

**PSEUDOTSUGA MENZIESII – TSUGA HETEROPHYLLA /
MAHONIA NERVOSA**

Douglas-fir – western hemlock / dwarf Oregongrape

Abbreviated Name: PSME-TSHE/MANE

Synonym: *Pseudotsuga menziesii* – *Tsuga heterophylla* /
Berberis nervosa

Sample size = 17 plots

DISTRIBUTION: Within the Puget Trough, this association is most common on Orcas Island, San Juan Co. It also occurs uncommonly in Whatcom, Skagit, northern Island, and fringes of the ecoregion in Clallam and Jefferson counties. It is absent or rare elsewhere in the ecoregion. Also occurs in adjacent ecoregions within Washington and in northwestern Oregon.

GLOBAL/STATE STATUS: G4S4. Natural-origin occurrences in the Puget Trough are rather rare due to historic logging. In adjacent ecoregions, it is more common and has been less impacted by logging.

ID TIPS: Dwarf Oregongrape typically occupies >5% cover or is present with little other understory vegetation. Salal occupies <5% cover, sword fern <3% cover, and cutleaf foamflower <1% cover. Refer to key.

ENVIRONMENT: These sites are moderately to slightly dry and appear to be nutrient-medium. Sites are usually on moderate to steep slopes and a variety of aspects. Slope position is most often mid- to upper slopes. Most sites have a restrictive soil layer of bedrock or cemented till. Parent materials include residuum, colluvium, glacial till, volcanic ash, and glacial outwash. Soil textures range from silt loam to loamy sand, often with a significant coarse fragment content. If the soil texture is fine (silt loam), then the soil is characterized as very gravelly. Sites where it occurs are usually at a moderate to high elevation for the ecoregion (mean elevation is 1193 feet) and are probably cooler than average.

Precipitation: 28-67 inches (mean 45)

Elevation: 170 - 2150 feet

Aspect/slope: various/ 6-73% (mean 31)

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

Soil series: Pickett, Louella, Hoypus, Melbourne, Nati, Revel, Rinker, Triton

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Vegetation Composition Table (selected species):

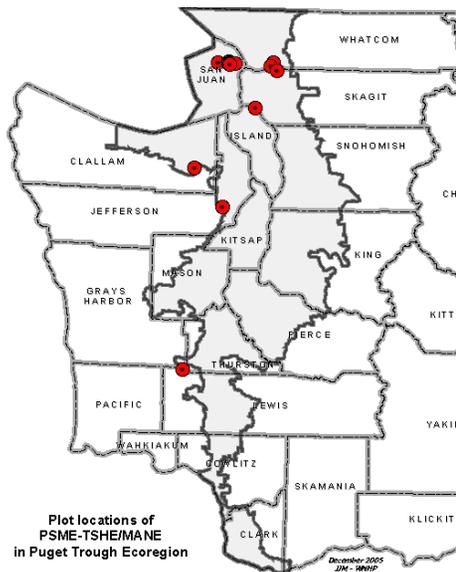
Con = constancy, the percent of plots within which each species was found;
Cov = cover, the mean crown cover of the species in plots where it was found;
+ = trace (< 0.5% cover).

Trees	Kartesz 2005 Name	Con	Cov
Douglas-fir	<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	94	66
western hemlock	<i>Tsuga heterophylla</i>	94	47
western redcedar	<i>Thuja plicata</i>	41	29
Shrubs and Dwarf-shrubs			
dwarf Oregongrape	<i>Mahonia nervosa</i>	82	17
red huckleberry	<i>Vaccinium parvifolium</i>	47	3
baldhip rose	<i>Rosa gymnocarpa</i>	35	3
beaked hazelnut	<i>Corylus cornuta</i> var. <i>californica</i>	6	20
vine maple	<i>Acer circinatum</i>	6	13
Graminoids			
Coast Range fescue	<i>Festuca subuliflora</i>	41	2
western fescue	<i>Festuca occidentalis</i>	29	3
Forbs and Ferns			
western starflower	<i>Trientalis borealis</i> ssp. <i>latifolia</i>	47	1
sword fern	<i>Polystichum munitum</i>	47	1
bracken fern	<i>Pteridium aquilinum</i> var. <i>pubescens</i>	41	2

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Chris Chappell photo



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

VEGETATION: This is a forest where Douglas-fir tends to dominate the uppermost canopy layer. Western hemlock is usually co-dominant and dominates tree regeneration. Western redcedar is sometimes prominent to co-dominant. The shrub layer ranges from sparse to moderately dense and is usually dominated by dwarf Oregongrape, which is the most frequent understory species. Red huckleberry is sometimes present. Vine maple or beaked hazelnut are rarely prominent to co-dominant. The poorly developed herb layer shows no species with over 50% constancy. Western starflower, sword fern, bracken fern, and Coast Range fescue are sometimes present in small amounts. Occasionally the understory is nearly devoid of vascular plants and dominated by mosses.

CLASSIFICATION NOTES: Also described by Chappell (1997). NatureServe classification will soon be revised to include this type as part of much broader association with same name as this one. This association is similar to TSHE/BENE of Mount Baker-Snoqualmie and Olympic National Forests (Henderson et al. 1989 & 1992) and Gifford Pinchot National Forest (Topik et al. 1986). A few plots on Orcas Island with very little vascular plant understory and abundant mosses (*Hylocomium splendens*, *Eurychium oregonum*, and/or *Rhytidiopsis robusta*) were included here though they could be considered a separate association.

MANAGEMENT NOTES: Stands that have not been previously harvested, especially old-growth and mature stands, should be considered for conservation status. These sites appear to be moderately low in productivity for tree growth.

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>].