Vasey's Big Sagebrush/Pinegrass

Artemisia tridentata var. *vaseyana/Calamagrostis rubescens*

Original prepared by J. Pojar, S. Flynn, and C. Cadrin

Plant Community Information

Description

This shrub-steppe community has a shrub cover of Vasey's big sagebrush (*Artemisia tridentata* var. *vaseyana*) over a herb layer often dominated by Idaho fescue (*Festuca idahoensis*), and/or pinegrass *Calamagrostis rubescens*) depending on the location. Western meadowrue (*Thalictrum occidentale*), and wild strawberry (*Fragaria virginiana*) commonly occur in this community. Arctic lupine (*Lupinus arcticus* ssp. *subalpinus*), silky lupine (*Lupinus arcticus* ssp. *subalpinus*), sandworts (*Arenaria* and *Minuartia* spp.), old man's whiskers (*Geum triflorum*), junegrass (*Koeleria macrantha*), bluebunch wheatgrass (*Pseudoroegneria spicata*), and fescue grasses (*Festuca* spp.) can also be found in this community, but with low cover (Lloyd et al. 1990).

This community occurs over morainal and colluvial blankets, on generally warm aspects, and on middle to upper slopes with steep to gentle gradients. Soils have fine to medium textures, are relatively dry (subxeric to submesic in this these subzones), and have medium to very rich nutrient regimes. Soils are occasionally shallow and rocky in the ESSFxc. Vasey's big sagebrush typically occurs on well-drained, moderately deep soils, but in contrast is restricted to cooler, moister mountain climates.

Distribution

Global

Unknown.

British Columbia

In British Columbia, this plant community is known from higher elevations in the southern and central interior, specifically at Mount Kobau, Greenstone Mountain, Tenas Mountain, the Ashnola Valley, and possibly Enderby Cliffs. It occurs as small patches sparsely distributed within a very limited range.

Forest region and districts

Southern Interior: Cascades, Kamloops, Okanagan Shuswap

Ecoprovince and ecosection

SOI: OKR, STU

Biogeoclimatic units

ESSF: xc/04

MS: xk/04

Broad ecosystem unit

SS

Elevation

1450–2060 m

Plant Community Characteristics

Structural stage

3: shrub/herb

Natural disturbance regime

Frequent stand-initiating events (NDT3) (MOF and MELP 1995) in particular light ground fires but also including periodic drought; grazing/browsing by native ungulates (mountain sheep, deer) and hare; and bark-eating voles, defoliating insects, and snowmold on Vasey's big sagebrush (Sturges and Nelson 1986). Grazing and browsing by native

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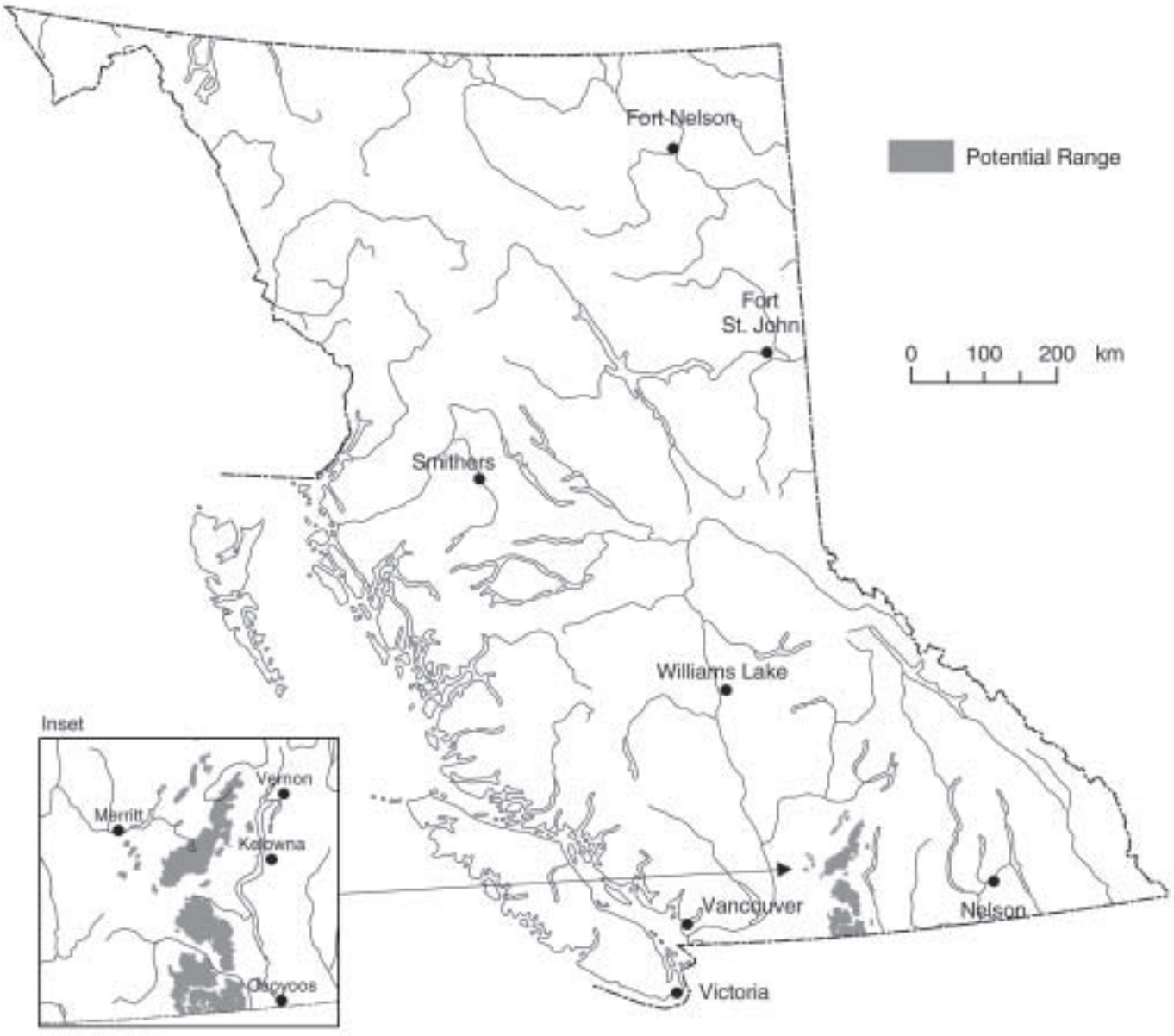
(Artemisia tridentata var. vaseyana / Calamagrostis rubescens)



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.

ungulates is an important modifying factor, as is grazing by domestic livestock. However, overgrazing may have resulted in major long-term shifts in vegetation composition and structure, serious disturbance to the soil surface, and spread of invasive plants.

Fragility

Moderate to high. Generally these communities should be less fragile than other shrub-steppe of warmer drier climates, especially if on deep soils, and may also be more resistant to invasion by introduced species and more resilient under moderate grazing pressure. However, they may be subject to intense grazing because of their higher productivity and their finer-textured soils make them more susceptible to compaction. Most occurrences have experienced some level of disturbance by livestock grazing (D. Lloyd, pers. comm.) and may have been invaded by weedy species.

Conservation and Management

Status

The Vasey's big sagebrush/pinegrass plant community is on the provincial *Red List* in British Columbia. It is ranked S1 in British Columbia. Its global status is unknown.

Trends

Currently known from <5 occurrences in British Columbia. Historically, the range of this plant community in British Columbia was very limited, and its distribution was sparse over this range. Most occurrences have experienced some level of disturbance by livestock grazing. It is doubtful if any occurrences of the community remain in a relatively undisturbed "climax" state. Their disturbed or degraded state will persist as long as the grazing pressure continues. Invasive species will probably increase. Ecosystem recovery will be slow, even if actively managed.

Threats

This plant community is threatened by invasive species, fire suppression, livestock grazing, and off-road vehicles and probably climate change. Heavy livestock grazing maintains this community in an early or mid-seral stage and may prevent it from reaching climax condition. Fire prevention and suppression result in ingress of young conifers.

Legal Protection and Habitat Conservation

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

This community occurs in Mount Kobau Provincial Park and likely occurs in Cathedral and Apex Mountain provincial parks. The Greenstone Mountain occurrence is within an exclosure (R. Tucker, pers. comm.).

Range use plans under the *Forest and Range Practices Act* may address this community through implementation of similar recommendations as outlined below in "General wildlife measures" below.

Identified Wildlife Provisions

Sustainable resource management and planning recommendations

- Control forest encroachment. A prescribed fire program that approximates the natural fire regime could assist in the recovery of this plant community.
- 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.

Wildlife habitat area

Goal

Maintain or recover known occurrences.

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 climax occurrences of this community. As a lower priority, WHAs may be established within earlier seral stages where the key species of the community are present in small patches, to recover community to climax condition. When selecting candidate areas for recovery, select areas that are (in order of priority):

- closest to climax condition;
- can be expected to recover to a more natural state;
- near or adjacent to 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 10 and 100 ha.

Design

The WHA should include the entire occurrence of the community plus 50 m surrounding the perimeter of the occurrence. Boundaries should be designed to minimize edge effects (especially of invasive species), and to allow the plant community to expand.

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 Lloyd et al. 1990).
2. Prevent physical disturbance, especially of the soil.
3. Minimize introduction and spread of invasive species.

Measures

Access

- Do not develop roads or trails.

Pesticides

- Do not use pesticides.

Range

- Plan livestock grazing to meet the general wildlife measure goals described above. Fencing could be required by the statutory decision maker to meet goals, to recover community, or for restoration treatments.
- Do not place livestock attractants within WHA.

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.

Prescribed fire should be part of the management regime for this community, but it must be planned and implemented carefully, as part of an overall program of restoration, otherwise it may increase invasive species.

Restrict recreational use (i.e., dirt bikes, mountain bikes, and other off-road vehicles).

Protect from forest encroachment.

Information Needs

1. Further inventory and confirmation of classification to clarify the extent of this community.
2. Determine historical distribution of community and reference conditions (i.e., pre-1850).
3. Map remaining known occurrences.

Cross References

Badger

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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Personal Communications

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