

**WRITTEN FINDINGS OF THE  
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD  
(November 1998)**

Scientific Name: *Impatiens glandulifera* Royle

Common Name: policeman's helmet

Family: Balsaminaceae

Legal Status: Class B (a) regions 1,3,4,6,7,8,9,10  
(b) region 2 except Whatcom County  
(c) region 5 except Pierce County

Description and Variation: *Impatiens glandulifera*, or policeman's helmet, is an herbaceous annual that is succulent and glabrous (smooth and hairless), and it can range from 3 feet to 10 feet tall. The upright, hollow stems are easily broken, and they have a purplish tinge. The leaf arrangement can be opposite or whorled, with (usually) three leaves to a node. The simple leaves range from oblong to ovate to elliptic (egg shaped), and they are about 6 inches long and half as wide. The leaf margins are sharply serrate with 20 teeth, or more, along each side. Each leaf has a stout petiole (stem), with small, glandular stalks found at the base of these petioles. Several solitary flowers terminate an elongated axillary stalk. The flowers are irregular, with 5 petals (2 fused), three sepals (2 fused) and 5 stamens with connate (fused) filaments. The overall flower shape resembles an English policeman's helmet. The fused sepals form a spur less than 6mm long. The flower color ranges from white to all shades of pink and purple. The fruit is a 5 chambered capsule. When touched, the mature capsule explodes and ejects 4-16 seeds for distances up to 21 feet. The plant can produce 800 seeds. The roots extend 4 to 6 inches deep, with adventitious roots found along the lower stem nodes, sometimes buttressing.

Economic Importance:

Detrimental: It is one of the "top 20" British aliens, because of abundance and distribution. It is considered extremely invasive to moist, natural areas. It is the tallest annual herb of British flora (Beerling and Perrins 1993).

Beneficial: Sold as a garden ornamental. A late season source of nectar and pollen.

Habitat: *Impatiens glandulifera* tolerates a wide variety of soil type, but requires high soil moisture. Frost sensitivity may be a limiting factor in distribution outside of its native land. In Himalaya, this species is frost tolerant, and it found at elevations up to 4,000 meters. (Beerling and Perrins 1993). Policeman's helmet is partially shade tolerant, and is found in lowland, riparian areas which include moist forests, stream sides and roadside thickets. Associated species in western Washington sites include: blackberries (*Rubus* spp), Japanese knotweed (*Polygonum cuspidatum*), elderberry (*Sambucus racemosa*), *Spirea douglassi* ssp *douglassi*, reed canarygrass (*Phalaris arundinacea*), willows (*Salix* spp.) and ivy (*Hedera helix*).

Geographic Distribution: Native to India, the western Himalaya. *I. glandulifera* is considered naturalized throughout the UK, most of mainland Britain, Ireland and several of the Isles. It is found in 18 European countries between latitudes of 30 and 64 N; French Pyrenees, Holland, Germany, the Austrian Alps, Poland, Hungary, Yugoslavia and parts of Russia. (Beerling and Perrins 1993). *I. glandulifera* is established in areas of western Washington and in the lower Fraser Valley of British Columbia (Pojar and MacKinnon 1994).

History: Seeds were sent from western Himalaya to Kew in 1839. Naturalized populations were reported in 1855, and continued to spread throughout moist, natural areas. By the 1900's *I. glandulifera* was widespread in Ireland and England. By 1970 establishments were common in Scotland and the British Isles were rapidly colonized. It is considered extremely invasive, one of the "top 20" British aliens, because of abundance and distribution. It is the tallest annual herb of British flora (Beerling and Perrins 1993). The name *impatiens* means 'impatient' - referring to the explosive seed dispersal (Pojar and MacKinnon 1994).

Growth and Development: An annual, *I. glandulifera* germinates in February to March. Roots develop 12 days after germination, photosynthesis begins in the leaves 4 weeks after germination. Flowers are present from June to October, with shaded environments producing later flowers. This annual species can reach 10 feet tall, in shaded areas. Seed set occurs about 13 weeks after flowering. When the seed capsules are mature, they split along the 5 seams of the fused stamens, ejecting seeds for up to 20 feet. The seeds travel along waterways, and they can germinate under water. Seeds are viable for 18 months, or more. *I. glandulifera* is susceptible to frost, both in the early seedling stage and at the mature plant stage. Pollinators include several species of bees, ten moth species and wasps (Mumford 1988; Beerling and Perrins 1993).

Reproduction: Reproduces by seed, up to 800 seeds per plant. *I. glandulifera* is self compatible. The seeds are ejected over 20 feet from the capsule. The seeds do require cold stratification to break dormancy (Mumford 1988).

Response to Herbicide: It does respond to herbicide, with early season control recommended to prevent flowering, and late season application to control late-season non-flowering plants. Flowering plants sprayed with herbicide still produce viable seed (Beerling and Perrins 1993). More information is needed on local herbicide control options.

Response to Cultural Methods: Sheep and cattle graze the whole plant, in Britain.

Response to Mechanical Methods: An annual with a shallow root system, this plant pulls up easily. A seed bank is present with 2 year viability - follow up control is recommended.

Biocontrol Potentials: None known

## References:

- \*Beerling, D. J. and J. M. Perrins. 1993. Biological Flora of the British Isles. *Impatiens glandulifera* Royle (*Impatiens roylei* Walp.). Journal of Ecology. Vol. 81 (2). Pp. 367-382.
- Beerling, D. J. and F. I. Woodward. 1994. Climate change and the British scene. Journal of Ecology. Vol. 82 (2).
- \*Cooke, S. S. 1997. A Field Guide to the Common Wetland Plants of Western Washington and Northwestern Oregon. Seattle Audubon Society and Washington Native Plant Society. P. 129.
- \*Hitchcock, C.L. and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press. Seattle and London. Pp. 289-90.
- \*Hitchcock, C.L., A. Cronquist, M. Ownbey and J. W. Thompson. 1961. Vascular Plants of the Pacific Northwest. University of Washington Press. Seattle and London. Part 3, pp. 414-416.
- Holden, A.N.G., S.V. Fowler and D. Schroeder. 1992. Invasive weeds of amenity land in the UK: biological control - the neglected alternative. Aspects of Applied Biology. (29).
- \* Mumford, P. M. 1988. Alleviation and induction of dormancy by temperature in *Impatiens glandulifera* Royle. The New Phytologist. Vol. 109 (1) pp. 107-110.
- \*Mumford, P. M. 1990. Dormancy break in seeds of *Impatiens glandulifera* Royle. The New Phytologist. Vol. 115 (1) pp. 171-115.
- \*Pojar, J. and A. MacKinnon. 1994. Plants of the Pacific Northwest Coast. Lone Pine Publishing. Redmond, WA, Vancouver B.C. and Edmonton, Alberta. Pp314.
- \* **References available from the Washington State Noxious Weed Control Board Office in Kent.**

## Rationale for Listing:

At this time, the distribution is still somewhat limited, and as a Class B noxious weed, *I. glandulifera* can be controlled and contained. Introduced and sold as an ornamental, this species has escaped, with distribution primarily in lowland riparian areas, which include moist forests, stream sides and roadside thickets. The literature finds this Asian ornamental an invasive species that colonized and naturalized much of England and moist, natural areas of Europe.

*I. glandulifera* is the tallest annual herb or British flora, where it is considered one of the “top 20” aliens because of abundance and distribution.