

**WRITTEN FINDINGS OF THE  
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD  
(NOVEMBER 1997)**

Scientific Name: *Geranium robertianum* L.

Common Name: herb Robert, Robert geranium

Family: Geraniaceae

Legal Status: Class B (a) regions 3,4,6,7, 9,10

Description and Variation: *Geranium robertianum* is both a winter and a spring annual. The leaves are deeply dissected and light green in color. In late fall the foliage turns red. The stems fork, and are brittle at the joints, they are pubescent and under high light conditions are red and up to 25 cm in length. The roots are shallow. The pink flowers are perfect with five petals that are 7-10 mm. The receptacle is elongated into a structure called a "torus". The fruit is a capsule. Seeds are brown and about 2 mm in length. Propagates by seed

A distinguishing characteristic of the species is the pungent odor of the crushed leaves.

Economic/environmental importance: *Detrimental:* *Geranium robertianum* poses a threat to forest understories and plant biodiversity by displacing native species, especially herbaceous species. In preliminary research in western Washington it was found that under 90% canopy cover it was possible to find 250 plants/m<sup>2</sup>. In a more open canopy (e.g., 50% - 60%) there were only 112 plants/m<sup>2</sup> but these plants were larger and more vigorous. There are unsubstantiated reports that its strong odor may trigger asthma attacks (Tisch 1992).

*Beneficial:* Herb Robert is an ornamental species and has been sold in nurseries in the Pacific Northwest and elsewhere. White flowered forms are also sold. It has a long history of medicinal use including relief from toothaches and nosebleeds (Bath and Jones 1994).

Geographic distribution: *Geranium robertianum* is found throughout Europe, Asia and North Africa where it grows on a variety of soils, rocks, tree trunks and decaying organic matter such as logs (Falinska and Pironznikow 1983). It is a component of virtually all forest types there. In the Pacific Northwest it is primarily found west of the Cascade crest although it extends along the Columbia River in Klickitat County. In some western counties it is widespread, although still expanding fast into new territory. In other areas it appears in only a few to no populations.

Habitat: *Geranium robertianum* is highly adaptable. It is found in moist forests with canopy closure, in forest gaps and more open canopies, and on dry rocky outcrops. Herb Robert apparently can form mycorrhizal relationships (Boerner 1990). It is also becoming a significant garden pest in some areas. It is found from sea level to mid-montane areas in both the Cascades and Olympics.

History: The earliest specimen in the University of Washington herbarium was collected in 1911 from a garden in Bingen (Klickitat County). By at least 1962 it was abundant east of Bingen in dry

basaltic oak and grass covered hills and it appears that this population still existed in the early 1990's. Increased numbers of herbarium specimens indicated that it appears to have begun to spread more vigorously around the state in the last two decades. Because it is a garden plant there have likely been numerous independent introductions. Reports indicate that Issaquah (King County) was another early site of introduction.

Growth and development: Herb Robert seeds are capable of germinating soon after dispersal if there is adequate moisture. Seeds which germinate in the fall overwinter as small rosettes and begin elongation growth early in the spring, fruiting in early to mid summer. Seeds which overwinter germinate in the spring and flower in mid to late summer. There are also reports that some individuals in Europe are biennial or perennial (Falinska and Piroznikow 1983) but that has not been recorded in the Pacific Northwest. There have been reports that it is capable of overwintering under snow (Ed Tisch 1992).

Reproduction: *Geranium robertianum* is both a spring and a fall annual. Under heavy canopy cover reproduction is low but in an open canopy (e.g. 50% - 60% cover) preliminary data show that as many as 3100 seeds/m<sup>2</sup> may be produced. Pollination is apparently unspecialized, with at least three species of small bees seen visiting the flowers as well as some flies. There are five seeds/flower and the seeds are born at the base of the torus. They are ejected ballistically, in response to drying of the capsule. Reports indicate that they may be ejected as far as 15 to 20 feet from the mother plant. Connected to the seed is a sticky thread that attaches the seed to the underside of leaves or to passing animals or people. The seeds attached to leaves wash down after rainfall if they are not removed by someone brushing against them.

Response to herbicides: Herbicides are generally effective in controlling *Geranium robertianum*. The Washington Park Arboretum at the University of Washington has used four preemergent herbicides on it (Deurinol, Ronstar, Treflan and Rout) and all worked well. They also have used glyphosate (without a surfactant) and it also killed herb Robert effectively. *Geranium robertianum* is a sprawling plant, growing into and over other plants. When using herbicides it may be difficult to control this species without damaging plants associated with it.

Response to mechanical methods: *Geranium robertianum* has little root structure and pulls from the ground easily at all stages of growth, although this disturbance may improve the seed bed (Tisch 1992). The brittle stems break easily, pull from the base of the plant to remove the whole plant and the root. It may also be controlled using a string trimmer in early to mid summer before fruiting.

Biocontrol potentials: Within its native range there is one aphid (*Acyrtosiphon malvae garanii*) that is mostly specific to *Geranium robertianum* and a number of other aphids and butterflies which are polyphagous and include it in their diet. (Dr. John Titus, Czechoslovakia, pers. comm). It is unlikely that biocontrol will be an option, however, because of the economic value of other ornamental geraniums.

## References:

\*Boerner, R.E.J. 1990. Role of mycorrhizal fungus origin in growth and nutrient uptake by *Geranium robertianum*. American Journal of Botany. 77(44): 483-489.

Bath, T. and J. Jones. 1994. The gardener's guide to growing hardy Geraniums. Portland, OR: Timber Press.

\*Falinska, K. and E. Piroznikow. 1983. Ecological structure of *Geranium robertianum* L. populations under natural conditions and in the garden in Poland. Polish Journal of Ecology. 31(1): 93-121.

\*Fries, M. 1997. What to do About *Geranium robertianum*? Douglasia. Vol 21 (4):22.

\*Hitchcock, C.L. and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press. Seattle and London. P. 280.

\*McAlpine, D. 1883. The Botanical Atlas. A guide to the Practical Study of Plants. SMITHMARK Publishers. NY. Pp 110 - 111.

Time Life Plant Encyclopedia - Internet search. *Geranium robertianum*.

\*Tisch, E. 1992. Alien weed threatens Olympic National Park. Voice of the Wild Olympics (Newsletter of the Olympic Park). 1(1): 6.

\*References available from the Washington State Noxious Weed Control Board Office in Kent.

Rationale for listing: *Geranium robertianum* poses a threat to forest understories and to plant biodiversity in forest of western Washington. It is capable of growing under full canopy closure in very dense populations (up to 250 plants/m<sup>2</sup>) and under more open canopies in populations of fewer, but more vigorous, plants. Where it occurs there appear to be fewer native herbaceous species. It is spreading in forested natural areas in western Washington from sea level to about 4000 feet at an alarming rate. Prevention of spread of this species into additional areas of western Washington, as well as parts of eastern Washington, is thus desirable.