

WESTERN REDCEDAR/DEVIL'S-CLUB/OSTRICH FERN

Thuja plicata/*Oplopanax horridus*/*Matteuccia struthiopteris*

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Plant Community Information

Description

This moist forested community has a canopy dominated by western redcedar (*Thuja plicata*), with some hybrid white spruce (*Picea engelmannii* × *glauca*), subalpine fir (*Abies lasiocarpa*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), and paper birch (*Betula papyrifera*). The shrub layer is dominated by devil's-club (*Oplopanax horridus*), and has a moderate cover of thimbleberry (*Rubus parviflorus*). Black gooseberry (*Ribes lacustre*) and Douglas maple (*Acer glabrum*) are also present, typically with low cover. The dense herb layer is dominated by oak fern (*Gymnocarpium dryopteris latifolia*), one leaved-foamflower (*Tiarella trifoliata* var. *unifoliata*), enchanter's-nightshade (*Circaea alpina*), and toothed wood fern (*Dryopteris carthusiana*). Ostrich fern (*Matteuccia struthiopteris*), lady fern (*Athyrium filix-femina*), common miterwort (*Mitella nuda*), and meadow horsetail (*Equisetum pratense*) are present with moderate cover. Coastal leafy moss (*Plagiomnium insigne*) dominates the poorly developed moss layer. See Meidinger et al. (1984, 1988) and DeLong et al. (1996) for detailed descriptions.

This community occupies lower, toe, and level slope positions with medium- to coarse-textured (coarse loamy to sandy) fluvial deposits. Sites are usually on or near floodplains and subject to seepage and periodic flooding. Most commonly they are middle and high bench fluvial terraces. Soils are moist to very moist (relative within subzone) with imperfect to poor drainage, and have a medium to rich nutrient regime.

Distribution

Global

Western redcedar/devil's-club/ostrich fern is restricted to British Columbia, and reportedly occurs only in the ICHvk2, a rather small (ca. 113 640 ha) variant in east-central British Columbia.

British Columbia

This community is sparsely distributed as small patches on lower valley walls along the Fraser River between Dome Creek and the Bowron River, above Slim Creek between the Fraser River and Tumuch Lake, and above Walker Creek/Goodson Creek between the McGregor and Torpy rivers. It can also be found on southwest aspects above the McGregor River between Mount Sir Alexander and Gleason Creek, and along the Torpy River on the lower slopes of the McGregor Range and Bearpaw Ridge.

Forest region and district

Northern Interior: Prince George

Ecoprovinces and ecosections

SBI: MCP, SHR

SIM: BOV, CAM, UFT

Biogeoclimatic unit

ICH: vk2/05

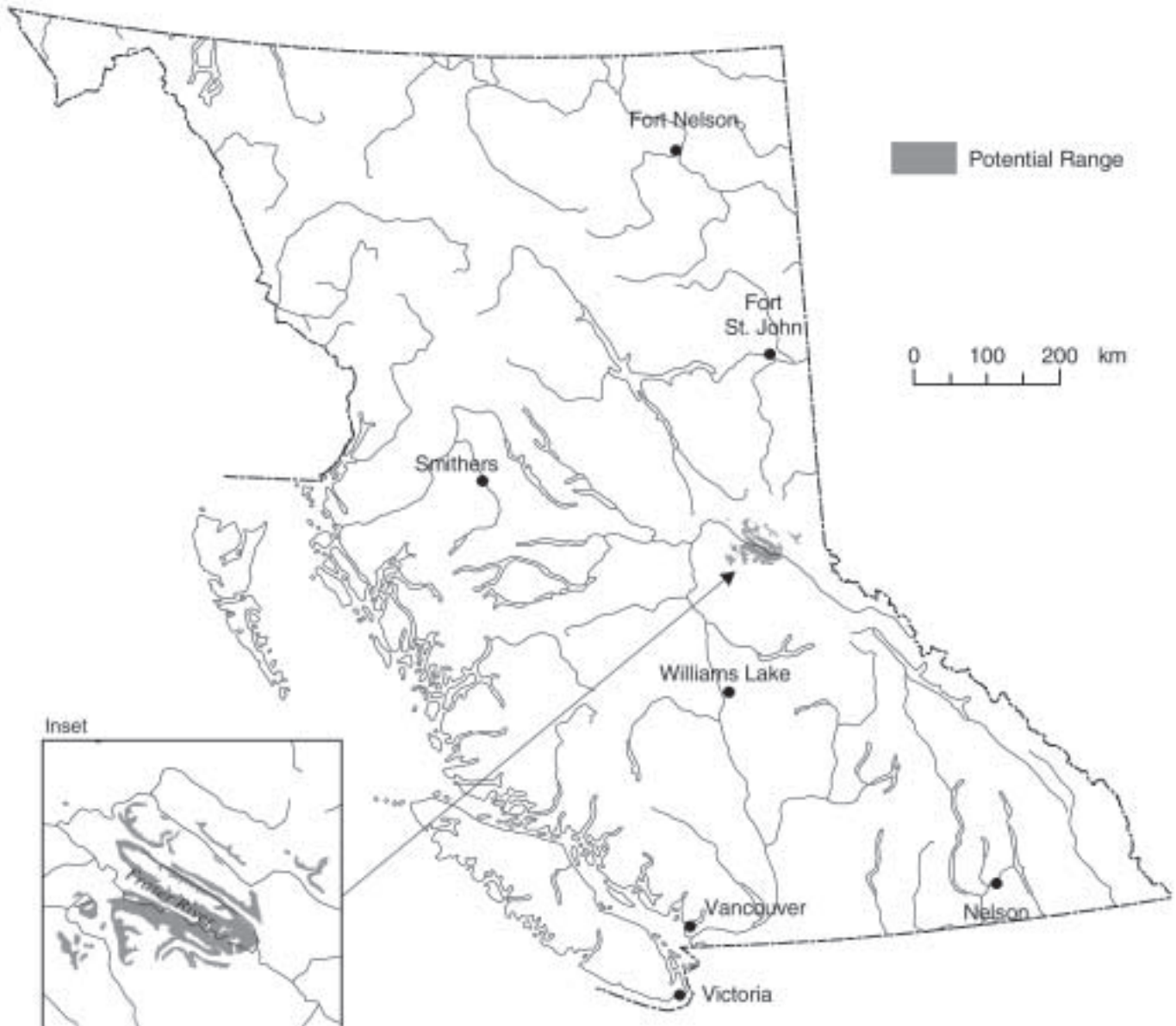
Broad ecosystem units

IH, RR

Elevation

680–1000 m

Western Redcedar / Devil's-club / Ostrich Fern
(*Thuja plicata* / *Oplopanax horridus* / *Matteuccia struthiopteris*)



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.

Plant Community Characteristics

Structural stage

- 6: mature forest (more structurally complex stands, usually >150 years)
- 7: old forest (>250 years)

Natural disturbance regime

Rare stand-initiating events (NDT1) (MOF and MELP 1995) including wildfire (although these valley bottom forests are less likely to burn than those on adjacent uplands), major floods, insect epidemics (e.g., hemlock looper [*Lambdina fiscellaria*] and green-striped forest looper [*Melanolophia imitata*], although they attack western hemlock primarily), and windthrow. Fairly frequent direct mortality of individual or small groups of trees due to root rots, defoliating insects, and bark beetles, or indirect mortality via predisposition of attacked trees to blowdown.

Fragility

Very fragile. Soils typically are deep, medium- to coarse-textured, moist to very moist, and at least moderately nutrient rich. Hence these sites are less susceptible than finer-textured poorer sites to degradation due to soil compaction, erosion, and nutrient losses. However, their valley bottom location makes these ecosystems obvious targets for road locations and harvesting. The soils are imperfectly to poorly drained and have at least periodically high water tables, and sometimes occur on unstable materials, so are susceptible to water table changes and to small mass movements, especially those triggered by land clearing or forestry activity such as road building. Overbank floods occur occasionally, but are part of the natural hydrological regime. The ecosystems rebound vigorously after stand-destroying disturbances. But they take a long time (two to three centuries at least) to attain old-growth conditions, and will do so within the lifetime of a redcedar tree only if biological legacies such as snags and large downed logs persist on site. These rich moist sites are also prone to outbursts of shrubbery and to growing season frosts after major disturbances, which can result in deciduous “brush”

competition with conifers, delays in forest regeneration, and slower forest recovery after disturbance.

Conservation and Management

Status

The western redcedar/devil’s-club/ostrich fern plant community is on the provincial *Red List* in British Columbia. In British Columbia this community is ranked S1S2. Its global status is proposed as G1G2.

Trends

Perhaps stable for now. Ecologists estimate that <10 high quality occurrences remain. The community was probably always rare but has been seriously depleted and its old structural stage is in peril. Further decline may now be arrested due to some new protected areas and riparian management guidelines. But the trend is uncertain and, with so few occurrences, the risk of losing these old flood-plain forests is very high. Although, the distribution of this community has probably always been patchy and dynamic, few old patches now remain and few young patches are being recruited.

Threats

This community is naturally rare within a small range, and typically occurs in small patches or strips. The fairly high timber values of the ICHvk2 in general (including the ICHvk2/05) have resulted in serious depletion of this community by logging. Parts of the subzone (including some of this community) have been cleared for ranching, forest harvesting and minor human settlement on small parcels of private land. The subzone is bisected by the transportation corridor of the CN Railway and Highway 16; the railroad in particular has affected these valley bottom ecosystems. Connectivity of old forest habitat is a serious conservation issue, especially along the major riparian corridors where this plant community occurs.

Legal Protection and Habitat Conservation

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

Some representation in Sugarbowl–Grizzly Den, Slim Creek, and perhaps Kakwa parks. The ICHvk2 as a whole has 10% (10 926 ha) of its area protected, but not much of that total would include this restricted and rare community.

The *Forest Practices Code* guidelines for riparian management areas presumably would apply to most of the occurrences, but could be too narrow to provide adequate protection. Old growth management areas may protect some occurrences provided old forest retention objectives cannot be met in the non-timber harvesting land base.

Identified Wildlife Provisions

Strategic management recommendations

- ❖ Maintain water flow and hydrological system of the surrounding landscape. The occurrence of this community as a linear system dependent on adjacent water flows and upland drainage requires consideration of the larger landscape context.
- ❖ Maximize connectivity of riparian systems and upland/riparian linkages within the ICHvk2.
- ❖ 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.
- ❖ Wherever possible, protect remaining occurrences through the placement of old growth management areas and riparian management guidelines.

Wildlife habitat area

Goals

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 within a young stand of sufficient stream length and upland buffering to attain a minimum of 5 ha or any mature (structural stage 6) linear occurrences in a relatively natural state and where the watercourse is undisturbed for a significant upstream distance. As a lower priority, establish WHAs within younger, relatively undisturbed forests including this plant community to recover the community to climax condition along stable river systems. Select areas that are or have (in order of priority):

- the oldest, most structurally complex secondary forests available;
- intact hydrological processes that are relatively lightly damaged and can be expected to recover to a more natural state;
- part of a network of reserve areas; 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 ± 100 m (approximately two tree heights) surrounding the occurrence along the upland boundary of the stream. Boundaries should be designed to minimize edge effects and to the extent possible, be delineated along windfirm boundaries. Typically the trees on these sites have shallow rooting, and the stands are prone to windthrow.

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 Meidinger et al. 1984; DeLong et al. 1996).
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 or restore the natural hydrological regime of the WHAs. Seepage, fluctuating and seasonally high water tables, and occasional major overbank floods are fundamental to the ecology of these riparian ecosystems.
4. Maintain open forest-interior conditions.
5. Prevent physical disturbance, especially of the soil.
6. 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 WHA. These considerations apply particularly to land clearing, and road location, construction, and maintenance.

Information Needs

1. Further inventory and confirmation of classification to clarify the extent of this community.
2. Mapping and assessment of the structural stage, successional dynamics, quality, and integrity of the remnant occurrences.
3. Identification of candidate forests for recruitment.

Cross References

Bull Trout, Fisher, Grizzly Bear

References Cited

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