WRITTEN FINDINGS OF THE
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD
(1998, updated May 2008)

Scientific Name: *Centaurea macrocephala* Puschk. *ex* Willd.

Common Name: Bighead knapweed, Great golden knapweed

Family: Asteraceae (Compositae)

Legal Status: Class A

Description and Variation:
Bighead knapweed, *Centaurea macrocephala*, is a member of the thistle tribe (Cynareae) in the sunflower family. This perennial species is the tallest knapweed growing in the Pacific Northwest, ranging from 2 feet to 5 feet tall, depending on the habitat. The plant stems are upright and unbranched, terminating in a single flower head. The leaves are broadly lance shaped with toothed edges and pointed tips with a rough surface. Basal, or rosette, leaves are stalked, and they can reach 15 inches long and 3 inches wide. The leaves and leaf stalks are progressively smaller upward on the plant stem, with the top leaves being stalkless. The solitary flower heads are globe shaped, and 1 inch to 3 inches in diameter. The bracts beneath the flower head have thin, papery, fringed margins. The lower bracts show evidence of spines. The flowers are yellow. The seeds are medium brown and ridged, ¼ inch long with a ring of light-colored bristles or plumes. *C. macrocephala* has a taprooted woody crown.

Habitat:
In its native habitat, *C. macrocephala* is found in high elevation grassy fields and subalpine meadows. In our region, the established field location of is in a grassy meadow, in loam and silt loam soils with precipitation of 20 inches, or more at an elevation ranging from 2560' to 2680'.

Geographical Distribution:
Bighead knapweed is native to Armenia and Romania, Azerbaijan and Turkey. It is found in fields and grassy areas of the upper mountainous region of the Caucasus Mountains; in Romania it is found in pastures and glades; in Turkey it is found in subalpine meadows at elevations ranging from 6600 to 7590 feet. At this time, bighead knapweed is found in four states in the Pacific Northwest as well as in Michigan, Minnesota in the Midwest and NE Canada.

History: This species was introduced into Britain in 1805 and into North America on the east coast in 1812. There is a 1918 collection from the garden of Wilhelm Suksdorff near Bingen, Klickitat County, at an elevation of 1900 feet. Many sites appear to have been originally cultivated as an ornamental species. Weed specialist noted that bighead knapweed was found escaping from abandoned gardens in Whitman and Pend Oreille counties in the early 1980's (Roche 1991). An abandoned homestead in Pend Oreille County with *C. macrocephala* has grown from a few plants to over 10 acres. The site is actively controlled and regularly monitored. This species is now found in 12 counties in Washington State, up from only two field locations

in 1998. Weed specialist in Quesnel, British Columbia have also reported bighead knapweed infestations.

Biology:

Growth and Development:

C. macrocephala is a perennial with a large taproot. The rosette (usually) does not produce a flowering stalk the first year. Flowers are present from mid-July to August. The seeds are dislodged from the mature cup-shaped seed heads by wind or by direct contact. The large, heavy seeds are not wind dispersed. This species can overwinter as a mature plant, seedling or seed. Seed viability in the soil is not known.

Reproduction: Bighead knapweed spreads predominately by seed, with each flower capable of generating up to 200 seeds. This species can also be propagated by root division.

Control:

Response to Herbicide:

Picloram, and Clopyralid alone or with triclopyr have been noted as being successful control methods for Bighead knapweed.

Response to Cultural Methods:

Response to Mechanical Methods:

C. macrocephala is a taprooted perennial, and pulling as a control option is impractical for large plants. When the flowering stem is broken off, a new stem will grow from the woody crown, producing another flower head later in the season. Repeated mowing will reduce seed production, and will eventually diminish root reserves. Small plants can be eliminated by digging or hand pulling, making sure that the entire root is removed so that the plant does not return from the crown. Control should be administered before seed production. The site should be monitored until seed banks are depleted.

Biocontrol Potentials: None known.

Economic Importance:

Detrimental: *C. macrocephala* has escaped cultivation in several counties in Washington state. Populations are spreading as it is now established in one county in Oregon and Idaho and in 12 counties in Washington. It has also been found in Montana, British Columbia as well as in the Midwest and Northeastern Canada.

Beneficial: Bighead knapweed is sold as a garden ornamental and in seed packets on the internet, usually found under a variety of common names - including Lemon Fluff and Globe Centaury. This species can also found in dried flower arrangements.

Rationale for listing:

In Washington state, this species has escaped garden cultivation and has spread throughout the Pacific Northwest. Once established, this species is very difficult to control, and the threat exists to our natural areas, including subalpine meadows. This species is still offered for sale in

nurseries and in seed packets. *Centaurea macrocephala* is a Class A noxious weed in Washington, and eradication is still a practical control method at this time.

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**** References available*** *from the Washington State Noxious Weed Control Board Office in Olympia*