
Standards for Broad Terrestrial Ecosystem Classification and Mapping for British Columbia:

Classification and Correlation of the
Broad Habitat Classes used in
1:250,000 Ecological Mapping

Prepared by
Ecosystems Working Group
Terrestrial Ecosystems Task Force
Resources Inventory Committee

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The Resources Inventory Committee consists of representatives from various ministries and agencies of the Canadian and the British Columbia governments as well as from First Nations peoples. RIC objectives are to develop a common set of standards and procedures for the provincial resources inventories, as recommended by the Forest Resources Commission in its report "The Future of our Forests."

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1.0 INTRODUCTION AND SCOPE

With increasing human pressures on the natural environment, resource management plans must be based on an understanding of the ecosystems of the province. Through an ecologically based classification system planners have the ability to develop effective land use plans which incorporate an understanding of the cumulative effects of multiple resource use. The broad ecosystem classification is an ecologically based framework which provides an ecosystem perspective for resource management.

1.1 Background

A Broad Ecosystem Unit (BEU) is a permanent area of the landscape that supports a distinct type of dominant vegetative cover, or distinct non-vegetated cover (such as lakes or rock out-crops). Each unit is defined as including potential (climax) vegetation and any associated successional stages (for forests and grasslands). Ecosystem units are based on the integration of vegetation, terrain (surficial material), topography, and soil characteristics. This approach emphasizes those site characteristics that determine the function and distribution of plant communities in the landscape. Broad ecosystem units are developed from the site classification level of the biogeoclimatic ecosystem classification of British Columbia. Mapping of BEUs ties together the Ministry of Environment, Lands, and Parks (MoELP) Ecoregion classification and mapping, and the Ministry of Forests (MoF) climate level biogeoclimatic ecosystem classification (BEC).

The Ecoregion classification was developed and mapped for British Columbia to provide a systematic view of the broad geographic and climatic relationships of the province (Demarchi, 1996; Demarchi, 1995). There are five levels in the Ecoregion classification including, Ecodomain, Ecodivision, Ecoprovince, Ecoregion and Ecosession. The highest two levels of this classification, Ecodomains and Ecodivisions, are very broad and place British Columbia in a global context. The three lowest levels, Ecoprovinces, Ecoregions, and Ecosessions, are progressively more detailed and narrow in scope. They relate different segments of the province to one another based on areas of similar climate, physiography, oceanography, hydrology, vegetation, and wildlife potential (Demarchi, 1996).

The Ecosession is the classification unit depicted in broad ecosystem mapping. Presently British Columbia is mapped to the ecosession level at two scales of presentation: 1:2,000,000 (Demarchi, 1993) and 1:250,000 (MoF, Research Branch, unpubl.). All ecoregion units are always mapped as simple map units.

Within the terrestrial environment each Ecoregion and Ecosession can be further subdivided into biogeoclimatic units based on the interaction of the climate, soil, topography, and vegetation. The biogeoclimatic ecosystem classification system has been revised and adopted by the B.C. Forest Service since 1975 (Meidinger and Pojar, 1991). Biogeoclimatic Units, as mapped by MoF, provide a hierarchical framework for mapping plant community distribution with separate climate and site levels (Pojar et al., 1987, Meidinger and Pojar, 1991). At the climatic level biogeoclimatic ecosystem

classification can be broken down into the zone, subzone, variant, and phase. The subzone is the basic unit which can be grouped in zones or divided into variants and phases based on the characteristics of the regional climates. Each subzone is based on a distinct climax (or near-climax) plant association on a zonal site. A zonal site exhibits intermediate soil moisture and nutrient conditions and thus best reflects the regional climate. Subzones with similar climatic characteristics and zonal ecosystems are grouped into broad, macroclimatically homogeneous biogeoclimatic zones. Biogeoclimatic variants are created to account for the variation of the regional climates at the subzone level (eg; areas which are slightly wetter or warmer than other areas in the subzone). This climatic variation results in differences in the vegetation, with the presence of distinct climax plant subassociations on zonal sites. In some subzones and variants local relief has resulted in further regional climatic variation. Biogeoclimatic phases account for these areas of local relief, where topographic or topoedaphic variation has resulted in ecosystems which are atypical for the given regional climate (Meidinger and Pojar, 1991).

The biogeoclimatic zones are mapped for the province at 1:2,000,000 while the subzone/variant level is mapped at a scale between 1:100,000 and 1:500,000 for each of the forest regions. Subzones and variants are the main biogeoclimatic units mapped for the Broad Ecosystem Unit Classification (phases are included when present). They are always mapped as simple units.

The site level of this classification groups ecosystems or sites which have similar environmental properties and potential (climax) vegetation. Groups of sites are first divided into site associations based on potential vegetation of each site. Further divisions into site series, utilizing subzones and variants, create climatically and edaphically uniform site units (Meidinger and Pojar, 1991).

As described earlier, it is the site series which exhibits intermediate soil moisture and nutrient conditions, the zonal site series, that best reflects the regional climate. These zonal site units define each of the various subzones and variants throughout the province. In order to truly understand each of these regional climates, a number of azonal site units have been defined. Each of these site units depicts extreme soil, moisture and nutrient conditions as compared to the zonal site unit in a given regional climate. For example, an azonal site unit may be drier or wetter, or have a much higher or lower nutrient content than is typical for a zonal site.

Broad ecosystem units are amalgamations of all of these site series units. Thus each BEU may have many distinct climax plant associations. BEUs were correlated to all site series which have been described to date in the regional MoF field guides [for example; the ESSFmc 01 site series unit was correlated to the BEU, Engelmann Spruce - Subalpine Fir Dry Forested(EF)]. Non-forested units (including alpine, parkland, grassland and wetland units) are poorly defined in these field guides and as they become better defined, these correlation tables will have to be updated.

The current broad ecosystem unit classification originated in the late 1980's, as A First Approximation of Wildlife Habitats of British Columbia, developed by Andrew Harcombe and Ted Lea. These wildlife habitats had been initially created for the Wildlife Habitat Handbook for the Southern Interior Ecoprovince but eventually, expanded to cover the Province for the Regional Wildlife Plans (Harcombe and Lea,

1990, unpubl.). This first draft was ordered by administrative rather than ecological regions.

The Broad ecosystem units are a further development or expansion of these broad habitat classes. Basically, the classification was changed to broad ecosystem units in order to characterize individual ecosystems rather than just habitats best suited for wildlife. Each BEU provides wildlife biologists with broad ecological information that can be used for a wide spectrum of species assessments. For example the detail needed to assess bear and ungulate foraging habitat is unnecessary to assess the canopy structure important to bird habitat. The broad ecosystem unit provides a framework which is applicable to a greater number of species, both plant and animal.

BEU maps provide an interpretative base map for the development of landscape level plans including timber supply areas, land and resource management plans, and regional wildlife plans (Lacelle, 1994; Demarchi, 1996).

The ultimate goal of broad ecosystem unit classification is to provide an ecologically based provincial framework for MoELP and MoF resource management. The objectives of this report are to describe Broad Ecosystem Unit Classification, providing detailed descriptions of major ecosystem types mapped at a scale sufficient for broad planning initiatives.

1.2 How to Use This Guide

This classification was designed to provide the information required for the development of effective land and resource management plans. This guide together with broad ecosystem maps and the accompanying databases provide sufficient material to produce effective broad scale management plans. The ecosystem units have been grouped according to vegetative dominance or other unique characteristics which set them apart from each of the other units. Ten major ecosystem groupings have been created: (1) coastal forest ecosystems, (2) southern interior forest ecosystems, (3) central and northern interior forest ecosystems, (4) forested wetland and riparian ecosystems, (5) subalpine parkland and krummholz ecosystems, (6) shrub and herb dominated ecosystems, (7) nonforested wetland and aquatic ecosystems, (8) nonforested subalpine and alpine ecosystems, (9) sparsely vegetated ecosystems and (10) urban and agricultural ecosystems.

2.0 BEU Classification

Most of the province is presently mapped at 1:250,000 for the broad habitat classes. The habitat classes directly correspond to each of the BEU's described in this classification. However, the mapping was completed prior to the description of the units so additional, more detailed units appear in this document than those units found on the maps. As the descriptions of the various ecosystem units were developed, it was apparent that all of the vegetative diversity and expansive geographical distributions could not be adequately described without further classification. Similarly, some vegetated units were combined while more complex units, such as wetland and riparian units, were split creating new units. Some of these units rarely appear on the BEU maps because they cover such a small area at this scale. However, it is important to note that even though they do not appear very often, these units are wide-spread in distribution. This is typical of many of the wetland and riparian types, as well as some of the urban and sparsely vegetated units.

Currently, some areas of the province are being remapped using this updated BEU classification and eventually the entire province is to be completely remapped. In addition to the re-mapping, some of the nonforested ecosystem types, in particular the wetland and alpine communities, will be more extensively sampled and classified. This may create the need for further classification of the broad ecosystem units.

2.1 Description of Classification

The written description of BEUs should enable the user to identify the unit either in the field or describe the unit in technical reports or publications. This description of the classification breaks down BEU classification and demonstrates the content of each section and the source of the information. The description of each unit provides information on an ecosystems distribution, subdivisions, climax vegetation, successional vegetation, physical environment, and any atypical sites. A distribution map and colour photograph(s) will also be provided to further assist in correctly identifying or describing each unit. The distribution maps show the biogeoclimatic zone(s), subzone(s) and variant(s) in which each of the broad ecosystem units occur.

Name and Symbol: Unit names contain the primarily dominant and/or characteristic climax and seral species and, if relevant, an ecological qualifier. Naming for non-forested units is often more generic (ex. Alpine Meadow(AM), Shrub Fen(SF)). A unique two letter upper-case code based on the unit name is provided for mapping; these names do not correspond directly with BEC classification. Examples include the Amabilis Fir - Western Hemlock broad ecosystem unit (FR) and the Black Cottonwood Riparian broad ecosystem unit (CR).

General Description: Describes a typical unit including the presence and relative abundance of the dominant species and other characteristic vegetation. Seral development and disturbance history are important biotic factors which may be described. Important geographical features such as elevation, latitude, proximity to the

ocean, and soil moisture regime may also be included. Features deemed most characteristic of the unit are included.

Distribution: Depicts the geographical distribution of each BEU, within specified ecoprovinces, ecoregions and/or ecosections, as well as in relation to political boundaries, elevational limits, bodies of water, mountain ranges, and/or plateaus. Each of these BEU distributions has been developed based on the current distribution of associated BEC units as described in the forestry regional field guides. Note there is considerable range in the upper and lower elevational limits of most units due to climatic variability and differences in local topography.

Subdivision: BEUs are divided into subunits when there are clear differences in vegetation. Site series correlated to each unit are then divided geographically using physical boundaries (i.e., mountains, rivers, proximity to the ocean - coastal/interior/transitional, latitude north/south, or elevation) or climatically (i.e., moisture regime-hydric/mesic/xeric). Broad Ecosystem Units and subunits may be present in more than one biogeoclimatic zone.

Climax Vegetation: BEC site series climax vegetation tables and descriptions, edatopic grids, additional information in the Forestry Regional Field Guides, large scale mapping legends, and personal communications with regional ecologists are all sources of information used to generalize and describe the vegetation of a unit. Relative abundance and presence of vegetation in the canopy (tree species with height greater than 10m), shrub layer (shrubs and tree regeneration with height less than 10m), herb layer (ferns, graminoids, herbs, saprophytes and some woody species), and moss and lichen layer (moss, lichens and liverworts) are described. Species are recorded in their approximate order of abundance within each vegetation layer (see example units).

Successional Vegetation: Provides a brief description of the general characteristics of these ecosystems following disturbance. Typically, this description includes an account of the dominant vegetation and structural characteristics which occur as the unit moves through a gradual transition from an early pioneer vegetated state to an overmature climax state. For example, a forested unit may progress through a shrub/herb dominated community composed of fireweed and willow to an aspen dominated seral forest until reaching a spruce dominated climax state.

Physical Environment: Terrain, soil moisture, slope, aspect, elevation, and any additional physical factors common to the unit which influence vegetation are discussed. Most often BEUs occur over wide ranging physical characteristics.

Atypical Sites: Describes sites which occur within a given unit but have slightly different dominant vegetation species and/or physical environments than the typical situation described for the unit. An example is a moist devil's club dominated site occurring in a normally drier BEU where devil's club is typically a minor component.

2.2 Major BEU Classes

Broad Ecosystem Units have been divided into ten classes of ecosystem types:

1. Coastal Forest Ecosystems

2. Southern Interior Forest Ecosystems
3. Central and Northern Forest Ecosystems
4. Forested Wetland and Riparian Ecosystems
5. Subalpine Parkland and Krummholz Ecosystems
6. Shrub and Herb Dominated Ecosystems
7. Non-forested Wetland and Aquatic Ecosystems
8. Non-forested Subalpine and Alpine Ecosystems
9. Sparsely Vegetated Ecosystems
10. Urban and Agricultural Ecosystems

3.0 BEU MAPPING METHODOLOGY

During the early development of the Biophysical Habitat Mapping Methodology, two main goals were identified: (1) to provide a framework to assess the suitability and capability of the land surface for supporting wild animals (Demarchi et. al., 1983; Fuhr and Demarchi, 1990), and (2) to provide a framework for improving animal habitat (Demarchi et. al., 1990). Therefore, mapping was completed based on existing mapping and data sources including: ecoregion, biogeoclimatic zonation mapping, terrain, soil and vegetation mapping where available, landsat imagery, forest cover mapping, as well as unpublished data available from regional and headquarters offices. This mapping was completed without any fieldwork required. The smallest scale maps are used for provincial planning.

3.1 Basemap Development

Ecoregion Classification and Biogeoclimatic Ecosystem Classification each have their place in the broad ecosystem mapping framework. The ecosection is the ecoregion classification unit displayed on ecosystem maps; it is always mapped as a simple map unit. Within each ecosection polygon, there may be a number of BEC subzone, variant, and/or phase polygons, as well as numerous broad ecosystem unit polygons. Each BEC subzone/variant unit is always mapped as a simple map unit. British Columbia is mapped to the ecosection at 1:250,000 and to the BEC subzone/variant level at scales ranging between 1:100,000 and 1:500,000 for each of the forest regions (MoF, Research Branch unpubl.).

Delineation of Broad Ecosystem Units is completed by independent contractors who utilize standardized basemap information which is provided to them by government inventory agencies. The first step in the mapping process is to define the project area (i.e., spatial and non-spatial attributes) at a 1:250,000 scale. A basemap is created by delineating the project boundary, then mapping the ecosection lines, BEC lines, and waterbody features taken from 1:250,000 topographical maps. These polygons are delineated by major slope classes and then by major landform types. This basemap is provided to the contractor(s).

3.2 Map Unit Delineation and Labelling

Broad ecosystem map unit delineation begins with the collection of all relevant materials. The next step is involves registering a mylar copy of the basemap over 1:250,000 satellite images. Ecoregion and biogeoclimatic polygons are labeled with the appropriate symbols for the ecosection, biogeoclimatic zone, subzone, and/or variant. The ecosystem map units are then typed out and labelled accordingly. One or two broad ecosystem units may occur per broad ecosystem map polygon. When the polygon represents a complex of two BEUs the label will display the approximate percentage of the polygon that is represented by each ecosystem types.

If necessary, the appropriate symbols for the ecosystem unit modifiers and structural stages are also included in the label. Broad ecosystem unit modifiers define a set of

particular site characteristics that vary from the typical characteristics described for each broad ecosystem unit (see table 1). Structural stages are used as a way of classifying the gradual transition of an ecosystem from a non-vegetated pioneer state to a potential over-mature climax state. The structural stages used in the broad ecosystem classification are listed in table 2.

Table 1. Modifiers used for the 1:250,000 scale broad ecosystem mapping (definitions adapted from Resources Inventory Committee, 1995).

<i>Symbol</i>	<i>Modifier</i>	<i>Defining Criteria</i>
c	coarse-textured soils	ecosystems occur over coarse-textured soils, including sandy loam, loamy sand and sand textures; fine matrix with over 70% coarse fragments and medium matrix with over 35% coarse fragments.
f	fine-textured soils	ecosystems occur over fine-textured soils, including heavy clay, silty clay, clay and sandy clay textures.
g	gently sloping	limited to alpine ecosystems that have slope gradients which are greater than 3% and less than 15%.
l	shallow (lithic) soils	ecosystems occur where the soils are considered shallow to bedrock (0 - 100 cm depth).
m	moist soils	ecosystems occur where the soils are considered wetter than average.
n	cool (northerly) aspect	ecosystems occur on moderately steep to steep slopes (slope gradient greater than 25%) which have a cool, northerly or easterly aspect (285 to 135 degrees).
s	steep, warm (southerly) aspect	ecosystems occur on steep slopes (slope gradient greater than 35%) which have a warm, southerly or westerly aspect (135 to 285 degrees).
t	moderate, warm (southerly) aspect	ecosystems occur on moderately steep slopes (slope gradient between 25% and 35%) which have a warm, southerly or westerly aspect (135 to 285 degrees).
u	upper elevation, gentle slope	limited to upper elevation forested ecosystems, that have slope gradients which are greater than 3% and less than 15%.

A maximum of three seral stages can be listed for each ecosystem map unit. When multiple seral stages are mapped for a single ecosystem unit, the approximate percentage of the map unit that is covered by each of the seral stages must also be displayed in the map label. Some examples of broad ecosystem map labels are shown in figures 1 and 2.

Table 2. Seral stages used for 1:250,000 scale BEU mapping (RIC, 1995).

#	Seral Stages	Defining Seral Stage Characteristics	Age Criteria
0	non-forested units	Climax or disclimax communities dominated by herbaceous or shrubby vegetation less than 10m tall (ie; alpine, snow fields, avalanche tracks, grasslands, wetlands).Some communities dominated by bryophytes and lichens, especially where there is little or no soil development (ie; rock outcrops, talus).	Up to 100+ yrs.
1	recent disturbance	Communities representative of early successional stages following recent disturbance (ie; fire, logging). Includes initial stages in primary or secondary succession with less than 10% cover of vascular plants; as well as more advanced stages of succession where the communities may be shrub or herb dominated, with greater than 20% shrub or herb cover (or greater than 33% of total cover) and total tree cover less than 10% (seedling and advance regeneration may be abundant).	less than 20 yrs. for normal forest succession
2	young forests, coniferous	Forests dominated by coniferous trees (cone-bearing with needle-shaped, scalelike leaves), that are greater than 10 m tall and have overtopped the shrub and herb layers. Younger stands (usually 10 - 30 yrs) are typically dense and remain this way until self-thinning and canopy differentiation into distinct layers (dominant, co-dominant and suppressed) becomes evident. This may be begin as early as age 30, depending on the tree species and ecological conditions.	less than 60 yrs.
3	young forests, broad-leaved or mixed	Forests dominated by broad-leaved trees (broad, flat surface leaves) or dominated by a mixture of coniferous and broad-leaved species, that are greater than 10 m tall and have overtopped the shrub and herb layers. Younger stands (usually 10 -30 yrs) are typically dense and remain this way until self-thinning and canopy differentiation into distinct layers (dominant, co-dominant and suppressed) becomes evident. This may be begin as early as age 30, depending on the tree species and ecological conditions.	less than 60 yrs.
4	mature forests, coniferous	Coniferous trees that were established after the last disturbance have matured and a second cycle of shade tolerant trees may have become established; understories become well developed as the canopy opens up.	60 to 140 yrs.
5	mature forests, broad-leaved or mixed	Broad-leaved and coniferous (if present) trees that were established after the last disturbance have matured and a second cycle of shade tolerant trees may have become established; understories become well developed as the canopy opens up.	60 to 140 yrs.
6	old-growth	Old, structurally complex stands comprised mainly of climax tree species, although older seral remnants may still be present in the upper canopy; standing snags and rotting logs on the ground are common and understories are typically patchy.	greater than 140 yrs.

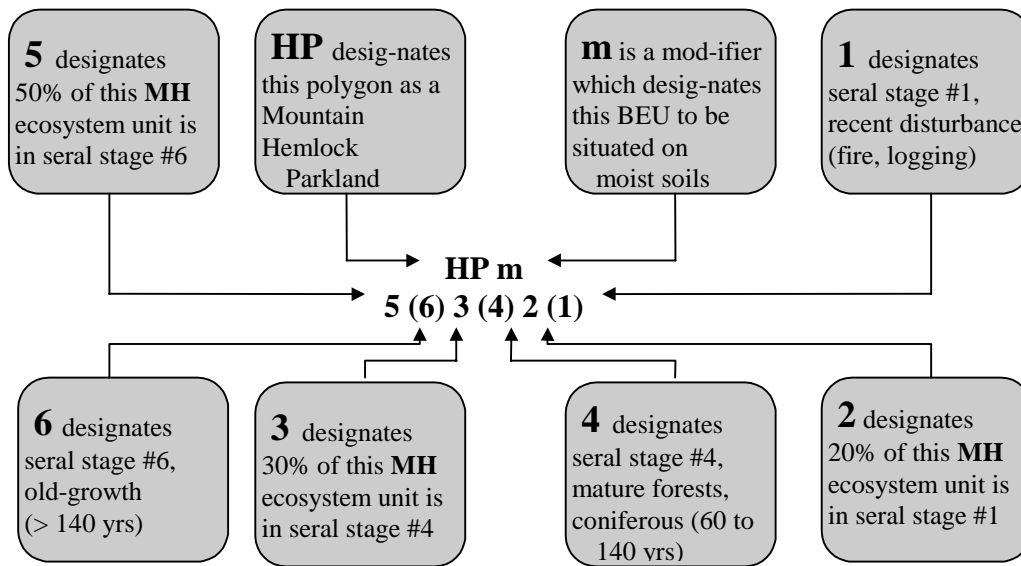
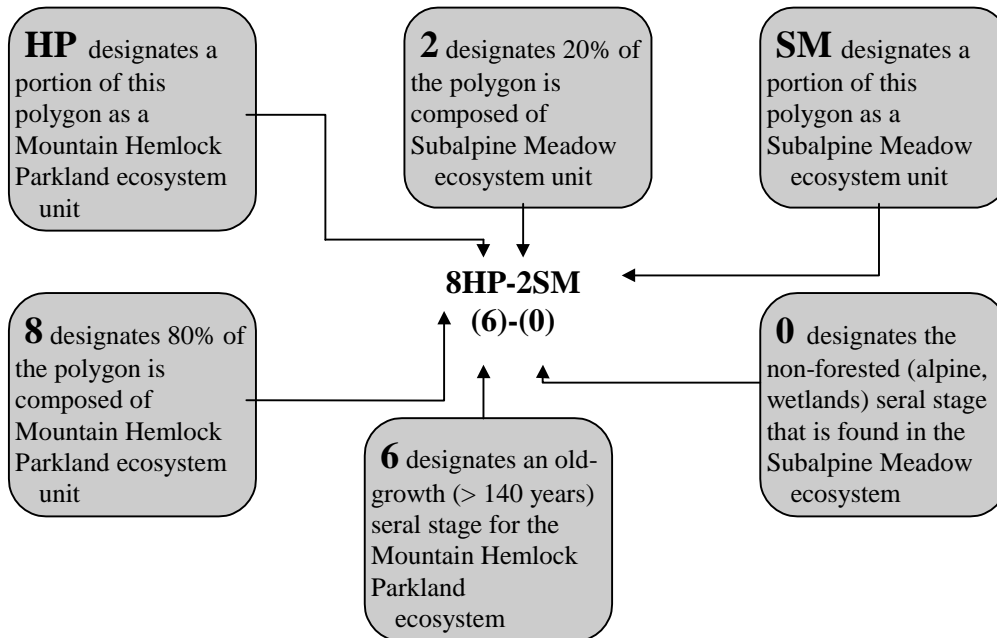


Figure 1. A Sample Broad Ecosystem Unit Map Label

- * The example above depicts how a broad ecosystem map unit can represent more than one seral stage.
- ** Note: not all of the required information is included in this sample label.



- * The example above shows all information which is required to appear in a complex broad ecosystem.

Figure 2. A Sample Broad Ecosystem Polygon Map Label.

A draft 1:250,000 mapsheet is edited and once completed a final version of the BEU map is created. The maps are digitized and all relevant information is stored in an accompanying database(s). Standardized BEU polygon ratings are completed for different values (i.e., wildlife capability and suitability) from which interpretive maps may be drafted.

4.0 COASTAL FOREST ECOSYSTEMS

CD Coastal Douglas-fir

General Description

Typically a dense coniferous forest, with shrub-dominated understories, including seral plant communities composed of Douglas-fir which progress directly to climax.

Distribution

Found in lower to middle elevations, ranging from sea level to approximately 700 m, in the southwestern portion of the province. This unit occurs on the Gulf Islands and Vancouver Island, east of the Vancouver Island range and south of Kelsey Bay. It is also found in a narrow strip along the mainland coast, south of Bella Coola and in the southern portion of the Fraser Valley as well as east and north of Chilliwack into the drainages of the upper Fraser River and the eastern Coast Mountains.

Biogeoclimatic Units

CDFmm	CWHdm	CWHds1	CWHmm1	CWHxm
		CWHds2	CWHmm2	

Climax Vegetation

A well developed canopy dominated by Douglas-fir; lesser amounts of western redcedar, shore/lodgepole pine and bigleaf maple commonly occur. Salal typically dominates the understory, secondary species include dull Oregon-grape, ocean-spray and baldhip rose. The herb layer is usually sparsely populated with bracken fern, vanilla-leaf and sword fern. Step moss is almost always present in the moss and lichen layer; Oregon-beaked moss and red-stemmed feathermoss are often abundant.

Successional Vegetation

Early successional stages are dominated by ocean-spray, red huckleberry, salal and dull Oregon-grape.

Atypical Sites

Atypical sites can be identified by the dominance of falsebox and Douglas maple within the shrub layer, along with the presence of tall Oregon-grape. The herb layer is often dominated by Hooker's fairybells, while cattail moss is the most abundant species present in the moss and lichen layer.

Physical Environment

This unit lies in the rainshadow of the Vancouver Island and Olympic mountains, resulting in warm, dry summers and mild, wet winters. Typically occurs on dry, steep, southfacing slopes with shallow soils.

References

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

CG Coastal Western Redcedar - Grand Fir

General Description

Typically a dense coniferous forest that includes plant communities that progress through long-lived Douglas-fir seral stages to a varied climax of western redcedar and grand fir.

Distribution

Restricted to low elevations along southeastern Vancouver Island from Bowser to Victoria, the Gulf Islands south of Cortes Island and a narrow strip along the Sunshine Coast. Elevational limits range from sea level to approximately 150m.

Biogeoclimatic Units

CDFmm

Climax Vegetation

Typically a dense coniferous forest dominated by Douglas-fir, grand fir and western redcedar. Salal, Oregon-grape and baldhip rose characterize the shrub layer. Regenerating western redcedar and grand fir are commonly found under this dense closed canopy. Common herbaceous species include sword fern, three-leaved foamflower and vanilla-leaf. Oregon-beaked moss dominates the moss and lichen layer; additional common species include step moss, electrified cat's tail moss and palm tree moss.

Successional Vegetation

Early successional stages are dominated by ocean-spray, red huckleberry, salal and dull Oregon-grape. Bigleaf maple and red alder are commonly found in early forested stages.

Physical Environment

This unit lies in the rainshadow of the Vancouver Island and Olympic mountains, resulting in warm, dry summers and mild, wet winters. Typically this unit occurs on mesic to more moist sites.

References

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

CH Coastal Western Hemlock - Western Redcedar

General Description

Typically a dense coniferous forest, with shrub-dominated understories, found along outer coastal plains.

Distribution

Occurs in a narrow fringe along the outer coast of southern Vancouver Island widening to cover the northern portion of Vancouver Island, the windward side of the Queen Charlotte Ranges and the Coast Mountains up the Mainland Coast to the Alaskan border. The elevational limits range from sea level to 600m.

Biogeoclimatic Units

CWHmm1	CWHvh1	CWHvm1	CWHwh1
CWHmm2	CWHvh2	CWHvm2	CWHwh2

Climax Vegetation

Generally an open, scrubby canopy dominated by western redcedar and western hemlock; with minor amounts of Sitka spruce, yellow-cedar and lodgepole pine often present. Salal is the most prominent species in a thick shrub layer; conifer regeneration, Alaskan blueberry, false azalea and red huckleberry are also common. Deer fern, bunchberry and false lily-of-the-valley characterize a limited herb layer. The dense moss and lichen layer is predominantly composed of step moss, lanky moss and Oregon-beaked moss.

Successional Vegetation

Early successional stages usually contain red huckleberry, oval-leaved blueberry, salal and cordillian bunchberry. Later forested stages include lodgepole pine, western hemlock, black huckleberry, salal, Alaskan blueberry, deer fern and moss.

Physical Environment

Found on a wide range of sites, usually flat or gentle slopes, over moderately well to imperfectly drained materials. Soil types range from deep organic horizons to thin lithic layers over bedrock. Sites are typically mesic to slightly dry.

Atypical Sites

The shrub layer of wetter sites varies considerably, but is usually composed of false azalea, salmonberry and red elderberry, while the canopy remains of similar composition. Common herbaceous species include sword fern, sedges, skunk cabbage, oak fern, foamflowers, spiny wood fern and queen's cup.

References

- Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.
- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

CP Coastal Douglas-fir - Shore Pine

General Description

Typically a dry coniferous forest, characterized by plant communities composed of a sparse shrub layer and a well developed moss and lichen layer, which proceed to a Douglas-fir climax.

Distribution

Typical elevation ranges from sea level to approximately 650m. This unit is found along the Sunshine Coast and in the lower Fraser Valley, extending inland along the major river valleys to its eastern limit in the Coast Mountains.

Biogeoclimatic Units

CWHds1 CWHms1
CWHds2 CWHms2

Climax Vegetation

Closed canopy dominated by Douglas-fir with codominants shore pine and western redcedar. A poorly developed shrub layer characterizes this unit. The shrub layer of the wetter sites features salal, red huckleberry and ocean-spray (i.e., CWHdm). Prince's pine, Douglas maple and kinnikinnick characterize the understory of drier sites (i.e., CWHds1, ds2). The herb layer is extremely underdeveloped, with some bracken and

western fescue present on the wetter sites. A well developed moss and lichen layer includes red-stemmed feathermoss, step moss, electrified cat's-tail moss and pipecleaner moss, with minor amounts of Cladina and Cladonia lichens.

Physical Environment

Typically found on very dry, nutrient poor sites. The wetter sites of the CWHdm experience warm, dry summers and moist, mild winters. The drier sites of the CWHds1 and CWHds2 experience warm, dry summers as well, but the winters are moist and cool with moderate amounts of snowfall.

References

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

CS Coastal Western Hemlock - Subalpine Fir

General Description

Typically a northern coastal, cold habitat, characterized by dense coniferous forests of western hemlock, subalpine fir and spruce with dense shrub and moss and lichen layers.

Distribution

Commonly occurs in the Coast, Skeena and Hazelton Mountains, the Nass Basin and the Stikine Plateau; ranging between 100m and 1100m in elevation.

Biogeoclimatic Units

ICHmc1 ICHmc2 ICHvc ICHwc
ICHmc1a

Climax Vegetation

Dry sites

A closed canopy consisting of western hemlock, subalpine-fir, western redcedar and the hybrid Roche spruce. Blueberries, huckleberries, false azalea and plenty of conifer regeneration characterize the shrub layer. Minor amounts of devil's club may be scattered throughout the understory. Common herb species include bunchberry, five-leaved bramble and some oak fern. Red-stemmed feathermoss dominates a well developed moss and lichen layer along with knight's plume and step moss.

Wet sites

Closed canopy includes western hemlock, subalpine-fir, hybrid Roche spruce and western redcedar. A heavy cover of devil's club is characteristic of the shrub layer with

thimbleberry, false azalea and some *Vaccinium* spp. also represented. The lush herb layer typically includes oak fern, lady fern, spiny wood fern, bunchberry and foamflowers. Leafy moss, knight's plume, step moss and red-stemmed feathermoss are commonly found in the moderate moss and lichen layer.

Successional Vegetation

Dry sites

Early successional stages are often dominated by shrubs, particularly black huckleberry, willows, thimbleberry and saskatoon.

Wet sites

Shrubby vegetation is typical of early successional stages in this unit, including willows, thimbleberry, black huckleberry and saskatoon.

Physical Environment

Dry sites

Sites are generally located in an upper to middle mesoslope position on morainal, colluvial, or glaciofluvial materials. The soils are often shallow, well drained blankets deposited over bedrock.

Wet sites

Typically found on rich sites that receive abundant seepage or have high water tables. This is characteristic of sites located in middle to toe mesoslope positions, depressions and level areas, that are situated over morainal, fluvial or lacustrine deposits.

Atypical Sites

Dry sites

Amabilis fir commonly occurs as a secondary canopy species on sites with slightly moderated temperatures.

Wet sites

Amabilis fir commonly occurs as a secondary canopy species on sites with slightly moderated temperatures.

Wetter sites, located on organic materials, may have an abundant cover of skunk cabbage, horsetail and sphagnum moss in addition to the climax vegetation. Trembling aspen and paper birch may be found in some valley bottom sites.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

CW Coastal Western Hemlock - Douglas-fir

General Description

Typically a dense coniferous forest with fern-or shrub- dominated understories, that include plant communities that progress through long-lived Douglas-fir seral stages to a western hemlock climax.

Distribution

Found in lower to middle elevations, ranging from sea level to approximately 700 m, in the southwestern portion of the province. This unit occurs on the Southern Gulf Islands and Vancouver Island, east of the Vancouver Island range and south of Kelsey Bay. On the mainland it is found along the coast and on the windward slopes of the Coast Mountains south of the Alaskan border and in the southern portion of the Fraser Valley, as well as east and north of Chilliwack into the drainages of the upper Fraser River and the eastern Coast Mountains.

Biogeoclimatic Units

CWHdm CWHds1 CWHds2 CWHxm

Climax Vegetation

Mesic sites

Typically a mixed coniferous forest dominated by Douglas-fir and western hemlock; and to a lesser extent western redcedar. Salal, red huckleberry and Oregon-grape characterize the shrub understory. The moderate herb layer usually consists of sword fern, vanilla-leaf, oakfern, queen's cup and spiny wood fern. Step moss dominates the moss and lichen layer; lanky moss, Oregon-beaked moss, flat moss and pipecleaner moss are also common.

Wet sites

Mixed coniferous forest on wetter sites dominated by Douglas-fir, western hemlock and western redcedar. Dominant shrubs include devil's club, vine maple, salmonberry and red huckleberry. Sword fern and vanilla-leaf dominate the lush herb layer; secondary species include lady fern, oakfern and foamflowers. The mosses present include step moss, leafy moss, Oregon-beaked moss and palmtree moss.

Very dry sites

Canopy dominated by western hemlock with minor amounts of Douglas-fir and lodgepole/shore pine. Black huckleberry and Alaskan blueberry dominate the shrub layer; false azalea, ocean-spray and falsebox are also common. The herb layer is very sparse with some bunchberry and kinnikinnick scattered throughout the understory. Red-stemmed feathermoss and *Cladonia* lichens dominate the moss and lichen layer, with minor amounts of pipecleaner and step moss also present.

Successional Vegetation

Mesic sites

Typically a shrub dominated community occurs on these sites following disturbances. Early successional stages are dominated by salal, red huckleberry, falsebox, Douglas maple, bracken fern and fireweed. After burning, fireweed and bracken fern are usually more abundant. Shrubby red alder and Douglas-fir are most common in later stages, bigleaf maple and salmonberry may also be present.

Wet sites

Dense shrubby communities are most common following disturbances. Early successional species include falsebox, saskatoon, willows, Douglas maple, Oregon-grape and fireweed. Salmonberry, red alder and bigleaf maple are common in later stages.

Very dry sites

Early successional stages dominated by salal, Oregon-grape, red huckleberry, bracken and fireweed. Red alder, bigleaf maple and salmonberry are common in early forested stages.

Physical Environment

Mesic sites

Found in a wide range of soil and moisture regimes. Warm, dry summers with some water deficits and moist, cool winters with little to moderate snowfall, are most common.

Wet sites

Soils are typically moist to very moist and rich in nutrients. Normally, warm, dry summers and moist, mild winters occur within this unit. These sites are very localized and the overall climatic patterns described do not directly reflect the typical site characteristics.

Very dry sites

These sites are characterized by moist, cool winters with cool, but relatively dry summers. Usually located on very dry, nutrient poor soils.

Atypical Sites

Mesic sites

On more northern or higher elevation sites Alaskan blueberry may be abundant in the shrub layer. Slightly drier sites may have a reduced understory composed of prince's pine, falsebox and bunchberry.

Wet sites

Slightly drier sites may have a very sparse shrub layer featuring Douglas maple and black huckleberry. Queen's cup, bunchberry, foamflower and oakfern are commonly found in the herb layer of these sites. Step moss is still the dominant moss species; additional species include electrified cat's-tail moss and pipecleaner moss.

References

Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

DA Douglas-fir - Arbutus**General Description**

Typically a dense coniferous forest, with shrub-dominated understories, that are composed of plant communities which may pass through seral stages with arbutus as a major component after intense fire, to a Douglas-fir climax. Sites usually associated with shallow, rocky areas.

Distribution

Occurs on the eastern side of Vancouver Island south of Kelsey Bay, on the Southern Gulf Islands and on some of the islands located in Johnstone Strait. It also occurs in the lower Fraser Valley on the south side of the Fraser River as far as Chilliwack and along the Sunshine Coast up to Desolation Sound. It ranges in elevation from sea level to approximately 700m.

Biogeoclimatic Units

CDFmm CWHdm CWHxm

Climax Vegetation

Open to closed forest dominated by Douglas-fir and arbutus; lodgepole pine codominates in the CWH and Garry oak may be present in the CDF. Extensive shrub cover consisting of mainly ocean-spray, salal, baldhip rose and dull Oregon-grape. The sparse herb layer includes Alaska oniongrass, purple peavine and hairy cat's-ear. Oregon beaked moss, step moss and electrified cat's-tail moss are common in a moderate moss and lichen layer.

Successional Vegetation

Early successional stages are typically shrub dominated including salal, Oregon-grape and ocean spray.

Physical Environment

Sites are typically situated on very dry, poor soils. This unit experiences warm, dry summers and mild, wet winters with sufficient water deficits during the summer months.

Atypical Sites

Some sites may have additional species present in the shrub layer, including baldhip rose, red huckleberry, honeysuckle, snowberry and falsebox.

References

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

FR Amabilis Fir - Western Hemlock

General Description

Typically a low elevation, dense coniferous forest, with fern or shrub dominated understories, that include plant communities which may contain western redcedar as a long-lived seral species, leading to a mixed western hemlock and amabilis fir climax.

Distribution

Commonly occurs at low to middle elevations, between 500m and 1100m, occasionally down to sea level. This unit is found extensively throughout the major valleys of the windward and leeward portions of the Coast Mountains, Vancouver Island Ranges and Queen Charlotte Ranges, as well as on the outer coast of southern Vancouver Island and the adjacent northern Gulf Islands.

Biogeoclimatic Units

CWHmm1	CWHms1	CWHvh1	CWHvm1	CWHws1	ICHmc1a
CWHmm2	CWHms2	CWHvh2	CWHvm2	CWHws2	

Climax Vegetation

Sites with Douglas-fir

Mixed coniferous canopy dominated by western hemlock, with co-dominant to subdominant amabilis fir, western redcedar and Douglas-fir. The shrub layer is

commonly dominated by Alaskan blueberry with lesser amounts of salal and oval-leaved blueberry often present. The herb layer is usually quite sparse but commonly includes bunchberry, deer fern, sword fern, vanilla-leaf and foamflower. Pipecleaner moss, lanky moss and step moss are the most common species in the moss and lichen layer.

Sites without Douglas-fir

Typically a closed canopy dominated by western hemlock and amabilis fir; with minor amounts of western redcedar and some Sitka spruce, Engelmann spruce, subalpine fir, Douglas-fir and yellow-cedar also occurring. Alaskan blueberry and oval-leaved blueberry characterize the shrub layer; with red huckleberry and salal more prominent on drier sites. Bunchberry, five-leaved bramble, queen's cup and deer fern are the most common herbs. The dense moss and lichen layer includes lanky moss, step moss and pipecleaner moss.

Successional Vegetation

Sites with Douglas-fir

Early successional vegetation includes thimbleberry, red elderberry, red huckleberry, salmonberry, Alaskan blueberry, red alder and fireweed. Red alder and salmonberry are pioneer species following disturbance, especially on exposed mineral soils. Fireweed is most common following burning.

Sites without Douglas-fir

Early successional vegetation includes thimbleberry, red elderberry, salmonberry, Alaskan blueberry and fireweed.

Red alder and salmonberry are common following disturbance, especially on exposed mineral soils. Fireweed is most common following burning.

Physical Environment

Sites with Douglas-fir

Typically occurs on middle to lower slopes. Slightly dry to moist colluvial materials are most common, sometimes blankets of organic material are present, particularly in wetter sites.

Sites without Douglas-fir

Typically occurs on middle to lower slopes. Slightly dry to moist colluvial materials are most common, sometimes blankets of organic material are present, particularly in wetter sites.

Devil's club occurs on the wetter, richer sites along with salmonberry, foamflower, twisted stalk and various ferns. The tree layer does not vary significantly on wetter sites. The moss and lichen layer is similarly dense, but often has a higher occurrence of leafy moss.

Atypical Sites

Sites with Douglas-fir

Devil's club may dominate the shrub layer in moist rich sites. The drier interior features salal, falsebox and dull Oregon-grape in the shrub layer. Kinnikinnick and Cladina lichens may also be abundant within these drier areas.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
- Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

GO Garry Oak

General Description

Typically a sparse to open mixed forest, with understories dominated by mosses and a dense mixture of spring wildflowers and grasses growing on shallow, rocky sites.

Distribution

This ecosystem is very limited in distribution, occurring at low elevations along SE Vancouver Island and the Gulf Islands. Elevational limits range between sea level and approximately 150m.

Biogeoclimatic Units

CDFmm

Climax Vegetation

Garry oak ecosystems include open Garry oak woodlands scattered with minor amounts of Douglas-fir. The understories are either meadows dominated by native wildflowers and grasses or open rocky areas dominated by endemic mosses and herbs or shrubs. Common camas, satin flower, white fawn lily, yellow western buttercup, Idaho fescue, Alaska oniongrass and blue camas characteristically occur in Garry oak meadows. Rock moss or broom moss are predominant on rocky sites, with Wallace's selaginella, seablush, satinflower, shooting star and broad-leaved stonecrop scattered about. Other rocky areas commonly have dense shrub thickets consisting of snowberry, Nootka rose, ocean spray and Indian plum; electrified cat's tail moss may be present in the moss and lichen layer. Hairy honeysuckle and tall Oregon-grape may dominate the understory of dry, colluvial sites.

Physical Environment

This ecosystem favours organically rich soils formed as a result of vegetation and dry climate. Summers are warm and dry and winters are mild and moist. Thin blankets or veneers over bedrock are common.

Atypical Sites

Introduced herb and shrub species have altered most Garry oak ecosystems. Garry oak meadows are often dominated by introduced species such as orchard grass, sweet vernal grass, hedgehog dogtail and barren brome. Rocky sites are often dominated by a dense shrub cover of another introduced species, scotch broom. Introduced species such as hairgrass, sweet vernal grass, orchard grass, Kentucky bluegrass and barren brome are also abundant. Many of the native herbs and shrubs are intermixed with these introduced species but are rarely as abundant as expected. Endemic rock moss remains dominant in the moss and lichen layer even though the introduced species are present.

References

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

HB Coastal Western Hemlock - Paper Birch

General Description

Typically a dense mixed forest composed of paper birch, Douglas-fir, western redcedar and western hemlock with shrub dominated understories.

Distribution

Occurs at low elevations in subarctic and subcontinental areas north of Knight Inlet, ranging in elevation from valley bottom to approximately 500m.

Biogeoclimatic Units

CWHds1 CWHds2

Climax Vegetation

Closed canopy dominated by Douglas-fir and western redcedar with minor amounts of western hemlock, paper birch and big-leaf maple also present. Commonly the shrub layer includes saskatoon, falsebox and Douglas maple. A sparse herb layer is typically composed of one-leaved foam flower, queen's cup, broad-leaved starflower and spiny wood fern. Step moss and leafy moss dominate the moss and lichen layer, some electrified cat's-tail moss and Oregon-beaked moss may also be present.

Successional Vegetation

Early successional stages tend to be shrub dominated including species such as saskatoon, falsebox, Douglas maple and red alder. Later stages usually have a reduced shrub component.

Physical Environment

Characteristically, this unit is found on rich, mesic sites and experiences warm, dry summers and moist, cool winters. This climate is described as transitional between the coast and the interior.

References

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

HL Coastal Western Hemlock - Lodgepole Pine

General Description

Typically an open to dense coniferous forest situated on dry sites, with shrub-dominated understories that include plant communities which progress through lodgepole pine seral stages to a western hemlock climax.

Distribution

This is a very uncommon ecosystem type which is limited to dry ridgecrests and rocky outcrops along the outer coast to the Alaskan border, including Vancouver Island, the Queen Charlotte Islands and any of the small coastal islands. It also can be found throughout the Coast Mountains, western Hazelton and Skeena Mountains and the Nass Basin. It ranges in elevation between sea level and 1000m.

Biogeoclimatic Units

CWHvh1	CWHvm1	CWHws1	ICHwc
CWHvh2	CWHvm2	CWHws2	

Climax Vegetation

Dry sites

Open to closed cover of stunted lodgepole pine and western hemlock, western redcedar and sometimes yellow-cedar. Conifer regeneration, salal, common juniper and minor amounts of Alaskan blueberry make up the shrub layer. The sparse herb layer may include crowberry and bunchberry. Reindeer lichens characterize the moss and lichen layer; rock moss and red-stemmed feathermoss are also present.

Wet sites

Open to closed canopy includes western hemlock and lodgepole pine. Kinnikinnick and prince's pine are commonly present in a sparse understory. Red-stemmed feathermoss characterizes the moss and lichen layer; step moss, lanky moss, electrified cat's tail moss and pipecleaner moss are also common on the wetter sites.

Physical Environment**Dry sites**

Only occurs on extremely dry, rocky outcrops and ridge crests. Soils are usually thin and poorly developed.

Wet sites

Found on very dry rocky outcrops and ridge crests where there is a thin veneer of morainal or colluvial materials.

References

Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

HS Western Hemlock - Sitka Spruce**General Description**

Typically a dense coniferous forest along outer coastal sites, with shrub-dominated understories, that usually succeed directly to a mixed climax of western hemlock and Sitka spruce.

Distribution

Occurs along the west and north coast of Vancouver Island and the Queen Charlotte Islands. It is also found throughout the windward portions of the Coast Mountains, extending from Knight Inlet northward into the Boundary Ranges. Typically this unit occurs at elevations ranging between sea level and approximately 600m.

Biogeoclimatic Units

CWHds2	CWHvh1	CWHwh1	CWHwm
	CWHvh2	CWHwh2	

Climax Vegetation

Dry/Poor subdivision

The closed canopy is dominated by western hemlock, Sitka spruce and western redcedar; with minor amounts of yellow-cedar intermixed. Salal is insignificant or absent from most sites. Vaccinium species such as red huckleberry, Alaskan blueberry and oval-leaved blueberry are common in the shrub layer along with false azalea and conifer regeneration. Ferns including deer fern and spiny wood fern contribute to a sparse herb layer when present. The dense moss and lichen layer features lanky moss, step moss, Oregon-beaked moss, leafy moss and flat moss.

Moist/Rich subdivision

The canopy is typically codominated by Sitka spruce and western hemlock, with scattered western redcedar and yellow-cedar. The understory is typically dominated by western hemlock regeneration and Alaskan blueberry; secondary species include oval-leaved blueberry, red huckleberry and false azalea. The herb layer is characterized by the presence of rich site indicators such as oakfern, deer fern and foamflower. Other common herb species include fern-leaved goldthread and false lily-of-the-valley. Lanky moss, step moss and large leafy moss typically dominate a well developed moss and lichen layer.

Shoreline/Ocean Spray subdivision

Characteristically the forest canopy is windswept and dominated by Sitka spruce, with varying amounts of western redcedar and western hemlock. The understory is most often dominated by salal thickets; red huckleberry and salmonberry are commonly intermixed. The herb layer is generally quite sparse but does often include deer fern, false lily-of-the-valley and sword fern. Oregon-beaked moss is most common in the moss and lichen layer, along with lanky moss, leafy moss and step moss.

Successional Vegetation

Dry/Poor subdivision

Red alder, salmonberry, red huckleberry, Alaskan blueberry, oval-leaved blueberry, five-leaved bramble and fireweed are typical shrub and herb species found in the early successional stages of this unit.

Moist/Rich subdivision

Shrub dominated communities are most common in early successional stages of this unit. Alaskan blueberry, oval-leaved blueberry, red huckleberry, false azalea and fireweed are typically abundant.

Shoreline/Ocean Spray subdivision

Early successional stages are usually shrub dominated and include salal, red huckleberry, salmonberry and fireweed.

Physical Environment

Dry/Poor subdivision

Poor, well drained colluvial soils are most common. Sites are typically found in middle slope positions with variable slope gradients.

Moist/Rich subdivision

Typically these units occur on sites situated over rich bedrock, where there is considerable nutrient rich seepage and mixing of colluvial materials.

Shoreline/Ocean Spray subdivision

These forest types are restricted to a narrow strip of shoreline found in exposed outer coastal areas. The unique vegetation composition of these communities is a direct result of the influences of salt spray, fog, brackish waters, high wind and waves.

Atypical Sites

Dry/Poor subdivision

A slightly more open canopy is common on some sites resulting in the dominance of the understory by salal. The herb and the moss and lichen layer maintain similar species composition.

Moist/Rich subdivision

Some sites are dominated by additional rich site indicators such as devil's club and salmonberry in the shrub layer and sword fern in the herb layer. Wetter sites may have moderate amounts of skunk cabbage and sphagnum moss also present.

Shoreline/Ocean Spray subdivision

A Sitka spruce dominated canopy with a dense blanket of Pacific reedgrass is characteristic of sites on rocky headlands and old sand dunes.

Sites located on old marine terraces tend to have an abundance of rich site indicators such as salmonberry and sword fern, in addition to the typical vegetation.

Slough sedge and Pacific crab apple dominate the understory of forests which are located near the edge of estuaries and tidal sloughs.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
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MF Mountain Hemlock - Amabilis Fir

General Description

Typically a high elevation dense coniferous forest with shrub-dominated understories, that proceeds after disturbance directly to a climax species mix of mountain hemlock, western hemlock and amabilis fir; occasionally minor amounts of yellow-cedar are also present.

Distribution

This unit occurs in high elevation areas along the coast, including the eastern and western slopes of the Vancouver Island Ranges, Queen Charlotte Mountains and Coast Mountains, as well as the western slopes of the Hazelton Mountains. It is limited to elevations ranging between 800m and 1600m. Note, there is considerable range in the upper and lower elevational limits, due to climatic variability and differing topography.

Biogeoclimatic Units

MHmm1 MHmm2 MHwh

Climax Vegetation

Middle to upper slopes

Closed canopy of amabilis fir and mountain hemlock with some yellow-cedar, subalpine fir and western hemlock. Alaskan and oval-leaved blueberry, false azalea, copperbush, black huckleberry and conifer regeneration characterize the shrub layer. Five-leaved bramble dominates the herb layer with minor amounts of bunchberry, rosy twistedstalk and pink mountain-heather also present. Pipecleaner moss, curly heron's-bill moss and lanky moss are common in a well developed moss and lichen layer.

Middle to toe slopes

Closed canopy dominated amabilis fir and mountain hemlock with moderate amounts of subalpine fir and western hemlock also present; occasionally yellow-cedar may occur. The composition of the shrub layer is similar to the upper slopes consisting of Alaskan blueberry, black huckleberry, oval-leaved blueberry, false azalea, devil's club and salmonberry. Five-leaved bramble, rosy twistedstalk, oakfern, deer fern, Indian hellebore and one-leaved foamflower are the most common herbaceous species. A moderate moss and lichen layer is typically composed of pipecleaner moss, lanky moss and curly heron's-bill moss.

Successional Vegetation

Middle to upper slopes

Early successional stages are shrub dominated including, black huckleberry, Alaskan blueberry, oval-leaved blueberry, five-leaved bramble and fireweed.

Middle to toe slopes

Early successional stages are shrub dominated including, black huckleberry, Alaskan blueberry, oval-leaved blueberry, five-leaved bramble and fireweed.

Physical Environment

Middle to upper slopes

Typically these sites occupy gentle to steep colluvial or morainal slopes overlain with organic materials, or organic veneers over bedrock.

Middle to toe slopes

Generally occurs on gentle to steep, middle to toe slopes where there is a rich colluvial, occasionally morainal deposit with seasonal seepage or extended snowpack.

Atypical Sites

Middle to upper slopes

Sites situated in crest positions are usually situated on shallow soils over bedrock. The canopy consists of stunted amabilis fir, mountain hemlock, yellow cedar, subalpine fir and western hemlock. The shrub layer is quite thick and dominated by Alaskan blueberry; conifer regeneration, false azalea, black huckleberry and copperbush are commonly present. The herb layer is sparse, primarily consisting of five-leaved bramble and pink mountain-heather. Pipecleaner moss and curly heron's-bill moss are common in a dense moss and lichen layer.

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- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
- Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

OA Garry Oak - Arbutus

General Description

Typically a sparse to open mixed forest, with understories dominated by mosses and a dense mixture of spring wildflowers and grasses, growing on shallow, rocky sites.

Distribution

Restricted to rocky areas of the CDFmm and CWHxm1 biogeoclimatic subzones of Southern Vancouver Island and adjacent Gulf Islands and a few sites in the southern portions of the Fraser Valley.

Biogeoclimatic Units

CDFmm CWHxm1

Climax Vegetation

Most often, Garry oak dominates in association with arbutus and scattered amounts of Douglas-fir. Characteristically, ocean-spray will be present in the shrub layer. White fawn lily, common camas, broad-leaved shooting star, sea-blush and Menzie's larkspur are common spring wildflowers found in a rich herb layer. A dense moss and lichen layer consisting mainly of rock moss is common.

Successional Vegetation

Introduced herb and shrub species have altered most Garry oak/arbutus ecosystems. Many of the rocky sites suitable for this type of ecosystem are dominated by a dense shrub cover of introduced species such as, scotch broom. Introduced species including hairgrass, sweet vernal grass, orchard grass, Kentucky bluegrass and barren brome are also abundant. Many of the native herbs and shrubs are intermixed with these introduced species but are rarely as abundant as expected. Endemic rock moss remains dominant in the moss and lichen layer eventhough the introduced species are present.

Physical Environment

Garry Oak - arbutus communities are associated with rocky outcrops. These ecosystems suffer extreme drought in the summer, so many herbaceous species flower early in the spring when water is available.

Atypical Sites

Flat or gently sloping sites with deep soils are often dominated by Garry oak and similar species of grasses and spring wildflowers also present; limited to the southeastern portion of the Saanich Peninsula.

YM Yellow-cedar - Mountain Hemlock Forest

General Description

Typically an open scrubby forest, with a well-developed understory; mountain hemlock and yellow-cedar are the dominant climax species.

Distribution

Occurs at high elevations on the Queen Charlotte Islands and in hypermaritime areas of the coast, including major coastal islands, north of Smith Inlet; typically found at elevations ranging from 500-1100m.

Biogeoclimatic Units

MHmm1 MHmm2 MHwh

Climax Vegetation**Dry sites**

Open stunted canopy of yellow-cedar and mountain hemlock, with minor amounts of western redcedar and amabilis fir also present. A well developed understory includes Alaskan blueberry and oval-leaved blueberry in the shrub layer and mountain-heathers, Pacific reedgrass, bunchberry, fern-leaved goldthread and partridgefoot in the herb layer. Curly heron's-bill moss and lanky moss contribute to a dense moss and lichen layer.

Zonal sites

Scrubby, but often dense, stands dominated by mountain hemlock, western hemlock and yellow-cedar; some Sitka spruce may be present. Sparse to moderate shrub cover of Alaskan blueberry, oval-leaved blueberry and conifer regeneration. Fern-leaved goldthread may be present in a sparse herbaceous community. The continuous moss and lichen layer is dominated by lanky moss; step moss, green sphagnum and pipecleaner moss are often abundant.

Wet sites

Scrubby forest dominated by yellow-cedar and mountain hemlock with some western hemlock and Sitka spruce also present. The moderate shrub layer is primarily composed of blueberries and conifer regeneration. Pacific reedgrass, Indian hellebore, goldthread, twistedstalks and five-leaved bramble are most common in the herb layer. The moss and lichen layer primarily consists of lanky moss with moderate amounts of step moss, leafy liverworts, sphagnum and pipecleaner moss also present.

Physical Environment**Dry sites**

Restricted to crests and upper slope positions which have organic layers directly overlying rock or fragmented colluvium; sites are usually exposed to wind.

Zonal sites

Occurs on relatively moderately well-drained colluvial materials; mid to upper slopes and crests are most common. Occasionally sites may be found on morainal deposits or veneers overlying rock.

Wet sites

Commonly situated on sites with thin morainal, colluvial or organic veneers over rock. Gentle to moderate slopes which receive constant seepage are characteristic.

Atypical Sites

Dry sites

Amabilis fir does not occur in the Queen Charlotte Islands.

Wet sites

Deer cabbage, white-marsh marigold and scattered sedges characterize the herb layer of the wetter sites. A Sitka spruce-reedgrass forest is found only in the Queen Charlotte Islands.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
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5.0 SOUTHERN INTERIOR FOREST ECOSYSTEMS

AC Trembling Aspen Copse

General Description

Typically a dense deciduous or broad-leaved forest, with a shrub-dominated understory, that includes plant communities which succeed through shrub thickets to an edaphic climax of trembling aspen, found in association with shrub/grasslands or grasslands.

Distribution

Found at lower elevations, between 330m and 1150m, throughout the major river valleys of Fraser plateau and the Thompson-Okanagan plateau; as well as in the Okanagan valley and portions of the East Kootenay trench.

Biogeoclimatic Units

BGxw1	IDFdk1	IDFdk4	IDFxb2	PPdh2	SBPSmk
BGxw2	IDFdk3	IDFxb1	IDFxm	PPxb1	SBPSxc

Climax Vegetation

Open to dense stands of trembling aspen with limited amounts of ponderosa pine, Douglas-fir and lodgepole pine. Common snowberry, red-osier dogwood, saskatoon, tall Oregon-grape, roses and soopolallie are characteristic shrub species. Kentucky bluegrass dominates the herb layer; pine-grass, American vetch, star-flowered false Solomon's-seal and blue wildrye may also occur. The moss and lichen layer is commonly poorly developed.

Successional Vegetation

Following disturbances, sites are dominated by thick shrub cover of trembling aspen, soopolallie and roses; with an abundant herb layer composed of pine-grass, fireweed and heart-leaved arnica.

This aspen unit is most likely a stalled successional stage due the removal of conifer seed source by repeated fires.

Physical Environment

Typically occurs on gently sloping sites and level areas in lower to toe mesoslope positions. Moist to very moist, deep, fine-textured morainal or fluvial blankets are characteristic.

Atypical Sites

Wetter sites tend to have pussy willows and sedges in addition to the characteristic composition.

Steep, southerly aspects found in the north, may have shrub layers composed of prickly rose, prairie rose, willows, soopolallie, highbush-cranberry and saskatoon. The diverse herb layer often includes slender wheatgrass, fireweed, Arctic lupine, kinnikinnick and fuzzy-spiked wildrye, with some northern bedstraw and blue-grasses present.

References

- Braumandl, T. and M.P. Curran, 1992. A Field Guide for Site Identification and Interpretation for the Nelson Forest Region. Land Manage. Handb. No. 20., B.C. Min. For., Victoria, B.C.
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- Lloyd, D., K. Angove, G. Hope and C. Thompson. 1990. A Guide to Site Identification and Interpretation for the Kamloops Forest Region. Land Manage. Handb. 23, B.C. Min. For., Victoria, B.C.

DF Interior Douglas-fir Forest

General Description

Typically a dense coniferous forest, with grass or shrub dominated understories, that include plant communities that progress directly to a Douglas-fir climax.

Distribution

DF occurs in the Southern interior of B.C. at low to moderate elevations in the Interior Douglas-fir Biogeoclimatic zone. Elevational limits range between 700m and 1100m.

Biogeoclimatic Units

Interior Douglas-fir/Bunchgrass Zone - dry and mesic sites

BGxh3	IDFdk1	IDFdk4	IDFmw1	IDFxh2	IDFwx
BGxw2	IDFdk2	IDFdm1	IDFmw2	IDFxm	IDFww
	IDFdk3	IDFdm2			

Sub-Boreal Spruce and Interior Cedar-Hemlock Zones

SBPSmk	SBSdk	SBSdw1	SBSdw2	SBSmc1	SBSmh
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Montane Spruce Zone and Interior Cedar-Hemlock Zones

ICHmk1	ICHmw3	ICHxw	MSdk	MSdm1	MSxk
ICHmk2				MSdm2	

Climax Vegetation

Interior Douglas-fir/Bunchgrass Zone - dry sites

Open forest or woodland dominated by Douglas-fir with a moderate to sparse shrub layer. Common juniper, common snowberry, prickly rose and birch-leaved spirea are characteristic shrub species. The shrub layer may also include western snowberry, Rocky Mountain juniper, chokecherry, tall Oregon-grape and saskatoon. The herb layer is dominated by bluebunch wheatgrass and sometimes pinegrass; associated herbs include showy aster, Richardson's sedge, timber milk-vetch, bluegrass, kinnikinnick, spike-like goldenrod, pussytoes, nodding onion and pasture sage. Not all units have a significant moss and lichen layer, but those units that do include, *Cladina* and *Peltigera* lichens with wavy-leaved moss and *Tortula ruralis*.

Interior Douglas-fir/Bunchgrass Zone - mesic sites

Open forest or woodland dominated by Douglas-fir with a sparse shrub layer that may include common juniper, birch-leaved spirea, prickly rose and common snowberry. The herb layer is also sparse and commonly contains pinegrass; bluebunch wheatgrass, spike-like goldenrod, northern bedstraw, showy aster and round-leaved alumroot may also be present. The moss and lichen layer is very dense and is dominated by red-stemmed feathermoss; common associated species include step moss, *Dicranum* spp., electrified cat's-tail moss, knight's plume and *Peltigera* lichens.

Sub-Boreal Spruce and Interior Cedar-Hemlock Zones

An open forest dominated by Douglas-fir, with a dense shrub understory. Characteristic shrubs include; saskatoon, falsebox, common juniper, birch-leaved spirea, prickly rose, soopolallie and Douglas maple. Wild sarsaparilla, twinflower, rough-leaved ricegrass, kinnikinnick and dwarf blueberry are commonly found in the herb layer. The moss and lichen layer is typically composed of red-stemmed feathermoss and wavy-leaved moss, as well as *Cladonia*, *Cladina* and *Peltigera* of lichens.

Montane Spruce Zone and Interior Cedar-Hemlock Zones

Open forest dominated by Douglas-fir, with a variable shrub layer, often including Vasey's big sagebrush, common juniper, falsebox, birch-leaved spirea, shrubby penstemon, saskatoon, common snowberry and Douglas maple. The herb layer is dominated by pinegrass and bluebunch wheatgrass, with minor amounts of yarrow, compact selaginella, Idaho fescue, kinnikinnick, thread-leaved sandwort and round-leaved alumroot. The moss and lichen layer is variable, often with *Peltigera* lichens, *Cladonia* lichens and juniper haircap moss.

Successional Vegetation

Interior Douglas-fir/Bunchgrass Zone - dry sites

Early successional stages are typically dominated by saskatoon, snowberry, rose, pinegrass and bluebunch wheatgrass.

Timber milk-vetch and yarrow dominate vegetation cover if the early successional stages are subject to grazing.

Interior Douglas-fir/Bunchgrass Zone - mesic sites

Early successional stages are typically lush shrub dominated communities, including saskatoon, soopolallie, snowberry, rose, pinegrass, wild strawberry and bluebunch wheatgrass.

Sub-Boreal Spruce and Interior Cedar-Hemlock Zones

Early successional stages are typically dominated by saskatoon, snowberry, rose, pinegrass and bluebunch wheatgrass.

Montane Spruce Zone and Interior Cedar-Hemlock Zones

Early successional stages are typically dominated by saskatoon, snowberry, rose, pinegrass and bluebunch wheatgrass.

Physical Environment

Interior Douglas-fir/Bunchgrass Zone - dry sites

DF is in the rainshadow of the coast mountains and experiences hot, dry summers and cool wet winters. Gentle to steep slopes over well-drained to rapidly drained, nutrient poor, colluvial or morainal materials.

Interior Douglas-fir/Bunchgrass Zone - mesic sites

Mesic sites do not experience the extreme dry conditions; most are situated on gently sloping aspects, primarily in middle to lower slope positions. Soils are typically deep and well-drained.

Sub-Boreal Spruce and Interior Cedar-Hemlock Zones

Gentle to steep slopes over well-drained to rapidly drained, nutrient poor, colluvial or morainal materials.

Montane Spruce Zone and Interior Cedar-Hemlock Zones

Gentle to steep slopes over well-drained to rapidly drained, nutrient poor, colluvial or morainal materials.

Atypical Sites

Interior Douglas-fir/Bunchgrass Zone - dry sites

Very dry sites have a sparse herb layer with little bluebunch wheatgrass and pine-grass, as well as a less diverse shrub layer. The shrub layer is dominated by common juniper, Rocky Mountain juniper, birch-leaved spirea and saskatoon. Common herbs include kinnikinnick, spike-like goldenrod, spreading dogbane, shrubby penstemon, compact selaginella, blue-bunch wheatgrass, Rocky-mountain fescue and yarrow. *Cladonia* spp., *Peltigera* spp. and *Tortula ruralis* are common in the moss and lichen layer.

Moderate to steep talus slopes of the bunchgrass zone are characterized by the presence of scattered Douglas-fir, with a sparse to moderate shrub understory. Shrub species present often include big sagebrush, saskatoon, woodrose and Douglas Maple.

The herb layer is very sparse and composed of scattered blue-bunch wheatgrass, junegrass, spike-like goldenrod and cliff ferns. Soils are typically coarse-textured. Sites with smaller coarse fragments are usually slightly more vegetated.

Interior Douglas-fir/Bunchgrass Zone - mesic sites

Drier sites have less moss and lichen cover; saskatoon, common and western snowberry, tall Oregon-grape and falsebox may be present in the shrub layer.

Wetter sites may have paper birch in the tree layer and have a diverse shrub layer composed of birch-leaved spirea, saskatoon, prickly rose, western snowberry, Douglas maple and tall Oregon-grape. Wild sarsaparilla, showy aster, rough-fruited fairybells, creamy peavine, northern bedstraw and rough-leaved ricegrass are common herbaceous species. The moss and lichen layer is usually dominated by red-stemmed feathermoss.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
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DL Douglas-fir - Lodgepole Pine

General Description

Typically a dense coniferous forest, with shrub or pinegrass dominated understories, that include plant communities which progress through a mixture of lodgepole pine and Douglas-fir or trembling aspen to a Douglas-fir climax.

Distribution

Found at lower to middle elevations (between 400 and 1600m) throughout the central and southern interior. It occurs on the Fraser Plateau, Okanagan highlands, Thompson Plateau and portions of the southern Monashee, Selkirk and Purcell mountains. Small pockets are also found at lower elevations of the Southern Rocky Mountains and on the leeward side of the Coast and Cascade mountains.

Biogeoclimatic Units

Mesic sites

ICHmk1	IDFdk1	IDFdm1	MSxk	SBSmh	SBPSmk
ICHmk2	IDFdk2	IDFdm2	SBSdh	SBSmm	SBPSxc
ICHmw1	IDFdk3	MSdc	SBSdw1	SBSmw	
ICHmw2	IDFdk4	MSdm1	SBSdw2		
ICHmw3	IDFww	MSdm2	SBSdw3		

Dry sites

ICHmk1	IDFdk1	IDFdm1	MSxk	SBSmh	SBPSxc
ICHmk2	IDFdk2	IDFdm2	SBSdh	SBSmk	
ICHmw1	IDFdk3	MSdc	SBSdw1	SBSmm	
ICHmw2	IDFdk4	MSdm1	SBSdw2	SBSmw	
ICHmw3	IDFww	MSdm2	SBSdw3		

Climax Vegetation

Mesic sites

An open canopy consisting of Douglas-fir and lodgepole pine, with some western larch. A moderate shrub understory typically composed of birch-leaved spirea, soopolallie, falsebox, prickly rose, saskatoon and snowberry. A moderate herb layer dominated by pinegrass. Secondary herb vegetation consists of kinnikinnick, twinflower, prince's pine and showy aster. A sparse to moderate moss and lichen layer dominated by red-stemmed feather-moss is characteristic. Some species of lichen may also be present, Peltigera and Cladonia lichens are common.

Dry sites

Within this drier variation Douglas-fir and lodgepole pine form an open canopy. Common juniper, black huckleberry, birch-leaved spirea, saskatoon and prickly rose make up a sparse to moderate shrub layer. The herb layer is composed of twinflower, pinegrass, prince's pine and some bluebunch wheatgrass. Characteristically, various species of lichens are abundant on these drier sites, including Cladonia, Cladina and Peltigera species. Red-stemmed feathermoss and wavy-leaved moss are also common.

Successional Vegetation

Mesic sites

A moderate cover of willows, rose, pine-grass and fireweed are commonly found following disturbance. Early forested stages are dominated by lodgepole pine; some western larch, trembling aspen and paper birch may be present.

Dry sites

Early successional stages dominated by a moderate cover of willows, rose, pine-grass, bluebunch wheatgrass and fireweed.

Physical Environment

Mesic sites

Generally occurs on steep to gentle warm aspects in a wide range of slope positions. Dry to mesic, nutrient poor morainal or colluvial soils are most common; some glaciofluvial terraces may also be evident.

Dry sites

Typically occurs on steep upper to crest slope positions. Characterized by poor, dry morainal or colluvial deposits, with some glaciofluvial materials.

Atypical Sites

Mesic sites

Velvet-leaved blueberry and thimbleberry can be found in the shrub layer on relatively moist sites. The herb layer also changes with the appearance of wild sarsaparilla and bunchberry. Red-stemmed feathermoss and knight's plume are found in a moderate to dense moss and lichen layer.

Dry sites

Found on much more rocky, open sites. The shrub layer is very sparse and composed mainly of saskatoon. Parsley fern is commonly present in the herb layer. Rock mosses and Cladonia lichens dominate the moss and lichen layer of this atypically dry site.

References

- Braumandl, T. and M.P. Curran, 1992. A Field Guide for Site Identification and Interpretation for the Nelson Forest Region. Land Manage. Handb. No. 20., B.C. Min. For., Victoria, B.C.
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DP Douglas-fir - Ponderosa Pine

General Description

Typically an open to dense coniferous forest, with shrub or bunchgrass dominated understories that include plant communities which progress through a mixture of Douglas-fir and ponderosa pine to a Douglas-fir climax.

Distribution

Occurs at low elevations in the valleys of the Southern Interior, including the Okanagan and Nicola valleys, as well as the valleys of the North and South Thompson, Bonaparte, Fraser, Similkameen, Kettle and Granby Rivers. It also occurs in the East Kootenay Trench. Typically found at elevations ranging between 450 and 1300m.

Biogeoclimatic Units

ICHdw	IDFdk1	IDFdm1	IDFxh1	IDFxw	PPdh1
ICHxw	IDFdk2	IDFdm2	IDFxh2	PPxh1	PPxh2
IDFmw1					

Climax Vegetation

Very dry to dry sites

Communities are characterized by an open Douglas-fir and ponderosa pine canopy. Typically the herb layer is dominated by bluebunch wheatgrass; associated herbaceous species include pinegrass, junegrass, pasture sage, yarrow and kinnikinnick. A moderate shrub layer is primarily composed of juniper, snowberry, saskatoon, antelope-brush and big sagebrush. A very sparse moss and lichen layer includes red-stemmed feathermoss and a variety of lichen species.

Mesic to moist sites

An open forest canopy composed predominately of Douglas-fir and to a lesser extent ponderosa pine. The herb layer is dominated by pinegrass; secondary herbaceous species include bluebunch wheat-grass and kinnikinnick. A moderate shrub layer primarily consists of spirea, snowberry, saskatoon and Oregon-grape. A very sparse

moss and lichen layer is common which can include red-stemmed feathermoss, as well as several species of lichens.

Successional Vegetation

Very dry to dry sites

Early successional stages characteristically include saskatoon, big sagebrush, compact selaginella, cheatgrass and bluebunch wheatgrass. Sites in the Okanagan/Kootenay regions may also contain antelope-brush in the early developmental stages. Ponderosa pine typically forms the initial canopy following disturbance, providing shade for regenerating Douglas-fir.

Mesic to moist sites

Typically shrubs dominate early successional stages, including snowbrush, saskatoon and birch-leaved spirea; pinegrass and bluebunch wheatgrass are also common. Ponderosa pine typically forms the initial canopy following disturbance, providing shade for regenerating Douglas-fir.

Physical Environment

Very dry to dry sites

Typically occurs on steep to gentle warm aspects in a middle to crest mesoslope position. Very dry to dry, morainal, colluvial or glaciofluvial deposits are most common.

Mesic to moist sites

Sites are generally located on gentle, middle to lower slopes. Soils range from mesic to moist and are usually morainal or fluvial deposits.

Atypical Sites

Very dry to dry sites

Usually located in much more dry, rocky sites. The understory is primarily composed of saskatoon and tall Oregon-grape. Parsley fern can be found in a moderate herb layer along with yarrow and western fescue. A dense moss and lichen layer is dominated by red-stemmed feathermoss.

Mesic to moist sites

Usually found in moist sites, characterized by an abundant shrub layer, including such species as mallow ninebark, snowberry, saskatoon, Oregon-grape and birch-leaved spirea. Typically, the herb layer is greatly reduced, but still composed mainly of pinegrass.

References

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EF Engelmann Spruce - Sub-alpine Fir Dry Forested

General Description

Typically a dense coniferous forest, with shrub dominated understories, that include plant communities which may progress through seral lodgepole pine to a varied climax of Engelmann spruce and subalpine fir.

Distribution

In the southern and central interior of the province, this unit represents the highest elevation forested area. It occurs throughout the Coast Mountains and eastward into the Rocky Mountains, ranging in elevation between 1275m and 2050m. Note, there is considerable range in the upper and lower elevational limits, due to climatic variability and differing topography.

Biogeoclimatic Units

ESSFdc1	ESSFmc	ESSFmv1	ESSFwc1	ESSFwk1	ESSFwv
ESSFdc2	ESSFmm1	ESSFmv2	ESSFwc2	ESSFwk2	ESSFxc
ESSFdk	ESSFmk	ESSFmv3	ESSFwc3	ESSFwm	ESSFyv
ESSFdv	ESSFmw	ESSFmv4	ESSFwc4	ESSFvv	MSdc

Climax Vegetation

Dry Grouseberry/Crowberry sites

Open coniferous forests with Engelmann spruce, subalpine fir, lodgepole pine and some Douglas-fir. The moderate shrub layer is dominated by crowberry and grouseberry; secondary shrub species include common juniper, white-flowered rhododendron and falsebox. The herb layer typically includes pinegrass and Sitka valerian. A sparse to moderate moss and lichen layer includes red-stemmed feathermoss, liverworts and Cladonia lichens.

Rhododendron sites

Closed canopy of codominants Engelmann spruce and subalpine fir, often with a minor component of lodgepole pine. White-flowered rhododendron is abundant; grouseberry, black huckleberry and false azalea may also be present. Rhododendron typically dominates over false azalea in northeastern B.C., while false azalea dominates in the northwest. Both species are often, but not necessarily, present. Sitka valerian, oakfern, five-leaved bramble and foamflowers are commonly found in the herb layer. The dense moss and lichen layer most often includes red-stemmed feathermoss, knight's plume, step moss and pipecleaner moss.

Azalea/Rhododendron sites

A closed canopy of Engelmann spruce and subalpine fir with some lodgepole pine and Douglas-fir is most common. False azalea is the identifying feature; white-flowered rhododendron, black huckleberry, black gooseberry, oval-leaved blueberry, low bilberry and bunchberry may also be present. False azalea's presence in the absence of rhododendron is seen exclusively in the ESSFdk. A moderate to dense moss and lichen layer typically includes red-stemmed feathermoss, step moss, leafy moss and knight's plume.

Successional Vegetation

Dry Grouseberry/Crowberry sites

White-flowered rhododendron, black huckleberry, alder, grouseberry, willows and fireweed are common early successional species.

Rhododendron sites

White-flowered rhododendron, black huckleberry, alder, grouseberry, willows and fireweed are common early successional species.

Azalea/Rhododendron sites

False azalea, white-flowered rhododendron, alder, black huckleberry, willows and fireweed are common early successional species.

Physical Environment

Dry Grouseberry/Crowberry sites

Moderate upper to lower slopes and high plateaus are most commonly featured in this unit; typically found on morainal materials.

Rhododendron sites

Most often found on middle to lower/toe slopes, some depressional sites. Soil moisture is variable, but most sites are situated on colluvial deposits; occasionally morainal or glaciofluvial materials.

Azalea/Rhododendron sites

Typically found on upper to toe slopes and occasionally in depressions. Characteristically this unit occurs on a wide range of soil moisture regimes, nutrient regimes and parent materials

Atypical Sites

Dry Grouseberry/Crowberry sites

Devil's club may be abundant on moisture receiving sites; with a dense moss and lichen layer including ragged mosses and red-stemmed feathermoss.

Open meadow forests characterized by Sitka valerian are found at higher elevations; the understory also includes arrow-leaved groundsel and sickle moss.

Very moist sites are characterized by horsetails and an abundant moss and lichen layer, primarily composed of glow moss.

Rhododendron sites

Similar to the Grouseberry/Crowberry sites, devil's club may be abundant on moisture receiving sites, Sitka valerian on moist high elevation sites, horsetails on very moist sites and sedges on wet sites. Typically a variety of shrub species are found in these moist sites, including trapper's tea, black gooseberry and twinberry. A dense moss and lichen layer composed of sphagnum, leafy, glow and red-stemmed feathermoss is common; mountain leafy liverwort is often also present.

Azalea/Rhododendron sites

Moist variations similarly include devil's club and Sitka valerian. Horsetails may be found on respectively wetter sites, along with a moss and lichen layer dominated by leafy mosses. Drier variations may include a shrub layer dominated by black huckleberry and a herb layer consisting of prince's pine and bunchberry.

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IG Interior Western Redcedar

General Description

Typically a dense coniferous or mixed forest, with extensive shrub and herb dominated understories, that include plant communities which progress through seral Douglas-fir, trembling aspen and paper birch to a climax of western redcedar and grand fir.

Distribution

ICHxw has a very limited distribution in B.C. It is only found in middle, lower and toe slope positions, as well as along the valley floor in the southern extremities of the Selkirk and Purcell mountain ranges. Elevational limits range from 450m - 1100m.

Biogeoclimatic Units

ICHxw

Climax Vegetation

A wide range of coniferous species may be found in the canopy including western larch, lodgepole pine, Douglas-fir, western redcedar and grand fir. Falsebox and snowberry are common shrub species. The herb layer is dominated by pinegrass and twinflower.

Successional Vegetation

Early successional communities are typically dominated by thimbleberry, soopolallie, falsebox, saskatoon, snowbrush, redstem ceanothus, bracken and grasses.

References

Braumandl, T. and M.P. Curran, 1992. A Field Guide for Site Identification and Interpretation for the Nelson Forest Region. Land Manage. Handb. No. 20., B.C. Min. For., Victoria, B.C.

IH Interior Western Hemlock - Douglas-fir

General Description

Typically a dense coniferous forest, with various shrub and herb dominated understories, that include plant communities which proceed through Douglas-fir, western larch, western white pine and/or paper birch seral stages to a mixed climax of western hemlock and western redcedar.

Distribution

Found extensively at low to middle elevations throughout the Columbia mountains and highlands, including the Monashee, Selkirk, Purcell, Kootenay and Cariboo mountains, as well as the Shuswap and Quesnel highlands. Typically range in elevation between approximately 400m and 1400m.

Biogeoclimatic Units

ICHdw	ICHmw1	ICHmw3	ICHvk2	ICHwk2	ICHwk4
ICHmm	ICHmw2	ICHvk1	ICHwk1	ICHwk3	

Climax Vegetation

Moist sites

Western redcedar and western hemlock dominate the canopy; some Douglas-fir, paper birch and hybrid white spruce are often present. Characterized by the presence of devil's club, along with Douglas maple, falsebox, black gooseberry, black huckleberry, thimbleberry and birch-leaved spirea. A moderate herb layer is typically composed of one-leaved foam-flower, oakfern, bunchberry, queen's cup and wild sarsaparilla. Common moss species include red-stemmed feathermoss, step moss and pipecleaner moss.

Dry sites

Most often the canopy is dominated by western redcedar and western hemlock, but sometimes Douglas-fir, paper birch and hybrid white spruce are also present. Falsebox, black huckleberry, Oregon-grape, birch-leaved spirea, saskatoon, Douglas maple and oval-leaved blueberry are usually present in the shrub layer. The herb understory is

typically composed of twinflower, prince's pine, queen's cup and bunchberry. Red-stemmed feathermoss and step moss are commonly found in the moss and lichen layer, along with the occasional lichen species.

Successional Vegetation

Moist sites

Early successional vegetation includes dense shrub communities composed of willow, paper birch, Sitka alder, thimbleberry, devil's club and black huckleberry; oakfern and fireweed also commonly occur in these early stages. Maturing seral stands are typically dominated by Douglas-fir, intermixed with western redcedar and western hemlock.

Dry sites

Early successional vegetation includes dense shrub dominated communities composed of black huckleberry, saskatoon, Douglas maple and falsebox. Twinflower and fireweed also commonly occur in these early stages. Maturing seral stands are typically dominated by Douglas-fir, intermixed with western redcedar and western hemlock.

Physical Environment

Moist sites

Generally located on gentle, lower slopes, sometimes level or depressional areas. Typically soils are deep, moist, fluvial or morainal deposits.

Dry sites

Occurs on gentle to steep slopes in middle to crest positions. Deep, dry to mesic morainal deposits are most common.

Atypical Sites

Moist sites

In more northerly locations, usually at higher elevations, Sitka mountain ash, oval-leaved blueberry and white-flowered rhododendron are commonly found in the shrub layer. Five-leaved bramble is often predominant in a moderate herb layer. Red-stemmed feathermoss is the most prominent species in the moss and lichen layer; associated species include leafy liverwort, broom moss, step moss and cladonia lichens.

Dry sites

On drier sites the canopy is dominated by Douglas-fir, with substantial amounts of western redcedar and western hemlock present; occasionally lodgepole pine. Common juniper, black huckleberry and falsebox are common shrub species, while a variety of herbaceous species may occur including bunchberry, five-leaved bramble, dwarf blueberry, prince's pine and/or kinnikinnick. Prominent moss species include red-stemmed feathermoss, knight's plume, step and electrified cat's-tail moss; scattered

species of lichens present. Usually very xeric to xeric conditions, found on steep, upper to crest slope positions.

References

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IS Interior Western Hemlock - White Spruce

General Description

Typically a dense coniferous forest with shrub and moss dominated understories, that include plant communities which may progress through long-lived seral subalpine fir, spruce and lodgepole pine to a climax of western hemlock and western redcedar.

Distribution

Found extensively at low to middle elevations throughout the Columbia mountains and highlands, including the Monashee, Selkirk, Purcell, Kootenay and Cariboo mountains, as well as the Shuswap and Quesnel highlands. Small pockets are also present in the southern Nass Basin and the Skeena and Hazelton mountain ranges. Typical range of elevation is between approximately 400m and 1400m.

Biogeoclimatic Units

ICHdw	ICHmm	ICHmw1	ICHvk1	ICHwk1	ICHwk4
ICHmc2	ICHmk3	ICHmw2	ICHvk2	ICHwk2	ICHxw
		ICHmw3		ICHwk3	

Climax Vegetation

Moist sites

The canopy is typically composed of western hemlock, western redcedar and hybrid white spruce; some subalpine fir and Douglas-fir is often present. Black huckleberry, black gooseberry, thimbleberry, devil's club, oval-leaved blueberry, red-osier dogwood

and false azalea form a well developed shrub layer. Oakfern, ladyfern, spiny woodfern, bunchberry, one-leaved foamflower, five-leaved bramble and queen's cup are prominent herbaceous species. The moss and lichen layer is characterized by red-stemmed feather moss, step moss, electrified cat's-tail moss, knight's plume and leafy moss.

Dry sites

The species composition of the canopy is diverse; it includes western hemlock, western redcedar, hybrid white spruce, subalpine fir, Douglas-fir and lodgepole pine. Soopolallie, falsebox, saskatoon, common juniper, false azalea and western yew are typical shrub species. The herb layer is usually dominated by prince's pine and bunchberry. Other species found in the understory include twinflower, queen's cup and five-leaved bramble. Red-stemmed feathermoss, step moss and knight's plume are typically found in the moss and lichen layer, along with some *Peltigera* and *Cladonia* lichens.

Successional Vegetation

Moist sites

Early successional stages are dominated by willows, black huckleberry, thimbleberry, oak fern and fireweed.

Dry sites

Early successional stages are dominated by willows, black huckleberry, bunchberry and fireweed.

Physical Environment

Moist sites

Typically found in middle to lower slope positions and in level areas. The parental materials vary considerably but the soils are usually mesic to moist.

Dry sites

Typically occurs on upper to crest positions with dry to mesic soils.

Atypical Sites

Moist sites

Moist sites have a more open canopy with similar composition and a reduced shrub layer. The herb layer is dominated by wet species such as skunk cabbage, horsetails and sedges. The abundance of sphagnums, step mosses, leafy mosses and red-stemmed feathermosses forms a dense, mat-like moss and lichen layer.

Dry sites

Some sites have very sparse shrub and herb layers. The shrub layer may contain black gooseberry, thimbleberry, black huckleberry, highbush cranberry and Douglas maple.

Purple peavine, prince's pine, wild sarsaparilla and some trailing raspberry may occur in this herb layer.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
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PP Ponderosa Pine

General Description

Typically a sparse to open coniferous forest, with shrub or perennial grass dominated understories, that occur along the grassland/forest borders, leading to a ponderosa pine and Douglas-fir climax.

Distribution

Occurs at low elevations in the major valleys of the Thompson/Okanagan Plateau, including the Thompson and Okanagan Basins, as well as the Thompson uplands and Okanagan Highlands. It also occurs in the East Kootenay Trench and in the Fraser River valley from north of Lillooet to just south of Lytton. Generally found below 500m in elevation.

Biogeoclimatic Units

Bunchgrass Zone

BGxh1 BGxh2 BGxw1

Interior Douglas-fir and Ponderosa Pine Zones

IDFxb1 PPdh1 PPdh2 PPxb1 PPxb2

Climax Vegetation

Bunchgrass Zone

Typically a closed canopy dominated by ponderosa pine, with minor amounts of Douglas-fir present. A sparse shrub layer is composed of various combinations of antelope-brush, rabbit-brush, pasture sage, saskatoon and big sagebrush. The herb layer is generally dominated by bluebunch wheatgrass; common secondary species include arrow-leaved balsamroot, yarrow, prickly pear cactus and needle and thread grass. The moss and lichen layer is very sparse, in some instances lacking entirely.

Interior Douglas-fir and Ponderosa Pine Zones

Ponderosa pine dominates the moderate canopy with a minor component of Douglas-fir present. Saskatoon, snowberry, birch-leaved spirea, pasture sage and prairie rose are commonly found in the understory. The shrub layer is sparse to moderate while the herb layer is well developed. Bluebunch wheatgrass is the predominant herb species; arrow-leaved balsam root, red three-awn and compact selaginella are often abundant. Additional herb species include yarrow, junegrass, lemon weed and rough fescue. The moss and lichen layer is sparse, some *Peltigera* and *Cladonia* lichens may be present, as well as *Tortula* mosses.

Successional Vegetation

Bunchgrass Zone

In the East Kootenays and Southern Okanagan antelope-brush is common in early successional stages, while big sagebrush often dominates these early stages in the Thompson and Okanagan valleys.

Kentucky bluegrass, bluebunch wheat-grass, saskatoon, needle-and-thread grass, knapweed and cheatgrass are also common in these areas following disturbance.

Interior Douglas-fir and Ponderosa Pine Zones

In the East Kootenays and Southern Okanagan antelope-brush is common in early successional stages, while big sagebrush often dominates these early stages in the Thompson and Okanagan valleys.

Kentucky bluegrass, bluebunch wheat-grass, rough fescue, saskatoon, knapweed and cheatgrass are also common in these areas following disturbance.

Physical Environment

Bunchgrass Zone

Generally located in moderately to slightly dry soils, on a steep to gentle middle slopes. Glaciofluvial deposits are common along with morainal and colluvial materials.

Interior Douglas-fir and Ponderosa Pine Zones

Typically found on moderately to slightly dry morainal or glaciofluvial soils. Steep to gentle slopes in middle to lower mesoslope positions are common.

Atypical Sites

Bunchgrass Zone

Sumac may dominate an atypically well developed shrub layer, including species such as saskatoon, mock orange, black elderberry, choke cherry and Nootka rose. Red-three awn and rough fescue may be prominent or even dominant in the herb layers of some units. Some *Cladonia* and *Tortula* may be present in the moss and lichen layer.

Much more Douglas-fir may be found in the canopy than expected where there has been extensive fire suppression.

Interior Douglas-fir and Ponderosa Pine Zones

Sites located on warm aspects tend to have a reduced canopy dominated by ponderosa pine, with minor amounts of Douglas-fir present. The shrub layer and moss and lichen layer are poorly developed, so the understory is predominantly herbaceous. Red three-awn, compact selaginella, brittle prickly-pear cactus and bluebunch wheat-grass are the common species.

On moist sites Douglas-fir is more prevalent in a ponderosa pine dominated canopy. The shrub layer is well developed and includes species such as common snowberry, Nootka rose, tall Oregon-grape and saskatoon. Pinegrass often dominates a somewhat sparse herbaceous community. The moss and lichen layer is also quite sparse, some *Brachythecium* spp. may be present. These sites are found on gentle, lower to toe slopes.

Much more Douglas-fir may be present in areas where there has been extensive fire suppression.

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RB Western Redcedar - Paper Birch

General Description

Typically a dense coniferous forest, with shrub-dominated understories, that include plant communities which succeed through deciduous seral stages or through Douglas-fir, lodgepole pine and western larch (sometimes) to a climax of western redcedar and hybrid spruce.

Distribution

Commonly found in valley bottoms and lower slopes between 800m and 1400m. Distributed throughout the Shuswap, Quesnel and Okanagan highlands, as well as the North Thompson Upland, Southern Fraser Plateau, Southern Rocky Mountain Trench and the leese of the Cascade Mountains.

Biogeoclimatic Units**Interior Cedar Hemlock sites**

ICHdk ICHmk2 ICHmk3 ICHmw3

Interior Douglas-fir subdivision

IDFdk2

Climax Vegetation**Interior Cedar Hemlock sites**

The canopy is usually composed of a mixture of Douglas-fir, western redcedar, hybrid white spruce, lodgepole pine, paper birch and, at higher elevations, subalpine fir. Characteristically the shrub layer contains falsebox, black huckleberry, twinberry and birch-leaved spirea. Prince's pine, twinflower, bunchberry, one-leaved foamflower and wild sarsaparilla are common herb species. The moss and lichen layer is often "carpet like" and composed of red-stemmed feathermoss, knight's plume and electrified cat-tail moss.

Interior Douglas-fir subdivision

The dense canopy is typically a mixture of paper birch, western redcedar, hybrid white spruce and Douglas-fir. Red-osier dogwood, black twinberry, Douglas maple, common snowberry and mountain alder are commonly found in the shrub layer. The herb layer often contains soft-leaved sedge, bunchberry, twinflower, showy aster, wild sarsaparilla and sweet cicely. Red-stemmed feathermoss is usually present in a sparse moss and lichen layer.

Successional Vegetation**Interior Cedar Hemlock sites**

Early successional stages are typically shrub dominated and include paper birch, thimbleberry, falsebox, black huckleberry, bunch berry and fireweed.

Interior Douglas-fir subdivision

Early successional stages are commonly dominated by shrubs, including Douglas maple, falsebox, willows, soopolallie, twinflower and fireweed.

Physical Environment

Interior Cedar Hemlock sites

Characteristically these sites are found over slightly dry to moist, loamy, coarse-textured, morainal middle to toe slopes. The drier sites are usually found in crest positions while the wetter sites are located in level areas and depressions, over fluvial materials.

Interior Douglas-fir subdivision

Usually situated over moist fluvial deposits on gentle, lower to toe slopes, as well as in level and depressional areas.

Atypical Sites

Interior Cedar Hemlock sites

On much drier sites saskatoon and soopolallie may be present in the shrub layer. Rough-leaved ricegrass and white-flowered hawkweed may also be present on these dry sites. The moss and lichen layer contains red-stemmed feathermoss and a variety of lichens including, *Peltigera*, *Cladonia* and *Cladina* species.

On considerably wetter sites western red-cedar, hybrid white spruce and subalpine fir are the predominant species in the canopy. Shrub species such as devil's club, red-osier dogwood, thimbleberry and black twinberry are common; as well as oak fern, ladyfern, horsetails and some sedges within the herb layer.

Interior Douglas-fir subdivision

Wetter sites often have a understory composed of black twinberry, thimbleberry, snowberry, red-osier dogwood, devil's club, oak fern and sedges.

References

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RD Western Redcedar - Douglas-fir

General Description

Typically a dense coniferous forest, with shrub-dominated understories, that includes plant communities that succeed through Douglas-fir, lodgepole pine and western larch (sometimes) to a climax of western redcedar.

Distribution

Found at low elevations (300m - 1200m) in the Shuswap, Quesnel and Okanagan Highlands and the southern Fraser Plateau. It also occurs in the southern Rocky Mountain Trench and the southern Monashee and Purcell Mountains, as well as in the leeward Pacific range and the southern Chilcotin range.

Biogeoclimatic Units

Interior Cedar-Hemlock Zone

ICHdk ICHmk1 ICHmk3 ICHmm ICHmw2 ICHwk4

Interior Douglas-fir Zone

IDFmw1 IDFmw2 IDFww IDFxh2

Climax Vegetation

Interior Cedar-Hemlock Zone

The forest canopy is generally a well developed, dense mixture of western red-cedar, Douglas-fir, lodgepole pine, hybrid white spruce, western larch, subalpine fir and trembling aspen. Falsebox, Sitka alder, black huckleberry, black gooseberry, Utah honeysuckle, birch-leaved spirea and thimbleberry are characteristic shrub species. The herb layer is typically composed of twinflower, prince's pine, bunchberry, queen's cup and one-leaved foamflower. Red-stemmed feathermoss dominate a sparse to moderate moss and lichen layer.

Interior Douglas-fir Zone

A dense canopy composed of Douglas-fir, western redcedar, paper birch, lodgepole pine, hybrid white spruce and western hemlock. Falsebox, birch-leaved spirea, Douglas maple, thimbleberry, saskatoon, common snowberry and tall Oregon-grape are typically found in shrub layer. The diverse herb layer is moderate and includes Hooker's fairybells, pinegrass, twinflower, prince's pine and broad-leaved starflower. Electrified cat-tail moss, step moss, leafy mosses and red-stemmed feathermoss are characteristically found on these sites.

Successional Vegetation

Interior Cedar-Hemlock Zone

Early successional stages are commonly dominated by alder, falsebox, willows, thimbleberry, huckleberry and fireweed.

Interior Douglas-fir Zone

Early successional stages commonly dominated by falsebox, willows, thimbleberry, huckleberry, Douglas maple and fireweed.

Physical Environment

Interior Cedar-Hemlock Zone

Typically found on gentle slopes, in upper to lower positions where the moisture regime is mesic to subhygric. Wetter sites are located in lower, toe and level areas. Drier extremes are usually situated on upper to crest slopes, in very dry conditions. Morainal and fluvial blankets are most common.

Interior Douglas-fir Zone

Generally found on moist gently sloping sites in middle to lower slope positions. Wetter sites are found on level and depressional areas. Soils typically consist of morainal, fluvial or glaciofluvial materials.

Atypical Sites

Interior Cedar-Hemlock Zone

Areas with increased moisture will have oakfern, ladyfern and horsetails present in the understory, along with leafy mosses and red-stemmed feathermoss. Most often drier sites have canopies with a greater abundance of Douglas-fir and western red-cedar; often with minor amounts of hybrid white spruce and lodgepole pine. Saskatoon and soopolallie are present in the shrub layer. Additional herb species intermixed with the characteristic species include rough-leaved ricegrass, wild strawberry and white-flowered hawkweed. Pinegrass may be abundant. Haircap moss, wavy-leaved moss, red-stemmed feathermoss and Peltigera lichens are often present in the moss and lichen layer.

Interior Douglas-fir Zone

On moisture receiving sites devil's club, vine maple and red-osier dogwood are commonly found in the understory. The canopy is typically dominated by western redcedar, with minor amounts of paper birch, Douglas-fir and white spruce commonly present. The herb layer often includes sweet-scented bedstraw, baneberry, vanilla-leaf, ladyfern and one-leaved foamflower. Electrified cat's-tail moss and step moss are predominant in the moss and lichen layer.

References

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SD Spruce - Douglas-fir

General Description

Typically a dense coniferous forest, with soopolallie or pine grass dominated understories, that include plant communities which progress through a mixture of lodgepole pine, Douglas-fir and western larch to a white spruce and subalpine fir climax; sometimes with lodgepole pine or trembling aspen present.

Distribution

Located between 600m and 1600m in the areas around the Nechako, Fraser and Thompson plateaus, as well as in the Okanagan highlands. It is also located in the southern Rocky Mountains, southern Rocky Mountain Trench, southeastern Purcell and Monashee mountains as well as the leeward side of the Cascade Mountains.

Biogeoclimatic Units

Montane Spruce/Sub-Boreal Spruce Zone

MSdk	SBSdh	SBSdw1	SBSdw3
MSdm1	SBSdk	SBSdw2	SBSvk

Interior Douglas-fir Zone

IDFdk1	IDFdk3	IDFdm2	IDFxm
IDFdk2	IDFdm1	IDFhx1	IDFxm

Climax Vegetation

Montane Spruce/Sub-Boreal Spruce Zone

Typically the canopy is composed of a mixture of Douglas-fir, hybrid white spruce, lodgepole pine and subalpine fir. Predominately, soopolallie, common snowberry, false azalea, honeysuckle and falsebox are represented in this well developed shrub layer. The main components of the herb layer include bunchberry, grouseberry, pinegrass and showy aster. Some lichens are often present in the moss and lichen layer, but the majority of this layer is composed of red-stemmed feathermoss and step moss.

Interior Douglas-fir Zone

A dense canopy is predominately composed of Douglas-fir and hybrid white spruce, with some lodgepole pine present. Prickly rose, western snowberry, common snowberry and Oregon-grape are commonly found in the shrub layer. A well developed herb layer is usually composed of pinegrass, twinflower and bunchberry. Red-stemmed feathermoss is usually present in a sparse moss and lichen layer.

Successional Vegetation

Montane Spruce/Sub-Boreal Spruce Zone

Early successional stages are dominated by soopolallie, snowberry, fireweed and pinegrass; with willows often present on wetter sites.

Later successional communities commonly have whitebark pine and Douglas-fir in the canopy, with an understory of soopolallie, black huckleberry, pinegrass and grouseberry.

Interior Douglas-fir Zone

Early stages dominated by prickly rose, snowberry, fireweed and pinegrass, with willows on wetter sites.

Later successional communities commonly have lodgepole pine and Douglas-fir in the canopy, with an understory of snowberry, Oregon-grape, pinegrass and bunchberry.

Physical Environment

Montane Spruce/Sub-Boreal Spruce Zone

Dry to moist, moderate to steep, middle to lower slopes and level areas are characteristic . Parent materials are variable.

At higher elevations this unit occurs on steep southerly aspects.

Interior Douglas-fir Zone

Generally, found in lower/toe slope positions and level areas. Soils are typically mesic to moist, fluvial, morainal or lacustrine deposits.

Atypical Sites

Montane Spruce/Sub-Boreal Spruce Zone

In drier areas common juniper and soopolallie dominate the shrub layer, while pinegrass, kinnikinnick and twinflower become more prevalent in the herb layer. At the higher elevations subalpine fir increases in abundance within the canopy.

Interior Douglas-fir Zone

Wetter sites have canopies dominated by white spruce, with some waterbirch and paperbirch often present. A variety of currant species are usually found in the shrub layer, including red-osier dogwood and black gooseberry. The herb layer is typically composed of fringed aster, common horsetail, bedstraw and false Solomon's-seal. Red-stemmed feathermoss, step moss and wavy-leaved moss are present in the moss and lichen layer.

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6.0 CENTRAL AND NORTHERN FOREST ECOSYSTEMS

BA Boreal White Spruce - Trembling Aspen

General Description

Typically a dense, broad-leaved, mixed or coniferous mixed forest, with shrub and herb dominated understories, which includes plant communities that succeed through trembling aspen seral forests to a white spruce climax.

Distribution

Found in the northeastern portion of the province, from the intersection of the Rocky mountains and the Alberta border north to the Yukon and Northwest Territories. Found at lower elevations, between 300 and 1050m, in the more northerly locations. In the southern portions it occurs at higher elevations, between 750-1050 m.

Biogeoclimatic Units

BWBSmw1 BWBSmw2

Climax Vegetation

The canopy is codominated by white spruce and trembling aspen; some black spruce is often present. Prickly rose, black twinberry and highbush-cranberry make up a moderate shrub layer. A well developed herb layer is typically composed of twinflower, bunchberry, trailing raspberry, one-sided wintergreen, common mitrewort, palmate's coltsfoot and tall bluebells. The moss and lichen layer characteristically contains step moss, Knight's plume and red-stemmed feathermoss.

Successional Vegetation

Willow and fireweed are typical of the early stages; a succession to hairy wildrye may result from further disturbance. Later stages are typically dominated by pole-sapling aspen communities. Many sites, particularly in the mw2, remain aspen dominated due to repeated fires that have destroyed most of the conifer seed source.

Physical Environment

Occurs on fine-textured lacustrine or morainal materials which have high soil moisture.

Atypical Sites

Atypical site with a well developed shrub layer composed of various species including green alder, willow, northern gooseberry, red-osier dogwood and red honeysuckle. In addition to the characteristic species, the well developed herb layer also contains wild sarsaparilla, heart-leaved arnica and creamy peavine.

Sites occurring on cooler aspects tend to have a white spruce dominated canopy, with scrub birch, willow and Labrador tea occurring as secondary species in the understory.

References

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BL Black Spruce - Lodgepole Pine

General Description

Typically an open coniferous forest with shrub, moss or terrestrial lichen understories, on gently sloping dry or wet sites, usually with lodgepole pine communities that progress to a black spruce climax.

Distribution

Generally found in the northern half of the province, north of 53 N. Located throughout the region east of the Rocky mountains to the Alberta border and north to the Northwest Territories. It is also found at lower to middle elevations of the major river valleys in the Skeena, Omineca and Central Canadian Rocky Mountains, as well as in the Fraser Basin, Rocky Mountain Trench and northern portions of the Fraser Plateau. Typically the elevation ranges between 350m and 1200m. The majority of sites are located in cool areas, either low lying valley floors or on north facing slopes.

Biogeoclimatic Units

BWBSdk1	BWBSmw2	SBPSdc	SBSdw3	SBSmk1	SBSwk2
BWBSdk2	BWBSwk1	SBPSmc	SBSmc2	SBSmk2	SBSwk3
BWBSmw1	BWBSwk2	SBSdw2	SBSmc3	SBSwk1	

Climax Vegetation

Moderate canopy dominated by lodgepole pine and black spruce, some hybrid white spruce may be present, as well as tamarack in the far north. Sparse understory composed of a variety of shrub species including Labrador Tea, prickly rose, soopolallie, black huckleberry, black twinberry and crowberry. Bunchberry, twinberry, dwarf blackberry, lingonberry and crowberry are found within the herb layer. Cladonia and Cladina lichens are often present in the dense moss and lichen layer however, feathermosses dominate, forming a thick carpet-like layer.

Atypical Sites

At higher elevations subalpine fir may be present in the canopy with lodgepole pine and black spruce remaining dominant. White-flowered rhododendron is usually present in the shrub layer, along with black huckleberry and Labrador tea. Five-leaved bramble may also be present in the herb layer, in addition to the typical herb species. The moss and lichen layer remains dominated by a thick carpet-like layer of feathermosses.

Physical Environment

Typically found at lower to middle elevations in areas subject to cool air drainage; usually on a cool aspect or in valley bottoms. Associated with a variety of materials, including glaciofluvial, lacustrine and morainal deposits. Soils are typically deeply leached and acidic.

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BP Boreal White Spruce - Lodgepole Pine

General Description

Typically a dense, boreal coniferous forest that includes plant communities that succeed through lodgepole pine seral forests to a white spruce climax.

Distribution

Found at elevations ranging from 300m to 1200m throughout the northeastern plains, north of the Rocky Mountain/Alberta border intersection to the Northwest Territories. It also occurs extensively along the walls of major valleys in the Northern Boreal Mountains; including the Northern Rocky Mountains, Cassiar Ranges, St. Elias Mountains and all of the adjacent plateaus.

Biogeoclimatic Units

BWBSdk1 BWBSdk2 BWBSmw1 BWBSwk1 BWBSwk2 BWBSwk3

Climax Vegetation

Zonal sites

White spruce and lodgepole pine dominate with some black spruce and trembling aspen also occurring. Soopolallie, prickly rose and highbush-cranberry characterize the shrub layer; scattered Labrador tea may also be present. Bunchberry, twinflower, lingonberry, fuzzy-spiked wildrye, bastard toad-flax and fireweed are common herbaceous species. Characteristically step moss, red-stemmed feathermoss and knight's plume are present in the moss and lichen layer.

Wet sites

White spruce forms an open to closed canopy with scattered trembling aspen and balsam poplar present. Highbush-cranberry, prickly rose, black twinberry, red swamp currant, Labrador tea and devil's club characterize the shrub layer. Horsetails, twinflower, tall bluebells, lingonberry, bunchberry, oakfern, dwarf scouring-rush and

trailing raspberry are commonly found in the herb layer. Step-moss, red-stemmed feathermoss and knight's plume dominate a dense moss and lichen layer.

Dry sites

Lodgepole pine and white spruce dominate the canopy often with minor amounts of trembling aspen. Soopolallie, prickly rose, common juniper and highbush-cranberry characterize the shrub layer. Common herbs include twinflower, bunchberry, lingonberry, kinnikinnick, heart-leaved arnica and fuzzy-spiked wildrye. Typically a dense moss and lichen layer composed of step moss, red-stemmed feathermoss and knight's plume, with scattered amounts of Cladonia lichens present.

Successional Vegetation

Zonal sites

A dense cover of willows, highbush cranberry, prickly rose, alder and fireweed are commonly found in early successional stages.

Wet sites

A dense cover of willows, highbush cranberry, prickly rose, alder and fireweed are commonly found in early successional stages.

Dry sites

Willow and fireweed are typical of the early stages; a succession to hairy wildrye may result from further disturbance.

Physical Environment

Zonal sites

Occurs on gradual middle to lower slopes with well drained morainal, fluvial or glaciofluvial parent materials.

Wet sites

Typically occurs on imperfectly to poorly drained sites or receiving sites located in middle to toe slope positions. Glaciofluvial, fluvial and morainal deposits are most common.

Dry sites

Occurs on gentle to moderate slopes and/or level areas, typically on warm aspects in an upper to crest mesoslope position. Glaciofluvial deposits and morainal or colluvial blankets over rock are most common.

Atypical Sites

Zonal sites

Black huckleberry may occur in the shrub layer at higher elevations.

Aspen is quite common and can be found with lodgepole pine and white spruce.

Dry sites

Similar to the composition of the mesic sites trembling aspen commonly occurs on these drier units.

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EW Subalpine Fir - Mountain Hemlock Wet Forested

General Description

Typically a dense coniferous forest, with shrub-dominated understories, that include plant communities which progress directly to a mixed climax of subalpine fir, mountain hemlock and sometimes, amabilis fir.

Distribution

Generally found in the eastern Kitimat ranges, south/central Hazelton Mountains, southeast Boundary ranges and northwest Skeena Mountains. The elevational limits range between approximately 900m and 1800m. There is also a limited amount of this unit found on the leeward side of the Pacific ranges as well as in the western Monashee mountains. These occur between 1275m and 1675m.

Biogeoclimatic Units

ESSFmk ESSFmw ESSFvc ESSFvv ESSFwv

Climax Vegetation

A dense canopy predominantly composed of subalpine fir and mountain hemlock; with some Engelmann spruce and amabilis fir. The shrub understory is typically well

developed, including black huckleberry, oval-leaved blueberry, false azalea, white-flowered rhododendron and conifer regeneration. Five-leaved bramble is almost always present in this lush herb layer. Other common herb species include rosy twisted-stalk, one-leaved foamflower, oak fern, Sitka valerian and bunchberry. The moss and lichen layer is well developed and usually composed of curly heron's-bill moss, red-stemmed feathermoss, pipe-cleaner moss, leafy moss and leafy liverwort.

Successional Vegetation

Early successional communities are typically composed of black huckleberry, oval-leaved blueberry, alder, willows, white-flowered rhododendron, Sitka valerian, five-leaved bramble and fireweed.

Physical Environment

Typically occurs at high elevations in an areas with an upper to lower slope position, on gentle to steep slopes or flat areas. The sites are usually found on moist, morainal deposits. The wetter sites are generally found on more rich fluvial materials, usually in a lower to toe position.

Atypical Sites

On drier, south facing slopes lodgepole pine may codominate a moderate canopy composed of subalpine fir and some mountain hemlock. The shrub and herb layers are sparsely populated with white-flowered rhododendron, saskatoon, blueberries, bunchberry, five-leaved bramble and prince's pine. The moss and lichen layer is usually dominated by *Cladonia* and reindeer lichens.

Atypical wet sites occasionally have some hybrid white spruce and Engelmann spruce intermixed within the dense canopy of subalpine fir and mountain hemlock. Some species of willow may be present in the shrub layer, but typically regenerating subalpine fir dominate. Common horsetail and sphagnum moss are also present in the understory of atypically wet sites.

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FB Subalpine Fir - Scrub Birch Forested

General Description

Typically a northern, subalpine, open forested habitat, characterized by stands of subalpine fir and white spruce with a dense shrub understory of willows and scrub birch.

Distribution

This unit is limited to elevations ranging between 1050m and 1500m. It occurs in the subalpine areas of the Northern Boreal Mountains; including the Northern Omineca, Cassiar, St. Elias and Northern Rocky Mountains, as well as the Stikine, Teslin and Southern Boreal Plateaus.

Biogeoclimatic Units

BWBSdk1 BWBSdk2 BWBSvk SWBdk SWBmk SWBvk

Climax Vegetation

A relatively open canopy usually dominated by white spruce, with abundant to minor amounts of subalpine fir present. Scattered lodgepole pine and trembling aspen are also common. Scrub birch, willows, shrubby cinquefoil and soopolallie dominate a well developed shrub layer. The moderate to poorly developed herb layer includes crowberry, lingonberry, Altai fescue, Arctic lupine, heart-leaved arnica, tall bluebells, tall larkspur and subalpine daisy. Step moss, red-stemmed feathermoss, Cladina lichens and Peltigera lichens are often abundant in a well developed moss and lichen layer.

Successional Vegetation

Early successional vegetation is dominated by a dense shrub/herb community composed of scrub birch and willows, along with Altai fescue, fuzzy-spiked wildrye and fireweed.

Physical Environment

Typically occurs on a gentle to moderate slope with deep, medium-textured, dry to moist soils.

Atypical Sites

Drier types occur in areas with coarse-textured soils or on steep slopes with warm aspects. Such sites are often dominated by lodgepole pine, with minor amounts of white spruce, trembling aspen and subalpine fir also present. The moderate to poorly developed shrub layer is usually dominated by scrub birch, but sometimes shrubby white spruce, subalpine fir or lodgepole pine dominate the understory. Crowberry, lingonberry, dwarf blueberry and kinnikinnick are common herb species. The moss and

lichen layer is less developed and often codominated by similar species of mosses and lichens.

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LP Lodgepole Pine

General Description

Typically an open lodgepole pine forest with shrub, moss or terrestrial lichen understories on level, nutrient-poor, coarse-textured soils.

Distribution

Found extensively, between 500m and 1600m, throughout the interior of the province. It occurs in the southern Interior Mountains, throughout the Columbia range, in the subboreal, central and southern interior; as well as throughout the Fraser Plateau, Fraser Basin, Skeena and Omineca Mountains, Thompson-Okanagan Plateau and the leeward side of the Pacific Ranges. It is also common within portions of the Taiga and Boreal Plains, Northern Boreal Mountains and along the North Coast.

Biogeoclimatic Units

Boreal White and Black Spruce Zone

BWBSdk1 BWBSmw1 BWBSwk1 BWBSwk3
BWBSdk2 BWBSmw2 BWBSwk2

Interior Cedar Hemlock/Interior Douglas-fir Zones

ICHmc1 ICHmc2 ICHwk1 IDFdk4

Montane Spruce/Engelmann Spruce - Subalpine-fir Zones

ESSFdc2 ESSFwc2 ESSFzv1 MSdm2 MSdm1 MSzv
ESSFmv1 ESSFxc MSdk

Sub-boreal Pine Spruce Zone

SBPSdc SBPSmc SBPSmk SBPSxc

Sub-boreal Spruce Zone

SBSdh SBSdw1 SBSmc1 SBSmk1 SBSmw SBSwk1
SBSdk SBSdw2 SBSmc2 SBSmk2 SBSvk SBSwk2
SBSdw3 SBSmc3 SBSmm SBSwk3

Climax Vegetation

Boreal White and Black Spruce Zone

Stunted, widely spaced lodgepole pine dominate, with minor amounts of white pine, black spruce and trembling aspen also occurring. The moderate shrub layer includes velvet-leaved blueberry, soopolallie and prickly rose. The herb layer commonly includes lingonberry, kinnikinnick, twinflower and bunchberry. Cladina, red-stemmed feathermoss, step moss and Peltigera contribute to the moss and lichen layer.

Interior Cedar Hemlock/Interior Douglas-fir Zones

An open canopy dominated by lodgepole pine, with minor amounts of western hemlock and Douglas-fir occasionally present. Falsebox, soopolallie, velvet-leaved blueberry and black huckleberry are commonly found in a sparse to moderate shrub layer. The herb layer is characteristically dominated by kinnikinnick; dwarf blueberry, cow-wheat and bunchberry are also common. Typically the moss and lichen layer is a mixture of red-stemmed feathermoss and lichens, predominantly Cladonia and Cladina spp.

Montane Spruce/Engelmann Spruce - Subalpine-fir Zones

Lodgepole pine dominates the moderately open canopy, with minor amounts of Engelmann spruce and subalpine fir present at higher elevations and hybrid white spruce occurring at lower elevations. Soopolallie, common juniper, falsebox, Utah honeysuckle and birch-leaved spirea make up the shrub layer. The herb layer is composed of grouseberry, dwarf blueberry, pinegrass, kinnikinnick and twinflower. Typically there is an abundance of Cladina, Cladonia and Peltigera lichens found in a sparse moss and lichen layer, along with some red-stemmed feathermoss.

Sub-boreal Pine Spruce Zone

Typically an open forest dominated by lodgepole pine, with some scattered hybrid white spruce present. Typical shrub species represented include common juniper, prickly rose, soopolallie and birch-leaved spirea. Kinnikinnick is the most prominent species in the herb layer; pinegrass, dwarf blueberry, spike-like goldenrod, twinflower and wild strawberry are also common. Cladina, Cladonia and Peltigera lichens dominate the moss and lichen layer. Minor amounts of red-stemmed feathermoss and wavy-leaved moss are often also present.

Sub-boreal Spruce Zone

An open canopy dominated by lodgepole pine; with minor amounts of hybrid white spruce and subalpine fir intermixed. Soopolallie, common juniper, prickly rose, saskatoon, birch-leaved spirea and velvet-leaved blueberry are common shrubs. The majority of the herb layer is occupied by kinnikinnick. Common secondary herb species include dwarf blueberry, bunchberry, twinflower and pinegrass. The moderate moss and lichen layer consists of red-stemmed feathermoss, Cladina, Cladonia and Peltigera spp. of lichens.

Successional Vegetation

Boreal White and Black Spruce Zone

Similar species occur following disturbance, often with a sparse shrub layer and fewer lichens present.

Interior Cedar Hemlock/Interior Douglas-fir Zones

Soopolallie, fireweed, pinegrass, kinnikinnick, grouseberry, dwarf blueberry and lodgepole pine commonly occur as pioneer vegetation on these sites following disturbance.

Montane Spruce/Engelmann Spruce - Subalpine-fir Zones

Soopolallie, fireweed, pinegrass, kinnikinnick, grouseberry, dwarf blueberry and lodgepole pine commonly occur as pioneer vegetation on these sites following disturbance.

Sub-boreal Pine Spruce Zone

Similar species occur following disturbance, with fewer lichens present.

Sub-boreal Spruce Zone

Similar species occur following disturbance, with fewer lichens present.

Physical Environment

Boreal White and Black Spruce Zone

Occurs in level or upper to crest slope positions on very dry, coarse-textured soils or dry, shallow soils; usually on south aspects. Gravely glaciofluvial and colluvial terraces are most common.

Interior Cedar Hemlock/Interior Douglas-fir Zones

Typically occurs in very dry, nutrient poor areas with gentle to steep slopes; most commonly sandy or gravelly fluvial or glaciofluvial terraces. Occasionally this unit occurs on ridgetops and steep warm aspects situated on dry, shallow soils.

Montane Spruce/Engelmann Spruce - Subalpine-fir Zones

Typically located on rapidly drained, coarse-textured or shallow, glaciofluvial or morainal deposits. Gentle middle to crest slope positions or level areas are common.

Sub-boreal Pine Spruce Zone

Sites which are gently sloping and in a middle to crest position or level are most common. Typically the soils are dry, poor, coarse-textured or shallow, morainal or glaciofluvial deposits.

Sub-boreal Spruce Zone

Sites which are gently sloping and in a middle to crest positions or level areas are most common. Typically the soils are very dry to slightly dry, poor, coarse-textured or shallow, morainal or glaciofluvial deposits.

Atypical Sites

Boreal White and Black Spruce Zone

At higher elevations black huckleberry and Sitka alder may be present in the shrub layer.

Montane Spruce/Engelmann Spruce - Subalpine-fir Zones

Sites found on much steeper and drier colluvial slopes tend to have the same vegetation composition but it is less abundant.

Sub-boreal Spruce Zone

On wetter and/or higher elevation sites falsebox, black huckleberry, Labrador tea and Sitka alder are characteristic shrub species. Lingonberry may be found in the herb layer. Red-stemmed feathermoss increases in abundance and the lichen cover is much reduced.

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SA Subboreal White Spruce - Trembling Aspen

General Description

Typically a dense mixed or coniferous subboreal forest, with shrub and herb dominated understories, that include plant communities which succeed through trembling aspen seral forests to a white spruce climax.

Distribution

Climax Vegetation

Forest canopy dominated by trembling aspen and white or hybrid white spruce; with minor amounts of lodgepole pine and Douglas-fir also present. Saskatoon, prickly rose, common snowberry and birch-leaved spirea are commonly found in the shrub layer. The herb layer is very diverse and includes pinegrass, twinflower, bunchberry, asters, peavines, star-flowered false Solomon's-seal, western meadowrue, blue wildrye and slender wheatgrass.

Successional Vegetation

Early successional stages are typically dominated by a moderate cover of trembling aspen, paper birch, common snowberry, soopolallie, willow, prickly rose, saskatoon, pinegrass, peavine and fireweed.

Physical Environment

Occurs extensively on mesic to moist, rich, deep, well-drained fluvial materials. Often found on southerly aspects in a receiving position.

Atypical Sites

Considerably wetter sites have an understory of black twinberry, highbush-cranberry, red-osier dogwood, black gooseberry, oak fern, lady fern and horsetails.

SB White Spruce - Paper Birch

General Description

Typically a dense, mixed subboreal forest, with dense shrub dominated understories, that include plant communities which succeed through paper birch, trembling aspen and Douglas-fir seral forests to a white spruce climax.

Distribution

Found on the lower valley slopes and valley bottoms, between the elevations of 450m and 1225m, in the Rocky Mountain Trench, Fraser Basin and northern Fraser Plateau.

Biogeoclimatic Units

SBSmh

Climax Vegetation

Forest canopy is usually composed of a mixture of Douglas-fir and hybrid white spruce, with some paper birch, subalpine fir and lodgepole pine. The well developed shrub layer may be dominated by beaked-hazelnut, common snowberry, prickly rose, or highbush cranberry. Other common shrub species which may be present include thimbleberry, soopolallie, saskatoon, birch-leaved spirea, red-osier dogwood and Douglas maple. Commonly, wild sarsaparilla, showy aster, bunchberry, twinflower, pinegrass and common mitrewort are present in the herb layer. A moderate to dense moss and lichen layer is typically composed of red-stemmed feathermoss, electrified cat-tail moss, step moss and wavy-leaved moss.

Successional Vegetation

Early successional vegetation is typically dominated by willows, prickly rose, thimbleberry, red-osier dogwood, saskatoon, beaked-hazelnut, trembling aspen, paper birch and fireweed. Later stages remain dominated by dense shrub cover with an understory dominated by pinegrass.

Physical Environment

Typically found on gentle, middle to toe slopes, on loamy fluvial materials; occasionally morainal or lacustrine deposits. Generally moisture conditions range between mesic and subhygric.

Atypical Sites

On southern aspects chokecherry may be present in a well developed shrub layer dominated by prickly rose. Rough-fruited fairybells often dominate the herb layer along with secondary species which include peavine and northern bedstraw. The extensive moss and lichen layer is composed mainly of feathermosses.

Wetter sites have similar tree species composition, with a shrub dominated understory that includes black twinberry, red-osier dogwood, high-bush cranberry, thimbleberry, black gooseberry, saskatoon, devil's club and mountain alder. Wild sarsaparilla, sweet-scented bedstraw, horsetails, ricegrass and twinflower are commonly found in the herb layer. Similar moss and lichen species are common.

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SF White Spruce - Subalpine Fir

General Description

Typically a dense, coniferous subboreal forest, with dense shrub and moss dominated understories, that include communities which progress directly to a white spruce and subalpine fir climax, sometimes with lodgepole pine or trembling aspen.

Distribution

This unit is common throughout the lowland forests found on the Fraser Plateau, Fraser Basin, Nass Basin, Central Canadian Rocky Mountains, Omineca Mountains, Skeena Mountains and Columbia Highlands. It also occurs to a limited extent in the Southern Rocky Mountain Trench and on the Thompson-Okanagan Plateau. In northerly areas it commonly occurs between 500m and 1200m elevation, while more southerly locations occur at higher elevations, ranging between 1000m and 1650m.

Biogeoclimatic Units

Sub-Boreal Spruce Zone/Engelmann Spruce - Subalpine Fir Zone

ESSFmv3	SBSdw1	SBSmc1	SBSmh	SBSmm	SBSwk1
SBSdh	SBSdw2	SBSmc2	SBSmk1	SBSmw	SBSwk2
SBSdk	SBSdw3	SBSmc3	SBSmk2	SBSvk	SBSwk3

Montane Spruce Zone

MSdc	MSdm1	MSdm2	MSxk
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Interior Cedar - Hemlock Zone

ICHdk	ICHmk1	ICHvc	ICHwc	ICHwk2
	ICHmk3			ICHwk4

Climax Vegetation

Sub-Boreal Spruce Zone/Engelmann Spruce - Subalpine Fir Zone

Hybrid white spruce dominates the canopy with lodgepole pine, subalpine fir and less frequently Douglas-fir also occurring. Typically a moderately well developed shrub layer that commonly includes black huckleberry, black gooseberry, highbush cranberry, thimbleberry and black twinberry in the moderately developed shrub layer. Twinflower, oak fern, bunchberry, five-leaved bramble, palmate's coltsfoot and one-leaved foamflower occur in the herb layer. Red-stemmed feathermoss, knight's plume, step moss, leafy moss and electrified cat's-tail moss may occur in a moderately developed moss and lichen layer.

Montane Spruce Zone

Hybrid white spruce, lodgepole pine and subalpine fir form a moderately open tree layer; minor amounts of Douglas-fir may also be present. Trapper's tea, black gooseberry, Utah honeysuckle, black huckleberry, Sitka alder and falsebox may occur in the shrub layer. The lush herb community is characterized by the abundance of grouseberry, twinflower, bunchberry, heart-leaved arnica and five-leaved bramble. Red-stemmed feathermoss, glow moss and leafy mosses typically occur in the moss and lichen layer.

Interior Cedar - Hemlock Zone

Moderately open canopy of hybrid white spruce with some subalpine fir. A well-developed shrub layer includes black twinberry, thimbleberry, highbush cranberry and red-osier dogwood. Moderate to dense, diverse herb layer consisting of oak fern, spiny woodfern, ladyfern, one-leaved foamflower and rosy twisted stalk. Leafy mosses, knight's plume and electrified cat's tail moss form a moderate cover of mosses.

Successional Vegetation

Sub-Boreal Spruce Zone/Engelmann Spruce - Subalpine Fir Zone

Typical early successional vegetation has dense shrub cover dominated by willows, alder, thimbleberry and black huckleberry. Oak fern, bunchberry and fireweed are also common in these early stages of development.

Montane Spruce Zone

Shrub species including black huckleberry, alder and falsebox dominate the early successional stages. Bunchberry, five-leaved bramble and fireweed are common herbaceous species which occur in these early stages.

Interior Cedar - Hemlock Zone

Early successional stages are typically dominated by shrubs such as willows, black twinberry, highbush-cranberry and red-osier dogwood. Fireweed and oak fern are common herbs.

Physical Environment

Sub-Boreal Spruce Zone/Engelmann Spruce - Subalpine Fir Zone

This unit experiences a wide variety of site and soil conditions. Typically sites occur on mesic to subhygric morainal or fluvial deposits that are situated on gentle, middle to toe slopes, level or depressional areas where there is limited seepage.

Montane Spruce Zone

Typically sites are situated on middle to toe slopes, level areas or depressional areas. Moist to very moist morainal or fluvial materials are most common.

Interior Cedar - Hemlock Zone

Variants subjected to moist, cool valley bottom climate and cold air drainage. Sites occur on moist to very moist loamy soils, usually morainal, fluvial or colluvial deposits. Gentle middle to toe slopes are common.

Atypical Sites

Sub-Boreal Spruce Zone/Engelmann Spruce - Subalpine Fir Zone

Devil's club occurs on moist nutrient rich sites along with red-osier dogwood, highbush-cranberry, black huckleberry, black gooseberry, thimbleberry and black twinberry. Moist non-devil's club sites also occur, usually with similar shrub species present. A fern dominated understory is characteristic of these moist, rich sites; oakfern, lady fern and spiny wood fern are commonly present. A variety of additional herb species are often found in the understory, including clasping and rosy twisted stalk, sweet-scented bedstraw, common mitrewort and horsetails. The moss and lichen layer usually has similar species composition.

Montane Spruce Zone

Herbaceous species including horsetails, lady fern and oak fern may be predominant on wetter sites. Devil's club is often abundant in the shrub layer of such sites.

Drier sites feature a canopy composed of predominantly lodgepole pine. Falsebox dominates a sparse shrub layer, while arctic lupine and pinegrass are intermixed with typical herb species. Red-stemmed feathermoss dominates the ground cover.

Interior Cedar - Hemlock Zone

Roche spruce replaces hybrid Engelmann-white spruce in the Prince Rupert ICHvc subzone.

Rich, wet sites feature a devil's club dominated shrub layer along with the typical herb and moss species.

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SL Subboreal White Spruce - Lodgepole Pine

General Description

Typically a dense, subboreal coniferous forest that include plant communities which succeed through lodgepole pine seral forests to a white spruce climax.

Distribution

This unit occurs extensively in the Southern Rocky Mountain Trench, Fraser Basin, Omineca Mountains and northern portion of the Fraser Plateau; elevational limits range between 700m and 1400m. It is also present at higher elevations, between 1200m and 1650m, in portions of the southern Fraser Plateau and Thompson-Okanagan Plateau.

Biogeoclimatic Units

Sub-Boreal Spruce Zone

SBSdk	SBSdw2	SBSmc1	SBSmc3	SBSmk1	SBSwk3
SBSdw1	SBSdw3	SBSmc2	SBSmh	SBSmk2	

Sub-Boreal Pine-Spruce Zones

SBPSdc	SBPSmc	SBPSmk	SBPSxc
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Interior Douglas-fir Zone - Montane Spruce Zone

IDFdk3	IDFdk4	IDFdm2	MSxk	MSxv
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Climax Vegetation

Sub-Boreal Spruce Zone - dry sites

Douglas-fir, white spruce and lodgepole pine are abundant in the forest canopy. A moderate shrub layer typically includes soopolallie, birch-leaved spirea, saskatoon, prickly rose and black huckleberry. Twinflower, bunchberry, one-sided wintergreen, heart-leaved arnica, pinegrass and false-Solomon's seal are common herb species. A well developed moss and lichen layer is characteristic. Red-stemmed feathermoss, step moss, knight's plume and some *Cladina* spp. and *Peltigera* spp. are common.

Sub-Boreal Spruce Zone - moist sites

The forest canopy is dominated by Douglas-fir and white spruce, with a minor component of lodgepole pine. Characteristic shrub species include prickly rose, black twinberry, highbush cranberry, thimbleberry, black gooseberry and red-osier dogwood. The herb layer is typically composed of bunchberry, twinflower, trailing raspberry, palmate coltsfoot, oakfern and purple peavine. The moss cover is very dense and includes red-stemmed feathermoss, knight's plume, step moss, cat-tail moss and leafy moss.

Sub-Boreal Pine-Spruce Zones

Lodgepole pine and white spruce are predominant in the canopy. A sparse shrub layer typically includes black twinberry, prickly rose, soopolallie, black huckleberry, willow, scrub birch and common juniper. The herb layer is characteristically composed of bunchberry, kinnikinnick, twinflower, palmate coltsfoot and bluejoint. Red-stemmed feathermoss, step moss, knight's plume are common moss species. Reindeer and dog lichens are also prominent in the moss and lichen layer.

Interior Douglas-fir Zone - Montane Spruce Zone

The forest canopy characteristically features white spruce with minor components of Douglas-fir and lodgepole pine. The understory includes shrub species such as prickly rose, black twinberry, red-osier dogwood, scrub birch and willow. Pinegrass, twinflower, bunchberry, crowberry, dwarf blueberry, palmate coltsfoot and wild sarsaparilla are common herb species. The moss cover is dense and includes red-stemmed feathermoss, leafy moss and step moss and ragged moss.

Successional Vegetation

Sub-Boreal Spruce Zone - dry sites

Willows, prickly rose, black huckleberry and soopolallie dominate early successional stages. Predominant herb species include pinegrass and fireweed. Later successional stages often include trembling aspen-lodgepole pine-Douglas-fir forests, with a moderate understory.

Sub-Boreal Spruce Zone - moist sites

Early successional stages include willows, prickly rose, highbush-cranberry, red-osier dogwood and thimbleberry in a dense shrub community. Commonly found herbs include purple peavine, palmate coltsfoot and fireweed.

Sub-Boreal Pine-Spruce Zones

A shrub dominated community is common in early successional stages. Characteristic species include willows, scrub birch, black huckleberry, prickly rose and soopolallie. Palmate coltsfoot, kinnikinnick and bluejoint dominate the herb understory.

Interior Douglas-fir Zone - Montane Spruce Zone

A shrub dominated community is common in early successional stages. Characteristic species include willows, scrub birch, black huckleberry, prickly rose and soopolallie. Pinegrass, fireweed, dwarf blueberry, palmate coltsfoot and kinnikinnick are commonly found following recent disturbance.

Physical Environment

Sub-Boreal Spruce Zone - dry sites

These morainal and/or glaciofluvial sites typically have poor to medium nutrient regimes with dry to moist soils. Typically found in middle to upper slope positions, but occasionally may occur in level areas or in a crest position.

Sub-Boreal Spruce Zone - moist sites

Typically found on moist, medium to rich, lacustrine or fluvial deposits. Sites are usually in a middle to lower or toe slope position.

Sub-Boreal Pine-Spruce Zones

Predominantly located on variable parent material, in poor to rich, moist sites. Usually found in lower to toe slope positions. Drier sites are usually located in middle slope positions while wetter sites are most often found in depressions.

Interior Douglas-fir Zone - Montane Spruce Zone

Generally found in moist to very moist conditions with nutrient levels of medium to very rich. This unit ranges from upper/crest positions to lower/toe slope positions, sometimes found in level or depressional sites. Typically occurs on loamy morainal or fluvial soils, occasionally sandy glaciofluvial materials.

Atypical Sites

Sub-Boreal Spruce Zone - dry sites

Much drier sites may have a pronounced increase in the abundance of lichens, including *Cladina* spp. and *Peltigera* spp.

Sub-Boreal Spruce Zone - moist sites

Pink spirea may be abundant in the understory of much richer sites. In wetter areas, the shrub layer may be dominated by devil's club, while both horsetails and sedges may be abundant in the herb layer. Sphagnum moss may also be present on these sites.

Sub-Boreal Pine-Spruce Zones

Pinegrass may be predominant in the understory of drier sites, while wetter sites usually contain common horsetail and softleaved sedge.

Interior Douglas-fir Zone - Montane Spruce Zone

Slightly drier, poor sites located in middle slope positions tend to be dominated by lodgepole pine with some white spruce and trembling aspen. The understory is characterized by a very sparse shrub layer and the presence of additional herb species including grouseberry, arctic lupine and heart-leaved arnica.

Sites which are wetter, usually at the perimeter of wetlands, tend to have an open canopy dominated by white spruce and lodgepole pine. The understory features scrub birch, common horsetail, arrow-leaved groundsel, trailing raspberry, soft-leaved sedge and glow moss.

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TB Trembling Aspen - Balsam Poplar

General Description

Typically an open, deciduous subalpine forest found on warm aspects, often in association with shrub/grasslands. This important habitat occurs on steep, warm aspects in the Spruce-Willow Birch Biogeoclimatic Zone.

Distribution

This unit is limited to elevations ranging between 1050m and 1500m. It occurs throughout the subalpine areas of the Northern Boreal Mountains; small patches are also present in the Northern Omineca and Central Canadian Rocky Mountains, as well as on the Muskwa Plateau.

Biogeoclimatic Units

SWB

Climax Vegetation

Typically the forest consists of stunted groves of trembling aspen or balsam poplar. These stands are most often adjacent to one another and rarely intermixed. Soopolallie, prickly rose, highbush cranberry and willows are commonly found in a dense, well developed shrub layer. The herb layer is characteristically, quite diverse, including fireweed, arctic lupine, tall bluebells, heart-leaved arnica, wild strawberry and tall larkspur. Kinnikinnick and twinflower are quite commonly found on the aspen sites, while fuzzy-spiked wildrye and mountain monkshood are characteristic of the poplar stands. The moss and lichen layer is poorly developed in both of these communities.

Physical Environment

The trembling aspen sites occur on southfacing, dry, steep, colluvial slopes; whereas the balsam poplar communities often occur on slightly moister, southfacing, colluvial slopes. This ecosystem type is considered a fire maintained subclimax community, however with extreme fire suppression it has the potential to develop into a spruce dominated ecosystem.

7.0 FORESTED WETLAND AND RIPARIAN ECOSYSTEMS

BB Black Spruce Bog

General Description

A bog wetland class that typically is a sparse to open, treed organic wetland, with a peat moss dominated understory, black spruce and sometimes, tamarack.

Distribution

Found at low to mid-elevations, between 300 and 1250m. It is common throughout the Taiga and Boreal Plains, Northern Boreal Mountains, Sub-Boreal Interior, Nass Basin, Southern Rocky Mountain Trench and Fraser Plateau.

Biogeoclimatic Units

BWBSdk1	BWBSwk2	ICHvk2	SBPSmk	SBSmk1	SBSmw
BWBSdk2	BWBSwk3	ICHwk3	SBSdh	SBSdw3	SBSvk
BWBSmw1	ICHmc2	SBPSdc	SBSdk	SBSmc2	SBSwk1
BWBSmw2	ICHmm	SBPSmc	SBSdw2	SBSmc3	SWBmk
BWBSwk1					

Climax Vegetation

Typically a sparse canopy composed of stunted black spruce, with some white spruce, tamarack and lodgepole pine often present. The shrub layer is characteristically dominated by Labrador tea; secondary species include scrub birch, black twinberry and various species of willow. Sedges are almost always present in a well developed herb layer. Numerous herb species are represented including lingonberry, horsetails, creeping-snowberry, bog cranberry, crowberry, marsh cinquefoil, bunchberry and common mitrewort. Sphagnum moss is almost always present, usually dominant, forming thick hummocky mats. Red-stemmed feathermoss, step moss, glow moss and golden fuzzy fen moss are also present.

Successional Vegetation

Typically species similar to the climax species occur on sites following disturbance.

Physical Environment

Found in level or depressional sites that are situated on poorly drained (wet), thick organic deposits.

Atypical Sites

Typically found in northern locations (N of 55). Tamarack is typically the only secondary canopy species. Labrador Tea remains dominant in the shrub layer while black twinberry is less common. Lingonberry, red swamp current and cloudberry are present in the herb layer. Still a sphagnum dominated moss and lichen layer.

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CB Cedars - Shore Pine Bog

General Description

A bog wetland class that typically is an open to dense forest, with moss and shrub dominated understories. Sites are found in poorly drained outer coastal areas; often containing a varying mixture of western hemlock, western redcedar, yellow-cedar and shore pine.

Distribution

Found at lower elevations throughout the Coast and Mountains, as well as the Georgia Depression, ranging from sea level to 1100m.

Biogeoclimatic Units

CDFmm	CWHds2	CWHms1	CWHvh2	CWHwh1	CWHws2
CWHdm	CWHmm1	CWHms2	CWHvm1	CWHwm	CWHxm
CWHds1	CWHmm2	CWHvh1	CWHvm2	CWHws1	

Climax Vegetation

An open, stunted canopy scattered with lodgepole/shore pine, western redcedar, western hemlock and yellow-cedar characterize these sites. Typical understory species include salal, red huckleberry, Labrador tea, false azalea, oval-leaved blueberry and Alaskan blueberry. Herbs include bunchberry, skunk cabbage, deer fern, sedges, deer cabbage and fern-leaved goldthread. Sphagnum dominates the moss and lichen layer; step moss, lanky moss, common green sphagnum and Oregon-beaked moss are also often present.

Atypical Sites

Along the Northcoast and in the Queen Charlottes Islands, similar species form a stunted open canopy. The dense to moderate shrub layer typically includes Labrador tea, bog laurel, bog rosemary, bog cranberry and salal. Crowberry, cotton-grass and sedges are commonly found in the herb layer. Peat moss dominates the moss and lichen layer forming a thick mat-like cover.

Physical Environment

Typically found in level areas or depressions where there is a poorly drained, thick organic layer. Sites often located in lower to crest mesoslope positions.

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CR Black Cottonwood Riparian Habitat Class**General Description**

Typically a dense conifer and deciduous or broad-leaved forest, with shrub-dominated understories, that includes plant communities which progress through a varying mixture of shrubs and black cottonwood.

Distribution

Found throughout the province along major rivers where floodplains occur, ranging in elevation from sea level to approximately 600m.

Biogeoclimatic Units

Coastal sites

CDFmm	CWHds1	CWHmm1	CWHvm1	CWHxm
CWHdm	CWHds2			

Central Interior sites

BGxh1	BGxw2	ICHmc1	ICHvc	IDF	PPdh1
BGxh2	BGxh3	ICHmc2	ICHwc		PPxh2

Northern Interior sites

ICHmc1	ICHvc
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Climax Vegetation

Coastal sites

Open broad-leaved or deciduous forest composed of black cottonwood, red alder and bigleaf maple, with some western red-cedar. Willows dominate the understory; along with salmonberry, red elderberry, stink currant and red-osier dogwood. Wildrye, sword fern, three-leaved foamflower, scouring-rush and horsetails may be present in the herb layer. The moss and lichen layer is sparse and consists of palm tree moss and leafy moss.

Central Interior sites

The presence of black cottonwood characterizes the stand; trembling aspen, ponderosa pine, paper birch and Douglas-fir also occur as minor components. Common snowberry, red-osier dogwood and Nootka rose constitute the shrub layer. Kentucky bluegrass and star-flowered Solomon's seal dominate a diverse herb layer. Secondary herb species include showy aster, sweet cicely and common dandelion. The moss and lichen layer is characteristically poorly developed.

Northern Interior sites

Black cottonwood dominates the canopy; subalpine fir may be scattered in the subcanopy. Highbush-cranberry, red-osier dogwood, devil's club, thimbleberry and Sitka alder form a dense, tall shrub layer. Herbs such as oakfern, twisted stalk, foamflower, wintergreen and lady fern are common. The moss and lichen layer is typically very sparse.

Successional Vegetation

Coastal sites

In theory these floodplain sites should proceed to a Sitka spruce, western redcedar or grand fir dominated climax forest, depending on the locality. However, frequent flooding prevents this from occurring.

Early successional stages are usually dominated by shrubby vegetation, typically a dense cover of willows. Older sites may have a sword fern dominated understory.

Central Interior sites

Early successional stages are usually dominated by shrubby vegetation, typically a dense cover of willows.

Northern Interior sites

Early successional stages are usually dominated by shrubby vegetation, typically a dense cover of willows.

Physical Environment

Coastal sites

Typically found on mesic to moist floodplains with medium to rich gravelly soils.

Central Interior sites

Occurs on moist to very moist, gentle lower to toe slopes and level areas situated on actively flooding fluvial deposits.

Northern Interior sites

Typically found on level sites situated on active floodplains (medium to low benches) of larger rivers.

Atypical Sites

Coastal sites

On sandy sites bigleaf maple and red-osier dogwood may dominate.

Central Interior sites

Wetter sites are characterized by water birch in the shrub layer and the presence of horsetail in the herb layer.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

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ER Engelmann Spruce Riparian

General Description

Typically a dense coniferous forest, with shrub and forb dominated understories, Engelmann spruce and sometimes black cottonwood; found on floodplains or small riparian areas.

Distribution

Occurs on floodplains and riparian areas throughout the Central, Southern and Sub-Boreal Interiors, as well as in the Southern Interior Mountains and the eastern slopes of the Coast Mountains. Elevational limits range between 1200m and 2000m in the south and 900m and 1500m in the north.

Biogeoclimatic Units

ESSFdc1	ESSFmk	ESSFmv3	ESSFwc1	ESSFwk1	ESSFxc
ESSFdk	ESSFmm1	ESSFmv4	ESSFwc2	ESSFwk2	ESSFxv
ESSFdv	ESSFmv1	ESSFmw	ESSFwc3	ESSFwm	
ESSFmc	ESSFmv2	ESSFvc	ESSFwc4	ESSFwv	

Climax Vegetation

The dense canopy is typically composed of Engelmann spruce, subalpine fir and black cottonwood. Alder, red-osier dogwood and black twinberry are commonly found in the shrub layer. The herb layer includes horsetails and cowparsnip.

Successional Vegetation

Red-osier dogwood, alder, willows and horsetails commonly dominate these sites following disturbance.

PB Lodgepole/Shore Pine Bog

General Description

A bog wetland class characterized by a sparse cover of stunted shore pine and poorly drained coastal soils. Shrubs and sphagnum moss dominate the understory.

Distribution

Typically found along eastern Vancouver Island south of Kelsey Bay, throughout the lower mainland and up the mainland coast; including the western slopes of the Coast Mountains, Hecate Lowland, Outer Fiordland, Georgia Lowland and the Southern Gulf Islands, as well as the islands of Queen Charlotte Strait and the Strait of Georgia. The elevational limits of this unit range between sea level and 700m.

Biogeoclimatic Units

CWHds1 CWHds2 CDFmm1 CWHms1 CWHms2 CWHxm

Climax Vegetation

An open bog, scattered with shrubby lodgepole pine characterize these sites. The sparse understory consists mainly of Labrador tea with some salal present. The herb layer is very sparse and includes some sedges and cotton-grass. The ground layer of coastal sites is dominated by sphagnum but sites located further inland tend to be codominated by red-stemmed feathermoss and sphagnum moss. Secondary species include Cladina lichens, step moss and cattail moss.

Physical Environment

Typically found in very wet, poorly drained coastal depressions. Sites which are located right on the coast may be subjected to varying amount of salt spray.

References

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

PR White Spruce - Balsam Poplar Riparian

General Description

Typically a dense, deciduous, mixed or coniferous forest, with thick shrub understories, found on or in association with fluvial sites; includes plant communities which succeed through deciduous forests to a white (or hybrid white) spruce climax.

Distribution

This unit occurs between 300m and 1200m in the northern portion of the province, throughout the major river valleys of the Northern Boreal Mountains, Boreal and Taiga Plains, as well as in the Southern Omineca Mountains and Central Canadian Rocky Mountains.

Biogeoclimatic Units

BWBSdk1 BWBSmw1 BWBSwk1 SWBdk SWBmk SWBvk
BWBSdk2 BWBSmw2 BWBSwk2

Climax Vegetation

Hybrid white spruce is prominent within the canopy; balsam poplar, paper birch and black spruce may also be present. The shrub layer is well developed and usually contains prickly rose, highbush-cranberry, mountain alder, red-osier dogwood and black gooseberry. The herb layer is typically composed of bunchberry, common and mountain horsetail, pink wintergreen, common mitrewort, palmate's coltsfoot and twinflower. The moss cover is variable ranging from sparse to moderate and usually contains step moss, knight's plume and red-stemmed feathermoss.

Successional Vegetation

Willow, alder, red-osier dogwood, highbush cranberry, balsam poplar and western thimbleberry are commonly found in early shrub dominated successional stages. Wildrye and horsetails are also common.

Physical Environment

Found in moist to wet fluvial sites that usually have a seasonally fluctuating water table. The sites are typically situated on medium to rich soils, on middle to low floodplains.

Atypical Sites

Slightly drier sites may also have common juniper and bearberry in the understory.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
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RR Western Redcedar - Black Cottonwood Riparian

General Description

Typically a dense coniferous forest, with shrub-dominated understories, that include plant communities which may succeed either through deciduous seral species or directly to a climax of hybrid spruce, western redcedar and western hemlock.

Distribution

Found extensively throughout valleys of the Southern Interior Mountains and portions of the Northern Thompson Upland and Northern Okanagan Highland, between approximately 400m and 1450m elevation. It also occurs between 350m and 1100m in the valleys of the Skeena Mountains, Nass Basin and Nass Ranges.

Biogeoclimatic Units

ESSFvc	ICHdk	ICHmk1	ICHmw1	ICHwk1	ICHvk2
ESSFwc1	ICHdw	ICHmk2	ICHmw2	ICHwk2	IDFmw1
ESSFwc2	ICHmc1	ICHmk3	ICHmw3	ICHwk3	IDFmw2
	ICHxw	ICHmm	ICHvk1	ICHwk4	IDFww

Climax Vegetation

Hybrid white spruce, western redcedar and western hemlock dominate the forest canopy. Seral species include paper birch, black cottonwood and trembling aspen. The rich, dense shrub layer is typically dominated by devil's club; secondary species include black twinberry, oval-leaved blueberry, thimbleberry, red-osier dogwood, black gooseberry and highbush cranberry. Oakfern, ladyfern, spiny wood fern, wild sarsaparilla, horsetail, bunchberry, skunk cabbage and five-leaved bramble are common herb species. The moss and lichen layer is typically composed of cattail moss, step moss, leafy moss, red-stemmed feathermoss and knight's plume.

Successional Vegetation

Willows, alder, red-osier dogwood, thimbleberry, lady fern and horsetails typically dominate early successional stages.

Physical Environment

Found on moist fluvial deposits, usually floodplains or smaller riparian areas.

References

Meidinger, D. 1995. A field guide for site identification and interpretation for the southeast portion of the Prince George forest region (Draft). B.C. Min. For., Victoria, B.C.

RS Western Redcedar Swamp

General Description

A swamp wetland class that typically is an open forested wetland composed of western redcedar and various conifers, with a skunk cabbage and fern understory associated with very poorly drained sites.

Distribution

The redcedar swamp is limited in size but has an extensive distribution. It occurs between 400m and 1550m on the more gentle slopes of the Southern Interior Mountains and portions of the Northern Thompson Upland and Northern Okanagan Highland. It occurs throughout the CDF and CWH biogeoclimatic zones of the Coast Mountains and Vancouver Island regions between sea level and approximately 1000m.

Biogeoclimatic Units

Coastal sites

CDFmm	CWHds2	CWHms1	CWHvh2	CWHwm	CWHws1
CWHdm	CWHmm1	CWHms2	CWHvm1	CWHwh1	CWHws2
CWHds1	CWHmm2	CWHvh1	CWHvm2	CWHwh2	CWHxm

Interior sites

ICHmk1	ICHmw1	ICHvk1	ICHwk1	IDFmw2	IDFww
ICHmk2	ICHmw2	ICHvk2	ICHwk2		
ICHmk3	ICHmw3		ICHwk3		

Climax Vegetation

Coastal sites

An open mixed coniferous and deciduous forest composed primarily of western redcedar and minor amounts of western hemlock, Douglas-fir, yellow-cedar, amabilis fir, Sitka spruce, grand fir, lodgepole pine, red alder and bigleaf maple. Salal, devil's club, salmonberry, red huckleberry, oval-leaved blueberry, Alaskan blueberry and false azalea characterize a vigorous shrub layer. Common herb species include deer fern, sword fern, lady fern, skunk cabbage, bunchberry, five-leaved bramble and foamflowers. The moderate to well developed moss and lichen layer usually includes step moss, lanky moss, leafy moss and less commonly sphagnum mosses.

Interior sites

An open coniferous forest consisting of primarily western redcedar and western hemlock, intermixed with hybrid white spruce and subalpine fir. Red-osier dogwood, devil's club, oval-leaved blueberry, black huckleberry and black gooseberry are common in the sparse to moderate shrub layer. A lush herb layer features skunk cabbage, lady fern, bunchberry, one-leaved foamflower, soft-leaved sedge and

horsetails. The sparse to moderate moss and lichen layer includes leafy, red-stemmed feathermoss and sphagnum mosses.

Successional Vegetation

Coastal sites

Early successional stages are typically dense, shrub dominated communities. Salmonberry, salal, red huckleberry, blueberry and false azalea commonly occur.

Interior sites

Early successional stages are typically dense, shrub dominated communities. Black huckleberry, blueberry and red-osier dogwood commonly occur.

Physical Environment

Coastal sites

Typically located on gradual slopes or level sites on fluvial, glaciofluvial or lacustrine deposits often overlain with organic materials. Mineral seepage, poor aeration and high water tables result in saturated, rich soils.

Interior sites

Wet, rich fluvial deposits, most often overlain with organic materials. Typically found in level and/or depressional sites.

Atypical Sites

Coastal sites

Some sites have mixed canopies composed of red alder, bigleaf maple, grand fir and Douglas-fir. Salmonberry, Indian-plum, thimbleberry, trailing blackberry and common snowberry are present in the well developed shrub layer. A diverse herb layer is commonly dominated by swordfern, with minor amounts of vanilla-leaf, bracken, false bugbane and three-leaved foamflower present. The moss and lichen layer is composed of sparsely scattered leafy moss and palm tree moss.

The wettest of sites with strongly fluctuating water tables have red alder and black cottonwood dominated canopies, with minor amounts of grand fir. Red-osier dogwood, black twinberry and Pacific crabapple are found in the shrub layer. The herb layer is dominated by slough sedge; false lily-of-the-valley, water parsley, sword fern and skunk cabbage are also present. The moss and lichen layer is relatively sparse containing some *Kinbergia* spp.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

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- Lloyd, D., K. Angove, G. Hope and C. Thompson. 1990. A Guide to Site Identification and Interpretation for the Kamloops Forest Region. Land Manage. Handb. 23, B.C. Min. For., Victoria, B.C.
- Meidinger, D. 1995. A field guide for site identification and interpretation for the southeast portion of the Prince George forest region (Draft). B.C. Min. For., Victoria, B.C.

SK Spruce - Swamp

General Description

A swamp wetland class that typically is an open forested wetland of spruce with an understory of skunk cabbage and sparse shrubs, found on very poorly drained sites.

Distribution

Located throughout the interior of the province, east of the Coast Mountains; including the Northern Boreal Mountains, Taiga and Boreal Plains, Central, Southern and Sub-Boreal Interior and the Southern Interior Mountains. Generally found at mid-elevations, between 400m and 1400m; more northerly locations may occur at lower elevations while more southerly areas may occur at higher elevations.

Biogeoclimatic Units

Sub-Boreal Pine - Spruce/Interior Douglas-fir sites

IDFdk3 IDFdk4 SBPSdc SBPSmc SBPSmk SBPSxc

Sub-Boreal Spruce/Boreal White and Black Spruce sites

BWBSdk1 SBSdw1 SBSmc2 SBSmh SBSvk

Interior Cedar Hemlock sites

ICHdk ICHmk1 ICHmw3 ICHvc ICHwk1
ICHmc2 ICHmk2 ICHwk4

Climax Vegetation

Sub-Boreal Pine - Spruce/Interior Douglas-fir sites

A moderate canopy composed of hybrid white spruce and some black spruce. Black twinberry, highbush cranberry, northern black current, black gooseberry and red-osier dogwood are commonly found in the understory. Abundant herb species include common horsetail, palmate coltsfoot, soft-leaved sedge and trailing raspberry. The moss and lichen layer is usually well developed and includes step moss, leafy moss, glow moss and red-stemmed feathermoss.

Sub-Boreal Spruce/Boreal White and Black Spruce sites

Hybrid white spruce characteristically dominates the canopy; subalpine fir, black spruce and lodgepole pine may also be present. The shrub layer is typically composed of black twinberry, highbush cranberry, black gooseberry, mountain alder, prickly rose and red swamp currant. Common herb species include horsetails, bunchberry, oakfern, ladyfern, trailing raspberry and common mitrewort. Typically there is a dense cover of moss, composed of step moss, leafy moss, knight's plume and red-stemmed feathermoss.

Interior Cedar Hemlock sites

Hybrid white spruce is found to dominate this open canopy. Secondary canopy species include western hemlock, western redcedar, lodgepole pine and subalpine fir. Black twinberry, oval-leaved blueberry, devil's club, mountain alder and black gooseberry are commonly found in the shrub layer. Characteristic herbaceous species include sedges, horsetails, oakfern, ladyfern, bluejoint and dwarf nagoonberry. Leafy mosses are the most prominent species in the moss and lichen layer. Sphagnum moss, ragged moss and red-stemmed feathermoss may also be present.

Successional Vegetation

Sub-Boreal Spruce/Boreal White and Black Spruce sites

Early successional stages are dominated by similar species of shrubs and ferns.

Interior Cedar Hemlock sites

Early successional stages are dominated by similar species of shrubs and ferns.

Physical Environment

Sub-Boreal Pine - Spruce/Interior Douglas-fir sites

Found on wet sites, usually in level areas and/or depressions. Most often occurs on silty or loamy fluvial materials, that are overlain with a layer of organic matter.

Sub-Boreal Spruce/Boreal White and Black Spruce sites

Found on poorly drained organic or fluvial deposits, usually in level depressional areas.

Interior Cedar Hemlock sites

Typically very wet, poorly drained organic and mineral soils with poor aeration. Sites are restricted to the base of mountain slopes, in depressions on benches or terraces and in abandoned stream back channels or filled in ponds.

Atypical Sites

Sub-Boreal Pine - Spruce/Interior Douglas-fir sites

On drier sites, the shrub layer may also include thimbleberry, snowberry, saskatoon and willows. Twinflower, common mitrewort, oakfern and bunchberry may also be found in the understory.

Sub-Boreal Spruce/Boreal White and Black Spruce sites

On very wet sites willows and scrub birch are abundant in the understory and there is usually a dense mat-like moss and lichen layer composed of step moss, glow moss and sphagnum mosses. Herbaceous species such as palmate coltsfoot, crowberry and twinflower may also be present.

Interior Cedar Hemlock sites

In the Prince Rupert region Roche spruce is commonly found in the both the canopy and subcanopy along with western hemlock. Skunk cabbage may also be abundant in the understory.

References

- Banner, A., W. MacKenzie, S. Haeussler, S.Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
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Meidinger, D. 1995. A field guide for site identification and interpretation for the southeast portion of the Prince George forest region (Draft). B.C. Min. For., Victoria, B.C.

SR Sitka Spruce - Black Cottonwood Riparian

General Description

Typically a dense coniferous forest, with fern- or shrub-dominated understories, that may progress through plant communities with redalder, black cottonwood or bigleaf maple to a coniferous mixture of Sitka spruce and western hemlock; found on or in association with fluvial sites.

Distribution

Occurs extensively throughout valley bottoms of the Coast and Mountains ecoprovince, ranging in elevation between sea level and 1000m.

High fluvial bench sites

CDFmm	CWHds1	CWHms1	CWHvh1	CWHwm	ICHvc
CWHdm	CWHds2	CWHms2	CWHvh2	CWHws1	
CWHmm1	CWHvm1	CWHxm	CWHwh1	CWHws2	

Medium fluvial bench sites

CDFmm	CWHmm1	CWHvh1	CWHwh1	CWHws1	ICHmc1
CWHdm	CWHms1	CWHvh2	CWHwm	CWHws2	ICHmc2
CWHds1	CWHms2	CWHvm1		CWHxm	ICHvc
CWHds2		CWHvm2			ICHwc

Climax Vegetation

High fluvial bench sites

Well spaced Sitka spruce and western hemlock with some black cottonwood, red alder and western redcedar characterize the sites. Salmonberry and devil's club dominate the dense shrub layer. The moderate herb layer includes horsetails, ferns and foamflowers. Leafy moss, lanky moss and step moss contribute to the well developed moss and lichen layer.

Medium fluvial bench sites

These sites are characterized by black cottonwood dominated forest with some red alder, Sitka spruce, western redcedar and bigleaf maple. The dense tall shrub layer includes salmonberry, red-osier dogwood, black twinberry, red elderberry, stink current and devil's club. A reduced herb layer is typically composed of oak fern, three-leaved foam flower, deer fern, Alaskan onion grass, lady fern and false lily-of-the-valley. Leafy moss, lanky moss and step moss are the most prominent species found in the sparse moss and lichen layer.

Successional Vegetation

High fluvial bench sites

Very dense shrub layers in early stages, dominated by red alder, willows, cottonwood, bigleaf maple and salmonberry.

Medium fluvial bench sites

Very dense shrub layers in early stages, dominated by red alder, willows, cottonwood, bigleaf maple, black twinberry, red elderberry and salmonberry.

Physical Environment

High fluvial bench sites

Active floodplain sites adjacent to rivers with poorly developed, course-textured soils. Being on a high bench flooding is less frequent but does result in surface deposition of fluvial materials.

Medium fluvial bench sites

Active floodplain sites adjacent to rivers with poorly developed, course-textured soils. More frequent flooding results in surface deposition of fluvial materials.

References

Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

Green, R.N. and K. Klinka. 1994. A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region, Land Manage. Handb. 28, B.C. Min. For., Victoria, B.C.

TF Tamarack Wetland

General Description

A fen wetland class that typically is an open forested wetland, dominated by tamarack, scrub birch, sedges and moss.

Distribution

Found between 300m and 1100m elevation throughout the Boreal and Taiga Plains, as well as the Liard Basin.

Biogeoclimatic Units

BWBSdk BWBSmw1 BWBSmw2

Climax Vegetation

Tamarack - Sedge sites

Typically a very open canopy dominated by stunted tamarack and white spruce. Scrub birch, willows, leatherleaf, sweet gale and Labrador tea characteristically form a dense shrub layer. Sedges dominate the herb layer. Secondary herb species include buckbean, bog cranberry, pink wintergreen, lingonberry, bastard toadflax and twinflower. Sphagnums, glow moss and golden fuzzy fen moss commonly cover the forest floor.

Tamarack - Sedge sites

Tamarack - Horsetail sites

A moderate canopy dominated by tamarack, black spruce and white spruce. The understory is dominated by horsetails. Other common herb species include dwarf scouring-rush, bunchberry, common mitrewort, soft-leaved sedge, lingonberry and twinflower. A sparse to moderate shrub layer is characterized by Labrador tea, highbush cranberry, prickly rose, willow and mountain alder. Step moss, knight's plume, red-stemmed feathermoss and glow moss form an extensive ground cover.

Physical Environment

Tamarack - Sedge sites

Mostly found on rich organic, moisture receiving soils, with medium to very rich nutrient supply. Typically located in a wet, level and toe slope positions.

Tamarack - Horsetail sites

Found on rich, level to depressional sites that are mainly situated over mineral soils, occasionally organic materials.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
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WG Hybrid White Spruce Bog Forest

General Description

A bog wetland class that is typically a sparse to open, treed organic wetland, composed of hybrid white spruce, with minor amounts of lodgepole pine and a moss dominated understory.

Distribution

Occurs throughout the interior, east of the Coast Mountains; including the Sub-Boreal, Central and Southern Interior of the Province and into the Southern Interior Mountains. Elevational limits range between 400m and 1450m. More northerly locations may occur at lower elevations while more southerly locations may occur at higher elevations.

Biogeoclimatic Units

BWBS	IDF	MSdk	MSxv	SBPS	SBS
ICH					

Climax Vegetation

Interior sites

Hybrid white spruce and/or white spruce dominate an open canopy with minor amounts of lodgepole pine and black spruce often present. A sparse to moderate shrub layer is typically composed of scrub birch, Labrador tea and red-osier dogwood. Sedges dominate the herb layer; dwarf nagoonberry, common horsetail, white bog orchid, bog cranberry, bluejoint and arrow-leaved coltsfoot are common associated species. Characteristically, sphagnum mosses form a dense carpet-like cover; glow moss and red-stemmed feathermoss are also common.

Northwest Coastal sites

An open, sparse canopy composed of white spruce and/or Roche spruce with minor amounts of black spruce is characteristic. Abundant cover of Labrador tea, scrub birch, western hemlock regeneration, hardhack and willows is typical of this moderate shrub layer. The herb layer includes sedges, buckbean, cloudberry, bog cranberry and dwarf nagoonberry. Sphagnum mosses typically dominate the moss and lichen layer; golden fuzzy fen moss and red-stemmed feathermoss are also commonly represented.

Physical Environment

Interior sites

White spruce bogs are typically situated in level and depressional areas with deep organic soils. Poor, subhydic soils are most common; with the water table typically at or near the surface (<30cm).

Northwest Coastal sites

White spruce bogs are typically situated in level and depressional areas with deep organic soils. Sites are most commonly found in poor, subhydric conditions, with the water table at or near the surface (<30cm).

WR Hybrid White Spruce - Black Cottonwood Riparian**General Description**

Typically a dense deciduous, mixed or coniferous forest, with shrub dominated understories, found on or in association with fluvial sites; includes plant communities which succeed slowly through black cottonwood to potential hybrid white spruce climax.

Distribution

Occurs throughout the interior, east of the Coast Mountains; including the Sub-Boreal, Central and Southern Interior of the Province and into the Southern Interior Mountains. Elevational limits range between 400m and 1450m. More northerly locations may occur at lower elevations while more southerly locations may occur at higher elevations.

Biogeoclimatic Units**Interior Douglas-fir/Cedar/Hemlock sites**

ICHdk	ICHwk1	IDFdk3	IDFdm1	IDFxm	IDFxh1
ICHmc1	IDFdk1	IDFdk4	IDFdm2	IDFxw	IDFxh2
ICHmc2	IDFdk2				

Sub-Boreal Spruce/Sub-Boreal Pine - Spruce sites

SBPSdc	SBSdh1	SBSdw2	SBSmh	SBSmw	SBSwk3
SBPSmc	SBSdh2	SBSmc1	SBSmk1	SBSvk	
SBPSmk	SBSdk	SBSmc2	SBSmk2	SBSwk1	
SBPSxc	SBSdw1	SBSmc3	SBSmm	SBSwk2	

Ponderosa Pine/Montane Spruce sites

MSdk	MSxv	PPdh2	PPxh1
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Climax Vegetation**Interior Douglas-fir/Cedar/Hemlock sites**

The canopy is typically dominated by hybrid white spruce and black cottonwood. Some lodgepole pine, Douglas-fir and paper birch may also be present. Black gooseberry, red-osier dogwood, mountain alder, common snowberry and Douglas maple are commonly found in the understory. Characteristic herbaceous species include common horsetail, sweet-scented bedstraw, false Solomon's-seal, bunchberry,

twinflower and palmate-coltsfoot. Leafy moss and red-stemmed feathermoss are commonly found in this unit.

Sub-Boreal Spruce/Sub-Boreal Pine - Spruce sites

Typically the canopy is either dominated by hybrid white spruce and/or black cottonwood. Minor amounts of lodgepole pine and subalpine fir may also be present. Red Sub-Boreal Spruce/Sub-Boreal Pine - Spruce Subdivision sites

Red-osier dogwood, black twinberry, prickly rose, highbush-cranberry and black gooseberry are the most prominent shrub species. The components of the herb layer are variable but most often common horsetail dominates; oak fern, sweet-scented bedstraw, bunchberry, trailing raspberry, wildrye and twinflower are commonly represented. Typically the moss and lichen layer is composed of red-stemmed feathermoss, knight's plume and leafy moss.

Ponderosa Pine/Montane Spruce sites

Hybrid white spruce and black cottonwood are prominent in the canopy. Scattered subalpine fir, Douglas-fir and lodgepole pine may also be found in the forest. Red-osier dogwood, mountain alder, Nootka rose, prickly rose and Labrador tea may be found in the shrub layer. Common horsetail, bunchberry, sedges, grouseberry, pinegrass and twinflower are present in the understory. The moss and lichen layer is typically composed of red-stemmed feathermoss and step moss.

Successional Vegetation

Interior Douglas-fir/Cedar/Hemlock sites

Typically early successional vegetation is dominated by shrubs, including willows, red-osier dogwood, alder, rose and horsetails.

Sub-Boreal Spruce/Sub-Boreal Pine - Spruce sites

Early successional stages are often dominated by willows, alder, red-osier dogwood, highbush cranberry and horsetails.

Ponderosa Pine/Montane Spruce sites

Mountain alder, red-osier dogwood, willows, rose and horsetails are common in early successional stages.

Physical Environment

Interior Douglas-fir/Cedar/Hemlock sites

Generally found in level and depressional areas, as well as in lower to toe slope positions. Sites are typically situated near active watercourses on moist to very moist fluvial materials, typically floodplains.

Sub-Boreal Spruce/Sub-Boreal Pine - Spruce sites

Typically located adjacent to watercourses, on moist to very moist floodplains. These sites are usually level areas, such as valley bottoms, where seepage water is almost always present.

Ponderosa Pine/Montane Spruce sites

Typically found on a moist to very moist, level, fluvial deposit. Usually located adjacent to watercourses, often on an active floodplain.

Atypical Sites

Interior Douglas-fir/Cedar/Hemlock sites

At lower elevations on the major floodplains, black cottonwood predominates with minor amounts of paper birch and trembling aspen possibly present. The shrub community is composed of red-osier dogwood, chokecherry, saskatoon, rose and snowberry. The herb layer may be diverse especially if the understory is not shrub dominated. Common herbaceous species include bedstraw, wintergreens, false Solomon's-seal, horsetails and oak fern.

Sub-Boreal Spruce/Sub-Boreal Pine - Spruce sites

Purple peavine, bluejoint, false-Solomon's seal and wild sarsaparilla may be abundant in the understory of some sites.

Ponderosa Pine/Montane Spruce sites

Slightly drier sites may have a reduced moss and lichen layer and an herb layer comprised of scouring rush, false Solomon's seal, common dandelion and bluebunch wheatgrass.

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YB Yellow Cedar Bog Forest

General Description

Typically an open forest with shrubby yellow-cedar, mountain hemlock and western hemlock; found on poorly drained sites.

Distribution

This unit is found on the western slopes of the Coast Mountains, north of the Fraser River through to the Alaskan border and throughout the Hecate Lowlands. It also occurs on the islands along the coast, including the Queen Charlotte Islands and Vancouver Island. It is restricted to windward portion of southern Vancouver Island and expands to cover all of northern Vancouver Island, north of Kelsey Bay. Typically the elevational limits of this unit range between sea level and approximately 1800m.

Biogeoclimatic Units

CWHmm2	CWHvh1	CWHvm1	CWHwh1	MHmm1	MHwh
	CWHvh2	CWHvm2	CWHwh2	MHmm2	

Climax Vegetation

Open, scrubby canopy of yellow-cedar, western redcedar, mountain hemlock and western hemlock, with minimal amounts of Sitka spruce and amabilis fir. The shrub layer is dominated by Alaskan and oval-leaved blueberries, copperbush and at lower elevations, salal. False azalea and conifer regeneration are also commonly found in the shrub layer. A moderate herb layer typically includes five-leaved bramble, fern-leaved

goldthread, deer fern, and skunk cabbage. At higher elevations additional herb species include white-marsh marigold, twistedstalks and mountain heather. The dense moss and lichen layer consists mainly of step moss, lanky moss and common green sphagnum; large leafy moss and red-stemmed feathermoss are also common.

Physical Environment

Occurs on very wet, poor nutrient sites, typically level or depressional areas with organic veneers or blankets, that receive excessive amounts of seepage.

Atypical Sites

Very wet hypermaritime sites on the Queen Charlottes and the adjacent mainland coast typically have a similar scrubby canopy except for the addition of minor amounts of shorepine. Salal dominates the shrub layer; secondary shrubs include false azalea, ovalleaved blueberry, Alaskan blueberry, red huckleberry and conifer regeneration. In addition to the typical herb species, these sites commonly include Pacific reedgrass, lingonberry, false lily-of-the-valley and yellow-flowered sedge. Step and lanky moss dominate the moss and lichen layer; common green and red sphagnums are also present.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
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YS Yellow-cedar Skunk Cabbage Swamp Forest

General Description

Typically an open forested wetland of yellow-cedar with an understory of skunk cabbage and sparse shrubs found on poorly drained mineral sites.

Distribution

Occurs at higher elevations, ranging between 500m and 1600m, on the Queen Charlotte Islands, Vancouver Island and the mainland coast, expanding east into the Coast Mountains and north to the Alaskan border.

Biogeoclimatic Units

MHmm1 MHmm2 MHwh

Climax Vegetation

Typically a scrubby and well spaced coniferous forest; yellow-cedar, mountain hemlock, western hemlock and amabilis fir codominate. Alaskan blueberry dominates the understory with falseazalea, oval-leaved blueberry, copperbush and conifer regeneration also present. Skunk cabbage is the diagnostic feature of the herb understory. Some secondary species include sedges, Sitka valerian, lady fern, oak fern, twistedstalks, Indian hellebore and five-leaved bramble. The moderate moss and lichen layer includes leafy moss, lanky moss, pipecleaner moss and sphagnum mosses.

Physical Environment

Characteristically sites are situated on cold, saturated, poorly aerated colluvial or morainal materials. Restricted to wet, lower seepage slopes or depressions that are under mineral seepage influences.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.
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8.0 SUBALPINE PARKLAND AND KRUMMNOLZ ECOSYSTEMS

BK Subalpine Fir - Scrub Birch Krummholz

General Description

Typically a northern, high elevation, stunted tree, open habitat, characterized by islands of subalpine fir intermixed with a dense shrub cover of willows and scrub birch.

Distribution

This unit is found at elevations above the upper limit of the SWB zone, approximately 1500m and below the AT zone. It occurs throughout the subalpine areas of the Northern Boreal Mountains; small patches are also present in the Northern Omineca and Central Canadian Rocky Mountains, as well as on the Muskwa Plateau.

Biogeoclimatic Units

SWBdk SWBmk SWBun

Climax Vegetation

Krummholz communities are usually found in a mosaic of subalpine meadows and heath. Typically these communities are dominated by islands of stunted subalpine fir intermixed with minor amounts of Engelmann spruce, whitebark pine and alpine larch. The understory is characteristically shrub dominated including black blueberry, black huckleberry, bog birch and willow species. A variety of dwarf shrubs are found throughout the herb layer. Pink mountain-heather, white mountain-heather and crowberry often dominate this community; grouseberry, five-leaved bramble, dwarf blueberry, lingonberry and partridgefoot are sometimes also abundant. Altai fescue, alpine pussytoes, small-awned sedge, mountain sagewort, thread-leaved sandwort, arctic lupine and alpine bluegrass are commonly found in the moderate to sparse, yet very diverse herb layer. The moss and lichen layer is dominated by lichens including crustose lichens, Cladonia, Peltigera and Cetraria lichens; awned-haircap moss and step moss are also common. Mountain leafy liverwort and common leafy liverwort are also often abundant.

Successional Vegetation

Early successional communities are dominated by similar shrub thickets including willows, black huckleberry, black blueberry and mountain-heather.

Physical Environment

Sites are typically situated on submesic to mesic, gently to moderately sloping ridges or cirque basins, where there is abundant snow accumulation. Characteristically, the soils are shallow, well to rapidly drained, colluvial and morainal blankets over bedrock.

Atypical Sites

In the spruce willow birch zone, communities are dominated by stunted islands of subalpine fir intermixed with shrub thickets consisting of scrub birch, willows, shrubby cinquefoil and soopolallie. The understory is typically composed of similar vegetation.

FP Engelmann Spruce - Subalpine Fir Parkland

General Description

Typically a high elevation mosaic of stunted-tree clumps and herb or dwarf shrub dominated openings, occurring above closed forest ecosystems and below the alpine communities.

Distribution

In the southern and central interior of the province, this unit represents the transition between the ESSF and AT zones. It occurs throughout the Coast Mountains and eastward into the Rocky Mountains, usually present above the ESSF zone; approximate elevation, 2050m. Note, there is considerable range in the upper and lower elevational limits, due to climatic variability and differing topography.

Biogeoclimatic Units

ESSFdc	ESSFmc	ESSFmv1	ESSFwc1	ESSFvc	ESSFwm
ESSFdk	ESSFmm1	ESSFmv2	ESSFwc2	ESSFwk1	ESSFxc
ESSFdv	ESSFmm2	ESSFmv3	ESSFwc3	ESSFwk2	ESSFxc

Climax Vegetation

Typically, these units are open parkland forests consisting of clumps of forested areas intermixed with moist meadow openings. The canopy of the forested areas are composed mainly of subalpine fir with minor amounts of Engelmann spruce present. Black huckleberry is commonly present in the shrub layer, along with a variety of dwarf shrub species including pink and white mountain-heather, crowberry, partridgefoot, five-leaved bramble, dwarf blueberry and grouseberry. A lush herb layer is typically composed of Sitka valerian, western pasqueflower, arrow-leaved groundsel, Indian hellebore, mountain arnica and subalpine daisy. Associated herbaceous species include arctic lupine, mountain sagewort, small-flowered woodrush and yellow glacier lily. Ragged moss and broom moss are commonly found in the moss and lichen layer, along with crustose lichens and Cladonia lichens.

Physical Environment

Soils are typically moist to wet, medium-textured, colluvial or morainal veneers and blankets. Sites are typically found on gentle to moderate, occasionally steep slopes; in areas where there is long snow duration.

Atypical Sites

On xeric to subxeric sites, subalpine fir and Engelmann spruce are found in parkland type communities dominated by crowberry. Some lodgepole pine and common juniper may be present. Mountain-heathers, dwarf blueberry, kinnikinnick and mountain sagewort are commonly associated with these drier parkland communities. Coral lichen, crustose lichens, Cladina and Cladonia lichens dominate the moss and lichen layer.

HP Mountain Hemlock Parkland

General Description

Typically a high elevation, sparse to open mosaic of stunted tree clumps and herbaceous or mountain-heather dominated openings, that proceeds after disturbance directly to a climax species mix, dominated by mountain hemlock.

Distribution

Found at high elevations along the coast, this unit represents the transition between the MH and AT zones. When present, it occurs above the MH zone on the eastern and western slopes of the Vancouver Island Ranges, Queen Charlotte Mountains and Coast Mountains, as well as the western slopes of the Hazelton Mountains; elevation approximately 1600m. Note, there is considerable range in the upper and lower elevational limits, due to climatic variability and differing topography.

Biogeoclimatic Units

MHmm1 MHmm2 MHwh

Climax Vegetation

These communities are typically dominated by open forested islands that are separated by sedge/heather meadows.

The open forested islands are typically composed mainly mountain hemlock, with minor amounts of amabilis fir, subalpine fir and yellow-cedar also present. Black huckleberry and oval-leaved blueberry are most commonly found in the shrub layer. The herb layer is characterized by pink mountain-heather, white mountain-heather, partridgefoot, sedges, arctic lupine and Sitka valerian. Cladina, Cladonia and crustose lichens are commonly found in the moss and lichen layer, as well as red-stemmed feathermoss.

The meadows usually include white mountain-heathers, pink mountain-heathers, Indian hellebore, Sitka valerian, partridgefoot and sedges.

Physical Environment

Sites are typically situated on submesic to mesic, gently sloping colluvial or morainal veneers and blankets. Soils are generally coarse textured, ranging from shallow to deep, often with rocky hummocks present.

WB Whitebark Pine Subalpine

General Description

Typically a subalpine habitat of open, whitebark pine forests, intermixed with lush bunchgrasses, other perennial grasses and forbs, on droughty sites.

Distribution

Limited to south facing slopes above the ESSF zone and below the AT zone, east of the leeward Coastal Mountains into the Rocky Mountains. Occurs between 1650m and 2100m elevation in more southerly areas and between 1000m and 1800m in more northerly locations. Note, there is considerable range in the upper and lower elevational limits, due to climatic variability and differing topography.

Biogeoclimatic Units

ESSFdk ESSFdv ESSFmk ESSFxv

Climax Vegetation

Stunted whitebark pine dominates a very open, sparse canopy; with minor amounts of lodgepole pine, subalpine fir, Engelmann spruce and alpine larch often present. Typically there is a lush understory/meadow composed of a mixture of grasses and herbs. Common species include rough fescue, spike trisetum, alpine fescue, alpine bluegrass, sedges, thread-leaved sandwort, paintbrush, arctic lupine, heart-leaved arnica, northern goldenrod, pussytoes, mountain sagewort, showy fleabane, Sitka valerian and wild strawberry. Dwarf shrubs are also common and often quite abundant, in particular grouseberry, dwarf blueberry, mountain-heather and kinnikinnick. Taller shrub species are very sparse, minor amounts of common juniper, saskatoon, soopolallie and black huckleberry may be present. A moderate moss and lichen layer typically includes *Dicranum* spp., *Brachythecium* spp., *Cladonia* spp., *Cladina* spp. and *Peltigera* spp.

Successional Vegetation

Early successional stages are dominated by fireweed, dandelion, heart-leaved arnica, rough fescue, spike trisetum and alpine bluegrass. Shrubby whitebark pine may dominate later stages with subalpine fir and Engelmann spruce as associate species.

Physical Environment

Generally found on dry to submesic, shallow to deep colluvial and morainal surficial materials, in an upper to crest slope position. A moderate to steep south facing slope is most common. These sites experience high winds and intense sunlight which reduces the snow cover and exposes vegetation to the harsh winter conditions.

Atypical Sites

Sites located in very exposed upper parkland elevations may appear as a whitebark pine krummholz. The vegetation composition of the understory is identical when compared to the typical sites.

References

Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

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WP Subalpine fir - Mountain Hemlock Wet Parkland

General Description

Typically a high elevation mosaic of tree clumps and subalpine meadows or tundra, occurring above the closed forest and below the alpine.

Distribution

This unit occurs above the ESSF zone in the eastern Kitimat ranges, south/central Hazelton Mountains, southeast Boundary ranges and northwest Skeena Mountains; elevation approximately 1800m. There is also a limited amount of this unit found on the leeward side of the Pacific ranges, as well as in the western Monashee Mountains, at approximately 1675m. Note, there is considerable range in the upper and lower elevational limits, due to climatic variability and differing topography.

Biogeoclimatic Units

ESSFmk ESSFmw ESSFvc ESSFwv

Climax Vegetation

Scattered subalpine fir and mountain hemlock form a very open canopy; often in clumps of forested areas separated by meadows. The forested areas usually have shrub understories which include oval-leaved blueberry, white-flowered rhododendron, false azalea and black huckleberry. Sitka valerian is the predominant understory species. Associated herbaceous species include mountain arnica, mountain-heather, partridgefoot, Indian hellebore, arrow-leaved groundsel and crowberry. The meadow communities are usually composed of similar herbaceous species. Very often additional herbs are present, including paintbrush, western meadowrue, arctic lupine, subalpine daisy and sedges. A few scattered moss species may be present, including *Dicranum* spp. and *Brachythecium* spp., as well as *Cladina*, *Cladonia* and *Peltigera* lichens.

Physical Environment

Usually found at the upper elevations of the parkland zones, on dry to mesic slopes. Typically sites are situated on shallow morainal or colluvial materials.

Atypical Sites

Wetter sites will often have abundant sedges and bluegrasses present.

9.0 SHRUB AND HERB DOMINATED ECOSYSTEMS

AB Antelope-brush Shrub/Grassland

General Description

Typically an open to dense, dry shrubland, generally lacking trees, that is dominated by drought tolerant shrubs, most prominently antelope-brush and perennial grasses.

Distribution

Found at lower elevations, between 250m and 700m; limited to the southern portion of the Okanagan valley, mainly south of Penticton, extending to the U.S. border.

Biogeoclimatic Units

BGxh1 PPxh1 PPdh2

Climax Vegetation

Antelope-brush provides the dominant vegetation cover; secondary species include big sagebrush and rabbit-brush. Common herbaceous species include, needle-and-thread grass, bluebunch wheatgrass and brittle prickly-pear cactus. A variety of lichen species dominate the moss and lichen layer.

Successional Vegetation

Early successional stages often dominated antelope-brush, big sagebrush, rabbit-brush, cheatgrass and prickly-pear cactus.

Physical Environment

Typically situated in a middle to lower mesoslope position, on dry, coarse-textured, glaciofluvial deposits; sometimes with a light capping of aeolian materials.

Atypical Sites

Much of this area has been replaced by agricultural fields and urban development.

References

Braumandl, T. and M.P. Curran, 1992. A Field Guide for Site Identification and Interpretation for the Nelson Forest Region. Land Manage. Handb. No. 20., B.C. Min. For., Victoria, B.C.

AD Sitka Alder - Devil's Club Shrub

General Description

Typically a Sitka alder shrub community, with a lush fern understory, that occurs on steep slopes within the northern portion of the Interior Cedar Hemlock zone.

Distribution

Typically found at lower elevations, between 150m and 1000m, on the leeward side of the Coastal mountains, in river valleys

Biogeoclimatic Units

ESSFwk1 ICHmc1 ICHvc ICHwc

Climax Vegetation

Sitka alder dominates the well developed shrub layer along with abundant amounts of devil's club and salmonberry. Minor amounts of red elderberry, thimbleberry and western hemlock regeneration are also scattered throughout this dense shrub layer. A lush herb layer is dominated by ferns including spiny wood fern, lady fern and oakfern. Clasping twistedstalk and rosy twistedstalk are also common. Ragged mosses and leafy mosses are commonly found in a sparse to moderate moss and lichen layer.

Atypical Sites

Moister sites may have scattered amounts of common horsetail in the herb layer.

Physical Environment

Sites typically occur on steep, moist middle to upper slopes. Nutrient-rich morainal or colluvial soils which are well to imperfectly drained are most common. Very often these soils have thick, turfy humus layers.

These areas are typically created by recurring disturbances such as blowdowns and fires. This prevents the establishment of a mature forest canopy.

References

Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge. 1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

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Meidinger, D. 1995. A field guide for site identification and interpretation for the southeast portion of the Prince George forest region (Draft). B.C. Min. For., Victoria, B.C.

AV Avalanche Track

General Description

Typically a dense shrub or herb dominated ecosystem where periodic snow and rock slides have prevented coniferous forest establishment and abundant moisture is available for much of the growing season.

Distribution

Avalanche tracks characteristically begin in the alpine or subalpine zones where there is abundant snow accumulation and steeply sloping valley walls. There are no definite elevational limits, upper or lower, slope breaks and snow accumulation determine the downslope extent of each avalanche track.

Biogeoclimatic Units

Coastal sites

AT	CWHmm2	CWHvm1	CWHvm2	CWHws2	MHmm1
CWHds1	CWHms2	CWHvh2	CWHwm	CWHxm	MHmm2
CWHds2					

Interior sites

BWBSdk	ESSFmk	ESSFwm	ICHmw	MHmm1	SBSdh
BWBSmw	ESSFmm	ESSFwv	ICHvc	MHmm2	SBSmc
BWBSvk	ESSFmv	ESSFxc	ICHvk1	MHwh	SBSmk
BWBSwk	ESSFmw	ESSF xv	ICHwc	MSdk	SBSvk
ESSFdc	ESSFvc	ICHmc	ICHwk	MS xv	SBSwk
ESSFdk	ESSFwc	ICHmk	IDFww	SBPSmc	SWBdk
ESSFmc	ESSFwk	ICHmm			SWBmk

Climax Vegetation

Coastal sites, gentle lower slopes

A forest canopy is completely absent as a result of periodic or annual snowslides.

The sparse to moderately well-developed, shrub layer typically includes salmonberry, red elderberry, Douglas maple, devil's club and thimbleberry. Lady fern dominates a lush herbaceous community; bracken fern, spiny wood fern, violets, Indian hellebore, bluejoint, cowparsnip, rosy twistedstalk, stinging nettle, Hooker's fairy bells, sedges and foamflowers are also commonly present. The moss and lichen layer is quite sparse but a variety of *Mnium* moss spp. are often scattered about the surface.

Coastal sites, steep middle to upper slopes

A forest canopy is completely absent as a result of periodic or annual snowslides.

The moderate to very well developed, diverse shrub layer typically includes Sitka mountain alder, Sitka willow, salmonberry, red elderberry, thimbleberry, devil's club, red-osier dogwood, Douglas maple and highbush cranberry. Lady fern dominates a moderately well developed herbaceous community; bracken fern, spiny wood fern, Indian hellebore, bluejoint, cowparsnip, rosy twistedstalk, hooker's fairy bells and violets are also commonly present. The moss and lichen layer is quite sparse but a variety of *Mnium* moss spp. are often scattered about the surface.

Interior sites, gentle lower slopes

A forest canopy is completely absent as a result of periodic or annual snowslides.

The moderate shrub layer is typically composed of thimbleberry, raspberry and willows. Western meadowrue, cowparsnip, blue wildrye, geranium, fireweed, bluejoint and sedges are characteristically abundant in these lush herbaceous meadows. Sitka valerian, stinging nettle, Indian hellebore and bluegrasses are also commonly present. The moss and lichen layer is quite sparse but a variety of mosses, including *Mnium* spp., *Brachythecium* spp. and *Plagiomnium* spp. are often scattered about the forest floor.

Interior sites, middle to upper slopes

A forest canopy is completely absent as a result of periodic or annual snowslides.

A well developed shrub layer is typically dominated Sitka alder, willows and thimbleberry; red raspberry and shrubby subalpine fir are also common. Western meadowrue, Indian hellebore, geranium, blue wildrye, cowparsnip and false Solomon seal are commonly present in the moderate herb layer. The moss and lichen layer is quite sparse but a variety of mosses, including *Mnium* spp., *Brachythecium* spp. and *Plagiomnium* spp. are often scattered about the forest floor.

Successional Vegetation

Interior sites, middle to upper slopes

The type of vegetation that is found is dependent on how active the avalanching is within any chute. Typically early successional stages are dominated by herbaceous communities followed by the shrub dominated communities. This successional trend is dependent on the frequency and intensity of slides in the area. Less active chutes tend to have much taller shrubs with some conifer regeneration present, whereas highly active slide areas can be quite sparsely vegetated.

Physical Environment

Interior sites, middle to upper slopes

Typically occurs on moist to very moist steep slopes, with the exception of the meadows that are found on gentle lower slopes; seepage is common. Abundant deciduous litterfall and extensive colluvial mixing create very rich soils.

Most often soils are composed of very rubbly, coarse-textured materials, with bedrock sometimes exposed.

Atypical Sites

Coastal sites

Slightly wetter, richer sites may have minor amounts of devil's club present in the shrub layer, as well as some skunk cabbage and horsetail in the herb layer.

Choke cherry, saskatoon, black huckleberry, grouseberry and wild strawberry are common on drier avalanche tracks.

Some sites are very sparsely vegetated, usually scattered shrub species on very rubbly colluvial material.

Less active slide areas are often dominated by low trees, particularly Douglas maple.

Interior sites

Slightly wetter, richer sites may have minor amounts of devil's club present in the shrub layer, as well as some skunk cabbage and horsetail in the herb layer.

Less active avalanche chutes may have tall shrub/herb complexes intermixed with regenerating subalpine fir, Engelmann spruce and lodgepole pine.

Common juniper, trembling aspen, saskatoon, grouseberry and willows are often found on sparse, dry, shallow avalanche tracks. The herb layer is quite sparse and often includes wild strawberry, kinnikinnick, Northern bedstraw, timber oatgrass, showy aster and bluegrasses.

Some avalanche chutes are sparsely vegetated; the steep, upper slopes are limited to Sitka alder and willows while the lower slopes usually have a sparse cover of low subalpine fir. These sparsely vegetated sites are associated with very rubbly colluvial material.

References

- Banner, A., W. MacKenzie, S. Haeussler, S. Thomson, J. Pojar and R. Trowbridge.
1993. A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region. Land Manage. Handb. No. 26., B.C. Min. For., Victoria, B.C.

BS Bunchgrass Grassland

General Description

Typically a dense herbaceous habitat dominated by perennial grasses and forbs and generally lacking shrubs or trees.

Distribution

Found at elevations ranging from 300m to 1650 m depending on the amount of moisture present. This unit occurs extensively throughout the lower to middle elevations of the Southern Interior and southern portion of the Fraser Plateau; including the Fraser River, Thompson and Okanagan Basins, as well as the valleys around the Fraser River in the Pavillion Ranges, the Nicola River and the Similkameen River. More isolated ecosystems are also found in the Granby and Kettle River valleys of the Southern Okanagan Highlands and in portions of the East Kootenay Trench.

Biogeoclimatic Units

BGxh1	BGxw1	IDFdk1	IDFxh1	PPdh1	SBPSdc
BGxh2	BGxw2	IDFdk3	IDFxh2	PPdh2	SBPSmk
BGxh3	ESSFxc	IDFdk4	IDFxm	PPxh1	SBPSxc
		IDFdm1	MSxk	PPxh2	SBSdk

Climax Vegetation

Bluebunch Wheatgrass sites

Bluebunch wheatgrass dominates the vegetation cover. Other herbaceous species which are commonly present include compact selaginella, Kentucky bluegrass, junegrass, yarrow, needle-and-thread grass, salsify, pasture sage, pussytoes and brittle prickly-pear cactus. A few shrub species may be scattered across the grassland, including antelope brush, rabbit brush, big sagebrush, saskatoon and Rocky Mountain juniper. A crust of lichen covers almost all open soil between clumps of grasses. Cladonia and Peltigera lichens are the most common; the occasional moss species may be present.

Spreading Needlegrass sites

The vegetation is dominated by a continuous layer of spreading needlegrass with a variety of other herbs mixed in, including short-awned porcupine grass, small flowered penstemon, cutleaved anemone, timber milk-vetch, northern bedstraw and pasture sedge. Shrubs, including snowberry, saskatoon and prairie rose, may be present, along with a few Douglas-fir trees. The moss and lichen layer is dominated by Cladonia lichens, with some Peltigera lichens and few mosses present.

Needle-and-thread grass sites

Sites are typically dominated by a continuous cover of needle-and-thread grass and also include scattered brittle prickly pear cactus, Indian ricegrass, sand dropseed and bluebunch wheatgrass. Occasional big sagebrush shrubs may also be found in this unit.

The moss community is moderately developed and dominated by cladonia lichens and Tortula moss. Unvegetated mineral soil is commonly found between clumps of grass and the lichen cover.

Successional Vegetation

Bluebunch Wheatgrass sites

The species composition often changes with intensive disturbance such as cattle grazing, to include pasture sage, arrow-leaved balsamroot, cheatgrass and knapweed.

Cattle grazing has also lead to the introduction and dominance of Kentucky bluegrass on some sites. In such areas, few other herb species will be present, but northern bedstraw and stiff needlegrass may persist. A poorly developed layer of cladonia lichens and moss will be present.

Spreading Needlegrass sites

The species composition often changes with intensive disturbance such as cattle grazing, to include pasture sage, arrow-leaved balsamroot, cheatgrass and knapweed.

Cattle grazing has also lead to the introduction dominance of Kentucky bluegrass on some sites. In such areas, few other herb species will be present, but northern bedstraw and stiff needlegrass may persist. A poorly developed layer of Cladonia lichens and moss will be present.

Physical Environment

Bluebunch Wheatgrass sites

Occurs on all aspects of level to moderate slopes and on E and NW aspects of steep slopes. The wetter sites are located in gentle to level areas, usually in lower or toe positions.

Spreading Needlegrass sites

Typically occurs at higher elevations, in level or depressional areas near the forest edge or on moderate to steep northfacing slopes, where snow accumulation and duration is greater than on the drier sites. They are also found in lower and/or toe slope positions adjacent to wet meadows. The soils in these areas have a higher moisture content than the drier bluebunch wheatgrass sites.

Needle-and-thread grass sites

Typically occurs on gentle to moderate S, SW and W aspects; fine-textured materials are most common. These sites are usually small in size and uncommon but locally distributed throughout the BGxh3.

Atypical Sites

Bluebunch Wheatgrass sites

A continuous layer of short-awned porcupine grass dominates vegetation cover of shallow depressions on gentle to steep slopes, where runoff accumulates. It is also found on those slopes which occupy more northerly aspects. These sites tend to be areas where snow accumulates and lasts a much longer than on drier sites. Bluebunch wheatgrass, junegrass, salsify, yarrow and pussytoes are commonly intermixed with the dominant cover. Many *Cladonia* and *Peltigera* lichens, along with numerous moss species form a diverse moss and lichen community.

On more moist sites the herb layer is usually codominated by bluebunch wheatgrass and rough fescue or Kentucky bluegrass and rough fescue. Even wetter sites may have some species of rushes present along with giant wildrye.

On warm aspects at higher elevations, numerous additional herbaceous species, including western pasqueflower, nodding onion, spike-like goldenrod, round leaved alumroot and trailing fleabane, may be intermixed with those more common species.

Spreading Needlegrass sites

More southerly locations may have green needlegrass as the most prominent vegetation cover.

A combination of Kentucky bluegrass, baltic rush, and spreading needlegrass is common on wetter sites. Moisture indicating species such as small-flowered penstemon and graceful cinquefoil are also common.

Needle-and-thread grass sites

A thick, continuous cover of grass, dominated by needle-and-thread grass with some short-awned porcupinegrass, Kentucky bluegrass and bluebunch wheatgrass, occurs in shallow, moist depressions. Minor amounts of small-flowered penstemon, salsify, death camas, wild blue flax, yarrow and prairie cinquefoil are often intermixed with these grasses. These sites are quite small and relatively uncommon in the grasslands. *Cladonia* and *Peltigera* lichens dominate a well developed moss and lichen layer.

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MS Montane Shrub/Grassland

General Description

Typically a varied mixture of shrubs, thickets and herbaceous openings found in steep breaks along lower river valleys.

Distribution

This type of habitat occurs in a very limited extent, usually in small patches throughout many of the river valleys found in the province. It typically ranges in elevation between 350m and 1200m.

Biogeoclimatic Units

BGxh3	BWBSdk1	IDFxh1	SBPSdc	SBSdk	SBSmc2
BWBSmw1	BWBSdk2	MSxv	SBPSmc	SBSdw2	SBSmc3

Climax Vegetation

Dry Subdivision sites

Sparse, stunted lodgepole pine and trembling aspen form the limited canopy. Shrub species such as saskatoon, common snowberry, prickly rose, Rocky Mountain juniper and common juniper are characteristic. The herb layer is dominated by grasses, including slender wheatgrass, spreading needlegrass, junegrass and a variety of bluegrasses. Purple peavine, showy aster, pasture sage and kinnikinnick are also commonly found in the understory. The moss and lichen layer is limited to a sparse cover of lichens.

Riparian Subdivision sites

Typically a moderate shrub dominated plant community, including silverberry, water birch, wood rose and various species of willow. The herb layer is characteristically quite sparse and can include poison ivy, giant wildrye and star-flowered false Solomon's seal. Active erosion or surface soils prevents the development of any lichen or moss species.

Physical Environment

Dry Subdivision sites

Generally restricted to very dry, steep, coarse-textured upper/middle slopes or gullies, with brief intermittent water flow. Typically sites are situated on south to southwest aspects. Sites are maintained by a combination of dry nutrient rich conditions and frequent fires.

Riparian Subdivision sites

Occurs along seepage sites on steep eroded banks of river valleys. Often a calcium carbonate crust on soil left behind following evaporation of seepage water.

Atypical Sites

Dry Subdivision sites

Gentle lower to toe slopes or level areas tend to differ in vegetation composition. Prairie rose and common snowberry are characteristic of these sites. The herb layer commonly includes Idaho fescue, Kentucky bluegrass, bluebunch wheatgrass and stiff needlegrass. Cladonia lichens provide a sparsely populated moss and lichen layer.

Riparian Subdivision sites

A community of similar plant composition occurs in moisture receiving, broad, shallow basins. Essentially the shrub layer contains the same species but forms more of a continuous layer, while the herb layer remains sparse. Similarly, there is virtually no moss and lichen layer present, but it is the build up litter that prevents its development.

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SS Big Sagebrush Shrub/Grassland

General Description

Typically an open to dense, dry shrubland, dominated by drought tolerant shrubs and perennial grasses and generally lacking trees.

Distribution

This unit occurs extensively throughout the lower to middle elevations of the Southern Interior and southern portion of the Fraser Plateau; including the Fraser River, Thompson and Okanagan Basins, as well as the valleys around the Fraser River in the Pavillion Ranges, the Nicola River and the Similkameen River. More isolated ecosystems are also found in the Granby and Kettle River valleys of the Southern Okanagan Highlands. Elevation ranges from 250-1300m with a sagebrush variety change in the higher elevation subzone (MSxk: 1450-1650m).

Biogeoclimatic Units

BGxh1	BGxw1	MSxk	IDFdk1	IDFxh1	PPxh1
BGxh2	BGxw2		IDFdm1	IDFxh2	PPxh2
BGxh3	ESSFxc				

Climax Vegetation

Low elevation sites

Tree cover is absent or insignificant. The presence of big sagebrush and bluebunch wheatgrass characterizes climax sites; needle-and -thread grass, pasture sage, yarrow, Sandberg's bluegrass, sand dropseed and prickly-pear cactus are also common. The moss and lichen layer is highly developed in climax stages and usually includes *Xanthoparmelia* spp., *Xanthoria elegans*, *Tortula* spp. and *Cladonia* spp.

High elevation sites

Vasey's big sagebrush characterizes higher elevation sites. Fescues, pinegrass, western meadowrue and wild strawberries are common herb species.

Successional Vegetation

Low elevation sites

Grazing by domestic livestock has altered the climax vegetation. Heavily grazed areas may(Clawed-leaved feathermoss) have more cheatgrass, woolly plantain and low pussytoes, as well as other weedy species such as diffuse knapweed. These sites have the potential, in moderately grazed areas, for needle-and-thread grass, Sanberg's

bluegrass and sand dropseed. Big sagebrush and pasture sage may also increase in abundance following grazing.

Typically the lichen cover is limited to early seral stages of heavily eroded sites.

High elevation sites

After grazing Kentucky bluegrass may dominate and the sagebrush often increases in both density and abundance.

Physical Environment

Low elevation sites

Sites are typically exposed to hot dry summers and cool winters and are commonly of all aspects with a gentle slope at low elevations. Soils are typically well-drained, often with fine-textured tops over bedrock. Very often there are considerable amounts of exposed bedrock present. Surface horizons are often enriched with organic material. Units typically cover valley bottoms with gentle to steep slopes.

Atypical Sites

Low elevation sites

Scattered Douglas-fir trees may be present on sites with shallow soils over fractured bedrock.

Continually eroding, steep, gravelly, S and SW facing slopes tend to be dominated by exposed mineral soil. Scattered big sagebrush and rabbitbrush can occur along with a number of sparse herbs including, sand dropseed, bluebunch wheatgrass, pasture sage and needle-and-thread grass.

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10.0 NON-FORESTED AQUATIC AND WETLAND ECOSYSTEMS

BG Sphagnum Bog

General Description

A bog wetland class that typically is an unforested wetland, dominated by sphagnum mosses and herbaceous plants, found on poorly drained organic sites.

Distribution

Found throughout the province in poorly drained, wet sites; typically areas that are level or depressional. This is a very localized habitat found at elevations ranging from sea level on the north coast to higher elevations (< 1800m) in the northern interior. It is found at much higher elevations in the southern interior, usually above 1200m.

Climax Vegetation

Coastal areas

Open bog wetland with a sparse covering of stunted conifers. Coastal areas feature shore pine, western hemlock and western redcedar. The shrub layer is often found on slightly drier hummocks and is dominated by Labrador tea and bog cranberry; some conifer regeneration may also be present. Herbs species commonly found include sedges, tufted clubrush, crowberry, bog-laurel, deer-cabbage, great burnet and narrow-leaved cottongrass. Sphagnum mosses typically dominate the moss and lichen layer; red-stemmed feathermoss is also common.

Coastal/high elevation areas

At higher coastal elevations, the sparse canopy is typically composed of stunted conifers; most often mountain hemlock and yellow cedar. The moderated shrub layer is composed of Alaskan blueberry, willows, Sitka alder, copperbush and oval-leaved blueberry. Sedges characteristically dominate the herb layer. Secondary species include deer cabbage, bog laurel, clubrush, whitemarsh marigold and mountain heather. Ground cover is mainly comprised of sphagnum mosses, but lanky moss, glow moss, red-stemmed feathermoss and heron's-bill moss may also be present.

Interior areas

Open bog wetland with a sparse covering of stunted conifers including black spruce and hybrid white spruce. Characteristic shrub species include Labrador tea, scrub birch, willows and some conifer regeneration. Common herbs found include sedges, crowberry, cloudberry, bog cranberry, bog laurel, white bogorchid, lingonberry and horsetails. Glow moss, step moss and red-stemmed feathermoss are common, but the majority of the surface is covered by sphagnum mosses.

Physical Environment

Coastal areas

These wetlands are comprised of deep accumulations of poorly to moderately decomposed sphagnum-derived peat. The bog surfaces are typically slightly elevated above the water table due to the upward growth of the sphagnum mosses. The primary source of water is precipitation, which results in low mineral content and high acidity.

Coastal/high elevation areas

These wetlands are comprised of deep accumulations of poorly to moderately decomposed sphagnum-derived peat. The bog surfaces are typically slightly elevated above the water table due to the upward growth of the sphagnum mosses. A bogs primary source of water is precipitation, which results in low mineral content and high acidity.

Interior areas

These wetlands are comprised of deep accumulations of poorly to moderately decomposed sphagnum-derived peat. The bog surfaces are typically slightly elevated above the water table due to the upward growth of the sphagnum mosses. A bogs primary source of water is precipitation, which results in low mineral content and high acidity.

Atypical Sites

Coastal/high elevation areas

At higher elevations, in the ESSF, a stunted mixed canopy composed of Engelmann spruce, subalpine fir, black spruce and lodgepole pine is characteristic. The shrub layer is sparse to moderate and usually contains willows, scrub birch, mountain alder, Labrador tea and some mountain hemlock and subalpine fir regeneration. Additional herb species include horsetails, crowberry, dwarf blueberry and Sitka valerian.

Interior areas

Cladonia and Cladina lichens may be present on the crest of hummocks.

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ES Estuary

General Description

Typically an unforested tidal wetland dominated by persistent emergent herbaceous species, with open or sporadic access to ocean areas and where the seawater is periodically diluted with fresh water derived from land drainage.

Distribution

Estuaries occur along coastal British Columbia where perennial rivers flow into the ocean.

Biogeoclimatic Units

CDFmm	CWHmm1	CWHvh1	CWHvm1	CWHwm	CWHxm1
CWHdm	CWHms2	CWHvh2	CWHwh1	CWHws1	CWHxm2

Climax Vegetation

The vegetation communities are usually found in quite definite zones. Each zone is defined by the length of time and frequency of saltwater inundation.

Typically there are expansive intertidal communities found in association with estuaries, including mud flats and beaches. Most of these types of communities are described in the intertidal ecosystem unit. Estuarine mud flats are only exposed at low tides and characteristically consist of very sparse cover of algae.

Marsh type vegetation usually borders the intertidal flats and tidal channels. The vegetation commonly found in these communities is dominated by persistent herbaceous plants such as Lyngbye's sedge, tufted hairgrass, eelgrass, seaside arrow-grass, Arctic rush, saltwort, saltgrass and Pacific silverweed.

Characteristically, the marsh community is traversed by an extensive array of interconnected deep, tidal channels. Beyond these marsh wetland communities, shrubcarrs, bogs and wet forests commonly occur. Further upstream of the tidal channels, saltwater inundation occurs less frequently and the channels resemble freshwater riverine ecosystems. Gravel bars and other forested riparian habitats commonly occur adjacent to these areas.

Physical Environment:

Estuaries occur on periodically and permanently flooded substrates and open water portions of semienclosed coastal waters where tidal seawater is diluted by flowing fresh water (Deukmejian et al. 1988). The waters found in estuaries have variable salinities. Brackish water is most common, with salt concentrations ranging between 0.5 ppt and 18 ppt. Salt water in excess of 18 ppt is most common in the intertidal portion of the estuaries. This is due to seasonal changes in the volume of freshwater that flows into the ocean, as well as the daily tidal fluctuations.

Typically, as freshwater flows into the ocean it increases in salinity, absorbing salt from the ocean. Therefore the ocean nearest to the estuary is being actively diluted as the lighter freshwater flows over the much denser seawater. To compensate for this dilution of saltwater at the surface, there is an influx of saltwater in the deeper waters. This creates a two-way circulation pattern that is typical of estuaries, the freshwater flows outward on the surface and in the deeper waters, the saltwater flows slowly towards the mouth of the river.

Typically, estuarine soils have very high salinity, with a turfy organic layer occurring over the fluvial and marinal materials. This becomes more apparent as the estuary stabilizes and is inundated less in the daily cycle.

FE Sedge Fen

General Description

A fen wetland class is typically an unforested wetland, dominated by sedges, found on poorly drained organic sites.

Distribution

This is a very localized ecosystem unit which generally occurs in small patches throughout all forested zones within province. It is most commonly found on the interior plateaus and does not occur in the AT zone.

Climax Vegetation

Subhydryc to hydric subdivision sites

Sites are typically dominated by sedges, particularly beaked sedge and water sedge with minor amounts of slender sedge and awned sedge often present. A variety of grasses and aquatic plants are often associated with these communities, including mannagrass, slimstem reedgrass, small yellow-water buttercup, water smartweed, bladderwort, duckweed and water milfoil. A moderate to dense moss and lichen layer typically includes *Drepanocladus* spp. A forest canopy is not present and usually only a few scattered shrub species are represented. Minor amounts of scrub birch and willow are common along fen edges.

Hydric subdivision sites

Typically, either buckbean, slender sedge, seaside arrowgrass and lesser-panicked sedge dominate these wetland communities. Rich fen indicators such as swamp horsetail, flat-leaved bladderwort and grass-leaved pondweed are frequently present. The moss and lichen layer is well developed and dominated by *Drepanocladus* spp.

Physical Environment

Subhydryc to hydric subdivision sites

Typically occurs on level or depressional sites where there are very poorly drained deep organic blankets or veneers. Water is primarily received as groundwater seepage and runoff from adjacent mineral uplands, creating sites which are generally less acidic and more mineral-rich than bogs. The water table is always less than 30 cm from the surface, but it is usually at or above the surface for part of the year.

Hydric subdivision sites

Typically occurs on level or depressional sites where there are very poorly drained deep organic blankets or veneers. Water is primarily received as groundwater seepage and runoff from adjacent mineral uplands, creating sites which are generally less acidic and more mineral-rich than bogs. Sites are usually inundated with 10cm and 60cm of standing water throughout the year, occasionally disappearing during exceptionally dry years.

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FS Fast Perennial Stream

General Description

Typically a freshwater riverine habitat contained within a channel that has continuously moving, fast flowing water, that is bounded by banks or upland habitat and has a high gradient.

Distribution

Distributed throughout the province with a larger proportion of fast flowing streams found at higher altitudes where there is a larger gradient.

Typical Situation

Generally a fast flowing stream which has a constant elevated source of water, such as a lake, pond, spring or reservoir. The rate of flow is relative to the slope or gradient and the volume of surface runoff or discharge.

Faster flowing streams tend to have varying degrees of rapids and waterfalls present throughout their course. These are factors which add to the stream velocity and result in constant swirling and churning of the water. This increases the water contact with the atmosphere and increases the amount of dissolved oxygen present in the stream. Over distance this constant churning of the water also increases the water temperature

slightly. Therefore, these faster flowing streams are often cooler in temperature than the slower streams. The temperature is also affected by the amount of insolation, depth of the water and seasonal changes in air temperatures.

Typically faster flowing streams are actively eroding their channels. The capacity of a stream to erode its course depends on factors including velocity, volume and substrate. High velocity streams actively carry abrasive materials which enhance the erosion process. Typically fast streams have rocky bottoms and lack alot of aquatic vegetation along the shore.

Atypical Situation

Streams which flow from inland bodies of saltwater or hot springs. These will vary in temperature, salinity and complex of vegetation.

IM Intertidal Marine

General Description

Typically a habitat that consists of ocean overlying the continental shelf and its associated high energy shoreline, with salinities in excess of 18ppt and a substrate that is exposed and flooded by tides (includes associated splash zone).

Distribution

This unit occurs along the shores of all coastal islands and the mainland, including major inlets, fjords, bays and the open ocean.

Biogeoclimatic Units

CDFmm	CWHmm1	CWHvh1	CWHvm1	CWHwm	CWHxm1
CWHdm	CWHms2	CWHvh2	CWHwh1	CWHws1	CWHxm2

Climax Vegetation

An intertidal ecosystem can be described as the shoreline community which extends from the lowest tideline to the highest tideline. Characteristically, includes all areas that are exposed and/or covered by seawater at sometime throughout the tidal cycle. Communities are found on a range of coastline substrates, ranging from sandy beaches to rocky shores. Beach faces are characterized by extensive accumulations of log debris, marking the highest of high tide lines. Patches of annular vascular plants are common; most often dominated by rushes, Pacific silverweed, yellow monkey-flower and Sitka willow. Shore buttercup, wooly plantain, spike bentgrass, springbank clover, chaffweed, birds-eye pearlwort and several species of the genus Enteromorpha are also commonly found in association with these sites. Seaweeds are most common on the lower intertidal shores, with the growth of vascular plants limited to thin accumulations of soils, located much closer to the upper tideline.

IN Intermittent Stream

General Description

Typically a freshwater riverine habitat contained within a channel that only periodically has moving water and is bounded by banks or upland habitat.

Distribution

Occurs throughout the province in areas where there is not enough of water supply to support perennial flow.

Typical Situation

Typically fast or slow flowing bodies of water that eventually dry up totally or stop flowing leaving standing pools of water. Generally intermittent streams follow heavy rainfall or only occur in the spring during the annual snowmelt.

Following heavy rains or during the rainy season on the coast, surface water moves downhill, eventually flowing into a perennial stream, lake or the ocean. Snow accumulation during the winter is also another source of intermittent ground run-off. As this runoff increases in volume, gullying and other forms of erosion occur, creating temporary streambeds. Eventually this ground runoff ceases and the streams dry up.

Atypical Situation

Intermittent run-off may also be caused by periodic release of water from a reservoir.

During years of heavy snow accumulation or significantly cooler, there may be enough melt water to sustain stream flow throughout the year.

LL Large Lake

General Description

Typically a fresh deepwater habitat that includes permanently flooded lakes, usually found in a topographical depression, lacking emergent vegetation except along shorelines and usually with a size of greater than 60 hectares.

Distribution

Large lakes are found in large valleys and basins throughout the province.

Climax Vegetation

Large lakes have a predominant part of the area deeper than 2m, generally the maximum depth for nonpersistent emergent vascular plants. This deeper zone is less productive than the shallow zone. Large lakes are nonflowing bodies of water that

usually have high flushing rates, windward beach production, sorted sediments and wave action. They are considered to be less sensitive to shoreline development than small lakes. With an increase in elevation, vegetative diversity usually decreases.

Northern spike water-milfoil has become a major nuisance species in some of the large lakes.

Water control is common on many of these lakes for the purposes of flood control, water supply and fishery purposes.

LS Small Lake

General Description

Typically a fresh deepwater habitat that includes permanently flooded lakes (and sometimes reservoirs), usually 8 to 60 ha in size in a topographic depression, with most of the water less than 7 m in depth.

Distribution

Small lakes occur throughout the province in small valleys and basins.

Climax Vegetation

Includes nonflowing water bodies deeper than 2m and less than 60 ha in area.

Typically small lakes tend to be more eutrophic, have more buildup of bottom sediments, be warmer with more plankton growth, have less wave action, less beach formation, less sediment sorting, less volume and lower flushing rate than large lakes. This gives small lakes a higher ratio of shallow to deep zones. Very often emergent and floating vegetation will occur in shallow zones.

Vegetation diversity and productivity will generally decrease with an increase in elevation; high subalpine and alpine lakes (tarns) may not contain any vascular plants.

Successional Vegetation

Northern-spiked watermilfoil has become a major nuisance species in many lakes.

ME Meadow

General Description

A meadow wetland class that typically is a lower elevation herbaceous community, dominated by moisture-loving species, on imperfectly to poorly drained mineral soil sites.

Distribution

Occurs, to a limited extent, at lower elevations throughout the southern portion of the province, including Vancouver

Island, the Mainland Coast, Okanagan and Kootenay regions. It is most commonly found within the Fraser Plateau area. Meadows do occur in most southern biogeoclimatic zones, with the exception of the AT zone.

Climax Vegetation

Non-Alkaline meadows

Arctic rush and field sedge are characteristically abundant in this wetland community. Slender wheatgrass, tufted white prairie aster, graceful cinquefoil, tufted hairgrass, Alkali bluegrass, mat muhlenbergia, Kentucky bluegrass, silverweed, Nuttall's alkaligrass, timothy, field mint and foxtail barley are also commonly represented in the diverse herb layer. The moss and lichen layer is very poorly developed to nonexistent, covering little of the surface, as is the forest canopy and shrub layer.

Alkaline meadows

These uncommon meadows are commonly dominated by alkali saltgrass. Associate species include Nuttall's alkaligrass, foxtail barley, silverweed, alkali bluegrass, Pursh's seablite, arrow-grass and Nevada bulrush. The moss and lichen layer is very poorly developed to nonexistent, covering little of the surface, as is the forest canopy and shrub layer.

Physical Environment

Non-Alkaline meadows

These herbaceous meadows generally develop in depressional areas, which receive most of the water through seepage and runoff from surrounding areas. The soils are typically saturated for part of the year, with the water table dropping below the rooting zone during the growing season. Imperfect to poorly drained, silty clay loam or silty clay lacustrine and fluvial deposits are most common; often with thin accumulation of Non-Alkaline meadows organic materials on the surface. Soils are often carbonated.

Alkaline meadows

These meadows are situated on alkaline soils or soils with very high salinity. Typically there is a small amount of organic accumulation on the surface, usually over clayey lacustrine or fluvial deposits. The high salinity/alkalinity restricts plant growth, reducing the species diversity and resulting in low total plant cover.

Atypical Sites

Non-Alkaline meadows

Commonly sites are dominated by tufted hairgrass; with secondary species including beaked sedge, arctic rush and Kentucky bluegrass. A poorly developed moss and lichen layer is characteristic.

References

- Cariboo Forest Region. 1989. A Field Guide for the Identification and Interpretation of Ecosystems of the Cariboo Forest Region. B.C. Min. For., Williams Lake, B.C.
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MR Marsh

General Description

A marsh wetland class that typically is permanently or seasonally inundated and that supports an extensive cover of emergent, non-woody vegetation, rooting in mineral-rich substrate.

Distribution

Found in a limited extent throughout lower elevation sites in the province. Marshes generally occur below 800m.

Climax Vegetation

Marshes are permanently or seasonally inundated and support an extensive cover of emergent, non-woody plants, usually in excess of 10% cover. The surface water is generally less than 2m in depth.

Marshes are usually dominated by cattail or great bulrush. Common associated species include marsh horsetail, common spikerush, woolly sedge, silverweed and seaside arrowgrass. Numerous aquatic plants are almost always present, including greater bladderwort, water-milfoil and duckweed.

Marshes are subject to very little wave action and substrate sorting does not occur. Accumulations of muck and decomposing vegetation are common. These habitats are very sensitive because of little or no flushing and their small area.

Physical Environment

Water depth of marshes varies between 2m down to 0m, in which case the ground surface will remain saturated, except during extremely dry years. The marsh substrate is predominantly mineral, typically a silty lacustrine blanket, but may include an organic veneer derived primarily from the marsh vegetation.

References

- Cariboo Forest Region. 1989. A Field Guide for the Identification and Interpretation of Ecosystems of the Cariboo Forest Region. B.C. Min. For., Williams Lake, B.C.
- Roberts, A. 1984. Guide to Wetland Ecosystems of the Sub-boreal Spruce Subzone in the Cariboo Forest Region, British Columbia. B.C. Min. For., Williams Lake, B.C.
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OW Shallow Open Water

General Description

A shallow open water wetland class that typically is comprised of permanent shallow open water and that lacks extensive emergent plant cover; water is usually less than 2 m in depth, with submerged and floating aquatic plants present.

Distribution

Generally found throughout the province at elevations below 1000m.

Climax Vegetation

This wetland ecosystem consists of permanent shallow standing water, with little emergent plant cover. The surface water remains throughout the year regardless of expected yearly moisture fluctuations. Usually found in shallow depressions with a maximum mid-growing season depth of less than 2m. Submerged and floating aquatic plants are common including Northern spiked water-milfoil, common hornwort, yellow waterlily, duckweed, bladderwort, pondweed and water buttercup. Scattered emergent vegetation is common along the perimeter of open water. Emergent species include cattail, great bulrush, swamp horsetail and buckbean. Floating liverwort may be present in the moss and lichen layer.

Physical Environment

Wave action is limited and substrate sorting does not occur. Accumulations of decaying vegetation and muck over lacustrine and fluvial materials are most common. Often these open water units are very small in area and receive little or no flushing, making them very sensitive.

References

Roberts, A. 1984. Guide to Wetland Ecosystems of the Sub-boreal Spruce Subzone in the Cariboo Forest Region, British Columbia. B.C. Min. For., Williams Lake, B.C.

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RE Reservoir

General Description

Typically a fresh, dammed, deepwater habitat that is permanently flooded, with variable water levels.

Distribution

Found all over the province, mainly at lower elevations.

Climax Vegetation

These are non-flowing bodies of water greater than 60 ha in size and 2m in depth, that have been created by man. Often experiencing significant drawdown at certain times of the year.

SC Shrub-Carr

General Description

A shrub-carr wetland class that typically is dominated by shrubs, found on poorly drained mineral soil sites.

Distribution

Occurs along stream edges, drainage ways, small depressions and the perimeters of lakes, ponds and sedge wetlands in most areas.

Climax Vegetation

These are shrub wetlands that are typically dominated by grey-leaved willow, short-fruited willow and scrub birch with varying amounts of hybrid white spruce, hardhack, alder, black gooseberry and red-osier dogwood. The shrub species are primarily found on the raised hummocks while the herbs occupy the moist depressions. A diverse, but sparse herb layer is common and includes grasses and moisture tolerant herbs such as field sedges, kinnikinnick, Bellard's kobresia, mat muhly, slender wheatgrass, arctic rush, yarrow, tufted white prairie aster, tufted hairgrass, wild strawberry and fringed aster. Typically the moss and lichen layer is well developed and diverse, including glow moss, golden fuzzy fen moss and Drepanocladus aduncus.

Physical Environment

Typically found in subhygric to hygric depressions which are periodically saturated and have mineral substrates overlain with organic materials. Soils are often carbonated. Sites characteristically consist of a mosaic of dry organic hummocks and moist depressions. Water is primarily received as seepage or runoff and water levels fluctuate seasonally, as does the nutrient availability.

References

- Roberts, A. 1984. Guide to Wetland Ecosystems of the Sub-boreal Spruce Subzone in the Cariboo Forest Region, British Columbia. B.C. Min. For., Williams Lake, B.C.
- Steen, O.A. and A.L. Roberts. 1988. Guide to Wetland Ecosystems of the Very Dry Montane Interior Douglas-fir Subzone Eastern Fraser Plateau Variant (IDFb2) in the Cariboo Forest Region, British Columbia. Land Management Report, #55. B.C. Min. For., Williams Lake, B.C.

SH Shrub Fen

General Description

A fen wetland class that is typically dominated by shrubs, found on poorly drained organic sites.

Distribution

Common throughout the interior of the province, with the exception of the BG, PP and AT zones. Limited to areas which are poorly drained, subhygric and depressional or level.

Climax Vegetation

Tall shrub fens

Typically, tall shrub species dominate, particularly Macall's willow, scrub birch, tea-leaved willow, grey-leaved willow and hybrid white spruce. Shrubs are most often

found on drier hummocks while the herbaceous plants occur in moister depressions. A variety of species are often present in the herb layer, including beaked sedge, water sedge, pink wintergreen, rush aster, Sartwell's sedge, buckbean and arrow-leaved colt's-foot. Characteristically the moss and lichen layer is moderately to well developed. Common species represented include *Drepanocladus* spp., *Mnium* spp., glow moss, golden fuzzy fen moss and ragged mosses.

Low shrub fens

Typically there is a sparse cover evenly distributed of shrub species including scrub birch, bog willow and hoary willow. The herb layer is most often dominated by buckbean and occasionally by prairie sedge. Water sedge, shore sedge and slender sedge are almost always present as secondary species. The moss and lichen layer is well developed and dominated by mosses forming a thick mat-like cover. Dominant species include golden fuzzy fen moss, ragged moss and *Drepanocladus* spp.

Physical Environment

Tall shrub fens

Typically occur in hygric to subhydryc depressions or level areas, where shallow standing water is present during a portion of the growing season. Deep, hummocky organic accumulations are most common. Water is primarily received as groundwater seepage and runoff from adjacent mineral uplands, creating sites which are generally less acidic and more mineral-rich than bog ecosystems.

Low shrub fens

Typically found in subhydryc, level or depressional sites where there is seasonal standing water present for a portion of the growing season. Deep, saturated organic soils are most common. Water is primarily received as groundwater seepage and runoff from adjacent mineral uplands, creating sites which are generally less acidic and more mineral-rich than bog ecosystems.

Atypical Sites

Low shrub fens

The herb layer of wetter depressions may include bluejoint, marsh cinquefoil, narrow-leaved cottongrass, arrowgrass and lesser-panicled sedge.

Usually on sites at lower elevations between 0m and 600m. The shrub layer will be dominated by sweetgale with some Pacific crab apple and willow. Sedges dominate the herb layer, secondary species include narrow-leaved cotton grass, great burnet and tufted clubrush. Minor amounts of sphagnum are present in the moss and lichen layer.

Some subalpine fir, Engelmann spruce and lodgepole pine may be present. Primarily species of willow are found in the understory, along with some shrubby cinquefoil and scrub birch. Sedges dominate a well developed herb layer; secondary species include blue joint, arrow-leaved groundsel, common horsetail, white-marsh marigold and globeflower. Glow moss, sphagnum moss and leafy moss form a dense to moderate moss and lichen layer.

References

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- Braumandl, T. and M.P. Curran, 1992. A Field Guide for Site Identification and Interpretation for the Nelson Forest Region. Land Manage. Handb. No. 20., B.C. Min. For., Victoria, B.C.
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SP Slow Perennial Stream

General Description

Typically a freshwater riverine habitat contained within a channel that contains continuously-moving, slow-moving water, is bounded by banks or upland habitat and has a low gradient; may include channels that form a connecting link between two bodies of standing water.

Distribution

Distributed throughout the province with a larger proportion of slow moving streams found at lower altitudes where the gradient of the stream is reduced.

Typical Situation

Generally a slow moving stream which has a constant elevated source of water, such as a lake, pond, spring or reservoir. The rate of flow is relative to the slope or gradient and the volume of surface runoff or discharge.

Slow streams usually have a low gradient or slope and are usually considerably larger in volume than faster moving bodies of water.

Very often faster flowing streams and rivers increase in volume and decrease in velocity as they move down a gradient. Eventually they reach a point where they are considered slow moving bodies of water.

This decrease in velocity results in sedimentation of small suspended particles such as silt and sand; as well as, a decrease in the amount of dissolved oxygen and an increase in the water temperature. Therefore, slower moving streams typically have muddy bottoms, slightly elevated temperatures and low amounts of dissolved oxygen. The degree of sedimentation is dependent on the substrate of the river bottom and streambanks. Changes in water temperature are also effected by the amount of insolation, depth of stream and seasonal changes in air temperature.

Atypical Situation

Streams which flow from inland bodies of saltwater or hot springs. These will vary in temperature, salinity and complex of vegetation.

ST Subtidal Marine

General Description

Typically a habitat that consists of open ocean overlying the continental shelf with salinities in excess of 18 ppt and a substrate that is continuously submerged.

Distribution

This unit occurs adjacent to the intertidal shores of all coastal islands and the mainland, including major inlets, fjords, bays and the open ocean.

Biogeoclimatic Units

CDFmm	CWHmm1	CWHvh1	CWHvm1	CWHwm	CWHxm1
CWHdm	CWHms2	CWHvh2	CWHwh1	CWHws1	CWHxm2

Climax Vegetation

The subtidal environment can be split into two broad groups, deep and shallow subtidal waters. The deep subtidal environment includes water deeper than 10m below the low tideline. This is typically an area of fine sediment accumulations which rarely supports very sparse submergent vegetation.

The shallow subtidal environment ranges between the low tide line and 10m depth. This distance marks the extent of coarse riverborne sediments in most estuaries and corresponds with a steep break in slope. Submergent or floating vegetation is common. Bull kelp is very commonly found in this zone.

SW Shrub Swamp

General Description

A swamp wetland class that typically is a tall shrub wetland, characterized by willows, a sparse cover of spruce and sedges, usually found along stream channels and composed of a mixture of mineral and organic material.

Distribution

Occurs at lower to middle elevations, in a limited extent along creeks and rivers throughout the province.

Climax Vegetation

A forest canopy is nonexistent. Tall shrubs including hybrid white spruce, grey-leaved willow, tea-leaved willow, Macall's willow, Mackenzie's willow and Drummond's willow are good indicators. A variety of sedges are prominent in the herb layer including beaked sedge, water sedge and Sartwell's sedge. Other common species include pink wintergreen, small bedstraw, rush aster, Scribner's reedgrass, bluejoint and arrow-leaved coltsfoot. The moss and lichen layer is poorly developed but a few species are commonly present including, *Aulacomium* spp., *Drepanocladus* spp., *Mnium* spp. and *Brachythecium* spp.

Characteristic herb species include lady fern, oak fern, spiny wood fern, common and woody horsetails, violets, skunk cabbage and bluejoint. Leafy and ragged mosses are prominent in the moss and lichen layer.

Physical Environment

Sites are typically very moist to wet swampy depressions located in valley bottoms and adjacent to lakes and creeks. Surface water often present throughout the growing season. Generally situated on a poorly drained, thick organic layers over fluvial or morainal deposits. Swamps are characterized by periodic flooding with nearly permanent subsurface waterflow, which results in both mineral-rich and nutrient-rich conditions.

References

- Roberts, A. 1984. Guide to Wetland Ecosystems of the Sub-boreal Spruce Subzone in the Cariboo Forest Region, British Columbia. B.C. Min. For., Williams Lake, B.C.
- Steen, O.A. and A.L. Roberts. 1988. Guide to Wetland Ecosystems of the Very Dry Montane Interior Douglas-fir Subzone Eastern Fraser Plateau Variant (IDFb2) in the Cariboo Forest Region, British Columbia. Land Management Report, #55. B.C. Min. For., Williams Lake, B.C.

WL Wetland

General Description

Used for any wetland habitat class which cannot be recognized at small mapping scales.

Climax Vegetation

Wetland ecosystems are widespread throughout the province. Most of these wetland units are mapped as wetland complexes because they are too small to be recognized as individual units at the 1:250,000 mapping scale.

Within the Broad Ecosystem Unit classification there are eight nonforested freshwater wetland ecosystems recognized, sphagnum bog, sedge fen, meadow, marsh, shallow open water, shrubcarr, shrub fen and shrub swamp. Each ecosystem is characterized as an area of relatively uniform vegetation, soils and other physical site characteristics. Each of these ecosystem types rarely occur as an individual mappable unit in the landscape. Most often they occur as complexes, but occasionally a unit can encompass an entire wetland site. Typically the wettest ecosystem types occur in the center of a wetland complex with the drier types occurring along the outer edge, as areas of transition leading into the adjacent uplands. As an example, areas of shallow open water are often surrounded by marsh ecosystems, with a fen type surrounding the marsh and a shrubcarr and/or meadow community at the drier extremities of the site, adjacent to the upland communities.

Scattered black spruce, subalpine fir or black cottonwood may be found in a very open, sparse canopy. The understory is dominated by a combination of willows in the shrub layer and sedges in the herb layer. Labrador tea, hardhack, thimbleberry and scrub birch are also commonly found in the shrub layer. Typically the herbaceous community also includes bluejoint, violets and horsetails. Sphagnum mosses, golden fuzzy fen moss, glow moss and leafy moss are commonly abundant in the moss and lichen layer.

Physical Environment

Typically occurs in a very wet, level or depression site. Wetland units are most common in the southwest Prince George forest region, the north central Cariboo forest region and southeastern Prince Rupert forest region. Typically in the area around the Nechako Plateau, Hazelton Mountains and Skeena Mountains ranging in elevation between 700m and 1500m. In more northerly locations it occurs at lower elevations, generally above 250m.

References

Roberts, A. 1984. Guide to Wetland Ecosystems of the Sub-boreal Spruce Subzone in the Cariboo Forest Region, British Columbia. B.C. Min. For., Williams Lake, B.C.

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11.0 NON-FORESTED SUBALPINE AND ALPINE ECOSYSTEMS

AG Alpine Grassland

General Description

Typically a high elevation, northern, grassland habitat, characterized by lush bunchgrass growth, with forbs, sedges and terrestrial lichens.

Distribution

This unit is only found in the alpine tundra (AT) zone in most of the mountain ranges in the province.

Climax Vegetation

The vegetative cover is lush and grass-dominated. Altai fescue and mountain sagewort dominate these alpine grasslands. Bellard's kobresia, alpine sweetgrass, one-headed pussytoes, mountain harebell, glaucous gentian, spiked woodrush, diverse-leaved cinquefoil and small-awned sedge are common secondary alpine grassland species. Terrestrial lichens dominate the moss and lichen layer, including ragged snow, curly snow, common coral and reindeer lichens. Awned haircap moss is also common in this moderately developed layer.

Physical Environment

Occurs on gentle to steep slopes in the alpine tundra zone. Submesic to mesic, well-drained colluvial or morainal materials are typical. Discontinuous snow cover may occur in the winter due to strong winds.

AH Alpine Heath

General Description

Typically a high elevation dwarf shrubland habitat, characterized by cold resistant vegetation, consisting of mountain-heathers, forbs, graminoids and lichens.

Distribution

This unit is only found in the alpine tundra (AT) zone in most of the mountain ranges in the province.

Climax Vegetation

Northern sites

Dwarf shrubs dominate this community; four-angled mountain-heather, dwarf snow willow, polar willow, white mountain-heather, mountain-avens, bog blueberry, partridgefoot and lingonberry are most common. Small-awned sedge, alai fescue, mountain sagewort, moss campion, capitate lousewort, glaucous gentian, alpine bistort and arctic bluegrass are commonly found intermixed with the dwarf shrubs. A sparse to moderate moss and lichen layer is typically composed of awned haircap moss and broom moss, as well as common coral, Cetraria, Cladonia and Peltigera lichens.

Interior sites

White and yellow mountain-heathers dominate the dwarf shrub layer, with minor amounts of pink mountain-heather and partridgefoot also present. Small-awned sedge, black alpine sedge, woolly pussy-toes, alai fescue, mountain arnica, slender hawkweed, glaucous gentian and subalpine daisy are commonly found intermixed with these dominant dwarf shrub species. A sparse to moderate moss and lichen layer is typically composed of haircap juniper moss and pale-stalked broom moss, as well as Cetraria, chocolate chip and orange-foot Cladonia lichens.

Coastal sites

Dwarf shrubs including four-angled mountain-heather, white mountain-heather, pink mountain-heather, yellow mountain-heather and dwarf willows dominate this alpine plant community. Partridgefoot, woolly pussytoes, small-awned sedge, black alpine sedge, alai fescue, mountain arnica, mountain sagewort and subalpine daisy are commonly found intermixed with these dominant dwarf shrub species. A sparse to moderate moss and lichen layer is typically composed of haircap moss and broom moss, as well as Cetraria, Cladonia and Peltigera lichens.

Physical Environment

Coastal sites

Typically occurs on moist to mesic sites, often moisture receiving; with gentle to steep, cool aspects where there is greater snow accumulation and duration. Soils are typically imperfectly to well drained, deep, medium- to coarse-textured colluvial, morainal or fluvial materials.

Atypical Sites

Coastal sites

Some heath communities are situated on warmer aspects, but maintain similar plant communities.

AM Alpine Meadow

General Description

Typically a high elevation, herbaceous community, dominated by moisture-loving forbs and/or sedges, on wetter sites in alpine areas.

Distribution

This unit is only found in the alpine tundra (AT) zone in most of the mountain ranges in the province.

Climax Vegetation

Sedge dominated meadows

Typically dominated by a dense cover of sedges, including small-awned sedge and black alpine sedge; alтай fescue, alpine fescue, arctic woodrush, rushes, dwarf snow willow and arctic willow are also abundant. Alpine timothy, western pasqueflower, bluegrasses, Sitka valerian, sibbaldia, cottongrass and common horsetail are often associated herbaceous species. A sparse to moderate moss and lichen layer is typically composed of snow lichen, common coral lichen, Icelandmoss, reindeer lichen, golden fuzzy fen moss, glow moss and haircap moss.

Forb dominated meadows

Typically, forbs dominate these alpine meadow communities, including western pasqueflower, arrow-leaved groundsel, Sitka valerian, arctic lupine, mountain arnica and subalpine daisy. Dwarf snow willow, polar willow, yellow glacier lily, Indian hellebore, sedges, subalpine buttercup and mountain arnica are commonly associated with this community. A sparse moss and lichen layer composed of golden fuzzy fen moss, glow moss, haircap moss and snow lichens, is characteristic.

Physical Environment

Sedge dominated meadows

Typically situated on gently to moderately sloping seepage sites; lower alpine receiving areas are most common. Seepage is often provided by snow accumulations, on these mesic to subhygric sites. The soils are characteristically moderately well to imperfectly drained, deep or shallow colluvial or morainal veneers.

A short growing season and high snow accumulation results in few areas suitable for extensive vegetative growth in much of the alpine region.

Forb dominated meadows

Typically situated on gently to moderately sloping seepage sites; middle to high alpine receiving areas are most common. Seepage is often provided by snow accumulations within cirque bottoms and at the base of slopes. The soils are characteristically moderately well to well drained, deep colluvial or morainal veneers.

A short growing season and high snow accumulation results in few areas suitable for extensive vegetative growth in much of the alpine region.

Atypical Sites

Forb dominated meadows

Globeflower, yellow-marsh marigold, fringed grass-of-parnassus, horsetail and cowparsnip are often associated with slightly wetter alpine meadows.

More northerly locations may have a greater amount of dwarf snow willow and polar willow present, often codominating with sedge and forb species.

AN Alpine Sparsely Vegetated

General Description

Typically a high elevation, sparsely vegetated habitat, characterized by a mixture of rocky slopes and a sparse cover of grasses, lichens and low shrubs.

Distribution

This unit is only found in the alpine tundra (AT) zone in most of the mountain ranges in the province.

Climax Vegetation

Typically the vegetation covers less than 5% of the surface and is limited to small pockets of soil and moisture accumulation.

The remainder of these units are composed of barren rock/rubble and areas with no, or very shallow soils. The shrub layer is poorly developed and limited to dwarf willows and mountain-avens. Moss campion, saxifrage, arctic bluegrass, small-awned sedge and altai fescue are often found scattered throughout these units. The rocky, exposed areas are dominated by a variety of lichen species; rock orange lichen, rocktripe lichen, green map lichen and curly snow lichen are abundant.

Physical Environment

Typically vegetated sites are very xeric to xeric. The soils are generally lacking or very shallow with extremely poor nutrient availability.

The alpine tundra experiences extremely short growing seasons, followed by periods of very high snowfall. However, sites may be totally snowfree due to high winds and/or the steepness of the slope. The processes of solifluction and frost-heaving commonly occur where soils are present. All are factors limiting the establishment of vegetation.

AS Alpine Shrubland

General Description

Typically a high elevation, northern, shrubland habitat, characterized by a dense cover of deciduous shrubs with graminoids, forbs and terrestrial lichens.

Distribution

This unit is only found in the alpine tundra (AT) zone in most of the mountain ranges in the province.

Climax Vegetation

Willows and scrub birch dominate these dense shrub communities. Shrubby cinquefoil and bog blueberry are commonly found in these communities as well. Crowberry, alтай fescue, alpine fescue, arctic lupine, arctic bluegrass, small-awned sedge, mountain sagewort, lingonberry, and woodrush can be found in the moderate herb layer. The bryoid community is dominated by golden fen fuzzy moss, along with secondary species including step and ragged mosses. Curly snow lichen, reindeer lichen and coral lichen are often found on these sites as well.

Atypical Sites

Wetter, gently sloping alluvial fans found in alpine valley bottoms are often dominated by shrub communities. Barratt's willow is characteristically dominant, with felt-leaved, Alaska and grey-leaved willow commonly present as secondary species. The herbaceous layer is usually composed of a variety of species including, common horsetail, sedges, bluejoint, sweet colts-foot, dwarf nagoonberry, tall Jacob's-ladder and tall bluebell. Golden fuzzy fen moss dominates the moss and lichen layer, secondary species include, step moss, sickle moss, ragged moss and Calliergon spp., as well as freckled lichen.

Physical Environment

Typically sites are located on mesic to moist, colluvial and morainal blankets or veneers, or glaciofluvial undulating materials. Sites range from lower receiving positions to upper exposed areas.

AT Alpine Tundra

General Description

Typically a high elevation, open to dense herbaceous or dwarf shrubland habitat, characterized by cold resistant vegetation consisting of low dwarf shrubs, graminoids, hardy forbs and lichens.

Distribution

This unit is only found in the alpine tundra (AT) zone in most of the mountain ranges in the province.

Mesic to dry sites

These tundra communities are dominated by a variety of dwarf shrubs and herbaceous species. Dwarf shrub species which commonly occur in the alpine tundra, include, white mountain-avens, net-leaved dwarf willow, polar willow and arctic willow. Moss campion, blackish locoweed, one-flowered cinquefoil, spotted saxifrage, small-awned sedge, alpine sweetgrass, alpine bluegrass and arctic bluegrass are characteristic tundra species. Bellard's kobresia, snow draba, altai fescue, spiked woodrush, curved alpine woodrush, alpine bistort and capitate lousewort are also often found scattered throughout the tundra. The moss and lichen community is quite diverse and dominated by lichens, including a variety of snow lichens, common coral lichen, spiny heath lichen, common witch's hair lichen and Icelandmoss lichen. Awned-haircap moss and rock mosses are also commonly found in this diverse layer.

Physical Environment

Mesic to dry sites

Typically found on exposed, windswept convex ridge crests and gentle to moderate slopes. Sites are situated on rapidly drained, coarse-textured, shallow, colluvial or morainal veneers and blankets. The alpine tundra experiences extremely short growing seasons followed by periods of variable snowfall. The degree of exposure determines the extent of snow cover while the topography determines snow duration. Sites are usually a combination of drier areas and moister snow pockets. The processes of solifluction and frost-heaving commonly occur. All are factors in the determination of vegetative composition.

Atypical Sites

Mesic to dry sites

Drier sites are often dominated by white mountain-avens while moister sites tend to be dominated by dwarf willows and sedges. The remaining typical species are found as abundant associates.

Very dry communities are typically dominated by alpine bluegrass and arctic bluegrass. Small-awned sedge, one-flowered cinquefoil, spotted saxifrage and dwarf willows, such as polar and arctic willow, are commonly associated with this tundra community. Curled snow lichen, Iceland-moss lichen, common witch's hair and rock mosses are commonly found in the moderate moss and lichen layer.

AU Alpine Unvegetated

General Description

Typically a high elevation habitat dominated by rock outcrops, talus, steep cliffs and other areas with very sparse vegetation of grass, lichens and low shrubs.

Distribution

This unit is only found in the alpine tundra (AT) zone in most of the mountain ranges in the province.

Climax Vegetation

Past glaciation, followed by active postglacial processes, have removed most surficial material, limiting the establishment of any plant species. This alpine unit is dominated by barren rock.

Physical Environment

This unit experiences an extremely short growing season, if any, followed by periods of very high snowfall. Very often these sites are snow free most of the year due to strong winds and steep slopes.

Atypical Sites

Occasionally small isolated pockets of soil may support some tundra vegetation, possibly including mountain-heathers, dwarf willows, saxifrage, lupines, cinquefoils, mountain-avens, sedges, grass, mosses and a variety of lichens.

SG Subalpine Grassland

General Description

Typically a high elevation, lush grassland habitat dominated by perennial grasses and forbs, on dry sites.

Distribution

This uncommon unit occurs on isolated, high elevation sites throughout the Northern Boreal Mountains, Omineca Mountains, Central Canadian Rockies and the Southern Interior Mountains. It is found at elevations ranging between 1000m and 1600m in the north and approximately 1600m and 2000m in the south.

Biogeoclimatic Units

Spruce Willow Birch Zone and Boreal White and Black Spruce Zone

BWBSdk1 SWBmk

Engelmann Spruce Subalpine Fir Zone

ESSFdk ESSFmv ESSFxc ESSFyv

Climax Vegetation

Spruce Willow Birch Zone and Boreal White and Black Spruce Zone

These northerly locations are dominated by a well developed grassland vegetation type, Altai fescue is most prominent. Common secondary species include Rocky mountain fescue, glaucous bluegrass, Cusick's bluegrass, mountain sagewort and diverse-leaved cinquefoil. The moss and lichen layer is generally poorly developed, with wiry fern moss often present.

Engelmann Spruce Subalpine Fir Zone

In the northern portion of the ESSF Zone these grassland communities are often dominated by junegrass, Rocky mountain fescue, common starwort, wild strawberry and oldman's whiskers. Common secondary species include showy Jacob's-ladder, Northern bedstraw, diverse-leaved cinque-foil, bluegrasses, yarrow, small flowered penstemon and field locoweed. The moss and lichen layer is generally very sparse, consisting of scattered haircap moss. In the southern portion of ESSF zone rough fescue, alpine bluegrass and Idaho fescue dominate these subalpine grassland communities. Diverse-leaved cinquefoil, alpine pussytoes, wood forget-me-not, two-toned sedge and diamond-leaved saxifrage are common associate species. The moss and lichen layer is quite sparse, limited to minor amounts of haircap moss.

Physical Environment

Spruce Willow Birch Zone and Boreal White and Black Spruce Zone

Sites are most common on mesic to dry, south facing, lower to middle slopes, where snow cover is light or entirely lacking. Typically soils are shallow to deep glaciofluvial and fluvial deposits. Sites also occur in the bottom of well drained morainal frost pockets and wide drift valleys subject to cold air ponding.

Engelmann Spruce Subalpine Fir Zone

Primarily occurs on moderate to steep slopes with south to southwest exposure. Sites situated in middle to upper/crest slope positions over xeric to submesic, morainal or colluvial blankets and veneers, are most common.

Atypical Sites

Spruce Willow Birch Zone and Boreal White and Black Spruce Zone

Slightly drier sites have a greater abundance of moss and lichen species, including juniper haircap moss, sidewalk moss, Cladina, Cladonia, Cetraria and Peltigera lichens.

Engelmann Spruce Subalpine Fir Zone

Extreme southerly locations may have communities dominated by Idaho fescue and Cusick’s bluegrass, with rough fescue and alpine bluegrass present in minor amounts.

SM Subalpine Meadow

General Description

Typically a high elevation meadow community, dominated by moisture-loving herbaceous species, found on wetter sites in subalpine forested areas.

Distribution

This unit occurs throughout the province at elevations ranging between 1000m and 1600m in the north and 1600m and 2000m in the south. It occurs in the Vancouver Island and Queen Charlotte Island Ranges, Coastal Mountains, Southern Interior Mountains and Northern Boreal Mountains, as well as many of the high elevation plateaus found in the province.

Biogeoclimatic Units

ESSFdc	ESSFmm1	ESSFvc	ESSFwm	MHmm1	SWBdk
ESSFdk	ESSFmv3	ESSFwc	ESSFwv	MHmm2	SWBmk
ESSFmc	ESSFmv4	ESSFwk1	ESSFxc	MHwh1	
ESSFmk	ESSFmw	ESSFwk2	ESSFxv		

Climax Vegetation

Forb dominated meadows

A rich herbaceous community dominated by a wealth of species including Sitka valerian, arctic lupine, subalpine daisy, yellow glacier lily, arrow-leaved groundsel, mountain sagewort and western pasque-flower. Numerous additional species are also common, including mountain-heather, sedges, Indian hellebore, bluegrasses, globeflower, subalpine buttercup, mountain arnica, alpine timothy, bracted lousewort and woodrushes. The moss and lichen layer is typically quite sparse; most often composed of step moss, juniper haircap moss, Brachythecium spp., Drepanocladus spp., Cladonia spp., Peltigera spp. and Stereocaulon spp.

Sedge/Grass dominated meadows

Mountain hairgrass, alpine timothy, black alpine sedge, showy sedge, water sedge and bluejoint dominate these hygic communities. Common associated species include, arrow-leaved groundsel, western pasqueflower, subalpine daisy, cottongrass, bluegrasses, marsh cinquefoil, small-flowered woodrush, Sitka valerian, mountain arnica and dwarf blueberry. The moss and lichen layer is typically dominated by moss spp., including golden fuzzy fen moss, Drepanocladus spp., Calliergon spp., Mnium spp. and glow moss.

Mountain-Heather dominated meadows

White mountain-heather, pink mountain-heather, alpine pussytoes, sedges, bluegrasses and yellow glacier lily are the most characteristic species found in these communities. Common associated species include dwarf willows, subalpine buttercup, partridgefoot, western pasqueflower, mountain sagewort, subalpine daisy and woodrushes. A sparse to moderate moss and lichen layer is often dominated by rock mosses and a variety of lichen spp.

Physical Environment

Forb dominated meadows

Occurs on moist, gently to moderately sloping seepage sites, over deep to shallow, well to moderately well drained, morainal and colluvial materials. These communities are typically found in snow accumulation sites that have short frost free periods and are subject to cold air pooling. Thus, snowmelt provides much of the moisture supply for most of the growing season.

Sedge/Grass dominated meadows

This wet meadow are typically found on poorly drained, lacustrine, morainal, colluvial or fluvial materials, that occur in level or depressional areas, usually lower to toe slope positions. Deep, fine-textured soils are most common. Moisture is received from snowmelt found in these areas of longer snowpack duration.

Mountain-Heather dominated meadows

Meadows occur where there is a prolonged duration of snowcover, providing abundant moisture for the meadows. Wet, deep, medium to course textured, morainal or colluvial blankets and veneers are most common.

Atypical Sites

Forb dominated meadows

Wetter sites may include globeflower, yellow marsh-marigold, fringed-grass-of-parnassus, horsetails and cowparsnip.

Sedge/Grass dominated meadows

Some sites may be dominated by dwarf blueberry, diamond-leaved willow, woolly pussytoes, subalpine daisy and sedges. On these sites mountain sagewort, sibbaldia, mountain vahlodea and spike trisetum are also abundant.

Drier communities are typically dominated by alpine bluegrass and arctic bluegrass. Small-awned sedge, one-flowered cinque-foil, spotted saxifrage and dwarf willows, such as polar and arctic willow, are commonly associated with this tundra community. Curled snow lichen, Icelandmoss lichen, common witch's hair and rock mosses are commonly found in the moderate moss and lichen layer.

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SU Subalpine Shrub/Grassland

General Description

Typically high elevation, northern habitat, characterized by dense shrubs and bunchgrasses, both intermixed and occasionally dominated by scrub birch, willows and Altai fescue.

Distribution

Generally limited to the high elevation areas of the Northern Boreal Mountains and portions of the Omineca and Central Canadian Rocky Mountains. Elevational limits range between 1000m and 1600m.

Biogeoclimatic Units

SWBmk SWBun

Climax Vegetation

Grey-leaved willow, tea-leaved willow, diamond-willow, scrub birch and bog birch typically dominate a dense shrub layer. The herb layer is well developed and often dominated by altai fescue, mountain sagewort, bluegrasses and alpine fescue. Alpine timothy, arctic lupine, mountain-heather, diverse-leaved cinque-foil, sedges, arrow-leaved groundsel, mountain forget-me-not, northern goldenrod and alpine pussytoes are also commonly found in this shrub/grassland unit. The sparse moss and lichen layer typically includes haircap juniper moss, *Cladonia* spp. and *Cetraria* spp.

Successional Vegetation

Willows, bog birch, altai fescue, mountain sagewort and fireweed are common on sites frequented by fires.

Physical Environment

Typically sites are found in dry to mesic conditions, on steep to gentle slopes. Soils are generally shallow colluvial or morainal veneers and blankets.

Atypical Sites

Exposed sites may have Bellard's kobresia present while drier sites often have kinnikinnick and white mountain-avens as associates species.

12.0 SPARSELY VEGETATED UNITS

CL Cliff

General Description

Non-alpine, steep unvegetated rock slope.

Distribution

Cliffs are typically located throughout the province, mainly concentrated in mountainous regions. Cliffs are most often associated with many of the alpine units as well as the talus and rocky outcrop units.

Typical Situation

Cliffs can be defined as steep, vertical or overhanging rock faces (Maser 1979). Characteristic features include fractures, ledges, overhangs and sheer rock faces. Fractures occur at different angles and sizes, depending on the bedrock type. The frequency with which ledges, overhangs and rock faces occur, is directly related to the angle and degree of fracturing that occurs within the given bedrock. Therefore bedrock composition is the key determining factor as to the number, extent and type of each cliff feature which is found.

Many of the cliffs found throughout the province occur as a result of past glaciation. As glaciers advanced then retreated over the province they carved out valleys and plateaus, leaving cliffs adjacent to their paths. Subsequent mechanical and chemical erosion has altered the appearance of many of these cliffs and even created some new ones.

Cliffs composed of softer materials are weathered down more easily, producing smaller fragments and numerous small fractures. Most often these types of bedrock cliffs do not reach substantial heights or degrees of steepness. Cliffs composed of more durable parent materials produce considerably larger fragments and fractures. Cliffs which are most resistant to erosional processes are usually very high, vertical cliffs.

GB Gravel Bar

General Description

Typically a level, unvegetated or partially vegetated fluvial area along an active watercourse.

Distribution

Found extensively along streams and rivers throughout the province.

Climax Vegetation

Gravel bars typically occur as unvegetated or partially vegetated areas along the perimeter of an active watercourse or along the perimeter of an island situated in the middle of an active watercourse. Gravel bars may be composed of mostly gravels, sands, silts, cobbles or any combination of these substrates. Most often these units are flooded annually for varying lengths of times, dependent on the amount of water flow.

Atypical Sites

Gravel bars associated with intermittent streams may be slightly more vegetated than perennial streams.

GL Glacier

General Description

Typically a field or body of snow or ice formed in higher elevations in mountainous terrain where snowfall exceeds melting; these areas of snow and ice will show evidence of past or present glacier movement.

Distribution

Glaciers are generally found above 1800m in the higher elevation biogeoclimatic zones throughout the mountain ranges of the province.

Biogeoclimatic Units

AT	CWHds1	CWHws2	ESSFmw	MHmm2	SWBmk
BWBSdk1	CWHwm	ESSFmm1	ESSFxv	SWBdk	SWBvk

Physical Environment

Typically glaciers are unvegetated, permanent snowfields and icefields. These remnant icefields and cirque glaciers are now receding and are small in comparison to their former extent. There remains evidence of tremendous ice erosion surrounding many of these glaciers.

PO Lodgepole Pine Outcrop

General Description

Typically a sparse to open lodgepole pine forest, with understories dominated by moss, lichens and grasses, growing on shallow, rocky sites.

Distribution

Limited to areas with shallow soils over bedrock, within the Pacific Ranges.

Biogeoclimatic Units

CWHxm CWHdm MSxv SBPSxc

Climax Vegetation

Typically an open forest of lodgepole pine, with minor amounts of Douglas-fir and western hemlock also present. Salal is common in the understory, along with oceanspray. The herb layer is dominated by kinnikinnick. Exposed rock is dominated by lichen and moss.

Successional Vegetation

Early successional stages are represented by oceanspray, salal and kinnikinnick.

Physical Environment

Typically found on very dry sites, with shallow soils and moderate to steep slopes. Most often located on a warm aspect.

RO Rock**General Description**

Typically a mixture of gentle to steep, nonalpine bedrock escarpments and outcroppings with little soil development and relatively low vegetative cover.

Distribution

Found anywhere exposed bedrock is located in nonalpine regions of the province. Extensively occurs in mountainous areas.

Climax Vegetation

This unit does not include rock outcropping associated with either the Garry Oak - Arbutus, Douglas-fir - Arbutus or Alpine complex of broad ecosystem units. Rock outcrops are often covered with dense blankets of moss and lichen, especially at lower elevations. At higher elevations, increased precipitation and steeper slopes prevents much accumulation of eroded materials and cliffs and rocky bluffs are more common. Vegetative cover is very sparse and limited to areas with minor accumulations of soil. Cladonia and Cladina lichens are common along with Rhacomitrium mosses.

Physical Environment

Usually found on very dry, steep, exposed rocky slopes and bluffs.

Atypical Sites

Occasionally stunted trees, shrubs and/or herbs can be found in rock crevices, forming an extremely sparse canopy.

TA Talus

General Description

Typically sparsely vegetated, rubbly or blocky colluvial areas, at the base of rock outcroppings, cliffs or escarpments.

Distribution

Found throughout the province in non-alpine areas, usually on steep slopes below rock outcrops or escarpments. The weathered bedrock sheds blocks of rubble which accumulate in draws and across the base of steep slopes and cliffs.

Climax Vegetation

Typically soil moisture is very deep and only deep rooted, hardy shrubs and occasional trees are found here. The vegetative cover is sparse, but saskatoon, choke cherry, sumac, mock orange, rose and raspberry do occasionally occur. Some Cladonia and Cladina lichens are often present; as well as Rhacomitrium mosses.

Physical Environment

Moisture conditions are usually dry to very dry and sites are located on steep slopes.

Atypical Sites

Occasional trees will be found in crevices or on thin accumulations of soil.

UV Unvegetated

General Description

Typically non-alpine, unvegetated areas consisting of exposed soils and excluding unvegetated bedrock sites.

Distribution

Typically the total cover of vegetation, including trees, shrubs, herbs and lichens is less than five percent of the total surface area.

This limited habitat occurs as a result of natural erosion processes, as well as human activities. Some typical sources of exposed soils include cutbanks along watercourses and roads, beaches, gravel pits, landings for sorting and loading logs, glacial moraine,

mudflats in association with dried up lakes and ponds and steep slopes where mudslides and debris torrents commonly occur.

13.0 URBAN AND AGRICULTURAL UNITS

CF Cultivated Field

General Description

Typically a mixture of farmlands where human agricultural practices of plowing, fertilization and non-native crop production has resulted in long-term soil and/or vegetation changes.

Distribution

Generally cultivated fields are located on flat to gently rolling terrain. Soil types and local climatic factors influence the types of crops which can be grown. The majority of the lower elevation plateaus and floodplains in the province are used for agriculture.

Detailed Description

Two major uses of cultivated fields are as cropland or as pasture. Pasture land is created by clearing of the land. This is sometimes followed by seeding, depending on the intensity of the initial disturbance and successional pattern of the area. Continual grazing often leads to the introduction of many non-native species.

Croplands are much more intensively managed, including plowing and fertilizing. This has long term effects on the soil, often changing the vegetation climax potential for the area. Irrigation is often associated with both types of agriculture, particularly in drier regions.

Perennial shrubs or uncut/ungrazed grasses are often found along the irrigation ditches, fences and hedgerows that form the boundary lines of these open agricultural lands.

The shape, size and growing patterns of the vegetation found on cultivated fields varies considerably. It is mainly dependent on plant species and climate. Most species are annuals planted in the spring and harvested in late summer. The specifics of germination and harvest time reflect the local climate and the species planted. Crop rotation is also a factor in the composition of these fields, as it is used to conserve soils and maintain productivity.

Cultivated fields are typically associated with or located adjacent to orchard/vineyard units (OV) and urban units (UR). They are also usually associated with aquatic habitats including large lakes (LL), small lakes (LS), reservoirs (RE) and shallow open water (OW).

MI Mine

General Description

Typically an area where mining exploration is presently taking place or an area where mining has recently been completed.

Distribution

Mining activity occurs in all regions of the province, covering large or small areas, depending on the minerals which are desired and the terrain of the chosen area. Open pit mining is a common method used for mineral extraction. Basically, open pit mines are holes in the ground, varying in size and shape, which are open to the sky and have been created for the purpose of extracting minerals or aggregates (including gravel pits). Mines can also be in the form of complex underground tunnels, with only a few tunnels that actually connect to the surface, often via a central mine shaft.

Another common feature of associated with mining activity are mine tailings or rubbly mine spoils. These are areas containing the waste rock or overburden which is discarded in the extraction of ore in a mining operation.

OV Orchard/Vineyard

General Description

Typically an agricultural area used for growing hard and soft fruit crops, with some form of symmetrical arrangement of the tress, shrubs or vines.

Distribution

Concentrated in very arid regions of the province including the river valleys of the south Fraser, Thompson and Similkameen Rivers, the Okanagan Valley and southeastern Vancouver Island. Typically orchards and vineyards are associated with the Coastal Douglas-fir, Interior Douglas-fir, Ponderosa Pine and Bunchgrass biogeoclimatic zones.

Detailed Description

Orchards are typically open single species tree dominated habitats. Depending on species and pruning method, most trees are low and bushy, less than 5m in height, with an open understory to facilitate harvest. Very often trees are arranged in a linear pattern with uniform spacing. The understory consists of low growing grasses and other herbaceous plants or managed to prevent understory growth entirely.

Vineyards are also single species units planted in rows, with plants usually supported by wood or wire trellises. Vines are typically intertwined along each row but spaced between rows. Understory growth is usually prevented along the rows and managed between rows to control soil erosion.

Typically this unit is associated with other anthropogenic units including cultivated fields (CF), reservoirs (RE) and urban (UR) centres. It is also associated with aquatic habitats such as large lakes (LL), small lakes (LS) and shallow open water (OW).

Physical Environment

Orchards and vineyards are associated with rich fluvial materials on flat areas located in the valley bottoms, on terraces or gentle valley slopes. Most sites are subject to a variety of irrigation methods.

RM Reclaimed Mine

General Description

Typically a mined area or mine tailings that have plant communities composed of a mixture of agronomic grasses and forbs and native plants.

Distribution

Mining activity has taken place in all regions of the province, covering large and small areas, depending on the minerals which were desired and the terrain of the chosen area. Reclaimed mines usually contain a mixture of native and introduced plant species. The density and composition of these communities is related to the age and location of the site, as well as the amount of disturbance that resulted from the mining activities.

In some areas of the province, the disturbances caused by mining activities may have provided the ideal conditions for particular native plant species, which have flourished since the operation ceased. However, in other heavily disturbed areas, agronomic species may have been seeded in order to stabilize the soils and have subsequently dominated these previously mined sites.

TC Transportation Corridor

General Description

Typically a linear-shaped land area dedicated to some form of above ground system for carrying products from one point to another, including roads and railways.

Distribution

Commonly occur in low to middle elevation biogeoclimatic units throughout the southern half of the province. In more northerly locations they are not as widespread. Transportation corridors tend to be associated with communities, linking one community to another and to resource related activities.

Detailed Description

Transportation corridors may create physical barriers or boundaries on the surface of the ground. Many roads are both paved and fenced, though many less traveled roads are graveled, primarily used for activities related to forestry, agricultural, mining and petroleum exploration and hydroelectricity. These less traveled roads do not seriously divide vegetated areas, but typically transportation corridors are subject to ongoing human disturbances.

TR Transmission Corridor

General Description

Typically a linear-shaped land area dedicated to some form of above or below ground system for carrying products from one point to another, including transmission lines and pipeline.

Distribution

Commonly occur in low to middle elevation biogeoclimatic units throughout the southern half of the province. In more northerly locations they are not as widespread in occurrence. Transmission corridors tend to be concentrated around hydroelectric systems.

Detailed Description

Transmission corridors, such as gas pipelines and transmission lines, do not form physical barriers on the ground. The vegetation associated with this unit is usually managed and kept in an early successional stage; most often a grass or shrub dominated community. In heavily disturbed areas, grasses or legumes are often seeded to stabilize the soils.

Typically transmission corridors are less frequently traveled and not subject to the influences of constant human disturbances.

UR Urban

General Description

Typically a mixture of human-influenced habitats that includes residential areas, urban areas, but excludes major agricultural lands.

Distribution

Urban development is not limited to specific regions or particular physical environments. However, the majority of urban centres are situated at low elevations and near the coast, large rivers or lakes.

Detailed Description

Urban ecosystem units are dominated by urban and rural housing, commercial cores and industrial developments. Vegetative diversity is provided by residential housing, parks, green belts and cemeteries. Each provide a wide variety of annual and perennial herbs, grasses, shrubs and trees in combination with components of existing natural ecosystems.

Forested areas do exist, often containing a variety of tree species, depending on what was planted. The understory also varies in structure and composition depending on the canopy composition and degree of maintenance.

Along many roads there are usually trees, shrubs or grasses planted. The desired development reflects the spacing, type and size of species planted.

Lawns, shrubs and a variety of shade trees are common in all residential areas. All three are typically composed of a variety of species and subject to scheduled maintenance. This maintains a continuous and uniform ground cover.

Over time most urban vegetation is relatively static in species composition because of maintenance. However, shrub and tree species found in urban areas will grow in size and possibly change the composition of much of the understory vegetation. Secondly, the majority of urban centres have a variety of introduced species planted within the city. Very often introduced species outcompete natural vegetation and slowly take over the ecosystems surrounding urban centres. The degree of change is dependent on the amount of maintenance and the desired vegetation structure and form.

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APPENDIX A

Correlation between the Biogeoclimatic Ecosystem Classification (BGC) and the Broad Ecosystem Unit Classification (BEU), grouped by BGC units.

Note: Units marked with an asterisk (*) are noncorrelated units (eg; limited data); for further information contact the Ministry of Forests Regional Ecologist.

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
BS	BG	xh1	00	Kamloops	*Bluebunch wheatgrass - Junegrass
SS	BG	xh1	01	Kamloops	Big sage - Bluebunch wheatgrass
SS	BG	xh1	01-MS	Kamloops	Big sage - Needle-and-thread grass
AB	BG	xh1	02	Kamloops	Antelope brush - Needle-and-thread grass
BS	BG	xh1	03	Kamloops	Bluebunch wheatgrass - Selaginella
PP	BG	xh1	04	Kamloops	Py - Antelope-brush - Red three-awn
PP	BG	xh1	05	Kamloops	Py - Sumac
CR	BG	xh1	06	Kamloops	PyAct - Nootka rose - Poison ivy
CR	BG	xh1	07	Kamloops	Act - Water birch
SS	BG	xh2	01	Kamloops	Big sagebrush - Bluebunch wheatgrass
BS	BG	xh2	02	Kamloops	Bluebunch wheatgrass - Selaginella
PP	BG	xh2	03	Kamloops	Py - Red three-awn
PP	BG	xh2	04	Kamloops	Py - Bluebunch wheatgrass
SS	BG	xh2	05	Kamloops	Big sage - Needle-and-thread grass
BS	BG	xh2	06	Kamloops	Fescue - Bluebunch wheatgrass(Rough fescue)
CR	BG	xh2	07	Kamloops	Act - Snowberry - Dogwood
ME	BG	xh2	08	Kamloops	Woolly sedge - Arctic rush
BS	BG	xh3	01	Cariboo	Bluebunch wheatgrass - Big sagebrush
SS	BG	xh3	02	Cariboo	Big sagebrush - Prickly pear cactus
DF	BG	xh3	03	Cariboo	Saskatoon - Douglas fir
SS	BG	xh3	04	Cariboo	Big sagebrush - Sand dropseed
BS	BG	xh3	05	Cariboo	Bluebunch wheatgrass - Pasture sage
BS	BG	xh3	05A	Cariboo	Bluebunch wheatgrass - Sand dropseed
BS	BG	xh3	06	Cariboo	Rocky Mountain jumiper - Rabbitbrush
BS	BG	xh3	07	Cariboo	Sand dropseed - Indian ricegrass
BS	BG	xh3	08	Cariboo	Needle-and-thread grass - Cladonia cariosa

Standards for Broad Terrestrial Ecosystem Classification and Mapping

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
MS	BG	xh3	09	Cariboo	Snowberry - Juniper
BS	BG	xh3	10	Cariboo	Bluebunch wheatgrass - Round-leaved alumroot
DF	BG	xh3	11	Cariboo	Douglas fir - Rocky Mountain juniper
BS	BG	xh3	12	Cariboo	Short-awned porcupinegrass - Small-flowered penstemon
MS	BG	xh3	13	Cariboo	Wolf-willow - Giant wildrye
MS	BG	xh3	14	Cariboo	Wood-rose - Snowberry
BS	BG	xw1	01	Kamloops	Bluebunch wheatgrass - Junegrass
BS	BG	xw1	02	Kamloops	Bluebunch wheatgrass - Selaginella
PP	BG	xw1	03	Kamloops	Py - Bluebunch wheatgrass
SS	BG	xw1	04	Kamloops	Big sage - Bluebunch wheatgrass
PP	BG	xw1	05	Kamloops	Py - Rough fescue - Bluebunch wheatgrass
BS	BG	xw1	06	Kamloops	Fescue - Bluebunch wheatgrass(Rough fescue)
BS	BG	xw1	07	Kamloops	Giant wildrye
AC	BG	xw1	08	Kamloops	At - Snowberry - Kentucky bluegrass
ME	BG	xw1	09	Kamloops	Salt grass - Sedge
BS	BG	xw2	01	Cariboo	*Bluebunch wheatgrass - Needle-and-thread grass
BS	BG	xw2	01a	Cariboo	*Bluebunch wheatgrass - Needle-and-thread grass, high elevation phase
DF	BG	xw2	02	Cariboo	*Fd - Spike-like goldenrod - Pelt lichen
DF	BG	xw2	03	Cariboo	*Fd - Rocky mountain juniper - Bluebunch wheatgrass
DF	BG	xw2	04	Cariboo	*Fd - Pinegrass - Red-stemmed feather moss
DF	BG	xw2	05	Cariboo	*Douglas fir - Douglas maple
AC	BG	xw2	06	Cariboo	*Trembling aspen - Snowberry
SS	BG	xw2	31	Cariboo	*Saskatoon - Pasture sage
SS	BG	xw2	32	Cariboo	*Big sagebrush - Pasture sage
SS	BG	xw2	33	Cariboo	*Small-flowered ricegrass - Lichen
SS	BG	xw2	34	Cariboo	*Pasture sage - Bluebunch wheatgrass
BS	BG	xw2	35	Cariboo	*Needle-and-thread grass - Sand dropseed
BS	BG	xw2	36	Cariboo	*Spreading needlegrass - Old man's whiskers
BS	BG	xw2	37	Cariboo	*Bluebunch wheatgrass - Nodding onion
BS	BG	xw2	38	Cariboo	*Short-awned porcupine grass - Lemonweed
BS	BG	xw2	39	Cariboo	*Spreading needlegrass - Northern bedstraw

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
BS	BG	xw2	39a	Cariboo	*Spreading needlegrass - Northern bedstraw, Kentucky bluegrass phase
BP	BWBS	dk1	01	P. George	Sw - Knight's plume - Step moss
BP	BWBS	dk1	01	P. Rupert	Sw - Knight's plume - Step moss
LP	BWBS	dk1	02	P. George	Pl - Lingonberry - Feathermoss
LP	BWBS	dk1	02	P. Rupert	Pl - Lingonberry - Feathermoss
BP	BWBS	dk1	03	P. George	Sw - Wildrye - Feathermoss
BP	BWBS	dk1	03	P. Rupert	Sw - Wildrye - Feathermoss
BL	BWBS	dk1	04	P. George	Sb - Lingonberry - Knight's plume
BL	BWBS	dk1	04	P. Rupert	Sb - Lingonberry - Knight's plume
BP	BWBS	dk1	05	P. George	SwPl - Soopolallie - Twinflower
BP	BWBS	dk1	05	P. Rupert	SwPl - Soopolallie - Twinflower
BP	BWBS	dk1	06	P. George	Sw - Scouring-rush - Step moss
BP	BWBS	dk1	06	P. Rupert	Sw - Scouring-rush - Step moss
BL	BWBS	dk1	07	P. George	Sb - Lingonberry - Coltsfoot
BL	BWBS	dk1	07	P. Rupert	Sb - Lingonberry - Coltsfoot
PR/BP	BWBS	dk1	08	P. George	Sw - Currant - Horsetail
PR/BP	BWBS	dk1	08	P. Rupert	Sw - Currant - Horsetail
BB	BWBS	dk1	09	P. George	Sb - Horsetail - Sphagnum
BB	BWBS	dk1	09	P. Rupert	Sb - Horsetail - Sphagnum
BB	BWBS	dk1	10	P. George	Sb - Labrador tea - Sphagnum
BB	BWBS	dk1	10	P. Rupert	Sb - Labrador tea - Sphagnum
SK	BWBS	dk1	11	P. George	Sw - Willow - Glow moss
SK	BWBS	dk1	11	P. Rupert	Sw - Willow - Glow moss
BG	BWBS	dk1	31	P. George	Non-forested bog
BG	BWBS	dk1	31	P. Rupert	Non-forested bog
SW	BWBS	dk1	32	P. George	Non-forested fen/marsh
SW	BWBS	dk1	32	P. Rupert	Non-forested fen/marsh
MS	BWBS	dk1	81	P. George	Grassland/scrub
MS	BWBS	dk1	81	P. Rupert	Grassland/scrub
BL	BWBS	dk2	00	P. George	*Sb - Feathermoss - Bluebells
LP	BWBS	dk2	00	P. Rupert	*Pl - Scrub birch - Lingonberry
BP	BWBS	dk2	01	P. George	Sw - Knight's plume - Step moss
BP	BWBS	dk2	01	P. Rupert	Sw - Knight's plume - Step moss
BP	BWBS	dk2	02	P. George	Pl - Lingonberry - Cladonia
BP	BWBS	dk2	02	P. Rupert	Pl - Lingonberry - Cladonia
BL	BWBS	dk2	03	P. George	Sb - Lingonberry - Knight's plume
BL	BWBS	dk2	03	P. Rupert	Sb - Lingonberry - Knight's plume
BL	BWBS	dk2	04	P. George	Sb - Labrador tea - Feathermoss
BL	BWBS	dk2	04	P. Rupert	Sb - Labrador tea - Feathermoss
BP	BWBS	dk2	05	P. George	Sw - Wildrye - Toad-flax
BP	BWBS	dk2	05	P. Rupert	Sw - Wildrye - Toad-flax
PR/BP	BWBS	dk2	06	P. George	Sw - Currant - Horsetail
PR/BP	BWBS	dk2	06	P. Rupert	Sw - Currant - Horsetail
BB	BWBS	dk2	07	P. George	Sb - Labrador tea - Sphagnum
BB	BWBS	dk2	07	P. Rupert	Sb - Labrador tea - Sphagnum
TF	BWBS	dk2	08	P. George	Lt - Glow moss

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BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
TF	BWBS	dk2	08	P. Rupert	Lt - Glow moss
BG	BWBS	dk2	31	P. George	Non-forested bog
BG	BWBS	dk2	31	P. Rupert	Non-forested bog
TF	BWBS	dk2	32	P. George	Non-forested fen/marsh
TF	BWBS	dk2	32	P. Rupert	Non-forested fen/marsh
MS	BWBS	dk2	81	P. George	Grassland/scrub
MS	BWBS	dk2	81	P. Rupert	Grassland/scrub
BA	BWBS	mw1	00	P. George	*SwAt - Soopolallie
TF	BWBS	mw1	00	P. George	*Lt - Sedge
BA	BWBS	mw1	01	P. George	SwAt - Step moss
LP	BWBS	mw1	02	P. George	Pl - Lingonberry - Velvet-leaved blueberry
BP	BWBS	mw1	03	P. George	Sw - Wildrye - Peavine
BL	BWBS	mw1	04	P. George	Sb - Lingonberry - Coltsfoot
BP	BWBS	mw1	05	P. George	Sw - Currant - Oak fern
BP	BWBS	mw1	06	P. George	Sw - Currant - Bluebells
PR/BP	BWBS	mw1	07	P. George	Sw - Currant - Horsetail
BB	BWBS	mw1	08	P. George	Sb - Labrador tea - Sphagnum
BB	BWBS	mw2	00	P. George	*Sb - Labrador tea - Sphagnum
BB	BWBS	mw2	00	P. George	*Sb - Labrador tea - Wildrye
BL	BWBS	mw2	00	P. George	*Sb - Kinnikinnick - Cladina
BA	BWBS	mw2	01	P. George	SwAt - Step moss
LP	BWBS	mw2	02	P. George	Pl - Lingonberry - Velvet-leaved blueberry
BL	BWBS	mw2	03	P. George	Sb - Lingonberry - Knight's plume
BL	BWBS	mw2	04	P. George	Sb - Lingonberry - Coltsfoot
PR/BP	BWBS	mw2	05	P. George	Sw - Currant - Horsetail
BL	BWBS	mw2	06	P. George	Sb - Feathermoss - Bluebells
TF	BWBS	mw2	07	P. George	Lt - Horsetail
BB	BWBS	mw2	08	P. George	Sb - Cloudberry - Sphagnum
BB	BWBS	mw2	09	P. George	Sb - Willow - Glow moss
TF	BWBS	mw2	10	P. George	Lt - Buckbean
BP	BWBS	wk1	01	P. George	Sw - Huckleberry - Step moss
LP	BWBS	wk1	02	P. George	Pl - Lingonberry - Velvet-leaved blueberry
BL	BWBS	wk1	03	P. George	Sb - Lingonberry - Coltsfoot
BP	BWBS	wk1	04	P. George	Sw - Wildrye - Peavine
BP	BWBS	wk1	05	P. George	Sw - Currant - Bluebells
PR/BP	BWBS	wk1	06	P. George	Sw - Currant - Horsetail
BB	BWBS	wk1	07	P. George	Sb - Horsetail - Sphagnum
BB	BWBS	wk1	08	P. George	Sb - Willow - Glow moss
BP	BWBS	wk2	01	P. George	Sw - Huckleberry - Step moss
LP	BWBS	wk2	02	P. George	Pl - Lingonberry - Feathermoss
BP	BWBS	wk2	03	P. George	Sw - Wildrye - Peavine
BL	BWBS	wk2	04	P. George	Sb - Lingonberry - Coltsfoot
BP	BWBS	wk2	05	P. George	Sw - Currant - Bluebells
PR/BP	BWBS	wk2	06	P. George	Sw - Currant - Horsetail
BB	BWBS	wk2	07	P. George	Sb - Horsetail - Sphagnum

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
BB	BWBS	wk2	08	P. George	Sb - Willow - Glow moss
BP	BWBS	wk3	01	P. George	Sw - Huckleberry - Step moss
GO	CDF	mm	00	Vancouver	*Qg - Brome
GO	CDF	mm	00	Vancouver	*Qg - Ocean spray
CD	CDF	mm	01	Vancouver	Fd - Salal
DA	CDF	mm	02	Vancouver	FdPl - Arbutus
GO	CDF	mm	03	Vancouver	Fd - Oniongrass
CG	CDF	mm	04	Vancouver	FdBg - Oregon grape
CD	CDF	mm	05	Vancouver	CwFd - Kindbergia
CG	CDF	mm	06	Vancouver	CwBg - Foamflower
CR	CDF	mm	07	Vancouver	Cw - Snowberry
SR	CDF	mm	08	Vancouver	Act - Red-osier dogwood
SR	CDF	mm	09	Vancouver	Act - Willow
CB	CDF	mm	10	Vancouver	Pl - Sphagnum
RS	CDF	mm	11	Vancouver	Cw - Skunk cabbage
RS	CDF	mm	12	Vancouver	Cw - Vanilla-leaf
RS	CDF	mm	13	Vancouver	Cw - Indian-plum
RS	CDF	mm	14	Vancouver	Cw - Slough sedge
CW	CWH	dm	01	Vancouver	Hw - Flat moss
DA	CWH	dm	02	Vancouver	FdPl - Cladina
CD	CWH	dm	03	Vancouver	FdHw - Salal
CW	CWH	dm	04	Vancouver	Fd - Sword fern
CW	CWH	dm	05	Vancouver	Cw - Sword fern
CW	CWH	dm	06	Vancouver	HwCw - Deer fern
CW	CWH	dm	07	Vancouver	Cw - Foamflower
SR	CWH	dm	08	Vancouver	Ss - Salmonberry
SR	CWH	dm	09	Vancouver	Act - Red-osier dogwood
SR	CWH	dm	10	Vancouver	Act - Willow
CB	CWH	dm	11	Vancouver	Pl - Sphagnum
RS	CWH	dm	12	Vancouver	CwSs - Skunk cabbage
RS	CWH	dm	13	Vancouver	Cw - Salmonberry
RS	CWH	dm	14	Vancouver	Cw - Black twinberry
RS	CWH	dm	15	Vancouver	Cw - Slough sedge
CW	CWH	ds1	01	Vancouver	HwFd - Cat's-tail moss
CP	CWH	ds1	02	Vancouver	FdPl - Kinnikinnick
CW	CWH	ds1	03	Vancouver	FdHw - Falsebox
CD	CWH	ds1	04	Vancouver	Fd - Fairybells
HB	CWH	ds1	05	Vancouver	Cw - Solomon's seal
CW	CWH	ds1	06	Vancouver	Hw - Queen's cup
CW	CWH	ds1	07	Vancouver	Cw - Devil's club
SR	CWH	ds1	08	Vancouver	Ss - Salmonberry
SR	CWH	ds1	09	Vancouver	Act - Red-osier dogwood
SR	CWH	ds1	10	Vancouver	Act - Willow
CB	CWH	ds1	11	Vancouver	Pl - Sphagnum
RS	CWH	ds1	12	Vancouver	CwSs - Skunk cabbage
CW	CWH	ds2	01	Vancouver	HwFd - Cat's-tail moss
CP	CWH	ds2	02	Vancouver	FdPl - Kinnikinnick

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BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
CW	CWH	ds2	03	Vancouver	FdHw - Falsebox
CD	CWH	ds2	04	Vancouver	Fd - Fairybells
HB	CWH	ds2	05	Vancouver	Cw - Solomon's seal
CW	CWH	ds2	06	Vancouver	Hw - Queen's cup
HS	CWH	ds2	07	Vancouver	Cw - Devil's club
SR	CWH	ds2	08	Vancouver	Ss - Salmonberry
SR	CWH	ds2	09	Vancouver	Act - Red-osier dogwood
SR	CWH	ds2	10	Vancouver	Act - Willow
CB	CWH	ds2	11	Vancouver	Pl - Sphagnum
RS	CWH	ds2	12	Vancouver	CwSs - Skunk cabbage
FR	CWH	mm1	01	Vancouver	HwBa - Pipecleaner moss
CD	CWH	mm1	02	Vancouver	FdHw - Salal
CH	CWH	mm1	03	Vancouver	HwCw - Salal
FR	CWH	mm1	04	Vancouver	CwHw - Sword fern
FR	CWH	mm1	05	Vancouver	BaCw - Foamflower
FR	CWH	mm1	06	Vancouver	HwBa - Deer fern
FR	CWH	mm1	07	Vancouver	BaCw - Salmonberry
SR	CWH	mm1	08	Vancouver	Ss - Salmonberry
SR	CWH	mm1	09	Vancouver	Act - Red-osier dogwood
SR	CWH	mm1	10	Vancouver	Act - Willow
CB	CWH	mm1	11	Vancouver	Pl - Sphagnum
RS	CWH	mm1	12	Vancouver	CwSs - Skunk cabbage
FR	CWH	mm2	01	Vancouver	HwBa - Pipecleaner moss
CD	CWH	mm2	02	Vancouver	FdHw - Salal
CH	CWH	mm2	03	Vancouver	HwCw - Salal
FR	CWH	mm2	04	Vancouver	CwHw - Sword fern
FR	CWH	mm2	05	Vancouver	BaCw - Foamflower
FR	CWH	mm2	06	Vancouver	HwBa - Deer fern
YB	CWH	mm2	07	Vancouver	CwYc - Goldthread
FR	CWH	mm2	08	Vancouver	BaCw - Salmonberry
CB	CWH	mm2	09	Vancouver	Pl - Sphagnum
RS	CWH	mm2	10	Vancouver	CwYc - Skunk cabbage
FR	CWH	ms1	01	Vancouver	HwBa - Step moss
CP	CWH	ms1	02	Vancouver	FdPl - Kinnikinnick
FR	CWH	ms1	03	Vancouver	FdHw - Falsebox
FR	CWH	ms1	04	Vancouver	BaCw - Oak fern
FR	CWH	ms1	05	Vancouver	HwBa - Queen's cup
FR	CWH	ms1	06	Vancouver	BaCw - Devil's club
SR	CWH	ms1	07	Vancouver	Ss - Salmonberry
SR	CWH	ms1	08	Vancouver	Act - Red-osier dogwood
SR	CWH	ms1	09	Vancouver	Act - Willow
CB	CWH	ms1	10	Vancouver	Pl - Sphagnum
RS	CWH	ms1	11	Vancouver	CwSs - Skunk cabbage
FR	CWH	ms2	01	Vancouver	HwBa - Step moss
CP	CWH	ms2	02	Vancouver	FdPl - Kinnikinnick
FR	CWH	ms2	03	Vancouver	FdHw - Falsebox
FR	CWH	ms2	04	Vancouver	BaCw - Oak fern

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
FR	CWH	ms2	05	Vancouver	HwBa - Queen's cup
FR	CWH	ms2	06	Vancouver	BaCw - Devil's club
SR	CWH	ms2	07	Vancouver	Ss - Salmonberry
SR	CWH	ms2	08	Vancouver	Act - Red-osier dogwood
SR	CWH	ms2	09	Vancouver	Act - Willow
CB	CWH	ms2	10	Vancouver	Pl - Sphagnum
RS	CWH	ms2	11	Vancouver	CwSs - Skunk cabbage
CH	CWH	vh1	01	Vancouver	CwHw - Salal
HL	CWH	vh1	02	Vancouver	PIYc - Rhacomitrium
CH	CWH	vh1	03	Vancouver	CwYc - Salal
CH	CWH	vh1	04	Vancouver	HwSs - Lanky moss
HS	CWH	vh1	05	Vancouver	CwSs - Sword fern
FR	CWH	vh1	06	Vancouver	CwSs - Foamflower
FR	CWH	vh1	07	Vancouver	CwSs - Devil's club
SR	CWH	vh1	08	Vancouver	Ss - Lily-of-the-valley
SR	CWH	vh1	09	Vancouver	Ss - Trisetum
SR	CWH	vh1	10	Vancouver	Dr - Lily-of-the-valley
YB	CWH	vh1	11	Vancouver	CwYc - Goldthread
CB	CWH	vh1	12	Vancouver	PIYc - Sphagnum
RS	CWH	vh1	13	Vancouver	CwSs - Skunk cabbage
HS	CWH	vh1	14	Vancouver	Ss - Salal
HS	CWH	vh1	15	Vancouver	Ss - Kindbergia
HS	CWH	vh1	16	Vancouver	Ss - Reedgrass
HS	CWH	vh1	17	Vancouver	Ss - Sword fern
HS	CWH	vh1	18	Vancouver	Ss - Slough sedge
HS	CWH	vh1	19	Vancouver	Ss - Pacific crab apple
CH	CWH	vh2	01	P. Rupert	CwHw - Salal
CH	CWH	vh2	01	Vancouver	CwHw - Salal
HL	CWH	vh2	02	P. Rupert	PIYc - Rhacomitrium
HL	CWH	vh2	02	Vancouver	PIYc - Rhacomitrium
CH	CWH	vh2	03	P. Rupert	CwYc - Salal
CH	CWH	vh2	03	Vancouver	CwYc - Salal
CH	CWH	vh2	04	P. Rupert	HwSs - Lanky moss
CH	CWH	vh2	04	Vancouver	HwSs - Lanky moss
HS	CWH	vh2	05	P. Rupert	CwSs - Sword fern
HS	CWH	vh2	05	Vancouver	CwSs - Sword fern
FR	CWH	vh2	06	P. Rupert	CwSs - Foamflower
FR	CWH	vh2	06	Vancouver	CwSs - Foamflower
FR	CWH	vh2	07	P. Rupert	CwSs - Devil's club
FR	CWH	vh2	07	Vancouver	CwSs - Devil's club
SR	CWH	vh2	08	P. Rupert	Ss - Lily-of-the-valley
SR	CWH	vh2	08	Vancouver	Ss - Lily-of-the-valley
SR	CWH	vh2	09	P. Rupert	Ss - Trisetum
SR	CWH	vh2	09	Vancouver	Ss - Trisetum
SR	CWH	vh2	10	P. Rupert	Dr - Lily-of-the-valley
SR	CWH	vh2	10	Vancouver	Dr - Lily-of-the-valley
YB	CWH	vh2	11	P. Rupert	CwYc - Goldthread

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YB	CWH	vh2	11	Vancouver	CwYc - Goldthread
CB	CWH	vh2	12	P. Rupert	PIYc - Sphagnum
CB	CWH	vh2	12	Vancouver	PIYc - Sphagnum
RS	CWH	vh2	13	P. Rupert	CwSs - Skunk cabbage
RS	CWH	vh2	13	Vancouver	CwSs - Skunk cabbage
HS	CWH	vh2	14	P. Rupert	Ss - Salal
HS	CWH	vh2	14	Vancouver	Ss - Salal
HS	CWH	vh2	15	P. Rupert	Ss - Kindbergia
HS	CWH	vh2	15	Vancouver	Ss - Kindbergia
HS	CWH	vh2	16	P. Rupert	Ss - Reedgrass
HS	CWH	vh2	16	Vancouver	Ss - Reedgrass
HS	CWH	vh2	17	P. Rupert	Ss - Sword fern
HS	CWH	vh2	17	Vancouver	Ss - Sword fern
HS	CWH	vh2	18	P. Rupert	Ss - Slough sedge
HS	CWH	vh2	18	Vancouver	Ss - Slough sedge
HS	CWH	vh2	19	P. Rupert	Ss - Pacific crab apple
BG	CWH	vh2	31	P. Rupert	Non-forested topogenous bog
BG	CWH	vh2	32	P. Rupert	Non-forested slope/blanket bog
SH	CWH	vh2	33	P. Rupert	Non-forested fen/marsh
FR	CWH	vm1	01	P. Rupert	HwBa - Blueberry
FR	CWH	vm1	01	Vancouver	HwBa - Blueberry
FR	CWH	vm1	01s	Vancouver	HwBa - Blueberry; Salal phase
HL	CWH	vm1	02	P. Rupert	HwPl - Cladina
HL	CWH	vm1	02	Vancouver	HwPl - Cladina
CH	CWH	vm1	03	P. Rupert	HwCw - Salal
CH	CWH	vm1	03	Vancouver	HwCw - Salal
FR	CWH	vm1	04	P. Rupert	CwHw - Sword fern
FR	CWH	vm1	04	Vancouver	CwHw - Sword fern
FR	CWH	vm1	05	P. Rupert	BaCw - Foamflower
FR	CWH	vm1	05	Vancouver	BaCw - Foamflower
FR	CWH	vm1	06	P. Rupert	HwBa - Deer fern
FR	CWH	vm1	06	Vancouver	HwBa - Deer fern
FR	CWH	vm1	07	Vancouver	BaCw - Salmonberry
FR	CWH	vm1	08	P. Rupert	BaSs - Devil's club
FR	CWH	vm1	08	Vancouver	BaSs - Devil's Club
SR	CWH	vm1	09	P. Rupert	Ss - Salmonberry
SR	CWH	vm1	09	Vancouver	Ss - Salmonberry
SR	CWH	vm1	10	P. Rupert	Act - Red-osier dogwood
SR	CWH	vm1	10	Vancouver	Act - Red-osier dogwood
SR	CWH	vm1	11	P. Rupert	Act - Willow
SR	CWH	vm1	11	Vancouver	Act - Willow
YB	CWH	vm1	12	P. Rupert	CwYc - Goldthread
CB	CWH	vm1	13	P. Rupert	Pl - Sphagnum
CB	CWH	vm1	13	Vancouver	Pl - Sphagnum
RS	CWH	vm1	14	P. Rupert	CwSs - Skunk cabbage
RS	CWH	vm1	14	Vancouver	CwSs - Skunk cabbage
BG	CWH	vm1	31	P. Rupert	Non-forested bog

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
SH	CWH	vm1	32	P. Rupert	Non-forested fen/marsh
AV	CWH	vm1	51	P. Rupert	Avalanche track
FR	CWH	vm2	01	P. Rupert	HwBa - Blueberry
FR	CWH	vm2	01	Vancouver	HwBa - Blueberry
HL	CWH	vm2	02	P. Rupert	HwPl - Cladina
HL	CWH	vm2	02	Vancouver	HwPl - Cladina
CH	CWH	vm2	03	P. Rupert	HwCw - Salal
CH	CWH	vm2	03	Vancouver	HwCw - Salal
FR	CWH	vm2	04	Vancouver	CwHw - Sword fern
FR	CWH	vm2	05	P. Rupert	BaCw - Foamflower
FR	CWH	vm2	05	Vancouver	BaCw - Foamflower
FR	CWH	vm2	06	P. Rupert	HwBa - Deer fern
FR	CWH	vm2	06	Vancouver	HwBa - Deer fern
FR	CWH	vm2	07	Vancouver	BaCw - Salmonberry
FR	CWH	vm2	08	Vancouver	BaSs - Devil's club
FR	CWH	vm2	08	P. Rupert	BaSs - Devil's club
YB	CWH	vm2	09	P. Rupert	CwYc - Goldthread
YB	CWH	vm2	09	Vancouver	CwYc - Goldthread
CB	CWH	vm2	10	P. Rupert	Pl - Sphagnum
CB	CWH	vm2	10	Vancouver	Pl - Sphagnum
RS	CWH	vm2	11	P. Rupert	CwYc - Skunk cabbage
RS	CWH	vm2	11	Vancouver	CwYc - Skunk cabbage
BG	CWH	vm2	31	P. Rupert	Non-forested bog
SH	CWH	vm2	32	P. Rupert	Non-forested fen/marsh
AV	CWH	vm2	51	P. Rupert	Avalanche track
CH	CWH	wh1	01	Vancouver	HwSs - Lanky moss
HS	CWH	wh1	02	Vancouver	CwSs - Salal
HS	CWH	wh1	03	Vancouver	CwSs - Sword fern
CH	CWH	wh1	04	Vancouver	CwHw - Salal
HS	CWH	wh1	05	Vancouver	CwSs - Foamflower
HS	CWH	wh1	06	Vancouver	CwSs - Conocephalum
SR	CWH	wh1	07	Vancouver	Ss - Lily-of-the-valley
SR	CWH	wh1	08	Vancouver	Ss - Trisetum
SR	CWH	wh1	09	Vancouver	Dr - Lily-of-the-valley
YB	CWH	wh1	10	Vancouver	CwYc - Goldthread
CB	CWH	wh1	11	Vancouver	PlYc - Sphagnum
RS	CWH	wh1	12	Vancouver	CwSs - Skunk cabbage
HS	CWH	wh1	13	Vancouver	Ss - Salal
HS	CWH	wh1	14	Vancouver	Ss - Kindbergia
HS	CWH	wh1	15	Vancouver	Ss - Reedgrass
HS	CWH	wh1	16	Vancouver	Ss - Sword fern
HS	CWH	wh1	17	Vancouver	Ss - Slough sedge
HS	CWH	wh1	18	Vancouver	Ss - Pacific crab apple
CH	CWH	wh2	01	Vancouver	HwSs - Lanky moss
CH	CWH	wh2	02	Vancouver	CwHw - Salal
HS	CWH	wh2	03	Vancouver	CwSs - Foamflower
HS	CWH	wh2	04	Vancouver	CwSs - Conocephalum

Standards for Broad Terrestrial Ecosystem Classification and Mapping

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
YB	CWH	wh2	05	Vancouver	CwYc - Goldthread
RS	CWH	wh2	06	Vancouver	CwSs - Skunk cabbage
HS	CWH	wm	01	P. Rupert	HwSs - Blueberry
HS	CWH	wm	02	P. Rupert	HwSs - Step moss
HS	CWH	wm	03	P. Rupert	SsHw - Oak fern
HS	CWH	wm	04	P. Rupert	SsHw - Devil's club
SR	CWH	wm	05	P. Rupert	Ss - Salmonberry
SR	CWH	wm	06	P. Rupert	Act - Red-osier dogwood
SR	CWH	wm	07	P. Rupert	Act - Willow
RS	CWH	wm	08	P. Rupert	Hw - Sphagnum
RS	CWH	wm	09	P. Rupert	Ss - Skunk cabbage
CB	CWH	wm	10	P. Rupert	Pl - Sphagnum
BG	CWH	wm	31	P. Rupert	Non-forested bog
FE	CWH	wm	32	P. Rupert	Non-forested fen and marsh
AV	CWH	wm	51	P. Rupert	Avalanche track
FR	CWH	ws1	01	P. Rupert	HwBa - Bramble
HL	CWH	ws1	02	P. Rupert	Pl - Kinnikinnick
HL	CWH	ws1	03	P. Rupert	HwPl - Feathermoss
FR	CWH	ws1	04	P. Rupert	BaCw - Oak fern
FR	CWH	ws1	05	P. Rupert	HwBa - Queen's cup
FR	CWH	ws1	06	P. Rupert	BaCw - Devil's club
SR	CWH	ws1	07	P. Rupert	Ss - Salmonberry
SR	CWH	ws1	08	P. Rupert	Act - Red-osier dogwood
SR	CWH	ws1	09	P. Rupert	Act - Willow
CB	CWH	ws1	10	P. Rupert	Pl - Sphagnum
RS	CWH	ws1	11	P. Rupert	CwSs - Skunk cabbage
BG	CWH	ws1	31	P. Rupert	Non-forested bog
FE	CWH	ws1	32	P. Rupert	Non-forested fen/marsh
FR	CWH	ws2	01	P. Rupert	HwBa - Bramble
FR	CWH	ws2	01	Vancouver	HwBa - Bramble
HL	CWH	ws2	02	Vancouver	Pl - Kinnikinnick
HL	CWH	ws2	02	P. Rupert	Pl - Kinnikinnick
HL	CWH	ws2	03	P. Rupert	HwPl - Feathermoss
HL	CWH	ws2	03	Vancouver	HwPl - Feathermoss
FR	CWH	ws2	04	P. Rupert	BaCw - Oak fern
FR	CWH	ws2	04	Vancouver	BaCw - Oak fern
FR	CWH	ws2	05	P. Rupert	HwBa - Queen's cup
FR	CWH	ws2	05	Vancouver	HwBa - Queen's cup
FR	CWH	ws2	06	P. Rupert	BaCw - Devil's club
FR	CWH	ws2	06	Vancouver	BaCw - Devil's club
SR	CWH	ws2	07	P. Rupert	Ss - Salmonberry
SR	CWH	ws2	07	Vancouver	Ss - Salmonberry
SR	CWH	ws2	08	P. Rupert	Act - Red-osier dogwood
SR	CWH	ws2	08	Vancouver	Act - Red-osier dogwood
SR	CWH	ws2	09	P. Rupert	Act - Willow
SR	CWH	ws2	09	Vancouver	Act - Willow
CB	CWH	ws2	10	P. Rupert	Pl - Sphagnum

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
CB	CWH	ws2	10	Vancouver	Pl - Sphagnum
RS	CWH	ws2	11	P. Rupert	CwSs - Skunk cabbage
RS	CWH	ws2	11	Vancouver	CwSs - Skunk cabbage
BG	CWH	ws2	31	P. Rupert	Non-forested bog
FE	CWH	ws2	32	P. Rupert	Non-forested fen/marsh
AV	CWH	ws2	51	P. Rupert	Avalanche track
CW	CWH	xm	01	Vancouver	HwFd - Kindbergia
DA	CWH	xm	02	Vancouver	FdPl - Cladina
CD	CWH	xm	03	Vancouver	FdHw - Salal
CW	CWH	xm	04	Vancouver	Fd - Sword fern
CW	CWH	xm	05	Vancouver	Cw - Sword fern
CW	CWH	xm	06	Vancouver	HwCw - Deer fern
CW	CWH	xm	07	Vancouver	Cw - Foamflower
SR	CWH	xm	08	Vancouver	Ss - Salmonberry
SR	CWH	xm	09	Vancouver	Act - Red-osier dogwood
SR	CWH	xm	10	Vancouver	Act - Willow
CB	CWH	xm	11	Vancouver	Pl - Sphagnum
RS	CWH	xm	12	Vancouver	CwSs - Skunk cabbage
RS	CWH	xm	13	Vancouver	Cw - Salmonberry
RS	CWH	xm	14	Vancouver	Cw - Black twinberry
RS	CWH	xm	15	Vancouver	Cw - Slough sedge
EF	ESSF	dc1	01	Kamloops	Bl - Rhododendron - Grouseberry
EF	ESSF	dc1	01	Nelson	Bl - Rhododendron - Grouseberry
EF	ESSF	dc1	02	Kamloops	PlSe - Pinegrass
EF	ESSF	dc1	02	Nelson	PlSe - Pinegrass
EF	ESSF	dc1	03	Kamloops	Bl - Grouseberry - Cladonia
EF	ESSF	dc1	03	Nelson	Bl - Grouseberry - Cladonia
EF	ESSF	dc1	04	Kamloops	Bl - Rhododendron - Valerian
EF	ESSF	dc1	04	Nelson	Bl - Rhododendron - Valerian
EF	ESSF	dc1	05	Kamloops	Bl - Trapper's tea
EF	ESSF	dc1	05	Nelson	Bl - Trapper's tea
ER/EF	ESSF	dc1	06	Kamloops	Bl - Horsetail - Glow moss
ER/EF	ESSF	dc1	06	Nelson	Bl - Horsetail - Glow moss
WL	ESSF	dc1	07	Kamloops	Sedge - Sphagnum
WL	ESSF	dc1	07	Nelson	Sedge - Sphagnum
EF	ESSF	dc2	01	Cariboo	Bl - Rhododendron - Grouseberry
EF	ESSF	dc2	01	Kamloops	Bl - Rhododendron - Grouseberry
LP	ESSF	dc2	02	Cariboo	Juniper - Pinegrass
LP	ESSF	dc2	02	Kamloops	Juniper - Pinegrass
EF	ESSF	dc2	03	Cariboo	PlSe - Falsebox - Pinegrass
EF	ESSF	dc2	03	Kamloops	PlSe - Falsebox - Pinegrass
EF	ESSF	dc2	04	Cariboo	Bl - Grouseberry - Cladonia
EF	ESSF	dc2	04	Kamloops	Bl - Grouseberry - Cladonia
EF	ESSF	dc2	05	Cariboo	Bl - Huckleberry - Feathermoss
EF	ESSF	dc2	05	Kamloops	Bl - Huckleberry - Feathermoss
EF	ESSF	dc2	06	Cariboo	Bl - Gooseberry - Oak fern
EF	ESSF	dc2	06	Kamloops	Bl - Gooseberry - Oak fern

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BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
EF	ESSF	dc2	07	Cariboo	B1 - Rhododendron - Valerian
EF	ESSF	dc2	07	Kamloops	B1 - Rhododendron - Valerian
EF	ESSF	dc2	08	Cariboo	B1 - Trapper's tea
EF	ESSF	dc2	08	Kamloops	B1 - Trapper's tea
WL	ESSF	dc2	09	Kamloops	Sedge - Sphagnum
EF	ESSF	dk	01	Nelson	B1 - Azalea - Foamflower
EF	ESSF	dk	02	Nelson	Fd - Douglas maple - Soopolallie
EF	ESSF	dk	03	Nelson	B1 - Azalea - Grouseberry
EF	ESSF	dk	04	Nelson	B1 - Azalea - Soopolallie
EF	ESSF	dk	05	Nelson	B1 - Azalea - Step moss
ER/EF	ESSF	dk	06	Nelson	B1 - Azalea - Horsetail
SH	ESSF	dk	07	Nelson	Willow - Sedge
EF	ESSF	dv	01	Kamloops	B1 - Rhododendron - Heron's-bill
WB	ESSF	dv	02	Kamloops	Pa - Junegrass
EF	ESSF	dv	03	Kamloops	BI Pa - Juniper
EF	ESSF	dv	04	Kamloops	B1 - Huckleberry - Brachythecium
EF	ESSF	dv	05	Kamloops	B1 - Valerian - Arnica
ER/EF	ESSF	dv	06	Kamloops	B1 - Horsetail - Glow moss
EF	ESSF	mc	01	P. Rupert	B1 - Huckleberry - Leafy liverwort
EF	ESSF	mc	02	P. Rupert	BIPI - Juniper - Cladonia
EF	ESSF	mc	03	P. Rupert	B1 - Huckleberry - Crowberry
EF	ESSF	mc	04	P. Rupert	B1 - Huckleberry - Heron's-bill
EF	ESSF	mc	05	P. Rupert	B1 - Huckleberry - Thimbleberry
EF	ESSF	mc	06	P. Rupert	B1 - Oak fern - Heron's-bill
EF	ESSF	mc	07	P. Rupert	B1 - Devil's club - Lady fern
EF	ESSF	mc	08	P. Rupert	B1 - Valerian - Sickie moss
ER/EF	ESSF	mc	09	P. Rupert	B1 - Horsetail - Glow moss
ER/EF	ESSF	mc	10	P. Rupert	B1 - Horsetail - Leafy moss
SH	ESSF	mc	31	P. Rupert	Non-forested wetland
AV	ESSF	mc	51	P. Rupert	Avalanche track
EW	ESSF	mk	01	P. Rupert	BIHm - Twistedstalk
WB	ESSF	mk	02	P. Rupert	BI Pa - Cladonia
EW	ESSF	mk	03	P. Rupert	BIHm - Cladonia
EW	ESSF	mk	04	P. Rupert	BIHm - Oak fern
EW	ESSF	mk	05	P. Rupert	BIHm - Devil's club - Lady fern
ER/EF	ESSF	mk	06	P. Rupert	B1 - Horsetail - Leafy moss
ER/EF	ESSF	mk	07	P. Rupert	B1 - Lady fern - Horsetail
SH	ESSF	mk	31	P. Rupert	Non-forested wetland
AV	ESSF	mk	51	P. Rupert	Avalanche track (Sitka alder - Cow-parsnip)
EF	ESSF	mm1	00	P. George	*B1 - Valerian - Arnica
EF	ESSF	mm1	01	P. George	B1 - Azalea - Gooseberry
EF	ESSF	mm1	02	P. George	B1 - Huckleberry - Feathermoss
EF	ESSF	mm1	03	P. George	BIPI - Cladonia
EF	ESSF	mm1	04	P. George	B1 - Azalea - Rhododendron
EF	ESSF	mm1	05	P. George	B1 - Oakfern - Bramble
EF	ESSF	mm1	06	P. George	B1 - Devil's club - Lady fern

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
ER/EF	ESSF	mm1	07	P. George	Bl - Labrador tea - Horsetail
EF	ESSF	mv1	01	P. George	Bl - Rhododendron - Feathermoss
LP	ESSF	mv1	02	P. George	Pl - Huckleberry - Cladonia
EF	ESSF	mv1	03	P. George	Bl - Huckleberry - Feathermoss
EF	ESSF	mv1	04	P. George	Bl - Huckleberry - Gooseberry
ER/EF	ESSF	mv1	05	P. George	Bl - Horsetail - Glow moss
EF	ESSF	mv2	01	P. George	Bl - Rhododendron - Feathermoss
EF	ESSF	mv2	02	P. George	Bl - Lingonberry
EF	ESSF	mv2	03	P. George	BlSb - Labrador tea
EF	ESSF	mv2	04	P. George	Bl - Oak fern - Knight's plume
EF	ESSF	mv2	05	P. George	Bl - Devil's club - Rhododendron
ER/EF	ESSF	mv2	06	P. George	Bl - Alder - Horsetail
EF	ESSF	mv3	00	P. George	*Bl - Valerian - Arnica
EF	ESSF	mv3	01	P. George	Bl - Rhododendron - Feathermoss
EF	ESSF	mv3	01	P. Rupert	Bl - Rhododendron - Feathermoss
EF	ESSF	mv3	02	P. George	BlPl - Crowberry - Cladina
EF	ESSF	mv3	02	P. Rupert	BlPl - Crowberry - Cladina
EF	ESSF	mv3	03	P. George	BlSb - Labrador tea
EF	ESSF	mv3	03	P. Rupert	BlSb - Labrador tea
EF	ESSF	mv3	04	P. George	Bl - Oak fern - Knight's plume
EF	ESSF	mv3	04	P. Rupert	Bl - Oak fern - Knight's plume
EF	ESSF	mv3	05	P. George	Bl - Devil's club - Rhododendron
EF	ESSF	mv3	05	P. Rupert	Bl - Devil's club - Rhododendron
SF	ESSF	mv3	06	P. George	Sxw - Huckleberry - Highbush-cranberry
SF	ESSF	mv3	06	P. Rupert	Sxw - Huckleberry - Highbush-cranberry
ER/EF	ESSF	mv3	07	P. George	Bl - Horsetail - Feathermoss
ER/EF	ESSF	mv3	07	P. Rupert	Bl - Horsetail - Feathermoss
EF	ESSF	mv4	01	P. George	Bl - Rhododendron - Feathermoss
EF	ESSF	mv4	02	P. George	BlPl - Crowberry - Cladina
EF	ESSF	mv4	03	P. George	BlSb - Labrador tea
ER/EF	ESSF	mv4	04	P. George	Bl - Rhododendron - Horsetail
ER/EF	ESSF	mv4	05	P. George	Bl - Alder - Horsetail
EW	ESSF	mw	01	Kamloops	BlBa - Rhododendron
EW	ESSF	mw	01	Vancouver	BlBa - Rhododendron
EF	ESSF	mw	02	Kamloops	BlPl - Juniper - Rhacomitrium
EF	ESSF	mw	02	Vancouver	BlPl - Juniper - Rhacomitrium
EF	ESSF	mw	03	Kamloops	FdBl - Falsebox - Pinegrass
EF	ESSF	mw	03	Vancouver	FdBl - Falsebox - Pinegrass
EW	ESSF	mw	04	Kamloops	Bl - Huckleberry - Falsebox
EW	ESSF	mw	04	Vancouver	Bl - Huckleberry - Falsebox
EW	ESSF	mw	05	Kamloops	BlBa - Azalea - Pipecleaner moss
EW	ESSF	mw	05	Vancouver	BlBa - Azalea - Pipecleaner moss
EW	ESSF	mw	06	Kamloops	Bl - Gooseberry - Valerian
EW	ESSF	mw	06	Vancouver	Bl - Gooseberry - Valerian
EW	ESSF	mw	07	Kamloops	BlBa - Oak fern - Lady fern

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BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
EW	ESSF	mw	07	Vancouver	BIba - Oak fern - Lady fern
ER/EW	ESSF	mw	08	Kamloops	B1 - Gooseberry - Horsetail
ER/EW	ESSF	mw	08	Vancouver	B1 - Gooseberry - Horsetail
EW	ESSF	vc	01	Kamloops	BIHm - Rhododendron - Oak fern
EW	ESSF	vc	01	Nelson	BIHm - Rhododendron - Oak fern
EW	ESSF	vc	02	Kamloops	BIHm - Rhododendron - Leafy liverwort
EW	ESSF	vc	02	Nelson	BIHm - Rhododendron - Leafy liverwort
EW	ESSF	vc	03	Kamloops	BIHm - Rhododendron - Pipecleaner moss
EW	ESSF	vc	03	Nelson	BIHm - Rhododendron - Pipecleaner moss
EW	ESSF	vc	04	Kamloops	BIHm - Devil's club - Lady fern
EW	ESSF	vc	04	Nelson	BIHm - Devil's club - Lady fern
ER/EW	ESSF	vc	05	Kamloops	BIHm - Horsetail
ER/EW	ESSF	vc	05	Nelson	BIHm - Horsetail
WL	ESSF	vc	06	Kamloops	Sedge - Sphagnum
WL	ESSF	vc	06	Nelson	Sedge - Sphagnum
EF	ESSF	vv	01	Kamloops	B1 - Rhododendron - Foamflower
EF	ESSF	vv	02	Kamloops	B1 - Huckleberry - Mountain liverwort
EW	ESSF	vv	03	Kamloops	BIHm - Rhododendron - Leafy liverwort
EF	ESSF	vv	04	Kamloops	B1 - Valerian - Groundsel
SM	ESSF	vv	05	Kamloops	Mountain-heather - Alpine sedge
EF	ESSF	wc1	01	Kamloops	B1 - Rhododendron - Oak fern
EF	ESSF	wc1	01	Nelson	B1 - Rhododendron - Oak fern
EF	ESSF	wc1	02	Kamloops	B1 - Falsebox - Grouseberry
EF	ESSF	wc1	02	Nelson	B1 - Falsebox - Grouseberry
EF	ESSF	wc1	03	Kamloops	B1 - Devil's club - Lady fern
EF	ESSF	wc1	03	Nelson	B1 - Devil's club - Lady fern
ER/EF	ESSF	wc1	04	Nelson	B1 - Horsetail - Brachythecium
WL	ESSF	wc1	05	Kamloops	Sedge - Sphagnum
WL	ESSF	wc1	05	Nelson	Sedge - Sphagnum
ER/EF	ESSF	wc2	00	Kamloops	*B1 - Grass-of-Parnassus - Horsetail
ER/EF	ESSF	wc2	00	Nelson	*B1 - Grass-of-Parnassus - Horsetail
ER/EF	ESSF	wc2	00	P. George	*B1 - Grass-of-Parnassus - Horsetail
EF	ESSF	wc2	01	Kamloops	B1 - Azalea - Oak fern
EF	ESSF	wc2	01	Nelson	B1 - Azalea - Oak fern
EF	ESSF	wc2	01	P. George	B1 - Azalea - Oak fern
LP	ESSF	wc2	02	Kamloops	PI - Huckleberry - Cladonia
LP	ESSF	wc2	02	Nelson	PI - Huckleberry - Cladonia
LP	ESSF	wc2	02	P. George	PI - Huckleberry - Cladonia
EF	ESSF	wc2	03	Kamloops	B1 - Huckleberry - Arnica
EF	ESSF	wc2	03	Nelson	B1 - Huckleberry - Arnica
EF	ESSF	wc2	03	P. George	B1 - Huckleberry - Arnica
EF	ESSF	wc2	04	Kamloops	B1 - Rhododendron - Heron's-bill

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
EF	ESSF	wc2	04	Nelson	Bl - Rhododendron - Heron's-bill
EF	ESSF	wc2	04	P. George	Bl - Rhododendron - Heron's-bill
EF	ESSF	wc2	05	Kamloops	Bl - Azalea - Feathermoss
EF	ESSF	wc2	05	Nelson	Bl - Azalea - Feathermoss
EF	ESSF	wc2	05	P. George	Bl - Azalea - Feathermoss
EF	ESSF	wc2	06	Kamloops	Bl - Valerian - Oak fern
EF	ESSF	wc2	06	Nelson	Bl - Valerian - Oak fern
EF	ESSF	wc2	06	P. George	Bl - Valerian - Oak fern
EF	ESSF	wc2	07	Kamloops	Bl - Devil's club - Lady fern
EF	ESSF	wc2	07	Nelson	Bl - Devil's club - Lady fern
EF	ESSF	wc2	07	P. George	Bl - Devil's club - Lady fern
ER/EF	ESSF	wc2	08	Kamloops	Bl - Horsetail - Sphagnum
ER/EF	ESSF	wc2	08	Nelson	Bl - Horsetail - Sphagnum
ER/EF	ESSF	wc2	08	P. George	Bl - Horsetail - Sphagnum
EF	ESSF	wc2	09	Kamloops	Pl - Dwarf blueberry - Sphagnum
EF	ESSF	wc2	09	Nelson	Pl - Dwarf blueberry - Sphagnum
EF	ESSF	wc2	09	P. George	Pl - Dwarf blueberry - Sphagnum
WL	ESSF	wc2	10	Kamloops	Sedge - Sphagnum
WL	ESSF	wc2	10	Nelson	Sedge - Sphagnum
WL	ESSF	wc2	10	P. George	Sedge - Sphagnum
EF	ESSF	wc3	01	Cariboo	Bl - Rhododendron - Oak fern
EF	ESSF	wc3	01	P. George	Bl - Rhododendron - Oak fern
EF	ESSF	wc3	02	Cariboo	Bl - Rhododendron - Queen's cup
EF	ESSF	wc3	02	P. George	Bl - Rhododendron - Queen's cup
ER/EF	ESSF	wc3	03	Cariboo	Bl - Globeflower - Horsetail
ER/EF	ESSF	wc3	03	P. George	Bl - Globeflower - Horsetail
EF	ESSF	wc4	01	Kamloops	Bl - Rhododendron - Oak fern
EF	ESSF	wc4	01	Nelson	Bl - Rhododendron - Oak fern
EF	ESSF	wc4	02	Kamloops	Bl - Rhododendron - Falsebox
EF	ESSF	wc4	02	Nelson	Bl - Rhododendron - Falsebox
EF	ESSF	wc4	03	Kamloops	Bl - Rhododendron - Woodrush
EF	ESSF	wc4	03	Nelson	Bl - Rhododendron - Woodrush
EF	ESSF	wc4	04	Kamloops	Bl - Rhododendron - Foamflower
EF	ESSF	wc4	04	Nelson	Bl - Rhododendron - Foamflower
EF	ESSF	wc4	05	Kamloops	Bl - Rhododendron - Lady fern
EF	ESSF	wc4	05	Nelson	Bl - Rhododendron - Lady fern
ER/EF	ESSF	wc4	06	Kamloops	Bl - Horsetail - Brachythecium
ER/EF	ESSF	wc4	06	Nelson	Bl - Horsetail - Brachythecium
EF	ESSF	wc4	07	Kamloops	Bl - Sedge - Sphagnum
EF	ESSF	wc4	07	Nelson	Bl - Sedge - Sphagnum
SH	ESSF	wc4	08	Kamloops	Willow - Sedge
SH	ESSF	wc4	08	Nelson	Willow - Sedge
AD	ESSF	wk1	00	P. George	*Alder - Lady fern
BG	ESSF	wk1	00	Cariboo	*Scrub birch - Sedge - Sphagnum
EF	ESSF	wk1	01	Cariboo	Bl - Oak fern - Brachythecium
EF	ESSF	wk1	01	P. George	Bl - Oak fern - Brachythecium
EF	ESSF	wk1	02	Cariboo	Bl - Huckleberry - Feathermoss

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BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
EF	ESSF	wk1	02	P. George	B1 - Huckleberry - Feathermoss
EF	ESSF	wk1	03	Cariboo	B1 - Oak fern - Knight's plume
EF	ESSF	wk1	03	P. George	B1 - Oak fern - Knight's plume
EF	ESSF	wk1	04	Cariboo	B1 - Twinberry - Lady fern
EF	ESSF	wk1	04	P. George	B1 - Twinberry - Lady fern
EF	ESSF	wk1	05	Cariboo	B1 - Devil's club - Lady fern
EF	ESSF	wk1	05	P. George	B1 - Devil's club - Lady fern
ER/EF	ESSF	wk1	06	Cariboo	B1 - Horsetail - Sphagnum
ER/EF	ESSF	wk1	06	P. George	B1 - Horsetail - Sphagnum
ER/EF	ESSF	wk1	07	P. George	B1 - Lady fern - Horsetail
ER/EF	ESSF	wk1	07	Cariboo	B1 - Lady fern - Horsetail
BG	ESSF	wk1	08	P. George	Scrub birch - Sedge - Sphagnum
EF	ESSF	wk2	00	P. George	*B1 - Valerian - Arnica
EF	ESSF	wk2	01	P. George	B1 - Oak fern - Knight's plume
EF	ESSF	wk2	02	P. George	B1 - Oak fern - Sarsaparilla
EF	ESSF	wk2	03	P. George	B1 - Oak fern - Bluebells
EF	ESSF	wk2	04	P. George	B1 - Devil's club - Rhododendron
EF	ESSF	wk2	05	P. George	B1 - Rhododendron - Ladyfern
ER/EF	ESSF	wk2	06	P. George	B1 - Horsetail - Sphagnum
BG	ESSF	wk2	31	P. George	Non-forested bog
EF	ESSF	wm	01	Nelson	B1 - Azalea - Arnica
EF	ESSF	wm	02	Nelson	B1 - Rhododendron - Azalea
EF	ESSF	wm	03	Nelson	BIHw - Rhododendron - Azalea
EF	ESSF	wm	04	Nelson	B1 - Azalea - Queen's cup
EW	ESSF	wv	01	P. Rupert	BIHm - Azalea
EF	ESSF	wv	02	P. Rupert	BIPl - Cladonia
EW	ESSF	wv	03	P. Rupert	BIHm - Feathermoss
EW	ESSF	wv	04	P. Rupert	BIHm - Heron's-bill
EW	ESSF	wv	05	P. Rupert	B1 - Oak fern - Heron's-bill
EW	ESSF	wv	06	P. Rupert	B1 - Devil's club - Lady fern
EW	ESSF	wv	07	P. Rupert	B1 - Valerian - Sickle moss
ER/EF	ESSF	wv	08	P. Rupert	B1 - Horsetail - Glow moss
ER/EF	ESSF	wv	09	P. Rupert	B1 - Lady fern - Horsetail
SH	ESSF	wv	31	P. Rupert	Non-forested wetland
AV	ESSF	wv	51	P. Rupert	Avalanche track
EF	ESSF	xc	01	Cariboo	B1 - Grouseberry - Valerian
EF	ESSF	xc	01	Kamloops	B1 - Grouseberry - Valerian
LP	ESSF	xc	02	Cariboo	Pl - Juniper - Lupine
LP	ESSF	xc	02	Kamloops	Pl - Juniper - Lupine
BS	ESSF	xc	03	Cariboo	Bluebunch wheatgrass - Pasqueflower
BS	ESSF	xc	03	Kamloops	Bluebunch wheatgrass - Pasqueflower
SS	ESSF	xc	04	Cariboo	Big sage - Pinegrass
SS	ESSF	xc	04	Kamloops	Big sage - Pinegrass
EF	ESSF	xc	05	Cariboo	B1 - Grouseberry - Cladonia
EF	ESSF	xc	05	Kamloops	B1 - Grouseberry - Cladonia

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
EF	ESSF	xc	06	Cariboo	Bl - Rhododendron - Grouseberry
EF	ESSF	xc	06	Kamloops	Bl - Rhododendron - Grouseberry
EF	ESSF	xc	07	Cariboo	Bl - Gooseberry - Foamflower
EF	ESSF	xc	07	Kamloops	Bl - Gooseberry - Foamflower
ER/EF	ESSF	xc	08	Cariboo	Bl - Horsetail - Glow moss
ER/EF	ESSF	xc	08	Kamloops	Bl - Horsetail - Glow moss
SH	ESSF	xc	09	Kamloops	Bluejoint - Sedge
SH	ESSF	xc	10	Kamloops	Willow - Sedge
EF	ESSF	xv	01	Cariboo	Bl - Arnica - Cladonia
WB	ESSF	xv	02	Cariboo	BlPa - Juniper - Cladonia
LP	ESSF	xv	03	Cariboo	Pl - Cladonia - Stereocaulon
WB	ESSF	xv	04	Cariboo	BlPa - Juniper - Grouseberry
EF	ESSF	xv	05	Cariboo	BlPa - Arnica - Twinflower
EF	ESSF	xv	06	Cariboo	Bl - Rhododendron - Crowberry
EF	ESSF	xv	07	Cariboo	Bl - Valerian - Arnica
ER/EF	ESSF	xv	08	Cariboo	Bl - Horsetail - Glowmoss
EF	ESSF	xv	09	Cariboo	Bl - Twinberry - Hellebore
RB	ICH	dk	01	Cariboo	CwSxw - Falsebox - Wintergreen
RD	ICH	dk	02	Cariboo	CwSxw - Soopolallie
RB	ICH	dk	03	Cariboo	CwSxw - Falsebox - Soopolallie
RB	ICH	dk	04	Cariboo	CwSxw - Falsebox - Feathermoss
RB	ICH	dk	05	Cariboo	CwSxw - Thimbleberry
RB	ICH	dk	06	Cariboo	CwSxw - Raspberry - Oak fern
SF	ICH	dk	07	Cariboo	Sxw - Twinberry - Oak fern
SF	ICH	dk	08	Cariboo	Sxw - Devil's club - Lady fern
SF/WR	ICH	dk	09	Cariboo	Sxw - Horsetail
IH	ICH	dw	01a	Nelson	CwFd - Falsebox
IH	ICH	dw	01b	Nelson	CwFd - Falsebox
DP	ICH	dw	02	Nelson	FdPy - Oregon-grape - Parsley fern
IH	ICH	dw	03	Nelson	CwHw - White pine - Devil's club
IS	ICH	dw	04	Nelson	CwHw - Devil's club - Lady fern
CS	ICH	mc1	01	P. Rupert	Hw - Step moss
LP	ICH	mc1	02	P. Rupert	HwPl - Kinnikinnick - Cladonia
CS	ICH	mc1	03	P. Rupert	HwBl - Oak fern
CS	ICH	mc1	04	P. Rupert	HwBl - Devil's club
CR	ICH	mc1	05	P. Rupert	ActSx - Dogwood
CS	ICH	mc1	06	P. Rupert	Hw - Azalea - Skunk cabbage
SH	ICH	mc1	31	P. Rupert	Non-forested fen/marsh
FR	ICH	mc1a	01	P. Rupert	HwBa - Bramble
FR	ICH	mc1a	02	P. Rupert	HwBa - Oak fern
CS	ICH	mc1a	03	P. Rupert	HwBa - Devil's club - Lady fern
CS	ICH	mc2	01	P. Rupert	Hw - Step moss
LP	ICH	mc2	02	P. Rupert	HwPl - Kinnikinnick - Cladonia
CS	ICH	mc2	03	P. Rupert	HwCw - Oak fern
IS	ICH	mc2	04	P. Rupert	CwHw - Devil's club - Oak fern
CS	ICH	mc2	05	P. Rupert	Sx - Devil's club - Lady fern
CR	ICH	mc2	06	P. Rupert	ActSx - Dogwood

Standards for Broad Terrestrial Ecosystem Classification and Mapping

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
SK/WR/RS	ICH	mc2	07	P. Rupert	CwSx - Horsetail - Skunk cabbage
BB	ICH	mc2	08	P. Rupert	SbSx - Scrub birch - Sedge (Forested Swamp)
BG	ICH	mc2	31	P. Rupert	Non-forested bog
SH	ICH	mc2	32	P. Rupert	Non-forested fen/marsh
CS	ICH	mc2	51	P. Rupert	\$PIHw - Feathermoss \$(seral association)
CS	ICH	mc2	52	P. Rupert	\$SxEp - Thimbleberry - Hazelnut \$(seral association)
CS	ICH	mc2	53	P. Rupert	\$AtEp - Dogwood \$(seral association)
CS	ICH	mc2	54	P. Rupert	\$SxEp - Devil's club \$(seral association)
RD	ICH	mk1	01	Kamloops	CwSxw - Falsebox
RD	ICH	mk1	01	Nelson	CwSxw - Falsebox
RD	ICH	mk1	01-YS	Kamloops	CwSxw - Aspen
DF	ICH	mk1	02	Kamloops	Fd - Juniper - Penstemon
DF	ICH	mk1	02	Nelson	Fd - Penstemon - Pinegrass
DL	ICH	mk1	03	Kamloops	FdPl - Pinegrass - Twinflower
DL	ICH	mk1	03	Nelson	FdPl - Pinegrass - Twinflower
RD	ICH	mk1	04	Kamloops	FdPl - Sitka alder - Pinegrass
RD	ICH	mk1	04	Nelson	FdPl - Sitka alder - Pinegrass
RD	ICH	mk1	05	Kamloops	SxwFd - Gooseberry - Sarsaparilla
RD	ICH	mk1	05	Nelson	SxwFd - Gooseberry - Sarsaparilla
SF	ICH	mk1	06	Kamloops	Sxw - Oak fern
SF	ICH	mk1	06	Nelson	Sxw - Oak fern
SF/WR	ICH	mk1	07	Kamloops	Sxw - Horsetail
SF/WR	ICH	mk1	07	Nelson	Sxw - Horsetail
FE	ICH	mk1	08	Kamloops	Sedge - Cinquefoil
FE	ICH	mk1	08	Nelson	Sedge - Cinquefoil
RB	ICH	mk2	01	Kamloops	CwSxw - Falsebox - Knight's plume
DF	ICH	mk2	02	Kamloops	Fd - Juniper - Pinegrass
DF	ICH	mk2	03	Kamloops	Fd - Falsebox - Pinegrass
RB	ICH	mk2	04	Kamloops	CwSxw - Douglas maple - Fairybells
RB	ICH	mk2	05	Kamloops	CwSxw - Oak fern - Bunchberry
SF/WR	ICH	mk2	06	Kamloops	Sxw - Horsetail
BG	ICH	mk3	00	Cariboo	*Scrub birch - Sedge - Sphagnum
RB	ICH	mk3	01	Cariboo	CwSxw - Falsebox - Knight's plume
RD	ICH	mk3	02	Cariboo	FdCw - Wavy-leaved moss
RD	ICH	mk3	03	Cariboo	CwSxw - Soopolallie
RB	ICH	mk3	04	Cariboo	CwSxw - Oak fern - Cat's-tail moss
SF	ICH	mk3	05	Cariboo	SxwCw - Oak fern
IS	ICH	mk3	06	Cariboo	CwHw - Devil's club - Lady fern
IS/RR	ICH	mk3	07	Cariboo	CwSxw - Devil's club - Horsetail
IS	ICH	mm	01	P. George	HwCw - Spruce - Step moss
RD	ICH	mm	02	P. George	CwSxw - Soopolallie
IH	ICH	mm	03	P. George	HwCw - Step moss
IS	ICH	mm	04	P. George	CwHw - Oak fern

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
IS	ICH	mm	05	P. George	CwHw - Devil's club - Oak fern
IS/RR	ICH	mm	06	P. George	CwSxw - Devil's club - Horsetail
BB	ICH	mm	07	P. George	SbPl - Bog-laurel - Sphagnum
IS	ICH	mm	08	P. George	CwSxw - Skunk cabbage - Sphagnum
IH	ICH	mw1	01	Nelson	HwCw - Falsebox - Feathermoss
IS	ICH	mw1	02	Nelson	Pl - Juniper - Twinflower
IS	ICH	mw1	03	Nelson	HwCw - Falsebox - Pipecleaner moss
DL	ICH	mw1	04	Nelson	CwFd - Soopolallie - Douglas maple
IS	ICH	mw1	05	Nelson	CwHw - Devil's club - Lady fern
IS	ICH	mw1	06	Nelson	CwHw - Oval-leaved blueberry - Oak fern
IS/RR	ICH	mw1	07	Nelson	CwHw - Horsetail
IH	ICH	mw2	01	Kamloops	HwCw - Falsebox - Feathermoss
IH	ICH	mw2	01	Nelson	HwCw - Falsebox - Feathermoss
RD	ICH	mw2	01-YS	Kamloops	CwFd - Feathermoss
RD	ICH	mw2	02	Kamloops	FdCw - Falsebox - Prince's pine
RO/TA	ICH	mw2	02	Nelson	Rhacomitrium - Cladonia
IH	ICH	mw2	03	Kamloops	CwFd - Falsebox
RD	ICH	mw2	03	Nelson	FdCw - Falsebox - Prince's pine
IH	ICH	mw2	04	Nelson	CwFd - Falsebox
IS	ICH	mw2	04	Kamloops	CwHw - Oak fern - Foamflower
IS	ICH	mw2	05	Kamloops	CwHw - Devil's club - Lady fern
IS	ICH	mw2	05	Nelson	CwHw - Oak fern - Foamflower
IS	ICH	mw2	06	Nelson	CwHw - Devil's club - Lady fern
IS/RR	ICH	mw2	06	Kamloops	CwHw - Horsetail
IS/RR	ICH	mw2	07	Nelson	CwHw - Horsetail
RS	ICH	mw2	07	Kamloops	CwSxw - Skunk cabbage
RS	ICH	mw2	08	Nelson	CwSxw - Skunk cabbage
SH	ICH	mw2	08	Kamloops	Bluejoint - Glow moss
SH	ICH	mw2	09	Nelson	Bluejoint - Sedge
IH	ICH	mw3	01	Kamloops	HwCw - Falsebox - Feathermoss
IH	ICH	mw3	01	Nelson	HwCw - Falsebox - Feathermoss
IH	ICH	mw3	01-YC	Kamloops	HwCw - Feathermoss
DF	ICH	mw3	02	Kamloops	Fd - Juniper - Cladina
DF	ICH	mw3	02	Nelson	Fd - Juniper - Cladina
DL	ICH	mw3	03	Kamloops	FdPl - Pinegrass - Feathermoss
DL	ICH	mw3	03	Nelson	FdPl - Pinegrass - Feathermoss
RB	ICH	mw3	04	Kamloops	CwFd - Soopolallie - Twinflower
RB	ICH	mw3	04	Nelson	CwFd - Soopolallie - Twinflower
IH	ICH	mw3	05	Kamloops	CwFd - Falsebox
IH	ICH	mw3	05	Nelson	CwFd - Falsebox
IS	ICH	mw3	06	Kamloops	CwHw - Oak fern
IS	ICH	mw3	06	Nelson	CwHw - Oak fern
IS	ICH	mw3	07	Kamloops	CwHw - Devil's club - Lady fern
IS	ICH	mw3	07	Nelson	CwHw - Devil's club - Lady fern
RS	ICH	mw3	08	Kamloops	CwSxw - Skunk cabbage

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BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
RS	ICH	mw3	08	Nelson	CwSxw - Skunk Cabbage
WL	ICH	mw3	09	Kamloops	Sedge - Sphagnum
WL	ICH	mw3	09	Nelson	Sedge - Sphagnum
CS	ICH	vc	01	P. Rupert	HwBl - Devil's club
CS	ICH	vc	02	P. Rupert	Hw - Step moss
SF	ICH	vc	03	P. Rupert	Sx - Devil's club
SR	ICH	vc	04	P. Rupert	Sx - Devil's club - Dogwood
CR	ICH	vc	05	P. Rupert	ActSx - Dogwood
SF/WR	ICH	vc	06	P. Rupert	Sx - Horsetail
WL	ICH	vc	31	P. Rupert	Non-forested fen/marsh
AD	ICH	vc	51	P. Rupert	\$Sitka alder - Devil's club
SW	ICH	vc	52	P. Rupert	\$Mountain alder - Lady fern
IS	ICH	vk1	01	Kamloops	CwHw - Devil's club - Lady fern
IS	ICH	vk1	01	Nelson	CwHw - Devil's club - Lady fern
IH	ICH	vk1	02	Kamloops	HwCw - Falsebox - Feathermoss
RO/TA	ICH	vk1	02	Nelson	Rock Outcrop and Talus
IH	ICH	vk1	03	Nelson	HwCw - Falsebox - Feathermoss
IS	ICH	vk1	03	Kamloops	CwHw - Oak fern -Foamflower
IS	ICH	vk1	04	Kamloops	CwHw - Oak fern - Spiny wood fern
IS	ICH	vk1	04	Nelson	CwHw - Oak fern - Spiny wood fern
IS/RR	ICH	vk1	05	Kamloops	CwSxw - Devil's club - Horsetail
IS/RR	ICH	vk1	05	Nelson	CwSxw - Devil's club - Horsetail
RS	ICH	vk1	06	Kamloops	CwSxw - Skunk cabbage
RS	ICH	vk1	06	Nelson	CwSxw - Skunk cabbage
IS	ICH	vk2	01	P. George	CwHw - Devil's club - Lady fern
IH	ICH	vk2	02	P. George	HwCw - Cladonia
IH	ICH	vk2	03	P. George	HwCw - Step moss
IS	ICH	vk2	04	P. George	CwHw - Oak fern
IS	ICH	vk2	05	P. George	Cw - Devil's club - Ostrich fern
RS	ICH	vk2	06	P. George	CwSxw - Skunk cabbage
BB	ICH	vk2	07	P. George	Sb - Sphagnum
CS	ICH	wc	01	P. Rupert	HwBl - Oak fern
HL	ICH	wc	02	P. Rupert	HwPl - Feathermoss - Cladonia
CS	ICH	wc	03	P. Rupert	Hw - Step moss
CS	ICH	wc	04	P. Rupert	HwBl - Devil's club
SF	ICH	wc	05	P. Rupert	Sx - Devil's club
CR	ICH	wc	06	P. Rupert	ActSx - Dogwood
CS	ICH	wc	07	P. Rupert	HwSx - Blueberry - Sphagnum
SF/WR	ICH	wc	08	P. Rupert	Sx - Horsetail
BG	ICH	wc	31	P. Rupert	Non-forested bog
FE	ICH	wc	32	P. Rupert	Non-forested fen/marsh
AD	ICH	wc	51	P. Rupert	\$Sitka Alder - Devil's Club
SW	ICH	wc	52	P. Rupert	\$Mountain Alder - Lady fern
IS	ICH	wk1	01	Kamloops	CwHw - Oak fern
IS	ICH	wk1	01	Nelson	CwHw - Oak fern
IS	ICH	wk1	01	P. George	CwHw - Oak fern
LP	ICH	wk1	02	Kamloops	PIHw - Velvet-leaved blueberry

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
RO/TA	ICH	wk1	02	Nelson	Rhacomitrium - Cladonia
RO/TA	ICH	wk1	02	P. George	Rhacomitrium - Cladonia
IH	ICH	wk1	03	Kamloops	HwCw - Step moss
LP	ICH	wk1	03	P. George	PIHw - Velvet-leaved blueberry
IH	ICH	wk1	04	Kamloops	HwCw - Falsebox - Feathermoss
IH	ICH	wk1	04	Nelson	HwCw - Falsebox - Feathermoss
IH	ICH	wk1	04	P. George	HwCw - Falsebox - Feathermoss
IS	ICH	wk1	05	Kamloops	CwHw - Devil's club - Lady fern
IS	ICH	wk1	05	Nelson	CwHw - Devil's club - Lady fern
IS	ICH	wk1	05	P. George	CwHw - Devil's club - Lady fern
IS/RR	ICH	wk1	06	Kamloops	CwSxw - Devil's club - Horsetail
IS/RR	ICH	wk1	06	Nelson	CwSxw - Devil's club - Horsetail
IS/RR	ICH	wk1	06	P. George	CwSxw - Devil's club - Horsetail
RS	ICH	wk1	07	Kamloops	CwSxw - Skunk cabbage
WR	ICH	wk1	07	Nelson	Act - Dogwood - Twinberry
WR	ICH	wk1	07	P. George	Act - Dogwood - Twinberry
RS	ICH	wk1	08	Nelson	CwSxw - Skunk cabbage
RS	ICH	wk1	08	P. George	CwSxw - Skunk cabbage
WL	ICH	wk1	08	Kamloops	Sedge - Sphagnum
WL	ICH	wk1	09	Nelson	Sedge - Sphagnum
WL	ICH	wk1	09	P. George	Sedge - Sphagnum
BG	ICH	wk2	00	Cariboo	*Labrador tea - Sedge - Sphagnum
IS	ICH	wk2	01	Cariboo	CwHw - Oak fern
IH	ICH	wk2	02	Cariboo	HwCw - Cladonia
IH	ICH	wk2	03	Cariboo	CwFd - Juniper - Falsebox
IH	ICH	wk2	04	Cariboo	HwCw - Step moss
SF	ICH	wk2	05	Cariboo	SxwCw - Oak fern
SF	ICH	wk2	06	Cariboo	Sxw - Twinberry - Oak fern
IS	ICH	wk2	07	Cariboo	CwHw - Devil's club - Lady fern
RS	ICH	wk2	08	Cariboo	CwSxw - Skunk cabbage
IS	ICH	wk3	01	P. George	CwHw - Oak fern
IH	ICH	wk3	02	P. George	Hw - Azalea - Cladonia
IS	ICH	wk3	03	P. George	CwSxw - Prince's pine - Cat's-tail moss
IH	ICH	wk3	04	P. George	HwCw - Step moss
IS	ICH	wk3	05	P. George	CwHw - Devil's club - Lady fern
IS/RR	ICH	wk3	06	P. George	CwSxw - Devil's club - Horsetail
IS	ICH	wk3	07	P. George	Hw - Wood horsetail - Sphagnum
RS	ICH	wk3	08	P. George	CwSxw - Skunk cabbage
BB	ICH	wk3	09	P. George	PIsb - Sedge - Sphagnum
BG	ICH	wk4	00	Cariboo	*Labrador tea - Sedge - Sphagnum
IS	ICH	wk4	01	Cariboo	CwHw - Oak fern
IS	ICH	wk4	01	P. George	CwHw - Oak fern
IH	ICH	wk4	02	Cariboo	HwCw - Cladonia
IH	ICH	wk4	02	P. George	HwCw - Cladonia
RD	ICH	wk4	03	Cariboo	CwSxw - Soopolallie
RD	ICH	wk4	03	P. George	CwSxw - Soopolallie

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BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
IS	ICH	wk4	04	Cariboo	CwSxw - Velvet-leaved blueberry
IS	ICH	wk4	04	P. George	CwSxw - Velvet-leaved blueberry
IH	ICH	wk4	05	Cariboo	HwCw - Step moss
IH	ICH	wk4	05	P. George	HwCw - Step moss
SF	ICH	wk4	06	Cariboo	Sxw - Twinberry - Oak fern
SF	ICH	wk4	06	P. George	Sxw - Twinberry - Oak fern
IS	ICH	wk4	07	Cariboo	CwHw - Devil's club - Lady fern
IS	ICH	wk4	07	P. George	CwHw - Devil's club - Lady fern
SF	ICH	wk4	08	Cariboo	Sxw - Devil's club - Lady fern
SF	ICH	wk4	08	P. George	Sxw - Devil's club - Lady fern
BG	ICH	wk4	09	P. George	Labrador tea - Sedge - Sphagnum
IG	ICH	xw	01	Nelson	*CwFd - Mock-orange
DP	ICH	xw	02?	Nelson	*FdPy - Mallow ninebark - Bluebunch wheatgrass
DP	ICH	xw	03?	Nelson	*FdPy - Oregon grape - Birch-leaved spirea
DF/DP	ICH	xw	04?	Nelson	*Fd - Prince's pine
IS	ICH	xw	05?	Nelson	*CwHw - Prince's pine - Wild sarsaparilla
IS	ICH	xw	06?	Nelson	*CwHw - Devil's club - Oak fern
DL	IDF	dk1	01	Kamloops	FdPl - Pinegrass - Feathermoss
DF	IDF	dk1	02	Kamloops	Fd - Snowberry - Bluebunch wheatgrass
DF	IDF	dk1	03	Kamloops	Fd - Juniper - Pinegrass
DF	IDF	dk1	04	Kamloops	Fd - Pinegrass - Yarrow
SD	IDF	dk1	05	Kamloops	SxwFd - Gooseberry - Feathermoss
SF/WR	IDF	dk1	06	Kamloops	Sxw - Horsetail
SH	IDF	dk1	07	Kamloops	Willow - Sedge
BS	IDF	dk1a	91	Kamloops	Fescue - Bluebunch wheatgrass(Idaho fescue)
BS	IDF	dk1a	92	Kamloops	Bluebunch wheatgrass - Junegrass
BS	IDF	dk1a	93	Kamloops	Spreading needlegrass
AC	IDF	dk1a	94	Kamloops	At - Snowberry - Kentucky bluegrass
DL	IDF	dk2	01	Kamloops	FdPl - Pinegrass - Feathermoss
DP	IDF	dk2	02	Kamloops	FdPy - Bluebunch wheatgrass - Pinegrass
DP	IDF	dk2	03	Kamloops	FdPy - Pinegrass
DF	IDF	dk2	04	Kamloops	Fd - Feathermoss
SD	IDF	dk2	05	Kamloops	SxwFd - Dogwood - Gooseberry
SF/WR	IDF	dk2	06	Kamloops	Sxw - Horsetail
RB	IDF	dk2	07	Kamloops	CwSxw - Twinberry - Soft-leaved sedge
SH	IDF	dk2	08	Kamloops	Willow - Sedge
	IDF	dk3		Cariboo	*Shallow Open Water Ecosystems
BS	IDF	dk3	00	Cariboo	*Bluebunch wheatgrass - Junegrass
DL	IDF	dk3	01	Cariboo	FdPl - Pinegrass - Feathermoss
DF	IDF	dk3	02	Cariboo	Fd - Juniper - Kinnikinnick
DF	IDF	dk3	03	Cariboo	Fd - Juniper - Peltigera

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
DF	IDF	dk3	04	Cariboo	Fd - Bluebunch wheatgrass - Needlegrass
DF	IDF	dk3	05	Cariboo	Fd - Feathermoss - Step moss
DF	IDF	dk3	06	Cariboo	Fd - Pinegrass - Aster
SD	IDF	dk3	07	Cariboo	SxwFd - Prickly rose - Sedge
SD	IDF	dk3	08	Cariboo	SxwFd - Prickly rose - Sarsaparilla
SK/SL/WR	IDF	dk3	09	Cariboo	Sxw - Horsetail - Glow moss
ME	IDF	dk3	W1	Cariboo	*Alkali saltgrass - Nuttall's alkaligrass meadow
FE	IDF	dk3	W10	Cariboo	*Slender sedge - Moss fen
FE	IDF	dk3	W11	Cariboo	*Buckbean - Slender sedge fen
MR	IDF	dk3	W12	Cariboo	*Arrow grass marsh
MR	IDF	dk3	W13	Cariboo	*Cattail marsh
MR	IDF	dk3	W14	Cariboo	*Great Bulrush marsh
ME	IDF	dk3	W2	Cariboo	*Alkali saltgrass - Foxtail barley meadow
ME	IDF	dk3	W3	Cariboo	*Arctic rush - Field sedge meadow
SC	IDF	dk3	W4	Cariboo	*Scrub birch - Kinnikinnick shrubb-carr
FE	IDF	dk3	W5	Cariboo	*Maccall's willow - Beaked sedge fen
SW	IDF	dk3	W6	Cariboo	*Tall willow - Sartwell's sedge swamp
FE	IDF	dk3	W7	Cariboo	*Low willow - Buckbean fen
MR	IDF	dk3	W8	Cariboo	*Awned sedge fen - marsh
FE	IDF	dk3	W9	Cariboo	*Beaked sedge - water sedge fen
BS	IDF	dk4	00	Cariboo	*Spreading needlegrass
DL	IDF	dk4	01	Cariboo	FdPl - Pinegrass - Feathermoss
DF	IDF	dk4	02	Cariboo	Fd - Juniper - Peltigera
DF	IDF	dk4	03	Cariboo	Fd - Juniper - Saskatoon
DF	IDF	dk4	04	Cariboo	Fd - Juniper - Pasture sage
DF	IDF	dk4	05	Cariboo	Fd - Bluebunch wheatgrass - Pinegrass
LP	IDF	dk4	06	Cariboo	Pl - Kinnikinnick - Cladonia
DF	IDF	dk4	07	Cariboo	Fd - Feathermoss - Step moss
SL	IDF	dk4	08	Cariboo	Sxw - Scrub birch - Feathermoss
SL	IDF	dk4	09	Cariboo	Sxw - Feathermoss - Brachythecium
SK/SL/WR	IDF	dk4	10	Cariboo	Sxw - Horsetail - Glow moss
SS	IDF	dm1	00	Nelson	*Big sage - Bluebunch wheatgrass - Balsamroot
DL	IDF	dm1	01	Kamloops	FdPl - Pinegrass - Twinflower
DL	IDF	dm1	01	Nelson	FdPl - Pinegrass - Twinflower
BS	IDF	dm1	02	Kamloops	Bluebunch wheatgrass - Junegrass
BS	IDF	dm1	02	Nelson	Bluebunch wheatgrass - Junegrass
DP	IDF	dm1	03	Kamloops	FdPy - Bluebunch wheatgrass - Pinegrass
DP	IDF	dm1	03	Nelson	FdPy - Bluebunch wheatgrass - Pinegrass

Standards for Broad Terrestrial Ecosystem Classification and Mapping

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
DF	IDF	dm1	04	Kamloops	Fd - Pinegrass - Kinnikinnick
DF	IDF	dm1	04	Nelson	Fd - Pinegrass - Kinnikinnick
SD	IDF	dm1	05	Kamloops	FdLw - Spruce - Pinegrass
SD	IDF	dm1	05	Nelson	FdLw - Spruce - Pinegrass
SD	IDF	dm1	06	Kamloops	SxwFd - Dogwood - Gooseberry
SD	IDF	dm1	06	Nelson	SxwFd - Dogwood - Gooseberry
SF/WR	IDF	dm1	07	Kamloops	Sxw - Horsetail
SF/WR	IDF	dm1	07	Nelson	Sxw - Horsetail
	IDF	dm2		Nelson	Saltgrass - Foxtail barley
DL	IDF	dm2	01	Nelson	FdPl - Pinegrass - Twinflower
DP	IDF	dm2	02	Nelson	Antelope-brush - Bluebunch wheatgrass
DP	IDF	dm2	03	Nelson	Fd - Snowberry - Balsamroot
SD	IDF	dm2	04	Nelson	FdLw - Spruce - Pinegrass
SL	IDF	dm2	05	Nelson	SxwAt - Sarsaparilla
SH	IDF	dm2	06	Nelson	Scrub birch - Horsetail
SF/WR	IDF	dm2	07	Nelson	Sxw - Horsetail
RD	IDF	mw1	01	Kamloops	FdCw - Falsebox - Prince's pine
RD	IDF	mw1	01-YC	Kamloops	CwFd - Feathermoss
DP	IDF	mw1	02	Kamloops	FdPy - Snowberry - Bluebunch wheatgrass
DF	IDF	mw1	03	Kamloops	Fd - Penstemon - Pinegrass
DF	IDF	mw1	04	Kamloops	Fd - Pinegrass - Feathermoss
RD	IDF	mw1	05	Kamloops	CwFd - Dogwood
RD	IDF	mw1	06	Kamloops	Cw - Devil's club - Foamflower
RD	IDF	mw2	01	Cariboo	FdCw - Falsebox - Prince's pine
RD	IDF	mw2	01	Kamloops	FdCw - Falsebox - Prince's pine
RD	IDF	mw2	01-YC	Cariboo	CwFd - Feathermoss
RD	IDF	mw2	01-YC	Kamloops	CwFd - Feathermoss
RD	IDF	mw2	01-YS	Cariboo	EpAt - Thimbleberry - Falsebox
RD	IDF	mw2	01-YS	Kamloops	EpAt - Thimbleberry - Falsebox
DF	IDF	mw2	02	Cariboo	Fd - Snowberry - Bluebunch wheatgrass
DF	IDF	mw2	02	Kamloops	Fd - Snowberry - Bluebunch wheatgrass
DF	IDF	mw2	03	Cariboo	Fd - Pinegrass - Feathermoss
DF	IDF	mw2	03	Kamloops	Fd - Pinegrass - Feathermoss
RD	IDF	mw2	04	Cariboo	CwSxw - Oak fern
RD	IDF	mw2	04	Kamloops	CwSxw - Oak fern
RS	IDF	mw2	05	Cariboo	Dogwood - Sedge
RS	IDF	mw2	05	Kamloops	Dogwood - Sedge
DP	IDF	uu	00	Nelson	*FdPy - Bluebunch wheatgrass - Pinegrass
RD	IDF	ww	01	Vancouver	FdCw - Hazelnut
DL	IDF	ww	02	Vancouver	FdPl - Peltigera
DF	IDF	ww	03	Vancouver	Fd - Falsebox - Feathermoss
RD	IDF	ww	04	Vancouver	Fd - Douglas maple - Fairybells
RD	IDF	ww	05	Vancouver	CwFd - Vine maple

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
RD	IDF	ww	06	Vancouver	Cw - Devil's club - Lady fern
RS	IDF	ww	07	Vancouver	CwSxw - Skunk cabbage
DP	IDF	xh1	01	Kamloops	FdPy - Pinegrass
DP	IDF	xh1	01	Nelson	FdPy - Pinegrass
DP	IDF	xh1	02	Kamloops	FdPy - Bluebunch wheatgrass - Balsamroot
DP	IDF	xh1	02	Nelson	FdPy - Bluebunch wheatgrass - Balsamroot
DP	IDF	xh1	03	Kamloops	FdPy - Bluebunch wheatgrass - Pinegrass
DP	IDF	xh1	03	Nelson	FdPy - Bluebunch wheatgrass - Pinegrass
DP	IDF	xh1	04	Kamloops	FdPy - Snowbrush - Pinegrass
DP	IDF	xh1	04	Nelson	FdPy - Snowbrush - Pinegrass
PP	IDF	xh1	05	Kamloops	FdPy - Pinegrass - Idaho fescue
PP	IDF	xh1	05	Nelson	FdPy - Pinegrass - Idaho fescue
DP	IDF	xh1	06	Kamloops	FdPy - Spirea - Feathermoss
DP	IDF	xh1	06	Nelson	FdPy - Spirea - Feathermoss
DP	IDF	xh1	07	Kamloops	FdPy - Snowberry - Spirea
DP	IDF	xh1	07	Nelson	FdPy - Snowberry - Spirea
SD	IDF	xh1	08	Kamloops	SxwFd - Douglas maple - Dogwood
SD	IDF	xh1	08	Nelson	SxwFd - Douglas maple - Dogwood
SH	IDF	xh1	09	Kamloops	Willow - Sedge
SH	IDF	xh1	09	Nelson	Willow - Sedge
BS	IDF	xh1a	91	Kamloops	Fescue - Bluebunch wheatgrass
SS	IDF	xh1a	92	Kamloops	Big sage - Bluebunch wheatgrass - Balsamroot
BS	IDF	xh1a	93	Kamloops	Bluebunch wheatgrass - Balsamroot
SS	IDF	xh1a	94	Kamloops	Big sage - Bluebunch wheatgrass - Idaho fescue
SS	IDF	xh1a	95	Kamloops	Big sage - Kentucky bluegrass
BS	IDF	xh1a	96	Kamloops	Kentucky bluegrass - Stiff needlegrass
MS	IDF	xh1a	97	Kamloops	Prairie rose - Idaho fescue
AC	IDF	xh1a	98	Kamloops	At - Snowberry - Kentucky bluegrass
BS	IDF	xh2	0	Kamloops	*Bluebunch wheatgrass - Junegrass
DP	IDF	xh2	01	Kamloops	FdPy - Pinegrass - Feathermoss
DP	IDF	xh2	02	Kamloops	FdPy - Bluebunch wheatgrass - Rough fescue
DP	IDF	xh2	03	Kamloops	FdPy - Bluebunch wheatgrass - Balsamroot
DP	IDF	xh2	04	Kamloops	FdPy - Bluebunch wheatgrass - Pinegrass
DP	IDF	xh2	05	Kamloops	FdPy - Pinegrass
DF	IDF	xh2	06	Kamloops	Fd - Feathermoss
RD	IDF	xh2	07	Kamloops	CwFd - Dogwood
SF/WR	IDF	xh2	08	Kamloops	Sxw - Horsetail
BS	IDF	xh2a	00	Kamloops	*Bluebunch wheatgrass - Junegrass

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BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
BS	IDF	xh2a	91	Kamloops	Fescue - Bluebunch wheatgrass
BS	IDF	xh2a	92	Kamloops	Bluebunch wheatgrass - Needle-and-thread grass
SS	IDF	xh2a	93	Kamloops	Big sage - Kentucky bluegrass
BS	IDF	xh2a	94	Kamloops	Balsamroot - Kentucky bluegrass
AC	IDF	xh2a	95	Kamloops	At - Snowberry - Kentucky bluegrass
DF	IDF	xm	01	Cariboo	Fd - Pinegrass - Feathermoss
DF	IDF	xm	02	Cariboo	Fd - Bluebunch wheatgrass - Penstemon
DF	IDF	xm	03	Cariboo	Fd - Juniper - Cladonia
DF	IDF	xm	04	Cariboo	Fd - Bluebunch wheatgrass - Pasture sage
DF	IDF	xm	05	Cariboo	Fd - Feathermoss - Step moss
SD	IDF	xm	06	Cariboo	Fd - Ricegrass - Feathermoss
DF	IDF	xm	07	Cariboo	Fd - Prickly rose - Sarsaparilla
SD	IDF	xm	08	Cariboo	Sxw - Snowberry - Prickly rose
SF/WR	IDF	xm	09	Cariboo	Sxw - Horsetail
BS	IDF	xm	31	Cariboo	*Bluebunch wheatgrass - Pussytoes
BS	IDF	xm	32	Cariboo	*Bluebunch wheatgrass - Pasture sage
BS	IDF	xm	33	Cariboo	*Bluebunch wheatgrass - Yarrow
BS	IDF	xm	34	Cariboo	*Short awned porcupinegrass - Pussytoes
BS	IDF	xm	35	Cariboo	*Spreading needlegrass - Pussytoes
BS	IDF	xm	36	Cariboo	*Spreading needlegrass - Cut-leaved anemone
BS	IDF	xm	37	Cariboo	*Spreading needlegrass - Sticky purple geranium
BS	IDF	xm	38	Cariboo	*Spreading needlegrass - Baltic rush
BS	IDF	xm	38a	Cariboo	*Spreading needlegrass - Baltic rush, Kentucky bluegrass phase
DF	IDF	xw	01	Cariboo	Fd - Juniper - Bluebunch wheatgrass
DP	IDF	xw	02	Cariboo	FdPy - Bluebunch wheatgrass - Pinegrass
DP	IDF	xw	03	Cariboo	FdPy - Western snowberry - Bluebunch wheatgrass
DP	IDF	xw	04	Cariboo	FdPy - Bluebunch wheatgrass - Balsamroot
DF	IDF	xw	05	Cariboo	Fd - Feathermoss
SD	IDF	xw	06	Cariboo	Sxw - Water birch
WR	IDF	xw	07	Cariboo	Sxw - Prickly rose - Coltsfoot
MF	MH	mm1	01	P. Rupert	HmBa - Blueberry
MF	MH	mm1	01	Vancouver	HmBa - Blueberry
MF	MH	mm1	02	P. Rupert	HmBa - Mountain-heather
MF	MH	mm1	02	Vancouver	HmBa - Mountain-heather
MF	MH	mm1	03	P. Rupert	BaHm - Oak fern
MF	MH	mm1	03	Vancouver	BaHm - Oak fern
MF	MH	mm1	04	P. Rupert	HmBa - Bramble

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
MF	MH	mm1	04	Vancouver	HmBa - Bramble
MF	MH	mm1	05	P. Rupert	BaHm - Twistedstalk
MF	MH	mm1	05	Vancouver	BaHm - Twistedstalk
MF	MH	mm1	06	P. Rupert	HmYc - Deer cabbage
MF	MH	mm1	06	Vancouver	HmYc - Deer cabbage
YM	MH	mm1	07	P. Rupert	YcHm - Hellebore
YM	MH	mm1	07	Vancouver	YcHm - Hellebore
YB	MH	mm1	08	P. Rupert	HmYc - Sphagnum
YB	MH	mm1	08	Vancouver	HmYc - Sphagnum
YS	MH	mm1	09	P. Rupert	YcHm - Skunk cabbage
YS	MH	mm1	09	Vancouver	YcHm - Skunk cabbage
FE	MH	mm1	31	P. Rupert	Non-forested wetland
AV	MH	mm1	51	P. Rupert	Avalanche track
MF	MH	mm2	01	P. Rupert	HmBa - Blueberry
MF	MH	mm2	01	Vancouver	HmBa - Blueberry
MF	MH	mm2	02	P. Rupert	HmBa - Mountain-heather
MF	MH	mm2	02	Vancouver	HmBa - Mountain-heather
MF	MH	mm2	03	P. Rupert	BaHm - Oak fern
MF	MH	mm2	03	Vancouver	BaHm - Oak fern
MF	MH	mm2	04	P. Rupert	HmBa - Bramble
MF	MH	mm2	04	Vancouver	HmBa - Bramble
MF	MH	mm2	05	P. Rupert	BaHm - Twistedstalk
MF	MH	mm2	05	Vancouver	BaHm - Twistedstalk
MF	MH	mm2	06	P. Rupert	HmYc - Deer cabbage
MF	MH	mm2	06	Vancouver	HmYc - Deer cabbage
YM	MH	mm2	07	P. Rupert	YcHm - Hellebore
YM	MH	mm2	07	Vancouver	YcHm - Hellebore
YB	MH	mm2	08	P. Rupert	HmYc - Sphagnum
YB	MH	mm2	08	Vancouver	HmYc - Sphagnum
YS	MH	mm2	09	P. Rupert	YcHm - Skunk cabbage
YS	MH	mm2	09	Vancouver	YcHm - Skunk cabbage
FE	MH	mm2	31	P. Rupert	Non-forested wetland
AV	MH	mm2	51	P. Rupert	Avalanche track
YM	MH	wh	01	P. Rupert	HmSs - Blueberry
YM	MH	wh	01	Vancouver	HmSs - Blueberry
YM	MH	wh	02	P. Rupert	HmYc - Mountain-heather
YM	MH	wh	02	Vancouver	HmYc - Mountain-heather
YM	MH	wh	03	P. Rupert	SsHm - Reedgrass
YM	MH	wh	03	Vancouver	SsHm - Reedgrass
YM	MH	wh	04	P. Rupert	HmYc - Goldthread
YM	MH	wh	04	Vancouver	HmYc - Goldthread
YM	MH	wh	05	P. Rupert	YcHm - Twistedstalk
YM	MH	wh	05	Vancouver	YcHm - Twistedstalk
MF	MH	wh	06	P. Rupert	HmYc - Deer cabbage
MF	MH	wh	06	Vancouver	HmYc - Deer cabbage
YM	MH	wh	07	P. Rupert	YcHm - Hellebore
YM	MH	wh	07	Vancouver	YcHm - Hellebore

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BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
YB	MH	wh	08	P. Rupert	HmYc - Sphagnum
YB	MH	wh	08	Vancouver	HmYc - Sphagnum
YS	MH	wh	09	P. Rupert	YcHm - Skunk cabbage
YS	MH	wh	09	Vancouver	YcHm - Skunk cabbage
FE	MH	wh	31	P. Rupert	Non-forested wetland
EF	MS	dc	01	Kamloops	Sxw - Wintergreen - Feathermoss
DL	MS	dc	02	Kamloops	FdPl - Juniper
EF	MS	dc	03	Kamloops	Pl - Spirea - Pinegrass
SF	MS	dc	04	Kamloops	Sxw - Gooseberry
FE	MS	dc	05	Kamloops	Sedge - Glow moss
SD	MS	dk	01	Nelson	Sxw - Soopolallie - Grouseberry
DF	MS	dk	02	Nelson	Saskatoon - Bluebunch wheatgrass
LP	MS	dk	03	Nelson	Pl - Juniper - Pinegrass
SD	MS	dk	04	Nelson	Pl - Oregon-grape - Pinegrass
SD	MS	dk	05	Nelson	Sxw - Soopolallie - Snowberry
SD/SK/WR	MS	dk	06	Nelson	Sxw - Dogwood - Horsetail
WG	MS	dk	07	Nelson	Sxw - Scrub birch - Sedge
SF	MS	dm1	01	Kamloops	Sxw - Falsebox - Feathermoss
SF	MS	dm1	01	Nelson	Sxw - Falsebox - Feathermoss
DF	MS	dm1	02	Kamloops	Fd - Big sage - Pinegrass
DF	MS	dm1	02	Nelson	Fd - Penstemon - Pinegrass
LP	MS	dm1	03	Kamloops	Pl - Grouseberry - Cladonia
LP	MS	dm1	03	Nelson	Pl - Grouseberry - Cladonia
DL	MS	dm1	04	Kamloops	Pl - Pinegrass - Kinnikinnick
DL	MS	dm1	04	Nelson	Pl - Pinegrass - Kinnikinnick
SF	MS	dm1	05	Kamloops	Sxw - Trapper's tea - Grouseberry
SF	MS	dm1	05	Nelson	Sxw - Trapper's tea - Grouseberry
SF	MS	dm1	06	Kamloops	Sxw - Gooseberry
SF	MS	dm1	06	Nelson	Sxw - Gooseberry
SF/WR	MS	dm1	07	Kamloops	Sxw - Trapper's tea - Horsetail
SF/WR	MS	dm1	07	Nelson	Sxw - Trapper's tea - Horsetail
SF	MS	dm1	08	Nelson	Sxw - Gooseberry - Oak fern
SH	MS	dm1	08	Kamloops	Willow - Sedge
SH	MS	dm1	09	Nelson	Willow - Sedge
SF	MS	dm2	01	Kamloops	Sxw - Falsebox - Feathermoss
DF	MS	dm2	02	Kamloops	Juniper - Bluebunch wheatgrass
LP	MS	dm2	03	Kamloops	Pl - Juniper - Grouseberry
DL	MS	dm2	04	Kamloops	Pl - Grouseberry - Pinegrass
SF	MS	dm2	05	Kamloops	Sxw - Gooseberry - Grouseberry
SF	MS	dm2	06	Kamloops	Sxw - Gooseberry - Devil's club
SF/WR	MS	dm2	07	Kamloops	Sxw - Horsetail - Leafy moss
SL	MS	xk	01	Cariboo	Pl - Pinegrass - Lupine
SL	MS	xk	01	Kamloops	Pl - Pinegrass - Lupine
DF	MS	xk	02	Cariboo	Fd - Juniper - Grouseberry
DF	MS	xk	02	Kamloops	Fd - Juniper - Grouseberry
BS	MS	xk	03	Kamloops	Bluebunch wheatgrass - Junegrass
SS	MS	xk	04	Kamloops	Vasey's big sage - Pinegrass

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
DL	MS	xk	05	Cariboo	FdPl - Pinegrass - Arnica
DL	MS	xk	05	Kamloops	FdPl - Pinegrass - Arnica
SF	MS	xk	06	Cariboo	Pl - Falsebox - Lupine
SF	MS	xk	06	Kamloops	Pl - Falsebox - Lupine
SF	MS	xk	07	Cariboo	Sxw - Trapper's tea - Grouseberry
SF	MS	xk	07	Kamloops	Sxw - Trapper's tea - Grouseberry
SF	MS	xk	08	Cariboo	Sxw - Gooseberry - Grouseberry
SF	MS	xk	08	Kamloops	Sxw - Gooseberry - Grouseberry
SF/WR	MS	xk	09	Cariboo	Sxw - Horsetail - Leafy moss
SF/WR	MS	xk	09	Kamloops	Sxw - Horsetail - Leafy moss
SL	MS	xv	01	Cariboo	Pl - Grouseberry - Feathermoss
LP	MS	xv	02	Cariboo	Pl - Fescue - Stereocaulon
LP	MS	xv	03	Cariboo	Pl - Kinnikinnick - Cladonia
SL	MS	xv	04	Cariboo	Pl - Grouseberry - Kinnikinnick
SL	MS	xv	05	Cariboo	Pl - Trapper's tea - Crowberry
SL	MS	xv	06	Cariboo	Sxw - Crowberry - Knight's plume
SL	MS	xv	07	Cariboo	Sxw - Crowberry - Glow moss
SL/WR	MS	xv	08	Cariboo	Sxw - Horsetail - Crowberry
WG	MS	xv	09	Cariboo	Sxw - Labrador tea - Crowberry
PP	PP	dh1	01	Nelson	Py - Bluebunch wheatgrass - Junegrass
BS	PP	dh1	02	Nelson	Selaginella - Bluebunch wheatgrass - Blue-eyed Mary
BS	PP	dh1	03	Nelson	Bluebunch wheatgrass - Balsamroot
DP	PP	dh1	04	Nelson	FdPy - Ninebark
CR	PP	dh1	05	Nelson	PyAct - Snowberry - Kentucky bluegrass
CR	PP	dh1	06	Nelson	AtAct - Snowberry - Horsetail
AB	PP	dh2	00	Nelson	*Antelope-brush - Bluebunch wheatgrass
BS	PP	dh2	00	Nelson	*Fescue - Bluebunch wheatgrass
PP	PP	dh2	01	Nelson	Py - Bluebunch wheatgrass - Junegrass
BS	PP	dh2	02a	Nelson	Bluebunch wheatgrass - Junegrass
BS	PP	dh2	02b	Nelson	Bluebunch wheatgrass - Junegrass
AC	PP	dh2	03	Nelson	PyAt - Rose - Solomon's-seal
WR	PP	dh2	04	Nelson	Act - Dogwood - Nootka rose
BS	PP	xh1	00	Kamloops	*Bluebunch wheatgrass - Balsamroot
SS	PP	xh1	00	Kamloops	*Threetip sagebrush - Bluebunch wheatgrass
PP	PP	xh1	01	Kamloops	Py - Bluebunch wheatgrass - Idaho fescue
PP	PP	xh1	02	Kamloops	Py - Red three-awn
SS	PP	xh1	03	Kamloops	Big sage - Bluebunch wheatgrass - Balsamroot
PP	PP	xh1	04	Kamloops	Py - Bluebunch wheatgrass - Cheatgrass
PP	PP	xh1	05	Kamloops	Py - Bluebunch wheatgrass - Rough

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					fescue
DP/AC	PP	xh1	06	Kamloops	FdPy - Snowberry - Pinegrass
DP	PP	xh1	07	Kamloops	FdPy - Snowberry - Spirea
AC	PP	xh1	08	Kamloops	Fd - Water birch - Douglas maple
DP	PP	xh2	01	Kamloops	Py - Bluebunch wheatgrass - Fescue
PP	PP	xh2	02	Kamloops	FdPy - Bluebunch wheatgrass - Selaginella
PP	PP	xh2	03	Kamloops	Py - Bluebunch wheatgrass
PP	PP	xh2	04	Kamloops	Py - Big sage - Bluebunch wheatgrass
SS	PP	xh2	05	Kamloops	Big sage - Bluebunch wheatgrass (- Fescue)
DP	PP	xh2	06	Kamloops	FdPy - Snowberry - Saskatoon
CR	PP	xh2	07	Kamloops	Act - Water birch
LP	SBPS	dc	01	Cariboo	PI - Juniper - Feathermoss
LP	SBPS	dc	02	Cariboo	PI - Kinnikinnick - Cladonia
LP	SBPS	dc	03a	Cariboo	PI - Kinnikinnick - Feathermoss
LP	SBPS	dc	03b	Cariboo	PI - Kinnikinnick - Feathermoss
BL	SBPS	dc	04	Cariboo	PIsb - Feathermoss
SL	SBPS	dc	05	Cariboo	Sxw - Scrub birch - Feathermoss
SK/SL/WR	SBPS	dc	06	Cariboo	Sxw - Horsetail - Meadowrue
BB	SBPS	dc	07	Cariboo	Sb - Scrub birch - Sedge
SK/SL/WR	SBPS	dc	08	Cariboo	Sxw - Horsetail - Glow moss
LP	SBPS	mc	01	Cariboo	PI - Feathermoss - Cladina
LP	SBPS	mc	01	P. George	PI - Feathermoss - Cladina
LP	SBPS	mc	01	P. Rupert	PI - Feathermoss - Cladina
LP	SBPS	mc	02	Cariboo	PI - Kinnikinnick - Cladonia
LP	SBPS	mc	02	P. George	PI - Kinnikinnick - Cladonia
LP	SBPS	mc	02	P. Rupert	PI - Kinnikinnick - Cladonia
BL	SBPS	mc	03	Cariboo	SbPI - Feathermoss
BL	SBPS	mc	03	P. George	SbPI - Feathermoss
BL	SBPS	mc	03	P. Rupert	SbPI - Feathermoss
SL	SBPS	mc	04	Cariboo	Sxw - Scrub birch - Feathermoss
SL	SBPS	mc	04	P. George	Sxw - Scrub birch - Feathermoss
SL	SBPS	mc	04	P. Rupert	Sxw - Scrub birch - Feathermoss
SF/WR	SBPS	mc	05	Cariboo	Sxw - Horsetail
SF/WR	SBPS	mc	05	P. George	Sxw - Horsetail
SF/WR	SBPS	mc	05	P. Rupert	Sxw - Horsetail
SK/SL/WR	SBPS	mc	06	Cariboo	Sxw - Horsetail - Glow moss
SK/SL/WR	SBPS	mc	06	P. George	Sxw - Horsetail - Glow moss
SK/SL/WR	SBPS	mc	06	P. Rupert	Sxw - Horsetail - Glow moss
BB	SBPS	mc	07	Cariboo	Sb - Scrub birch - Sedge
BB	SBPS	mc	07	P. George	Sb - Scrub birch - Sedge
BB	SBPS	mc	07	P. Rupert	Sb - Scrub birch - Sedge
BG	SBPS	mc	31	P. Rupert	Non-forested bog
WL*	SBPS	mc	32	P. Rupert	Non-forested fen/marsh
WL*	SBPS	mk	00	Cariboo	*Soft-leaved sedge
SL	SBPS	mk	01	Cariboo	PI - Pinegrass - Arnica

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
LP	SBPS	mk	02	Cariboo	Pl - Cladonia - Haircap moss
DF	SBPS	mk	03	Cariboo	Fd - Pinegrass - Aster
DL	SBPS	mk	04	Cariboo	Pl - Pinegrass - Feathermoss
SL	SBPS	mk	05	Cariboo	SxwFd - Step moss
SL	SBPS	mk	06	Cariboo	Sxw - Twinberry
SK/SL/WR	SBPS	mk	07	Cariboo	Sxw - Horsetail - Glow moss
BB	SBPS	mk	08	Cariboo	Sb - Scrub birch - Sedge
WL	SBPS	xc	00	Cariboo	*Scrub birch - Glow moss
LP	SBPS	xc	01	Cariboo	Pl - Kinnikinnick - Feathermoss
LP	SBPS	xc	02	Cariboo	Pl - Kinnikinnick - Cladonia
SL	SBPS	xc	03	Cariboo	Sxw - Scrub birch - Fen moss
SL	SBPS	xc	04	Cariboo	Sxw - Scrub birch - Feathermoss
SK/SL/WR	SBPS	xc	05	Cariboo	Sxw - Horsetail - Glow moss
SK/SL/WR	SBPS	xc	06	Cariboo	Sxw - Horsetail - Meadowrue
SD	SBS	dh	01	P. George	SxwFd - Ricegrass
LP	SBS	dh	02	P. George	Pl - Velvet-leaved blueberry - Cladonia
DL	SBS	dh	03	P. George	FdPl - Pinegrass - Feathermoss
DL	SBS	dh	04	P. George	Pl - Pinegrass - Feathermoss
LP	SBS	dh	05	P. George	Pl - Labrador tea - Velvet-leaved blueberry
SD	SBS	dh	06	P. George	SxwFd - Thimbleberry
SF/WR	SBS	dh	07	P. George	Sxw - Horsetail
BB	SBS	dh	08	P. George	Sb - Scrub birch - Sedge
SL	SBS	dk	01	P. George	Sxw - Spirea - Purple peavine
SL	SBS	dk	01	P. Rupert	Sxw - Spirea - Purple peavine
LP	SBS	dk	02	P. George	Pl - Juniper - Ricegrass
LP	SBS	dk	02	P. Rupert	Pl - Juniper - Ricegrass
LP	SBS	dk	03	P. George	Pl - Feathermoss - Cladina
LP	SBS	dk	03	P. Rupert	Pl - Feathermoss - Cladina
DF	SBS	dk	04	P. George	Fd - Soopolallie - Feathermoss
DF	SBS	dk	04	P. Rupert	Fd - Soopolallie - Feathermoss
SL	SBS	dk	05	P. George	Sxw - Spirea - Feathermoss
SL	SBS	dk	05	P. Rupert	Sxw - Spirea - Feathermoss
SL	SBS	dk	06	P. George	Sxw - Twinberry - Coltsfoot
SL	SBS	dk	06	P. Rupert	Sxw - Twinberry - Coltsfoot
SF/WR	SBS	dk	07	P. George	Sxw - Horsetail
SF/WR	SBS	dk	07	P. Rupert	Sxw - Horsetail
WR	SBS	dk	08	P. George	Act - Dogwood - Prickly rose
WR	SBS	dk	08	P. Rupert	Act - Dogwood - Prickly rose
BB	SBS	dk	09	P. George	Sb - Creeping-snowberry - Sphagnum
BB	SBS	dk	09	P. Rupert	Sb - Creeping-snowberry - Sphagnum
BB	SBS	dk	10	P. George	Sb - Soft-leaved sedge - Sphagnum
BB	SBS	dk	10	P. Rupert	Sb - Soft-leaved sedge - Sphagnum
BG	SBS	dk	31	P. Rupert	Non-forested bog
WL	SBS	dk	32	P. Rupert	Non-forested fen/marsh

Standards for Broad Terrestrial Ecosystem Classification and Mapping

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
MS	SBS	dk	81	P. George	Saskatoon - Slender wheatgrass
MS	SBS	dk	81	P. Rupert	Saskatoon - Slender wheatgrass
BS	SBS	dk	82	P. George	Bluegrass - Slender wheatgrass
BS	SBS	dk	82	P. Rupert	Bluegrass - Slender wheatgrass
SD	SBS	dw1	01	Cariboo	SxwFd - Pinegrass
SD	SBS	dw1	01	P. George	SxwFd - Pinegrass
DL	SBS	dw1	02	Cariboo	FdPl - Cladonia
DL	SBS	dw1	02	P. George	FdPl - Cladonia
DF	SBS	dw1	03	Cariboo	Fd - Saskatoon - Pinegrass
DF	SBS	dw1	03	P. George	Fd - Saskatoon - Pinegrass
DL	SBS	dw1	04	Cariboo	Pl - Pinegrass - Feathermoss
DL	SBS	dw1	04	P. George	Pl - Pinegrass - Feathermoss
SD	SBS	dw1	05	Cariboo	SxwFd - Ricegrass
SD	SBS	dw1	05	P. George	SxwFd - Ricegrass
SD	SBS	dw1	06	Cariboo	SxwFd - Thimbleberry
SD	SBS	dw1	06	P. George	SxwFd - Thimbleberry
SL	SBS	dw1	07	Cariboo	Sxw - Twinberry - Coltsfoot
SL	SBS	dw1	07	P. George	Sxw - Twinberry - Coltsfoot
SF	SBS	dw1	08	Cariboo	Sxw - Twinberry - Oak fern
SF	SBS	dw1	08	P. George	Sxw - Twinberry - Oak fern
SK/SL/WR	SBS	dw1	09	Cariboo	Sxw - Horsetail - Glow moss
SK/SL/WR	SBS	dw1	09	P. George	Sxw - Horsetail - Glow moss
SD	SBS	dw2	01	Cariboo	SxwFd - Pinegrass
SD	SBS	dw2	01	P. George	SxwFd - Pinegrass
DL	SBS	dw2	02	Cariboo	FdPl - Cladonia
DL	SBS	dw2	02	P. George	FdPl - Cladonia
LP	SBS	dw2	03	Cariboo	Pl - Kinnikinnick - Wavy-leaved moss
LP	SBS	dw2	03	P. George	Pl - Kinnikinnick - Wavy-leaved moss
DF	SBS	dw2	04	Cariboo	Fd - Pinegrass - Aster
DF	SBS	dw2	04	P. George	Fd - Pinegrass - Aster
SL	SBS	dw2	05	Cariboo	SxwFd - Cat's-tail moss
SL	SBS	dw2	05	P. George	SxwFd - Cat's-tail moss
DL	SBS	dw2	06	Cariboo	Pl - Pinegrass - Feathermoss
DL	SBS	dw2	06	P. George	Pl - Pinegrass - Feathermoss
BL	SBS	dw2	07	Cariboo	PlSb - Feathermoss
BL	SBS	dw2	07	P. George	PlSb - Feathermoss
SL	SBS	dw2	08	Cariboo	Sxw - Twinberry
SL	SBS	dw2	08	P. George	Sxw - Twinberry
SF	SBS	dw2	09	Cariboo	Sxw - Devil's club - Knight's plume
SF	SBS	dw2	09	P. George	Sxw - Devil's club - Knight's plume
SF/WR	SBS	dw2	10	Cariboo	Sxw - Horsetail
SF/WR	SBS	dw2	10	P. George	Sxw - Horsetail
BB	SBS	dw2	11	Cariboo	Sb - Soft-leaved sedge - Sphagnum
BB	SBS	dw2	11	P. George	Sb - Soft-leaved sedge - Sphagnum
SD	SBS	dw3	01	P. George	SxwFd - Pinegrass

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
DL	SBS	dw3	02	P. George	FdPl - Cladonia
LP	SBS	dw3	03	P. George	Pl - Feathermoss - Cladina
SD	SBS	dw3	04	P. George	SxwFd - Ricegrass
BL	SBS	dw3	05	P. George	PlSb - Feathermoss
SL	SBS	dw3	06	P. George	Sxw - Pink spirea - Prickly rose
SL	SBS	dw3	07	P. George	Sxw - Twinberry
SF	SBS	dw3	08	P. George	Sxw - Oak fern
SL/SK/WR	SBS	dw3	09	P. George	Sxw - Horsetail - Glow moss
BB	SBS	dw3	10	P. George	Sb - Soft-leaved sedge - Sphagnum
BG	SBS	mc1	00	Cariboo	*Labrador tea - Sphagnum bog
SF	SBS	mc1	01	Cariboo	Sxw - Black huckleberry
LP	SBS	mc1	02	Cariboo	Pl - Cladonia - Haircap moss
DF	SBS	mc1	03	Cariboo	Fd - Pinegrass - Aster
SF	SBS	mc1	04	Cariboo	Sxw - Huckleberry - Labrador tea
SF	SBS	mc1	05	Cariboo	Sxw - Spirea - Glow moss
SF	SBS	mc1	06	Cariboo	Sxw - Oak fern
SF	SBS	mc1	07	Cariboo	Sxw - Devil's club - Step moss
SL/SK/WR	SBS	mc1	08	Cariboo	Sxw - Horsetail - Glow moss
SF	SBS	mc2	01	Cariboo	Sxw - Black huckleberry
SF	SBS	mc2	01	P. George	Sxw - Black Huckleberry
SF	SBS	mc2	01	P. Rupert	Sxw - Black huckleberry
LP	SBS	mc2	02	Cariboo	Pl - Huckleberry - Cladonia
LP	SBS	mc2	02	P. George	Pl - Huckleberry - Cladonia
LP	SBS	mc2	02	P. Rupert	Pl - Huckleberry - Cladonia
BL	SBS	mc2	03	P. George	SbPl - Feathermoss
BL	SBS	mc2	03	P. Rupert	SbPl - Feathermoss
SF	SBS	mc2	04	Cariboo	Sxw - Huckleberry - Dwarf blueberry
SF	SBS	mc2	04	P. George	Sxw - Huckleberry - Dwarf blueberry
SL	SBS	mc2	05	P. George	Sxw - Twinberry - Coltsfoot
SL	SBS	mc2	05	P. Rupert	Sxw - Twinberry - Coltsfoot
SF	SBS	mc2	06	Cariboo	Sxw - Oak fern
SF	SBS	mc2	06	P. George	Sxw - Oak fern
SF	SBS	mc2	06	P. Rupert	Sxw - Oak fern
SL	SBS	mc2	07	P. George	Sxw - Scrub birch - Feathermoss
SL	SBS	mc2	07	P. Rupert	Sxw - Scrub birch - Feathermoss
SF	SBS	mc2	08	Cariboo	Sxw - Twinberry - Oak fern
SF	SBS	mc2	08	P. George	Sxw - Twinberry - Oak fern
SF	SBS	mc2	09	P. Rupert	Sxw - Devil's club
SF	SBS	mc2	09	P. Rupert	Sxw - Devil's club
SF/WR	SBS	mc2	10	P. Rupert	Sxw - Horsetail
SF/WR	SBS	mc2	10	P. George	Sxw - Horsetail
SK/SL/WR	SBS	mc2	11	Cariboo	Sxw - Horsetail - Glow moss
SK/SL/WR	SBS	mc2	11	P. George	Sxw - Horsetail - Glow moss
BB	SBS	mc2	12	P. George	SbSxw - Scrub birch - Sedge
BB	SBS	mc2	12	P. Rupert	SbSxw - Scrub birch - Sedge

Standards for Broad Terrestrial Ecosystem Classification and Mapping

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
WL	SBS	mc2	31	P. Rupert	Non-forested fen/marsh
SF	SBS	mc3	01	P. George	Sxw - Black huckleberry
LP	SBS	mc3	02	P. George	PI - Juniper - Dwarf blueberry
LP	SBS	mc3	03	P. George	PI - Feathermoss - Cladina
SL	SBS	mc3	04	P. George	Sxw - Huckleberry - Soopolallie
BL	SBS	mc3	05	P. George	Sb - Huckleberry - Spirea
BL	SBS	mc3	06	P. George	SbPI - Feathermoss
SL	SBS	mc3	07	P. George	Sxw - Twinberry
SF/WR	SBS	mc3	08	P. George	Sxw - Horsetail
BB	SBS	mc3	09	P. George	SbSxw - Scrub birch - Sedge
SB	SBS	mh	01	Cariboo	SxwFd - Hazelnut
SB	SBS	mh	01	P. George	SxwFd - Hazelnut
DL	SBS	mh	02	Cariboo	FdPI - Cladonia
DL	SBS	mh	02	P. George	FdPI - Cladonia
DL	SBS	mh	03	Cariboo	FdPI - Velvet-leaved blueberry - Cladonia
DL	SBS	mh	03	P. George	FdPI - Velvet-leaved blueberry - Cladonia
DF	SBS	mh	04	Cariboo	Fd - Douglas maple - Step moss
DF	SBS	mh	04	P. George	Fd - Douglas maple - Step moss
SB	SBS	mh	05	Cariboo	SxwFd - Feathermoss
SB	SBS	mh	05	P. George	SxwFd - Feathermoss
SB	SBS	mh	06	Cariboo	SxwFd - Coltsfoot
SB	SBS	mh	06	P. George	SxwFd - Coltsfoot
SF	SBS	mh	07	Cariboo	SxwEp - Devil's club \$
SF	SBS	mh	07	P. George	SxwEp - Devil's club \$
SF	SBS	mh	08	Cariboo	Sxw - Ostrich fern
SF	SBS	mh	08	P. George	Sxw - Ostrich fern
SK/SL/WR	SBS	mh	09	Cariboo	Sxw - Horsetail - Glow moss
SK/SL/WR	SBS	mh	09	P. George	Sxw - Horsetail - Glow moss
SF	SBS	mk1	01	P. George	Sxw - Huckleberry - Highbush-cranberry
SL	SBS	mk1	02	P. George	PI - Cladina - Step moss
LP	SBS	mk1	03	P. George	PI - Feathermoss - Cladina
SF	SBS	mk1	04	P. George	SxwFd - Knight's plume
SL	SBS	mk1	05	P. George	SxwFd - Toad-flax
BL	SBS	mk1	06	P. George	Sb - Huckleberry - Spirea
SF	SBS	mk1	07	P. George	Sxw - Oak fern
SF	SBS	mk1	08	P. George	Sxw - Devil's club
SF/WR	SBS	mk1	09	P. George	Sxw - Horsetail
BB	SBS	mk1	10	P. George	Sb - Scrub birch - Sedge
SF	SBS	mk2	01	P. George	Sxw - Huckleberry - Highbush-cranberry
LP	SBS	mk2	02	P. George	PI - Feathermoss - Cladina
SL	SBS	mk2	03	P. George	Sxw - Huckleberry - Soopolallie
BL	SBS	mk2	04	P. George	Sb - Huckleberry - Spirea
SF	SBS	mk2	05	P. George	Sxw - Oak fern
SF/WR	SBS	mk2	06	P. George	Sxw - Horsetail

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
SF	SBS	mm	01	Kamloops	Sxw - Falsebox - Knight's plume
LP	SBS	mm	02	Kamloops	Pl - Huckleberry - Cladonia
DL	SBS	mm	03	Kamloops	Pl - Douglas-fir - Juniper
LP	SBS	mm	04	Kamloops	Pl - Soopolallie - Pinegrass
SF	SBS	mm	05	Kamloops	Sxw - Soopolallie - Falsebox
LP	SBS	mm	06	Kamloops	Sxw - Huckleberry - Falsebox
SF	SBS	mm	07	Kamloops	Sxw - Oak fern
SF/WR	SBS	mm	08	Kamloops	Sxw - Horsetail
WL	SBS	mm	09	Kamloops	Sedge - Sphagnum
SF	SBS	mw	01	Cariboo	SxwFd - Falsebox
SF	SBS	mw	01	P. George	SxwFd - Falsebox
DL	SBS	mw	02	Cariboo	FdBl - Huckleberry
DL	SBS	mw	02	P. George	FdBl - Huckleberry
LP	SBS	mw	03	Cariboo	Pl - Huckleberry - Velvet-leaved blueberry
LP	SBS	mw	03	P. George	Pl - Huckleberry - Velvet-leaved blueberry
SF	SBS	mw	04	Cariboo	SxwFd - Knight's plume
SF	SBS	mw	04	P. George	SxwFd - Knight's plume
SF	SBS	mw	05	Cariboo	Sxw - Pink spirea
SF	SBS	mw	05	P. George	Sxw - Pink spirea
SF	SBS	mw	06	Cariboo	Sxw - Oak fern
SF	SBS	mw	06	P. George	Sxw - Oak fern
SF	SBS	mw	07	Cariboo	Sxw - Twinberry - Oak fern
SF	SBS	mw	07	P. George	Sxw - Twinberry - Oak fern
SF	SBS	mw	08	Cariboo	Sxw - Devil's club
SF	SBS	mw	08	P. George	Sxw - Devil's club
SF/WR	SBS	mw	09	Cariboo	Sxw - Horsetail
SF/WR	SBS	mw	09	P. George	Sxw - Horsetail
BB	SBS	mw	10	Cariboo	SbSxw - Scrub birch - Sedge
BB	SBS	mw	10	P. George	SbSxw - Scrub birch - Sedge
SF	SBS	vk	01	P. George	Sxw - Devil's club
LP	SBS	vk	02	P. George	Pl - Huckleberry - Velvet-leaved blueberry
SD	SBS	vk	03	P. George	SxwFd - Thimbleberry
SF	SBS	vk	04	P. George	Sxw - Oak fern
SF	SBS	vk	05	P. George	Sxw - Devil's club - Spiny wood fern
SF/WR	SBS	vk	06	P. George	Sxw - Horsetail
SF	SBS	vk	07	P. George	Sxw - Devil's club - Ostrich fern
BB	SBS	vk	08	P. George	SbPl - Bog-laurel - Sphagnum
LP	SBS	vk	09	P. George	Pl - Huckleberry - Cladina
SK	SBS	vk	10	P. George	Sxw - Skunk cabbage
SF	SBS	wk1	01	Cariboo	Sxw - Oak fern
SF	SBS	wk1	01	P. George	Sxw - Oak fern
LP	SBS	wk1	02	Cariboo	Pl - Huckleberry - Cladina
LP	SBS	wk1	02	P. George	Pl - Huckleberry - Cladina
LP	SBS	wk1	03	Cariboo	Pl - Huckleberry - Velvet-leaved blueberry

Standards for Broad Terrestrial Ecosystem Classification and Mapping

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
LP	SBS	wk1	03	P. George	Pl - Huckleberry - Velvet-leaved blueberry
SF	SBS	wk1	04	Cariboo	SxwFd - Knight's plume
SF	SBS	wk1	04	P. George	SxwFd - Knight's plume
SF	SBS	wk1	05	Cariboo	Sxw - Huckleberry - Highbush-cranberry
SF	SBS	wk1	05	P. George	Sxw - Huckleberry - Highbush-cranberry
SF	SBS	wk1	06	Cariboo	Sxw - Pink spirea - Oak fern
SF	SBS	wk1	06	P. George	Sxw - Pink spirea - Oak fern
SF	SBS	wk1	07	Cariboo	Sxw - Twinberry - Oak fern
SF	SBS	wk1	07	P. George	Sxw - Twinberry - Oak fern
SF	SBS	wk1	08	P. George	Sxw - Devil's club
SF	SBS	wk1	08	Cariboo	Sxw - Devil's club
SF/WR	SBS	wk1	09	Cariboo	Sxw - Horsetail
SF/WR	SBS	wk1	09	P. George	Sxw - Horsetail
SF	SBS	wk1	10	P. George	Sxw - Devil's club - Lady fern
BB	SBS	wk1	11	Cariboo	SbSxw - Scrub birch - Sedge
BB	SBS	wk1	11	P. George	SbSxw - Scrub birch - Sedge
BL	SBS	wk1	12	P. George	SbPl - Feathermoss
SF	SBS	wk2	01	P. George	Sxw - Oak fern
LP	SBS	wk2	02	P. George	Pl - Huckleberry - Cladina
SF	SBS	wk2	03	P. George	Sxw - Huckleberry - Highbush-cranberry
BL	SBS	wk2	04	P. George	SbPl - Feathermoss
SF	SBS	wk2	05	P. George	Sxw - Devil's club
SF/WR	SBS	wk2	06	P. George	Sxw - Horsetail
SF	SBS	wk3	01	P. George	Sxw - Oak fern
LP	SBS	wk3	02	P. George	Pl - Huckleberry - Cladina
SF	SBS	wk3	03	P. George	SxwFd - Purple peavine
SF	SBS	wk3	04	P. George	Sxw - Huckleberry - Highbush-cranberry
BL	SBS	wk3	05	P. George	Sb - Labrador tea
SL	SBS	wk3	06	P. George	Sxw - Twinberry - Coltsfoot
SF	SBS	wk3	07	P. George	Sxw - Devil's club
SF/WR	SBS	wk3	08	P. George	Sxw - Horsetail
	SWB	mk	01	P. George	*Sw - Hairy wildrye - Step moss
	SWB	mk	01	P. Rupert	*Sw - Hairy wildrye - Step moss
	SWB	mk	02	P. George	*Sw - Common Juniper - Lichen
	SWB	mk	02	P. Rupert	*Sw - Common Juniper - Lichen
	SWB	mk	03	P. Rupert	*Sw - Prickly rose - Wildrye
	SWB	mk	04	P. George	*Bog birch - Cranberry
	SWB	mk	04	P. Rupert	*Bog birch - Cranberry
	SWB	mk	05	P. George	*Sw - Prickly rose - Shrubby cinquefoil
	SWB	mk	05	P. Rupert	*Sw - Prickly rose - Shrubby cinquefoil
	SWB	mk	06	P. Rupert	*Sw - Willow - Kinnikinnick

BEU	BGC Zone	Subzone Variant	Site Series Number	Forest Region	Site Series Name
	SWB	mk	07	P. George	*Sw - Willow - Larkspur
	SWB	mk	07	P. Rupert	*Sw - Willow - Larkspur
	SWB	mk	08	P. George	*Sw - Willow - Altai fescue
	SWB	mk	08	P. Rupert	*Sw - Willow - Altai fescue
	SWB	mk	09	P. George	*Willow - Bog birch - Sedge
	SWB	mk	09	P. Rupert	*Willow - Bog birch - Sedge
	SWB	mk	3	P. George	*Sw - Prickly rose - Wildrye
	SWB	mk	6	P. George	*Sw - Willow - Kinnikinnick

APPENDIX B

PLANT SPECIES LIST

COMMON NAME	LATIN NAME
alder	<i>Alnus spp.</i>
alder, red	<i>Alnus rubra</i>
alder, Green	<i>Alnus crispa spp. crispa</i>
alder, mountain	<i>Alnus incana ssp tenuifolia</i>
alder, Sitka	<i>Alnus crispa ssp. sinuata</i>
alkaligrass, Nuttall's	<i>Puccinellia nuttalliana</i>
alumroot, round-leaved	<i>Heuchera cylindrica</i>
anemone, cut-leaved	<i>Anemone multifida</i>
antelope-brush	<i>Purshia tridentata</i>
apple, Pacific crab	<i>Malus fusca</i>
arbutus	<i>Arbutus menziesii</i>
arnica, heart-leaved	<i>Arnica cordifolia</i>
arnica, mountain	<i>Arnica latifolia</i>
arrowgrass	<i>Triglochin spp.</i>
arrow-grass, seaside	<i>Triglochin maritimum</i>
aspen, trembling	<i>Populus tremuloides</i>
aster, fringed	<i>Aster ciliolatus</i>
aster, leafy	<i>Aster foliaceus</i>
aster, meadow	<i>Aster campestris</i>
aster, rush	<i>Aster borealis</i>
aster, showy	<i>Aster conspicuus</i>
aster, tufted white prairie	<i>Aster pansus</i>
azalea, FALSE	<i>Menziesia ferruginea</i>
balsamroot, arrow-leaved	<i>Balsamorhiza sagittata</i>
baneberry	<i>Actaea rubra</i>
barley, foxtail	<i>Hordeum jubatum</i>
bearberry	<i>Arctostaphylos spp.</i>
bedstraw	<i>Galium spp.</i>
bedstraw, northern	<i>Galium boreale</i>
bedstraw, small	<i>Galium trifidum</i>
bedstraw, sweet-scented	<i>Galium triflorum</i>
bentgrass, spike	<i>Agrostis exarata</i>
bilberry, low	<i>Vaccinium myrtillus</i>
birch, paper	<i>Betula papyrifera</i>
birch, scrub	<i>Betula glandulosa</i>
birch, water	<i>Betula occidentalis</i>
birch, Bog	<i>Betula glandulosa</i>
bistort, alpine	<i>Bistorta vivipara</i>

Standards for Broad Terrestrial Ecosystem Classification and Mapping

COMMON NAME	LATIN NAME
black currant, northern	<i>Ribes hudsonianum</i>
blackberry, evergreen	<i>Rubus laciniatus</i>
blackberry, Himalayan	<i>Rubus discolor</i>
blackberry, trailing	<i>Rubus ursinus</i> spp. <i>macropetalus</i>
blackberry, Dwarf red	<i>Rubus pubescens</i>
bladderwort	<i>Utricularia</i> spp.
bladderwort, flat-leaved	<i>Utricularia intermedia</i>
bladderwort, greater	<i>Utricularia vulgaris</i>
blue-eyed-grass	<i>Sisyrinchium</i> spp.
bluebells, tall	<i>Mertensia paniculata</i>
blueberry	<i>Vaccinium</i> spp.
blueberry, Alaskan	<i>Vaccinium alaskaense</i>
blueberry, bog	<i>Vaccinium uliginosum</i>
blueberry, dwarf	<i>Vaccinium caespitosum</i>
blueberry, oval-leaved	<i>Vaccinium ovalifolium</i>
blueberry, velvet-leaved	<i>Vaccinium myrtilloides</i>
bluegrass	<i>Poa</i> spp.
bluegrass, alkali	<i>Poa juncifolia</i>
bluegrass, alpine	<i>Poa alpina</i>
bluegrass, arctic	<i>Poa arctica</i>
bluegrass, Cusick's	<i>Poa cusickii</i>
bluegrass, glaucous	<i>Poa glauca</i>
bluegrass, Kentucky	<i>Poa pratensis</i>
bluegrass, Sandberg's	<i>Poa sandbergii</i>
bluejoint	<i>Calamagrostis canadensis</i>
bog-laurel	<i>Kalmia microphylla</i> ssp. <i>occidentalis</i>
bog-orchid, white	<i>Platanthera dilatata</i>
Bog-rosemary	<i>Andromeda polifolia</i>
bracken	<i>Pteridium aquilinum</i>
bramble, five-leaved	<i>Rubus pedatus</i>
brome, Barren	<i>Bromus sterilis</i>
broom, Scotch	<i>Cytisus scoparius</i>
buckbean	<i>Menyanthes trifoliata</i>
bugbane, False	<i>Trautvetteria caroliniensis</i>
bulrush, great	<i>Scirpus lacustris</i>
bulrush, Nevada	<i>Scirpus nevadensis</i>
bunchberry	<i>Cornus canadensis</i>
bunchberry, cordilleran	<i>Cornus unalaschkensis</i>
burnet, great	<i>Sanguisorba officinalis</i>
buttercup, shore	<i>Ranunculus cymbalaria</i>
buttercup, subalpine	<i>Ranunculus eschscholtzii</i>
buttercup, western	<i>Ranunculus occidentalis</i>
cabbage, skunk	<i>Lysichiton americanum</i>
cactus, brittle prickly-pear	<i>Opuntia fragilis</i>

COMMON NAME	LATIN NAME
cactus, prickly-pear	<i>Opuntia spp.</i>
camas, common	<i>Camassia quamash</i>
campion, moss	<i>Silene acaulis</i>
cat's-ear, hairy	<i>Hypochaeris radicata</i>
cattail	<i>Typha latifolia</i>
ceanothus, redstem	<i>Ceanothus sanguineus</i>
Chaffweed	<i>Centunculus minimus</i>
Cheatgrass	<i>Bromus tectorum</i>
cherry, choke	<i>Prunus virginiana</i>
common starwort (chickweed)	<i>Stellaria media</i>
cinquefoil	<i>Potentilla spp.</i>
cinquefoil, diverse-leaved	<i>Potentilla diversifolia</i>
cinquefoil, graceful	<i>Potentilla gracilis</i>
cinquefoil, marsh	<i>Potentilla palustris</i>
cinquefoil, one-flowered	<i>Potentilla uniflora</i>
cinquefoil, prairie	<i>Potentilla pensylvanica</i>
cinquefoil, shrubby	<i>Potentilla fruticosa</i>
cloudberry	<i>Rubus chamaemorus</i>
clover, Springbank	<i>Trifolium wormskjoldii</i>
clubmoss, stiff	<i>Lycopodium annotinum</i>
clubrush	<i>Trichophorum spp.</i>
clubrush, tufted	<i>Trichophorum cespitosum</i>
coltsfoot, arrow-leaved	<i>Petasites sagittatus</i>
coltsfoot, palmate	<i>Petasites palmatus</i>
coltsfoot, sweet	<i>Petasites frigidus</i>
copperbush	<i>Cladothamnus pyroliflorus</i>
cotton-grass	<i>Eriophorum spp.</i>
cotton-grass, narrow-leaved	<i>Eriophorum angustifolium</i>
cottonwood, black	<i>Populus balsamifera ssp. trichocarpa</i>
cow-parnsip	<i>Heracleum sphondylium</i>
cow-wheat	<i>Melampyrum lineare var. lineare</i>
cranberry, bog	<i>Vaccinium oxycoccos</i>
creeping-snowberry	<i>Gaultheria hispidula</i>
crowberry	<i>Empetrum nigrum</i>
currant	<i>Ribes spp.</i>
currant, red swamp	<i>Ribes triste</i>
currant, stink	<i>Ribes bracteosum</i>
daisy, subalpine	<i>Erigeron peregrinus</i>
dandelion, Common	<i>Taraxacum officinale</i>
death-camas	<i>Zigadenus spp.</i>
deer-cabbage	<i>Fauria crista-galli</i>
devil's club	<i>Oplopanax horridus</i>
dogbane, spreading	<i>Apocynum androsaemifolium</i>
dogtail, Hedgehog	<i>Cynosurus echinatus</i>

COMMON NAME	LATIN NAME
dogwood, red-osier	<i>Cornus sericea</i>
dogwood, western flowering	<i>Cornus nuttallii</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>
Douglas-fir, coast	<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>
Douglas-fir, interior	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>
draba, Snow	<i>Draba nivalis</i>
dropseed, sand	<i>Sporobolus cryptandrus</i>
duckweed	<i>Lemna</i> spp. & <i>Spirodela</i> spp.
eel-grass, Common	<i>Zostera marina</i>
elderberry, red	<i>Sambucus racemosa</i>
elderberry, Black (Black elder)	<i>Sambucus racemosa</i> spp. <i>pubens</i> var.
fairybells, Hooker's	<i>Disporum hookeri</i>
fairybells, rough-fruited	<i>Disporum trachycarpum</i>
False Solomon's-seal, star-flowered	<i>Smilacina stellata</i>
False Solomon's-seal	<i>Smilacina racemosa</i> var. <i>amplexicaulis</i>
falsebox	<i>Paxistima myrsinites</i>
feathermoss, red-stemmed	<i>Pleurozium schreberi</i>
fern, bracken	<i>Pteridium aquilinum</i>
fern, lady	<i>Athyrium filix-femina</i>
fern, deer	<i>Blechnum spicant</i>
fern, parsley	<i>Cryptogramma crispera</i>
fern, spiny wood	<i>Dryopteris expansa</i>
fern, oak	<i>Gymnocarpium dryopteris</i>
fern, sword	<i>Polystichum munitum</i>
ferns, Cliff	<i>Woodsia</i> spp.
fescue	<i>Festuca</i> spp.
fescue, alpine	<i>Festuca brachyphylla</i>
fescue, Altai	<i>Festuca altaica</i>
fescue, Idaho	<i>Festuca idahoensis</i>
fescue, Rocky Mountain	<i>Festuca saximontana</i>
fescue, rough	<i>Festuca scabrella</i>
fescue, western	<i>Festuca occidentalis</i>
fir, amabilis	<i>Abies amabilis</i>
fir, grand	<i>Abies grandis</i>
fir, subalpine	<i>Abies lasiocarpa</i>
fireweed	<i>Epilobium angustifolium</i>
flax, wild blue (western blue)	<i>Linum perenne</i> var. <i>lewisii</i>
fleabane, showy	<i>Erigeron speciosus</i>
fleabane, trailing	<i>Erigeron flagellaris</i>
foamflowers	<i>Tiarella</i> spp.
foamflower, one-leaved	<i>Tiarella unifoliata</i>
foamflower, three-leaved	<i>Tiarella trifoliata</i>
forget-me-not, mountain	<i>Myosotis asiatica</i>
forget-me-not, wood	<i>Myosotis sylvatica</i>

COMMON NAME	LATIN NAME
gale, sweet	<i>Myrica gale</i>
oak, Garry	<i>Quercus garryana</i>
gentian, glaucous	<i>Gentiana glauca</i>
geranium	<i>Geranium spp.</i>
globeflower	<i>Trollius laxus</i>
goldenrod, spike-like	<i>Solidago spathulata</i>
goldenrod, Northern	<i>Solidago multiradiata</i>
goldthread	<i>Coptis spp.</i>
goldthread, fern-leaved	<i>Coptis aspleniifolia</i>
gooseberry, black	<i>Ribes lacustre</i>
gooseberry, northern	<i>Ribes oxycanthoides</i>
grass-of-Parnassus, fringed	<i>Parnassia fimbriata</i>
groundsel, arrow-leaved	<i>Senecio triangularis</i>
grouseberry	<i>Vaccinium scoparium</i>
hairgrass, tufted	<i>Deschampsia cespitosa</i>
hairgrass, Mountain (Mountain	<i>Vahlodea atropurpurea</i>
hardhack	<i>Spiraea douglasii ssp. douglasii</i>
harebell, mountain	<i>Campanula lasiocarpa</i>
hawkweed, slender	<i>Hieracium gracile</i>
hawkweed, white-flowered	<i>Hieracium albiflorum</i>
hazelnut, beaked	<i>Corylus cornuta</i>
hellebore, Indian	<i>Veratrum viride</i>
hemlock, mountain	<i>Tsuga mertensiana</i>
hemlock, western	<i>Tsuga heterophylla</i>
highbush-cranberry	<i>Viburnum edule</i>
honeysuckle, hairy	<i>Lonicera hispidula</i>
honeysuckle, red	<i>Lonicera dioica</i>
honeysuckle, Utah	<i>Lonicera utahensis</i>
honeysuckle	<i>Lonicera spp.</i>
hornwort, Common (Coontail)	<i>Ceratophyllum demersum</i>
horsetails	<i>Equisetum spp.</i>
horsetail, common	<i>Equisetum arvense</i>
horsetail, marsh	<i>Equisetum palustre</i>
horsetail, swamp	<i>Equisetum fluviatile</i>
huckleberry	<i>Vaccinium spp.</i>
huckleberry, black	<i>Vaccinium membranaceum</i>
huckleberry, red	<i>Vaccinium parvifolium</i>
lichen, Icelandmoss	<i>Cetraria spp.</i>
Indian-plum	<i>Oemleria cerasiformis</i>
Jacob's-ladder, showy	<i>Polemonium pulcherrimum</i>
Jacob's-ladder, tall	<i>Polemonium caeruleum</i>
junegrass	<i>Koeleria macrantha</i>
juniper, common	<i>Juniperus ommunis</i>
juniper, Rocky Mountain	<i>Juniperus scopulorum</i>

COMMON NAME	LATIN NAME
kelp, Bull	<i>Nereocystis luetkeana</i>
kinnikinnick	<i>Arctostaphylos uva-ursi</i>
knapweed	<i>Centaurea spp.</i>
knapweed, spotted	<i>Centaurea maculosa</i>
kobresia, Bellard's	<i>Kobresia myosuroides</i>
Labrador tea	<i>Ledum groenlandicum</i>
Labrador tea, northern	<i>Ledum palustre</i>
larch, alpine	<i>Larix lyallii</i>
larch, western	<i>Larix occidentalis</i>
larkspur, Menzies'	<i>Delphinium menziesii</i>
larkspur, tall	<i>Delphinium glaucum</i>
leatherleaf	<i>Chamaedaphne calyculata</i>
lemonweed	<i>Lithospermum ruderales</i>
lichen, Cladina	<i>Cladina spp.</i>
lichen, Cladonia	<i>Cladonia spp.</i>
lichen, Peltigera	<i>Peltigera spp.</i>
lichen, Common witch's hair	<i>Alectoria sarmentosa</i>
lichen, Curly snow	<i>Cetraria cucullata</i>
lichen, Ragged snow	<i>Cetraria nivalis</i>
lichen, Snow	<i>Cetraria spp.</i>
lichen, reindeer	<i>Cladina rangiferina</i>
lichen, Orange-foot	<i>Cladonia ecmocyna</i>
lichen, Spiny heath	<i>Coelocaulon aculeatum</i>
lichen, dog	<i>Peltigera canina</i>
lichen, Freckled	<i>Peltigera aphthosa</i>
lichen, Green map	<i>Rhizocarpon geographicum</i>
lichen, Chocolate chip	<i>Solorina crocea</i>
lichen, Common coral	<i>Stereocaulon paschale</i>
lichen, Rock orange	<i>Xanthoria elegans</i>
lichens, Reindeer	<i>Cladina spp.</i>
lichens, Pelt	<i>Peltigera spp.</i>
lichens, Coral	<i>Stereocaulon spp.</i>
lichens, Rocktripe	<i>Umbilicaria spp.</i>
lichens, Rockfrog	<i>Xanthoparmelia spp.</i>
lily, glacier	<i>Erythronium grandiflorum</i>
lily, white fawn	<i>Erythronium oregonum</i>
lily-of-the-valley, False	<i>Maianthemum dilatatum</i>
lingonberry	<i>Vaccinium vitis-idaea</i>
liverwort, leafy	<i>Barbilophozia spp.</i>
liverwort, common leafy	<i>Barbilophozia lycopodioides</i>
liverwort, Mountain leafy	<i>Barbilophozia floerkei</i>
liverwort, floating	<i>Ricciocarpus natans</i>
locoweed, blackish	<i>Oxytropis nigrescens</i>
locoweed, field	<i>Oxytropis campestris</i>

COMMON NAME	LATIN NAME
lousewort, boreal	<i>Pedicularis macrodonta</i>
lousewort, bracted	<i>Pedicularis bracteosa</i>
lousewort, capitate	<i>Pedicularis capitata</i>
lupine, arctic	<i>Lupinus arcticus</i>
lupine	<i>Lupinus spp.</i>
mannagrass	<i>Glyceria spp.</i>
maple, bigleaf	<i>Acer macrophyllum</i>
maple, Douglas	<i>Acer glabrum</i>
maple, vine	<i>Acer circinatum</i>
marsh-marigold, white	<i>Caltha leptosepala</i>
marsh-marigold, Yellow (Cowslip)	<i>Caltha palustris spp. asarifolia</i>
meadowrue, western	<i>Thalictrum occidentale</i>
milk-vetch, timber	<i>Astragalus miser</i>
mint, field	<i>Mentha arvensis</i>
mitrewort, common	<i>Mitella nuda</i>
mock-orange	<i>Philadelphus lewisii</i>
monkey-flower, Yellow	<i>Mimulus guttatus</i>
monkshood, mountain	<i>Aconitum delphiniifolium</i>
moss, glow	<i>Aulacomnium palustre</i>
moss, Ragged	<i>Brachythecium spp.</i>
moss, Dicranum	<i>Dicranum spp.</i>
moss, broken-leaf	<i>Dicranum tauricum</i>
moss, broom	<i>Dicranum scoparium</i>
moss, wavy-leaved	<i>Dicranum polysetum</i>
moss, Curly heron's-bill	<i>Dicranum fuscescens</i>
moss, sickle	<i>Drepanocladus uncinatus</i>
moss, Common hook	<i>Drepanocladus aduncus</i>
moss, step	<i>Hylocomium splendens</i>
moss, cat-tail	<i>Isoetecium myosuroides</i>
moss, palm tree	<i>Leucolepis menziesii</i>
moss, Leafy	<i>Plagiomnium & Mnium spp.</i>
moss, flat	<i>Plagiothecium undulatum</i>
moss, haircap	<i>Polytrichum spp.</i>
moss, awned haircap	<i>Polytrichum piliferum</i>
moss, juniper haircap	<i>Polytrichum juniperinum</i>
moss, Roadside rock	<i>Racomitrium canescens</i>
moss, electrified cat's-tail	<i>Rhytidiadelphus triquetrus</i>
moss, lanky	<i>Rhytidiadelphus loreus</i>
moss, pipecleaner	<i>Rhytidiopsis robusta</i>
moss, sphagnum (peat)	<i>Sphagnum spp.</i>
moss, Oregon beaked	<i>Kindbergia oregana</i>
moss, Wiry fern	<i>Thuidium abietinum</i>
moss, golden fuzzy fen	<i>Tomenthypnum nitens</i>
moss, Tortula	<i>Tortula spp.</i>

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moss, Sidewalk	<i>Tortula ruralis</i>
mosses, Water	<i>Calliergon spp.</i>
mountain-ash, European	<i>Sorbus aucuparia</i>
mountain-ash, Sitka	<i>Sorbus sitchensis</i>
mountain-avens, white	<i>Dryas octopetala</i>
mountain-avens	<i>Dryas spp.</i>
mountain-heather, Alaskan	<i>Cassiope stelleriana</i>
mountain-heather, club-moss	<i>Cassiope lycopodioides</i>
mountain-heather, four-angled	<i>Cassiope tetragona</i>
mountain-heather, white	<i>Cassiope mertensiana</i>
mountain-heather, pink	<i>Phyllodoce empetriformis</i>
mountain-heather, yellow	<i>Phyllodoce glanduliflora</i>
mountain-heather	<i>Phyllodoce spp. and Cassiope spp.</i>
muhly, mat	<i>Muhlenbergia richardsonis</i>
nagoonberry, dwarf	<i>Rubus arcticus</i>
needle-and-thread grass	<i>Stipa comata</i>
needlegrass, green	<i>Stipa viridula</i>
needlegrass, spreading	<i>Stipa richardsonii</i>
needlegrass, stiff	<i>Stipa occidentalis</i>
nettle, stinging	<i>Urtica dioica</i>
ninebark, mallow	<i>Physocarpus malvaceus</i>
oatgrass, timber	<i>Danthonia intermedia</i>
ocean-spray	<i>Holodiscus discolor</i>
old man's whiskers	<i>Geum triflorum</i>
onion, nodding	<i>Allium cernuum</i>
oniongrass, Alaska	<i>Melica subulata</i>
oniongrass	<i>Melica bulbosa</i>
orchardgrass	<i>Dactylis glomerata</i>
Oregon-grape, dull	<i>Mahonia nervosa</i>
Oregon-grape, tall	<i>Mahonia aquifolium</i>
paintbrush	<i>Castilleja spp.</i>
partridgefoot	<i>Luetkea pectinata</i>
pasqueflower, western	<i>Pulsatilla occidentalis</i>
pearlwort, Bird's-eye	<i>Sagina procumbens</i>
peavine, creamy	<i>Lathyrus ochroleucus</i>
peavine, purple	<i>Lathyrus nevadensis</i>
penstemon, shrubby	<i>Penstemon fruticosus</i>
penstemon, small-flowered	<i>Penstemon procerus</i>
pine, ponderosa	<i>Pinus ponderosa</i>
pine, western white	<i>Pinus monticola</i>
pine, whitebark	<i>Pinus albicaulis</i>
pine, lodgepole	<i>Pinus contorta var. latifolia</i>
pine, shore	<i>Pinus contorta var. contorta</i>
pinegrass	<i>Calamagrostis rubescens</i>

COMMON NAME	LATIN NAME
plantain, common	<i>Plantago major</i>
plantain, Woolly (Indian-wheat)	<i>Plantago patagonica</i>
moss, knight's plume	<i>Ptilium crista-castrensis</i>
poison-ivy	<i>Toxicodendron rydbergii</i>
polytrichum, Stiff-leaved	<i>Polytrichum alpinum</i>
pondweed, grass-leaved	<i>Potamogeton gramineus</i>
pondweed	<i>Potamogeton spp.</i>
poplar	<i>Populus balsamifera</i>
poplar, balsam	<i>Populus balsamifera spp. balsamifera</i>
porcupinegrass, short-awned	<i>Stipa curtisetata</i>
prince's pine	<i>Chimaphila umbellata</i>
pussytoes, alpine	<i>Antennaria alpina</i>
pussytoes, one-headed	<i>Antennaria monocephala</i>
pussytoes, low	<i>Antennaria dimorpha</i>
pussytoes, woolly	<i>Antennaria lanata</i>
pussytoes	<i>Antennaria spp.</i>
queen's cup	<i>Clintonia uniflora</i>
rabbit-brush	<i>Chrysothamnus nauseosus</i>
raspberry, trailing	<i>Rubus pubescens</i>
redcedar, western	<i>Thuja plicata</i>
reedgrass, Pacific	<i>Calamagrostis nutkaensis</i>
reedgrass, Scribner's	<i>Calamagrostis scribneri</i>
reedgrass, slimstem	<i>Calamagrostis stricta</i>
rhododendron, white-flowered	<i>Rhododendron albiflorum</i>
ricegrass	<i>Oryzopsis spp.</i>
ricegrass, rough-leaved	<i>Oryzopsis asperifolia</i>
ricegrass, Indian	<i>Stipa hymenoides</i>
rock moss	<i>Racomitrium spp.</i>
rose	<i>Rosa spp.</i>
rose, baldhip	<i>Rosa gymnocarpa</i>
rose, Nootka	<i>Rosa nutkana</i>
rose, prickly	<i>Rosa acicularis</i>
rose, Prairie (Wood's rose)	<i>Rosa woodsii spp. ultramontana</i>
rush, arctic	<i>Juncus arcticus</i>
rush, Baltic	<i>Juncus balticus var. littoralis</i>
rush	<i>Juncus spp.</i>
sage, pasture	<i>Artemisia frigida</i>
sagebrush, big	<i>Artemisia tridentata var. tridentata</i>
sagebrush, Vasey's big	<i>Artemisia tridentata var. vaseyana</i>
sagewort, mountain	<i>Artemisia arctica</i>
salal	<i>Gaultheria shallon</i>
salmonberry	<i>Rubus spectabilis</i>
salsify	<i>Tragopogon spp.</i>
saltgrass, alkali	<i>Distichlis stricta</i>

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saltgrass	<i>Distichlis spp.</i>
saltwort, Perennial	<i>Salicornia virginica</i>
sandwort, thread-leaved	<i>Arenaria capillaris</i>
sarsaparilla, wild	<i>Aralia nudicaulis</i>
saskatoon	<i>Amelanchier alnifolia</i>
Satinflower, (Douglas' blue-eyed grass)	<i>Olsynium douglasii var. douglasii</i>
saxifrage, spotted	<i>Saxifraga bronchialis</i>
saxifrage, diamond-leaved	<i>Saxifraga rhomboidea</i>
saxifrage	<i>Saxifraga spp.</i>
scouring-rush, dwarf	<i>Equisetum scirpoides</i>
scouring-rush	<i>Equisetum hyemale</i>
Sea blush	<i>Plectritis congesta</i>
seablite	<i>Suaeda depressa</i>
sedge, awned	<i>Carex atherodes</i>
sedge, beaked	<i>Carex rostrata</i>
sedge, black alpine	<i>Carex nigricans</i>
sedge, field	<i>Carex praegracilis</i>
sedge, lesser panicled	<i>Carex diandra</i>
sedge, Lyngbye's	<i>Carex lyngbyei</i>
sedge, pasture	<i>Carex petasata</i>
sedge, prairie	<i>Carex prairea</i>
sedge, Richardson's	<i>Carex richardsonii</i>
sedge, Sartwell's	<i>Carex sartwellii</i>
sedge, shore	<i>Carex limosa</i>
sedge, slender	<i>Carex lasiocarpa</i>
sedge, slough	<i>Carex obnupta</i>
sedge, small-awned	<i>Carex microchaeta</i>
sedge, soft-leaved	<i>Carex disperma</i>
sedge, two-toned	<i>Carex albonigra</i>
sedge, water	<i>Carex aquatilis</i>
sedge, woolly	<i>Carex lanuginosa</i>
sedge, yellow-flowered	<i>Carex anthoxanthea</i>
sedges	<i>Carex spp.</i>
selaginella, compact	<i>Selaginella densa</i>
selaginella, Wallace's	<i>Selaginella wallacei</i>
shootingstar	<i>Dodecatheon spp.</i>
sibbaldia	<i>Sibbaldia procumbens</i>
Silverberry (wolf-willow)	<i>Elaeagnus commutata</i>
Silverweed	<i>Potentilla anserina spp. anserina</i>
silverweed, Pacific	<i>Potentilla anserina spp. pacifica</i>
smartweed, Water	<i>Polygonum amphibium</i>
snowberry, common	<i>Symphoricarpos albus</i>
snowberry, western	<i>Symphoricarpos occidentalis</i>
snowberry	<i>Symphoricarpos spp.</i>

COMMON NAME	LATIN NAME
snowbrush	<i>Ceanothus velutinus</i>
Solomon's-seal, false	<i>Smilacina racemosa</i>
soopolallie	<i>Shepherdia canadensis</i>
sphagnum, common green	<i>Sphagnum girgensohnii</i>
sphagnum, common red	<i>Sphagnum capillaceum</i>
spike-rush, common	<i>Eleocharis palustris</i>
spirea, birch-leaved	<i>Spiraea betulifolia</i>
spruce, black	<i>Picea mariana</i>
spruce, Engelmann	<i>Picea engelmannii</i>
spruce, Sitka	<i>Picea sitchensis</i>
spruce, white	<i>Picea glauca</i>
spruce, hybrid white	<i>Picea glauca x engelmannii</i>
spruce, Roche	<i>Picea sitchensis x glauca (=P. x lutzii)</i>
starflower, broad-leaved	<i>Trientalis latifolia</i>
starflower, northern	<i>Trientalis europaea</i>
stonecrop, broad-leaved	<i>Sedum spathulifolium</i>
strawberry, wild	<i>Fragaria virginiana</i>
sumac	<i>Rhus glabra</i>
sweet-cicely	<i>Osmorhiza spp.</i>
sweetgrass, alpine	<i>Hierochloe alpina</i>
tamarack	<i>Larix laricina</i>
thimbleberry	<i>Rubus parviflorus</i>
three-awn, red	<i>Aristida longiseta</i>
timothy, alpine	<i>Phleum alpinum</i>
timothy	<i>Phleum pratense</i>
toad-flax, bastard	<i>Geocaulon lividum</i>
trapper's tea	<i>Ledum glandulosum</i>
trisetum, spike	<i>Trisetum spicatum</i>
twinberry, black	<i>Lonicera involucrata</i>
twinflor	<i>Linnaea borealis</i>
twistedstalk, clasping	<i>Streptopus amplexifolius</i>
twistedstalk, rosy	<i>Streptopus roseus</i>
twistedstalk	<i>Streptopus spp.</i>
valerian, Sitka	<i>Valeriana sitchensis</i>
vanilla-leaf	<i>Achlys triphylla</i>
vernalgrass, Sweet	<i>Anthoxanthum odoratum</i>
vetch, American	<i>Vicia americana</i>
violet	<i>Viola spp.</i>
wall-lettuce	<i>Mycelis murelis</i>
water-buttercup, small yellow	<i>Ranunculus gmelinii</i>
water-buttercup	<i>Ranunculus spp.</i>
water-milfoil,	<i>Myriophyllum spp.</i>
water-milfoil, northern spiked	<i>Myriophyllum spicatum var. exalbescens</i>
water-parsley,	<i>Oenanthe sarmentosa</i>

Standards for Broad Terrestrial Ecosystem Classification and Mapping

COMMON NAME	LATIN NAME
waterlily, yellow	<i>Nuphar lutea</i>
wheatgrass, bluebunch	<i>Agropyron spicatum</i>
wheatgrass, slender	<i>Agropyron trachycaulum</i>
wildrye	<i>Elymus spp.</i>
wildrye, blue	<i>Elymus glaucus</i>
wildrye, fuzzy-spiked	<i>Elymus innovatus</i>
wildrye, giant	<i>Elymus cinereus</i>
wildrye, hairy	<i>Elymus hirsutus</i>
willow, Alaska (felt-leaved)	<i>Salix alaxensis</i>
willow, arctic	<i>Salix arctica</i>
willow, Barratt's	<i>Salix barrattiana</i>
willow, bog	<i>Salix pedicellaris</i>
willow, diamond-leaved	<i>Salix planifolia spp. pulchra</i>
willow, Drummond's	<i>Salix drummondiana</i>
willow, grey-leaved	<i>Salix glauca</i>
willow, hoary	<i>Salix candida</i>
willow, Maccall's	<i>Salix maccalliana</i>
willow, Mackenzie's	<i>Salix mackenzieana</i>
willow, net-veined	<i>Salix reticulata spp. reticulata</i>
willow, polar	<i>Salix polaris</i>
willow, pussy	<i>Salix discolor</i>
willow, short-fruited	<i>Salix brachycarpa</i>
willow, Sitka	<i>Salix sitchensis</i>
willow, snow	<i>Salix reticulata ssp. nivalis</i>
willow, tea-leaved	<i>Salix planifolia spp. planifolia</i>
willow	<i>Salix spp.</i>
wintergreen, one-sided	<i>Orthilia secunda</i>
wintergreen, pink	<i>Pyrola asarifolia</i>
wintergreen	<i>Pyrola spp.</i>
woodrush, arctic	<i>Luzula arctica</i>
woodrush, curved alpine	<i>Luzula arcuata</i>
woodrush, small-flowered	<i>Luzula parviflora</i>
woodrush, spiked	<i>Luzula spicata</i>
woodrush	<i>Luzula spp.</i>
yarrow	<i>Achillea millefolium</i>
yarrow, western	<i>Achillea millefolium var. lanulosa</i>
Yellow-cedar	<i>Chamaecyparis nootkatensis</i>
yew, western	<i>Taxus brevifolia</i>
	<i>Aulacomium spp.</i>
	<i>Brachythecium spp.</i>
	<i>Drepanocladus spp.</i>
	<i>Enteromorpha spp.</i>
	<i>Mnium spp.</i>
	<i>Rhacomitrium spp.</i>

COMMON NAME	LATIN NAME
	<i>Xanthoparmelia spp.</i>