

Canadian National Wetland Inventory BC

Field Guide

v2. 2026



Environnement et
Changement climatique Canada
Service canadien de la faune

Environment and
Climate Change Canada
Canadian Wildlife Service



Suggested Citation:

Canadian Wildlife Service. 2026. Canadian National Wetland Inventory – British Columbia. Environment and Climate Change Canada. Co-authored with British Columbia Ministry of Waters, Lands and Resource Stewardship and British Columbia Wildlife Federation.

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- Deepa Spaeth-Filatow. BC Ministry of Land, Water & Resource Stewardship. Natural Resource Information & Digital Services. Ecosystems Information Services.

Acknowledgements

We would like to thank Chenoa OneDove Gao for the illustrations.

Version Record

Version 1: July 10, 2024

Version 2: 2026

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A. Introduction

The Canadian National Wetland Inventory (CNWI) is a national initiative to compile, process, and publish the best available wetland mapping and ground-truthing data throughout Canada. The CNWI aims to map all natural, constructed, and managed wetlands in both freshwater and coastal marine systems. Standardized wetland data is vital for accurate comparisons across time and space.

This field guide provides guidance to collect water, soil, and vegetation properties in the field to correctly classify wetlands for the CNWI in British Columbia (BC). See **Figure A-1** for an overview of the field data collection process.

See **Appendix A** for a copy of the CNWI BC Field Form and **Appendix B** for a copy of the CNWI BC Datasheets.

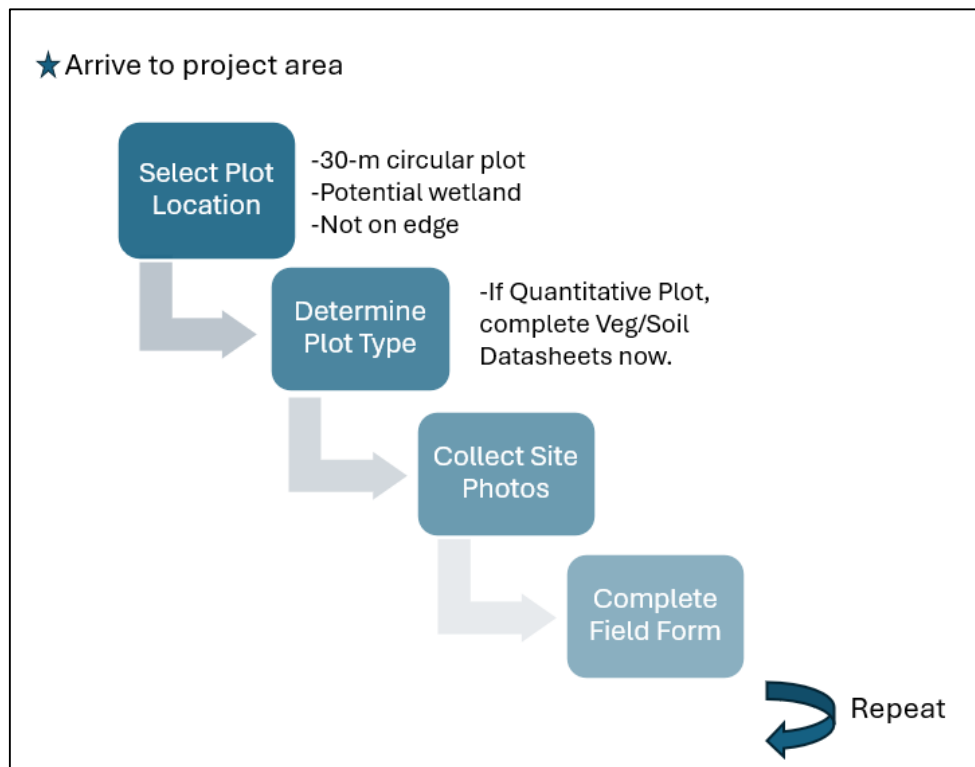


Figure A-1 Overview of Field Data Collection Process

Note: Wetland mapping projects (polygon based) that use CNWI BC Field Methods to collect plot field validation data should consult with the “[Guidance for Mapping Wetlands from Imagery in BC for the CNWI](#)” and “[CNWI BC V13](#)” documents available to download from the BC Data Catalogue CNWI BC Resources package to determine how to extrapolate field plot data to wetland mapping and polygon-based inventory projects.

A.1 Defining Wetlands

Wetlands are defined as “land that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soil, hydrophytic vegetation and various kinds of biological activity which are adapted to a wet environment” (National Wetland Working Group, 1988).

Wetlands in the CNWI are classified using the five classes (bog, fen, swamp, marsh, shallow open water) as per the Canadian Wetland Classification System (National Wetland Working Group, 1988).

An overview of the five wetland classes is provided below in **Table A-1**.

	Soil	Surface Cover	Other Key Attributes
Bog	≥40 cm peatland organics* (fibric / mesic)	Tree, shrubs, moss, herbs, open water	Ombrogenous*
Fen			Minerogenous*
Swamp	Mineral soil (i.e., <40cm organic surface horizon) or ≥40cm humic organic horizon*	Tree or Shrub*	Includes some riparian areas, transitional, benches, flood fringe, shrub carrs, etc.
Marsh		Herbaceous*	Includes estuary, tidal, inland, etc.
Shallow Open Water		Open water, exposed sediment, eel grass, algae*	Includes eel grass, mud flats, ponds, vernal pools etc.
¹ Disturbance or rare ecological conditions may result in anomalies.			
* Key attribute of the wetland class			

All available information should be used to determine if the area is a wetland and to classify it.

- Water/saturated soil must be present within the top 40cm during the growing season for the area to be a wetland.
- Water levels should be no more than 2-m deep at low tide or low summer conditions.
- If plants are present but soil is not (or soil is recently deposited and does not show clear hydric signs), predominant wetland vegetation (OBL/FACW species) must be present (e.g., gravel bars, very sandy soils, landslides, restored sites)
- If soil is present but plants are not, obvious signs of undrained hydric soil must be present (e.g., intertidal mudflat, vernal pool, pond, etc.)
- If both soil and plants are present – both should be considered for a positive wetland identification.

If uncertain if the area is a wetland, consult the [BC Wetland Identification and Delineation Manual \(2025\)](#) for detailed guidance and methods.

B. Planning for Field Work

B.1 Timing

Field work should be conducted during the growing season, when most vegetation is identifiable, and the ground is not frozen – usually May to September in BC.

Consider how the timing of the field visit may relate to the typical conditions in the wetland (e.g. month in the year, recent weather events, and the type of year (drought or high water)). Field work should be avoided during excessive flood or drought conditions. If unavoidable, field crew should seek to interview local knowledge keepers to discern how wetlands may be presenting differently in those extreme conditions.

Tidal wetlands are assessed at low tide to ensure the entire ecosystem is visible.

B.2 Area of Assessment

The area of assessment means the area that you will complete field work in – example in **Figure B-1**. This could be based on property boundaries, project boundaries, ecological boundaries, or another justification. Determine which wetland areas are IN your project area and thus will be the focus of your field work data collection effort.

When considering the project area, identify where water is coming into the wetland(s) (inflow) and how water flows out from the wetland(s) (outflow). Consider surface water and groundwater movement and where the water may be pooling or staying for longer periods of time.

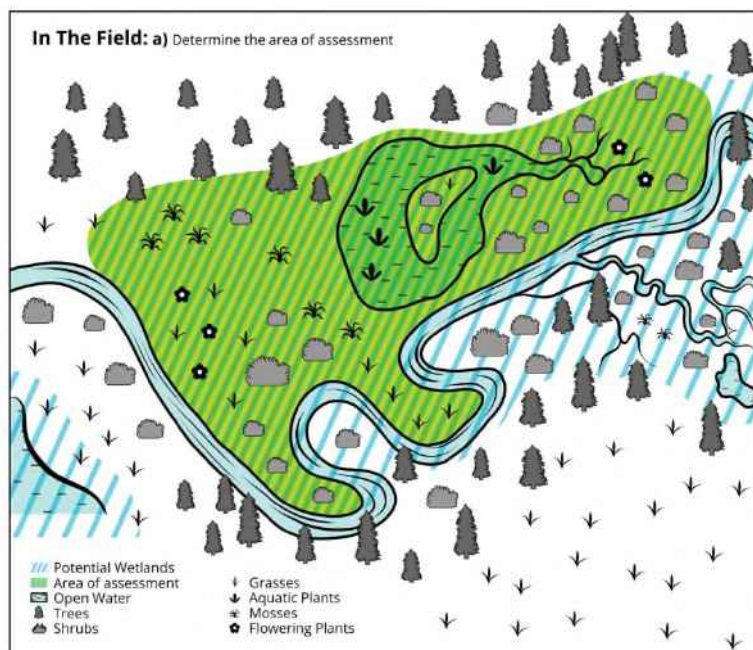


Figure B-1 Area of Assessment Example

B.3 Digital Data Capture

ESRI FieldMaps and Survey123 are two powerful mobile applications to efficiently collect data in the field. Field Maps is a map-centric data collection app and Survey123 is a form-centric data collection app. Templates of the CNWI BC Field Form are available on the BC Data Catalogue for Survey123 and FieldMaps applications.

If you cannot use Survey123 or FieldMaps, use different digital data capture software. For example, an .xls form template can also be used to create QField forms for QGIS users. Alternately, use a GPS device to collect location information and record attributes on the paper CNWI Field Form in **Appendix A. Table 2-2** briefly describes how to use the ESRI applications.

Table B-1 Using ESRI FieldMaps and Survey123 for CNWI BC	
Field Maps	<p>GIS user will:</p> <ol style="list-style-type: none">1. Create a web map on their ArcGIS Online account, load the standard CNWI BC Field Form and publish it to enable it for use in ESRI FieldMaps.2. Add Group and Item headings to make the form look like the form version in Appendix A, which will help the field user. <p>Then, field users will:</p> <ol style="list-style-type: none">3. Install the FieldMaps app on mobile device and sign in.4. If cell reception is not available at field sites - download the desired satellite basemap for “offline use” at a suitable resolution and scale.5. In the field, navigate to plot locations, collect field data plots using the loaded CNWI BC Field Form, capture photos, add attachments, add notes, etc.6. At the end of the field day, “sync” FieldMaps to the cloud when an internet connection is available to ensure field data is secured.
Survey 123	<p>GIS user will:</p> <ol style="list-style-type: none">1. Load the CNWI BC Field Form (.xlsx) into their ArcGIS Online account and publish as a fillable Survey123 survey form. <p>Then, field users will:</p> <ol style="list-style-type: none">2. Install the Survey123 app on mobile device and sign in.3. Download the published CNWI BC Field Form to device and enable for offline use (if cell reception is not available at field sites).4. In the field, collect new field data plots using the CNWI BC Field Form, capture photos, add attachment, add notes, etc.5. “Sync” Survey123 to the cloud when an internet connection is available to ensure field data is secured.

B.4 Desktop Review

Resources that detail climate, geology, aquatics, soil, vegetation and other environmental factors related to the field site may include the following:

Table B-2 Relevant BC Wetland Resources		
Topic	Reference	Topic
Biogeoclimatic Ecosystem Classification	BEC Web	General Ecology. Regional field guides.
Fresh Water Atlas	BC Data Catalogue	Aquatic Boundaries
Land Management Handbook 52	LMH52	Some BEC wetland plant associations
Wetland Identification and Delineation Guide (Draft)	Province of BC	Detailed Soil Criteria
Wetland Plants of British Columbia	BCWF Website	Plant Field Guide
Wetland Plant List of British Columbia	Province of BC	Rankings of plants for likelihood to occur in a wetland
Mapping Wetland from Imagery in British Columbia	BC Data Catalogue	Desktop GIS mapping of wetlands
Canadian Soil Classification System	Third Edition	Soil Information
Google timelapse (or similar)	Google Timelapse	Historic imagery

B.5 Local Knowledge Keepers

Local knowledge keepers could include First Nations, farmers, ranchers, conservationists, residents, environmental organizations, fishing and hunting groups, government biologists, or others. These folks often have a good sense of the local landscape and can often help field crews understand site hydrology, disturbance history, and other characteristics. Consult with your organization's leadership before reaching out to external local knowledge keepers.

B.6 Safety and Permits

This guide is not intended to provide specific guidance for safety considerations. Possible hazards include inclement and dangerous weather conditions, encounters with wildlife, challenging terrain, driving, etc. It is important to always have a safety plan. The safety plan should include a communication plan, equipment, personal protective gear, first aid kits, and vehicle safety kits.

Depending on the location of fieldwork, permits may be required (e.g. sample soil in an archeologically sensitive area or to fly drones in controlled airspaces). Obtain the necessary permits early in the planning process to ensure compliance with local, provincial, and national regulations. Confirm land ownership and appropriate permissions to access your site.

C. CNWI BC Field Form

The numbers in this section mirror the numbers on the CNWI BC Field Form in **Appendix A**. Alternatively, load the form into ESRI Survey123 or ESRI FieldMaps App.

Ideally complete this form using Survey123 or ESRI FieldMaps. As a backup, complete the paper version of the form and note the GPS Plot Number or lat/long location.

C.1 Select Plot Location

All surveys are 30-m diameter circular plots.

Plot Selection Guidance:

- Complete a plot when you suspect an area is a wetland.
- Find 30-meter patch that looks reasonably homogenous in terms of wetland class and surface cover. For example:
 - Area with similar vegetation and standing water (puddles) is approximately the same depth across the 30-m plot.
 - A swamp wetland that contains a shrubby willow area and a treed cedar area should have two plots (one shrubby area and one in treed area), provided each area meets the 30-m plot size requirement.
- Try to avoid putting the plots on the “edge” in between two wetland classes.
 - Aim for >15-m from the transition from one wetland class to another.
 - For example – do NOT place plot on the border in between a marsh and swamp.
- Ensure you have at least one plot in each different wetland type in your project area.
- Use the scenarios in Table C-2 to help determine which type of plot to complete (quantitative, qualitative ground, qualitative air)
- Aim for at least one plot in the wettest part of the wetland (some people like to do this first)
- Aim for at least one plot in a drier part of the wetland, this will likely be along the wetland boundary (this one will be harder, so some people like to leave it later in the day)
- Consider traveling in a loop around your project site - this will allow for additional plot collection without adding extra travel time.
- Consider the effort to get to a plot location and the reward of data (importance or uniqueness) that that path will provide.

BOX 1 – What about small wetlands? (< 30 m plot size)

Common examples of this include a small shrubby patch within a big marsh, or a small marshy patch within a big shallow open water pond, or vernal pools.

Is it surrounded by non-wetlands? Yes - complete a plot, record size on plot form.

Is it adjacent to other wetlands included in your project? No – do not complete a plot in the small feature, locate the plot in the surrounding wetland and describe the characteristics there.

BOX 2 – What about long and narrow wetlands? (< 30 m across)

Common examples are a strip of marsh or swamp around the edge of a lake, pond, or river.

Does the wetland have an overall area of 1,000 m²? Yes - complete a plot, record size on plot form.

A 30m circular plot is equivalent to 0.07 ha (700 m²). For ease of field measurements and estimation we will round this number up to a 0.1 ha threshold (1,000m²).

Examples of wetland that meet the 1,000m² criteria:

10 m X 100 m = 1,000 m²

20 m X 50 m = 1,000 m²

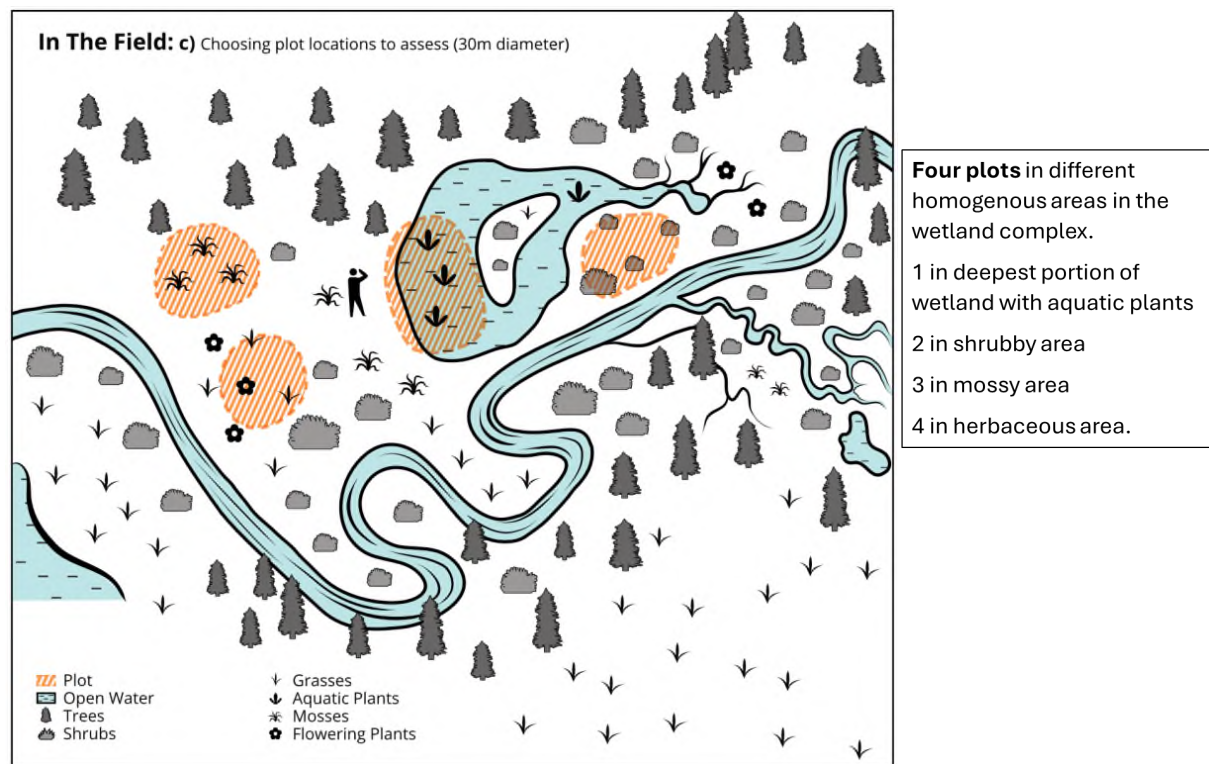


Figure C-1

Plot Locations Example

C.2 General Site Information

Record the Date/Time, weather, and information about surveyors and plot location.

There are three types of CNWI plots in BC.

- **Quantitative Ground Plots** provide the most concrete evidence and should be used when:
 - the first time an ecosystem type is encountered or
 - whenever you are not confident in the class and require more data to support.
- **Qualitative Ground Plots** should be used when:
 - Repeating ecosystem type (already have quantitative data)
 - Vegetation is only obligate wetland plants and hydrology are extremely obvious (e.g. classic cattail marsh flooded with water)
 - Field time is limited
- **Qualitative Air Plots** should be used when:
 - Repeating ecosystem type (already have quantitative data)
 - Vegetation is only obligate wetland plants and hydrology are extremely obvious (e.g. classic cattail marsh flooded with water)
 - Field time is limited
 - Access is not possible or difficult
 - Air data is the only available data.

Ideally, qualitative plots should be paired with quantitative plots in a project assessment area. The appropriate ratio of quantitative: qualitative plots will vary with the complexity and heterogeneity of the landscape. Generally, at least 1 quantitative plot should be completed for every 9 qualitative plots. Pairing qualitative and quantitative plots enables great data collected per field day without compromising accuracy.

Types of plots and scenario examples are provided in **Table C-1** and **Table C-2**.

Table C-1 Plot Types			
Type of Assessment	Datasheets Required? (Soil & Veg)	Approximate Time to Complete ¹	Location Guidance
Quantitative Ground	Yes	20-60 minutes	You must be in the wetland to complete this plot.
Qualitative Ground	No	5-15 minutes	You may complete this plot at a distance (e.g. wetland viewed from a road or with binoculars) You may complete this plot within the wetland.
Qualitative Air Based	No	5- 15 minutes	You may complete this plot from a helicopter or from reviewing high resolution photos / footage collected from UAV.
¹ Time estimate is based on a trained field crew with typical wetland sites. Junior or untrained crews and/or difficult wetland sites may require additional time to complete. Travel to plot location is another factor that will affect the number of plots a crew can complete in a day.			

Table C-2 Plot Type Scenarios					
#	Scenario	Example	Recommended Plot Type	Alternate Method 1	Alternate Method 2
1	Area is very “transitional” OR faint indicators of wetland hydrology, vegetation, soil OR where the surveyor has low confidence in the wetland classification.	An area that has mostly facultative vegetation, hydric soil indicators are faint, and it is not obvious if the area is a wetland or upland. E.g., is it meadow or marsh? Swamp or mesic forest?	Quantitative Ground	If time constraints or difficult access - Qualitative Ground	n/a
2	For a wetland class that has not been yet assessed in the project.	First time seeing a fen in the project area.	Quantitative Ground	If time constraints or difficult access - Qualitative Ground	If time constraints or difficult access - Qualitative Air Based Assessment
3	For a wetland class that has been assessed in this project area, BUT the surface cover, hydroperiod, soil type, and/or hydrological system are <i>quite different</i> .	Second time seeing a swamp in the project. But the first one was shrubby surface cover and next to a river, and this swamp is treed and in a basin.	Quantitative Ground	If time constraints or difficult access - Qualitative Ground	If time constraints or difficult access - Qualitative Air Based Assessment.
4	For a wetland class that has been assessed in this project area during this survey AND the surface cover, hydroperiod, soil type, and/or hydrological system are <i>similar</i> to the original.	Observing a new fen, and it looks very similar to the first fen observed (which had a quantitative plot) but the new fen has slightly different vegetation species.	Qualitative Ground	If time constraints or difficult access – Qualitative Air Based	n/a
5	Completing the required ratio for Quantitative Plots: #study plots and you do not see any new wetland classes or notable features.	Seeing more marshes & swamps similar to those already sampled with quantitative assessments.	Qualitative Ground	If time constraints or difficult access – Qualitative Air Based Assessment.	n/a
6	For an area with all obligate or facultative-wet vegetation that is a classic, obvious wetland.	Classic cattail marsh. Lilypond pond, etc.	Qualitative Ground	If time constraints or difficult access – Qualitative Air Based	n/a

C.3 Photo Capture

Field photos provide excellent data to confirm and verify key wetland features.

Use a field photo collection app (e.g. Solocator, Timestamp, Theodolite, etc.) to include location information, plot number, cardinal direction, etc. on the photos you collect. Be sure to update the plot number for each new site.

See **Appendix C** for examples of effective field photos.

Table C-3 Photo Requirements for Field Plots		
Type of Plot	Minimum Required Photos	Additional Photos
Quantitative Plot	<input type="checkbox"/> 4-Directions (N/E/S/W) <input type="checkbox"/> Down and up (floor and canopy) <input type="checkbox"/> Datasheets (Soil and Veg) <input type="checkbox"/> Soil profile	<input type="checkbox"/> Aerial view of site with markup showing plot location <input type="checkbox"/> Notable vegetation <input type="checkbox"/> Water inflow/outflow
Qualitative Plot (Ground)	<input type="checkbox"/> 4-Directions (N/E/S/W) or aerial view of site with markup showing plot location <input type="checkbox"/> Down and up (floor and canopy)	<input type="checkbox"/> Aerial view of site with markup showing plot location <input type="checkbox"/> Notable vegetation <input type="checkbox"/> Water inflow/outflow <input type="checkbox"/> Soil core (quick check)
Qualitative Plot (Air)	<input type="checkbox"/> Aerial view of site with markup showing plot location	<input type="checkbox"/> Notable vegetation <input type="checkbox"/> Water inflow/outflow
A “360° camera” is an interesting alternative to the 4-D photos. It will take a google earth street view perspective photo of the location which is useful for data review and QC/QC when viewed in the appropriate software.		

Capturing photos from UAVs:

- Flying a UAV/drone to collect photos/videos of the entire assessment areas will help you get a lay of the land, identify walking hazards, and help you pick your plot locations. By having high quality drone photos, you can complete additional qualitative air-based plots back in the office.
- You can pre-plan a flight path that covers the entire area of interest and collected footage can be stitched together into a continuous product.
- Or you can manually fly around the wetland and collect photos/videos at different angles, altitude and perspectives.

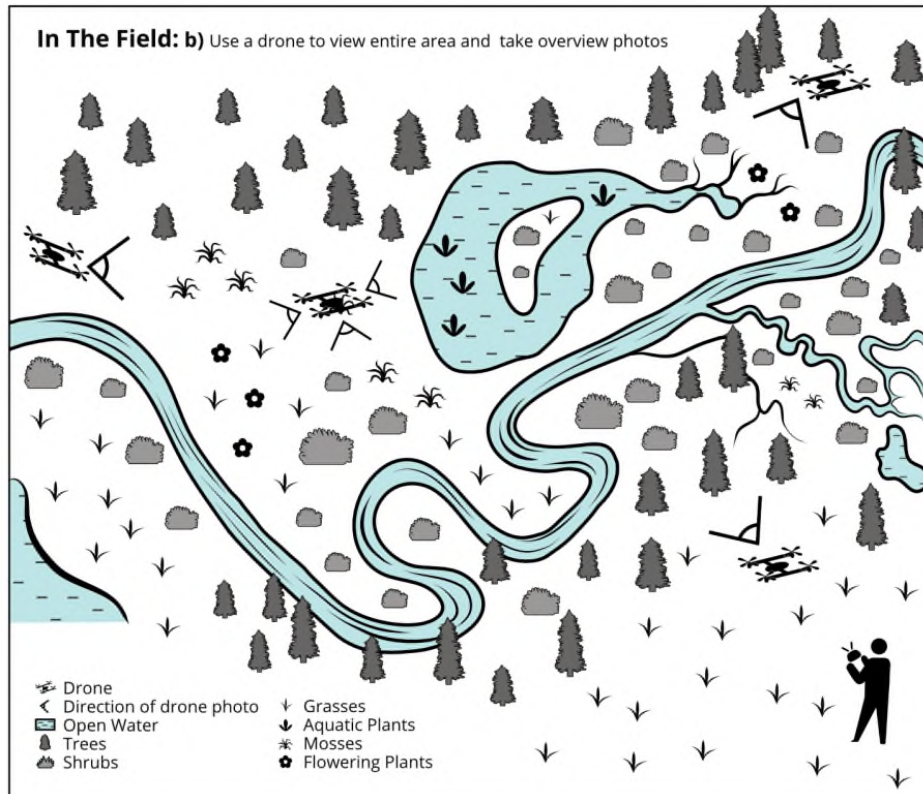


Figure C-2 Drone Flight and Photo Capture Example

Safety! Be aware of potential hazards (e.g. power lines, trees, or other obstacles). Also, check for any legal restrictions or permits required for flying drones in the area, especially NOTAMs around wildfires. Follow all local regulations, obtain necessary permits, and prioritize safety.

C.4 Vegetation

*If completing a quantitative plot – complete the Vegetation Datasheet (**Appendix B; Section D**). Take a photo of the datasheet in the field to ensure the data is secured. If data is corrected (e.g., vegetation is collected for confirmation) replace the photo.*

For all plots, consider the 30-m plot size and complete the following fields in the CNWI BC Field Form:

- **List of species:** Record all vegetation species you can identify in your 30-m plot. Use scientific name or 7 letter cod where practicable. **See Section D.**
- **Woody Veg Type:** See common wetland plant list in **Appendix D.**
- **Woody Veg Height:** See height estimation methods in **Section D.**
- **Woody Veg Canopy Cover:** See guides in **Section D.**
- **Herbaceous:** See common wetland plant list in **Appendix D.**
- **Bryophytes:** See common wetland plant list in **Appendix D.**

C.5 Soil

If completing a quantitative plot – complete the Soil Datasheet (**Appendix B; Section E**). Take a photo of the datasheet in the field to ensure the data is secured. **Also take a photo of the soil profile.** Note: update the photo if corrections or additions are made.

Necessary soil data to determine CNWI soil type: depth of organics, Von Post, as well as presence and depth to water table/saturation.

If completing a qualitative plot, you can still take a quick look at the soil core using a hand auger, take a clear photo, and check to see the soil type. Tricky sites will require a soil profile and completing of the datasheet to confirm all horizons and soil properties. A quick check still provides some information and is better than nothing! In qualitative plots, many ecological values can give clues to the soil type including plant species composition, tree throw, stream cuts and other natural exposures.

For the purposes of the CNWI in BC, wetland soils are characterized into broad categories, or soil types. See **Table 2-4** and **Section E** for further details on determining the soil type.

Table C-4 Soil Type	
Soil type	Description
Peatland soil	Soil profile with a surface organic horizon ≥ 40 cm. Most of the organic soil in the top 40 cm fibric or mesic (Von Post 1-6).
Organic humic soil	Soil profile with a surface organic horizon ≥ 40 cm. Most of the organic soil in the top 40 cm is humic organic (Von Post 7-10).
Mineral wetland soil	Mineral soil profile with hydric signs in the upper 40 cm. Hydric signs include: mottling, gleying, oxidized rhizospheres, odour, or some organic matter accumulation). Note: A surface organic horizon may be present, but it is less than 40cm.
Young mineral wetland soil	Mineral soil profile in an area that has obvious signs of wetland hydrology AND wetland vegetation, but no/faint hydric soil signs in the upper 40 cm. Note: This soil type includes gravel bars or areas with rapid drainage or disturbed soils that do not show evidence to qualify as 'hydric mineral soil, but are likely wetlands based on the frequency of flooding or fluctuating water table.
Organic soil over bedrock	Soils profile with a surface organic horizon 40cm (or less) (typically fibric/mesic) and is underlain by a bedrock layer. Note: this soil type is typically used for certain coastal bogs.
Organic soil over water	Soils profile with a surface organic horizon 40cm (or less) (typically fibric/mesic) and underlain by a water layer. Note: This soil type is typically assigned for a “floating” wetland such as a floating fen or floating bog. There is often water found above the organic soil (as well as in the subterrain/below).
Non-wetland soil/substrate	A soil that is not a wetland soil (e.g., not mineral hydric soil or organic hydric soil). Non-hydric soils lack flooding or fluctuating water table.
Note: To qualify as an organic soil horizon, the soil must contain $> 17\%$ organic C (approximately $\geq 30\%$ organic matter) by weight.	

C.6 Water

Use a measuring stick or probe to determine the amount of water on the surface.

Check Point – Wetland Yes / No?

At this point you have collected all the information in the field and are now going to characterize the plot location. It is best practice to complete these sections in the field while the information is fresh in your mind. Recall that not all sites may have both soil and vegetation. If uncertain, make a note in the field and refer to the desktop resources in Section B-4 when back in the office to confirm class of wetland area.

C.7 Wetland Characterization

Surface Cover

CNWI BC Surface Cover follows a hierarchy within the 30 m² field plot: tree > shrub > woody > herbs > bryophytes > aquatic vegetation > eelgrass > macro algae > exposed sediment > exposed bedrock > open water > anthropogenic > other.

Table C-5 Surface Cover Key		
Woody Vegetation		
1	Is >25% of the surface area covered by trees? Trees are woody vegetation >5 meters in height. Note: if unable to discern height; code to “Woody.”	Yes – Treed No – Go to 2 Unsure – Go to 3.
2	Is >25% of the surface area covered by shrubs? Shrubs are woody vegetation <5 meters in height. Note: Do not include dwarf woody vegetation or woody fines in the shrubby category (See Appendix D). The reason for this is because dwarf woody vegetation looks considerably different from imagery than other ‘typical’ trees and shrubs. Typically, open bogs/fens with dwarf woody vegetation are coded to herbaceous or bryophyte surface cover type. Stunted trees & shrubs (e.g., black spruce [<i>Picea mariana</i>] or lodge pole pine [<i>Pinus contorta</i>]) should still be included in the applicable tree/shrub surface cover category. Note: if unable to discern height; code to “Woody.”	Yes – Shrub No – Go to 3.
3	Is >25% of the surface area covered by woody vegetation? (Do not include dwarf woody vegetation or woody vines in this category)	Yes – Woody No – Go to 4
Ground Vegetation		
4	Is > 25% of the ground covered by vegetation (i.e., bryophytes, lichen, and/or herbaceous vegetation)?	Yes – Go to 5 No – Go to 7
5	Is >25% of the ground vegetation covered by herbaceous species? (e.g., grasses, rushes sedges, reeds, ferns, fern allies, grass-like plants, and forbs)	Yes – Herbaceous No – Go to 6
6	Is >25% ground surface covered by bryophytes (mosses, liverworts,	Yes – Bryophyte

Table C-5 Surface Cover Key		
	hornworts) and/or lichens?	No – Got to 7
Aquatic and Exposed		
7	Is >25% of the surface area covered with floating or submerged aquatic vegetation?	Yes – Aquatic Vegetation No – Go to 8
8	Is the surface area covered with water or exposed sediment with eelgrass (e.g., <i>Zostera marina</i> , <i>Ruppia maritima</i>) at densities >1 shoot /m ² ?	Yes – Eelgrass No – Go to 10
9	Is >25% of the surface area covered with macro algae?	Yes – Macro Algae No – Go 9
10	Is the surface area dominated with exposed sediment with <25% vegetation cover of any type and no eelgrass? Exposed sediment is sand, silt, clay, gravel or small boulders, or other particle inorganic substrates. <u>Note:</u> un-vegetated intertidal areas should always be coded to exposed sediment or exposed bedrock as opposed to open water regardless of the high of the tide at the time of survey.	Yes – Exposed Sediment No – Go to 11
11	Is the surface area dominated with exposed bedrock with <25% vegetation cover of any type and no eelgrass? <u>Note:</u> un-vegetated intertidal areas should always be coded to exposed sediment or exposed bedrock as opposed to open water regardless of the high of the tide at the time of survey.	Yes – Exposed Bedrock No – Go to 12
12	Is the surface area dominated with open water with <25% vegetation surface cover and no eelgrass?	Yes – Water No – Go to 13
13	Is the surface area dominated with snow, ice, glaciers with <25% vegetation surface cover?	Yes – Snow/Ice No – Go to 14
Other		
14	Is the surface area in a non-natural state – e.g., covered with roads, buildings, structures, resource extraction (mines), parking lots, etc.	Yes – Anthropogenic No – Go to 15
15	Is the surface area covered by other vegetation or ground cover types not explicitly included above?	Yes – Other

Hydrological System

Hydrological system describes how water has formed the wetland and how water is generally still influencing the wetland. **Figure C-3** shows how hydrological systems interact on the landscape and can have transitional zones. Use the Key in **Table C-6** to correctly assign the Hydrological System

Table C-6 Hydrological System Key		
#	Question	Result
1	Is the wetland on the shore next to the open ocean? Exposed to waves, tides, and saltwater (salinities >30ppt) with little or no influence of freshwater. Examples could include shallow indentations, bays, and lagoons.	Yes – Marine No – Go to 2

2	Is the wetland semi enclosed by land and has open, partly open or sporadic access to the ocean and with at least occasional dilution from freshwater run-off from the land? Salinity levels vary from fresh to saline with tide and runoff levels. Examples can include salt marshes, mudflats and eelgrass beds.	Yes – Estuarine No – Go to 3
3	Is the wetland within or adjacent to a channel of flowing water?	Yes – Riverine No – Go to 4
4	Is the wetland within or adjacent to a topographic depression or dammed river channel at least 8 ha in size? *can be <8ha in size if there is an active wave-formed or bedrock shoreline present	Yes – Lacustrine No – Go to 5
5	Is the wetland in a basin or low spot on the landscape?	Palustrine

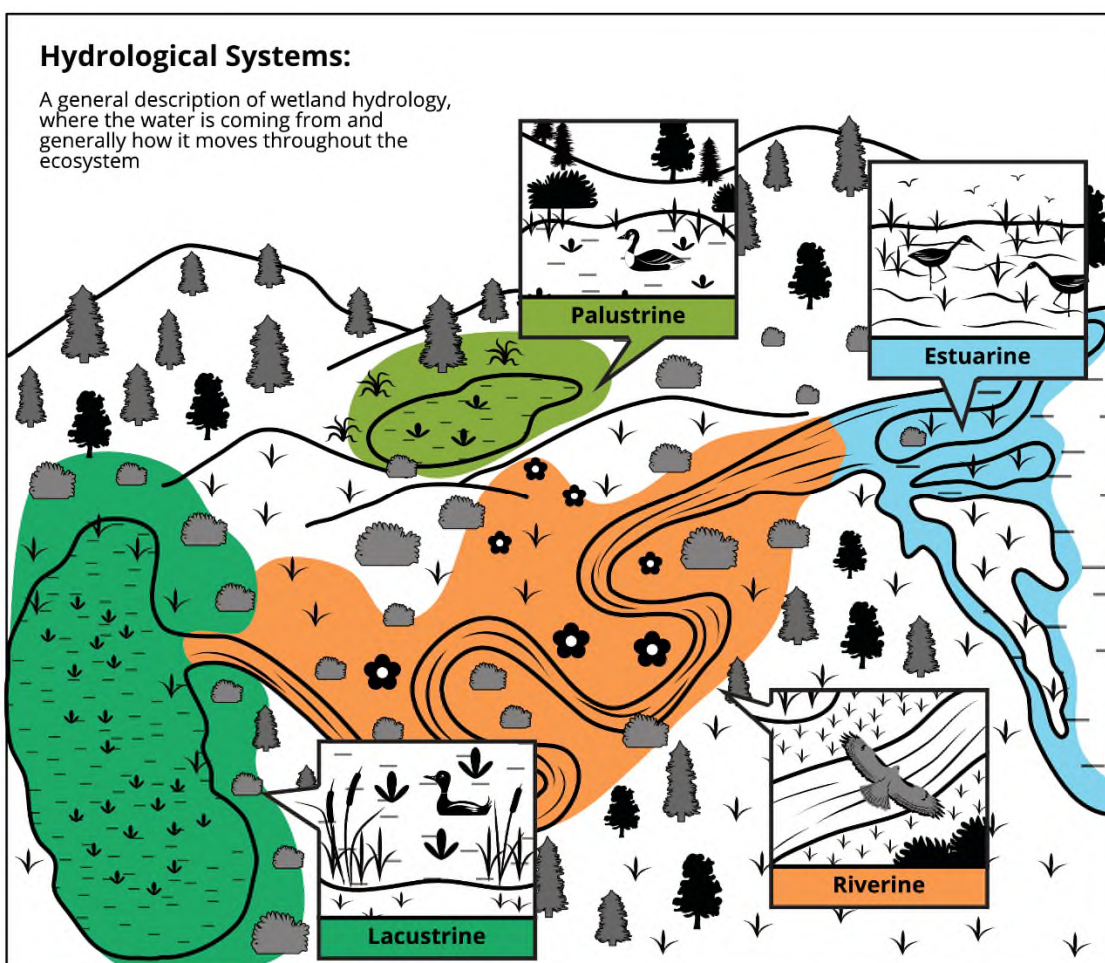


Figure C-3 Hydrological System

Hydroperiod

Hydroperiod means how long surface water is held in the wetland in a typical year. **Table C-7** and **Figure C-4** help to describe the types of hydroperiods for wetlands.

The “growing season” generally begins in the spring with green-ups and ends in the fall with plant dieback and leaf-drop. “Frost-free” tables are available online for most of BC which describe plant growing seasons for gardening and agricultural activities which can be a useful guide for determining the growing season for the area. **Table C-8** provides frost free dates for several major cities in BC.

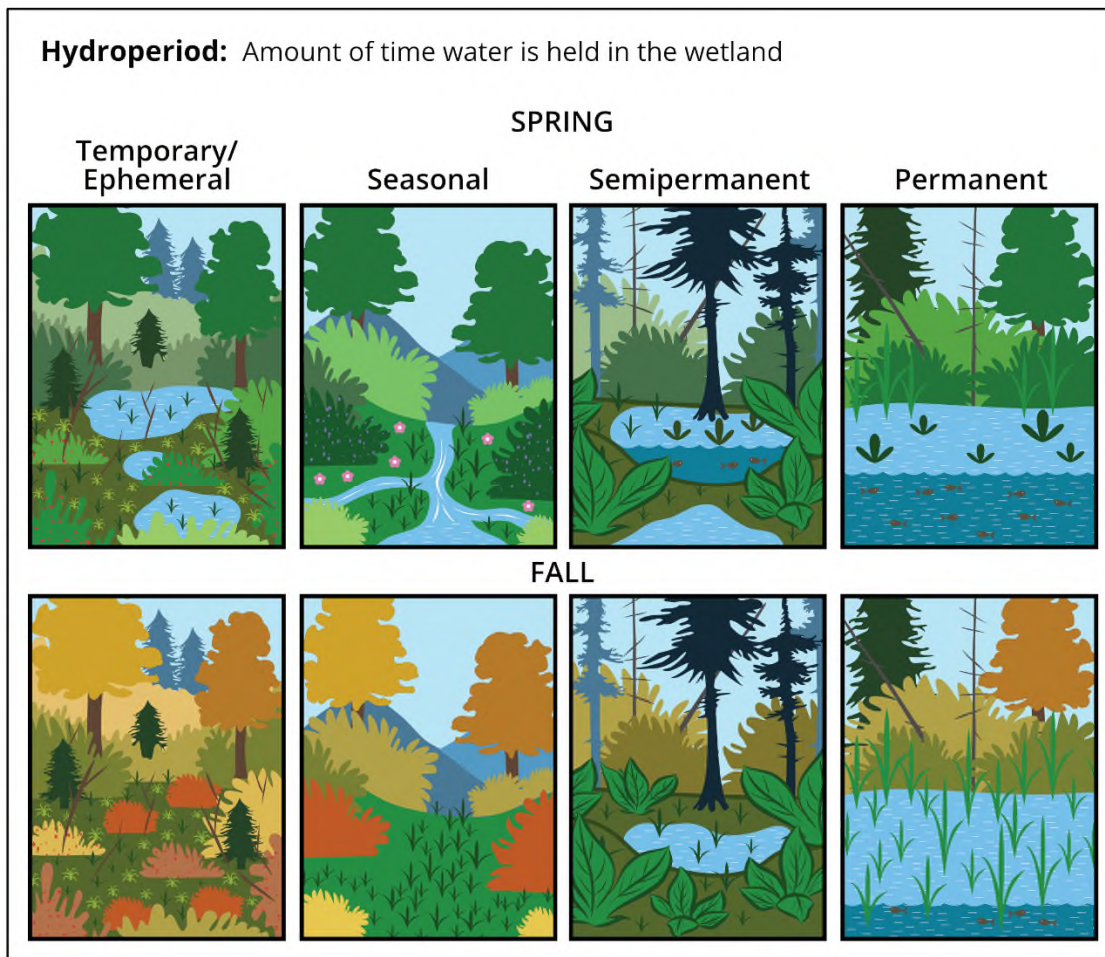


Figure C-4 Hydroperiod and Seasonality

Table C-7 Hydroperiod Type	
Type	Definition: <i>In most years, surface water (or saturated soils at the surface) is present for...</i>
Ephemeral	...a very short time (>2 weeks) in the early growing season, or after heavy rains.
Temporary	...a short period of time (~25%) in the growing season.

	Topsoil is typically dry by the end of the summer.
Seasonal	...approximately half (~50%) the growing season.
	Topsoil is typically moist by the end of the summer.
Semi-permanent	...most (~75%) of the growing season.
	Topsoil is typically quite moist or wet by the end of summer.
Permanent	...present throughout (~100%) the growing season.
Not applicable	The hydroperiod field may not apply to some bogs (sloping high elevation bogs) or tidal wetlands (as tidal wetlands are influenced by daily hydroperiods).
References: Stewart and Kantrud 1971; ESRD 2015; MacKenzie and Moran, 2004.	

Table C-8 Growing Seasons					
City	First Frost	Last Frost	Approximate Growing Season	Approximate Growing Season Months	Approximate 50% growing season period ("Seasonal")
Cranbrook	May 24	Sept 14	112 days	4 months	8 weeks
Dawson Creek	Jun 8	Aug 24	76 days	2.5 months	5-6 weeks
Fort Nelson	May 26	Sep 5	101 days	3.5 months	7-8 weeks
Golden	Jun 2	Sep 8	97 days	3 months	6-7 weeks
Kamloops	May 3	Oct 3	152 days	5 months	10-11 weeks
Kelowna	May 8	Oct 6	150 days	5 months	10-11 weeks
Nanaimo	May 4	Oct 15	163 days	5.5 months	11-12 weeks
Prince George	May 20	Sep 18	120 days	4 months	8-9 weeks
Prince Rupert	May 14	Oct 7	145 days	5 months	10-11 weeks
Port Hardy	Apr 23	Oct 22	181 days	6 months	12-13 weeks
Williams Lake	Jun 2	Sep 7	96 days	3 months	6-7 weeks
Vancouver	Apr 21	Oct 19	180 days	6 months	12-13 weeks
Victoria	Apr 14	Nov 9	208 days	7 months	14-15 weeks
Last and first frost dates are 33% probability. Calculated using 1981-2010 Climate Normals from Environment Canada.					

Salinity

Take a salinity measurement using a water meter. Or infer the salinity regime by the vegetation species present.

- Fresh = <0.5 ppt salts
- Brackish = 0-30 ppt salts
- Saline = 30 ppt salts

Tidal

Record if the plot area is influenced by tides. Consider all tides in the annual cycle including king tides.

C.7 Wetland Class

CNWI “Wetland Class” is a function of surface cover type and soil type. Use the keys in **Figures C-5 and C-6** to determine which class is present.

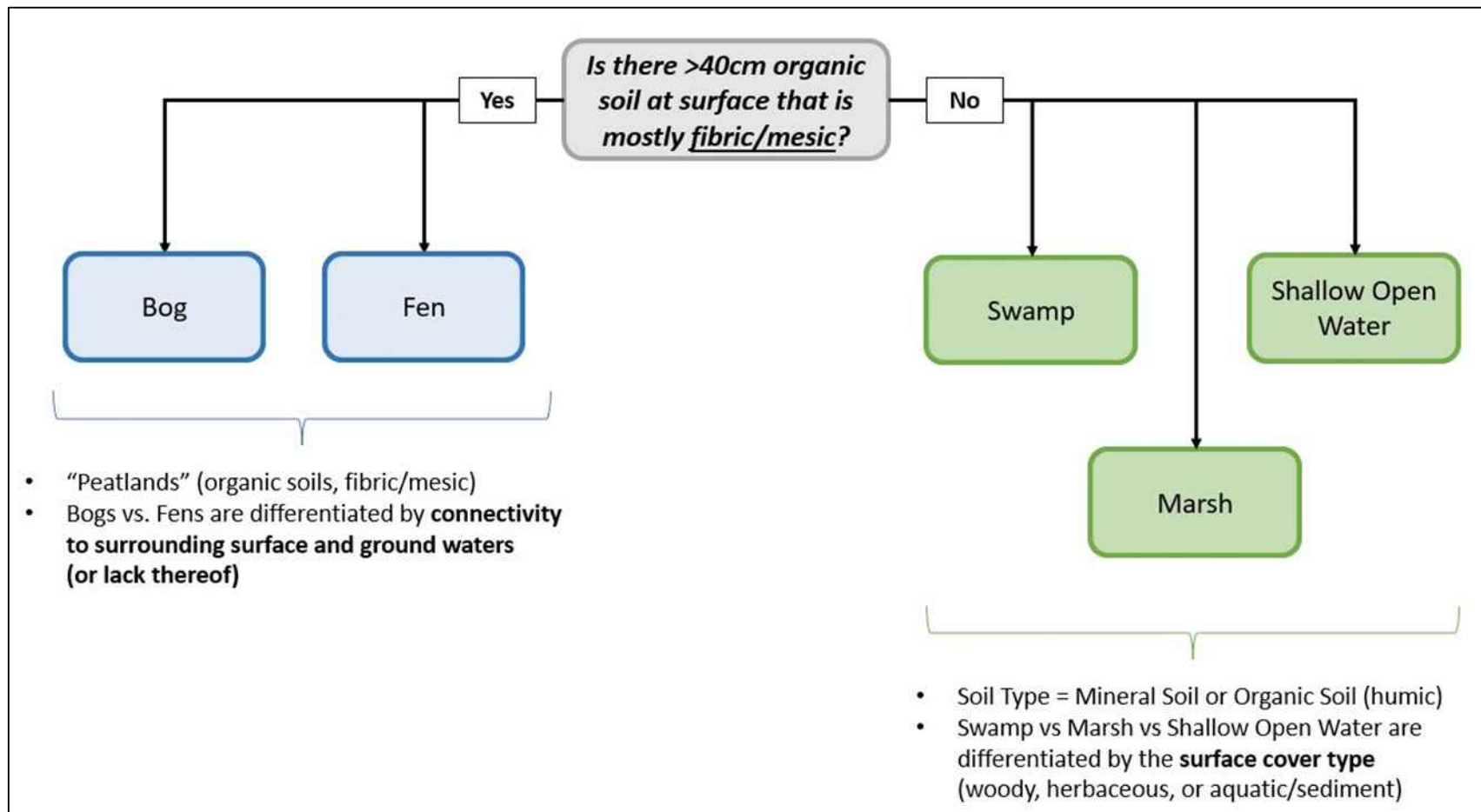


Figure C-5 Wetland Class Flow Chart (Simplified)

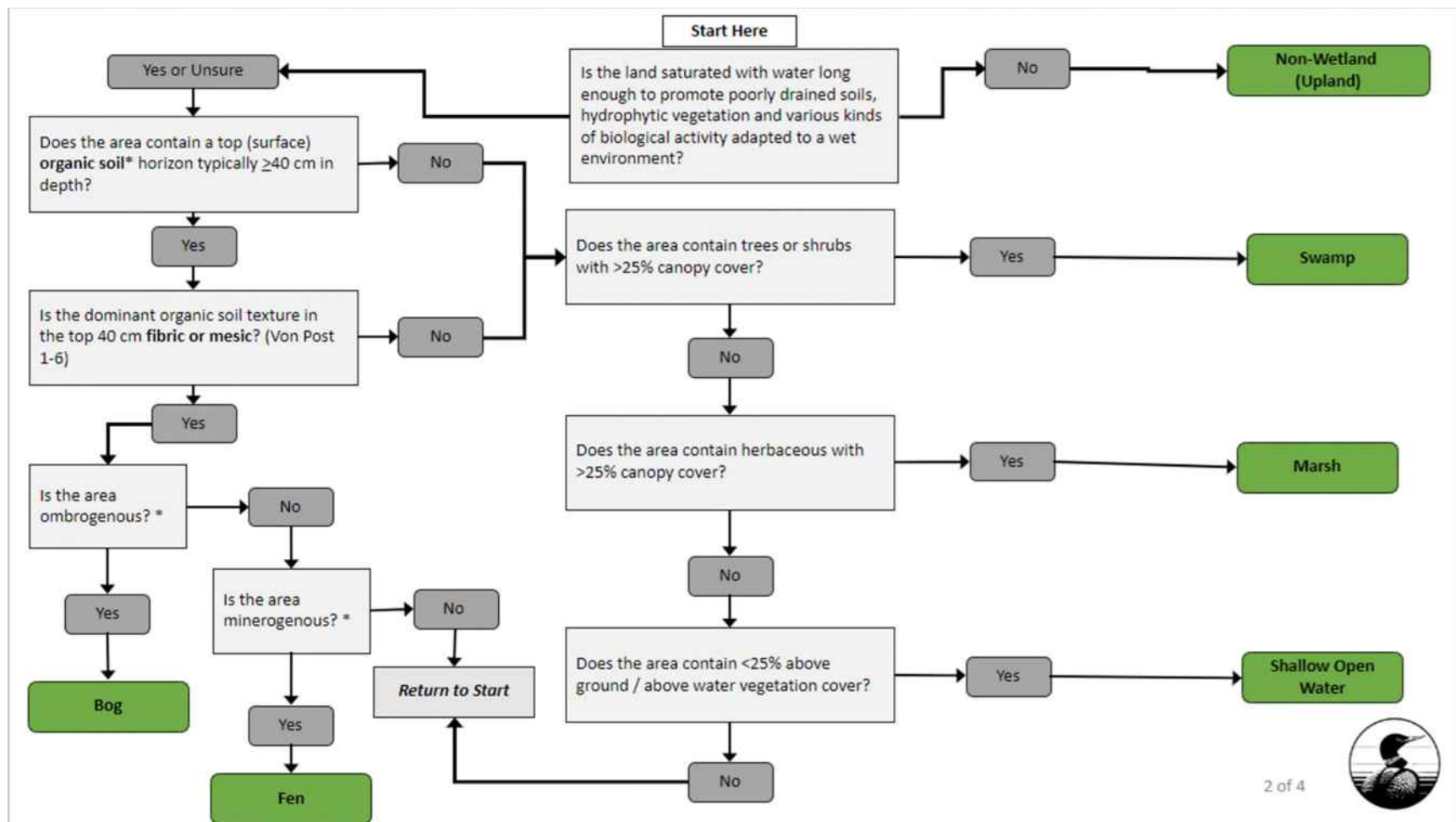


Figure C-6 Wetland Class Flow Chart (Detailed)

C.9 Impact and Disturbance

Many wetlands have been modified from natural or man-made disturbances. Since the nature of these modifications often greatly influences the character of such habitats, special modifying terms are included to indicate the type of impact. CNWI impact types are listed in **Table C-9**

Table C-9 Impact Types		
Type	Definition	Examples
Farmed	Soil surface has been mechanically or physically altered for production of crops, but hydrophytes will become re-established if farming is discontinued.	Grazing Croplands Hayfields
Constructed	Soil surface has been mechanically or physically altered by excavation to create an impoundment for holding water.	Sewage lagoons Golf course ponds Dugouts
Burned	Indications that site had been affected by recent fire whether by natural or anthropogenic cause	Forest fires
Cleared	Tree/shrub cover removal in whole or part (excluding linear infrastructure) that can be permanent or temporary.	Logging Landscaping
Linear infrastructure	Soil surface has been altered (or the vegetation cover has been removed) due to linear infrastructures.	Logging Road construction Pipelines Powerlines
No impact	There is no sign of any impact on wetland due to anthropogenic causes	n/a
Other	An impact is present but none of the impact categories here apply.	Natural disaster (other than forest fires)
Multiple	Two or more impact types identified to a wetland polygon	n/a

C.10 Additional Characterization

Nutrients & pH

Wetlands can be categorized based on nutrient availability and pH characteristics.

Table C-10 Nutrients	
Category	Examples
Poor / Very Poor	Very poor (<4.5 pH) Typical high cover of peat moss (<i>Sphagnum spp.</i>) Stunted trees and shrubs such as black spruce (<i>Picea mariana</i>), and

Table C-10 Nutrients

	specialized species such as sundew (<i>Drosera rot</i>). Poor (4.5 – 5.5 pH) Same as very poor nutrient species but also with some other diversity including brown mosses, sedge (<i>Carex spp.</i>), willow (<i>Salix spp.</i>), hardhack (<i>Spirea douglasii</i>), lodgepole pine (<i>Pinus contorta</i>), western hemlock (<i>Tsuga heterophylla</i>), buckbean (<i>Menyanthes trifoliata</i>).
Medium/Rich	Medium (5.5-6.4 pH) Vegetation similar to poor and rich sites, often contains both poor and rich species. Rich (6.5-7.4 pH) Cattail (<i>Typha spp.</i>), skunk cabbage (<i>Lysichiton americanus</i>), birch (<i>Betula spp.</i>), salmonberry (<i>Rubus spectabilis</i>), blue berry (<i>Vaccinium ovalifolium</i>), western red cedar (<i>Thula plicata</i>), baltic rush (<i>juncus balticus</i>), great bull rush (<i>Schoenopletuc acutus</i>). Very rich (>7.5 pH) Vegetation often similar to rich sites but likely more abundant/larger Site could be eutrophic or alkaline.
Note: Nutrients are generally measured when there is open water available. Some wetlands will not have water availability OR sometimes when assessing soils, the water table will be revealed where the soil auger was dug in. If there is no water availability, vegetation is another adequate way of determining nutrient richness.	

Slope

Optional field: if the wetland is located on a slope, record the percent gradient slope.

BC Plant Association

Optional field: record the BC Plant Association (as per LMH52 or regional LMH).

Rare Ecosystem

Optional field: record if the ecosystem is red or blue listed. Consult the BC Conservation Data Center BC Species & Ecosystems Explorer for details.

D. Vegetation Datasheet

See Appendix B for the CNWI Vegetation Datasheet.

Skip if you are doing a Qualitative Ground Plot or Qualitative Air Plot.

Priority field vegetation data to collect are **species id, height, and percentage cover**. Other data on the form (dominant, native/exotic, life form and other) can be filled out in the office later but must be completed before submitting forms for CNWI.

See **Appendix D** for species list typical wetland plants by stratum and life form type.

D.1 Plot Size and Stratum

Trees ($\geq 5\text{m}$) and shrubs ($< 5\text{m}$) are considered “Woody Vegetation” and assessed at a 30m plot size.

All other vegetation on the ground or in the water are considered “Ground Vegetation” (grasses, mosses, aquatic vegetation, etc.). This vegetation is assessed based on a representative 1m^2 plot (nested within the 30m plot).

How to record dwarf woody veg and woody vines?

- Dwarf woody vegetation and woody vines are recorded in the ground vegetation category. The reason for this is because dwarfed woody vegetation looks considerably different from imagery than other trees and shrubs. Typically, open bogs/fens with dwarf woody vegetation are coded to herbaceous or bryophyte surface cover types.
- Typical tree/shrub species experiencing “stunting” due to low nutrient conditions, (black spruce (*Picea mariana*) or lodge pole pine (*Pinus contorta*)) should still be recorded in the woody vegetation stratum on the data sheet.
- See Appendix D for list of typical dwarf woody veg and woody vine species.

D.2 Species Identification

Species name: Write down all tree/shrub species within the 30-meter tree/shrub plot and all other species within the 1m ground cover plot. If you are unsure of the species’ ID, take additional photos. Identifying the vegetation to the exact species is not always expected.

The **7-Letter Code** is best practice. Please practice using it where possible. The first four letters of a 7-letter code are the genus; the following 3 letters are the species. Using the 7-Letter-Code improve certainty for data reviewers later.

- BC contains multiple cattail species, for example: common cattail (*Typha latifolia*), narrow-leaved cattail (*Typha angustifolia*) and hybridized cattail (*Thypha x glauca*).
- If you are confident in the species identification, record the 7-Letter-Code: e.g., TYPH LAT.
- If you are unsure which type of cattail is present on the site, record the 7-Letter-Code with “SPP”. TYPH SPP (SPP stands for species which indicates the exact species is not known).

- If you do not know the scientific name of the species, record the common name and update with the 7-letter code at the end of the field day. E.g. 'Cattail' would be updated to TYPH LAT or TYPHA SPP, etc. at the end of the field day.

D.3 Percent Cover

There are two ways to determine percent cover of vegetation (**Figure D-1**).

1. **Foliar Cover** refers to the proportion of the ground surface that is covered by each distinct leaf and branches of plants.
2. **Canopy Cover** refers to the proportion of the sky that is covered by the vertical projection of the outermost layer of vegetation (e.g. where the outer water drip line of the tree/plant would be). It represents the horizontal extent of the plant canopy (Pellant et al, 2020).

Use Canopy Cover for all CNWI BC percent cover estimations!

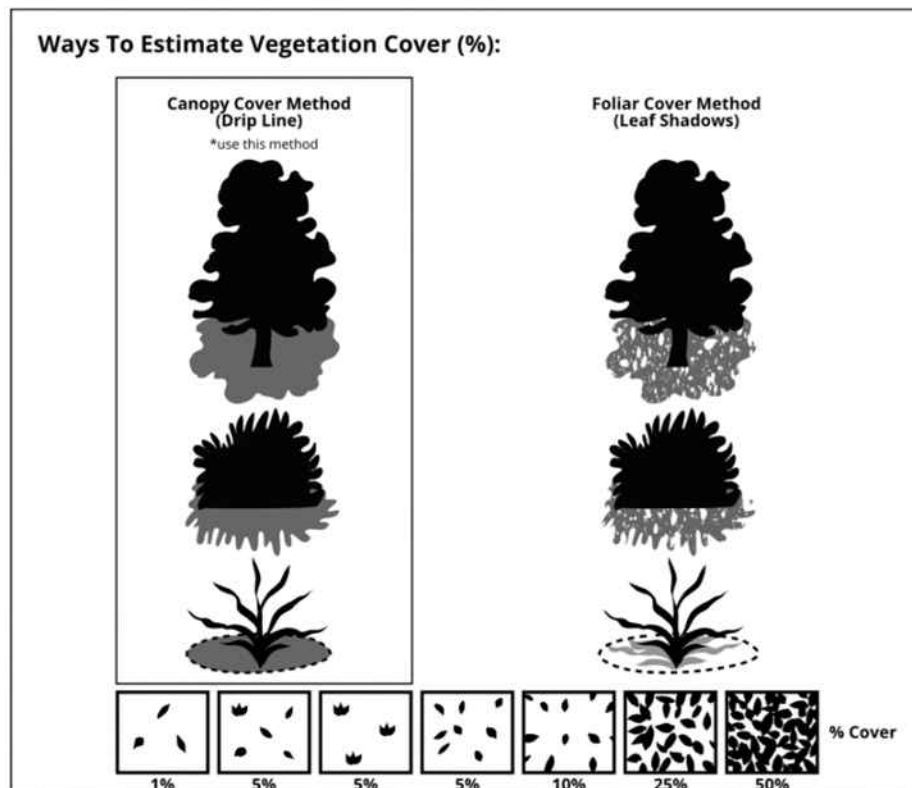


Figure D-1 Methods to Estimate Vegetation Cover %

D.4 Height

Here are two methods to improve accuracy of estimating vegetation height in the field (**Figure D-2**)

1. Field Partner Estimation

- Have your field partner stand at the base of the tree.

- Know your field partner's height in meters and consider the extra height of their boots or hat/helmet.
- Visualize and estimate how many times your field partner would have to stack on top of themselves to reach the height of the vegetation.
- Use simple math to arrive at an estimate for the tree. E.g. 1.8m tall person X ~2.25 stacks = approximately 4m tall tree

2. Drone Estimation

- Fly the drone to approximately the same height as the top of the tree. Note the height reading on the drone screen.
- Consider the distance in height from the drone to the ground. If the tree is on a steep slope the drone may be reading a distance to a lower or higher elevation. If there is dense shrub cover the drone may be reading to the top of the shrubs.
- Take multiple measurements at different locations to be sure you understand any limitations your drone may have with height readings.
- Record a final height measurement on the form considering any issues the drone may have with a height reading.

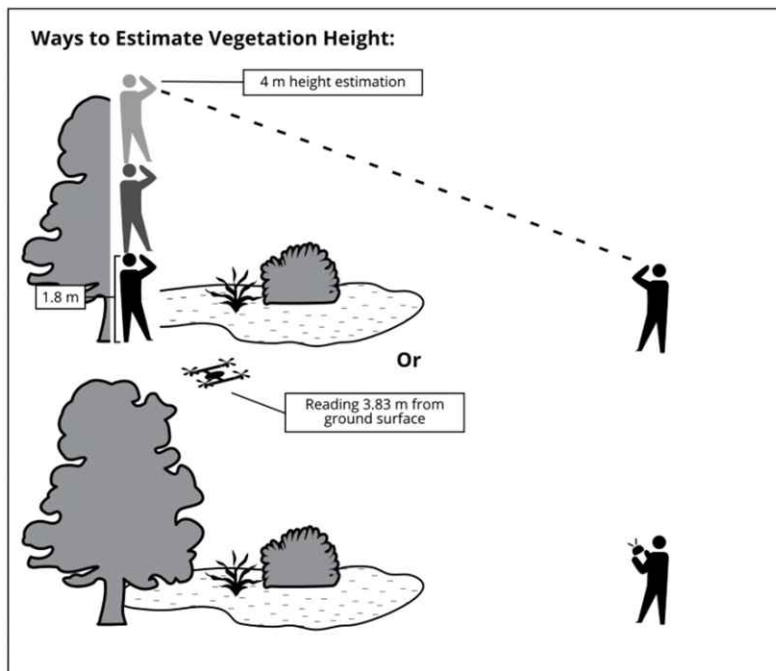


Figure D-2 Methods to Estimate Vegetation Height

D.5 Dominance

Use the Steps provided on the CNWI BC Vegetation Data Collection Sheet to determine dominance for each species. For additional guidance on determining dominance and hydrophytic wetland vegetation and how to interpret this information, refer to the BC Wetland Identification and Delineation Manual.

D.6 Native or Exotic

Look up the vegetation species in the relevant reference text or local vegetation ID book and assign a native or exotic code. You can also note if an exotic species is weedy or invasive.

D.7. Life Form

Refer to the Life Form codes provided on the vegetation sheet. This field is optional unless collecting data in conjunction with the Wetland Ecosystem Services Protocol.

(T) Tree (S) Shrub (H) Herbaceous (M) Moss (L) Lichen (Aq) Aquatic (Al) Algae (O) Other

D8. Other / Wetland Plant Ranking

Input the wetland plant ranking as per the BC Wetland Plant Indicator List. For additional guidance on how to interpret this information, please refer to the BC Wetland Identification and Delineation Manual.

E. Soil Datasheet

See Appendix A for the CNWI BC Field Forms including the Soil Data Sheet.
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Priority fields to collect are horizons and depth, type, texture, Von Post and taking clear photos of the soil profile. For additional guidance on determining wetland soil assessment and hydric soil indicators refer to the “*BC Wetland Identification and Delineation Manual*” and the “*Canadian System of Soil Classification*”. Take notes on other indicators and features when present such as depth to seepage, depth to saturated soil, presence of wood, tephra or buried horizons, presence of ice, etc.

E.1 Depth

Use your soil auger to extract a soil column to at least 50 cm deep. Work in stages and carefully push the soil out of the auger to create a soil profile in order of shallowest to deepest cores.

Measure the depths of each auger pull so you start where you left off then lay the auger pulls on a measuring tape according to the depths from which they came. This will account for compression and allow for more accurate measurement of horizon depths.

If there is water within the auger hole, or the soils are saturated in the auger hole – record the observed depth. If a soil pit is excavated with a shovel, depths can be measured from the profile directly.

E.2 Photos of Soil Profile

Clear photos of the soil profile are essential for data reviewers. Place the soil profile on a piece of white laminated paper to help show features better in contrast to surrounding soil and vegetation. Include a ruler in the photo and indicate which end is the top of the soil column. Ensure photo is of clear/crisp resolution. Where possible, aim to take photographs in natural lighting conditions (i.e. not overly bright or overly shadowed). Panoramic photo mode can be used to take the length of longer auger sequences.

See **Appendix C** for examples of the soil profile photos.

E.3 Soil 101

Soil is made of two main particle types: organic matter and mineral particles.

1. Organic matter are carbon-based parts in soil.

- Primarily composed of residue from plants (e.g. leaves, mosses), but can also come from animals (e.g. scat, decay, etc.)
- Plants in the soil can be at different levels of decay – e.g. not decomposed at all to completely decomposed.
- Von Post scale is used to determine the degree of decomposition in the field.
- E.g. “Peat” “Muck” “Black Earth”

2. Mineral particles in soil come from the weathering of rocks and parent material.

- Inorganic material (e.g. silica, metals, limestone, sandstone, granite, etc.)
- Affects drainage and chemistry of soil.
- Includes coarse fragments (>2mm) and fine fraction (<2mm).
- Hand texturing is used to estimate the fine fraction E.g. “Sand” “Silt” “Clay” “Loam”

Each sample of soil will have a % of organic material and a % of mineral content

(Ranging from 0-100%)

E.4 Horizons

Horizons are layers of soil that are formed through physical, chemical and biological processes at the earth's surface.

We observe, measure and record horizon depths and their properties (colour, texture, Von Post scale of decomposition, presence of redox features, etc.). Measuring the thickness of the surface organic horizon and differentiating organic horizons from mineral horizons helps us to classify wetlands and hydric soils.

There are two main types of soil horizons: **Organic Horizons and Mineral Horizons.**

- Organic horizons contain >30% organic matter by dry weight (>17% organic carbon in loss on ignition test).
 - Thus, an organic soil horizon can contain up to 70% mineral content. See Box 3. for more information on distinguishing organic vs mineral horizons rich in organics.
 - Organic horizons generally accumulate on the surface and overlay mineral horizons. However, buried organic horizons (below mineral horizons) can occur due to flooding and inundation.
 - When exposed to long periods of saturation, organic soil becomes anaerobic, which drastically slows decomposition. This leads to poorly decomposed thick organic surface horizons in many wetlands.
- Mineral horizons are composed of >70% mineral particle content.
 - In mineral horizons, prolonged saturation promotes iron reduction producing grey, blue or greenish soil colours (i.e., Gleying).
 - Intermittent saturation (i.e., wet-dry cycles) coupled with microbial activity drive reduction, translocation then re-oxidation forming mottles, pore linings, nodules, manganese stains and coatings, concretions and other redoximorphic features.
 - Other signs of saturation include sulphur dioxide and methane gas which can be detected by smell.

Simple Horizon Method: Record a new “horizon” anytime the soil color, VonPost, or texture significantly changes. E.g., Soil horizon 1 is on the surface (topsoil), Soil horizon 2 is directly below 1, horizon 3 is below 2, etc.

Detailed Horizon Method: If you would like, you can label the horizons as an O horizon, A, B, C, etc. such as described in the Canadian System of Soil Classification (Table E-1).

Table E-1 Soil Horizons	
Horizon	Descriptions
LFH	<ul style="list-style-type: none"> Organic horizon (>30% organic matter by dry weight, >17% organic carbon) Leaf litter from trees/shrubs and upland vegetation. Typically, LFH is present in areas significant shrub and tree cover (e.g., upland forests and some swamps).
S	<ul style="list-style-type: none"> A layer of living moss. Common in fens and bogs and some swamps This is technically not part of the soil but is sometimes intertwined. May be mixed with leaf litter or transition into Of.
O	<ul style="list-style-type: none"> Organic horizon (>30% organic matter by dry weight, >17% organic carbon) Accumulates at the surface of the soil but can be buried. Mixture of organic material (i.e. leaves, moss, plants, debris) in any stage of decomposition Fibrous or greasy when rubbed between the fingers Will stain the finger black or brown Will not be gritty when rubbed between the fingers (sand) or thumbnails (silt) and lacks stickiness (clay) Of, Om and Oh are common wetland organic horizon designations
A	<ul style="list-style-type: none"> Topsoil and/or the layer below O/S/LFH (if present) Zone of organic enrichment and/or losses by leaching to lower horizons Contains ≤30% organic matter by dry weight, 5 to 17% organic carbon Ah, Ap are common wetland horizons
B	<ul style="list-style-type: none"> Subsoil layer beneath A (if present) Could contain an accumulation of minerals from the upper layers may contains a higher clay content Contains ≤30% organic material by field weight/volume (the rest is mineral) Bg, Bfg, Btg, Bhg are some common wetland horizons
C	<ul style="list-style-type: none"> Unaltered soil parent material such as weathered rock or sediment Absence of soil-forming processes C, and Cg are common wetland horizons

BOX 3 – Note on distinguishing Organic Horizons (Oh or Ohi) from Organic Rich A Horizons (Ah):

Field estimates of % organic matter can be challenging when the organic matter is well decomposed, and the texture of the mineral particles are fine (particularly when dominated by silt or flat mica particles). It takes practice and calibration against lab analysed samples. This is a common challenge in fluvial and littoral marshes, swamps and some fens where sluggish flood waters and wave action can input significant mineral sediments that accumulate with organic matter at the soil surface resulting in mucky horizons that may be close to the Organic/Mineral boundary.

Here are some rules of thumb you can apply:


- If you see or can feel sand it is most likely mineral horizon because mineral particles are disproportionately heavy compared to dry organic matter.
- If it can be rolled into a cohesive worm <5mm that can bend and hold its own weight it is most likely mineral because it likely has significant silt and clay.
- If you can feel grit between your thumbnails, it is most likely mineral because you are feeling the silt particles.
- If the sample is dry and dusty and sucks the moisture from your hands when it dries out it is most likely mineral (that is the silt and clay).
- Conduct the rub test as described in section 6 of the British Columbia Wetland Identification and Delineation Manual.
- Don't be fooled by a cummulic soil where mineral and organic horizons may be alternating in cm or decameter increments. The auger can smear these layers together. Break apart the core to observe the pure organic and mineral layers.

If you are still unsure → record horizon as **organic soil** with a **humic texture** on the data sheet.

E.5 Organic Horizon Properties

Von Post Level of Decomposition

For organic soil horizons, assess the level of decomposition (record as “texture” on the Soil Data Sheet”. There could be several organic soil horizons – e.g. 20 cm of fibric on top of 10 cm mesic, which are on top of 10 cm humic. In that case record three separate horizons with different textures (e.g. “Of” and “Om” and “Oh”). Do not complete colour for organic soil horizons.

Table E-2 Organic Soil Texture Summary		
Texture	Description	Illustration
Fibric	<ul style="list-style-type: none">• No/little decomposition• Non-woody plant structures easily identified• Woody structures remain visible• Water runs clear / yellowish• Von Post 1-3	


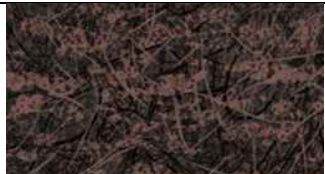
Mesic	<ul style="list-style-type: none"> • Moderate decomposition • Non-woody plant structures are indistinct/vague • Woody structures remain visible • Water runs muddy brown • Von Post 4-6 	
Humic	<ul style="list-style-type: none"> • Strong/complete decomposition • Non-woody plant structures not identifiable • Woody structures may remain visible • Water runs dark and almost pasty • Von Post 7-10 	

Table E-3 Von Post Level of Decomposition				
Texture	VP Level	Non-woody plant structures	Water colour when squeezed	Particulate matter (“peat”) that escapes with the water /paste when squeezed
Fibric	1	Undecomposed	Clear to light yellow	No peat escapes
	2	Almost undecomposed	Light yellow to brown	No peat escapes
	3	Very weakly decomposed	Light to medium brown	No peat escapes, residue not mushy.
Mesic	4	Weakly decomposed	Medium brown	No peat escapes, residue rather mushy.
	5	Moderately decomposed	Medium brown	Some peat escapes, residue very mushy
	6	Very moderately decomposed	Medium to dark brown	A third of peat escapes, residue strongly mushy.
Humic	7	Strongly decomposed	Very dark brown / black – sample has more greasy / humic texture.	Half of peat escapes.
	8	Very strongly decomposed	Little water escapes when squeezed, it is more of a solution/paste.	Two thirds of peat escapes, residue only consist of resistant remnants (root fibers & wood).
	9	Almost completely decomposed	No free water escapes, it is more of a solution/paste.	Nearly all peat escapes.
	10	Completely decomposed	No free water escapes, it is more of a solution/paste	All peat escapes.
Reference: Soil Classification Working Group. 1998. The Canadian System of Soil Classification, 3rd ed. Agriculture and Agri-Food Canada Publication 1646, 187 pp.				

Hydric Signs

Signs of water presence (“hydric signs”) within an organic horizon are:

1. Organic matter accumulation

- As organic matter cannot decompose and accumulate without the presence of water, all organic horizons were signs of hydric, or water presence in soil.
- Record “OM” on the data sheet for all Organic horizons

2. Sulphuric acid odour (rotten egg smell, swamp gas)

- Hydrogen sulphide (H₂S) is produced as bacteria decompose organic matter in waterlogged conditions.
- Record “S” on the data sheet when this is encountered.

3. Permafrost

- Where the ground is frozen (at or below 0°C) for several consecutive years and there is water / frozen water present in the soil profile.
- Record “P” on the data sheet when this is encountered.

E.6 Mineral Horizon Properties

Texture (Grain Size)

Mineral soil is first described by the size of the inorganic particles (grain size). A soil sample can contain a combination of different particle sizes. Determining the particle size of a soil sample is important as it helps provide information site drainage, water retention and aeration (Table E-4)

Coarse fragments (mineral particles >2mm, i.e., rocks boulders) are excluded from the estimates of soil texture.

Mineral particles <2mm are the fine fraction of the soil.

In the field, we estimate the percentage of fine fractions (sand, silt, and clay) in a soil sample to determine the texture class. We use the texture triangle Figure. E1 to assign the 2-3 letter code e.g., “SiL” is Silt Loam and “LS” is a Loamy Sand.

Soil textures are named with the dominant texture last, i.e. “Loamy Sand” is dominated by sand. The term “Loam” is used to describe a mix of sand silt and clay. Accordingly, loams are found in the middle of the triangle. There are many different keys and guides to hand texturing soils. It takes practice calibrating against lab analyzed soils to get good at it. Start with the keys in this guide. The BEC regional field guides have soil texture keys appropriate to the areas they describe (see Table B-2).

Table E-4 Mineral Soil Particle Size Summary

Type	Diameter (mm)	Texture Description
Coarse sand	0.5 – 2.00	<ul style="list-style-type: none">• Very coarse grains• Fingers can feel individual sand particles

Table E-4 Mineral Soil Particle Size Summary		
Medium sand	0.25 – 0.5	<ul style="list-style-type: none"> Coarse grains Fingers can feel individual sand particles
Fine sand	0.10 – 0.25	<ul style="list-style-type: none"> Grainy Fingers can feel individual sand particles
Very Fine Sand	0.05 – 0.10	<ul style="list-style-type: none"> Very fine grains Fingers can faintly feel individual sand particles.
Silt	0.002-0.05	<ul style="list-style-type: none"> Floury when dry Soapy/sticky when wet (sticks to hands)
Clay	<0.002	<ul style="list-style-type: none"> Hard when dry Very sticky (like gum) when wet (sticks to itself)
Loam	Mixed (sand, silt, clay)	<ul style="list-style-type: none"> Variable depending on proportions of sand, silt, clay
Reference: Soil Classification Working Group. 1998. The Canadian System of Soil Classification, 3rd ed. Agriculture and Agri-Food Canada Publication 1646, 187 pp.		

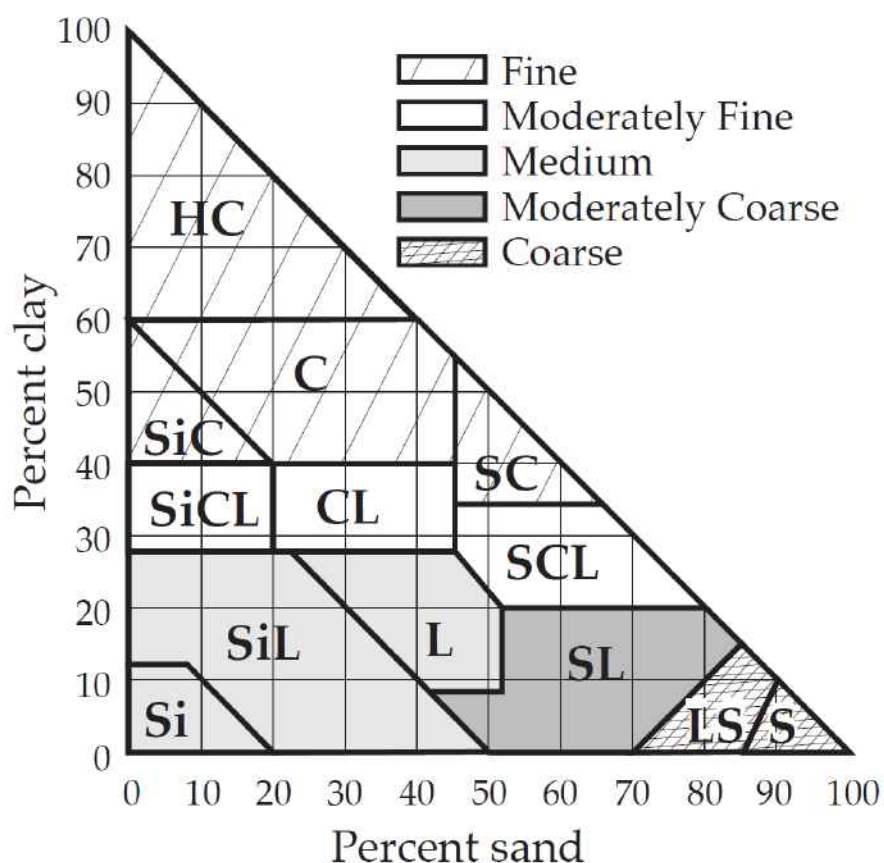


Figure E-1 Mineral Soil Texture Schematic (BCMFR and BCMOE, 2023.)

Colour

The Munsell Soil Colour Chart is a standardized tool used to determine the colour of soil. It is structured around three colour attributes: hue (the type of colour), value (lightness or darkness), and chroma (colour intensity). The book contains a series of colour chips with coded notations that represent these three attributes, allowing users to describe the colour of the soil samples with high precision.

1. Identify the Sample

- Determine the mineral horizons in the soil profile.
- Organic horizons do not receive a colour notation

2. Prepare the Sample

- Crumble the soil gently to remove clumps, debris or skid marks from the auger/shovel. For a most accurate colour reason, moisten the soil with a little bit of water from a spray bottle.

3. Determine the Colour Match

- Observe the soil sample in natural light.
- Compare the sample to different pages in the Munsell Book (pages indicate more yellow or redder)
- Compare the sample to different colour chips on a page (chips on the page indicate lightness-darkness as well as colour intensity).

4. Record the Colour Notation

- This notation consists of the hue (a number with letters representing the colour), followed by the value and chroma (e.g., 10YR 6/4, where “10YR” is the hue, “6” is the value, and “4” is the chroma).

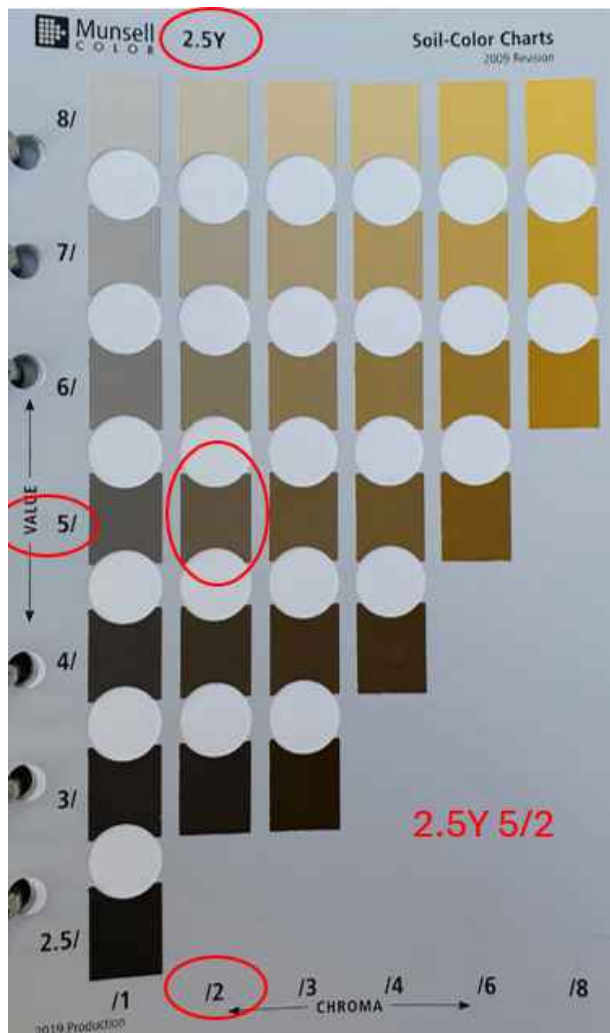


Figure E-2 Example of recording a soil colour (2.5Y 5/2) This is also a grey soil colour.

Hydric Signs

1. **“Depleted” Soil** occurs when the soil is saturated with water for a prolonged period.
 - a. The iron/manganese in the soil are not exposed to oxygen under prolonged saturation and therefore they change soil colour to **light/medium grey, grey/green, or blue/grey**.
 - b. In the Munsell Soil Colour book, the **light-medium grey colours** are found on 5R-5Y pages with a chroma of 1 or 2, and a value of 4+ or more. The medium gray colours must also contain mottling to be considered hydric.
 - c. In the Munsell book the **green/grey** and **blue/grey** colours are found on the “Gley1” and “Gley2” pages; the value must be 4+.
 - d. If a soil horizon meets this colour criteria, record as a “D” on the data sheet.

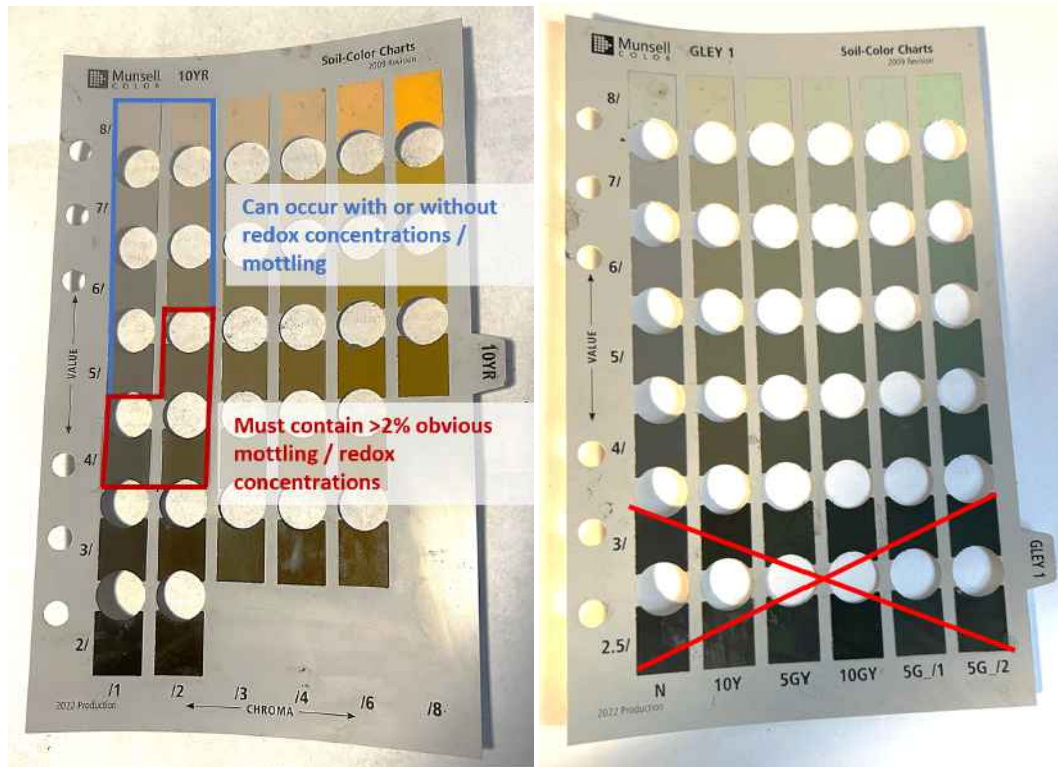


Figure E-3 Depleted Soil Colour Examples (Greys and Gleys)

2. **Concentrations** occur when water saturation levels fluctuate in the soil column. (“mottles” and “oxidized rhizospheres”)
 - a. When the water saturation levels fluctuate (typically over the growing season) the iron/manganese in the soil is intermittently exposed to oxygen, which turns the soil rust coloured (reg/orange). Overtime, particularly in drier conditions, it can also appear more yellow in colour.
 - b. Rust patches are usually found in a soft mass, nodule, or splotchy pattern in the soil profile. These splotchy patterns are called “*mottles*”.
 - c. Rust patches can also be found in the “rhizosphere”, which means the area in the soil around the living plant roots. When iron/manganese is oxidized in the rhizosphere area, we call this an “*oxidized rhizosphere*”.
 - d. Concentrations (mottles or oxidized rhizospheres) are rust.



Figure E-4 Redox Concentrations (Mottling & Oxidized Rhizospheres)

Caution: Depleted Soil and Redox Concentrations (as a sign of hydric soil activity) are hard to identify in soil materials that naturally contain *very low* OR *very high* amounts of iron/manganese.

Field test:

1. Does all soil in the area (including uplands) appear grey-ish? If yes, then refer to the Wetland Identification and Delineation Manual for further information.
2. Does all soil in the area (including uplands) appear red-ish? If yes, then refer to the Wetland Identification and Delineation Manual for further information.

Caution: “Young” soils may now show depletion or concentration. Examples of “young” soils include:

- Gravel bars
- Areas with rapid drainage (sandy soils)
- Disturbed soils
- Landslide area
- Newly restored sites

E.7 Soil Types

The overall type of a soil profile (the overall type of soil for the plot) is determined by the type and thickness of the horizons.

Organic soil requires ≥ 40 cm of surficial organic soil. In CNWI BC, there are subtypes of organic soils depending on the Von Post decomposition level (peatland vs humic organic), and also for peatlands’ underlying features (bedrock or water).

Mineral soil types are also distinguished by two subtypes. Classic mineral wetland soil will contain prominent or distinct signs of hydric signs. Young mineral wetland soil will not show obvious hydric signs, but wetland hydrology and wetland vegetation will be present.

Table E-5 Soil Type	
Soil type	Description
Peatland soil	Soil profile with a surface organic horizon ≥ 40 cm. Most of the organic soil in the top 40 cm fibric or mesic (Von Post 1-6).
Organic humic soil	Soil profile with a surface organic horizon ≥ 40 cm. Most of the organic soil in the top 40 cm is humic organic (Von Post 7-10).
Mineral wetland soil	Mineral soil profile with hydric signs in the upper 40 cm. Hydric signs include mottling, gleying, oxidized rhizospheres, odour, or some organic matter accumulation). Note: A surface organic horizon may be present, but it is less than 40cm.
Young mineral wetland soil	Mineral soil profile in an area that has obvious signs of wetland hydrology AND wetland vegetation, but no/faint hydric soil signs in the upper 40 cm. Note: This soil type includes gravel bars or areas with rapid drainage or disturbed soils that do not show evidence to quality as 'hydric mineral soil, but are likely wetlands based on the frequency of flooding or fluctuating water table.
Organic soil over bedrock	Soils profile with a surface organic horizon 40cm (or less) (typically fibric/mesic) and is underlain by a bedrock layer. Note: this soil type is typically used for certain coastal bogs.
Organic soil over water	Soils profile with a surface organic horizon 40cm (or less) (typically fibric/mesic) and underlain by a water layer. Note: This soil type is typically assigned for a "floating" wetland such as a floating fen or floating bog. There is often water found above the organic soil (as well as in the subterrain/below).
Non-wetland soil/substrate	A soil that is not a wetland soil (e.g., not mineral hydric soil or organic hydric soil). Non-hydric soils lack flooding or fluctuating water table.
Note: To qualify as an organic soil horizon, the soil must contain $> 17\%$ organic C (approximately $\geq 30\%$ organic matter) by weight.	

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Appendix A - CNWI BC Field Form

1 – SELECT PLOT LOCATION Consult CNWI BC Field Guide (2026) for more information

- Complete CNWI BC Field Form in a reasonably uniform 30 m circular plot when you suspect an area is a wetland.
- Aim for one plot to contain one wetland class and one surface cover.
- Ensure plot center and GPS point are ≥ 15 m from edge of the wetland.
- If recording from a distance (binoculars, drone, helicopter); use ESRI Field Maps “offline maps” to record accurate plot location.

2 – GENERAL SITE INFORMATION

Date/Time*		Plot Type*	Quantitative (soil/veg datasheets required)
Weather*			Qualitative Ground (boots or binoculars)
Organization/Surveyors*			Qualitative Air (drone-view or helicopter)
Project Area*			
Plot Number*			
Plot Location (lat/long)*			
Plot Size*	Standard 30 m circular plot	<30 m circular plot (unique wetland surrounded by non-wetland)	Long and narrow feature (<30m one direction & >30m in other) (e.g. strip around lake)
Site Comments E.g., site history, disturbance, wildlife, size.			

3 – PHOTOS

List of Photos* For example: 4-D(NESW), inflow, outflow, aerial, soil core, plants, datasheets, etc.	
--	--

4 – VEGETATION Quantitative plot → Complete Veg Datasheet, take photos of datasheet and any notable plants. Then complete questions below.

Qualitative plot → Proceed immediately to questions below.

Species List*									
Woody Veg*	Yes	No	Woody Veg Type*	>75% Conifer	Woody Veg Height* (m)	<2	Woody Canopy Cover* (%)	1-10	
Herbaceous*	Yes	No		>75% Broadleaf		2-5		10-25	
Bryophytes*	Yes	No		Mixed		5-10		25-50	
						10-25		50-75	
Type of Herb*	Forbs >50%		Graminoids >50%		Aquatic >50%	Ferns >50%		Mixed	
Type of Bryo*	Moss >50%			Lichens >50%			Mixed		
						25+		75-100	

5 – SOIL Quantitative plot → Complete Soil Datasheet, take photos of datasheet and soil core on white background. Then complete questions below.

Qualitative plot → Quick visual check of soils with auger if possible. Or assign soil type on professional judgement and on knowledge of site.

Describe soil* Saturation, texture, colour, VonPost, redox, salt, odour, etc.		
Soil Type* Circle one	Peatland	>40 cm organic topsoil; mostly fibric/mesic texture (Von Post 1-6)
	Organic humic	>40 cm organic topsoil; mostly humic texture (Von Post 7-10)
	Mineral wetland soil	Mineral soil shows hydric signs in the upper 40 cm (Hydric signs: mottles (rust), depleted matrix (light/med grey), gleying (blue/green), rotten egg smell.) Organic topsoil horizon can be present but is <40cm
	Young mineral wetland soil	Mineral soil shows poor hydric signs in the upper 40-cm. E.g., sandy soil, gravel bars, recently restored areas, landslide areas, etc. Must show obvious signs of wetland hydrology & wetland vegetation to be a wetland.
	Organic on bedrock	~40 cm organic topsoil; underlain by bedrock (typically coastal bogs)
	Organic on water	>40 cm organic topsoil; underlain by water layer (typically 'floating' fens)
	Non-wetland soil/substrate	Does not meet any of the definitions above (e.g., bedrock, forest soil, etc.)
	Not reported	Not comfortable assigning type based on professional judgement.

6 – WATER If quantitative plot, record measurement.

Water on surface?* (i.e., in pond or puddle)	Yes	Depth of water? (cm)	
	No		



Check Point ! At this point you should have enough data to determine whether wetland: yes / no.

Use all available information to determine if the area is a wetland.

- Water/saturated soil must be present within the top 40cm during the growing season for the area to be a wetland.
- If plants are present but soil is not (or soil is recently deposited and does not show clear hydric signs), predominant wetland vegetation (OBL/FACW species) must be present (e.g., gravel bars, very sandy soils, landslides, restored sites)
- If soil is present but plants are not, obvious signs of saturation or hydric soil must be present (e.g., intertidal mudflat, vernal pool, pond, etc.)
- If both soil and plants are present – both should be considered for a positive wetland identification.

If uncertain, consult the [BC Wetland Identification and Delineation Manual \(2025\)](#) for detailed guidance and methods.

7 – WETLAND CHARACTERIZATION

Surface Cover* <i>See Key in CNWI BC Field Guide.</i>	Tree >25%	Hydrological System* <i>See Key in CNWI BC Field Guide.</i>	Marine
	Shrub >25%		Estuary
	Woody >25%		Riverine (flowing)
	Herbaceous >25%		Lacustrine (lake/stagnant)
	Bryophytes >25%		Palustrine (basin)
	Aquatic veg >25%		Non-wetland
	Eelgrass >1shoot/m ²	Hydroperiod* <i>See Key in CNWI BC Field Guide.</i>	Ephemeral
	Macro algae >25%		Temporary
	Sediment >25%		Seasonal
	Bedrock >25%		Semi-Permanent
	Water >25%		Permanent
	Snow/Ice >25%		Non-wetland
Tidal*	Anthropogenic	Salinity	Fresh
	Yes		Brackish
	No		Saline

8 – WETLAND CLASS

Wetland Class* <i>See Key in CNWI BC Field Guide.</i>	Bog	Confidence in Classification	High
	Fen		Medium
	Swamp		Low
	Marsh	Comments	
	Shallow Open Water		
	Non-Wetland		

9 – HUMAN IMPACT AND DISTURBANCE

Is the area impacted and/or disturbed?*	Yes	No
Comments <i>For example: invasive species, ditches, berms, dams, linear infrastructure, fire, etc.</i>		

10 – ADDITIONAL CHARACTERIZATION

Nutrient regime	Rich (>5.5 pH)	Slope	No slope
	Poor (<5.5 pH)		Shallow (0-3%)
pH reading			Gentle (4-9%)
BC Plant Association (E.g., Wm05, Wb01, etc.)			Moderate (10-15%)
Rare Ecosystem in BC (E.g., Red/Blue listed)	Yes		Steep slope (16%+)
	No		
Permafrost	Present	Absent	

Appendix B - CNWI BC Datasheets

Date: _____

Plot ID or Lat/Long: _____

Surveyors: _____

Weather: _____

GENERAL SITE COMMENTS

E.g. landscape position, hummocks/terrain, coarse woody debris, location of soil/water samples, wildlife trees, site history, etc.

WATERDepth of water to the
ground (puddle):

_____ cm

pH at surface:

Soil or water reading?

Depth to the water table in
the soil core:

_____ cm

Salinity:

Record unit.

_____ ppt

SOIL (see instructions below)

Horizon (simple)	Depth (cm)	Horizon LFH, O, A, B, C	Type / Texture / VonPost see notes below	Colour (mineral horizons only)				Hydric Signs		Comments: (wetness/saturation/seep age, roots, woody debris, tephra layer, frozen, etc.)
				Colour #1	%	Colour #2	%	Type (S/OM/C/D)	Strength (P/D/F)	
1										
2										
3										
4										
5										
6										

Depth/Horizon:

- Core to least 50cm deep. If not possible, say why. E.g. too compact, bedrock, permafrost, frozen, etc.
- Leaf litter is from upland/forested plants. Record as increasing number. E.g. 6-0 cm means 6 cm litter on top of soil.
- O, A, B, C horizons are below the litter layer. Record as decreasing numbers. E.g. O = 0-10cm; A = 10-15cm; B = 15-40cm+.

Type / Texture / VonPost:

- **LFH:** Record what you see: twigs, broadleaves, needles, scat, etc. Is it partially decomposed? fully decomposed?
- **Organic Horizons (Of, Om, Oh)**
 - Fibric: Von post 1-3. Plants still identifiable, not very decomposed, squeezed water is clear/light brown.
 - Mesic: Von post 4-6. Plants somewhat recognizable but vague, moderately decomposed, squeezed water is muddy brown.
 - Humic: Von post 7-10. Plants not recognizable, very decomposed, squeezed water is very dark/almost pasty.
- **Mineral Horizons (A, B, C):** Use Mineral Soil Texture Guides. Estimate OM content if present.
 - Sand (S) Silt (Si) Clay (C) Loam (L).

Colour: Only record for Mineral Horizons

- Use Munsell Book to identify colour. E.g. 10YR, 2/3 - Hue (colour), Chroma (light/dark) / Value (bright/grey).
- If you don't have a Munsell, record the colour type. E.g. very dark brown, medium grey, light yellowish brown, etc.

Hydric Signs: (there can be more than one)

- (S) Smell of sulfur or methane (rotten eggs, stinky).
- (OM) Organic Matter. I.e. An O horizon or Ah/Bh if contains some humic organic content, often appears very dark in colour.
- (C) Redox Concentrations: rust-coloured splotches/streaks in the soil. Can occur with/without depletions "Mottling".
- (D) Redox Depletions: light-medium grey, grey/green, or blue grey. Can occur with/without concentrations "Gleying".

Strength of Hydric Signs

- (P) Prominent: confident it is present and dominant in soil horizon. Visible from standing.
- (D) Distinct: confident it is present, but not dominant in the soil horizon. Visible from arms length.
- (F) Faint: barely visible, or unsure if present in soil horizon. Visible, but only when inspected up close (nose length).

Data collection to support the Canadian National Wetland Inventory in BC

Data Sheet adapted from: "B.C. Ministry of Forests and Range. 2010. Field manual for describing terrestrial ecosystems. -- 2nd ed. Land Management Handbook 25. Co-published with B.C. Ministry of Environment." And "Watson, K., and D. Pennock 2016. Section 3. Soil Profile Description. From: D. Pennock, K. Watson, and P. Sanborn. 2016. Field Handbook for the Soils of Western Canada. Pedology Subcommittee, Canadian Society of Soil Science." And "US Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0."



Date: _____

Plot ID or Lat/Long: _____

Surveyors: _____

Weather: _____

Mid Points: 1% 3% 7.5% 17.5% 37.5% 75%

Woody Stratum Plot size = 30-m diameter. (Equates to ~700m². Seven 1m² plants would equate to ~1% of plot area).

Record dwarf/low woody veg and woody vines in "Ground Stratum.". Use

Specie Name Scientific code or common name	Percent Cover (%) Use canopy cover	Average Height	Dominant Y/N	Native (N) Exotic (E)	Life Form	Other
1.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	<1m, 1-2, 2-5, 5-10, 10-25, 25m+				
2.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	<1m, 1-2, 2-5, 5-10, 10-25, 25m+				
3.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	<1m, 1-2, 2-5, 5-10, 10-25, 25m+				
4.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	<1m, 1-2, 2-5, 5-10, 10-25, 25m+				
5.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	<1m, 1-2, 2-5, 5-10, 10-25, 25m+				
6.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	<1m, 1-2, 2-5, 5-10, 10-25, 25m+				
7.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	<1m, 1-2, 2-5, 5-10, 10-25, 25m+				
50/20 Dominance Guide:	A. Total % cover all species: _____ %	B. 50% of the total cover: _____ %	C. 20% of the total cover: _____ %			

Ground Stratum Plot size = 1-m diameter. (Equates to ~0.78m². One 10cm² plant would equate ~12% of plot area)

Record all herbaceous veg, bryophytes, algae, dwarf/low woody veg, woody vines AND plants submerged in water e.g. lily pads, milfoil, eelgrass, etc.

Specie Name Scientific code or common name	Percent Cover (%) Use canopy cover	Average Height	Dominant Y/N	Native (N) Exotic (E)	Life Form	Other
1.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
2.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
3.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
4.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
5.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
6.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
7.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
8.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
9.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
10.	<1%, 1-5, 5-10, 10-25, 25-50, 50%+	0-10cm, 10-50, 50-100, 100cm+				
50/20 Dominance Guide:	A. Total % cover all species: _____ %	B. 50% of the total cover: _____ %	C. 20% of the total cover: _____ %			

Other Vegetation (not within the sample plot but are dominant, abundant or notable in wetland complex).

Specie Name	Comments (describe the prevalence / distribution / height of the specie).	Life Form
1.		
2.		
3.		

Notes:

- **Specie Name** – Scientific code is the first 4 letters of Genus and first 3 letters of species (E.g. ACER MAC; CARE AQU)
- **"Dominant"** is determined by the 50/20 Rule which is done in Four Step Method for both Woody and Ground Stratums.
 - Step 1:** Calculate total % cover of all species ("A") by adding the mid-points for each specie (A can be >100%). Record numbers.
 - Step 2:** Calculate what 50% ("B") and 20% ("C") of the total % cover ("A") is. "B" = A/2. "C" = A/5. Record numbers.
 - Step 3:** "50 Rule" - In decreasing order of abundance, select all species until the cumulative coverage exceeds "B".
 - Step 4:** "20 Rule" - Select any other species that, by itself exceeds "C".
- **Note:** for "50 Rule" and "20 Rule" - if two or more species are equal in coverage (i.e., same % bin), they should both/all be selected.
- **Native / Exotic** – Indicate if the species is native to the region or an exotic (ornamental or invasive).
- **Life Form** (T) Tree (S) Shrub (H) Herbaceous (M) Moss (L) Lichen (Aq) Aquatic (Al) Algae (O) Other
- **Other:** (OLB) Obligate (FACW) Facultative Wet (FAC) Facultative (FACU) Facultative Upland (UPL) Upland

Data collection to support the Canadian National Wetland Inventory in BC



Data Sheet adapted from: "B.C. Ministry of Forests and Range. 2010. Field manual for describing terrestrial ecosystems. 2nd ed. Land Management Handbook 25. Co-published with B.C. Ministry of Environment." and "DUC Boreal Wetland Site Surveying Field Form. Helicopter Surveys. Rev. 08/20/12" and "US Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0."



Appendix C - Field Photo Examples

Appendix C – Field Photo Examples

CNWI BC Field Guide

Soil Profile Example (Quantitative Plot)		
		<p>Pros</p> <ul style="list-style-type: none">- Clear lighting and high resolution- Decent lighting- Ruler present with “0” at top of soil profile- Contrasting laminated paper- Depth is >50cm <p>Cons</p> <ul style="list-style-type: none">- Laminated paper could be blank- Ruler markings could be larger for easier visibility
Soil Quick Check (Qualitative Plot)		
		<p>Pros</p> <ul style="list-style-type: none">- High resolution- Decent lighting- For a qualitative plot it shows clear hydric soil signs (gleyed matrix) <p>Cons</p> <ul style="list-style-type: none">- Lighting is slightly over brightened- Does not show accurate depth of sample- Does not show any quantitative data

Aerial Photo Examples (captured from drone)



Pros

- Drone image is clear and high resolution
- Good view of surrounding ecosystem
- Mark up clearly shows the wetland surveyed and plot location

Cons

- An arrow or N indicating which direction is north could assist data reviewers



Down Photos (of ground vegetation)



Pros

- Clear and high resolution
- Good view of surrounding ecosystem
- Mark up clearly shows the wetland surveyed and plot location

Cons

- A visual boundary of the plot size would be helpful reference

360 Photo (must be viewed in 360 viewer for proper review)



4D Photos (NESW)



Appendix D - Common Wetland Vegetation

Appendix D – Wetland Vegetation

CNWI BC Field Guide

The following tables summarize plants that are typically found in wetlands (FACW and OBL ranked). FAC ranked species are included for trees and shrubs as the depth of rooting zone for those species is typically deeper than other vegetation,

On the CNWI BC Vegetation Data Sheet, species found in Table 1 and 2 should be recorded in the 30-m plot for woody species. Species in Tables 3-6 should be recorded in the 1-m ground vegetation plot.

This is an excerpt from the “BC Wetland Plant Indicator List” V1.0, 2025-11-26.

Table 1 – Coniferous Woody Vegetation showing OBL, FACW, and FAC species.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Callitropsis nootkatensis</i>	Yellow-cedar	FAC	-	-	-
<i>Larix laricina</i>	Tamarack	-	-	FACW	-
<i>Picea engelmannii</i>	Engelmann spruce	-	FAC	-	FACU
<i>Picea glauca</i>	White spruce	-	FAC	FACU	FAC
<i>Picea mariana</i>	Black spruce	-	-	FACW	-
<i>Picea sitchensis</i>	Sitka spruce	-	FAC	FACU	FAC
<i>Picea x lutzii</i>	Roche spruce	FAC	-	-	-
<i>Pinus contorta</i>	Lodgepole pine	-	FAC	FAC	FAC
<i>Thuja plicata</i>	Western redcedar	-	FAC	FAC	FAC
<i>Tsuga heterophylla</i>	Western hemlock	-	FACU	FAC	FACU
<i>Tsuga mertensiana</i>	Mountain hemlock	-	FACU	FAC	FACU

Table 2 – Broadleaf Woody Vegetation showing OBL, FACW, and FAC species.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Acer circinatum</i>	Vine maple	-	FAC	FAC	FAC
<i>Acer glabrum</i>	Douglas maple	-	FACU	FACU	FAC
<i>Acer macrophyllum</i>	Bigleaf maple	-	FACU	-	FAC
<i>Acer negundo</i>	Box-elder	-	FAC	-	FACW
<i>Acer rubrum</i>	Red maple	-	FAC	-	-
<i>Alnus alnobetula</i>	Green alder	-	FACW	FAC	FACW
<i>Alnus incana</i>	Mountain alder	-	FACW	FAC	FACW
<i>Alnus rubra</i>	Red alder	-	FAC	FAC	FACW
<i>Arctous rubra</i>	Red bearberry	FAC	-	-	-
<i>Betula glandulosa</i>	Dwarf birch	-	OBL	FAC	OBL
<i>Betula occidentalis</i>	Water birch	-	FACW	FAC	FACW
<i>Betula papyrifera</i>	Paper birch	-	FAC	FACU	FAC
<i>Betula pubescens</i>	Downy birch	-	FACW	-	FAC
<i>Betula pumila</i>	Low birch	-	OBL	-	OBL
<i>Chamaedaphne calyculata</i>	Leatherleaf	-	-	FACW	-
<i>Clematis ligusticifolia</i>	White clematis	-	FAC	-	FAC
<i>Clematis vitalba</i>	Traveler's joy	-	FAC	-	FAC
<i>Cornus sanguinea</i>	Blood-twigg dogwood	FAC	-	-	-

Table 2 – Broadleaf Woody Vegetation showing OBL, FACW, and FAC species.						
Scientific Name	English Name	BC	WMV	AK	AR	
<i>Cornus sericea</i>	Red-osier dogwood	FACW	-	FAC*	-	
<i>Crataegus douglasii</i>	Black hawthorn	-	FAC	FAC	FAC	
<i>Crataegus monogyna</i>	Common hawthorn	-	FAC	FACU	FAC	
<i>Crataegus suksdorfii</i>	Huckleberry hawthorn	-	FAC	UPL	FAC	
<i>Dasiphora fruticosa</i>	Shrubby cinquefoil	-	FAC	FAC	FAC	
<i>Elaeagnus angustifolia</i>	Russian olive	-	FAC	-	FAC	
<i>Elaeagnus commutata</i>	Silverberry	-	FAC	FAC	FAC	
<i>Elliottia pyroliflora</i>	Copperbush	-	FAC	FAC	-	
<i>Euonymus occidentalis</i>	Western strawberry-bush	-	FAC	-	FACW	
<i>Frangula purshiana</i>	Cascara buckthorn	-	FAC	-	FACU	
<i>Fraxinus latifolia</i>	Oregon ash	-	FACW	-	FACW	
<i>Fraxinus pennsylvanica</i>	Green ash	-	FAC	-	FACW	
<i>Gaultheria shallon</i>	Salal	-	FACU	FAC	FACU	
<i>Lonicera involucrata</i>	Black twinberry	-	FAC	FACU	FAC	
<i>Lonicera utahensis</i>	Utah honeysuckle	-	FAC	-	FAC	
<i>Malus fusca</i>	Pacific crab apple	-	FACW	FACW	FAC	
<i>Myrica gale</i>	Sweet gale	-	OBL	OBL	-	
<i>Oplopanax horridus</i>	Devil's club	-	FAC	FACU	FAC	
<i>Physocarpus capitatus</i>	Pacific ninebark	-	FACW	FAC	FACW	
<i>Populus balsamifera</i>	Balsam poplar	-	FAC	FACU	FAC	
<i>Populus deltoides</i>	Eastern cottonwood	-	FAC	-	FAC	
<i>Populus trichocarpa</i>	Black cottonwood	FAC	-	-	-	
<i>Prunus virginiana</i>	Choke cherry	-	FACU	FAC	FAC	
<i>Rhododendron columbianum</i>	Trapper's-tea	-	OBL	-	FACW	
<i>Rhododendron groenlandicum</i>	Labrador-tea	-	OBL	FAC	-	
<i>Rhododendron lapponicum</i>	Lapland rosebay	-	-	FAC	-	
<i>Rhododendron tomentosum</i>	Northern Labrador tea	-	-	FACW	-	
<i>Ribes aureum</i>	Golden currant	-	FAC	-	FAC	
<i>Ribes bracteosum</i>	Stink currant	-	FAC	FAC	FAC	
<i>Ribes glandulosum</i>	Skunk currant	FACU	-	FAC	-	
<i>Ribes hudsonianum</i>	Northern black currant	-	FACW	FAC	FACW	
<i>Ribes inerme</i>	White-stemmed gooseberry	-	FAC	-	FAC	
<i>Ribes lacustre</i>	Black gooseberry	-	FAC	FAC	FACW	
<i>Ribes oxycanthoides</i>	Northern gooseberry	-	FACW	FACU	FACU	
<i>Ribes triste</i>	Red swamp currant	-	FAC	FAC	OBL	
<i>Ribes viscosissimum</i>	Sticky currant	-	FAC	-	FAC	
<i>Rosa nutkana</i>	Nootka rose	-	FAC	FACU	FACU	
<i>Rosa pisocarpa</i>	Clustered wild rose	-	FAC	-	FAC	
<i>Rubus allegheniensis</i>	Allegheny bramble	-	FAC	-	FACU	
<i>Rubus armeniacus</i>	Himalayan blackberry	-	FAC	-	FAC	
<i>Rubus leucodermis</i>	White-barked raspberry	-	FACU	FAC	FACU	
<i>Rubus parviflorus</i>	Thimbleberry	-	FACU	FACU	FAC	
<i>Rubus pedatus</i>	Five-leaved bramble	-	FACU	FAC	FACU	
<i>Rubus phoenicolasius</i>	Japanese wineberry	-	FAC	-	FACU	

Table 2 – Broadleaf Woody Vegetation showing OBL, FACW, and FAC species.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Rubus pubescens</i>	Dwarf red raspberry	-	FAC	FACW	FAC
<i>Rubus spectabilis</i>	Salmonberry	-	FAC	FACU	FAC
<i>Rubus ursinus</i>	Trailing blackberry	-	FACU	-	FAC
<i>Salix alaxensis</i>	Alaska willow	-	-	FAC	-
<i>Salix alba</i>	White willow	FAC	-	-	-
<i>Salix amygdaloides</i>	Peach-leaf willow	-	FACW	-	FACW
<i>Salix arbusculoides</i>	Northern bush willow	-	-	FACW	-
<i>Salix arctica</i>	Arctic willow	-	FAC	FACU	FAC
<i>Salix athabascensis</i>	Athabasca willow	-	-	OBL	-
<i>Salix barclayi</i>	Barclay's willow	-	FACW	FAC	FACW
<i>Salix barrattiana</i>	Barratt's willow	-	FACW	FACW	FACW
<i>Salix bebbiana</i>	Bebb's willow	-	FACW	FAC	FACW
<i>Salix boothii</i>	Booth's willow	-	FACW	OBL	FACW
<i>Salix brachycarpa</i>	Short-fruited willow	-	FACW	-	FACW
<i>Salix candida</i>	Sage willow	-	OBL	OBL	OBL
<i>Salix commutata</i>	Under-green willow	-	OBL	FAC	OBL
<i>Salix discolor</i>	Pussy willow	-	FACW	-	FACW
<i>Salix drummondiana</i>	Drummond's willow	-	FACW	-	FACW
<i>Salix exigua</i>	Narrow-leaved willow	-	FACW	-	FACW
<i>Salix farriae</i>	Farr's willow	-	OBL	-	OBL
<i>Salix geyeriana</i>	Geyer's willow	-	FACW	-	OBL
<i>Salix glauca</i>	Grey-leaved willow	-	FACW	FAC	FACW
<i>Salix hookeriana</i>	Hooker's willow	-	FACW	FACW	FACW
<i>Salix interior</i>	Narrow-leaf willow	-	FACW	FACW	FACW
<i>Salix lasiandra</i>	Pacific willow	-	FACW	FACW	FACW
<i>Salix maccalliana</i>	Maccalla's willow	-	FACW	-	FACW
<i>Salix melanopsis</i>	Dusky willow	-	OBL	-	OBL
<i>Salix myrtillofolia</i>	Bilberry willow	-	FACW	FACW	FACW
<i>Salix niphoclada</i>	Barren-ground willow	FAC	-	-	-
<i>Salix nivalis</i>	Dwarf snow willow	-	FACW	-	FACW
<i>Salix pedicellaris</i>	Bog willow	-	OBL	-	OBL
<i>Salix petiolaris</i>	Meadow willow	-	OBL	-	-
<i>Salix planifolia</i>	Plane-leaved willow	-	OBL	FACW	OBL
<i>Salix polaris</i>	Polar willow	-	-	FACW	-
<i>Salix prolixa</i>	Mackenzie willow	-	OBL	FACW	OBL
<i>Salix pseudomonticola</i>	Serviceberry willow	-	FACW	FAC	FACW
<i>Salix pseudomyrsinites</i>	Tall blueberry willow	FAC	-	-	-
<i>Salix pulchra</i>	Diamond-leaved willow	-	-	FACW	-
<i>Salix purpurea</i>	Purple willow	-	OBL	-	FACW
<i>Salix pyrifolia</i>	Balsam willow	FAC	-	-	-
<i>Salix raupii</i>	Raup's willow	FAC	-	-	-
<i>Salix reticulata</i>	Net-veined willow	-	FAC	FAC	FAC
<i>Salix richardsonii</i>	Richardson's willow	-	-	FACW	-
<i>Salix scouleriana</i>	Scouler's willow	-	FAC	FAC	FAC

Table 2 – Broadleaf Woody Vegetation showing OBL, FACW, and FAC species.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Salix serissima</i>	Autumn willow	-	OBL	-	OBL
<i>Salix sessilifolia</i>	Soft-leaved willow	-	FACW	-	-
<i>Salix setchelliana</i>	Setchell's willow	-	-	FAC	-
<i>Salix sitchensis</i>	Sitka willow	-	FACW	FAC	FACW
<i>Salix tweedyi</i>	Tweedy's willow	-	FACW	-	FACW
<i>Salix vestita</i>	Rock willow	-	FAC	-	FAC
<i>Salix viminalis</i>	Basket willow	-	OBL	-	FACW
<i>Salix x fragilis</i>	Hybrid white willow	FACW	-	-	-
<i>Salix x meyeriana</i>	Meyer's willow	FAC	-	-	-
<i>Salix x sepulcralis</i>	Golden willow	FAC	-	-	-
<i>Sorbus sitchensis</i>	Sitka mountain-ash	-	FAC	FACU	FAC
<i>Spiraea douglasii</i>	Hardhack spirea	-	FACW	FACW	FACW
<i>Symphoricarpos occidentalis</i>	Western snowberry	-	FAC	-	FAC
<i>Tamarix ramosissima</i>	Salt-cedar	FAC	-	-	-
<i>Toxicodendron diversilobum</i>	Poison oak	-	FAC	-	FACU
<i>Ulmus americana</i>	American elm	-	FAC	-	FAC
<i>Vaccinium alaskaense</i>	Alaskan blueberry	-	FAC	FAC	FAC
<i>Vaccinium cespitosum</i>	Dwarf blueberry	-	FAC	FACW	FAC
<i>Vaccinium corymbosum</i>	Highbush blueberry	-	FACW	-	-
<i>Vaccinium ovalifolium</i>	Oval-leaved blueberry	-	UPL	FAC	UPL
<i>Vaccinium parvifolium</i>	Red huckleberry	-	FACU	FACU	FAC
<i>Vaccinium uliginosum</i>	Bog blueberry	-	FACW	FAC	FACW
<i>Viburnum edule</i>	Highbush cranberry	-	FACW	FACU	FACW
<i>Viburnum opulus</i>	American bush-cranberry	-	FACW	-	FACW
<i>Vitis riparia</i>	Riverbank grape	-	FACU	-	FAC

Table 3 – Dwarf Woody Vegetation showing OBL, FACW, and FAC species.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Andromeda polifolia</i>	bog-rosemary	-	OBL	FACW	OBL
<i>Dryas ajanensis</i>	white dryad	-	FAC	-	UPL
<i>Empetrum nigrum</i>	crowberry	-	FAC	FAC	FAC
<i>Gaultheria hispidula</i>	creeping wintergreen	-	FACW	-	-
<i>Gaultheria humifusa</i>	alpine-wintergreen	-	FACW	-	FACW
<i>Gaultheria ovatifolia</i>	Oregon wintergreen	-	FAC	-	FAC
<i>Harrimanella stelleriana</i>	Alaska moss-heather	-	FACU	FACW	FACU
<i>Kalmia microphylla</i>	western bog-laurel	-	OBL	OBL	OBL
<i>Kalmia procumbens</i>	alpine-azalea	FAC	-	-	-
<i>Phyllodoce x intermedia</i>	intermediate mountain heather	FAC	-	-	-
<i>Vaccinium macrocarpon</i>	large-fruited cranberry	-	OBL	OBL	OBL
<i>Vaccinium microcarpum</i>	small-fruited cranberry	OBL	-	-	-
<i>Vaccinium oxycoccos</i>	bog cranberry	-	OBL	OBL	OBL
<i>Vaccinium vitis-idaea</i>	lingonberry	-	-	FAC	-

Table 4 – Ferns and Allys showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Adiantum capillus-veneris</i>	Southern maiden-hair fern	-	FACW	-	FACW
<i>Azolla caroliniana</i>	Eastern mosquito fern	OBL	-	-	-
<i>Azolla filiculoides</i>	Large mosquito fern	-	OBL	OBL	OBL
<i>Azolla microphylla</i>	Mexican mosquito fern	OBL	-	-	-
<i>Botrychium crenulatum</i>	Dainty moonwort	-	FACW	-	FACW
<i>Botrychium lanceolatum</i>	Triangle moonwort	-	FACW	FAC	FACW
<i>Dryopteris cristata</i>	Crested wood fern	-	FACW	-	FACW
<i>Dryopteris expansa</i>	Spiny wood fern	-	FACW	FACU	FACW
<i>Equisetum braunii</i>	Giant horsetail	-	FACW	-	FACW
<i>Equisetum fluviatile</i>	Swamp horsetail	-	OBL	OBL	OBL
<i>Equisetum hyemale</i>	Common scouring-rush	-	FACW	FACW	FACW
<i>Equisetum laevigatum</i>	Smooth scouring-rush	-	FACW	-	FACW
<i>Equisetum palustre</i>	Marsh horsetail	-	FACW	FACW	FACW
<i>Equisetum pratense</i>	Meadow horsetail	-	FACW	FACW	-
<i>Equisetum telmateia</i>	Giant horsetail	-	FACW	-	FACW
<i>Equisetum variegatum</i>	Variegated scouring-rush	-	FACW	FACW	FACW
<i>Equisetum x jesupii</i>	Mackay's scouring-rush	FACW	-	-	-
<i>Equisetum x litorale</i>	Shore horsetail	FACW	-	-	-
<i>Isoetes echinospora</i>	Spiny-spore quillwort	OBL	-	-	-
<i>Isoetes howellii</i>	Howell's quillwort	-	OBL	-	OBL
<i>Isoetes maritima</i>	Coastal quillwort	-	OBL	OBL	-
<i>Isoetes minima</i>	Columbia quillwort	-	OBL	-	FACW
<i>Isoetes nuttallii</i>	Nuttall's quillwort	-	OBL	-	OBL
<i>Isoetes occidentalis</i>	Western quillwort	-	OBL	-	OBL
<i>Lycopodiella inundata</i>	Bog clubmoss	-	OBL	OBL	OBL
<i>Marsilea vestita</i>	Hairy water-clover	-	OBL	-	OBL
<i>Matteuccia struthiopteris</i>	Ostrich fern	-	FACW	FACW	-
<i>Ophioglossum pusillum</i>	Northern adder's-tongue	-	FACW	FACW	FACW
<i>Selaginella selaginoides</i>	Mountain-moss	-	FACW	FACU	FACW
<i>Woodwardia fimbriata</i>	Giant chain fern	-	FACW	-	FACW

Table 5 – Graminoids showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Agrostis exarata</i>	Spike bentgrass	-	FACW	FACW	FACW
<i>Agrostis gigantea</i>	Redtop	-	FAC	FAC	FACW
<i>Agrostis idahoensis</i>	Idaho bentgrass	-	FACW	FACW	FACW
<i>Agrostis microphylla</i>	Small-leaved bentgrass	-	FACW	-	FACW
<i>Agrostis oregonensis</i>	Oregon bentgrass	-	FAC	-	FACW
<i>Agrostis stolonifera</i>	Creeping bentgrass	-	FAC	FAC	FACW
<i>Alopecurus aequalis</i>	Little meadow-foxtail	-	OBL	OBL	OBL
<i>Alopecurus carolinianus</i>	Carolina meadow-foxtail	-	FACW	-	FACW
<i>Alopecurus geniculatus</i>	Water meadow-foxtail	-	OBL	OBL	OBL

Table 5 – Graminoids showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Alopecurus magellanicus</i>	Alpine meadow-foxtail	-	FACW	FACW	FACW
<i>Alopecurus pratensis</i>	Meadow-foxtail	-	FAC	FACW	FACW
<i>Amphiscirpus nevadensis</i>	Nevada bulrush	FACW	-	-	-
<i>Anthoxanthum hirtum</i>	Hairy sweetgrass	-	FACW	FACW	FACW
<i>Arctagrostis latifolia</i>	Polargrass	-	-	FACW	-
<i>Arctophila fulva</i>	Pendantgrass	-	-	OBL	-
<i>Beckmannia syzigachne</i>	American sloughgrass	-	OBL	OBL	OBL
<i>Bolboschoenus fluviatilis</i>	River bulrush	OBL	-	-	-
<i>Bolboschoenus glaucus</i>	Bulbous bulrush	OBL	-	-	-
<i>Bolboschoenus maritimus</i>	Saltmarsh bulrush	FACW	-	-	-
<i>Calamagrostis canadensis</i>	Bluejoint reedgrass	-	FACW	FAC	FACW
<i>Calamagrostis nutkaensis</i>	Pacific reedgrass	-	FACW	FAC	FACW
<i>Calamagrostis stricta</i>	Slimstem reedgrass	-	FACW	FACW	FACW
<i>Carex amplifolia</i>	Bigleaf sedge	-	OBL	-	OBL
<i>Carex anthoxanthea</i>	Yellow-flowered sedge	-	OBL	FACW	-
<i>Carex aperta</i>	Columbia sedge	-	OBL	-	FACW
<i>Carex aquatilis</i>	Water sedge	-	OBL	OBL	OBL
<i>Carex arcta</i>	Northern clustered sedge	-	OBL	OBL	OBL
<i>Carex arctiformis</i>	Polar sedge	-	-	OBL	-
<i>Carex atherodes</i>	Awned sedge	-	OBL	OBL	OBL
<i>Carex athrostachya</i>	Slender-beaked sedge	-	FACW	FAC	FACW
<i>Carex atratiformis</i>	Black sedge	-	-	FACW	-
<i>Carex atosquama</i>	Black-scaled sedge	-	FAC	FACW	FACU
<i>Carex aurea</i>	Golden sedge	-	FACW	FACW	OBL
<i>Carex bebbii</i>	Bebb's sedge	-	OBL	OBL	OBL
<i>Carex bicolor</i>	Two-coloured sedge	-	-	OBL	-
<i>Carex borealipolaris</i>	Siberian kobresia	-	FAC	FACW	FAC
<i>Carex brunnescens</i>	Brownish sedge	-	OBL	FAC	OBL
<i>Carex buxbaumii</i>	Buxbaum's sedge	-	OBL	FACW	OBL
<i>Carex canescens</i>	Grey sedge	-	OBL	FACW	OBL
<i>Carex capillaris</i>	Hairlike sedge	-	FACW	FACW	FACW
<i>Carex capitata</i>	Capitate sedge	-	FACW	FAC	FAC
<i>Carex chordorrhiza</i>	Cordroot sedge	-	OBL	OBL	OBL
<i>Carex comosa</i>	Bearded sedge	-	OBL	-	OBL
<i>Carex crawei</i>	Crawe's sedge	-	FACW	-	FACW
<i>Carex crawfordii</i>	Crawford's sedge	-	FACW	FAC	FAC
<i>Carex cusickii</i>	Cusick's sedge	-	OBL	-	OBL
<i>Carex diandra</i>	Lesser-panicled sedge	-	OBL	OBL	OBL
<i>Carex disperma</i>	Soft-leaved sedge	-	FACW	FACW	OBL
<i>Carex echinata</i>	Star sedge	-	OBL	OBL	OBL
<i>Carex eleusinoides</i>	Goosegrass sedge	-	-	FACW	-
<i>Carex enanderi</i>	Enander's sedge	-	-	OBL	-
<i>Carex exsuccata</i>	Inflated sedge	-	OBL	OBL	OBL
<i>Carex feta</i>	Green-sheathed sedge	-	FACW	-	FACW

Table 5 – Graminoids showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Carex flava</i>	Yellow sedge	-	OBL	OBL	OBL
<i>Carex garberi</i>	Garber's sedge	-	FACW	FACW	FACW
<i>Carex glareosa</i>	Lesser saltmarsh sedge	-	-	OBL	-
<i>Carex granularis</i>	Limestone meadow sedge	-	OBL	-	-
<i>Carex gynocrates</i>	Yellow bog sedge	-	OBL	OBL	OBL
<i>Carex hassei</i>	Salt sedge	-	FACW	-	FACW
<i>Carex heleonastes</i>	Hudson Bay sedge	-	-	OBL	-
<i>Carex hystericina</i>	Porcupine sedge	-	OBL	-	OBL
<i>Carex illota</i>	Sheep sedge	-	FACW	-	FACW
<i>Carex interior</i>	Inland sedge	-	OBL	OBL	OBL
<i>Carex interrupta</i>	Green-fruited sedge	-	OBL	-	OBL
<i>Carex jonesii</i>	Jones' sedge	-	OBL	-	FACW
<i>Carex kelloggii</i>	Kellogg's sedge	-	OBL	OBL	OBL
<i>Carex lachenalii</i>	Two-parted sedge	-	OBL	OBL	OBL
<i>Carex lacustris</i>	Lake sedge	-	OBL	-	-
<i>Carex laeviculmis</i>	Smooth-stemmed sedge	-	FACW	FACW	FACW
<i>Carex lapponica</i>	Lapland sedge	-	-	OBL	-
<i>Carex lasiocarpa</i>	Slender sedge	-	OBL	OBL	OBL
<i>Carex leporina</i>	Oval sedge	-	FACW	-	FACW
<i>Carex leptalea</i>	Bristle-stalked sedge	-	OBL	OBL	OBL
<i>Carex limosa</i>	Shore sedge	-	OBL	OBL	OBL
<i>Carex livida</i>	Pale sedge	-	OBL	OBL	OBL
<i>Carex loliacea</i>	Ryegrass sedge	-	-	OBL	-
<i>Carex longii</i>	Green and white sedge	-	OBL	-	FACW
<i>Carex luzulina</i>	Woodrush sedge	-	OBL	-	OBL
<i>Carex lyngbyei</i>	Lyngbye's sedge	-	OBL	OBL	OBL
<i>Carex mackenziei</i>	Mackenzie's sedge	-	-	OBL	-
<i>Carex macloviana</i>	Falkland Island sedge	-	FACW	FAC	FACW
<i>Carex macrochaeta</i>	Large-awned sedge	-	OBL	FACW	FACW
<i>Carex magellanica</i>	Poor sedge	-	OBL	OBL	OBL
<i>Carex media</i>	Scandinavian sedge	-	FACW	FACW	FACW
<i>Carex membranacea</i>	Fragile sedge	-	-	FACW	-
<i>Carex mertensii</i>	Merten's sedge	-	FAC	FACW	FAC
<i>Carex microglochin</i>	Few-seeded fen sedge	-	FACW	OBL	OBL
<i>Carex micropoda</i>	Pyrenean sedge	-	FACU	FACW	FAC
<i>Carex nigra</i>	Smooth black sedge	FACW	-	-	-
<i>Carex nigricans</i>	Black alpine sedge	-	FACW	FACW	FACW
<i>Carex obnupta</i>	Slough sedge	-	OBL	-	OBL
<i>Carex parryana</i>	Parry's sedge	-	FACW	FACW	FAC
<i>Carex pauciflora</i>	Few-flowered sedge	-	OBL	OBL	OBL
<i>Carex pedunculata</i>	Peduncled sedge	-	OBL	-	-
<i>Carex pellita</i>	Woolly sedge	-	OBL	-	OBL
<i>Carex pluriflora</i>	Many-flowered sedge	-	OBL	OBL	-
<i>Carex praeceptorum</i>	Teacher's sedge	-	OBL	-	OBL

Table 5 – Graminoids showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Carex praegracilis</i>	Field sedge	-	FACW	FACW	FACW
<i>Carex prairea</i>	Prairie sedge	-	OBL	-	-
<i>Carex praticola</i>	Meadow sedge	-	FACW	FAC	FACW
<i>Carex retrorsa</i>	Long-bracted sedge	-	OBL	-	OBL
<i>Carex rostrata</i>	Swollen beaked sedge	-	OBL	OBL	OBL
<i>Carex sartwellii</i>	Sartwell's sedge	-	OBL	OBL	OBL
<i>Carex saxatilis</i>	Russet sedge	-	OBL	FACW	OBL
<i>Carex scoparia</i>	Pointed broom sedge	-	FACW	-	FACW
<i>Carex scopulorum</i>	Rocky Mountain sedge	-	OBL	-	FACW
<i>Carex simpliciuscula</i>	Simple kobresia	-	FACW	FACW	FACW
<i>Carex simulata</i>	Short-beaked fen sedge	-	OBL	-	OBL
<i>Carex spectabilis</i>	Showy sedge	-	FACW	FACW	FACW
<i>Carex stipata</i>	Awl-fruited sedge	-	OBL	OBL	OBL
<i>Carex stylosa</i>	Long-styled sedge	-	OBL	FACW	-
<i>Carex subbracteata</i>	Small-bracted sedge	-	FACW	-	FACW
<i>Carex sychnocephala</i>	Many-headed sedge	-	FACW	FACW	FACW
<i>Carex tenera</i>	Tender sedge	-	FACW	-	FACW
<i>Carex tenuiflora</i>	Sparse-flowered sedge	-	OBL	OBL	OBL
<i>Carex tribuloides</i>	Blunt broom sedge	-	FACW	-	-
<i>Carex trisperma</i>	Three-seeded sedge	OBL	-	-	-
<i>Carex unilateralis</i>	One-sided sedge	-	FACW	-	FACW
<i>Carex utriculata</i>	Beaked sedge	-	OBL	OBL	OBL
<i>Carex vaginata</i>	Sheathed sedge	-	OBL	OBL	-
<i>Carex vesicaria</i>	Lesser bladder sedge	-	OBL	-	OBL
<i>Carex viridula</i>	Greenish sedge	-	OBL	OBL	OBL
<i>Carex vulpinoidea</i>	Fox sedge	-	OBL	-	OBL
<i>Catabrosa aquatica</i>	Brookgrass	-	OBL	OBL	OBL
<i>Cinna latifolia</i>	Nodding wood-reed	-	FACW	FACW	FACW
<i>Coleanthus subtilis</i>	Moss grass	-	OBL	-	OBL
<i>Coleataenia rigidula</i>	Redtop panicgrass	-	FACW	-	FACW
<i>Cyperus acuminatus</i>	Taper-tip flatsedge	-	OBL	-	OBL
<i>Cyperus erythrorhizos</i>	Red-rooted cyperus	-	OBL	-	OBL
<i>Cyperus esculentus</i>	Yellow nut-grass	-	FAC	FACW	FACW
<i>Cyperus squarrosus</i>	Awned cyperus	-	OBL	-	OBL
<i>Cyperus strigosus</i>	Straw-coloured flatsedge	-	FACW	-	FACW
<i>Cyperus subsquarrosus</i>	Small-flowered lipocarpa	-	OBL	-	OBL
<i>Deschampsia danthonioides</i>	Annual hairgrass	-	FACW	FAC	FACW
<i>Deschampsia elongata</i>	Slender hairgrass	-	FACW	FAC	FACW
<i>Distichlis spicata</i>	Alkali saltgrass	-	FACW	-	FAC
<i>Dulichium arundinaceum</i>	Three-way sedge	-	OBL	OBL	OBL
<i>Echinochloa crus-galli</i>	Large barnyard grass	-	FAC	-	FACW
<i>Echinochloa muricata</i>	Rough barnyard grass	-	FACW	-	FACW
<i>Eleocharis acicularis</i>	Needle spike-rush	-	OBL	OBL	OBL
<i>Eleocharis atropurpurea</i>	Purple spike-rush	-	FACW	-	FACW

Table 5 – Graminoids showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Eleocharis coloradoensis</i>	Dwarf spike-rush	OBL	-	-	-
<i>Eleocharis elliptica</i>	Elliptic spike-rush	-	OBL	-	OBL
<i>Eleocharis engelmannii</i>	Englemann's spike-rush	-	OBL	-	OBL
<i>Eleocharis erythropoda</i>	Bald spike-rush	OBL	-	-	-
<i>Eleocharis geniculata</i>	Bent spike-rush	-	OBL	-	OBL
<i>Eleocharis kamtschatica</i>	Kamchatka spike-rush	-	-	FACW	-
<i>Eleocharis macrostachya</i>	Creeping spike-rush	OBL	-	-	-
<i>Eleocharis mamillata</i>	Nipple spikerush	-	OBL	OBL	OBL
<i>Eleocharis nitida</i>	Slender spike-rush	-	-	OBL	-
<i>Eleocharis obtusa</i>	Blunt spike-rush	-	OBL	-	OBL
<i>Eleocharis ovata</i>	Ovate spike-rush	OBL	-	-	-
<i>Eleocharis palustris</i>	Common spike-rush	-	OBL	OBL	OBL
<i>Eleocharis parvula</i>	Small spike-rush	-	OBL	-	OBL
<i>Eleocharis quinqueflora</i>	Few-flowered spike-rush	-	OBL	OBL	OBL
<i>Eleocharis rostellata</i>	Beaked spike-rush	-	OBL	-	OBL
<i>Eleocharis suksdorfiana</i>	Suksdorf's spike-rush	-	OBL	-	OBL
<i>Eleocharis uniglumis</i>	Creeping spike-rush	OBL	-	-	-
<i>Eriophorum brachyantherum</i>	Short-anthered cotton-grass	-	-	OBL	-
<i>Eriophorum callitrix</i>	Arctic cotton-grass	-	OBL	FACW	FACW
<i>Eriophorum chamissonis</i>	Chamisso's cotton-grass	-	OBL	OBL	OBL
<i>Eriophorum gracile</i>	Slender cotton-grass	-	OBL	OBL	OBL
<i>Eriophorum scheuchzeri</i>	Scheuchzer's cotton-grass	-	OBL	OBL	OBL
<i>Eriophorum vaginatum</i>	Sheathed Cotton-grass	-	-	FACW	-
<i>Eriophorum virginicum</i>	Tawny cotton-grass	OBL	-	-	-
<i>Eriophorum viridicarinarum</i>	Green-keeled cotton-grass	-	OBL	OBL	OBL
<i>Glyceria borealis</i>	Northern mannagrass	-	OBL	OBL	OBL
<i>Glyceria canadensis</i>	Canada mannagrass	-	OBL	-	-
<i>Glyceria declinata</i>	Waxy mannagrass	-	FACW	-	FACW
<i>Glyceria elata</i>	Tall mannagrass	-	FACW	-	OBL
<i>Glyceria fluitans</i>	Floating sweet-grass	-	OBL	-	OBL
<i>Glyceria grandis</i>	Tall mannagrass	-	OBL	OBL	OBL
<i>Glyceria leptostachya</i>	Slender-spiked mannagrass	-	OBL	OBL	OBL
<i>Glyceria maxima</i>	Giant mannagrass	-	OBL	-	-
<i>Glyceria pulchella</i>	Slender mannagrass	-	-	OBL	-
<i>Glyceria striata</i>	Fowl mannagrass	-	OBL	OBL	OBL
<i>Glyceria x occidentalis</i>	Western mannagrass	FACW	-	-	-
<i>Holcus mollis</i>	Creeping velvetgrass	-	FACW	-	FAC
<i>Hordeum brachyantherum</i>	Meadow barley	-	FACW	FACW	FACW
<i>Isolepis cernua</i>	Low clubrush	-	OBL	OBL	OBL
<i>Isolepis setacea</i>	Bristle clubrush	-	FACW	-	FACW
<i>Juncus acuminatus</i>	Tapered rush	-	OBL	-	OBL
<i>Juncus alpinoarticulatus</i>	Alpine rush	-	OBL	OBL	OBL
<i>Juncus anthelatus</i>	Giant path rush	-	FACW	-	FACW
<i>Juncus arcticus</i>	Arctic rush	-	-	OBL	-

Table 5 – Graminoids showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Juncus articulatus</i>	Jointed rush	-	OBL	OBL	OBL
<i>Juncus balticus</i>	Baltic rush	-	FACW	OBL	FACW
<i>Juncus biglumis</i>	Two-flowered rush	-	OBL	OBL	OBL
<i>Juncus bolanderi</i>	Bolander's rush	-	OBL	-	OBL
<i>Juncus breweri</i>	Brewer's rush	-	FACW	-	FACW
<i>Juncus bufonius</i>	Toad rush	-	FACW	OBL	FACW
<i>Juncus bulbosus</i>	Bulbous rush	-	OBL	-	-
<i>Juncus canadensis</i>	Canadian rush	-	OBL	-	-
<i>Juncus castaneus</i>	Chestnut rush	-	FACW	FACW	FACW
<i>Juncus compressus</i>	Compressed rush	-	OBL	-	OBL
<i>Juncus covillei</i>	Coville's rush	-	FACW	-	FACW
<i>Juncus drummondii</i>	Drummond's rush	-	FACW	FACW	FACW
<i>Juncus effusus</i>	Soft rush	-	FACW	OBL	FACW
<i>Juncus ensifolius</i>	Dagger-leaf rush	-	FACW	FACW	FACW
<i>Juncus falcatus</i>	Sickle-leaved rush	-	FACW	FACW	FACW
<i>Juncus filiformis</i>	Thread rush	-	FACW	FACW	FACW
<i>Juncus gerardii</i>	Blackgrass rush	-	FACW	-	FACW
<i>Juncus haenkei</i>	Haenke's rush	FACW	-	-	-
<i>Juncus hemiendytus</i>	Hermann's dwarf rush	-	FACW	-	OBL
<i>Juncus kelloggii</i>	Kellogg's rush	-	FACW	-	FACW
<i>Juncus longistylis</i>	Long-styled rush	-	FACW	-	FACW
<i>Juncus marginatus</i>	Grass-leaf rush	-	FACW	-	FACW
<i>Juncus mertensianus</i>	Mertens' rush	-	OBL	OBL	OBL
<i>Juncus nevadensis</i>	Nevada rush	-	FACW	-	FACW
<i>Juncus nodosus</i>	Tuberous rush	-	OBL	OBL	OBL
<i>Juncus occidentalis</i>	Western rush	-	FACW	-	FACW
<i>Juncus oxymeris</i>	Pointed rush	-	FACW	-	FACW
<i>Juncus pelocarpus</i>	Brown-fruit rush	-	OBL	-	-
<i>Juncus pylaei</i>	Soft rush	-	OBL	-	-
<i>Juncus regelii</i>	Regel's rush	-	FACW	-	FACW
<i>Juncus saximontanus</i>	Rocky Mountain rush	-	FACW	FACW	FACW
<i>Juncus squarrosus</i>	Mosquito rush	FACW	-	-	-
<i>Juncus stygius</i>	Moor rush	-	-	OBL	-
<i>Juncus supiniformis</i>	Spreading rush	-	OBL	OBL	OBL
<i>Juncus tenuis</i>	Slender rush	-	FAC	FACW	FACW
<i>Juncus torreyi</i>	Torrey's rush	-	FACW	-	FACW
<i>Juncus triglumis</i>	Three-flowered rush	-	FACW	FACW	FACW
<i>Juncus tweedyi</i>	Short-tailed rush	-	OBL	-	OBL
<i>Juncus vaseyi</i>	Vasey's rush	-	FACW	-	FACW
<i>Leersia oryzoides</i>	Rice cutgrass	-	OBL	-	OBL
<i>Luzula rufescens</i>	Rusty wood-rush	-	-	FACW	-
<i>Muhlenbergia asperifolia</i>	Alkali muhly	-	FACW	-	FACW
<i>Muhlenbergia filiformis</i>	Slender muhly	-	FACW	-	FACW
<i>Muhlenbergia glomerata</i>	Marsh muhly	-	FACW	-	FACW

Table 5 – Graminoids showing OBL and FACW species only.

Scientific Name	English Name	BC	WMV	AK	AR
<i>Muhlenbergia racemosa</i>	Satin grass	-	FACW	-	FACW
<i>Muhlenbergia uniflora</i>	Bog muhly	-	OBL	-	OBL
<i>Panicum dichotomiflorum</i>	Fall panicgrass	-	FACW	-	FACW
<i>Paspalum distichum</i>	Knotgrass	-	FACW	-	FACW
<i>Phalaris arundinacea</i>	Reed canarygrass	-	FACW	OBL	FACW
<i>Phippsia algida</i>	Frigid phippsia	-	OBL	OBL	OBL
<i>Phragmites australis</i>	Common reed	-	FACW	-	FACW
<i>Pleuropogon refractus</i>	Nodding semaphoregrass	-	OBL	-	OBL
<i>Poa leptocoma</i>	Bog bluegrass	-	FACW	FAC	FACW
<i>Poa marcida</i>	Weeping bluegrass	-	FACW	-	-
<i>Poa trivialis</i>	Rough bluegrass	-	FAC	FAC	FACW
<i>Podagrostis aequivalvis</i>	Alaska bentgrass	-	OBL	OBL	-
<i>Podagrostis humilis</i>	Alpine bentgrass	-	FACW	FACW	FACW
<i>Polypogon interruptus</i>	Ditch rabbit's-foot grass	-	FACW	-	FACW
<i>Polypogon monspeliensis</i>	Rabbitfoot polypogon	-	FACW	FACW	FACW
<i>Puccinellia distans</i>	Weeping alkaligrass	-	FACW	-	FACW
<i>Puccinellia nutkaensis</i>	Pacific alkaligrass	-	OBL	OBL	OBL
<i>Puccinellia nuttalliana</i>	Nuttall's alkaligrass	-	FACW	FACW	FACW
<i>Puccinellia pumila</i>	Dwarf alkaligrass	-	FACW	FACW	FACW
<i>Rhynchospora alba</i>	White beak-rush	-	OBL	OBL	OBL
<i>Rhynchospora capillacea</i>	Brown beak-rush	OBL	-	-	-
<i>Schoenoplectiella saximontana</i>	Rocky Mountain clubrush	FACW	-	-	-
<i>Schoenoplectus acutus</i>	Hard-stemmed bulrush	-	OBL	OBL	OBL
<i>Schoenoplectus americanus</i>	American bulrush	-	OBL	OBL	OBL
<i>Schoenoplectus pungens</i>	Common three-square bulrush	-	OBL	-	OBL
<i>Schoenoplectus subterminalis</i>	Water clubrush	-	OBL	OBL	OBL
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed bulrush	-	OBL	OBL	OBL
<i>Schoenoplectus triqueter</i>	Streambank clubrush	-	OBL	-	-
<i>Scirpus atrocinctus</i>	Wool-grass	-	OBL	-	OBL
<i>Scirpus atrovirens</i>	Woolgrass bulrush	-	OBL	-	OBL
<i>Scirpus cyperinus</i>	Woolgrass	-	OBL	-	OBL
<i>Scirpus georgianus</i>	Georgia bulrush	FACW	-	-	-
<i>Scirpus microcarpus</i>	Small-flowered bulrush	-	OBL	OBL	OBL
<i>Scirpus pallidus</i>	Pale bulrush	-	OBL	-	OBL
<i>Scolochloa festuacea</i>	Rivergrass	-	OBL	OBL	OBL
<i>Spartina patens</i>	Salt meadowgrass	-	OBL	-	OBL
<i>Spartina pectinata</i>	Prairie cordgrass	-	OBL	-	OBL
<i>Sporobolus anglicus</i>	English cordgrass	FACW	-	-	-
<i>Sporobolus hookerianus</i>	Alkali cordgrass	-	FACW	-	FACW
<i>Sporobolus montevidensis</i>	Dense-flowered cordgrass	-	OBL	-	OBL
<i>Torreyochloa pallida</i>	Pale false mannagrass	-	OBL	FACW	OBL
<i>Trichophorum alpinum</i>	Hudson Bay clubrush	-	OBL	OBL	-
<i>Trichophorum cespitosum</i>	Tufted clubrush	FACW	-	-	-
<i>Trichophorum pumilum</i>	Dwarf clubrush	-	FACW	OBL	FACW

Table 5 – Graminoids showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Vahlodea atropurpurea</i>	Mountain hairgrass	-	FACW	FACW	FACW
<i>x Elylemus uclueletensis</i>	Hybrid Ucluelet wildrye	FACW	-	-	-
<i>Zizania palustris</i>	Interior wildrice	-	OBL	-	OBL

Table 6 – Forbs showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Aconitum columbianum</i>	Columbia monkshood	FACW	FACW	FACW	FACW
<i>Acorus americanus</i>	American sweet-flag	-	OBL	OBL	OBL
<i>Agrimonia gryposepala</i>	Common agrimony	-	FACW	-	FAC
<i>Alisma gramineum</i>	Narrow-leaved water-plantain	-	OBL	-	OBL
<i>Alisma lanceolatum</i>	Lance-leaved water-plantain	-	OBL	-	OBL
<i>Alisma plantago-aquatica</i>	European water-plantain	-	OBL	OBL	-
<i>Alisma triviale</i>	American water-plantain	-	OBL	OBL	OBL
<i>Allium schoenoprasum</i>	Wild chives	-	FACW	FAC	FACW
<i>Ammannia robusta</i>	Scarlet ammannia	-	OBL	-	OBL
<i>Anemonastrum richardsonii</i>	Yellow anemone	FACW	-	-	-
<i>Anemone parviflora</i>	Northern anemone	-	FACW	FACU	FACW
<i>Angelica arguta</i>	Sharptooth angelica	-	FACW	-	FACW
<i>Angelica dawsonii</i>	Dawson's angelica	-	FACW	-	FACW
<i>Angelica genuflexa</i>	Kneeling angelica	-	FACW	FACW	FACW
<i>Anticlea occidentalis</i>	Western mountainbells	-	FAC	-	FACW
<i>Aphragmus eschscholtzianus</i>	Eschscholtz's little nightmare	-	-	FACW	-
<i>Arctanthemum arcticum</i>	Arctic-daisy	-	-	FACW	-
<i>Arnica chamissonis</i>	Meadow arnica	-	FACW	FACW	FACW
<i>Arnica lanceolata</i>	Streambank arnica	-	FACW	FAC	FACW
<i>Arnica longifolia</i>	Seep-spring arnica	-	FACW	-	FACW
<i>Arnica mollis</i>	Hairy arnica	-	FAC	FACW	FAC
<i>Arnica ovata</i>	Leaf arnica	-	FACW	FACW	FACW
<i>Artemisia biennis</i>	Biennial wormwood	-	FACW	FAC	FACW
<i>Artemisia douglasiana</i>	Douglas' sagewort	-	FACW	-	FAC
<i>Astragalus agrestis</i>	Field milk-vetch	-	FACW	-	FAC
<i>Astragalus canadensis</i>	Canada milk-vetch	-	FACW	-	FAC
<i>Atriplex gmelinii</i>	Gmelin's orache	-	FACW	FACW	FACW
<i>Atriplex patula</i>	Common orache	-	FACW	FACW	FACW
<i>Atriplex prostrata</i>	Thinleaf orach	-	FAC	-	FACW
<i>Barbarea orthoceras</i>	American wintercress	-	FACW	FACW	FACW
<i>Berula incisa</i>	Cut-leaved water-parsnip	-	OBL	-	OBL
<i>Bidens amplissima</i>	Vancouver Island beggarticks	-	FACW	-	-
<i>Bidens beckii</i>	Water marigold	-	OBL	-	OBL
<i>Bidens cernua</i>	Nodding beggarticks	-	OBL	OBL	OBL
<i>Bidens connata</i>	Purplestem beggarticks	FACW	-	-	-
<i>Bidens frondosa</i>	Common beggarticks	-	FACW	FACW	FACW
<i>Bidens tripartita</i>	Three-parted beggarticks	-	FACW	FACW	OBL
<i>Bidens vulgata</i>	Tall beggarticks	-	OBL	-	FACW

Table 6 – Forbs showing OBL and FACW species only.

Scientific Name	English Name	BC	WMV	AK	AR
<i>Bistorta bistortoides</i>	American bistort	-	FACW	-	FACW
<i>Brasenia schreberi</i>	Water shield	-	OBL	OBL	OBL
<i>Braya glabella</i>	Alpine braya	-	FACW	FAC	FAC
<i>Brewerimitella ovalis</i>	Oval-leaved mitrewort	-	FACW	-	OBL
<i>Brodiaea coronaria</i>	Harvest brodiaea	-	FACW	-	FAC
<i>Brodiaea rosea</i>	Harvest brodiaea	-	FACW	-	FAC
<i>Brodiaea rosea ssp. rosea</i>	Harvest brodiaea	-	FACW	-	FAC
<i>Butomus umbellatus</i>	Flowering-rush	-	OBL	-	OBL
<i>Calla palustris</i>	Wild calla	-	-	OBL	-
<i>Callitriche brutia</i>	Pedunculate water-starwort	OBL	-	-	-
<i>Callitriche hermaphroditica</i>	Northern water-starwort	-	OBL	OBL	OBL
<i>Callitriche heterophylla</i>	Large water-starwort	-	OBL	OBL	OBL
<i>Callitriche marginata</i>	Winged water-starwort	-	OBL	-	OBL
<i>Callitriche palustris</i>	Spring water-starwort	-	OBL	OBL	OBL
<i>Callitriche stagnalis</i>	Pond water-starwort	-	OBL	-	OBL
<i>Callitriche stenoptera</i>	Narrow-winged water-starwort	-	FACW	OBL	OBL
<i>Caltha biflora</i>	White mountain marsh-marigold	FACW	-	-	-
<i>Caltha leptosepala</i>	White mountain marsh-marigold	-	OBL	OBL	OBL
<i>Caltha natans</i>	Floating marsh-marigold	-	-	OBL	-
<i>Caltha palustris</i>	Yellow marsh-marigold	-	OBL	OBL	OBL
<i>Camassia leichtlinii</i>	Great camas	-	FACW	-	FACW
<i>Camassia quamash</i>	Common camas	-	FACW	-	FACW
<i>Canadanthus modestus</i>	Great northern aster	-	FACW	FAC	FACW
<i>Cardamine angulata</i>	Angled bittercress	-	FACW	FACW	FACW
<i>Cardamine breweri</i>	Brewer's bittercress	-	FACW	-	FACW
<i>Cardamine cordifolia</i>	Heart-leaved bittercress	-	FACW	-	FACW
<i>Cardamine nuttallii</i>	Slender toothwort	-	FACW	-	FAC
<i>Cardamine occidentalis</i>	Western bittercress	-	FACW	FACW	FACW
<i>Cardamine parviflora</i>	Small-flowered bittercress	-	FACW	-	FACW
<i>Cardamine pensylvanica</i>	Pennsylvanian bittercress	-	FACW	FACW	FACW
<i>Cardamine polemonioides</i>	Cuckoo bittercress	-	-	FACW	-
<i>Cardamine umbellata</i>	Umbel bittercress	-	FACW	FACW	FACW
<i>Castilleja ambigua</i>	Owl-clover paintbrush	-	FACW	-	FACW
<i>Castilleja miniata</i>	Scarlet paintbrush	-	FACW	FAC	FACW
<i>Castilleja minor</i>	Annual paintbrush	-	OBL	-	OBL
<i>Castilleja minor var. exilis</i>	Annual paintbrush	-	OBL	-	OBL
<i>Castilleja parviflora</i>	Small-flowered paintbrush	-	FAC	FACW	FAC
<i>Castilleja septentrionalis</i>	Northern paintbrush	-	FACW	-	FACU
<i>Cerastium fischerianum</i>	Fischer's chickweed	-	-	FACW	-
<i>Ceratophyllum demersum</i>	Common hornwort	-	OBL	OBL	OBL
<i>Ceratophyllum echinatum</i>	Spring hornwort	-	OBL	-	-
<i>Chamaenerion latifolium</i>	Broad-leaved willowherb	-	FACW	FAC	FACW
<i>Chrysosplenium tetrandrum</i>	Northern golden-saxifrage	-	OBL	OBL	OBL

Table 6 – Forbs showing OBL and FACW species only.

Scientific Name	English Name	BC	WMV	AK	AR
<i>Cicuta bulbifera</i>	Bulbous water-hemlock	-	OBL	OBL	OBL
<i>Cicuta douglasii</i>	Douglas' water-hemlock	-	OBL	OBL	OBL
<i>Cicuta maculata</i>	Spotted water-hemlock	-	OBL	OBL	OBL
<i>Cicuta virosa</i>	European water-hemlock	-	-	OBL	-
<i>Circaea alpina</i>	Enchanter's-nightshade	-	FAC	FACW	FAC
<i>Cirsium palustre</i>	Marsh thistle	FACW	-	-	-
<i>Claytonia perfoliata</i>	Miner's-lettuce springbeauty	-	FAC	FACW	FAC
<i>Claytonia sibirica</i>	Siberian miner's-lettuce	-	FAC	FACW	FAC
<i>Claytonia tuberosa</i>	Tuberous springbeauty	-	-	FACW	-
<i>Cochlearia groenlandica</i>	Scurvy-grass	-	FACW	FACW	-
<i>Comarum palustre</i>	Marsh cinquefoil	-	OBL	OBL	OBL
<i>Comastoma tenellum</i>	Slender gentian	-	FACW	FACW	FACW
<i>Conium maculatum</i>	Poison-hemlock	-	FAC	-	FACW
<i>Coptidium lapponicum</i>	Lapland buttercup	-	-	OBL	-
<i>Corallorhiza trifida</i>	Yellow coralroot	-	FAC	FACW	FAC
<i>Cotula coronopifolia</i>	Brass buttons	-	OBL	OBL	OBL
<i>Crassula aquatica</i>	Pigmyweed	-	OBL	OBL	OBL
<i>Cuscuta pacifica</i>	Saltmarsh dodder	FACW	-	-	-
<i>Cypripedium parviflorum</i>	Yellow lady's-slipper	-	FACW	FACW	FACW
<i>Cypripedium passerinum</i>	Sparrow's-egg lady's-slipper	-	FACW	FAC	-
<i>Delphinium glaucum</i>	Tall larkspur	-	FACW	FACW	FACW
<i>Downingia elegans</i>	Common downingia	-	OBL	-	OBL
<i>Drosera anglica</i>	Great sundew	-	OBL	OBL	OBL
<i>Drosera linearis</i>	Slender-leaf sundew	-	OBL	-	-
<i>Drosera rotundifolia</i>	Round-leaved sundew	-	OBL	OBL	OBL
<i>Egeria densa</i>	Brazilian waterweed	-	OBL	-	OBL
<i>Elatine brachysperma</i>	Short-seeded waterwort	-	OBL	-	OBL
<i>Elatine triandra</i>	Three-flowered waterwort	-	OBL	-	OBL
<i>Elodea canadensis</i>	Canadian waterweed	-	OBL	OBL	OBL
<i>Elodea nuttallii</i>	Nuttall's waterweed	-	OBL	-	OBL
<i>Epilobium campestre</i>	Smooth spike-primrose	-	OBL	-	OBL
<i>Epilobium ciliatum</i>	Northern purple-leaved willowherb	-	FACW	FAC	FACW
<i>Epilobium davuricum</i>	Northern swamp willowherb	-	-	FACW	-
<i>Epilobium densiflorum</i>	Dense spike-primrose	-	FACW	-	FACW
<i>Epilobium glaberrimum</i>	Glaucous willowherb	-	FACW	-	FACW
<i>Epilobium hallianum</i>	Hall's willowherb	-	FACW	-	FACW
<i>Epilobium hirsutum</i>	Hairy willowherb	-	FACW	-	FACW
<i>Epilobium hornemannii</i>	Hornemann's willowherb	-	FACW	FACW	FACW
<i>Epilobium lactiflorum</i>	White-flowered willowherb	-	FACW	FACW	FACW
<i>Epilobium leptocarpum</i>	Small-fruited willowherb	-	FACW	FACW	FACW
<i>Epilobium leptophyllum</i>	Narrow-leaved willowherb	-	FACW	FACW	FACW
<i>Epilobium luteum</i>	Yellow willowherb	-	FACW	FACW	FACW
<i>Epilobium obscurum</i>	Obscure willow-herb	FACW	-	-	-
<i>Epilobium oregonense</i>	Oregon willowherb	-	FACW	-	OBL

Table 6 – Forbs showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Epilobium palustre</i>	Swamp willowherb	-	OBL	OBL	OBL
<i>Epilobium saximontanum</i>	Rocky Mountain willowherb	-	FACW	-	FACW
<i>Epilobium torreyi</i>	Brook spike-primrose	-	FACW	-	FACW
<i>Epipactis gigantea</i>	Giant helleborine	-	OBL	-	OBL
<i>Erigeron glacialis</i>	Subalpine daisy	-	FACW	FACW	FAC
<i>Erigeron humilis</i>	Arctic-alpine daisy	-	FACW	FACW	FACW
<i>Erigeron lonchophyllus</i>	Spear-leaved daisy	-	FACW	FACW	FACW
<i>Erigeron peregrinus</i>	Wandering daisy	-	FACW	FACW	-
<i>Erythranthe scouleri</i>	Columbia River monkey-flower	FACW	-	-	-
<i>Erythranthe suksdorfii</i>	Suksdorf's monkey-flower	FACW	-	-	-
<i>Eupatorium cannabinum</i>	Thoroughwort	FACW	-	-	-
<i>Euphorbia serpyllifolia</i>	Thyme-leaved spurge	FACW	-	-	-
<i>Euthamia occidentalis</i>	Western goldenrod	-	FACW	-	FACW
<i>Eutrema edwardsii</i>	Edwards' mock wallflower	-	OBL	FAC	-
<i>Eutrema salsugineum</i>	Saltwater cress	FACW	-	-	-
<i>Eutrochium maculatum</i>	Spotted Joe-pye weed	-	OBL	-	OBL
<i>Ficaria verna</i>	Lesser celandine	-	FACW	-	-
<i>Floerkea proserpinacoides</i>	False-mermaid	-	FACW	-	FACW
<i>Fritillaria camschatcensis</i>	Northern rice-root	-	FACW	FAC	-
<i>Galium labradoricum</i>	Northern bog bedstraw	FACW	-	-	-
<i>Galium palustre</i>	Marsh bedstraw	-	OBL	-	-
<i>Galium trifidum</i>	Small bedstraw	-	FACW	FACW	FACW
<i>Gentiana calycosa</i>	Mountain bog gentian	-	FACW	-	FACW
<i>Gentiana douglasiana</i>	Swamp gentian	-	OBL	FACW	OBL
<i>Gentiana platypetala</i>	Broad-petalled gentian	FACW	-	-	-
<i>Gentiana prostrata</i>	Moss gentian	-	FACW	FACW	FACW
<i>Gentiana sceptrum</i>	King gentian	-	OBL	-	OBL
<i>Gentianella amarella</i>	Northern dwarf gentian	-	FACW	FACW	FACW
<i>Gentianella propinqua</i>	Four-parted dwarf gentian	-	FACW	FACU	FACW
<i>Gentianopsis detonsa</i>	Fringed gentian	-	-	FACW	-
<i>Gentianopsis virgata</i>	Lesser fringed gentian	-	OBL	-	-
<i>Geum aleppicum</i>	Yellow avens	-	FACW	FACU	FAC
<i>Geum calthifolium</i>	Caltha-leaved avens	-	-	FACW	-
<i>Geum macrophyllum</i>	Large-leaved avens	-	FAC	FAC	FACW
<i>Geum rivale</i>	Water avens	-	FACW	-	FACW
<i>Gnaphalium palustre</i>	Lowland cudweed	-	FACW	-	FACW
<i>Gratiola ebracteata</i>	Bractless hedge-hyssop	-	OBL	-	OBL
<i>Gratiola neglecta</i>	American hedge-hyssop	-	OBL	-	OBL
<i>Grindelia hirsutula</i>	Hairy gumweed	-	FACW	-	FACW
<i>Grindelia stricta</i>	Oregon gumweed	-	FACW	FACW	FACW
<i>Halenia deflexa</i>	Spurred gentian	-	FACW	-	-
<i>Halerpestes cymbalaria</i>	Shore buttercup	FACW	-	-	-
<i>Hammarbya paludosa</i>	Bog adder's-mouth orchid	OBL	-	-	-
<i>Helenium autumnale</i>	Common sneezeweed	-	FACW	-	FACW

Table 6 – Forbs showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Helianthus nuttallii</i>	Nuttall's sunflower	-	FACW	-	FACW
<i>Heracleum maximum</i>	Cow-parsnip	-	FAC	FACU	FACW
<i>Heteranthera dubia</i>	Water star-grass	-	OBL	-	OBL
<i>Hippuris lanceolata</i>	Lance-leaved mare's tail	-	-	OBL	-
<i>Hippuris montana</i>	Mountain mare's-tail	-	FACW	OBL	FACW
<i>Hippuris tetraphylla</i>	Four-leaved mare's-tail	-	-	OBL	-
<i>Hippuris vulgaris</i>	Common mare's-tail	-	OBL	OBL	OBL
<i>Hosackia gracilis</i>	Seaside bird's foot lotus	-	FACW	-	FACW
<i>Hosackia pinnata</i>	Bog bird's-foot trefoil	-	FACW	-	FACW
<i>Hydrocotyle ranunculoides</i>	Floating water pennywort	-	OBL	-	OBL
<i>Hydrophyllum tenuipes</i>	Pacific waterleaf	-	FAC	-	FACW
<i>Hypericum anagalloides</i>	Bog St. John's-wort	-	OBL	-	OBL
<i>Hypericum boreale</i>	Northern bog St. John's-wort	-	OBL	-	OBL
<i>Hypericum canadense</i>	Canadian St. John's wort	-	FACW	-	-
<i>Hypericum ellipticum</i>	Pale Saint John's wort	-	OBL	-	-
<i>Hypericum majus</i>	Large Canadian St. John's-wort	-	FACW	-	FACW
<i>Hypericum mutilum</i>	Dwarf St. John's-wort	-	FACW	-	FACW
<i>Hypericum scouleri</i>	Western St. John's-wort	-	FACW	-	FACW
<i>Iliamna rivularis</i>	Streambank globe-mallow	-	FAC	-	FACW
<i>Impatiens aurella</i>	Orange touch-me-not	-	FACW	-	FACW
<i>Impatiens capensis</i>	Spotted touch-me-not	-	FACW	-	FACW
<i>Impatiens ecornuta</i>	Spurless touch-me-not	FACW	-	-	-
<i>Impatiens glandulifera</i>	Policeman's helmet	-	FACW	-	FACW
<i>Impatiens noli-tangere</i>	Common touch-me-not	-	FACW	FACW	-
<i>Iris missouriensis</i>	Western blue iris	-	FACW	-	FACW
<i>Iris pseudacorus</i>	Yellow iris	-	OBL	-	OBL
<i>Jaumea carnosa</i>	Fleshy jaumea	-	OBL	-	OBL
<i>Koenigia islandica</i>	Iceland koenigia	-	OBL	OBL	OBL
<i>Lasthenia glaberrima</i>	Rayless goldfields	-	OBL	-	OBL
<i>Lathyrus palustris</i>	Marsh peavine	-	OBL	OBL	OBL
<i>Lemna minor</i>	Common duckweed	-	OBL	OBL	OBL
<i>Lemna minuta</i>	Least duckweed	-	OBL	-	OBL
<i>Lemna trisulca</i>	Ivy-leaved duckweed	-	OBL	OBL	OBL
<i>Lemna turionifera</i>	Turion duckweed	-	OBL	OBL	OBL
<i>Lepidium oxycarpum</i>	Sharp-pod peppergrass	-	OBL	-	OBL
<i>Leptarrhena pyrolifolia</i>	Leatherleaf saxifrage	-	FACW	FACW	FACW
<i>Lilaeopsis occidentalis</i>	Western lilaeopsis	-	OBL	OBL	OBL
<i>Limosella acaulis</i>	Owyhee mudwort	-	OBL	-	OBL
<i>Limosella aquatica</i>	Water mudwort	-	OBL	OBL	OBL
<i>Lindernia dubia</i>	False pimpernel	-	OBL	-	OBL
<i>Liparis loeselii</i>	Yellow widelip orchid	-	FACW	-	FACW
<i>Lobelia dortmanna</i>	Water lobelia	-	OBL	OBL	OBL
<i>Lobelia kalmii</i>	Kalm's lobelia	-	OBL	-	OBL
<i>Lomatogonium rotatum</i>	Marsh felwort	-	OBL	OBL	OBL

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Scientific Name	English Name	BC	WMV	AK	AR
<i>Ludwigia palustris</i>	Water-purslane	-	OBL	-	OBL
<i>Lupinus latifolius</i>	Broadleaf lupine	-	FAC	-	FACW
<i>Lycopus americanus</i>	Cut-leaved water horehound	-	OBL	OBL	OBL
<i>Lycopus asper</i>	Rough water horehound	-	OBL	OBL	OBL
<i>Lycopus europaeus</i>	European horehound	FACW	-	-	-
<i>Lycopus uniflorus</i>	Northern water horehound	-	OBL	OBL	OBL
<i>Lysichiton americanus</i>	Skunk cabbage	-	OBL	OBL	OBL
<i>Lysimachia ciliata</i>	Fringed loosestrife	-	FACW	FACW	FACW
<i>Lysimachia maritima</i>	Sea-milkwort	-	OBL	OBL	FACW
<i>Lysimachia minima</i>	Chaffweed	-	FACW	-	FACW
<i>Lysimachia nummularia</i>	Creeping loosestrife	-	FACW	-	FACW
<i>Lysimachia punctata</i>	Spotted loosestrife	-	OBL	OBL	OBL
<i>Lysimachia terrestris</i>	Bog loosestrife	-	OBL	-	OBL
<i>Lysimachia thyrsiflora</i>	Tufted loosestrife	-	OBL	OBL	OBL
<i>Lysimachia vulgaris</i>	Yellow loosestrife	-	FACW	-	FACW
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	FACW	-	-	-
<i>Lythrum portula</i>	European water-purslane	-	OBL	-	OBL
<i>Lythrum salicaria</i>	Purple loosestrife	-	OBL	OBL	OBL
<i>Maianthemum trifolium</i>	Three-leaved false Solomon's-seal	FACW	-	-	-
<i>Malaxis monophyllos</i>	White adder's-mouth orchid	FACW	-	-	-
<i>Mentha aquatica</i>	Water mint	-	FACW	-	FACW
<i>Mentha pulegium</i>	Pennyroyal	-	OBL	-	OBL
<i>Mentha spicata</i>	Spearmint	-	FACW	FACW	FACW
<i>Mentha suaveolens</i>	Applemint	-	FACW	-	FACW
<i>Mentha x piperita</i>	Peppermint	FACW	-	-	-
<i>Mentha x verticillata</i>	Whorled mint	FACW	-	-	-
<i>Menyanthes trifoliata</i>	Buckbean	-	OBL	OBL	OBL
<i>Mertensia paniculata</i>	Tall bluebells	-	FAC	FACU	FACW
<i>Micranthes integrifolia</i>	Grassland saxifrage	-	FACW	-	FACW
<i>Micranthes lyallii</i>	Red-stemmed saxifrage	-	FACW	FACW	FACW
<i>Micranthes nidifica</i>	Meadow saxifrage	-	FACW	-	FACW
<i>Micranthes odontoloma</i>	Stream saxifrage	-	FACW	-	FACW
<i>Microseris borealis</i>	Apargidium	-	OBL	OBL	OBL
<i>Mimulus scouleri</i>	Scouler's monkeyflower	FACW	-	-	-
<i>Mitella nuda</i>	Common mitrewort	-	FACW	FAC	FACW
<i>Montia bostockii</i>	Bostock's montia	-	-	FACW	-
<i>Montia chamissoi</i>	Chamisso's montia	-	OBL	OBL	OBL
<i>Montia fontana</i>	Blinks	-	FACW	OBL	OBL
<i>Montia howellii</i>	Howell's montia	-	FAC	-	FACW
<i>Montia parvifolia</i>	Small-leaved montia	-	FAC	FACW	FACW
<i>Morella californica</i>	California wax-myrtle	-	FACW	-	FACW
<i>Myosotis laxa</i>	Small-flowered forget-me-not	-	OBL	-	OBL
<i>Myosotis scorpioides</i>	European forget-me-not	-	FACW	FAC	FACW
<i>Myosurus apetalus</i>	Bristly mousetail	-	OBL	-	OBL

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Scientific Name	English Name	BC	WMV	AK	AR
<i>Myosurus minimus</i>	Tiny mousetail	-	OBL	-	OBL
<i>Myriophyllum aquaticum</i>	Parrot's feather	-	OBL	-	OBL
<i>Myriophyllum farwellii</i>	Farwell's water-milfoil	-	-	OBL	-
<i>Myriophyllum heterophyllum</i>	Varied-leaved watermilfoil	-	OBL	-	-
<i>Myriophyllum hippuroides</i>	Western water-milfoil	-	OBL	-	OBL
<i>Myriophyllum pinnatum</i>	Green parrot's-feather	-	OBL	-	-
<i>Myriophyllum quitense</i>	Waterwort water-milfoil	-	OBL	-	OBL
<i>Myriophyllum sibiricum</i>	Siberian water-milfoil	-	OBL	OBL	OBL
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	-	OBL	OBL	OBL
<i>Myriophyllum ussuriense</i>	Ussurian water-milfoil	OBL	-	-	-
<i>Myriophyllum verticillatum</i>	Verticillate water-milfoil	-	OBL	OBL	OBL
<i>Najas flexilis</i>	Wavy water nymph	-	OBL	OBL	OBL
<i>Nasturtium microphyllum</i>	One-rowed watercress	-	OBL	OBL	OBL
<i>Nasturtium officinale</i>	Common watercress	-	OBL	OBL	OBL
<i>Navaretia intertexta</i>	Needle-leaved navaretia	-	FACW	-	FACW
<i>Neottia borealis</i>	Northern twayblade	-	FACW	FACU	FACW
<i>Neottia cordata</i>	Heart-leaved twayblade	-	FAC	FACU	FACW
<i>Nephrophyllidium crista-galli</i>	Deer-cabbage	-	OBL	OBL	-
<i>Nuphar polysepala</i>	Rocky Mountain pond-lily	-	OBL	OBL	OBL
<i>Nuphar variegata</i>	Variegated yellow pond-lily	-	OBL	-	-
<i>Nymphaea leibergii</i>	Small white waterlily	-	OBL	-	-
<i>Nymphaea odorata</i>	Fragrant waterlily	-	OBL	OBL	OBL
<i>Nymphaea tetragona</i>	Pygmy waterlily	-	OBL	OBL	-
<i>Nymphaea x marliacea</i>	Hybrid European waterlily	OBL	-	-	-
<i>Nymphoides peltata</i>	Yellow floatingheart	-	OBL	-	OBL
<i>Oenanthe sarmentosa</i>	Pacific water-parsley	-	OBL	OBL	OBL
<i>Orthocarpus bracteosus</i>	Rosy owl-clover	-	FACW	-	FAC
<i>Oxypolis occidentalis</i>	Western cowbane	-	OBL	-	OBL
<i>Packera indecora</i>	Rayless mountain butterweed	-	FACW	FACU	FACW
<i>Packera paupercula</i>	Canadian butterweed	-	FACW	FAC	FACW
<i>Packera pseud aurea</i>	Streambank butterweed	-	FACW	-	FACW
<i>Packera subnuda</i>	Alpine meadow butterweed	-	FACW	FAC	FACW
<i>Parnassia fimbriata</i>	Fringed grass-of-Parnassus	-	OBL	FACW	OBL
<i>Parnassia kotzebuei</i>	Kotzebue's grass-of-Parnassus	-	OBL	FACW	OBL
<i>Parnassia palustris</i>	Northern grass-of-Parnassus	-	OBL	FACW	OBL
<i>Parnassia parviflora</i>	Small-flowered grass-of-Parnassus	-	OBL	OBL	OBL
<i>Pectiantia pentandra</i>	Five-stamened mitrewort	-	FAC	FACW	FACW
<i>Pedicularis groenlandica</i>	Elephant's-head lousewort	-	OBL	FACW	OBL
<i>Pedicularis labradorica</i>	Labrador lousewort	-	-	FACW	-
<i>Pedicularis parviflora</i>	Small-flowered lousewort	-	-	FACW	-
<i>Pedicularis pennellii</i>	Pennell'S lousewort	FACW	-	-	-
<i>Penstemon serrulatus</i>	Coast penstemon	-	FACU	FACW	FACU
<i>Penthorum sedoides</i>	Ditch stonecrop	-	OBL	-	-
<i>Persicaria amphibia</i>	Water smartweed	-	OBL	OBL	OBL

Table 6 – Forbs showing OBL and FACW species only.						
Scientific Name	English Name	BC	WMV	AK	AR	
<i>Persicaria hydropiper</i>	Marshpepper smartweed	-	OBL	FACW	OBL	
<i>Persicaria hydropiperoides</i>	Water-pepper	-	OBL	OBL	OBL	
<i>Persicaria lapathifolia</i>	Willow weed	-	FACW	FAC	FACW	
<i>Persicaria maculosa</i>	Lady's-thumb	-	FACW	FAC	FACW	
<i>Persicaria pennsylvanica</i>	Pennsylvania smartweed	-	FACW	FACW	FACW	
<i>Persicaria punctata</i>	Dotted smartweed	-	OBL	-	OBL	
<i>Petasites frigidus</i>	Sweet coltsfoot	-	FACW	FACW	FACW	
<i>Phyllospadix scouleri</i>	Scouler's surf-grass	-	OBL	OBL	OBL	
<i>Phyllospadix serrulatus</i>	Toothed surf-grass	OBL	-	-	-	
<i>Phyllospadix torreyi</i>	Torrey's surf-grass	-	OBL	-	OBL	
<i>Physostegia parviflora</i>	Purple dragonhead	-	FACW	-	FACW	
<i>Pinguicula villosa</i>	Hairy butterwort	-	-	OBL	-	
<i>Pinguicula vulgaris</i>	Common butterwort	-	-	OBL	-	
<i>Plagiobothrys cognatus</i>	Sleeping popcornflower	FACW	-	-	-	
<i>Plagiobothrys cusickii</i>	Cusick's popcornflower	FACW	-	-	-	
<i>Plagiobothrys figuratus</i>	Fragrant popcornflower	-	FACW	FACW	FACW	
<i>Plagiobothrys hispidulus</i>	Harsh popcornflower	-	FACW	FACW	FACW	
<i>Plagiobothrys scouleri</i>	Scouler's popcornflower	-	FACW	-	FACW	
<i>Plantago elongata</i>	Slender plantain	-	FACW	-	FACW	
<i>Plantago eriopoda</i>	Alkali plantain	-	FACW	FACU	FACW	
<i>Plantago macrocarpa</i>	Alaska plantain	-	OBL	FACW	-	
<i>Plantago maritima</i>	Sea plantain	-	FACW	FACW	FACW	
<i>Platanthera aquilonis</i>	Northern green rein orchid	-	FACW	FACW	OBL	
<i>Platanthera chorisiana</i>	Chamisso's rein orchid	-	OBL	OBL	-	
<i>Platanthera dilatata</i>	Fragrant white rein orchid	FACW	-	-	-	
<i>Platanthera huronensis</i>	Great Lakes rein orchid	-	OBL	OBL	OBL	
<i>Platanthera obtusata</i>	One-leaved rein orchid	-	FACW	FACW	FACW	
<i>Platanthera stricta</i>	Slender rein orchid	-	FACW	FACW	FACW	
<i>Polemonium occidentale</i>	Western polemonium	-	FACW	-	FACW	
<i>Polygonum fowleri</i>	Fowler's knotweed	-	FACW	FAC	FACW	
<i>Polygonum polygaloides</i>	Milkwort knotweed	-	FACW	-	FACW	
<i>Potamogeton alpinus</i>	Northern pondweed	-	OBL	OBL	OBL	
<i>Potamogeton amplifolius</i>	Large-leaved pondweed	-	OBL	-	OBL	
<i>Potamogeton berchtoldii</i>	Small pondweed	OBL	-	-	-	
<i>Potamogeton crispus</i>	Curled pondweed	-	OBL	-	OBL	
<i>Potamogeton epihydrus</i>	Ribbon-leaf pondweed	-	OBL	OBL	OBL	
<i>Potamogeton foliosus</i>	Closed-leaved pondweed	-	OBL	OBL	OBL	
<i>Potamogeton friesii</i>	Flat-stalked pondweed	-	OBL	OBL	OBL	
<i>Potamogeton gramineus</i>	Grass-leaved pondweed	-	OBL	OBL	OBL	
<i>Potamogeton illinoensis</i>	Illinois pondweed	-	OBL	-	OBL	
<i>Potamogeton natans</i>	Floating-leaved pondweed	-	OBL	OBL	OBL	
<i>Potamogeton nodosus</i>	Long-leaved pondweed	-	OBL	-	OBL	
<i>Potamogeton obtusifolius</i>	Blunt-leaved pondweed	-	OBL	OBL	OBL	
<i>Potamogeton praelongus</i>	Long-stalked pondweed	-	OBL	OBL	OBL	

Table 6 – Forbs showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Potamogeton pusillus</i>	Small pondweed	-	OBL	OBL	OBL
<i>Potamogeton richardsonii</i>	Richardson's pondweed	-	OBL	OBL	OBL
<i>Potamogeton robbinsii</i>	Robbin's pondweed	-	OBL	OBL	OBL
<i>Potamogeton strictifolius</i>	Stiff-leaved pondweed	-	OBL	-	OBL
<i>Potamogeton zosteriformis</i>	Eel-grass pondweed	-	OBL	OBL	OBL
<i>Potentilla anserina</i>	Silverweed cinquefoil	-	OBL	FACW	OBL
<i>Potentilla biennis</i>	Biennial cinquefoil	-	FACW	-	FACW
<i>Potentilla flabellifolia</i>	Fan-leaved cinquefoil	-	FAC	-	FACW
<i>Potentilla glaucophylla</i>	Diverse-leaved cinquefoil	-	FACU	FACW	FACU
<i>Potentilla rivalis</i>	Brook cinquefoil	-	FACW	-	FACW
<i>Potentilla supina</i>	Spreading cinquefoil	-	FACW	-	FACW
<i>Primula cuneifolia</i>	Wedge-leaf primrose	-	-	OBL	-
<i>Primula egaliksensis</i>	Greenland primrose	-	OBL	FACW	OBL
<i>Primula incana</i>	Mealy primrose	-	OBL	FACW	OBL
<i>Primula jeffreyi</i>	Jeffrey's shootingstar	FACW	-	-	-
<i>Primula mistassinica</i>	Mistassini primrose	-	-	FACW	-
<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed	-	FACW	-	FAC
<i>Psilocarphus brevissimus</i>	Dwarf woolly-heads	-	FACW	-	FACW
<i>Psilocarphus elatior</i>	Tall woolly-heads	-	FACW	-	FACW
<i>Psilocarphus tenellus</i>	Slender woolly-heads	-	OBL	-	OBL
<i>Ranunculus abortivus</i>	Kidney-leaved buttercup	-	FACW	FAC	FACW
<i>Ranunculus acris</i>	Meadow buttercup	-	FAC	FACW	FACW
<i>Ranunculus alismifolius</i>	Water-plantain buttercup	-	FACW	-	FACW
<i>Ranunculus aquatilis</i>	White water-buttercup	OBL	-	-	-
<i>Ranunculus cardiophyllus</i>	Heart-leaved buttercup	-	FACW	-	FACW
<i>Ranunculus eschscholtzii</i>	Subalpine buttercup	-	FACW	FACW	FAC
<i>Ranunculus flabellaris</i>	Yellow water-buttercup	-	OBL	-	OBL
<i>Ranunculus flammula</i>	Lesser water buttercup	-	FACW	FACW	OBL
<i>Ranunculus gmelinii</i>	Small yellow water-buttercup	-	FACW	FACW	FACW
<i>Ranunculus grayi</i>	Arctic buttercup	-	FAC	FACW	FAC
<i>Ranunculus hyperboreus</i>	Far-northern buttercup	-	OBL	OBL	OBL
<i>Ranunculus inamoenus</i>	Graceful buttercup	-	FACW	-	FACW
<i>Ranunculus lobbii</i>	Lobb's water-buttercup	-	OBL	-	OBL
<i>Ranunculus macounii</i>	Macoun's buttercup	-	OBL	FACW	OBL
<i>Ranunculus mongolicus</i>	Mongolia buttercup	OBL	-	-	-
<i>Ranunculus nivalis</i>	Snow buttercup	-	-	FACW	-
<i>Ranunculus occidentalis</i>	Western buttercup	-	FACW	FACW	FAC
<i>Ranunculus orthorhynchus</i>	Straight-beaked buttercup	-	FACW	FACW	FACW
<i>Ranunculus pensylvanicus</i>	Pennsylvania buttercup	-	FACW	FACW	FACW
<i>Ranunculus pygmaeus</i>	Pygmy buttercup	-	FAC	FACW	FACW
<i>Ranunculus sardous</i>	Hairy buttercup	-	FAC	-	FACW
<i>Ranunculus sceleratus</i>	Cursed buttercup	-	OBL	OBL	OBL
<i>Ranunculus subrigidus</i>	Stiff water crowfoot	OBL	-	-	-
<i>Ranunculus sulphureus</i>	Sulphur buttercup	-	FACW	FACW	FACW

Table 6 – Forbs showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Ranunculus trichophyllus</i>	Thread-leaved water-crowfoot	OBL	-	-	-
<i>Rhamnus alnifolia</i>	Alder-leaved buckthorn	-	FACW	-	OBL
<i>Romanzoffia sitchensis</i>	Sitka romanzoffia	-	FACW	FACW	FACW
<i>Rorippa alpina</i>	Alpine yellowcress	FACW	-	-	-
<i>Rorippa curvipes</i>	Blunt-leaved yellowcress	-	FACW	-	FACW
<i>Rorippa curvisiliqua</i>	Western yellowcress	-	OBL	FACW	OBL
<i>Rorippa palustris</i>	Marsh yellowcress	-	OBL	FAC	OBL
<i>Rorippa sylvestris</i>	Creeping yellowcress	-	OBL	FAC	OBL
<i>Rotala ramosior</i>	Toothcup	-	OBL	-	OBL
<i>Rubus chamaemorus</i>	Cloudberry	-	-	FACW	-
<i>Rumex britannica</i>	Greater water dock	-	OBL	-	OBL
<i>Rumex californicus</i>	California willow dock	-	FACW	-	FACW
<i>Rumex conglomeratus</i>	Clustered dock	-	FACW	-	FACW
<i>Rumex fueginus</i>	Golden dock	-	FACW	FACW	FACW
<i>Rumex obtusifolius</i>	Bitter dock	-	FAC	FACW	FAC
<i>Rumex occidentalis</i>	Western dock	-	FACW	OBL	FACW
<i>Rumex persicarioides</i>	Pacific golden dock	-	FACW	-	FACW
<i>Rumex stenophyllus</i>	Narrow-leaved dock	-	FACW	-	FACW
<i>Rumex transitorius</i>	Willow dock	-	FACW	FACW	FACW
<i>Rumex triangulivalvis</i>	Willow dock	-	FAC	-	FACW
<i>Ruppia cirrhosa</i>	Spiral ditch-grass	-	OBL	OBL	OBL
<i>Ruppia maritima</i>	Beaked ditch-grass	-	OBL	OBL	OBL
<i>Sagina maxima</i>	Coastal pearlwort	-	FAC	FACW	FAC
<i>Sagina nivalis</i>	Snow pearlwort	-	FACW	FAC	-
<i>Sagina saginoides</i>	Arctic pearlwort	-	FACW	FAC	FACW
<i>Sagittaria cuneata</i>	Arum-leaved arrowhead	-	OBL	OBL	OBL
<i>Sagittaria latifolia</i>	Wapato	-	OBL	-	OBL
<i>Salicornia depressa</i>	Maritime glasswort	-	OBL	OBL	OBL
<i>Salicornia pacifica</i>	American glasswort	-	OBL	-	OBL
<i>Salicornia rubra</i>	Red glasswort	-	OBL	-	OBL
<i>Sanguisorba menziesii</i>	Menzies' burnet	-	OBL	FAC	-
<i>Sanguisorba officinalis</i>	Great burnet	-	FACW	FACW	FACW
<i>Sarcocornia pacifica</i>	Pacific swampfire	-	OBL	-	OBL
<i>Sarracenia purpurea</i>	Common pitcher-plant	-	OBL	-	OBL
<i>Saussurea americana</i>	American sawwort	-	FACW	FACW	FACW
<i>Saxifraga adscendens</i>	Wedge-leaved saxifrage	-	FACW	FACU	FACW
<i>Saxifraga aizoides</i>	Evergreen saxifrage	-	-	FACW	-
<i>Saxifraga cernua</i>	Nodding saxifrage	-	FACW	FACW	FACW
<i>Saxifraga hirculus</i>	Yellow marsh saxifrage	-	OBL	OBL	OBL
<i>Saxifraga mertensiana</i>	Wood saxifrage	-	FACW	FACW	FACW
<i>Scheuchzeria palustris</i>	Scheuchzeria	-	OBL	OBL	OBL
<i>Scrophularia umbrosa</i>	Water figwort	FACW	-	-	-
<i>Scutellaria galericulata</i>	Marsh skullcap	-	OBL	OBL	OBL
<i>Scutellaria lateriflora</i>	Blue skullcap	-	FACW	FACW	FACW

Table 6 – Forbs showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Senecio hydrophiloides</i>	Sweet-marsh butterweed	-	FACW	-	FACW
<i>Senecio hydrophilus</i>	Alkali-marsh butterweed	-	OBL	-	OBL
<i>Senecio triangularis</i>	Arrow-leaved groundsel	-	FACW	FACW	FACW
<i>Sidalcea hendersonii</i>	Henderson's checker-mallow	-	FACW	FACU	-
<i>Sidalcea oregana</i>	Oregon checker-mallow	-	FACW	-	FACW
<i>Silene uralensis</i>	Nodding campion	-	FAC	FAC	FACW
<i>Sisyrinchium californicum</i>	Golden-eyed-grass	-	FACW	-	FACW
<i>Sisyrinchium idahoense</i>	Idaho blue-eyed-grass	-	FACW	-	FACW
<i>Sisyrinchium littorale</i>	Shore blue-eyed-grass	-	FACW	FACW	-
<i>Sisyrinchium montanum</i>	Mountain blue-eyed-grass	-	FAC	FACW	FACW
<i>Sisyrinchium septentrionale</i>	Northern blue-eyed-grass	-	FACW	-	FACW
<i>Sium suave</i>	Hemlock water-parsnip	-	OBL	OBL	OBL
<i>Solidago gigantea</i>	Giant goldenrod	-	FACW	-	FACW
<i>Sparganium angustifolium</i>	Narrow-leaved bur-reed	-	OBL	OBL	OBL
<i>Sparganium emersum</i>	Emersed bur-reed	-	OBL	OBL	OBL
<i>Sparganium eurycarpum</i>	Broad-fruited bur-reed	-	OBL	-	OBL
<i>Sparganium fluctuans</i>	Water bur-reed	-	OBL	-	-
<i>Sparganium hyperboreum</i>	Northern bur-reed	-	-	OBL	-
<i>Sparganium natans</i>	Small bur-reed	-	OBL	OBL	OBL
<i>Spergularia canadensis</i>	Canada sand-spurrey	-	FACW	FACW	FACW
<i>Spiranthes diluvialis</i>	Ute lady's tresses	-	FACW	-	FACW
<i>Spiranthes romanzoffiana</i>	Hooded ladies' tresses	-	FACW	OBL	FACW
<i>Spirodela polyrhiza</i>	Great duckweed	-	OBL	-	OBL
<i>Sporobolus alopecuroides</i>	Foxtail prickleggrass	-	OBL	-	OBL
<i>Stachys chamissonis</i>	Coastal hedge-nettle	-	FACW	FACW	OBL
<i>Stachys mexicana</i>	Mexican hedge-nettle	-	FACW	FACU	FACW
<i>Stachys palustris</i>	Marsh hedge-nettle	-	-	FACW	-
<i>Stellaria alsine</i>	Bog starwort	-	FAC	-	OBL
<i>Stellaria borealis</i>	Boreal starwort	-	FACW	FACW	FACW
<i>Stellaria calycantha</i>	Northern starwort	-	FACW	FACW	FACW
<i>Stellaria crassifolia</i>	Thick-leaved starwort	-	FACW	FACW	FACW
<i>Stellaria humifusa</i>	Salt marsh starwort	-	OBL	OBL	OBL
<i>Stellaria longifolia</i>	Long-leaved starwort	-	FACW	FAC	FACW
<i>Stellaria longipes</i>	Long-stalked starwort	-	FACW	FAC	FACW
<i>Stellaria obtusa</i>	Blunt-sepaled starwort	-	FACW	-	FACW
<i>Stellaria umbellata</i>	Umbellate starwort	-	FACW	FACW	FACW
<i>Streptopus streptopoides</i>	Small twisted-stalk	-	FACW	FAC	-
<i>Stuckenia filiformis</i>	Slender-leaved pondweed	-	OBL	OBL	OBL
<i>Stuckenia pectinata</i>	Fennel-leaved pondweed	-	OBL	OBL	OBL
<i>Stuckenia vaginata</i>	Sheathing pondweed	-	OBL	OBL	OBL
<i>Suaeda calceoliformis</i>	Seablite	-	FACW	FACW	FACW
<i>Subularia aquatica</i>	Awlwort	-	OBL	OBL	OBL
<i>Swertia perennis</i>	Alpine bog swertia	-	FACW	FACW	FACW
<i>Symphyotrichum boreale</i>	Rush aster	-	OBL	OBL	OBL

Table 6 – Forbs showing OBL and FACW species only.

Scientific Name	English Name	BC	WMV	AK	AR
<i>Symphyotrichum ciliatum</i>	Rayless alkali aster	-	FACW	FACU	FACW
<i>Symphyotrichum frondosum</i>	Short-rayed aster	-	FACW	-	FACW
<i>Symphyotrichum lanceolatum</i>	White-panicked aster	-	OBL	-	OBL
<i>Symphyotrichum puniceum</i>	Purple-stemmed aster	FACW	-	-	-
<i>Symphyotrichum subspicatum</i>	Douglas' aster	-	FACW	FAC	FACW
<i>Symphyotrichum x columbianum</i>	Columbia hybrid aster	FACW	-	-	-
<i>Tephrosieris palustris</i>	Marsh fleabane	-	-	FACW	-
<i>Teucrium canadense</i>	Canada germander	-	FAC	-	FACW
<i>Thalictrum alpinum</i>	Alpine meadowrue	-	FACW	FAC	FACW
<i>Thalictrum dasycarpum</i>	Purple meadowrue	-	FACW	-	FACW
<i>Tofieldia pusilla</i>	Common false asphodel	-	FACW	FAC	-
<i>Tolmiea menziesii</i>	Piggy-back plant	-	FAC	FACW	FACW
<i>Trautvetteria caroliniensis</i>	False bugbane	-	FAC	-	FACW
<i>Triadenum fraseri</i>	Fraser's St. John's-wort	FACW	-	-	-
<i>Triantha glutinosa</i>	Sticky false asphodel	-	OBL	FACW	-
<i>Triantha occidentalis</i>	Western false asphodel	-	FACW	FACW	FACW
<i>Trifolium wormskoldii</i>	Springbank clover	-	FACW	FAC	FACW
<i>Triglochin concinna</i>	Graceful arrow-grass	-	OBL	-	OBL
<i>Triglochin maritima</i>	Seaside arrow-grass	-	OBL	OBL	OBL
<i>Triglochin palustris</i>	Marsh arrow-grass	-	OBL	OBL	OBL
<i>Triglochin scilloides</i>	Flowering quillwort	-	OBL	-	OBL
<i>Typha angustifolia</i>	Lesser cattail	-	OBL	-	OBL
<i>Typha latifolia</i>	Common cattail	-	OBL	OBL	OBL
<i>Typha x glauca</i>	Blue cattail	OBL	-	-	-
<i>Utricularia gibba</i>	Humped bladderwort	-	OBL	-	OBL
<i>Utricularia intermedia</i>	Flat-leaved bladderwort	-	OBL	OBL	OBL
<i>Utricularia minor</i>	Lesser bladderwort	-	OBL	OBL	OBL
<i>Utricularia ochroleuca</i>	Ochroleucous bladderwort	-	OBL	OBL	OBL
<i>Utricularia vulgaris</i>	Greater bladderwort	OBL	-	-	-
<i>Valeriana dioica</i>	Marsh valerian	-	FACW	-	FACW
<i>Valeriana scouleri</i>	Scouler's valerian	-	FAC	FACW	FAC
<i>Vallisneria americana</i>	American tapegrass	-	OBL	-	OBL
<i>Veratrum viride</i>	Green false hellebore	-	FAC	FAC	FACW
<i>Veronica americana</i>	American speedwell	-	OBL	-	OBL
<i>Veronica anagallis-aquatica</i>	Blue water speedwell	-	OBL	OBL	OBL
<i>Veronica beccabunga</i>	American speedwell	-	OBL	-	OBL
<i>Veronica catenata</i>	Pink water speedwell	FACW	-	-	-
<i>Veronica peregrina</i>	Purslane speedwell	-	FACW	FACU	FAC
<i>Veronica scutellata</i>	Marsh speedwell	-	OBL	OBL	OBL
<i>Veronica serpyllifolia</i>	Thyme-leaved speedwell	-	FAC	OBL	FAC
<i>Viola biflora</i>	Twinflower violet	-	FACW	FACW	-
<i>Viola epipsila</i>	Northern marsh violet	FACW	-	-	-
<i>Viola glabella</i>	Stream violet	-	FACW	FACW	FAC
<i>Viola lanceolata</i>	Lance-leaved violet	-	OBL	-	-

Table 6 – Forbs showing OBL and FACW species only.					
Scientific Name	English Name	BC	WMV	AK	AR
<i>Viola macloskeyi</i>	Small white violet	-	OBL	-	OBL
<i>Viola nephrophylla</i>	Northern bog violet	-	FACW	-	FACW
<i>Viola palustris</i>	Marsh violet	-	OBL	FACW	FACW
<i>Viola renifolia</i>	Kidney-leaved violet	-	FACW	FAC	FACW
<i>Wolffia borealis</i>	Northern water-meal	-	OBL	-	OBL
<i>Wolffia brasiliensis</i>	Brazilian watermeal	-	OBL	-	OBL
<i>Wolffia columbiana</i>	Columbian water-meal	-	OBL	-	OBL
<i>Zannichellia palustris</i>	Horned pondweed	-	OBL	OBL	OBL
<i>Zeltnera exaltata</i>	Western centaury	-	FACW	-	FACW
<i>Zeltnera muehlenbergii</i>	Muhlenberg's centaury	-	FACW	-	FAC
<i>Zostera japonica</i>	Japanese eel-grass	OBL	-	-	-
<i>Zostera marina</i>	Common eel-grass	-	OBL	OBL	OBL