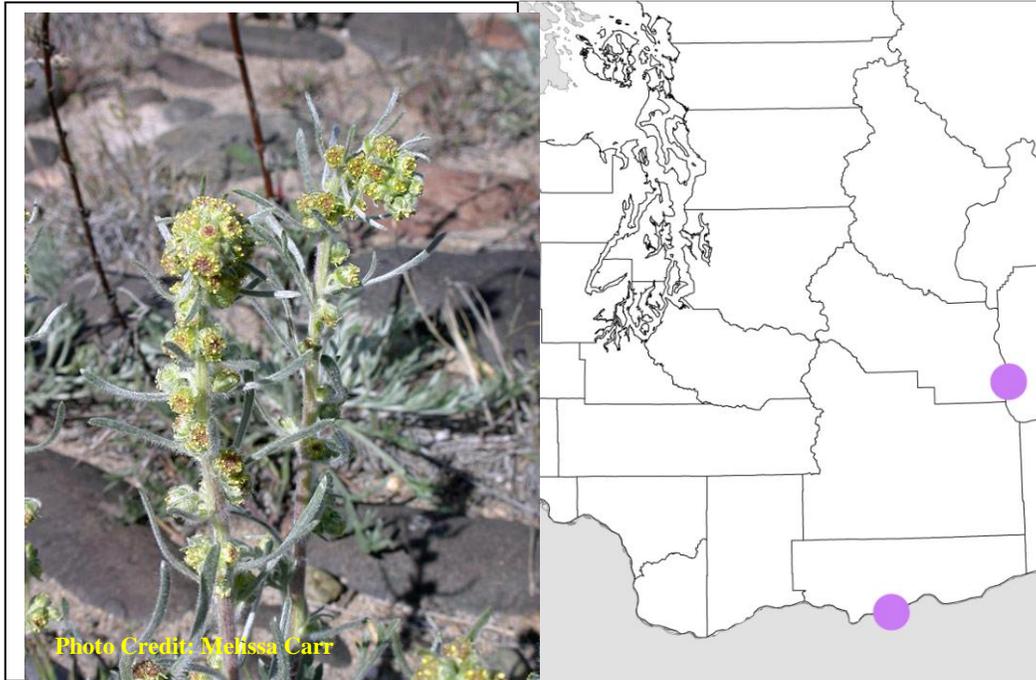


**Species Fact Sheet**  
**Northern wormwood**  
***Artemisia borealis* var. *wormskioldii***



**STATUS: CANDIDATE** Northern wormwood potentially occur  
Klickitat and Grant counties,  
Washington.

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Northern wormwood, *Artemisia borealis* var. *wormskioldii*, became a candidate for federal listing in October 1999 ([Federal Register 1999](#)).

### ***Current and Historical Status***

Historically, northern wormwood was collected along the banks of the Columbia River near the mouth of the John Day River in Wasco County, Oregon to the vicinity of Hood River in Hood River County, Oregon. These sites have been resurveyed for this species, and no populations were found. It is likely that disturbances due to the construction of several dams and subsequent flooding of habitat resulted in the extirpation of historical occurrences.

Currently, *A. b.* var. *wormskioldii* is known from only two sites along the Columbia River, in Klickitat and Grant Counties, Washington. These two

populations were discovered in 1983. At the Klickitat County site in 1989, 75 plants occupied less than 1 acre. In 1995 and in 1999 less than 145 flowering plants were documented on each survey. More recently, between 2002 and 2007 this species declined from 100 plants to 36 plants. Data from 2001 through 2006 indicate a steady decline in the Grant County population as well.

## ***Description and Life History***

Northern wormwood is a perennial plant in the aster family (Asteraceae). Also commonly known as Pacific sagebrush *A. b. var. wormskioldii* is generally a low-growing plant, 15 to 30 centimeters tall, but may grow up to 40 centimeters in height. This plant has a taproot and basal leaves crowded in rosettes. The basal leaves are 2 to 10 cm (1 to 4 in) long and divided two or three times in mostly linear divisions. Leaves on the upper stems are similar but smaller and less divided. The stems and leaves are conspicuously covered with silky hairs. The fruits (achenes) and the enlarged upper ends of the flower-bearing stalks (receptacles) are without hairs. Northern wormwood is the only variety of *Artemisia* that flowers in April and May. The arrangement of yellowish flowers (inflorescence) on the stem is narrow, and the involucre (bracts at the base of flowers) are about 0.3 to 0.5 cm (0.1 to 0.2 in). The flower heads are relatively large. The outer female flowers are fertile, and the sterile disk flowers have undeveloped ovaries.

## ***Habitat***

This species is restricted to exposed basalt, cobbly-sandy terraces, and sand habitat along the banks of the Columbia River. The Klickitat County, Washington, population is found near water level in the crevices of basalt outcrops, compacted cobbly terrace, and sand. The Grant County, Washington, population occurs along the shore of the Columbia River and on several "islands" composed mostly of compacted cobbly terrace. This population appears to be restricted to an area of compacted cobbles with varying amounts of sand and little, if any, soil development.

## ***Reasons for Decline***

The construction of dams along the Columbia River, and possibly railroad and highway construction resulted in the direct loss of suitable habitat as well as individuals and populations of *A. b. var. wormskioldii*. Losses of habitat and individuals probably resulted from both disturbances due to dam construction and the resulting inundation. The manipulation of water flows by hydroelectric dams is a major threat to this variety. Manipulated water regimes do not mimic historic water flows, which were not controlled

by dams and likely were much higher during the rainy season and lower during late-summer droughts, and may affect the ability of these plants to grow, flower, reproduce, and colonize. Recreational use, competition with nonnative invasive species, and small population size that makes them susceptible to genetic drift and inbreeding threaten its continued existence.

## ***Conservation Efforts***

The Washington Natural Heritage Program, using funding from USFWS, prepared a conservation strategy and monitoring plan for northern wormwood. Fencing of the Beverly population located at the Grant County site, active management to remove nonnative, invasive plant species, collection of seed, and the monitoring of the population have contributed to the incremental recovery of the population. The storing of seeds in a Center for Plant Conservation facility allows for testing of the germination potential of the plant and contributes to recovery by producing plants that could be outplanted into each of the populations.

Grant County PUD has developed a Conservation Agreement with the WDNR and the Service. This agreement includes measures to ensure demographic monitoring annually, provide fencing to control vehicle access at the site, and control noxious weeds that occur at the site. Grant County PUD is also working with the Bureau of Reclamation to reduce the impacts from recreational use by limiting public access around the largest population. Amsberry et al. (2007) investigated outplanting *A. b.* var. *wormskioldii* in Oregon. They found cultivation, selection of suitable habitat, and outplanting is not difficult given improved seed viability. Moderate levels of success were reported in a spring 2008 reintroduction on different site types near Meyer State Park, Oregon (Kelly Amsberry, Botanist, Oregon Department of Agriculture, OSU, pers. comm. 2009).

## ***References and Links***

[Candidate Assessment](#)

[USFWS Threatened and Endangered Species Profile](#)