

***PSEUDOTSUGA MENZIESII - TSUGA HETEROPHYLLA /
TIARELLA TRIFOLIATA VAR. LACINIATA***

Douglas-fir - western hemlock / cutleaf foamflower

Abbreviated Name: PSME-TSHE/TITRLA

Sample size = 16 plots

DISTRIBUTION: Occurs only on Orcas Island, San Juan County.

GLOBAL/STATE STATUS: GNRS2. Very small range. There are very few occurrences covering a relatively small area. Appears to be associated with heavy deer browsing and therefore may not have been a pre-Western settlement type. There is significant representation of this association in established natural areas. Non-native species and development are threats.

ID TIPS: Cutleaf foamflower >1% cover and more abundant than sword fern. Salal absent or low in abundance.

ENVIRONMENT: These sites are moderately moist to moist and appear to be relatively nutrient-rich. Slopes are gentle to moderate and aspect is variable. Mid-slopes are the most common topographic position. Parent material is sedimentary residuum with some admixture of glacial till. Mapped soil texture is gravelly silt loam.

Precipitation: 33-46 inches (mean 40)

Elevation: 250-1500 feet

Aspect/slope: All/ 2-40% (mean 17)

Slope position: mid, lower, plain

Soil series: Pickett

DISTURBANCE/SUCCESSION: Fire is the primary natural disturbance. All old-growth stands show evidence of past low- to moderate-severity fires (underburns). Hemlock and/or redcedar increase over time in absence of disturbance, Douglas-fir decreases. Red alder may regenerate abundantly after disturbance if a seed source is present and mineral soil is exposed, and ALRU/PTAQ can develop after an intense disturbance. Alder will typically die out after 80-100 years without disturbance. Understory composition appears to be controlled by heavy deer browsing, with deciduous shrubs (especially oceanspray) and sword fern depressed relative to grasses and forbs. Under less heavy deer browsing pressure, the PSME-TSHE/HODI/POMU association would probably develop on many of these sites.

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Vegetation Composition Table (selected species):

Con = constancy, the percent of plots within which each species was found;
Cov = cover, the mean crown cover of the species in plots where it was found;
+ = trace (< 0.5% cover).

Trees	Kartesz 2005 Name	Con	Cov
Douglas-fir	Pseudotsuga menziesii var. menziesii	100	55
western hemlock	Tsuga heterophylla	100	51
red alder	Alnus rubra	44	4
western redcedar	Thuja plicata	25	28
grand fir	Abies grandis	19	3
Shrubs and Dwarf-shrubs			
baldhip rose	Rosa gymnocarpa	81	5
dwarf Oregongrape	Mahonia nervosa	56	9
oceanspray	Holodiscus discolor	38	3
swamp currant	Ribes lacustre	38	1
Graminoids			
Coast Range fescue	Festuca subuliflora	56	8
Columbia brome	Bromus vulgaris	44	6
Alaska oniongrass	Melica subulata	38	6
nodding trisetum	Trisetum canescens	31	13
western fescue	Festuca occidentalis	19	6
Forbs and Ferns			
cutleaf foamflower	Tiarella trifoliata var. laciniata	100	16
bracken fern	Pteridium aquilinum var. pubescens	88	6
sweet-scented bedstraw	Galium triflorum	75	6
sword fern	Polystichum munitum	75	2
threeleaf foamflower	Tiarella trifoliata var. trifoliata	75	2
western starflower	Trientalis borealis ssp. latifolia	63	3
stinging nettle	Urtica dioica ssp. gracilis	44	1
twinflower	Linnaea borealis ssp. longiflora	38	12
big-leaved sandwort	Moehringia macrophylla	31	+
wall lettuce	Mycelis muralis	25	11
Scouler's bellflower	Campanula scouleri	19	20

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VEGETATION: Forest co-dominated by Douglas-fir and western hemlock. Western redcedar is only present on ¼ of plots, but is often co-dominant when present. Western hemlock typically dominates tree regeneration. The shrub layer is usually not well developed, though dwarf Oregongrape occasionally provides high cover. Dwarf Oregongrape and baldhip rose are usually present. Grasses are often abundant, though rather variable in composition. Coast Range fescue, Columbia brome, Alaska oniongrass, and nodding trisetum are the most common grasses. The understory is typically dominated or co-dominated by cutleaf foamflower. A number of other herbs may also be co-dominant including the grasses, Scouler's bellflower, and twinflower. Other herbs usually present are bracken fern, sweet-scented bedstraw, sword fern, threeleaf foamflower, and western starflower. The non-native wall lettuce is occasionally prominent.

CLASSIFICATION NOTES: Also described by Chappell (1997). Not recognized by NatureServe (2005), but will be in future.

MANAGEMENT NOTES: Red alder can regenerate abundantly after logging of this association. These sites are probably quite productive for tree growth. Non-native foxglove (*Digitalis purpurea*) is abundant in some areas where it has supplanted native understory; its invasion appears to be facilitated by windthrow. English ivy (*Hedera helix*) probably does well on these sites and if present can overwhelm the native understory and kill trees.



Chappell, C.B. 2006. Upland plant associations of the Puget Trough ecoregion, Washington. Washington Department of Natural Resources, Natural Heritage Program, Olympia, WA. [\[http://www.dnr.wa.gov/nhp/refdesk/communities/pdf/intro.pdf\]](http://www.dnr.wa.gov/nhp/refdesk/communities/pdf/intro.pdf).