

Listera borealis Morong
northern twayblade
Orchidaceae (Orchid Family)

Status: State Watch
Rank: G4S3

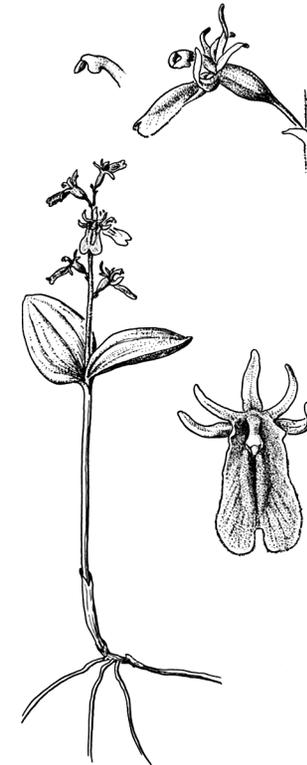
General Description: Adapted from Hitchcock et al. (1969): Plant 3 to 10 inches tall, glabrous below the leaves, sparsely pubescent and becoming glandular above. Leaves above midlength of the stem, from nearly opposite to as much as ½ inch apart, the blade lanceolate to ovate-elliptic, obtuse or rounded, glabrous ¾ to 2 inches long. Raceme 3 to 15 flowered, open to somewhat congested, the rachis and pedicels glandular-pubescent, the bracts 1/16 to 1/8 inch long. Pedicels ascending, 1/8 to ¼ inches long. Flowers grayish to yellowish green. Sepals 1-nerved, reflexed, mostly 1/8 to ¼ inch long, oblong-lanceolate, the lateral pair somewhat oblique and slightly longer than the dorsal one. Petals narrower and shorter than the sepals, also reflexed, 1-nerved. Lip declined at about a 45 degree angle, oblong-ovovate, broadest at the tip and narrowed in the middle, finely ciliolate, often puberulent on the dorsal surface, ¼ to ½ inch long and about half as broad, shallowly bilobed 1/16 to 1/8 inch and with well developed, rounded auricles and 2 long, parallel, deep greenish callosities leading to the shallow triangular nectary near the base, 3-nerved, the lateral nerves branched toward the tip. Column (with the anther) 1/8 to ¼ inch long, pointing forward and somewhat arcuate over the lip.

Identification Tips: There are three other species of *Listera* within the range of *Listera borealis* in Washington. The morphology of the lower petal, or lip, of the flower is the key to distinguishing the species. The lip of *Listera borealis* is unique with well-developed auricles at the base which project away from the column. In addition, the lip is shallowly bilobed and puberulent, at least along the margins. *L. cordata* can be distinguished from the other species of *Listera* by having a lip that is cleft about half its length into two somewhat divergent lobes. The lips of *L. caurina* and *L. convallarioides* are not usually puberulent, are usually narrowed toward the base, and sometimes have small projections, or claws, near the base.

Phenology: Flowers June through July.

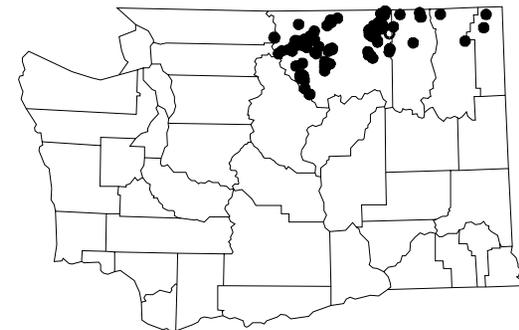
Range: The species occurs from central Alaska to Hudson Bay, south to northern Washington, Idaho, Montana, Wyoming and Utah. In Washington, it is scattered in Okanogan, Ferry, Stevens, and Pend Oreille counties.

Listera borealis
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Known distribution of
Listera borealis in
Washington



● Current (1980+)
○ Historic (older than 1980)

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Habitat: The species is typically found in moist areas along cold air drainages at elevations of 3000 to 6300 feet. It is often found emerging from a streamside carpet of moss. Most known sites are in old growth (or at least older forests). Dominant tree species vary from site to site, but may include *Picea engelmannii*, *Abies lasiocarpa*, *Thuja plicata* and *Pseudotsuga menziesii*. The shrub layer is generally quite open, while the herbaceous layer has a moderate cover and the moss layer is continuous.

Ecology: Little is known about the ecology of this species. However, as is the case with many other orchids, it may well have a complex relationship with soil-dwelling fungi. This relationship in turn is dependent upon appropriate nutrient and moisture conditions. Presumably factors affecting shading, soil moisture, and nutrient content affect this species as well.

State Status Comments: The majority of known populations have fewer than 10 plants, which raises the question of their overall viability.

Inventory Needs: Additional inventory is needed in appropriate habitats within the Okanogan Highlands physiographic province.

Threats and Management Concerns: Small population size is the greatest threat to the species. Timber harvest is a threat because it can lead to an increase in soil temperature and a decrease in soil moisture. In addition, grazing, herbicide use, and mining activities are all potential threats to the species.

References:

Franklin, J.F. and C.T. Dyrness. 1973. *Natural vegetation of Oregon and Washington*. U.S.D.A. Forest Service General Technical Report PNW-8. 417p.

Hitchcock, C. L., A. Cronquist, M. Ownbey, and J.W. Thompson. 1969. *Vascular Plants of the Pacific Northwest, Part 1: Vascular Cryptogams, Gymnosperms, and Monocotyledons*. University of Washington Press, Seattle. 914 pp.

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