WRITTEN FINDINGS OF THE
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD
Proposed for listing 2003

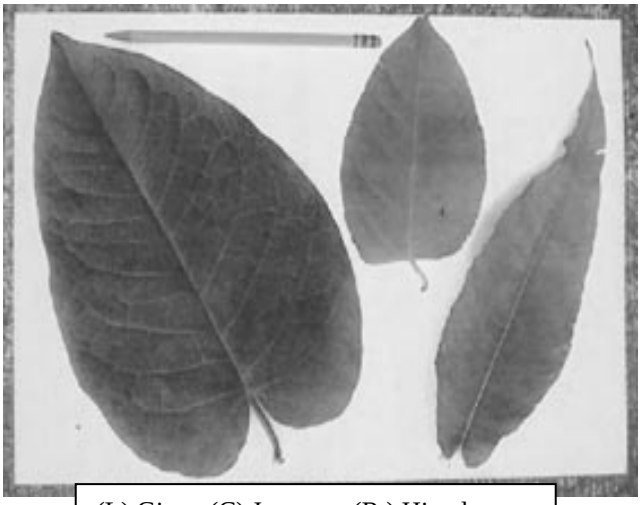
Scientific Name: *Polygonum polystachyum,* synonyms *Persicaria polystachya* (Wall. ex Meissn.) Gross, *Aconogonum polystachyum*

Common Name: Himalayan knotweed: bell-shaped knotweed

Family: Polyganaceae

Legal Status: Proposed as a Class B weed and designated for control in Kittitas County.

Description and Variation: Clumping perennial with large leaves, hollow stems, and long creeping rhizomes. Main stems erect, often arched near top, simple to minimally branched, grooved, thick, hollow, weakly woody, swollen at nodes, usually reddish-brown at maturity. Twigs often zigzag slightly from node to node. Leaves alternate, leathery, on stalks ~ 2-3 cm long. Tips acute to acuminate. Stems and leaves glabrous except where noted. Ocrea (specialized stipules) fused, membranous, sheathing stem above each node, usually fringed at the top. new growth stems usually pubescent. Leaves lanceolate, 10-20 cm long, often with short hairs on veins, margins, and lower surfaces. Bases slightly heart-shaped to tapered. Tips tapered, acute to acuminate. Ocrea persistent, long (> 6 mm), obliquely angled at the top, hairy near the base, usually not reddish. Rhizomes thick, extensive, storing large quantities of carbohydrates, and spreading aggressively. Fragments can produce new plants. Flowers bisexual, fragrant. Panicles terminal and on axillary branch tips, typically 20-35 cm long. Sepals white to pinkish, 5-7 mm long, outer 2 narrower than inner 3, not keeled or winged in flower or fruit. Inner 3 sepals persistent, enclose and disperse with achene. Achenes ovoid, 3-sided. Fruits have sepals 5-7 mm long. Sepals lack wings. Achenes are pale, ~ 5-7 mm long (Chancellor, 1973).



(L) Giant, (C) Japanese,(R) Himalayan

*Polygonum polystachyum(*Himalayan knotweed) is closely related to *Polygonum sachalinense*(giant knotweed) and to *P. cuspidatum* (Japanese knotweed), all are similar in appearance. The distinguishing characteristic between these species is the size and shape of the leaves. The Giant Knotweed leaves often exceed one foot long, and are 2/3 as wide - twice the size of Japanese knotweed (*P. cuspidatum*)(Hitchcock and Cronquist 1973). Himalayan knotweed's leaves are lanceolate, 10-20 cm. The tips tapered and elongated, the base is slightly heart-shaped to tapered. The physical characteristics of the leaf shape may be variable within the species.

Economic Importance:
Beneficial: These *Polygonums* were Introduced as garden ornamentals for their attractive bloom, large leaves and thick fence like stocks. All of these plants are easily propagated. These species are noted as herbal remedies for various ailments and as antioxidants.

Detrimental: Plants grow vigorously and create dense colonies that exclude native vegetation and greatly alter natural ecosystems. Established populations are extremely persistent and colonies are extremely difficult to eradicate. It poses a significant threat to riparian areas, where it can survive severe floods and is able to rapidly colonize scoured shores and islands.

Habitat: Distributed in disturbed moist sites, roadsides, riparian and wetland areas. Plants typically grow in open, sunny areas on moist soils in cool temperate climates. Growth occurs on a wide range of soil types. Himalayan knotweed tolerates some soil dryness and has been known to colonizes bare volcanic soils, including those high in sulfur (pH < 4), in its native range.

Geographic Distribution: Himalayan knotweed is thought to be distributed along the North and Central coastline from California to Canada.

Growth and Development: knotweed is a perennial species that flowers in late summer. The drooping clusters of white flowers die back after the first frost and leave tall bare red stalks in place all winter.

Reproduction: Members of this genus reproduce vegetatively from rhizomes and by seed. Each node on the plant stock is able to produce roots and new plants. New plants can sprout from fragments as small as 1 inch

Response to Herbicide: There is no specific information available on this particular species. It is thought that it will respond to chemical controls similarly to the other knotweeds. Japanese knotweed recommendations include:

Japanese knotweed has been controlled under certain conditions with Glyphosate (Ahrens 1975; Figueroa 1989). A foliar spray method for control of large populations. Apply a 2% solution of glyphosate or triclopyr and water to thoroughly wet all foliage. A 0.5% non-ionic surfactant is recommended in order to penetrate the leaf cuticle (Gritten, 1990). Picloram and Dicamba have also been effective on Japanese knotweed, but are persistent in the soil (Pridham and Bing, 1975). Control may vary depending on the size of the infestation. Applications are most effective in the fall when leaves are translocating to rhizomes (Lynn, et al, 1979). Repeated applications may be necessary.

A Cut stem treatment method should be used in areas where plants are established within or around other non-target plant species. Cut the stem about 2 inches above ground level. Immediately apply a 25% solution of glyphosate (e.g., Roundup, or use Rodeo if applying in or near wetland areas) or triclopyr (e.g., Garlon) and water to the cross-section of the stem.

A subsequent foliar application of glyphosate may be require to control new seedlings and resprouts.

Response to Cultural Methods: Carefully digging out small clumps when discovered can prevent new colonies from establishing. However, rhizomes and fragments left in the ground or nearby can regenerate and spread infestations. Repeated cutting of stems (4 or more times per season), especially in conjunction with shading by black plastic or heavy shade cloth, depletes rhizome energy reserves and can help control infestations (Baker, 1988).

Response to Mechanical Methods: Grubbing is effective for small populations. The entire root system must be removed, since resprouting can occur from rhizomes. The plant material should be removed, dried and burned if possible. New plants can sprout from fragments as small as 1 inch. Mowing or cutting plant shoots is ineffective alone. However, mowing followed by herbicide treatments will provide some control (Baker, 1988).

Biocontrol Potentials: There are currently no registered biological control agents for use on any of these Polygonum species. Grazing may be an effective strategy to prevent establishment. It has been observed that *Polygonum cuspidatum* will not establish where grazing pressure is high. However, heavy grazing may also select for other undesirable weedy species. Any grazing strategy should be carefully controlled to prevent damage in riparian areas.

Rationale for Listing: The knotweeds are escaped ornamentals that are becoming increasingly common along stream sides and rights-of-way in Washington. These species form dense stands that crowd out all other vegetation, degrading native plant and animal habitat. In addition, they can create a fire hazard in the dormant season. These perennial plants are difficult to control because they have extremely vigorous rhizomes that form a deep, dense mats. In addition, the plant can resprout from fragments; along streams, plant parts may fall into the water to create new infestations downstream.

References:

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