

**QUERCUS GARRYANA / CAREX INOPS -
(CAMASSIA QUAMASH)**

Oregon white oak / long-stolon sedge - (common camas)

Abbreviated Name: QUGA/CAIN-(CAQU)

Synonym: *Quercus garryana* / *Carex pensylvanica* –
(*Camassia quamash*)

Sample size = 15 plots

DISTRIBUTION: Occurs in San Juan, Whatcom, Pierce, and Thurston counties, as well as in southwestern BC. Probably extirpated from Clallam, Island, Mason, King, Lewis, Grays Harbor, Cowlitz, and Clark counties. Similar communities occur in the western Columbia Gorge, Skamania County.

GLOBAL/STATE STATUS: G1S1. There are only 5 known fair- to good-condition occurrences remaining in Washington. Those that remain are highly threatened by non-native species, conifer encroachment, and development.

ID TIPS: Woodland (>25% tree crown cover) dominated by Oregon white oak. Herbaceous dominated understory with significant native understory component. Long-stolon sedge usually co-dominant, common camas or western buttercup usually present.

ENVIRONMENT: These sites are dry to very dry and appear to be relatively nutrient-rich. Occurs on slopes with sunny aspects (south-east to west) and shallow soils over bedrock, or on coarse-textured gravelly outwash plains.

Precipitation: 30-53 inches (mean 45)

Elevation: 150-1400 feet

Aspect/slope: SE to W/ 0-82% slope (mean 21)

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

Soil series: Spanaway, rock outcrop, rockland, andic xerochrepts, Everett

DISTURBANCE/SUCCESSION: In the pre-Western settlement landscape (with much more frequent fires) these sites may have supported a mix of oak savanna, grasslands, and oak woodland similar to existing. In the absence of the former fire regime or active management, most of these stands are being invaded by Douglas-fir trees and/or shrubs (snowberry, Scot's broom), and are likely to convert to QUGA/SYAL/CAIN, QUGA-PSME/SYAL/POMU, or non-native understory. Stands on shallow soils appear more resistant to successional changes that lead to conversion to conifer forest.

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Vegetation Composition Table (selected species):

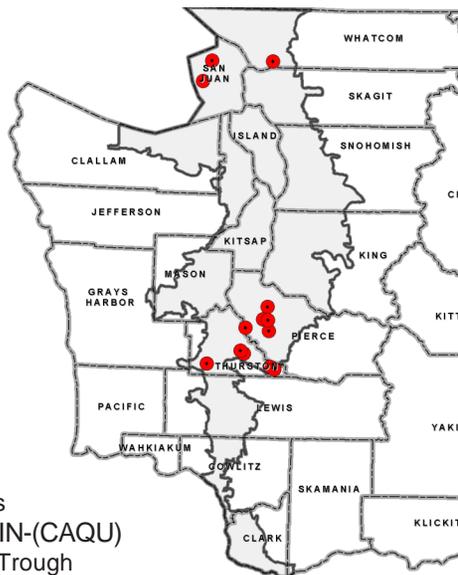
Con = constancy, the percent of plots within which each species was found;
Cov = cover, the mean crown cover of the species in plots where it was found;
+ = trace (less than 0.5% cover).

Trees	Kartesz 2005 Name	Con	Cov
Oregon white oak	<i>Quercus garryana</i> var. <i>garryana</i>	100	54
Douglas-fir	<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	60	6
Shrubs and Dwarf-shrubs			
Scot's broom	<i>Cytisus scoparius</i>	67	10
common snowberry	<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	73	7
tall Oregongrape	<i>Mahonia aquifolium</i>	73	5
serviceberry	<i>Amelanchier alnifolia</i>	53	3
Indian plum	<i>Oemleria cerasiformis</i>	33	2
hairy honeysuckle	<i>Lonicera hispidula</i>	20	25
kinnikinnick	<i>Arctostaphylos uva-ursi</i>	20	6
Graminoids			
long-stolon sedge	<i>Carex inops</i> ssp. <i>inops</i>	93	24
Kentucky bluegrass	<i>Poa pratensis</i>	93	19
blue wildrye	<i>Elymus glaucus</i>	73	12
wood-rush	<i>Luzula</i> (<i>comosa</i> , <i>multiflora</i> ssp. <i>multiflora</i>)	53	2
Roemer's fescue	<i>Festuca roemeri</i>	40	6
California brome	<i>Bromus carinatus</i>	40	6
California danthonia	<i>Danthonia californica</i>	40	3
colonial bentgrass	<i>Agrostis capillaris</i>	33	12
red fescue	<i>Festuca rubra</i>	20	21
orchard grass	<i>Dactylis glomerata</i>	20	18
Forbs and Ferns			
common St. John's-wort	<i>Hypericum perforatum</i>	67	4
cleavers	<i>Galium aparine</i>	67	3
yarrow	<i>Achillea millefolium</i> var. <i>occidentalis</i>	60	4
English plantain	<i>Plantago lanceolata</i>	60	2
western buttercup	<i>Ranunculus occidentalis</i> var. <i>occidentalis</i>	60	2
common camas	<i>Camassia quamash</i> (vars. <i>azurea</i> , <i>maxima</i>)	53	6
hairy cat's-ear	<i>Hypochaeris radicata</i>	53	2
Pacific sanicle	<i>Sanicula crassicaulis</i> var. <i>crassicaulis</i>	47	2
early blue violet	<i>Viola adunca</i> var. <i>adunca</i>	47	1
chocolate lily	<i>Fritillaria affinis</i> var. <i>affinis</i>	47	+
meadow death camas	<i>Zigadenus venenosus</i> var. <i>venenosus</i>	33	1
cut-leaf microseris	<i>Microseris laciniata</i> ssp. <i>laciniata</i>	27	2
woods strawberry	<i>Fragaria vesca</i> ssp. <i>bracteata</i>	27	2
white-top aster	<i>Sericocarpus rigidus</i>	27	+
common strawberry	<i>Fragaria virginiana</i> ssp. <i>platypetala</i>	20	3
Nuttall's larkspur	<i>Delphinium nuttallii</i>	13	6
spring-gold	<i>Lomatium utriculatum</i>	13	4
houndstongue hawkweed	<i>Hieracium cynoglossoides</i>	13	2
Henderson's shootingstar	<i>Dodecatheon hendersonii</i>	7	18
Puget balsamroot	<i>Balsamorhiza deltoidea</i>	7	13

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Chris Chappell photo



Plot locations
of QUGA/CAIN-(CAQU)
in the Puget Trough

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VEGETATION: Woodland, or open forest, dominated by Oregon white oak. The understory is usually dominated by herbaceous vegetation. Most commonly long-stolon sedge and the non-native Kentucky bluegrass are co-dominant. Blue wildrye is usually present and often co-dominant as well. Roemer's fescue may be present in excellent condition sites. Red fescue, orchardgrass, and colonial bentgrass can also be prominent to co-dominant. A relatively low-growing shrub layer varies from absent to prominent. Common snowberry, tall Oregongrape, Scot's broom, and serviceberry are usually present. A variety of native and non-native forbs can be present. The most abundant native forb in terms of cover is common camas, though it is not consistently present. Yarrow, western buttercup, and cleavers are usually present. Other prairie-associated plant species are possible.

CLASSIFICATION NOTES: Currently known as QUGA/CAQU Forest by NatureServe (2005). Chappell and Crawford (1997) describe same association from South Puget Sound area. In BC, Erickson (1996) recognizes multiple community types that have affinities to this association. More data analysis is needed to determine if somewhat similar communities on shallow soils in the western Columbia River Gorge (Western Cascades) are part of this association.

MANAGEMENT NOTES: Maintenance of this association requires monitoring and in many cases active control (e.g., prescribed fire, cutting, herbicides) of Douglas-fir, Scot's broom, and snowberry. Care should be taken to avoid disturbances so intense that they facilitate loss of native understory or massive increase of non-native herbs. Native species composition is also threatened by apparent ongoing increase and expansion of non-native grasses (e.g., tall oatgrass).

BIODIVERSITY NOTES: State sensitive white-top aster (*Aster curtus*) occurs in this association in southern Puget Sound area. State candidate slender-billed white-breasted nuthatch (*Sitta carolinensis aculeata*) is dependent on oak habitat and appears to prefer more open oak woodlands like this. State threatened western gray squirrel (*Sciurus griseus*) requires oak woodland as one component of its habitat, and probably uses this association. Many unlisted plant species associated with this vegetation are probably declining in the Puget Trough.

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>.