
Common mitrewort	<i>Mitella nuda</i>
Blunt-leaved sandwort	<i>Moehringia lateriflora</i>
Single delight	<i>Moneses uniflora</i>
One-sided wintergreen	<i>Orthilia secunda</i> var. <i>secunda</i>
Sweet-cicely	<i>Osmorhiza</i> sp.
Bog cranberry	<i>Oxycoccus oxycoccus</i>
Locoweed	<i>Oxytropis</i> sp.
Northern grass-of-Parnassus	<i>Parnassia palustris</i>
Elephant's-head lousewort	<i>Pedicularis groenlandica</i>
Labrador lousewort	<i>Pedicularis labradorica</i>
Small-flowered lousewort	<i>Pedicularis parviflora</i> ssp. <i>parviflora</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>frigidus</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>nivalis</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>palmatus</i>
Arrow-leaved coltsfoot	<i>Petasites sagittatus</i>
Common butterwort	<i>Pinguicula vulgaris</i> ssp. <i>vulgaris</i>
Northern green rein orchid	<i>Platanthera aquilonis</i>
Fragrant white rein orchid	<i>Platanthera dilatata</i> var. <i>dilatata</i>
Fragrant white rein orchid	<i>Platanthera dilatata</i> var. <i>leucostachys</i>
One-leaved rein orchid	<i>Platanthera obtusata</i> ssp. <i>obtusata</i>
Slender rein orchid	<i>Platanthera stricta</i>
Tall Jacob's-ladder	<i>Polemonium acutiflorum</i>
Water smartweed	<i>Polygonum amphibium</i> var. <i>stipulaceum</i>
Alpine bistort	<i>Polygonum viviparum</i>
Diverse-leaved cinquefoil	<i>Potentilla diversifolia</i> var. <i>diversifolia</i>
Graceful cinquefoil	<i>Potentilla gracilis</i> var. <i>flabelliformis</i>
Norwegian cinquefoil	<i>Potentilla norvegica</i>
Pink wintergreen	<i>Pyrola asarifolia</i>
White water-buttercup	<i>Ranunculus aquatilis</i> var. <i>diffusus</i>
Subalpine buttercup	<i>Ranunculus eschscholtzii</i>
Small yellow water-buttercup	<i>Ranunculus gmelinii</i>

**Table D-3 Plant Species Recorded During Field Surveys in the PEAA of the Alberta Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Lapland buttercup	<i>Ranunculus lapponicus</i>
Macoun's buttercup	<i>Ranunculus macounii</i>
Marsh yellow cress	<i>Rorippa palustris</i> var. <i>palustris</i>
Western dock	<i>Rumex aquaticus</i> var. <i>fenestratus</i>
Curled dock	<i>Rumex crispus</i>
Sitka burnet	<i>Sanguisorba canadensis</i>
Saxifrage	<i>Saxifraga</i> sp.
Rayless alpine butterweed	<i>Senecio pauciflorus</i>
Arrow-leaved groundsel	<i>Senecio triangularis</i>
Canada goldenrod	<i>Solidago canadensis</i> var. <i>gilvocanescens</i>
Goldenrod	<i>Solidago simplex</i> var. <i>simplex</i>
Hooded ladies' tresses	<i>Spiranthes romanzoffiana</i>
Thick-leaved starwort	<i>Stellaria crassifolia</i>
Clasping twistedstalk	<i>Streptopus amplexifolius</i> var. <i>amplexifolius</i>
Clasping twistedstalk	<i>Streptopus amplexifolius</i> var. <i>chalazatus</i>
Alpine leafybract aster	<i>Symphyotrichum foliaceum</i> var. <i>foliaceum</i>
Common dandelion	<i>Taraxacum officinale</i>
Veiny meadowrue	<i>Thalictrum venulosum</i>
Common false asphodel	<i>Tofieldia pusilla</i>
Seaside arrow-grass	<i>Triglochin maritima</i>
Stinging nettle	<i>Urtica dioica</i> ssp. <i>gracilis</i>
Marsh valerian	<i>Valeriana dioica</i> ssp. <i>sylvatica</i>
Sitka valerian	<i>Valeriana sitchensis</i>
American speedwell	<i>Veronica americana</i>
American vetch	<i>Vicia americana</i>
<b>Ferns and Fern Allies</b>	
Rattlesnake fern	<i>Botrychium virginianum</i>
Fragile fern	<i>Cystopteris fragilis</i>
Common horsetail	<i>Equisetum arvense</i>
Swamp horsetail	<i>Equisetum fluviatile</i>
Marsh horsetail	<i>Equisetum palustre</i>
Meadow horsetail	<i>Equisetum pratense</i>
Dwarf scouring-rush	<i>Equisetum scirpoides</i>

**Table D-3 Plant Species Recorded During Field Surveys in the PEAA of the Alberta Plateau (cont'd)**

Common Name	Scientific Name
<b>Ferns and Fern Allies (cont'd)</b>	
Horsetail	<i>Equisetum</i> sp.
Wood horsetail	<i>Equisetum sylvaticum</i>
Northern scouring-rush	<i>Equisetum variegatum</i> ssp. <i>variegatum</i>
Oak fern	<i>Gymnocarpium dryopteris</i>
Stiff club-moss	<i>Lycopodium annotinum</i>
<b>Aquatics</b>	
Water-milfoil	<i>Myriophyllum</i> sp.
Closed-leaved pondweed	<i>Potamogeton foliosus</i>
Richardson's pondweed	<i>Potamogeton richardsonii</i>
Narrow-leaved bur-reed	<i>Sparganium angustifolium</i>
<b>Mosses</b>	
Tufted moss	<i>Aulacomnium palustre</i>
Cushion moss	<i>Dicranum</i> sp.
Step moss	<i>Hylocomium splendens</i>
Mnium moss	<i>Mnium</i> sp.
Leafy moss	<i>Plagiomnium</i> sp.
Red-stemmed feathermoss	<i>Pleurozium schreberi</i>
Knight's plume	<i>Ptilium crista-castrensis</i>
Round moss	<i>Rhizomnium glabrescens</i>
Leafy moss	<i>Rhizomnium</i> sp.
Peat-moss	<i>Sphagnum angustifolium</i>
Acute-leaved peat-moss	<i>Sphagnum capillifolium</i>
Golden moss	<i>Tomentypnum nitens</i>
<b>Liverworts</b>	
Liverwort	<i>Barbilophozia floerkei</i>
<b>Lichens</b>	
Reindeer lichen	<i>Cladina mitis</i>
Green reindeer lichen	<i>Cladina rangiferina</i>
Gray's cup lichen	<i>Cladonia grayi</i>
Lichen	<i>Cladonia</i> sp.
Arctic kidney lichen	<i>Nephroma arcticum</i>
Felt lichen	<i>Peltigera aphthosa</i>

**Table D-3 Plant Species Recorded During Field Surveys in the PEAA of the Alberta Plateau (cont'd)**

Common Name	Scientific Name
<b>Lichens (cont'd)</b>	
Felt lichen	<i>Peltigera</i> sp.
Cottontail foam	<i>Stereocaulon paschale</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains**

Common Name	Scientific Name
<b>Trees</b>	
Amabilis fir	<i>Abies amabilis</i>
Subalpine fir	<i>Abies lasiocarpa</i> var. <i>lasiocarpa</i>
Paper birch	<i>Betula papyrifera</i> var. <i>papyrifera</i>
Tamarack	<i>Larix laricina</i>
Engelmann spruce	<i>Picea engelmannii</i>
Hybrid white spruce	<i>Picea engelmannii</i> x <i>glauca</i>
White spruce	<i>Picea glauca</i>
Black spruce	<i>Picea mariana</i>
Shore pine	<i>Pinus contorta</i> var. <i>contorta</i>
Lodgepole pine	<i>Pinus contorta</i> var. <i>latifolia</i>
Balsam poplar	<i>Populus balsamifera</i> ssp. <i>balsamifera</i>
Trembling aspen	<i>Populus tremuloides</i>
<b>Shrubs</b>	
Mountain alder	<i>Alnus incana</i> ssp. <i>tenuifolia</i>
Green alder	<i>Alnus viridis</i> ssp. <i>crispa</i>
Saskatoon	<i>Amelanchier alnifolia</i> var. <i>alnifolia</i>
Bog-rosemary	<i>Andromeda polifolia</i>
Wild sarsaparilla	<i>Aralia nudicaulis</i>
Red fruit bearberry	<i>Arctostaphylos rubra</i>
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>
Low birch	<i>Betula pumila</i> var. <i>glandulifera</i>
Bunchberry	<i>Cornus canadensis</i>
Red-osier dogwood	<i>Cornus stolonifera</i>
Crowberry	<i>Empetrum nigrum</i>
Creeping-snowberry	<i>Gaultheria hispidula</i>
Alpine-wintergreen	<i>Gaultheria humifusa</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Alaskan mountain-heather	<i>Harrimanella stelleriana</i>
Common juniper	<i>Juniperus communis</i>
Western bog-laurel	<i>Kalmia microphylla</i> ssp. <i>microphylla</i>
Labrador tea	<i>Ledum groenlandicum</i>
Northern Labrador tea	<i>Ledum palustre</i> ssp. <i>decumbens</i>
Twinflower	<i>Linnaea borealis</i> ssp. <i>longiflora</i>
Glaucous-leaved honeysuckle	<i>Lonicera dioica</i> var. <i>glaucescens</i>
Black twinberry	<i>Lonicera involucrata</i>
Utah honeysuckle	<i>Lonicera utahensis</i>
False azalea	<i>Menziesia ferruginea</i> ssp. <i>ferruginea</i>
Devil's club	<i>Oplopanax horridus</i>
Pink mountain-heather	<i>Phyllodoce empetriformis</i>
Pin cherry	<i>Prunus pensylvanica</i>
White-flowered rhododendron	<i>Rhododendron albiflorum</i>
Rhododendron	<i>Rhododendron</i> sp.
Skunk currant	<i>Ribes glandulosum</i>
Northern blackcurrant	<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>
Black gooseberry	<i>Ribes lacustre</i>
Trailing black currant	<i>Ribes laxiflorum</i>
Northern gooseberry	<i>Ribes oxycanthoides</i> ssp. <i>oxycanthoides</i>
Red swamp currant	<i>Ribes triste</i>
Prickly rose	<i>Rosa acicularis</i> ssp. <i>sayi</i>
Prairie rose	<i>Rosa woodsii</i> ssp. <i>ultramontana</i>
Nagoonberry	<i>Rubus arcticus</i> ssp. <i>acaulis</i>
Cloudberry	<i>Rubus chamaemorus</i>
Red raspberry	<i>Rubus idaeus</i> ssp. <i>strigosus</i>
Cutleaf evergreen blackberry	<i>Rubus laciniatus</i>
Thimbleberry	<i>Rubus parviflorus</i> var. <i>parviflorus</i>
Five-leaved bramble	<i>Rubus pedatus</i>
Dwarf red raspberry	<i>Rubus pubescens</i> var. <i>pubescens</i>
Arctic willow	<i>Salix arctica</i>
Barclay's willow	<i>Salix barclayi</i>
Barratt's willow	<i>Salix barrattiana</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Bebb's willow	<i>Salix bebbiana</i>
Short-fruited willow	<i>Salix brachycarpa</i>
Sage willow	<i>Salix candida</i>
Under-green willow	<i>Salix commutata</i>
Pussy willow	<i>Salix discolor</i>
Drummond's willow	<i>Salix drummondiana</i>
Grey-leaved willow	<i>Salix glauca</i> var. <i>acutifolia</i>
Grey-leaved willow	<i>Salix glauca</i> var. <i>villosa</i>
Hooker's willow	<i>Salix hookeriana</i>
Maccalla's willow	<i>Salix maccalliana</i>
Bilberry willow	<i>Salix myrtillifolia</i>
Dwarf snow willow	<i>Salix nivalis</i>
Bog willow	<i>Salix pedicellaris</i>
Meadow willow	<i>Salix petiolaris</i>
Plane-leaved willow	<i>Salix planifolia</i>
Mackenzie willow	<i>Salix prolixa</i>
Net-veined willow	<i>Salix reticulata</i> ssp. <i>reticulata</i>
Scouler's willow	<i>Salix scouleriana</i>
Coastal red elderberry	<i>Sambucus racemosa</i> var. <i>arborescens</i>
Black elderberry	<i>Sambucus racemosa</i> var. <i>melanocarpa</i>
Soopolallie	<i>Shepherdia canadensis</i>
Western mountain-ash	<i>Sorbus scopulina</i> var. <i>scopulina</i>
Sitka mountain-ash	<i>Sorbus sitchensis</i> var. <i>grayi</i>
Birch-leaved spirea	<i>Spiraea betulifolia</i> ssp. <i>lucida</i>
Hardhack	<i>Spiraea douglasii</i> ssp. <i>douglasii</i>
Common snowberry	<i>Symphoricarpos albus</i> var. <i>laevigatus</i>
Western snowberry	<i>Symphoricarpos occidentalis</i>
Alaskan blueberry	<i>Vaccinium alaskaense</i>
Dwarf blueberry	<i>Vaccinium caespitosum</i>
Black huckleberry	<i>Vaccinium membranaceum</i>
Velvet-leaved blueberry	<i>Vaccinium myrtilloides</i>
Oval-leaved blueberry	<i>Vaccinium ovalifolium</i>
Lingonberry	<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Highbush-cranberry	<i>Viburnum edule</i>
American bush-cranberry	<i>Viburnum opulus</i> var. <i>americanum</i>
<b>Graminoids</b>	
Wheatgrass	<i>Agropyron</i> sp.
Spike bentgrass	<i>Agrostis exarata</i>
Alpine bentgrass	<i>Agrostis humilis</i>
Idaho bentgrass	<i>Agrostis idahoensis</i>
Northern bentgrass	<i>Agrostis mertensii</i>
Small-leaved bentgrass	<i>Agrostis microphylla</i>
Hair bentgrass	<i>Agrostis scabra</i>
Fringed brome	<i>Bromus ciliatus</i>
Smooth brome	<i>Bromus inermis</i>
Pumpelly brome	<i>Bromus pumpellianus</i>
Bluejoint reedgrass	<i>Calamagrostis canadensis</i> var. <i>canadensis</i>
Bluejoint reedgrass	<i>Calamagrostis canadensis</i> var. <i>langsдорffii</i>
Purple reedgrass	<i>Calamagrostis purpurascens</i> var. <i>purpurascens</i>
Pinegrass	<i>Calamagrostis rubescens</i>
Slimstem reedgrass	<i>Calamagrostis stricta</i> ssp. <i>inexpansa</i>
Slimstem reedgrass	<i>Calamagrostis stricta</i> ssp. <i>stricta</i>
Two-toned sedge	<i>Carex albonigra</i>
Water sedge	<i>Carex aquatilis</i> ssp. <i>aquatilis</i>
Golden sedge	<i>Carex aurea</i>
Bigelow's sedge	<i>Carex bigelowii</i>
Grey sedge	<i>Carex canescens</i> ssp. <i>canescens</i>
Hairlike sedge	<i>Carex capillaris</i>
Cordroot sedge	<i>Carex chordorrhiza</i>
Low northern sedge	<i>Carex concinna</i>
Lesser-panicked sedge	<i>Carex diandra</i>
Soft-leaved sedge	<i>Carex disperma</i>
Star sedge	<i>Carex echinata</i> ssp. <i>echinata</i>
Coastal stellate sedge	<i>Carex echinata</i> ssp. <i>phyllomanica</i>
Yellow sedge	<i>Carex flava</i>
Garber's sedge	<i>Carex garberi</i> ssp. <i>garberi</i>



**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Yellow bog sedge	<i>Carex gynocrates</i>
Hayden's sedge	<i>Carex haydeniana</i>
Sheep sedge	<i>Carex illota</i>
Inland sedge	<i>Carex interior</i>
Slender sedge	<i>Carex lasiocarpa</i> ssp. <i>americana</i>
Kellogg's sedge	<i>Carex lenticularis</i> var. <i>lipocarpa</i>
Bristle-stalked sedge	<i>Carex leptalea</i> ssp. <i>leptalea</i>
Shore sedge	<i>Carex limosa</i>
Pale sedge	<i>Carex livida</i> var. <i>radiculis</i>
Falkland Island sedge	<i>Carex macloviana</i>
Large-headed sedge	<i>Carex macrocephala</i>
Large-awned sedge	<i>Carex macrochaeta</i>
Scandinavian sedge	<i>Carex media</i>
Merten's sedge	<i>Carex mertensii</i>
Small-awned sedge	<i>Carex microchaeta</i> ssp. <i>microchaeta</i>
Small-winged sedge	<i>Carex microptera</i>
Black alpine sedge	<i>Carex nigricans</i>
Few-flowered sedge	<i>Carex pauciflora</i>
Meadow sedge	<i>Carex praticola</i>
Ross' sedge	<i>Carex rossii</i>
Russet sedge	<i>Carex saxatilis</i> ssp. <i>laxa</i>
Sitka sedge	<i>Carex sitchensis</i>
Showy sedge	<i>Carex spectabilis</i>
Tracy's sedge	<i>Carex tracyi</i>
Beaked sedge	<i>Carex utriculata</i>
Sheathed sedge	<i>Carex vaginata</i>
Green sedge	<i>Carex viridula</i> ssp. <i>viridula</i>
Nodding wood-reed	<i>Cinna latifolia</i>
Tufted hairgrass	<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>
Spike-rush	<i>Eleocharis</i> sp.
Blue wildrye	<i>Elymus glaucus</i> ssp. <i>glaucus</i>
Quackgrass	<i>Elymus repens</i>
Slender wheatgrass	<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEEA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Narrow-leaved cotton-grass	<i>Eriophorum angustifolium</i>
Short-anthered cotton-grass	<i>Eriophorum brachyantherum</i>
Chamisso's cotton-grass	<i>Eriophorum chamissonis</i> var. <i>chamissonis</i>
Slender cotton-grass	<i>Eriophorum gracile</i>
Scheuchzer's cotton-grass	<i>Eriophorum scheuchzeri</i>
Sheathed cotton-grass	<i>Eriophorum vaginatum</i> ssp. <i>vaginatum</i>
Green-keeled cotton-grass	<i>Eriophorum viridicarinatum</i>
Alpine fescue	<i>Festuca brachyphylla</i>
Idaho fescue	<i>Festuca idahoensis</i> ssp. <i>idahoensis</i>
Red fescue	<i>Festuca rubra</i> ssp. <i>rubra</i>
Rocky Mountain fescue	<i>Festuca saximontana</i>
Northern mannagrass	<i>Glyceria borealis</i>
Tall mannagrass	<i>Glyceria elata</i>
Slender-spiked mannagrass	<i>Glyceria leptostachya</i>
Slender mannagrass	<i>Glyceria pulchella</i>
Fowl mannagrass	<i>Glyceria striata</i>
Alpine sweetgrass	<i>Hierochloa alpina</i>
Whitish rush	<i>Juncus albescens</i>
Alpine rush	<i>Juncus alpinoarticulatus</i>
Jointed rush	<i>Juncus articulatus</i>
Baltic rush	<i>Juncus balticus</i>
Colorado rush	<i>Juncus confusus</i>
Drummond's rush	<i>Juncus drummondii</i> var. <i>drummondii</i>
Mertens' rush	<i>Juncus mertensianus</i>
Sierra rush	<i>Juncus nevadensis</i>
Bog rush	<i>Juncus stygius</i>
Junegrass	<i>Koeleria macrantha</i>
Sprangletop	<i>Leptochloa</i> sp.
Fuzzy-spiked wildrye	<i>Leymus innovatus</i>
Curved wood-rush	<i>Luzula arcuata</i> ssp. <i>unalaschcensis</i>
Hitchcock's wood-rush	<i>Luzula hitchcockii</i>
Small-flowered wood-rush	<i>Luzula parviflora</i>
Piper's wood-rush	<i>Luzula piperi</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Melic	<i>Melica</i> sp.
Marsh muhly	<i>Muhlenbergia glomerata</i>
Ricegrass	<i>Oryzopsis</i> sp.
Western bluegrass	<i>Pascopyrum smithii</i>
Alpine timothy	<i>Phleum alpinum</i>
Common timothy	<i>Phleum pratense</i>
Alpine bluegrass	<i>Poa alpina</i> ssp. <i>alpina</i>
Arctic bluegrass	<i>Poa arctica</i> ssp. <i>lanata</i>
Bog bluegrass	<i>Poa leptocoma</i>
Fowl bluegrass	<i>Poa palustris</i>
Kentucky bluegrass	<i>Poa pratensis</i> ssp. <i>pratensis</i>
False melic	<i>Schizachne purpurascens</i>
Bulrush	<i>Scirpus</i> sp.
Hudson Bay clubrush	<i>Trichophorum alpinum</i>
Spike trisetum	<i>Trisetum spicatum</i>
Common cattail	<i>Typha latifolia</i>
Mountain hairgrass	<i>Vahlodea atropurpurea</i>
Yarrow	<i>Achillea millefolium</i> var. <i>alpicola</i>
Yarrow	<i>Achillea millefolium</i> var. <i>borealis</i>
Yarrow	<i>Achillea millefolium</i> var. <i>lanulosa</i>
Mountain monkshood	<i>Aconitum delphiniifolium</i>
Monkshood	<i>Aconitum</i> sp.
Baneberry	<i>Actaea rubra</i>
Orange agoseris	<i>Agoseris aurantiaca</i> ssp. <i>aurantiaca</i>
Wild chives	<i>Allium schoenoprasum</i> var. <i>sibiricum</i>
Round-leaved orchis	<i>Amerorchis rotundifolia</i>
Pearly everlasting	<i>Anaphalis margaritacea</i>
Cut-leaved anemone	<i>Anemone multifida</i> var. <i>multifida</i>
Narcissus anemone	<i>Anemone narcissiflora</i> var. <i>monantha</i>
Northern anemone	<i>Anemone parviflora</i>
Yellow anemone	<i>Anemone richardsonii</i>
Kneeling angelica	<i>Angelica genuflexa</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Field pussytoes	<i>Antennaria neglecta</i>
Racemose pussytoes	<i>Antennaria racemosa</i>
Rosy pussytoes	<i>Antennaria rosea</i>
Umber pussytoes	<i>Antennaria umbrinella</i>
Sitka columbine	<i>Aquilegia formosa</i> ssp. <i>formosa</i>
Rockcress	<i>Arabis</i> sp.
Sandwort	<i>Arenaria</i> sp.
Meadow arnica	<i>Arnica chamissonis</i> ssp. <i>chamissonis</i>
Heart-leaved arnica	<i>Arnica cordifolia</i>
Arnica	<i>Arnica griscomii</i> ssp. <i>frigida</i>
Mountain arnica	<i>Arnica latifolia</i>
Parry's arnica	<i>Arnica parryi</i>
Mountain sagewort	<i>Artemisia norvegica</i> ssp. <i>saxatilis</i>
Goatsbeard	<i>Aruncus dioicus</i>
Alpine aster	<i>Aster alpinus</i> ssp. <i>vierhapperi</i>
Rush aster	<i>Aster borealis</i>
Lindley's aster	<i>Aster ciliolatus</i>
Showy aster	<i>Aster conspicuus</i>
Tufted white prairie aster	<i>Aster ericoides</i> ssp. <i>pansus</i>
Great northern aster	<i>Aster modestus</i>
Arctic aster	<i>Aster sibiricus</i> var. <i>meritus</i>
American milk-vetch	<i>Astragalus americanus</i>
Nuttall's orache	<i>Atriplex nuttallii</i>
Coast boykinia	<i>Boykinia occidentalis</i>
Mustard	<i>Brassica</i> sp.
Diverse-leaved water-starwort	<i>Callitriche heterophylla</i> ssp. <i>bolanderi</i>
White mountain marsh-marigold	<i>Caltha leptosepala</i> var. <i>biflora</i>
White mountain marsh-marigold	<i>Caltha leptosepala</i> var. <i>leptosepala</i>
Yellow marsh-marigold	<i>Caltha palustris</i> var. <i>palustris</i>
Common harebell	<i>Campanula rotundifolia</i>
Asian bittercress	<i>Cardamine</i> sp.
Scarlet paintbrush	<i>Castilleja miniata</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Western paintbrush	<i>Castilleja occidentalis</i>
Chickweed	<i>Cerastium</i> sp.
Iowa golden-saxifrage	<i>Chrysosplenium iowense</i>
Northern golden-saxifrage	<i>Chrysosplenium tetrandrum</i>
Enchanter's-nightshade	<i>Circaea alpina</i> ssp. <i>alpina</i>
Enchanter's-nightshade	<i>Circaea alpina</i> ssp. <i>pacifica</i>
Bull thistle	<i>Cirsium vulgare</i>
Queen's cup	<i>Clintonia uniflora</i>
Long-bracted frog orchid	<i>Coeloglossum viride</i> var. <i>virescens</i>
Bastard toad-flax	<i>Comandra umbellata</i> var. <i>umbellata</i>
Marsh cinquefoil	<i>Comarum palustre</i>
Yellow coralroot	<i>Corallorhiza trifida</i>
Sparrow's-egg lady's-slipper	<i>Cypripedium passerinum</i>
Tall larkspur	<i>Delphinium glaucum</i>
Lance-fruited draba	<i>Draba lonchocarpa</i> var. <i>lonchocarpa</i>
Round-leaved sundew	<i>Drosera rotundifolia</i> var. <i>rotundifolia</i>
Entire-leaved mountain-avens	<i>Dryas integrifolia</i> ssp. <i>integrifolia</i>
Alpine willowherb	<i>Epilobium anagallidifolium</i>
Fireweed	<i>Epilobium angustifolium</i> ssp. <i>angustifolium</i>
Purple-leaved willowherb	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>
White-flowered willowherb	<i>Epilobium lactiflorum</i>
Broad-leaved willowherb	<i>Epilobium latifolium</i>
Small-fruited willowherb	<i>Epilobium leptocarpum</i>
Narrow-leaved willowherb	<i>Epilobium leptophyllum</i>
Bitter fleabane	<i>Erigeron acris</i> var. <i>kamtschaticus</i>
Arctic-alpine daisy	<i>Erigeron humilis</i>
Purple daisy	<i>Erigeron pallens</i>
Subalpine daisy	<i>Erigeron peregrinus</i> ssp. <i>peregrinus</i>
Showy daisy	<i>Erigeron speciosus</i> var. <i>speciosus</i>
Wood strawberry	<i>Fragaria vesca</i> var. <i>americana</i>
Wild strawberry	<i>Fragaria virginiana</i> var. <i>glauca</i>
Northern rice-root	<i>Fritillaria camschatcensis</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEEA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Thin-leaved bedstraw	<i>Galium bifolium</i>
Northern bedstraw	<i>Galium boreale</i>
Boreal bedstraw	<i>Galium kamtschaticum</i>
Northern bog bedstraw	<i>Galium labradoricum</i>
Small bedstraw	<i>Galium trifidum</i> ssp. <i>columbianum</i>
Sweet-scented bedstraw	<i>Galium triflorum</i>
Glaucous gentian	<i>Gentiana glauca</i>
Northern gentian	<i>Gentianella amarella</i> ssp. <i>acuta</i>
False toad-flax	<i>Geocaulon lividum</i>
Yellow avens	<i>Geum aleppicum</i>
Large-leaved avens	<i>Geum macrophyllum</i> ssp. <i>macrophyllum</i>
Large-leaved avens	<i>Geum macrophyllum</i> ssp. <i>perincisum</i>
Water avens	<i>Geum rivale</i>
Rattlesnake-plantain	<i>Goodyera oblongifolia</i>
Dwarf rattlesnake orchid	<i>Goodyera repens</i>
Alpine hedsarum	<i>Hedysarum alpinum</i>
Northern hedsarum	<i>Hedysarum boreale</i> ssp. <i>mackenzii</i>
Cow-parsnip	<i>Heracleum maximum</i>
Slender hawkweed	<i>Hieracium gracile</i>
Mouse-ear hawkweed	<i>Hieracium pilosella</i>
Scouler's hawkweed	<i>Hieracium scouleri</i>
Woolly hawkweed	<i>Hieracium triste</i>
Narrow-leaved hawkweed	<i>Hieracium umbellatum</i> ssp. <i>umbellatum</i>
Common mare's-tail	<i>Hippuris vulgaris</i>
Purple peavine	<i>Lathyrus nevadensis</i> var. <i>pilosellus</i>
Creamy peavine	<i>Lathyrus ochroleucus</i>
Clasping-leaved pepper-grass	<i>Lepidium perfoliatum</i>
Leatherleaf saxifrage	<i>Leptarrhena pyrolifolia</i>
Prickly phlox	<i>Leptodactylon pungens</i>
Wood lily	<i>Lilium philadelphicum</i> var. <i>andinum</i>
Northern twayblade	<i>Listera borealis</i>
Heart-leaved twayblade	<i>Listera cordata</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Lobelia	<i>Lobelia</i> sp.
Partridge-foot	<i>Luetkea pectinata</i>
Lupine	<i>Lupinus</i> sp.
Wild lily-of-the-valley	<i>Maianthemum canadense</i>
False Solomon's-seal	<i>Maianthemum racemosum</i> ssp. <i>amplexicaule</i>
False Solomon's-seal	<i>Maianthemum</i> sp.
Star-flowered false Solomon's-seal	<i>Maianthemum stellatum</i>
Three-leaved false Solomon's-seal	<i>Maianthemum trifolium</i>
Alfalfa	<i>Medicago sativa</i> ssp. <i>falcata</i>
Cow-wheat	<i>Melampyrum lineare</i> var. <i>lineare</i>
White sweet-clover	<i>Melilotus alba</i>
Spearmint	<i>Mentha</i> sp.
Buckbean	<i>Menyanthes trifoliata</i>
Tall bluebells	<i>Mertensia paniculata</i> var. <i>paniculata</i>
Yellow monkey-flower	<i>Mimulus guttatus</i>
Brewer's mitrewort	<i>Mitella breweri</i>
Common mitrewort	<i>Mitella nuda</i>
Five-stamened mitrewort	<i>Mitella pentandra</i>
Blunt-leaved sandwort	<i>Moehringia lateriflora</i>
Single delight	<i>Moneses uniflora</i>
Forget-me-not	<i>Myosotis</i> sp.
One-sided wintergreen	<i>Orthilia secunda</i> var. <i>secunda</i>
Mountain sweet-cicely	<i>Osmorhiza berteroi</i>
Blunt-fruited sweet-cicely	<i>Osmorhiza depauperata</i>
Western sweet-cicely	<i>Osmorhiza occidentalis</i>
Purple sweet-cicely	<i>Osmorhiza purpurea</i>
Bog cranberry	<i>Oxycoccus oxycoccos</i>
Mountain sorrel	<i>Oxyria digyna</i>
Locoweed	<i>Oxytropis</i> sp.
Fringed grass-of-Parnassus	<i>Parnassia fimbriata</i>
Kotzebue's grass-of-Parnassus	<i>Parnassia kotzebuei</i>
Northern grass-of-Parnassus	<i>Parnassia palustris</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Bracted lousewort	<i>Pedicularis bracteosa</i> var. <i>bracteosa</i>
Elephant's-head lousewort	<i>Pedicularis groenlandica</i>
Sickletop lousewort	<i>Pedicularis racemosa</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>frigidus</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>nivalis</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>palmatus</i>
Arrow-leaved coltsfoot	<i>Petasites sagittatus</i>
Pink twink	<i>Phlox gracilis</i> ssp. <i>gracilis</i>
Common butterwort	<i>Pinguicula vulgaris</i> ssp. <i>macroceras</i>
Common butterwort	<i>Pinguicula vulgaris</i> ssp. <i>vulgaris</i>
Alaska rein orchid	<i>Piperia unalascensis</i>
Northern green rein orchid	<i>Platanthera aquilonis</i>
Fragrant white rein orchid	<i>Platanthera dilatata</i> var. <i>dilatata</i>
Fragrant white rein orchid	<i>Platanthera dilatata</i> var. <i>leucostachys</i>
One-leaved rein orchid	<i>Platanthera obtusata</i> ssp. <i>obtusata</i>
Large round-leaved rein orchid	<i>Platanthera orbiculata</i>
Slender rein orchid	<i>Platanthera stricta</i>
Tall Jacob's-ladder	<i>Polemonium acutiflorum</i>
Northern Jacob's-ladder	<i>Polemonium boreale</i>
Water smartweed	<i>Polygonum amphibium</i> var. <i>stipulaceum</i>
Alpine bistort	<i>Polygonum viviparum</i>
Purslane	<i>Portulaca</i> sp.
Diverse-leaved cinquefoil	<i>Potentilla diversifolia</i> var. <i>diversifolia</i>
Sticky cinquefoil	<i>Potentilla glandulosa</i> var. <i>glandulosa</i>
Norwegian cinquefoil	<i>Potentilla norvegica</i>
Western rattlesnake-root	<i>Prenanthes alata</i>
Hooker's fairybells	<i>Prosartes hookeri</i> var. <i>oregana</i>
Rough-fruited fairybells	<i>Prosartes trachycarpa</i>
Self-heal	<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>
Pink wintergreen	<i>Pyrola asarifolia</i>
Green wintergreen	<i>Pyrola chlorantha</i>
White wintergreen	<i>Pyrola elliptica</i>



**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Lesser wintergreen	<i>Pyrola minor</i>
Meadow buttercup	<i>Ranunculus acris</i>
Subalpine buttercup	<i>Ranunculus eschscholtzii</i>
Small yellow water-buttercup	<i>Ranunculus gmelinii</i>
Lapland buttercup	<i>Ranunculus lapponicus</i>
Western buttercup	<i>Ranunculus occidentalis</i> var. <i>occidentalis</i>
Birdfoot buttercup	<i>Ranunculus pedatifidus</i> ssp. <i>affinis</i>
Hairy buttercup	<i>Ranunculus sardous</i>
Little buttercup	<i>Ranunculus uncinatus</i>
Yellow rattle	<i>Rhinanthus minor</i>
Sitka romanzoffia	<i>Romanzoffia sitchensis</i>
Marsh yellow cress	<i>Rorippa palustris</i> var. <i>palustris</i>
Green sorrel	<i>Rumex acetosa</i> ssp. <i>alpestris</i>
Pearlwort	<i>Sagina</i> sp.
Sitka burnet	<i>Sanguisorba canadensis</i>
Wedge-leaved saxifrage	<i>Saxifraga adscendens</i> ssp. <i>oregonensis</i>
Evergreen saxifrage	<i>Saxifraga aizoides</i>
Spotted saxifrage	<i>Saxifraga bronchialis</i> ssp. <i>austromontana</i>
Tufted saxifrage	<i>Saxifraga caespitosa</i>
Alaska saxifrage	<i>Saxifraga ferruginea</i>
Red-stemmed saxifrage	<i>Saxifraga lyallii</i> var. <i>hultenii</i>
Wood saxifrage	<i>Saxifraga mertensiana</i>
Dotted saxifrage	<i>Saxifraga nelsoniana</i> ssp. <i>pacifica</i>
Western saxifrage	<i>Saxifraga occidentalis</i>
Stream saxifrage	<i>Saxifraga odontoloma</i>
Purple mountain saxifrage	<i>Saxifraga oppositifolia</i>
Three-toothed saxifrage	<i>Saxifraga tricuspidata</i>
Rue-leaved saxifrage	<i>Saxifraga tridactylites</i>
Rayless alpine butterweed	<i>Senecio pauciflorus</i>
Canadian butterweed	<i>Senecio pauperculus</i>
Arrow-leaved groundsel	<i>Senecio triangularis</i>
Sibbaldia	<i>Sibbaldia procumbens</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Moss campion	<i>Silene acaulis</i> var. <i>acaulis</i>
Moss campion	<i>Silene acaulis</i> var. <i>subacaulescens</i>
Canada goldenrod	<i>Solidago canadensis</i> var. <i>gilvocanescens</i>
Missouri goldenrod	<i>Solidago missouriensis</i> var. <i>missouriensis</i>
Spikelike goldenrod	<i>Solidago spathulata</i> var. <i>nana</i>
Hooded ladies' tresses	<i>Spiranthes romanzoffiana</i>
Northern starwort	<i>Stellaria calycantha</i>
Long-leaved starwort	<i>Stellaria longifolia</i>
Umbellate starwort	<i>Stellaria umbellata</i>
Clasping twistedstalk	<i>Streptopus amplexifolius</i> var. <i>amplexifolius</i>
Clasping twistedstalk	<i>Streptopus amplexifolius</i> var. <i>chalmazatus</i>
Rosy twistedstalk	<i>Streptopus lanceolatus</i> var. <i>curvipes</i>
Alpine leafybract aster	<i>Symphotrichum foliaceum</i> var. <i>foliaceum</i>
Horned dandelion	<i>Taraxacum ceratophorum</i>
Common dandelion	<i>Taraxacum officinale</i>
Alpine meadowrue	<i>Thalictrum alpinum</i>
Western meadowrue	<i>Thalictrum occidentale</i>
Veiny meadowrue	<i>Thalictrum venulosum</i>
Three-leaved foamflower	<i>Tiarella trifoliata</i> var. <i>trifoliata</i>
One-leaved foamflower	<i>Tiarella trifoliata</i> var. <i>unifoliata</i>
False asphodel	<i>Tofieldia</i> sp.
Sticky false asphodel	<i>Triantha glutinosa</i>
Northern starflower	<i>Trientalis europaea</i> ssp. <i>arctica</i>
Alsike clover	<i>Trifolium hybridum</i>
Red clover	<i>Trifolium pratense</i>
Springbank clover	<i>Trifolium wormskioldii</i>
Marsh arrow-grass	<i>Triglochin palustris</i>
Globeflower	<i>Trollius albiflorus</i>
Stinging nettle	<i>Urtica dioica</i> ssp. <i>gracilis</i>
Marsh valerian	<i>Valeriana dioica</i> ssp. <i>sylvatica</i>
Sitka valerian	<i>Valeriana sitchensis</i>
Indian hellebore	<i>Veratrum viride</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Mullein	<i>Verbascum</i> sp.
American speedwell	<i>Veronica americana</i>
Thyme-leaved speedwell	<i>Veronica serpyllifolia</i> var. <i>humifusa</i>
Alpine speedwell	<i>Veronica wormskjoldii</i> var. <i>wormskjoldii</i>
American vetch	<i>Vicia americana</i>
Early blue violet	<i>Viola adunca</i> var. <i>adunca</i>
Canada violet	<i>Viola canadensis</i> var. <i>rugulosa</i>
Stream violet	<i>Viola glabella</i>
Round-leaved violet	<i>Viola orbiculata</i>
Marsh violet	<i>Viola palustris</i> var. <i>palustris</i>
Kidney-leaved violet	<i>Viola renifolia</i>
Mountain death-camas	<i>Zigadenus elegans</i> ssp. <i>elegans</i>
<b>Ferns and Fern Allies</b>	
Lady fern	<i>Athyrium filix-femina</i> ssp. <i>cyclosorum</i>
Dainty moonwort	<i>Botrychium crenulatum</i>
Least moonwort	<i>Botrychium simplex</i>
Rattlesnake fern	<i>Botrychium virginianum</i>
Fragile fern	<i>Cystopteris fragilis</i>
Spiny wood fern	<i>Dryopteris expansa</i>
Ground-cedar	<i>Diphasiastrum complanatum</i>
Common horsetail	<i>Equisetum arvense</i>
Swamp horsetail	<i>Equisetum fluviatile</i>
Scouring-rush	<i>Equisetum hyemale</i> ssp. <i>affine</i>
Marsh horsetail	<i>Equisetum palustre</i>
Meadow horsetail	<i>Equisetum pratense</i>
Dwarf scouring-rush	<i>Equisetum scirpoides</i>
Wood horsetail	<i>Equisetum sylvaticum</i>
Northern scouring-rush	<i>Equisetum variegatum</i> ssp. <i>variegatum</i>
Western oak fern	<i>Gymnocarpium disjunctum</i>
Oak fern	<i>Gymnocarpium dryopteris</i>
Western fir clubmoss	<i>Huperzia occidentalis</i>
Stiff club-moss	<i>Lycopodium annotinum</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Ferns and Fern Allies (cont'd)</b>	
Narrow beech fern	<i>Phegopteris connectilis</i>
Northern holly fern	<i>Polystichum lonchitis</i>
Rock selaginella	<i>Selaginella rupestris</i>
Mountain-moss	<i>Selaginella selaginoides</i>
Marsh fern	<i>Thelypteris</i> sp.
Western cliff fern	<i>Woodsia oregana</i> ssp. <i>oregana</i>
Mountain cliff fern	<i>Woodsia scopulina</i>
<b>Aquatics</b>	
Narrow-leaved bur-reed	<i>Sparganium angustifolium</i>
Small bur-reed	<i>Sparganium natans</i>
Slender-leaved pondweed	<i>Stuckenia filiformis</i> ssp. <i>occidentalis</i>
Bladderwort	<i>Utricularia</i> sp.
<b>Mosses</b>	
Tufted moss	<i>Aulacomnium palustre</i>
Greenland brachythecium moss	<i>Brachythecium groenlandicum</i>
Holzinger's brachythecium moss	<i>Brachythecium holzingeri</i>
Brachythecium moss	<i>Brachythecium hylotapetum</i>
Ragged-moss	<i>Brachythecium</i> sp.
Cushion moss	<i>Dicranum polysetum</i>
Brown moss	<i>Drepanocladus</i> sp.
Step moss	<i>Hylocomium splendens</i>
Mnium moss	<i>Mnium</i> sp.
Philonotis moss	<i>Philonotis fontana</i> var. <i>fontana</i>
Plagiomnium moss	<i>Plagiomnium medium</i>
Red-stemmed feathermoss	<i>Pleurozium schreberi</i>
Hair cap moss	<i>Polytrichum juniperinum</i>
Hair cap moss	<i>Polytrichum longisetum</i>
Hair cap moss	<i>Polytrichum sphaerothercium</i>
Knight's plume	<i>Ptilium crista-castrensis</i>
Moss	<i>Racomitrium lanuginosum</i>
Round moss	<i>Rhizomnium glabrescens</i>
Pipecleaner moss	<i>Rhytidiadelphus triquetrus</i>

**Table D-4 Plant Species Recorded During Field Surveys in the PEAA of the Rocky Mountains (cont'd)**

Common Name	Scientific Name
<b>Mosses (cont'd)</b>	
Peat-moss	<i>Sphagnum angustifolium</i>
Squarrose peat-moss	<i>Sphagnum squarrosum</i>
Golden moss	<i>Tomentypnum falcifolium</i>
Golden moss	<i>Tomentypnum nitens</i>
<b>Liverworts</b>	
Liverwort	<i>Barbilophozia lycopodioides</i>
Liverwort	<i>Plagiochasma</i> sp.
Liverwort	<i>Plagiochila acanthophylla</i>
<b>Lichens</b>	
Rag lichens	<i>Cetrelia</i> sp.
Reindeer lichen	<i>Cladina mitis</i>
Green reindeer lichen	<i>Cladina rangiferina</i>
Cup lichen	<i>Cladonia bellidiflora</i>
Cup lichen	<i>Cladonia gracilis</i>
Tube lichen	<i>Hypogymnia physodes</i>
Slender fringe-cup	<i>Lithophragma tenellum</i>
Lung lichen	<i>Lobaria pulmonaria</i>
Felt lichen	<i>Peltigera aphthosa</i>
Green map	<i>Rhizocarpon geographicum</i>
Cottontail foam	<i>Stereocaulon paschale</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau**

Common Name	Scientific Name
<b>Trees</b>	
Amabilis fir	<i>Abies amabilis</i>
Subalpine fir	<i>Abies lasiocarpa</i> var. <i>lasiocarpa</i>
Douglas maple	<i>Acer glabrum</i> var. <i>douglasii</i>
Paper birch	<i>Betula papyrifera</i> var. <i>papyrifera</i>
Engelmann spruce	<i>Picea engelmannii</i>
Hybrid white spruce	<i>Picea engelmannii</i> x <i>glauca</i>
White spruce	<i>Picea glauca</i>
Black spruce	<i>Picea mariana</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Trees (cont'd)</b>	
Shore pine	<i>Pinus contorta</i> var. <i>contorta</i>
Lodgepole pine	<i>Pinus contorta</i> var. <i>latifolia</i>
Balsam poplar	<i>Populus balsamifera</i> ssp. <i>balsamifera</i>
Black cottonwood	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>
Trembling aspen	<i>Populus tremuloides</i>
Rocky Mountain Douglas-fir	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>
Western hemlock	<i>Tsuga heterophylla</i>
<b>Shrubs</b>	
Mountain alder	<i>Alnus incana</i> ssp. <i>tenuifolia</i>
Green alder	<i>Alnus viridis</i> ssp. <i>crispa</i>
Sitka alder	<i>Alnus viridis</i> ssp. <i>sinuata</i>
Saskatoon	<i>Amelanchier alnifolia</i> var. <i>alnifolia</i>
Saskatoon	<i>Amelanchier alnifolia</i> var. <i>cusickii</i>
Bog-rosemary	<i>Andromeda polifolia</i>
Wild sarsaparilla	<i>Aralia nudicaulis</i>
Red fruit bearberry	<i>Arctostaphylos rubra</i>
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>
Low birch	<i>Betula pumila</i> var. <i>glandulifera</i>
Snowbrush	<i>Ceanothus</i> sp.
Leatherleaf	<i>Chamaedaphne calyculata</i>
Bunchberry	<i>Cornus canadensis</i>
Red-osier dogwood	<i>Cornus stolonifera</i>
Black hawthorn	<i>Crataegus douglasii</i> var. <i>douglasii</i>
Crowberry	<i>Empetrum nigrum</i>
Creeping-snowberry	<i>Gaultheria hispidula</i>
Common juniper	<i>Juniperus communis</i>
Western bog-laurel	<i>Kalmia microphylla</i> ssp. <i>microphylla</i>
Western bog-laurel	<i>Kalmia microphylla</i> ssp. <i>occidentalis</i>
Labrador tea	<i>Ledum groenlandicum</i>
Twinflower	<i>Linnaea borealis</i> ssp. <i>longiflora</i>
Black twinberry	<i>Lonicera involucrata</i>
False azalea	<i>Menziesia ferruginea</i> ssp. <i>ferruginea</i>
Devil's club	<i>Oplopanax horridus</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Falsebox	<i>Paxistima myrsinites</i>
Sweet cherry	<i>Prunus avium</i>
Pin cherry	<i>Prunus pensylvanica</i>
Choke cherry	<i>Prunus virginiana</i> ssp. <i>melanocarpa</i>
White-flowered rhododendron	<i>Rhododendron albiflorum</i>
Stink currant	<i>Ribes bracteosum</i>
Skunk currant	<i>Ribes glandulosum</i>
Northern blackcurrant	<i>Ribes hudsonianum</i> var. <i>hudsonianum</i>
Black gooseberry	<i>Ribes lacustre</i>
Trailing black currant	<i>Ribes laxiflorum</i>
Red swamp currant	<i>Ribes triste</i>
Prickly rose	<i>Rosa acicularis</i> ssp. <i>sayi</i>
Nootka rose	<i>Rosa nutkana</i> var. <i>nutkana</i>
Prairie rose	<i>Rosa woodsii</i> ssp. <i>ultramontana</i>
Nagoonberry	<i>Rubus arcticus</i> ssp. <i>acaulis</i>
Cloudberry	<i>Rubus chamaemorus</i>
Red raspberry	<i>Rubus idaeus</i> ssp. <i>strigosus</i>
Snow bramble	<i>Rubus nivalis</i>
Thimbleberry	<i>Rubus parviflorus</i> var. <i>parviflorus</i>
Five-leaved bramble	<i>Rubus pedatus</i>
Dwarf red raspberry	<i>Rubus pubescens</i> var. <i>pubescens</i>
Barclay's willow	<i>Salix barclayi</i>
Bebb's willow	<i>Salix bebbiana</i>
Short-fruited willow	<i>Salix brachycarpa</i>
Sage willow	<i>Salix candida</i>
Pussy willow	<i>Salix discolor</i>
Drummond's willow	<i>Salix drummondiana</i>
Grey-leaved willow	<i>Salix glauca</i> var. <i>villosa</i>
Maccalla's willow	<i>Salix maccalliana</i>
Bog willow	<i>Salix pedicellaris</i>
Plane-leaved willow	<i>Salix planifolia</i>
Mackenzie willow	<i>Salix prolixa</i>
Serviceberry willow	<i>Salix pseudomonticola</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEEA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Balsam willow	<i>Salix pyrifolia</i>
Scouler's willow	<i>Salix scouleriana</i>
Sitka willow	<i>Salix sitchensis</i>
Coastal red elderberry	<i>Sambucus racemosa</i> var. <i>arborescens</i>
Black elderberry	<i>Sambucus racemosa</i> var. <i>melanocarpa</i>
Elderberry	<i>Sambucus</i> sp.
Soopolallie	<i>Shepherdia canadensis</i>
Western mountain-ash	<i>Sorbus scopulina</i> var. <i>scopulina</i>
Sitka mountain-ash	<i>Sorbus sitchensis</i> var. <i>grayi</i>
Sitka mountain-ash	<i>Sorbus sitchensis</i> var. <i>sitchensis</i>
Birch-leaved spirea	<i>Spiraea betulifolia</i> ssp. <i>lucida</i>
Hardhack	<i>Spiraea douglasii</i> ssp. <i>douglasii</i>
Pink spirea	<i>Spiraea douglasii</i> ssp. <i>menziesii</i>
Pyramid spirea	<i>Spiraea pyramidata</i>
Subalpine spirea	<i>Spiraea splendens</i>
Common snowberry	<i>Symphoricarpos albus</i> var. <i>laevigatus</i>
Western snowberry	<i>Symphoricarpos occidentalis</i>
Dwarf blueberry	<i>Vaccinium caespitosum</i>
Black huckleberry	<i>Vaccinium membranaceum</i>
Velvet-leaved blueberry	<i>Vaccinium myrtilloides</i>
Oval-leaved blueberry	<i>Vaccinium ovalifolium</i>
Grouseberry	<i>Vaccinium scoparium</i>
Lingonberry	<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>
Highbush-cranberry	<i>Viburnum edule</i>
American bush-cranberry	<i>Viburnum opulus</i> var. <i>americanum</i>
<b>Graminoids</b>	
Spreading needlegrass	<i>Achnatherum richardsonii</i>
Hair bentgrass	<i>Agrostis scabra</i>
Little meadow-foxtail	<i>Alopecurus aequalis</i>
Meadow-foxtail	<i>Alopecurus</i> sp.
California brome	<i>Bromus carinatus</i>
Fringed brome	<i>Bromus ciliatus</i>
Smooth brome	<i>Bromus inermis</i>



**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Columbia brome	<i>Bromus vulgaris</i>
Bluejoint reedgrass	<i>Calamagrostis canadensis</i> var. <i>canadensis</i>
Bluejoint reedgrass	<i>Calamagrostis canadensis</i> var. <i>langsдорffii</i>
Pinegrass	<i>Calamagrostis rubescens</i>
Slimstem reedgrass	<i>Calamagrostis stricta</i> ssp. <i>inexpansa</i>
Yellow-flowered sedge	<i>Carex anthoxanthea</i>
Water sedge	<i>Carex aquatilis</i> ssp. <i>aquatilis</i>
Northern clustered sedge	<i>Carex arcta</i>
Awned sedge	<i>Carex atherodes</i>
Golden sedge	<i>Carex aurea</i>
Grey sedge	<i>Carex canescens</i> ssp. <i>canescens</i>
Cordroot sedge	<i>Carex chordorrhiza</i>
Lesser-panicked sedge	<i>Carex diandra</i>
Soft-leaved sedge	<i>Carex disperma</i>
Garber's sedge	<i>Carex garberi</i> ssp. <i>garberi</i>
Yellow bog sedge	<i>Carex gynocrates</i>
Hood's sedge	<i>Carex hoodii</i>
Inland sedge	<i>Carex interior</i>
Slender sedge	<i>Carex lasiocarpa</i> ssp. <i>americana</i>
Kellogg's sedge	<i>Carex lenticularis</i> var. <i>lipocarpa</i>
Bristle-stalked sedge	<i>Carex leptalea</i> ssp. <i>leptalea</i>
Shore sedge	<i>Carex limosa</i>
Ryegrass sedge	<i>Carex loliacea</i>
Lingbye's sedge	<i>Carex lyngbyei</i> ssp. <i>cryptocarpa</i>
Falkland Island sedge	<i>Carex macloviana</i>
Small-awned sedge	<i>Carex microchaeta</i> ssp. <i>microchaeta</i>
Small-winged sedge	<i>Carex microptera</i>
Thick-headed sedge	<i>Carex pachystachya</i>
Few-flowered sedge	<i>Carex pauciflora</i>
Peck's sedge	<i>Carex peckii</i>
Meadow sedge	<i>Carex praticola</i>
Ross' sedge	<i>Carex rossii</i>
Russet sedge	<i>Carex saxatilis</i> ssp. <i>laxa</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEEA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Sitka sedge	<i>Carex sitchensis</i>
Awl-fruited sedge	<i>Carex stipata</i> var. <i>stipata</i>
Sparse-flowered sedge	<i>Carex tenuiflora</i>
Tracy's sedge	<i>Carex tracyi</i>
Beaked sedge	<i>Carex utriculata</i>
Nodding wood-reed	<i>Cinna latifolia</i>
Timber oatgrass	<i>Danthonia intermedia</i>
Tufted hairgrass	<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>
Common spike-rush	<i>Eleocharis palustris</i>
Few-flowered spike-rush	<i>Eleocharis quinqueflora</i>
Blue wildrye	<i>Elymus glaucus</i> ssp. <i>glaucus</i>
Slender wheatgrass	<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>
Narrow-leaved cotton-grass	<i>Eriophorum angustifolium</i>
Short-anthered cotton-grass	<i>Eriophorum brachyantherum</i>
Chamisso's cotton-grass	<i>Eriophorum chamissonis</i> var. <i>chamissonis</i>
Slender cotton-grass	<i>Eriophorum gracile</i>
Green-keeled cotton-grass	<i>Eriophorum viridicarinatum</i>
Alpine fescue	<i>Festuca brachyphylla</i>
Idaho fescue	<i>Festuca idahoensis</i> ssp. <i>idahoensis</i>
Western fescue	<i>Festuca occidentalis</i>
Rocky Mountain fescue	<i>Festuca saximontana</i>
Northern mannagrass	<i>Glyceria borealis</i>
Tall mannagrass	<i>Glyceria elata</i>
Fowl mannagrass	<i>Glyceria striata</i>
Alpine sweetgrass	<i>Hierochloa alpina</i>
Common sweetgrass	<i>Hierochloa hirta</i> ssp. <i>arctica</i>
Arctic rush	<i>Juncus arcticus</i> ssp. <i>alaskanus</i>
Baltic rush	<i>Juncus balticus</i>
Dudley's rush	<i>Juncus dudleyi</i>
Junegrass	<i>Koeleria macrantha</i>
Fuzzy-spiked wildrye	<i>Leymus innovatus</i>
Many-flowered wood-rush	<i>Luzula multiflora</i> ssp. <i>multiflora</i>
Small-flowered wood-rush	<i>Luzula parviflora</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Oniongrass	<i>Melica bulbosa</i> var. <i>bulbosa</i>
Rough-leaved ricegrass	<i>Oryzopsis asperifolia</i>
Reed canarygrass	<i>Phalaris arundinacea</i>
Alpine timothy	<i>Phleum alpinum</i>
Common timothy	<i>Phleum pratense</i>
Short-awned ricegrass	<i>Piptatherum pungens</i>
Glaucous bluegrass	<i>Poa glauca</i> ssp. <i>glauca</i>
Fowl bluegrass	<i>Poa palustris</i>
Kentucky bluegrass	<i>Poa pratensis</i> ssp. <i>pratensis</i>
Pacific alkaligrass	<i>Puccinellia nutkaensis</i>
Wool-grass	<i>Scirpus atrocinctus</i>
Small-flowered bulrush	<i>Scirpus microcarpus</i>
Rivergrass	<i>Scolochloa festucacea</i>
Hudson Bay clubrush	<i>Trichophorum alpinum</i>
Tufted clubrush	<i>Trichophorum cespitosum</i>
Tall trisetum	<i>Trisetum canescens</i>
Spike trisetum	<i>Trisetum spicatum</i>
Common cattail	<i>Typha latifolia</i>
<b>Forbs</b>	
Yarrow	<i>Achillea millefolium</i> var. <i>alpicola</i>
Yarrow	<i>Achillea millefolium</i> var. <i>borealis</i>
Yarrow	<i>Achillea millefolium</i> var. <i>lanulosa</i>
Mountain monkshood	<i>Aconitum delphiniifolium</i>
American sweet-flag	<i>Acorus americanus</i>
Baneberry	<i>Actaea rubra</i>
Orange agoseris	<i>Agoseris aurantiaca</i> ssp. <i>aurantiaca</i>
Nodding onion	<i>Allium cernuum</i> var. <i>cernuum</i>
Pearly everlasting	<i>Anaphalis margaritacea</i>
Canada anemone	<i>Anemone canadensis</i>
Cut-leaved anemone	<i>Anemone multifida</i> var. <i>multifida</i>
Kneeling angelica	<i>Angelica genuflexa</i>
White pussytoes	<i>Antennaria microphylla</i>
Field pussytoes	<i>Antennaria neglecta</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEEA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Showy pussytoes	<i>Antennaria pulcherrima</i> var. <i>pulcherrima</i>
Racemose pussytoes	<i>Antennaria racemosa</i>
Umber pussytoes	<i>Antennaria umbrinella</i>
Spreading dogbane	<i>Apocynum androsaemifolium</i> var. <i>androsaemifolium</i>
Sitka columbine	<i>Aquilegia formosa</i> ssp. <i>formosa</i>
Drummond's rockcress	<i>Arabis drummondii</i>
Slender rockcress	<i>Arabis exilis</i>
Holboell's rockcress	<i>Arabis holboellii</i>
Holboell's rockcress	<i>Arabis holboellii</i> var. <i>pinetorum</i>
Sandwort	<i>Arenaria</i> sp.
Meadow arnica	<i>Arnica chamissonis</i> ssp. <i>chamissonis</i>
Heart-leaved arnica	<i>Arnica cordifolia</i>
Mountain arnica	<i>Arnica latifolia</i>
Michaux's mugwort	<i>Artemisia michauxiana</i>
Mountain sagewort	<i>Artemisia norvegica</i> ssp. <i>saxatilis</i>
Goatsbeard	<i>Aruncus dioicus</i>
Wild ginger	<i>Asarum caudatum</i>
Rush aster	<i>Aster borealis</i>
Lindley's aster	<i>Aster ciliolatus</i>
Showy aster	<i>Aster conspicuus</i>
Tufted white prairie aster	<i>Aster ericoides</i> ssp. <i>pansus</i>
Western willow aster	<i>Aster lanceolatus</i> ssp. <i>hesperius</i>
Great northern aster	<i>Aster modestus</i>
Milk-vetch	<i>Astragalus</i> sp.
Mustard	<i>Brassica</i> sp.
White mountain marsh-marigold	<i>Caltha leptosepala</i> var. <i>biflora</i>
Pennsylvanian bitter-cress	<i>Cardamine pennsylvanica</i>
Scarlet paintbrush	<i>Castilleja miniata</i>
Field chickweed	<i>Cerastium arvense</i>
Prince's pine	<i>Chimaphila umbellata</i> ssp. <i>occidentalis</i>
Northern golden-saxifrage	<i>Chrysosplenium tetrandrum</i>
Bulbous water-hemlock	<i>Cicuta bulbifera</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Douglas' water-hemlock	<i>Cicuta douglasii</i>
Enchanter's-nightshade	<i>Circaea alpina</i> ssp. <i>pacifica</i>
Canada thistle	<i>Cirsium arvense</i> var. <i>horridum</i>
Edible thistle	<i>Cirsium edule</i>
Queen's cup	<i>Clintonia uniflora</i>
Long-bracted frog orchid	<i>Coeloglossum viride</i> var. <i>virescens</i>
Small-flowered blue-eyed Mary	<i>Collinsia parviflora</i>
Pale comandra	<i>Comandra umbellata</i> var. <i>pallida</i>
Bastard toad-flax	<i>Comandra umbellata</i> var. <i>umbellata</i>
Marsh cinquefoil	<i>Comarum palustre</i>
Three-leaved goldthread	<i>Coptis trifolia</i>
Hawksbeard	<i>Crepis</i> sp.
Tall larkspur	<i>Delphinium glaucum</i>
Menzies' larkspur	<i>Delphinium menziesii</i> ssp. <i>menziesii</i>
Draba	<i>Draba</i> sp.
Great sundew	<i>Drosera anglica</i>
Yellow mountain-avens	<i>Dryas drummondii</i> var. <i>drummondii</i>
Fireweed	<i>Epilobium angustifolium</i> ssp. <i>angustifolium</i>
Purple-leaved willowherb	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>
Hornemann's willowherb	<i>Epilobium hornemannii</i> ssp. <i>hornemannii</i>
Broad-leaved willowherb	<i>Epilobium latifolium</i>
Swamp willowherb	<i>Epilobium palustre</i>
Showy daisy	<i>Erigeron speciosus</i> var. <i>speciosus</i>
Wild strawberry	<i>Fragaria virginiana</i> var. <i>glauca</i>
Chocolate lily	<i>Fritillaria affinis</i> var. <i>affinis</i>
Northern rice-root	<i>Fritillaria camschatcensis</i>
Thin-leaved bedstraw	<i>Galium bifolium</i>
Northern bedstraw	<i>Galium boreale</i>
Small bedstraw	<i>Galium trifidum</i> ssp. <i>columbianum</i>
Sweet-scented bedstraw	<i>Galium triflorum</i>
Northern gentian	<i>Gentianella amarella</i> ssp. <i>acuta</i>
False toad-flax	<i>Geocaulon lividum</i>
Bicknell's geranium	<i>Geranium bicknellii</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Northern geranium	<i>Geranium erianthum</i>
Richardson's geranium	<i>Geranium richardsonii</i>
Sticky purple geranium	<i>Geranium viscosissimum</i> var. <i>viscosissimum</i>
Yellow avens	<i>Geum aleppicum</i>
Large-leaved avens	<i>Geum macrophyllum</i> ssp. <i>macrophyllum</i>
Large-leaved avens	<i>Geum macrophyllum</i> ssp. <i>perincisum</i>
Rattlesnake-plantain	<i>Goodyera oblongifolia</i>
Dwarf rattlesnake orchid	<i>Goodyera repens</i>
Cow-parsnip	<i>Heracleum maximum</i>
Alumroot	<i>Heuchera</i> sp.
White hawkweed	<i>Hieracium albiflorum</i>
Orange-red king devil	<i>Hieracium aurantiacum</i>
Slender hawkweed	<i>Hieracium gracile</i>
Scouler's hawkweed	<i>Hieracium scouleri</i>
Woolly hawkweed	<i>Hieracium triste</i>
Narrow-leaved hawkweed	<i>Hieracium umbellatum</i> ssp. <i>umbellatum</i>
Common mare's-tail	<i>Hippuris vulgaris</i>
Purple peavine	<i>Lathyrus nevadensis</i> var. <i>pilosellus</i>
Creamy peavine	<i>Lathyrus ochroleucus</i>
Leatherleaf saxifrage	<i>Leptarrhena pyrolifolia</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Tiger lily	<i>Lilium columbianum</i>
Northern twayblade	<i>Listera borealis</i>
Northwestern twayblade	<i>Listera caurina</i>
Heart-leaved twayblade	<i>Listera cordata</i>
Arctic lupine	<i>Lupinus arcticus</i> ssp. <i>subalpinus</i>
Tufted loosestrife	<i>Lysimachia thyrsoiflora</i>
Wild lily-of-the-valley	<i>Maianthemum canadense</i>
False Solomon's-seal	<i>Maianthemum racemosum</i> ssp. <i>amplexicaule</i>
Star-flowered false Solomon's-seal	<i>Maianthemum stellatum</i>
Three-leaved false Solomon's-seal	<i>Maianthemum trifolium</i>
Cow-wheat	<i>Melampyrum lineare</i> var. <i>lineare</i>
Field mint	<i>Mentha arvensis</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEEA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Buckbean	<i>Menyanthes trifoliata</i>
Tall bluebells	<i>Mertensia paniculata</i> var. <i>paniculata</i>
Yellow monkey-flower	<i>Mimulus guttatus</i>
Common mitrewort	<i>Mitella nuda</i>
Blunt-leaved sandwort	<i>Moehringia lateriflora</i>
Single delight	<i>Moneses uniflora</i>
Indian-pipe	<i>Monotropa uniflora</i>
One-sided wintergreen	<i>Orthilia secunda</i> var. <i>secunda</i>
Mountain sweet-cicely	<i>Osmorhiza berteroi</i>
Blunt-fruited sweet-cicely	<i>Osmorhiza depauperata</i>
Bog cranberry	<i>Oxycoccus oxycoccus</i>
Mountain sorrel	<i>Oxyria digyna</i>
Locoweed	<i>Oxytropis</i> sp.
Fringed grass-of-Parnassus	<i>Parnassia fimbriata</i>
Northern grass-of-Parnassus	<i>Parnassia palustris</i>
Bracted lousewort	<i>Pedicularis bracteosa</i> var. <i>bracteosa</i>
Labrador lousewort	<i>Pedicularis labradorica</i>
Small-flowered penstemon	<i>Penstemon procerus</i> var. <i>procerus</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>frigidus</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>palmatus</i>
Arrow-leaved coltsfoot	<i>Petasites sagittatus</i>
Common plantain	<i>Plantago major</i>
Fragrant white rein orchid	<i>Platanthera dilatata</i> var. <i>dilatata</i>
Fragrant white rein orchid	<i>Platanthera dilatata</i> var. <i>leucostachys</i>
One-leaved rein orchid	<i>Platanthera obtusata</i> ssp. <i>obtusata</i>
Slender rein orchid	<i>Platanthera stricta</i>
Northern Jacob's-ladder	<i>Polemonium boreale</i>
Showy Jacob's-ladder	<i>Polemonium pulcherrimum</i> var. <i>pulcherrimum</i>
Water smartweed	<i>Polygonum amphibium</i> var. <i>stipulaceum</i>
American bistort	<i>Polygonum bistortoides</i>
Silvery cinquefoil	<i>Potentilla argentea</i>
Diverse-leaved cinquefoil	<i>Potentilla diversifolia</i> var. <i>diversifolia</i>
Drummond's cinquefoil	<i>Potentilla drummondii</i> ssp. <i>drummondii</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEEA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Sticky cinquefoil	<i>Potentilla glandulosa</i> var. <i>glandulosa</i>
Graceful cinquefoil	<i>Potentilla gracilis</i> var. <i>flabelliformis</i>
Hooker's fairybells	<i>Prosartes hookeri</i> var. <i>oregana</i>
Pink wintergreen	<i>Pyrola asarifolia</i>
Lesser wintergreen	<i>Pyrola minor</i>
Meadow buttercup	<i>Ranunculus acris</i>
Subalpine buttercup	<i>Ranunculus eschscholtzii</i>
Lesser spearwort	<i>Ranunculus flammula</i>
Small yellow water-buttercup	<i>Ranunculus gmelinii</i>
Lapland buttercup	<i>Ranunculus lapponicus</i>
Macoun's buttercup	<i>Ranunculus macounii</i>
Little buttercup	<i>Ranunculus uncinatus</i>
Yellow rattle	<i>Rhinanthus minor</i>
Marsh yellow cress	<i>Rorippa palustris</i> var. <i>palustris</i>
Sheep sorrel	<i>Rumex acetosella</i>
Western dock	<i>Rumex aquaticus</i> var. <i>fenestratus</i>
Curled dock	<i>Rumex crispus</i>
Alpine sorrel	<i>Rumex paucifolius</i>
Sitka burnet	<i>Sanguisorba canadensis</i>
Three-toothed saxifrage	<i>Saxifraga tricuspidata</i>
Marsh skullcap	<i>Scutellaria galericulata</i>
Spreading stonecrop	<i>Sedum divergens</i>
Lance-leaved stonecrop	<i>Sedum lanceolatum</i> var. <i>lanceolatum</i>
Canadian butterweed	<i>Senecio pauperculus</i>
Rocky Mountain butterweed	<i>Senecio streptanthifolius</i>
Arrow-leaved groundsel	<i>Senecio triangularis</i>
Hemlock water-parsnip	<i>Sium suave</i>
Spikelike goldenrod	<i>Solidago spathulata</i> var. <i>nana</i>
Hooded ladies' tresses	<i>Spiranthes romanzoffiana</i>
Northern starwort	<i>Stellaria calycantha</i>
Long-leaved starwort	<i>Stellaria longifolia</i>
Common chickweed	<i>Stellaria media</i>
Clasping twistedstalk	<i>Streptopus amplexifolius</i> var. <i>amplexifolius</i>



**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Clasping twistedstalk	<i>Streptopus amplexifolius</i> var. <i>chalmazatus</i>
Rosy twistedstalk	<i>Streptopus lanceolatus</i> var. <i>curvipes</i>
Alpine leafybract aster	<i>Symphotrichum foliaceum</i> var. <i>foliaceum</i>
Common dandelion	<i>Taraxacum officinale</i>
Alpine meadowrue	<i>Thalictrum alpinum</i>
Western meadowrue	<i>Thalictrum occidentale</i>
Few-flowered meadowrue	<i>Thalictrum sparsiflorum</i>
Veiny meadowrue	<i>Thalictrum venulosum</i>
Three-leaved foamflower	<i>Tiarella trifoliata</i> var. <i>trifoliata</i>
One-leaved foamflower	<i>Tiarella trifoliata</i> var. <i>unifoliata</i>
False asphodel	<i>Tofieldia</i> sp.
Sticky false asphodel	<i>Triantha glutinosa</i>
Broad-leaved starflower	<i>Trientalis borealis</i> ssp. <i>latifolia</i>
Northern starflower	<i>Trientalis europaea</i> ssp. <i>arctica</i>
Strawberry clover	<i>Trifolium fragiferum</i> ssp. <i>bonannii</i>
Alsike clover	<i>Trifolium hybridum</i>
Red clover	<i>Trifolium pratense</i>
Seaside arrow-grass	<i>Triglochin maritima</i>
Marsh arrow-grass	<i>Triglochin palustris</i>
Globeflower	<i>Trollius albiflorus</i>
Stinging nettle	<i>Urtica dioica</i> ssp. <i>gracilis</i>
Marsh valerian	<i>Valeriana dioica</i> ssp. <i>sylvatica</i>
Sitka valerian	<i>Valeriana sitchensis</i>
Indian hellebore	<i>Veratrum viride</i>
American speedwell	<i>Veronica americana</i>
Alpine speedwell	<i>Veronica wormskjoldii</i> var. <i>wormskjoldii</i>
American vetch	<i>Vicia americana</i>
Hairy vetch	<i>Vicia villosa</i> ssp. <i>villosa</i>
Early blue violet	<i>Viola adunca</i> var. <i>adunca</i>
Canada violet	<i>Viola canadensis</i> var. <i>rugulosa</i>
Stream violet	<i>Viola glabella</i>
Alaska violet	<i>Viola langsдорфii</i>
Round-leaved violet	<i>Viola orbiculata</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Marsh violet	<i>Viola palustris</i> var. <i>palustris</i>
Kidney-leaved violet	<i>Viola renifolia</i>
Lady fern	<i>Athyrium filix-femina</i> ssp. <i>cyclosorum</i>
Triangle moonwort	<i>Botrychium lanceolatum</i> ssp. <i>lanceolatum</i>
Common moonwort	<i>Botrychium lunaria</i>
Northwestern moonwort	<i>Botrychium pinnatum</i>
Rattlesnake fern	<i>Botrychium virginianum</i>
Rock-brake	<i>Cryptogramma</i> sp.
Fragile fern	<i>Cystopteris fragilis</i>
Spiny wood fern	<i>Dryopteris expansa</i>
Ground-cedar	<i>Diphasiastrum complanatum</i>
Common horsetail	<i>Equisetum arvense</i>
Swamp horsetail	<i>Equisetum fluviatile</i>
Scouring-rush	<i>Equisetum hyemale</i> ssp. <i>affine</i>
Meadow horsetail	<i>Equisetum pratense</i>
Dwarf scouring-rush	<i>Equisetum scirpoides</i>
Wood horsetail	<i>Equisetum sylvaticum</i>
Northern scouring-rush	<i>Equisetum variegatum</i> ssp. <i>alaskanum</i>
Oak fern	<i>Gymnocarpium dryopteris</i>
Stiff club-moss	<i>Lycopodium annotinum</i>
Ground-pine	<i>Lycopodium dendroideum</i>
Ostrich fern	<i>Matteuccia struthiopteris</i>
Irregular polypody	<i>Polypodium amorphum</i>
Bracken fern	<i>Pteridium aquilinum</i> ssp. <i>lanuginosum</i>
Thick-leaved thelypody	<i>Thelypodium laciniatum</i> var. <i>laciniatum</i>
Alpine cliff fern	<i>Woodsia alpina</i>
Mountain cliff fern	<i>Woodsia scopulina</i>
Duckweed	<i>Lemna</i> sp.
Yellow pond-lily	<i>Nuphar lutea</i> ssp. <i>polysepala</i>
Pondweed	<i>Potamogeton</i> sp.
Arum-leaved arrowhead	<i>Sagittaria cuneata</i>
Emersed bur-reed	<i>Sparganium emersum</i>
Lesser bladderwort	<i>Utricularia minor</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Mosses</b>	
Tufted moss	<i>Aulacomnium palustre</i>
Brachythecium moss	<i>Brachythecium campestre</i>
Moss	<i>Campylium stellatum</i> var. <i>stellatum</i>
Cushion moss	<i>Dicranum acutifolium</i>
Cushion moss	<i>Dicranum fuscescens</i> var. <i>fuscescens</i>
Cushion moss	<i>Dicranum groenlandicum</i>
Cushion moss	<i>Dicranum polysetum</i>
Brown moss	<i>Drepanocladus aduncus</i> var. <i>aduncus</i>
Brown moss	<i>Drepanocladus exannulatus</i> var. <i>exannulatus</i>
Brown moss	<i>Drepanocladus uncinatus</i> var. <i>uncinatus</i>
Step moss	<i>Hylocomium splendens</i>
Mnium moss	<i>Mnium</i> sp.
Moss	<i>Paludella squarrosa</i>
Leafy moss	<i>Plagiomnium</i> sp.
Red-stemmed feathermoss	<i>Pleurozium schreberi</i>
Hair cap moss	<i>Polytrichum juniperinum</i>
Knight's plume	<i>Ptilium crista-castrensis</i>
Round moss	<i>Rhizomnium glabrescens</i>
Pipecleaner moss	<i>Rhytidiadelphus loreus</i>
Pipecleaner moss	<i>Rhytidiadelphus triquetrus</i>
Peat-moss	<i>Sphagnum angustifolium</i>
Squarrose peat-moss	<i>Sphagnum squarrosum</i>
Golden moss	<i>Tomentypnum falcifolium</i>
Golden moss	<i>Tomentypnum nitens</i>
<b>Liverworts</b>	
Liverwort	<i>Barbilophozia lycopodioides</i>
Liverwort	<i>Conocephalum conicum</i>
Green-tongue liverwort	<i>Marchantia polymorpha</i>
<b>Lichens</b>	
Witch's hair lichen	<i>Alectoria</i> sp.
Horsehair lichens	<i>Bryoria</i> sp.
Reindeer lichen	<i>Cladina mitis</i>
Green reindeer lichen	<i>Cladina rangiferina</i>

**Table D-5 Plant Species Recorded During Field Surveys in the PEAA of the Interior Plateau (cont'd)**

Common Name	Scientific Name
<b>Lichens (cont'd)</b>	
Branching pebblehorn	<i>Cladonia acuminata</i>
Cup lichen	<i>Cladonia homosekikaica</i>
Felt lichen	<i>Peltigera aphthosa</i>
Felt lichen	<i>Peltigera canina</i>
Granular soil-foam	<i>Stereocaulon condensatum</i>
Cottontail foam	<i>Stereocaulon paschale</i>
Fringecup	<i>Tellima grandiflora</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains**

Common Name	Scientific Name
<b>Trees</b>	
Amabilis fir	<i>Abies amabilis</i>
Subalpine fir	<i>Abies lasiocarpa</i> var. <i>lasiocarpa</i>
Douglas maple	<i>Acer glabrum</i> var. <i>douglasii</i>
Yellow-cedar	<i>Chamaecyparis nootkatensis</i>
Engelmann spruce	<i>Picea engelmannii</i>
Hybrid white spruce	<i>Picea engelmannii</i> x <i>glauca</i>
White spruce	<i>Picea glauca</i>
Black spruce	<i>Picea mariana</i>
Sitka spruce	<i>Picea sitchensis</i>
Whitebark pine	<i>Pinus albicaulis</i>
Shore pine	<i>Pinus contorta</i> var. <i>contorta</i>
Lodgepole pine	<i>Pinus contorta</i> var. <i>latifolia</i>
Western white pine	<i>Pinus monticola</i>
Balsam poplar	<i>Populus balsamifera</i> ssp. <i>balsamifera</i>
Black cottonwood	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>
Western redcedar	<i>Thuja plicata</i>
Western hemlock	<i>Tsuga heterophylla</i>
Mountain hemlock	<i>Tsuga mertensiana</i>
<b>Shrubs</b>	
Mountain alder	<i>Alnus incana</i> ssp. <i>tenuifolia</i>
Red alder	<i>Alnus rubra</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Green alder	<i>Alnus viridis</i> ssp. <i>crispa</i>
Sitka alder	<i>Alnus viridis</i> ssp. <i>sinuata</i>
Saskatoon	<i>Amelanchier alnifolia</i> var. <i>alnifolia</i>
Bog-rosemary	<i>Andromeda polifolia</i>
Wild sarsaparilla	<i>Aralia nudicaulis</i>
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>
Low birch	<i>Betula pumila</i> var. <i>glandulifera</i>
Bunchberry	<i>Cornus canadensis</i>
Red-osier dogwood	<i>Cornus stolonifera</i>
Crowberry	<i>Empetrum nigrum</i>
Alaskan mountain-heather	<i>Harrimanella stelleriana</i>
Common juniper	<i>Juniperus communis</i>
Western bog-laurel	<i>Kalmia microphylla</i> ssp. <i>microphylla</i>
Western bog-laurel	<i>Kalmia microphylla</i> ssp. <i>occidentalis</i>
Labrador tea	<i>Ledum groenlandicum</i>
Twinflower	<i>Linnaea borealis</i> ssp. <i>longiflora</i>
Alpine-azalea	<i>Loiseleuria procumbens</i>
Black twinberry	<i>Lonicera involucrata</i>
Pacific crab apple	<i>Malus fusca</i>
False azalea	<i>Menziesia ferruginea</i> ssp. <i>ferruginea</i>
Sweet gale	<i>Myrica gale</i>
Devil's club	<i>Oplopanax horridus</i>
Pink mountain-heather	<i>Phyllodoce empetriformis</i>
Yellow mountain-heather	<i>Phyllodoce glanduliflora</i>
Choke cherry	<i>Prunus virginiana</i> ssp. <i>melanocarpa</i>
White-flowered rhododendron	<i>Rhododendron albiflorum</i>
Stink currant	<i>Ribes bracteosum</i>
Skunk currant	<i>Ribes glandulosum</i>
Black gooseberry	<i>Ribes lacustre</i>
Trailing black currant	<i>Ribes laxiflorum</i>
Prickly rose	<i>Rosa acicularis</i> ssp. <i>sayi</i>
Nootka rose	<i>Rosa nutkana</i> var. <i>nutkana</i>
Nagoonberry	<i>Rubus arcticus</i> ssp. <i>acaulis</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEEA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Shrubs (cont'd)</b>	
Cloudberry	<i>Rubus chamaemorus</i>
Red raspberry	<i>Rubus idaeus</i> ssp. <i>strigosus</i>
Thimbleberry	<i>Rubus parviflorus</i> var. <i>parviflorus</i>
Five-leaved bramble	<i>Rubus pedatus</i>
Dwarf red raspberry	<i>Rubus pubescens</i> var. <i>pubescens</i>
Salmonberry	<i>Rubus spectabilis</i>
Barclay's willow	<i>Salix barclayi</i>
Under-green willow	<i>Salix commutata</i>
Bilberry willow	<i>Salix myrtilifolia</i>
Bog willow	<i>Salix pedicellaris</i>
Polar willow	<i>Salix polaris</i>
Net-veined willow	<i>Salix reticulata</i> ssp. <i>reticulata</i>
Scouler's willow	<i>Salix scouleriana</i>
Sitka willow	<i>Salix sitchensis</i>
Coastal red elderberry	<i>Sambucus racemosa</i> var. <i>arborescens</i>
Black elderberry	<i>Sambucus racemosa</i> var. <i>melanocarpa</i>
Soopolallie	<i>Shepherdia canadensis</i>
Western mountain-ash	<i>Sorbus scopulina</i> var. <i>scopulina</i>
Sitka mountain-ash	<i>Sorbus sitchensis</i> var. <i>grayi</i>
Sitka mountain-ash	<i>Sorbus sitchensis</i> var. <i>sitchensis</i>
Birch-leaved spirea	<i>Spiraea betulifolia</i> ssp. <i>lucida</i>
Hardhack	<i>Spiraea douglasii</i> ssp. <i>douglasii</i>
Pink spirea	<i>Spiraea douglasii</i> ssp. <i>menziesii</i>
Common snowberry	<i>Symphoricarpos albus</i> var. <i>laevigatus</i>
Alaskan blueberry	<i>Vaccinium alaskaense</i>
Dwarf blueberry	<i>Vaccinium caespitosum</i>
Black huckleberry	<i>Vaccinium membranaceum</i>
Oval-leaved blueberry	<i>Vaccinium ovalifolium</i>
Red huckleberry	<i>Vaccinium parvifolium</i>
Bog blueberry	<i>Vaccinium uliginosum</i> ssp. <i>occidentale</i>
Bog blueberry	<i>Vaccinium uliginosum</i> ssp. <i>pubescens</i>
Highbush-cranberry	<i>Viburnum edule</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids</b>	
Wheatgrass	<i>Agropyron</i> sp.
Alaska bentgrass	<i>Agrostis aequivalvis</i>
Hair bentgrass	<i>Agrostis scabra</i>
Creeping bentgrass	<i>Agrostis stolonifera</i>
Bluejoint reedgrass	<i>Calamagrostis canadensis</i> var. <i>canadensis</i>
Water sedge	<i>Carex aquatilis</i> ssp. <i>aquatilis</i>
Golden sedge	<i>Carex aurea</i>
Grey sedge	<i>Carex canescens</i> ssp. <i>canescens</i>
Low northern sedge	<i>Carex concinna</i>
Coastal stellate sedge	<i>Carex echinata</i> ssp. <i>phyllomanica</i>
Inland sedge	<i>Carex interior</i>
Kellogg's sedge	<i>Carex lenticularis</i> var. <i>lipocarpa</i>
Shore sedge	<i>Carex limosa</i>
Pale sedge	<i>Carex livida</i> var. <i>radicaulis</i>
Lingbye's sedge	<i>Carex lyngbyei</i> ssp. <i>cryptocarpa</i>
Large-awned sedge	<i>Carex macrochaeta</i>
Scandinavian sedge	<i>Carex media</i>
Merten's sedge	<i>Carex mertensii</i>
Spikenard sedge	<i>Carex nardina</i>
Black alpine sedge	<i>Carex nigricans</i>
Few-flowered sedge	<i>Carex pauciflora</i>
Dunhead sedge	<i>Carex phaeocephala</i>
Many-flowered sedge	<i>Carex pluriflora</i>
Graceful mountain sedge	<i>Carex podocarpa</i>
Pyrenean sedge	<i>Carex pyrenaica</i> ssp. <i>micropoda</i>
Russet sedge	<i>Carex saxatilis</i> ssp. <i>laxa</i>
Sitka sedge	<i>Carex sitchensis</i>
Awl-fruited sedge	<i>Carex stipata</i> var. <i>stipata</i>
Beaked sedge	<i>Carex utriculata</i>
Green sedge	<i>Carex viridula</i> ssp. <i>viridula</i>
Nodding wood-reed	<i>Cinna latifolia</i>
Tufted hairgrass	<i>Deschampsia cespitosa</i> ssp. <i>cespitosa</i>
Needle spike-rush	<i>Eleocharis acicularis</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Graminoids (cont'd)</b>	
Common spike-rush	<i>Eleocharis palustris</i>
Few-flowered spike-rush	<i>Eleocharis quinqueflora</i>
Blue wildrye	<i>Elymus glaucus</i> ssp. <i>glaucus</i>
Narrow-leaved cotton-grass	<i>Eriophorum angustifolium</i>
Chamisso's cotton-grass	<i>Eriophorum chamissonis</i> var. <i>chamissonis</i>
Red fescue	<i>Festuca rubra</i> ssp. <i>rubra</i>
Tall mannagrass	<i>Glyceria elata</i>
Alpine sweetgrass	<i>Hierochloa alpina</i>
Meadow barley	<i>Hordeum brachyantherum</i> ssp. <i>brachyantherum</i>
Whitish rush	<i>Juncus albescens</i>
Arctic rush	<i>Juncus arcticus</i> ssp. <i>alaskanus</i>
Toad rush	<i>Juncus bufonius</i>
Mertens' rush	<i>Juncus mertensianus</i>
Spreading rush	<i>Juncus supiniformis</i>
Dune wildrye	<i>Leymus mollis</i> ssp. <i>mollis</i>
Small-flowered wood-rush	<i>Luzula parviflora</i>
Piper's wood-rush	<i>Luzula piperi</i>
Alpine timothy	<i>Phleum alpinum</i>
Alpine bluegrass	<i>Poa alpina</i> ssp. <i>alpina</i>
Arctic bluegrass	<i>Poa arctica</i> ssp. <i>lanata</i>
Bulbous bluegrass	<i>Poa bulbosa</i> ssp. <i>vivipara</i>
White beak-rush	<i>Rhynchospora alba</i>
Small-flowered bulrush	<i>Scirpus microcarpus</i>
Wedge scale	<i>Sphenopholis</i> sp.
Tufted clubrush	<i>Trichophorum cespitosum</i>
Spike trisetum	<i>Trisetum spicatum</i>
<b>Forbs</b>	
Yarrow	<i>Achillea millefolium</i> var. <i>borealis</i>
Yarrow	<i>Achillea millefolium</i> var. <i>lanulosa</i>
Mountain monkshood	<i>Aconitum delphiniifolium</i>
Baneberry	<i>Actaea rubra</i>
Pearly everlasting	<i>Anaphalis margaritacea</i>
Kneeling angelica	<i>Angelica genuflexa</i>



**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Seacoast angelica	<i>Angelica lucida</i>
Alpine pussytoes	<i>Antennaria alpina</i>
White pussytoes	<i>Antennaria microphylla</i>
Slender rockcress	<i>Arabis exilis</i>
Holboell's rockcress	<i>Arabis holboellii</i> var. <i>pinetorum</i>
Heart-leaved arnica	<i>Arnica cordifolia</i>
Mountain arnica	<i>Arnica latifolia</i>
Michaux's mugwort	<i>Artemisia michauxiana</i>
Mountain sagewort	<i>Artemisia norvegica</i> ssp. <i>saxatilis</i>
Goatsbeard	<i>Aruncus dioicus</i>
Rush aster	<i>Aster borealis</i>
Great northern aster	<i>Aster modestus</i>
Hairy aster	<i>Aster pilosus</i> var. <i>pilosus</i>
Arctic aster	<i>Aster sibiricus</i> var. <i>meritus</i>
Douglas' aster	<i>Aster subspicatus</i>
White mountain marsh-marigold	<i>Caltha leptosepala</i> var. <i>biflora</i>
Mountain harebell	<i>Campanula lasiocarpa</i>
Common harebell	<i>Campanula rotundifolia</i>
Arctic harebell	<i>Campanula uniflora</i>
White mountain-heather	<i>Cassiope mertensiana</i> var. <i>mertensiana</i>
Scarlet paintbrush	<i>Castilleja miniata</i>
Small-flowered paintbrush	<i>Castilleja parviflora</i>
Paintbrush	<i>Castilleja</i> sp.
Field chickweed	<i>Cerastium arvense</i>
Lamb's-quarters	<i>Chenopodium album</i> ssp. <i>album</i>
Prince's pine	<i>Chimaphila umbellata</i> ssp. <i>occidentalis</i>
Douglas' water-hemlock	<i>Cicuta douglasii</i>
Enchanter's-nightshade	<i>Circaea alpina</i> ssp. <i>pacifica</i>
Bull thistle	<i>Cirsium vulgare</i>
Miner's-lettuce	<i>Claytonia perfoliata</i>
Siberian miner's-lettuce	<i>Claytonia sibirica</i>
Queen's cup	<i>Clintonia uniflora</i>
Long-bracted frog orchid	<i>Coeloglossum viride</i> var. <i>virescens</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Small-flowered blue-eyed Mary	<i>Collinsia parviflora</i>
Pale comandra	<i>Comandra umbellata</i> var. <i>pallida</i>
Marsh cinquefoil	<i>Comarum palustre</i>
Pacific hemlock-parsley	<i>Conioselinum gmelinii</i>
Spleenwort-leaved goldthread	<i>Coptis aspleniifolia</i>
Three-leaved goldthread	<i>Coptis trifolia</i>
Yellow coralroot	<i>Corallorhiza trifida</i>
Tall larkspur	<i>Delphinium glaucum</i>
Common foxglove	<i>Digitalis purpurea</i>
Jeffrey's shootingstar	<i>Dodecatheon jeffreyi</i> ssp. <i>jeffreyi</i>
Alpine draba	<i>Draba alpina</i>
Great sundew	<i>Drosera anglica</i>
Round-leaved sundew	<i>Drosera rotundifolia</i> var. <i>rotundifolia</i>
Yellow mountain-avens	<i>Dryas drummondii</i> var. <i>drummondii</i>
Fireweed	<i>Epilobium angustifolium</i> ssp. <i>angustifolium</i>
Purple-leaved willowherb	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>
Hornemann's willowherb	<i>Epilobium hornemannii</i> ssp. <i>hornemannii</i>
Broad-leaved willowherb	<i>Epilobium latifolium</i>
Arctic-alpine daisy	<i>Erigeron humilis</i>
Subalpine daisy	<i>Erigeron peregrinus</i> ssp. <i>peregrinus</i>
Deer-cabbage	<i>Fauria crista-galli</i>
Wild strawberry	<i>Fragaria virginiana</i> var. <i>glauca</i>
Chocolate lily	<i>Fritillaria affinis</i> var. <i>affinis</i>
Northern rice-root	<i>Fritillaria camschatcensis</i>
Northern bedstraw	<i>Galium boreale</i>
Small bedstraw	<i>Galium trifidum</i> ssp. <i>columbianum</i>
Sweet-scented bedstraw	<i>Galium triflorum</i>
Glaucous gentian	<i>Gentiana glauca</i>
Broad-petalled gentian	<i>Gentiana platypetala</i>
False toad-flax	<i>Geocaulon lividum</i>
Northern geranium	<i>Geranium erianthum</i>
Large-leaved avens	<i>Geum macrophyllum</i> ssp. <i>macrophyllum</i>
Large-leaved avens	<i>Geum macrophyllum</i> ssp. <i>perincisum</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Sea-milkwort	<i>Glaux maritima</i> ssp. <i>maritima</i>
Rattlesnake-plantain	<i>Goodyera oblongifolia</i>
Hedysarum	<i>Hedysarum</i> sp.
Cow-parsnip	<i>Heracleum maximum</i>
Smooth alumroot	<i>Heuchera glabra</i>
White hawkweed	<i>Hieracium albiflorum</i>
Scouler's hawkweed	<i>Hieracium scouleri</i>
Beach pea	<i>Lathyrus japonicus</i> var. <i>maritimus</i>
Leatherleaf saxifrage	<i>Leptarrhena pyrolifolia</i>
Northwestern twayblade	<i>Listera caurina</i>
Heart-leaved twayblade	<i>Listera cordata</i>
Twayblade	<i>Listera</i> sp.
Partridge-foot	<i>Luetkea pectinata</i>
Arctic lupine	<i>Lupinus arcticus</i> ssp. <i>subalpinus</i>
Nootka lupine	<i>Lupinus nootkatensis</i> var. <i>nootkatensis</i>
Northern water horehound	<i>Lycopus uniflorus</i>
Skunk cabbage	<i>Lysichiton americanus</i>
False lily-of-the-valley	<i>Maianthemum dilatatum</i>
False Solomon's-seal	<i>Maianthemum racemosum</i> ssp. <i>amplexicaule</i>
Star-flowered false Solomon's-seal	<i>Maianthemum stellatum</i>
Cow-wheat	<i>Melampyrum lineare</i> var. <i>lineare</i>
Field mint	<i>Mentha arvensis</i>
Peppermint	<i>Mentha x piperita</i>
Buckbean	<i>Menyanthes trifoliata</i>
Yellow monkey-flower	<i>Mimulus guttatus</i>
Pink monkey-flower	<i>Mimulus lewisii</i>
Common mitrewort	<i>Mitella nuda</i>
Single delight	<i>Moneses uniflora</i>
Spring beauty	<i>Montia</i> sp.
Mountain forget-me-not	<i>Myosotis asiatica</i>
Pacific water-parsley	<i>Oenanthe sarmentosa</i>
One-sided wintergreen	<i>Orthilia secunda</i> var. <i>secunda</i>
Mountain sweet-cicely	<i>Osmorhiza berteroi</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEEA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Blunt-fruited sweet-cicely	<i>Osmorhiza depauperata</i>
Bog cranberry	<i>Oxycoccus oxycoccus</i>
Field locoweed	<i>Oxytropis campestris</i> var. <i>cusickii</i>
Fringed grass-of-Parnassus	<i>Parnassia fimbriata</i>
Bird's-beak lousewort	<i>Pedicularis ornithorhyncha</i>
Coast penstemon	<i>Penstemon serrulatus</i>
Sweet coltsfoot	<i>Petasites frigidus</i> var. <i>frigidus</i>
Common butterwort	<i>Pinguicula vulgaris</i> ssp. <i>vulgaris</i>
Alaska plantain	<i>Plantago macrocarpa</i>
Common plantain	<i>Plantago major</i>
Northern green rein orchid	<i>Platanthera aquilonis</i>
Fragrant white rein orchid	<i>Platanthera dilatata</i> var. <i>dilatata</i>
Large round-leaved rein orchid	<i>Platanthera orbiculata</i>
Jacob's-ladder	<i>Polemonium</i> sp.
American bistort	<i>Polygonum bistortoides</i>
Alpine bistort	<i>Polygonum viviparum</i>
Coast silverweed	<i>Potentilla egedii</i>
Western rattlesnake-root	<i>Prenanthes alata</i>
Hooker's fairybells	<i>Prosartes hookeri</i> var. <i>oregana</i>
Pink wintergreen	<i>Pyrola asarifolia</i>
Shore buttercup	<i>Ranunculus cymbalaria</i>
Subalpine buttercup	<i>Ranunculus eschscholtzii</i>
Sitka romanzoffia	<i>Romanzoffia sitchensis</i>
Marsh yellow cress	<i>Rorippa palustris</i> var. <i>palustris</i>
Sheep sorrel	<i>Rumex acetosella</i>
Sitka burnet	<i>Sanguisorba canadensis</i>
Spotted saxifrage	<i>Saxifraga bronchialis</i> ssp. <i>austromontana</i>
Alaska saxifrage	<i>Saxifraga ferruginea</i>
Red-stemmed saxifrage	<i>Saxifraga lyallii</i> var. <i>hultenii</i>
Dotted saxifrage	<i>Saxifraga nelsoniana</i> ssp. <i>pacifica</i>
Tolmie's saxifrage	<i>Saxifraga tolmiei</i>
Three-toothed saxifrage	<i>Saxifraga tricuspidata</i>
Roseroot	<i>Sedum integrifolium</i> ssp. <i>integrifolium</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Arrow-leaved groundsel	<i>Senecio triangularis</i>
Sibbaldia	<i>Sibbaldia procumbens</i>
Moss campion	<i>Silene acaulis</i> var. <i>acaulis</i>
Moss campion	<i>Silene acaulis</i> var. <i>subacaulescens</i>
Hemlock water-parsnip	<i>Sium suave</i>
Northern goldenrod	<i>Solidago multiradiata</i>
Sow-thistle	<i>Sonchus</i> sp.
Hooded ladies' tresses	<i>Spiranthes romanzoffiana</i>
Chickweed	<i>Stellaria</i> sp.
Clasping twistedstalk	<i>Streptopus amplexifolius</i> var. <i>amplexifolius</i>
Clasping twistedstalk	<i>Streptopus amplexifolius</i> var. <i>chalmazatus</i>
Rosy twistedstalk	<i>Streptopus lanceolatus</i> var. <i>curvipes</i>
Small twistedstalk	<i>Streptopus streptopoides</i> ssp. <i>brevipes</i>
Alpine leafybract aster	<i>Symphyotrichum foliaceum</i> var. <i>foliaceum</i>
Common dandelion	<i>Taraxacum officinale</i>
Western meadowrue	<i>Thalictrum occidentale</i>
Veiny meadowrue	<i>Thalictrum venulosum</i>
Three-leaved foamflower	<i>Tiarella trifoliata</i> var. <i>trifoliata</i>
One-leaved foamflower	<i>Tiarella trifoliata</i> var. <i>unifoliata</i>
False asphodel	<i>Tofieldia</i> sp.
Lyll's goldenweed	<i>Tonestus lyallii</i>
Sticky false asphodel	<i>Triantha glutinosa</i>
Northern starflower	<i>Trientalis europaea</i> ssp. <i>arctica</i>
Seaside arrow-grass	<i>Triglochin maritima</i>
Stinging nettle	<i>Urtica dioica</i> ssp. <i>gracilis</i>
Marsh valerian	<i>Valeriana dioica</i> ssp. <i>sylvatica</i>
Sitka valerian	<i>Valeriana sitchensis</i>
Indian hellebore	<i>Veratrum viride</i>
American speedwell	<i>Veronica americana</i>
Alpine speedwell	<i>Veronica wormskjoldii</i> var. <i>wormskjoldii</i>
Early blue violet	<i>Viola adunca</i> var. <i>adunca</i>
Canada violet	<i>Viola canadensis</i> var. <i>rugulosa</i>
Stream violet	<i>Viola glabella</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Forbs (cont'd)</b>	
Alaska violet	<i>Viola langsдорфii</i>
Marsh violet	<i>Viola palustris</i> var. <i>palustris</i>
<b>Ferns and Fern Allies</b>	
Lady fern	<i>Athyrium filix-femina</i> ssp. <i>cyclosorum</i>
Deer fern	<i>Blechnum spicant</i>
Parsley fern	<i>Cryptogramma acrostichoides</i>
Rock-brake	<i>Cryptogramma</i> sp.
Fragile fern	<i>Cystopteris fragilis</i>
Ground-cedar	<i>Diphasiastrum complanatum</i>
Spiny wood fern	<i>Dryopteris expansa</i>
Common horsetail	<i>Equisetum arvense</i>
Swamp horsetail	<i>Equisetum fluviatile</i>
Scouring-rush	<i>Equisetum hyemale</i> ssp. <i>affine</i>
Wood horsetail	<i>Equisetum sylvaticum</i>
Oak fern	<i>Gymnocarpium dryopteris</i>
Stiff club-moss	<i>Lycopodium annotinum</i>
Running club-moss	<i>Lycopodium clavatum</i> var. <i>clavatum</i>
Ostrich fern	<i>Matteuccia struthiopteris</i>
Narrow beech fern	<i>Phegopteris connectilis</i>
Anderson's holly fern	<i>Polystichum andersonii</i>
Bracken fern	<i>Pteridium aquilinum</i> ssp. <i>lanuginosum</i>
Wallace's selaginella	<i>Selaginella wallacei</i>
<b>Aquatics</b>	
Yellow pond-lily	<i>Nuphar lutea</i> ssp. <i>polysepala</i>
Waterlily	<i>Nymphaea</i> sp.
Pondweed	<i>Potamogeton</i> sp.
Narrow-leaved bur-reed	<i>Sparganium angustifolium</i>
<b>Mosses</b>	
Moss	<i>Andreaea rupestris</i> var. <i>rupestris</i>
Moss	<i>Antitrichia curtipendula</i>
Tufted moss	<i>Aulacomnium palustre</i>
Ragged-moss	<i>Brachythecium</i> sp.
Water-moss	<i>Calliergon</i> sp.

**Table D-6 Plant Species Recorded During Field Surveys in the PEEA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Mosses (cont'd)</b>	
Moss	<i>Campylium stellatum</i> var. <i>stellatum</i>
Moss	<i>Conostomum tetragonum</i>
Dicranella moss	<i>Dicranella crispa</i>
Dicranoweisia moss	<i>Dicranoweisia cirrata</i>
Cushion moss	<i>Dicranum fuscescens</i> var. <i>fuscescens</i>
Brown moss	<i>Drepanocladus</i> sp.
Greater water-moss	<i>Fontinalis antipyretica</i>
Step moss	<i>Hylocomium splendens</i>
Umbrella moss	<i>Leucolepis menziesii</i>
Mnium moss	<i>Mnium spinulosum</i>
Hair moss	<i>Oligotrichum</i> sp.
Apple-moss	<i>Philonotis</i> sp.
Plagiomnium moss	<i>Plagiomnium insigne</i>
Plagiothecium moss	<i>Plagiothecium undulatum</i>
Red-stemmed feathermoss	<i>Pleurozium schreberi</i>
Hair cap moss	<i>Polytrichum commune</i> var. <i>commune</i>
Hair cap moss	<i>Polytrichum juniperinum</i>
Knight's plume	<i>Ptilium crista-castrensis</i>
Moss	<i>Racomitrium aciculare</i>
Moss	<i>Racomitrium canescens</i> ssp. <i>canescens</i>
Moss	<i>Racomitrium lanuginosum</i>
Round moss	<i>Rhizomnium glabrescens</i>
Pipecleaner moss	<i>Rhytidiadelphus loreus</i>
Pipecleaner moss	<i>Rhytidiadelphus squarrosus</i>
Pipecleaner moss	<i>Rhytidiadelphus triquetrus</i>
Pipecleaner moss	<i>Rhytidiopsis robusta</i>
Common beard moss	<i>Schistidium apocarpum</i>
Peat-moss	<i>Sphagnum angustifolium</i>
Acute-leaved peat-moss	<i>Sphagnum capillifolium</i>
Twisted bog moss	<i>Sphagnum contortum</i>
Girgensohn's moss	<i>Sphagnum girgensohnii</i>
Lindberg's bog moss	<i>Sphagnum lindbergii</i>
Peat-moss	<i>Sphagnum papillosum</i>

**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Mosses (cont'd)</b>	
Squarrose peat-moss	<i>Sphagnum squarrosum</i>
Twisted bog moss	<i>Sphagnum subobesum</i>
Moss	<i>Timmia austriaca</i>
Golden moss	<i>Tomentypnum nitens</i>
<b>Liverworts</b>	
Liverwort	<i>Barbilophozia</i> sp.
Liverwort	<i>Conocephalum conicum</i>
Liverwort	<i>Haplomitrium hookeri</i>
Liverwort	<i>Pellia neesiana</i>
Liverwort	<i>Plagiochila porelloides</i>
Liverwort	<i>Porella</i> sp.
Liverwort	<i>Scapania bolanderi</i>
<b>Lichens</b>	
Spike lichen	<i>Calicium</i> sp.
Spiny heath	<i>Cetraria aculeata</i>
Iceland moss lichens	<i>Cetraria</i> sp.
Reindeer lichen	<i>Cladina arbuscula</i>
Reindeer lichen	<i>Cladina mitis</i>
Green reindeer lichen	<i>Cladina rangiferina</i>
Cup lichen	<i>Cladonia cornuta</i>
Cup lichen	<i>Cladonia macilenta</i>
Sulfur cup lichen	<i>Cladonia sulphurina</i>
Cup lichen	<i>Cladonia uncialis</i>
Furled paperdoll	<i>Flavocetraria cucullata</i>
Ragged paperdoll	<i>Flavocetraria nivalis</i>
Lung lichen	<i>Lobaria oregana</i>
Lung lichen	<i>Lobaria pulmonaria</i>
Paw lichens	<i>Nephroma</i> sp.
Felt lichen	<i>Peltigera aphthosa</i>
Felt lichen	<i>Peltigera neopolydactyla</i>
Lichen	<i>Racodium</i> sp.
Green map	<i>Rhizocarpon geographicum</i>
Map lichen	<i>Rhizocarpon inarense</i>



**Table D-6 Plant Species Recorded During Field Surveys in the PEAA of the Coast Mountains (cont'd)**

Common Name	Scientific Name
<b>Lichens (cont'd)</b>	
Chocolate chip lichen	<i>Solorina crocea</i>
Cottontail foam	<i>Stereocaulon paschale</i>
Fringecup	<i>Tellima grandiflora</i>
The whiteworm	<i>Thamnolia vermicularis</i>
Blistered rocktripe	<i>Umbilicaria hyperborea</i>
Frosted rocktripe	<i>Umbilicaria vellea</i>

