## *PSEUDOTSUGA MENZIESII – TSUGA HETERPHYLLA / GAULTHERIA SHALLON / POLYSTICHUM MUNITUM*

Douglas-fir – western hemlock / salal / sword fern

Abbreviated Name: PSME-TSHE/GASH/POMU

Sample size = 32 plots

**DISTRIBUTION:** This widespread association occurs throughout most of the Puget Trough ecoregion. Also occurs in adjacent ecoregions within Washington and in northwestern Oregon and southwestern British Columbia.

**GLOBAL/STATE STATUS:** G4G5S4. 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:** Salal occupies >10% cover and sword fern occupies >3% cover. Evergreen huckleberry is absent or <5% cover.

**ENVIRONMENT:** These sites are moderately dry to mesic and appear to be relatively nutrient-rich. Sites are flat to very steep. West to East-southeast aspects are most common, sunnier aspects are less frequent. A variety of slope positions and parent materials are represented. Soil textures are mostly loams, sandy loams, or loamy sands and usually have abundant gravel or stones.

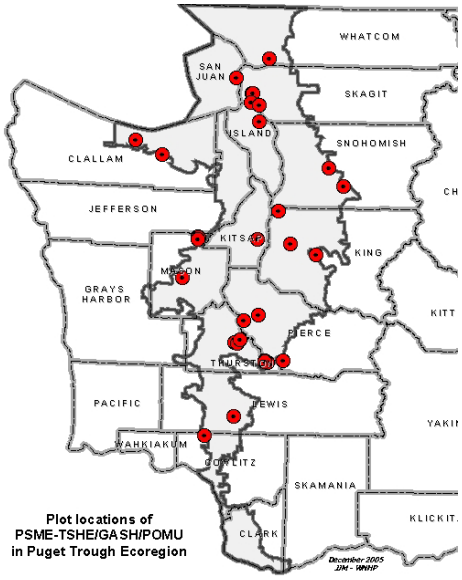
Precipitation: 27-79 inches (mean 49)
Elevation: sea level - 1700 feet
Aspect/slope: W to ESE, various/ 0-90% (mean 30)
Slope position: mid, short, lower, plain, upper, ridge
Soil series: Baldhill, Everett, Fidalgo, Hoodsport, Winston, Andic xerochrepts, Elwa, Lynnwood, Olympic, Ovall, Phenney, Schneider, Tenino, Terbies, Typic udorthents, Whidbey, Whistle, Wilkeson

**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. Red alder can become established after disturbance if the ground is scarified and a seed source is present.



**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 | 60 |
| western hemlock | Tsuga heterophylla | 88 | 24 |
| western redcedar | Thuja plicata | 84 | 25 |
| bigleaf maple | Acer macrophyllum | 50 | 16 |
| cascara | Frangula purshiana | 34 | + |
| **Shrubs and Dwarf-shrubs** | | | |
| salal | Gaultheria shallon | 100 | 37 |
| trailing blackberry | Rubus ursinus ssp. macropetalus | 94 | 4 |
| red huckleberry | Vaccinium parvifolium | 91 | 4 |
| dwarf Oregongrape | Mahonia nervosa | 81 | 11 |
| oceanspray | Holodiscus discolor | 72 | 5 |
| baldhip rose | Rosa gymnocarpa | 72 | 1 |
| beaked hazelnut | Corylus cornuta var. californica | 53 | 9 |
| orange honeysuckle | Lonicera ciliosa | 34 | 1 |
| vine maple | Acer circinatum | 25 | 13 |
| **Graminoids** | | | |
| Coast Range fescue | Festuca subuliflora | 47 | 1 |
| western fescue | Festuca occidentalis | 19 | + |
| **Forbs and Ferns** | | | |
| sword fern | Polystichum munitum | 100 | 16 |
| bracken fern | Pteridium aquilinum var. pubescens | 81 | 3 |
| western starflower | Trientalis borealis ssp. latifolia | 78 | 1 |
| sweet-scented bedstraw | Galium triflorum | 72 | 2 |
| twinflower | Linnaea borealis ssp. longiflora | 69 | 5 |
| western trillium | Trillium ovatum ssp. ovatum | 47 | + |
| evergreen violet | Viola sempervirens | 31 | 1 |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**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 sometimes forms a prominent to co-dominant lower canopy layer. The well-developed shrub layer is dominated by salal. Dwarf Oregongrape is usually present to prominent, occasionally co-dominant. Vine maple is occasionally prominent to co-dominant as a very tall shrub. Other frequently occurring shrubs and vines are trailing blackberry, red huckleberry, oceanspray, and baldhip rose. Beaked hazelnut is common in the southern half of the ecoregion. Sword fern dominates the herb layer. Bracken fern, western starflower, sweet-scented bedstraw, and twinflower are also frequent.

**CLASSIFICATION NOTES:** Also described by Chappell (1997, 2001). NatureServe classification will soon be revised to include this type as part of much broader PSME-TSHE/GASH/POMU. This association is similar to TSHE/POMU-GASH of Mount Baker-Snoqualmie National Forest (Henderson et al. 1992) and TSHE/GASH/POMU of Olympic National Forest (Henderson et al. 1989).

**MANAGEMENT NOTES:** Stands that have not been previously harvested should be considered for conservation status. These sites appear to be moderately productive for tree growth. Non-native English ivy (*Hedera helix*) is probably a threat to this association if it becomes established.

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].