

# WESTERN REDCEDAR–DOUGLAS-FIR/DEVIL’S-CLUB

*Thuja plicata*–*Pseudotsuga menziesii*/*Oplopanax horridus*

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## Plant Community Information

### Description

This forest community is dominated by western redcedar (*Thuja plicata*) and western hemlock (*Tsuga heterophylla*), often accompanied by Douglas-fir (*Pseudotsuga menziesii*) and (in the central coast) Sitka spruce (*Picea sitchensis*). Devil’s-club (*Oplopanax horridus*) characterizes the rather sparse shrub layer. The herb layer is dominated by queen’s cup (*Clintonia uniflora*), lady fern (*Athyrium filix-femina*), spiny wood fern (*Dryopteris expansa*), rosy twistedstalk (*Streptopus roseus*), and oak fern (*Gymnocarpium dryopteris latifolia*). Step moss (*Hylocomium splendens*), electrified cat’s-tail moss (*Rhytidiadelphus triquetrus*), coastal leafy moss (*Plagiomnium insigne*), and lanky moss (*Rhytidiadelphus loreus*) are common mosses. See Green and Klinka (1994).

These forests occur at low elevations; on lower or level slope positions; and on fluvial, colluvial, and sometimes morainal deposits. Soils are moderately well drained but often exhibit seepage, and are loamy or sandy, frequently with many coarse fragments. Sites are moist to very moist (relative within subzone), and nutrient conditions are rich to very rich.

### Distribution

#### Global

Unknown.

### British Columbia

In British Columbia, this community occurs in the drainages of the lower Fraser River east and north of Chilliwack and in the eastern portion of the Coast/Cascade Mountains from upper Harrison Lake to the Homathko River. It also occurs in subarctic and subcontinental areas north of the head of Knight Inlet, especially in the lower Klinaklini, Bella Coola, Talchako, and Dean valleys.

#### Forest regions and districts

Coast: Chilliwack, North Island, Squamish, Sunshine Coast

Southern Interior: Cascades, Chilcotin

#### Ecoprovinces and ecosections

CEI: WCR

COM: CPR, EPR, NPR, SPR

SOI: LPR

#### Biogeoclimatic unit

CWH: ds1/07

#### Broad ecosystem unit

CW

#### Elevation

Near sea level to 650 m

## Plant Community Characteristics

### Structural stage

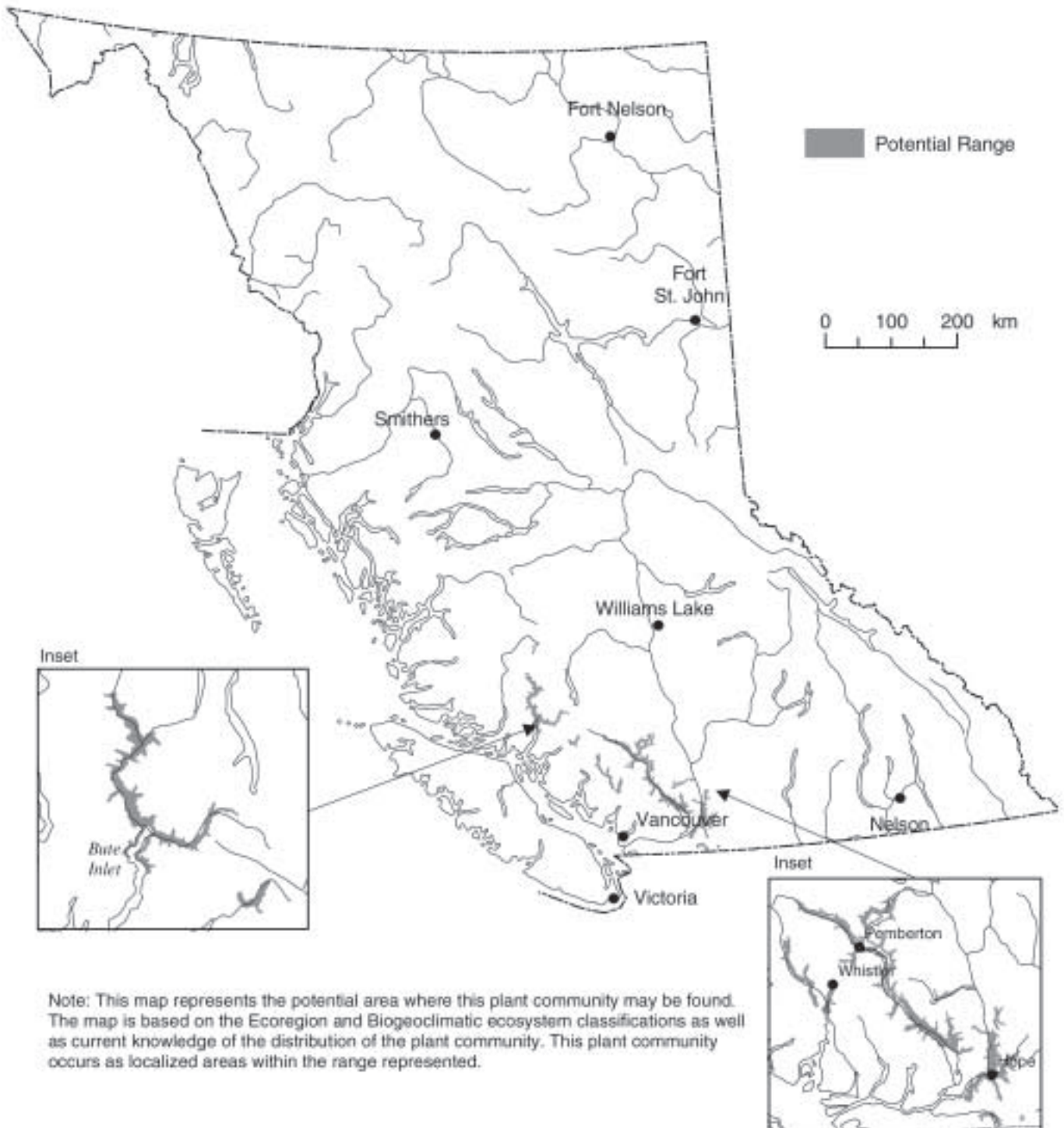
6: mature forest

7: old forest

### Natural disturbance regime

Infrequent stand-initiating events (NDT2) (MOF and MELP 1995), primarily wildfire (perhaps every 200–300 years, on average) and windthrow, sometimes snow avalanches and landslides. Occasional

## Western Redcedar - Douglas-fir / Devil's-club (*Thuja Plicata* - *Pseudotsuga menziesii* / *Oplopanax horridus*)



Note: This map represents the potential area where this plant community may be found. The map is based on the Ecoregion and Biogeoclimatic ecosystem classifications as well as current knowledge of the distribution of the plant community. This plant community occurs as localized areas within the range represented.

direct mortality of individual or small groups of trees due to defoliating insects and root rots, or indirect mortality via predisposition of attacked trees to blowdown (see Pojar et al. 1999). Gap dynamics prevail in old forests.

### **Fragility**

Low to moderate. Soils typically are deep, somewhat coarse-textured, moist and nutrient-rich. Therefore, these sites are less susceptible to degradation due to soil compaction, erosion, and nutrient losses and should recover relatively quickly after stand-destroying disturbances provided biological legacies such as snags and large downed logs persist on site. However, the transitional (i.e., between coast and interior) nature of the climate is reflected in periodic climatic extremes (summer drought, cold air ponding, outflow winter winds, heavy snows). The climatic factors can delay forest regeneration and could slow recovery after disturbance.

## **Conservation and Management**

### **Status**

The western redcedar–Douglas-fir/devil’s-club plant community is on the provincial *Red List* in British Columbia. It is ranked S1S2 in British Columbia. Its global status is unknown.

### **Trends**

The CWHds is a medium-sized subzone with a long history (by B.C. standards) of disturbance by humans. Many forest sites are productive and used to have an abundance of old growth Douglas-fir; thus, timber harvesting has been extensive. This community used to be rather widespread as small patches distributed across a localized area. It has been heavily logged over much of its range, and continues to be logged. Urban and agricultural developments have also impacted this plant community. Timber harvesting of remaining patches of old forest on these productive sites will continue, as will localized developments for other land uses.

### **Threats**

Naturally small and patchy occurrences continue to be threatened by forest management and the resulting loss of high quality mature and old forests and also because of the history of disturbance of these forests and the areas surrounding them.

Agriculture, rural, and urban development (Fraser Valley, Pemberton Valley, Bella Coola Valley) have also impacted this plant community.

The greatly diminished connectivity of old forest in the CWHds is a serious issue, especially at the lower elevations typically occupied by this subzone. Most of the remaining patches of old forest outside of parks are patches in a matrix of second growth.

### **Legal Protection and Habitat Conservation**

There is no legal protection for plant communities except for those within protected areas and parks.

Known sites occur within the following provincial parks: Tweedsmuir (especially along middle Dean River and on east side of Talchako River), Homathko, Mehatl, Chilliwack Lake, Skagit Valley, Garibaldi, and possibly Birkenhead Lake.

The *Forest and Range Practices Act* riparian guidelines would most likely not apply to this plant community. Old growth management areas (OGMAs) could address, at least in part, some occurrences provided old forest objectives could not be met in the non-timber harvesting land base.

### **Identified Wildlife Provisions**

#### **Sustainable resources management and planning recommendations**

- ❖ Maintain or recover at least 20 occurrences in good condition across the range of the plant community.
- ❖ Maintain or restore occurrences to as close to natural condition as possible and practical.
- ❖ Maximize connectivity of old forest within the CWHds1.
- ❖ Wherever possible, protect remaining occurrences through the placement of OGMAs.

## Wildlife habitat area

### Goal

Maintain or recover known occurrences that could not be addressed through landscape level planning and the designation of old growth management areas.

### Feature

Establish WHAs at occurrences that have been confirmed by a registered professional in consultation with the B.C. Conservation Data Centre or Ministry of Forests regional ecologists. Priority for WHAs should be any old (structural stage 7) occurrences of this community within a younger stand if necessary to attain a minimum size of 10 ha and mature (structural stage 6) occurrences between 5 and 50 ha that are in a relatively natural state. As a lower priority, establish WHAs within regenerating younger forests belonging to the same plant community, to recover community to climax condition. Select areas that are (in order of priority):

- the oldest, most structurally complex secondary forests available, ideally stands containing some old residual conifers;
- relatively lightly damaged and can be expected to recover to a more natural state;
- part of a network of reserve areas;
- in areas where the forest community has been severely depleted; and
- adjacent to natural occurrences of other plant communities.

### Size

The size of the WHA should be based on the extent of the plant community occurrence. Typically occurrences of this plant community are between 5 and 50 ha.

### Design

The WHA should include the entire occurrence of the community plus  $\pm 100$  m (approximately two tree heights) surrounding the occurrence. Boundaries should be designed to minimize edge effects and to the extent possible, be windfirm.

## General wildlife measures

### Goals

1. Maintain or restore plant community to a natural state (i.e., same species composition, physical structure and ecological processes as natural examples of the plant community) (see Green and Klinka 1994).
2. Maintain or enhance old forest structure (i.e., large old trees, range of tree sizes, large snags, down logs, canopy depth and roughness, multiple vegetation strata, horizontal patchiness of understorey) (Spies 1998).
3. Maintain a diversity of natural disturbance regimes.
4. Allow for the processes of litter accumulation, renewal, and microbiotic crust development.
5. Maintain forest-interior conditions.
6. Prevent physical disturbance, especially of the soil.
7. Minimize introduction and spread of invasive species.

### Measures

#### Access

- Do not develop roads or trails.

#### Harvesting and silviculture

- Do not harvest or salvage except when required to create a windfirm edge.
- Do not remove non-timber forest products.

#### Pesticides

- Do not use pesticides.

#### Recreation

- Do not develop recreational sites, trails, or facilities.

## Additional Management Considerations

Minimize impacts to vegetation, soils, and hydrology when operating adjacent to a WHA, particularly during road development and maintenance.

Eventually it will be necessary to intervene in the WHA when large veteran Douglas-fir and Sitka spruce die and are not naturally replaced (both

species are shade-intolerant on such sites). The intervention could take the form of fill-planting in a natural gap sufficiently large that full light conditions would occur in part of the opening, or suitable openings could be created through small-group selection logging.

### **Information Needs**

1. Further inventory and confirmation of classification to clarify the extent of this community.
2. Mapping of present-day occurrences and assessment of structural stage and successional dynamics of the occurrences.
3. Identification of the most optimal networks to link this and other listed communities in the CWHds.

### **Cross References**

Grizzly Bear, Spotted Owl

### **References Cited**

- B.C. Ministry of Forests and B.C. Ministry of Environment, Lands and Parks (MOF and MELP). 1995. Biodiversity guidebook. Victoria, B.C. Forest Practices Code of B.C. guidebook.
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