

**PSEUDOTSUGA MENZIESII - TSUGA HETEROPHYLLA /  
MAHONIA NERVOSA - POLYSTICHUM MUNITUM**

Douglas-fir - western hemlock / dwarf Oregongrape - sword fern

Abbreviated Name: PSME-TSHE/MANE-POMU

Synonym: *Pseudotsuga menziesii* - *Tsuga heterophylla* /  
*Berberis nervosa* - *Polystichum munitum*

Sample size = 45 plots

**DISTRIBUTION:** This association occurs throughout most of the Puget Trough. May be absent or rare on the Kitsap Peninsula and in much of Mason County. Also occurs in adjacent ecoregions and in northwestern Oregon.

**GLOBAL/STATE STATUS:** G4S3S4. Natural-origin occurrences in the Puget Trough are rare due to historic logging. In adjacent ecoregions it has been less impacted by development and logging.

**ID TIPS:** Dwarf Oregongrape and sword fern usually co-dominate the understory. Dwarf Oregongrape provides >5% and sword fern >3% cover. Dwarf Oregongrape more abundant than the combination of lady-fern, spreading woodfern, threeleaf foamflower, deerfern, and salmonberry.

**ENVIRONMENT:** These sites are moderately moist and appear to be relatively nutrient-rich. A variety of topography and soils are represented. Aspect is more commonly toward the north. Parent materials can include residuum, glacial till and outwash, and colluvium, among others. Soil texture is variable: most frequent is gravelly loam, gravelly sandy loam, or silt loam.

**Precipitation:** 24-88 inches (mean 48)

**Elevation:** 90-1560 feet

**Aspect/slope:** various/ 0-91% (mean 31)

**Slope position:** mid, short, lower, plain, upper, bottom

**Soil series:** Ahl, Alderwood, andic xerochrepts, Baldhill, Barneston, Buckpeak, Cathcart, Centralia, Cinebar, Everett, Indianola, Kapowsin, Kitsap, Louella, Nati, Neilton, Olympic, Pickett, Prather, Roche, Shelton, Skipopa, Terbies, Tokul, Whatcom, Whidbey, Wilkeson, xerochrepts, Yelm

**DISTURBANCE/SUCCESSION:** Fire is the primary natural disturbance. Old-growth stands show evidence of past low- to moderate-severity fire (underburns). Hemlock and/or redcedar increase over time in absence of disturbance, Douglas-fir decreases. Young stands may have little hemlock or redcedar.

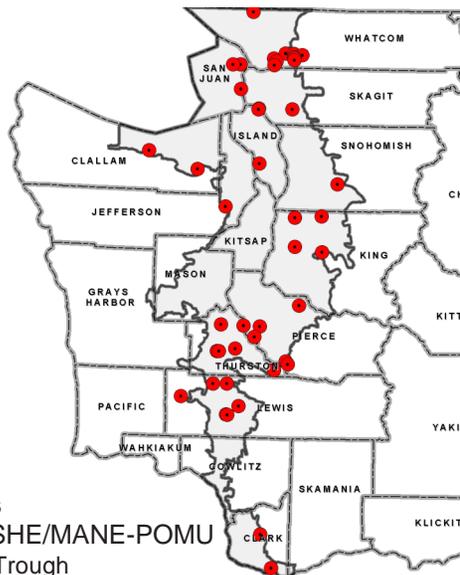
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**Vegetation Composition Table (selected species):**

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	<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	100	48
western hemlock	<i>Tsuga heterophylla</i>	87	38
western redcedar	<i>Thuja plicata</i>	82	35
bigleaf maple	<i>Acer macrophyllum</i>	60	19
grand fir	<i>Abies grandis</i>	22	7
<b>Shrubs and Dwarf-shrubs</b>			
dwarf Oregongrape	<i>Mahonia nervosa</i>	100	18
red huckleberry	<i>Vaccinium parvifolium</i>	80	3
trailing blackberry	<i>Rubus ursinus</i> var. <i>macropetalus</i>	78	1
salal	<i>Gaultheria shallon</i>	73	3
vine maple	<i>Acer circinatum</i>	49	15
beaked hazelnut	<i>Corylus cornuta</i> var. <i>californica</i>	42	5
baldhip rose	<i>Rosa gymnocarpa</i>	40	1
<b>Graminoids</b>			
Coast Range fescue	<i>Festuca subuliflora</i>	33	1
<b>Forbs and Ferns</b>			
sword fern	<i>Polystichum munitum</i>	100	23
sweet-scented bedstraw	<i>Galium triflorum</i>	62	2
western starflower	<i>Trientalis borealis</i> ssp. <i>latifolia</i>	62	2
bracken fern	<i>Pteridium aquilinum</i> var. <i>pubescens</i>	49	1
western trillium	<i>Trillium ovatum</i> ssp. <i>ovatum</i>	47	1
spreading woodfern	<i>Dryopteris expansa</i>	42	1
vanillaleaf	<i>Achlys triphylla</i>	36	3
twinlinear	<i>Linnaea borealis</i> ssp. <i>longiflora</i>	31	3
inside-out flower	<i>Vancouveria hexandra</i>	29	5
threeleaf foamflower	<i>Tiarella trifoliata</i> var. <i>trifoliata</i>	29	1

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Plot locations  
of PSME-TSHE/MANE-POMU  
in the Puget Trough

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Red alder may regenerate abundantly after disturbance if a seed source is present and mineral soil is exposed. Alder will typically die out after 80-100 years.

**VEGETATION:** This is a forest where Douglas-fir tends to dominate the uppermost canopy layer. Western hemlock or western redcedar often co-dominate the canopy with Douglas-fir or dominate tree regeneration. Bigleaf maple often forms a prominent to co-dominant lower canopy layer. Sword fern and dwarf Oregongrape usually co-dominate the understory. Vine maple forms a prominent to co-dominant tall shrub layer on about half the plots. Red huckleberry, trailing blackberry, salal, sweet-scented bedstraw, and western starflower are frequent. Inside-out flower is present to prominent on about ¼ of plots, especially from Lewis County south.

**CLASSIFICATION NOTES:** Also described by Chappell (1997, 2001). NatureServe (2005) names currently include TSHE/POMU and PSME-TSHE/POMU: parts of each of them would be classified as this association. In the near future, NatureServe will recognize PSME-TSHE/MANE-POMU as distinct and include with it the very similar TSHE/POMU-BENE of Mount Baker-Snoqualmie National Forest (Henderson et al. 1992), and TSHE/BENE/POMU of Olympic National Forest (Henderson et al. 1989) and Gifford Pinchot National Forest (Topik et al. 1986).

**MANAGEMENT NOTES:** Red alder can regenerate abundantly after logging of this association. These sites appear to be relatively productive for tree growth. Non-native English ivy (*Hedera helix*) does well on these sites and if present can quickly overwhelm the native understory. Herb Robert (*Geranium robertianum*) is another threatening invasive for this association.

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>].