WRITTEN FINDINGS OF THE
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD
(May 1995)

Scientific Name: *Centaurea diffusa* Lam.

Common Name: Diffuse knapweed

Family: Compositae (Asteraceae)

Legal Status: Class B:

(a) regions 1, 2, 5, 8

(b) Grant County lying in Townships 13-16 N, Ranges 25-27 E; Townships 17-18 N, Ranges 25-30 E; Townships 19-20 N, Ranges 29-30 E; T21N, R23E, Sections 1-30; T21N, R26E, sections 5, 6, 7, 8, 17, 18; E 1/2 of Township 21N, Range 27E; T21N, Ranges 28-30E; those portions of Townships 22-28N. Ranges 28-30 E; those portions of Township 22-28N, Ranges 23-30 E lying in Grant County; all W.M.

(c) Adams County except those areas within T15N, R36E, Section 36; T15N, R37E, Sections 22, 26, 27, 28, 31, 32, 33, 34; T15N, R37E, western 1/2 of Sections 23, 24, 25; T15N, R38E, Sections 2, 10, 11, 14, 15, 19, 20; T16N, R38E, Sections 34-35; T17N, R37E, Sections 5-6.

(d) Franklin County of regions 9 and 10.

Description and Variation: Diffuse knapweed is an 8 to 40 inch tall, biennial or short-lived perennial, with a long tap root. The single, upright stem produces several spreading branches. Basal leaves are short-stalked and divided into lobes on both sides of the center vein. The stem leaves are stalkless, becoming smaller and less divided near the top of the stem. The flowers, which are generally white (sometimes pink or lavender), occur in urn-shaped heads that grow in clusters at the ends of the branches. The bracts of the flower heads are leathery, with obvious veins. The lower and middle bracts are yellowish-green with a buff or brown margin; they are edged with a fringe of spines plus a longer, spreading spine at the tip.

Economic Importance: Diffuse knapweed is a very aggressive species that can infest large areas quickly. The species has little value as forage for cattle and limited seasonal value for big game. Knapweed infestations increase production costs for ranchers, impair the quality of wildlife habitat, decrease plant diversity, increase soil erosion rates, decrease the visual quality and appeal of recreational lands, and pose wildfire hazards.

Geographical Distribution: A native of southern Europe and the northcentral Ukraine, diffuse knapweed now occurs in eastern Washington, parts of western Washington, British Columbia,

Oregon, Idaho, and Montana. Herbarium records indicate that diffuse knapweed has been collected in numerous counties in Washington, including: Chelan, Ferry, Grant, Kittitas, Klickitat, Okanogan, Pend Oreille, Stevens, Walla Walla, Whatcom, Whitman, and Yakima.

Habitat: In Eurasia, diffuse knapweed has been reported from a variety of habitats, ranging from stony slopes and sands near the ocean to arid, noncultivated regions, cropland, roadsides and sandy or gravely ground (including scree and shale). Diffuse knapweed has been found in a wide range of habitats in Washington, as well, including sandy river shores, gravel banks, cracks in rock on cliffs and outcrops, rangelands, pastures and hayfields on sandy loams, loams and silt loams. Diffuse knapweed appears to grow best on well-drained, light textured soils. It is not tolerant of flooding or shade. While it is not tolerant of cultivation with annual crops, diffuse knapweed thrives in gravel pits, roadsides, railroad tracks, vacant lots, airports, trails and heavily grazed pasture.

History: Present information indicates that diffuse knapweed may have been introduced as a contaminant of alfalfa from the Caspian Sea region of Turkestan; other sources cite alfalfa seed from Asia Minor-Turkmenistan or hybrid alfalfa seed from Germany. The species was first reported from Washington in 1907 (near Bingen). It appears to have spread along roadsides and irrigation ditches in the Northwest, and, by 1937, it was becoming common in Okanogan County.

Growth and Development: Diffuse knapweed is a biennial or short-lived perennial plant. It establishes a rosette, and it commonly bolts the second year. However, when stressed by drought, grazing or mowing, it may show short-term perennial characteristics.

Reproduction: While plants may regenerate from the crown, diffuse knapweed reproduces primarily by seed. A single flower stalk can produce 1200 seeds. The seeds are dispersed as the plant broken off at the base behaves as a tumbleweed. These tumbleweeds are transported by vehicles. The seeds are moved in shoelaces, by feeding rodents, and in contaminated hay and crop seed.

Hybrids: Several

Population Dynamics: See *Knapweed Newsletters*

Response to Herbicides: 2,4-D and Roundup - seasonal control. Banvel and Tordon - longer control, perhaps for two or more seasons varying with soil type and precipitation patterns.

Response to Cultural Methods: Cultivation will eliminate it. Grazing or mowing delays flowering and may, in the process, increase the number of stems, thereby increasing seed production.

Biocontrol Potential: Five biocontrol agents have been established on diffuse knapweed in Washington. Two seed head weevils, *Bangasternus fausti* and *Larinus minutus,* do not occur in collectable numbers at present. *Urophora affinis (*seed head fly), *Urophora quadrifasciata* (seed head fly), and *Sphenoptera jugoslavica* (root boring/gall beetle) are available for mass collections.

References:

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*Roche', B. and C.J. Talbott. 1984. Eastern Washington Range Plants. Extension Bulletin 1302. Washington State University, Pullman.

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