

**WRITTEN FINDINGS OF THE  
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD  
(July 2008)**

**Scientific Name:** *Geranium lucidum* L.

**Synonyms:** *Geranium laevigatum* Royle

**Common Name:** shiny geranium, shiny crane's-bill, shining geranium, shiny-leaf geranium, shiny-leaf hawkbill

**Family:** Geraniaceae

**Legal Status:** Class A noxious weed

**Description and variation:**

Overall Habit: *G. lucidum* is a small, annual or biennial herbaceous plant with basal, lobed, shiny leaves and often times reddish stems with small magenta flowers.

Stems: Stem is typically ascending, often has a bright reddish tinge, and may reach a height of approximately 50 cm.

Leaves: Leaves are sub-orbicular to reniform and are between 10-40 mm wide. They are typically palmatipartite (divided into sections that extend over half-way toward the petiole), with each section further divided into three deep to shallow lobes, which are obtuse and end in broad points. Stipules are between 1.5 - 2.0 mm long, broadly lanceolate, and hairless. Petioles are pubescent on one side.

Flowers: Flowers are complete, hypogynous, and 5-merous. Five bright pink-to-magenta petals are spatulate and between 8-9 mm long. The five sepals are 5-7 mm long and ovate, each ending in a bristle-covered tip. The sepals are also 3-nerved, glabrous, and transversely rugose (wrinkled). The peduncles (flower stems) do not surpass the leaves and are pubescent on one side.

Fruits: The carpels are pubescent with tiny hairs and noticeably 5-ridged lengthwise. Each mericarp is longitudinally rugose-reticulate (wrinkly with a networked appearance) and along the sutures are glandular-uncinate (hooked at the tip). Beak is glabrous and between 7-8 mm in length. Seeds are 2 mm long, oval-shaped, glabrous, and reddish with a black projection.

**Habitat:** *Geranium lucidum* is found in well-shaded, mesic woodlands and in forest openings (ODA, 2008;



NPSO, Emerald Chapter, 2002). ODA (2008) notes that this species may be shade-limited by low light levels beneath second-growth conifer plantations. Co-occurring populations of *G. lucidum* and *G. robertianum* at Bayview park appeared to suggest that the *G. lucidum* dominated the forest clearings where sunlight was more readily available, while *G. robertianum* appeared to dominate the woodland understory. However, it was unclear whether there was any interaction between the two species. They might have been exploiting separate positions along a light gradient, may have been competing, or the *G. lucidum* colonization may have been too recent for any interaction to be occurring (T. Miller, A. Halpern, pers. obs.). This species has also been observed growing in full to partial sun.

### **Geographic distribution:**

Native Distribution: According to NPGS/GRIN (2008), *Geranium lucidum* is native to northern Africa (Portugal, Algeria, Libya, Morocco, Tunisia), temperate regions of Asia (Saudi Arabia, Cyprus, Iran, Iraq, Israel, Jordan, Lebanon, Syria, Turkey, Armenia, Azerbaijan, Georgia, Russian Federation, Turkmenistan) and tropical regions of Asia (India, Nepal, Pakistan), and Europe (Denmark, Finland, Ireland, Norway, Sweden, United Kingdom, Austria, Belgium, Czechoslovakia, Germany, Hungary, Switzerland, Russian Federation, Ukraine, Albania, Bulgaria, Greece, Italy, Romania, Yugoslavia, France, and Spain).

North American distribution: *Geranium lucidum* has been documented in California and Oregon. It was collected from two sites in California, both of which were in Alameda County. According to the Consortium of California Herbaria (2008), one population was sampled in wildlands adjacent to the UC-Berkley Campus in 1998, where it was described as “locally abundant in [a] solid patch “ and then in 2002 it was collected from the UC-Berkeley Botanical Gardens where it was described as “spreading like a weed” (Consortium of California Herbaria, 2008). In 2005, *G. lucidum* was listed as a potentially escaping garden plant in the 2005 Invasive Plant Alert by the Cal-IPC (2008). Hitchcock and Cronquist (1973) noted that this species had been recently documented in Yamhill County. About a quarter of a century later, *G. lucidum* has been described as “moving rapidly” in the Eugene area (NPSO, Emerald Chapter, 2002) and “exploding” at a site near Dillard (Newhouse, 2006). It is a problem on Mt. Pisgah at the Lane County Park’ Howard Buford Recreation Area (Friends of Buford Park and Mt. Pisgah, 200?). It is also prevalent in the Portland area (J. Walker, pers. com), including around Lake Oswego and the Camassia Preserve (E. Alverson, pers. comm.).



History and Distribution in Washington: The University of Washington Herbarium (2008) has three specimens of *Geranium lucidum* on record from Washington State. The first sampled was collected in 2005 in Clark County near the Skamania County line north of Route 14. In 2006, voucher specimens were submitted from the Padilla Bay National Estuarine Research Reserve in Skagit County and from the same location in Clark County. It was also detected in Bayview State Park, which is a short distance down the road from the Padilla Bay Reserve during a 2008 survey (J. Walker, pers. comm.). Given its presence along the road connecting the two sites, it is probable that it was introduced to one site and spread to the adjacent site. It also occurs in the WA Department of Natural Resource’s Natural Reserve Area at Washougal Oaks (S. Prince, pers. comm.) and has spread to about 8 acres there (J. Bush, pers. comm.). A recent survey of areas adjacent to the Washougal Oaks NRA revealed small scattered populations of *G. lucidum* growing along the railroad tracks running adjacent to Route 14 and there are likely small patches growing on nearby private properties (A. Halpern, pers. obs.).

### **Biology:**

**Growth and Development:** *Geranium lucidum* is typically an annual or biennial plant. Its phenology is such that it germinates in late summer to early fall, begins flowering in April-May, produces seed and begins to senesce in late June to early July (ODA, 2008).

**Reproduction:** *G. lucidum* is pollinated by insects (Plants for a Future, 2008) and reproduces by seed, with each dehiscent capsule producing five seeds that may be forcefully ejected when ripe. This ability to propel seeds seems to give this annual the ability to spread in an upward direction: into crevices of tree trunks or ascending up steep terrain (M. Widmer, pers. comm.) This annual species may produce up to five generations per year in Oregon (M. Widmer, pers. comm.) but this has not been verified.

### **Control:**

**Prevention:** Because seeds of *G. lucidum* may be carried via vehicle or footwear, ODA (2008) recommends such measures as cleaning stations for footwear at trailheads and the cleaning of equipment before moving to other locations.

**Response to Herbicides:** Non-selective glyphosate or broadleaf-specific such as triclopyr have been reportedly effective when applied prior to blooming, e.g., late March through April in Eugene, OR (C. LaBrecque, pers. comm.). Herbicide treatment is recommended for large infestations, with a follow-up plan (chemical or mechanical) to treat germinating seedlings, and native plants such as *Montia* spp. appear to emerge after *G. lucidum* has been chemically removed (C. LaBrecque, pers. comm.) Please refer to herbicide labels for site specific control information. For more information, please refer to the [PNW Weed Management Handbook](#)

**Response to Cultural Methods:** None known.

**Response to Mechanical Methods:** According to the California Invasive Plant Council (2008), attempts to control this species in Eugene, Oregon by hand-pulling only seemed to exacerbate the problem. An application of a heavy mulch layer may help to control it (M. Widmer, pers. comm.). LaBrecque (2008) also notes that seedlings may be hand-pulled, although it can be as effective and more cost-effective to use a propane flamer for large infestations.

**Biological Control Potential:** None known. Appears to be impervious to browsing deer and rabbits (Plants for a Future, 2008).

### **Economic Importance:**

**Detrimental:** Like the closely related species *Geranium robertianum*, *G. lucidum* is capable of forming dense mats in forest understories and appears to dominate areas so that native forbs and grasses cannot co-exist (Friends of Buford Park and Mt. Pisgah, 200?). Once established, it appears to spread very quickly. It appears to be capable of spreading into natural, undisturbed areas and may spread between parks.

**Beneficial:** *G. lucidum* has been used as an astringent and as a diuretic (Plants for a Future, 2008).

**Rationale for Listing:** *Geranium lucidum* has only recently begun to establish in Washington and in the Pacific Northwest it is being described as being the next *Geranium robertianum*, which is a Class B noxious weed that is rapidly colonizing western Washington. It appears to spread quickly once established and may be difficult to contain if management efforts are not implemented now, while its distribution in Washington is limited. Because there are few known infestations, with the largest covering approximately eight acres, *G. lucidum* is an excellent candidate for a Class A noxious weed, with the feasible goals of preventing further introductions and eradicating existing populations.

## References Cited:

California Invasive Plant Council. Invasive Plant Alerts. <http://www.cal-ipc.org/ip/management/alerts/index.php> [Accessed 4 January 2008]

Consortium of California Herbaria; Data provided by the participants of the Consortium of California Herbaria ([ucjeps.berkeley.edu/consortium/](http://ucjeps.berkeley.edu/consortium/)). [Accessed 12 July 2008]

2008 Flora of Pakistan. *Geranium lucidum*. [http://www.efloras.org/florataxon.aspx?flora\\_id=5&taxon\\_id=242422615](http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=242422615) [Accessed 3 January 2008]

200? Friends of Buford Park and Mt. Pisgah. 200? Invasive weeds at Mt. Pisgah. [http://www.bufordpark.org/WorstWeedsatHBRA\\_Flyer11-2.pdf](http://www.bufordpark.org/WorstWeedsatHBRA_Flyer11-2.pdf) [Accessed 4 January 2008]

NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, VA. Available at <http://www.natureserve.org/explorer/> [Accessed 4 January 2008]

Oregon Department of Agriculture. 2008. Oregon Department of Agriculture Pest Plant Documentation for Inclusion of Shiny-leaf Geranium, *Geranium lucidum* L., to the Weed Watch List. Draft version.

USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?424927> [Accessed 3 January 2008]

USDA, NRCS. 2005. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA. [Accessed 3 January 2008]