ALBERTA invasive species COUNCIL
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Diffuse Knapweed

Centaurea diffusa

Provincial Designation: Prohibited Noxious

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Overview:

Diffuse knapweed is a biennial to short-lived perennial that reproduces by seed. This tap-rooted member of the Aster family is native to south-eastern Europe. It is thought to be introduced in the late 1800s via contaminated crop seed. Seeds germinate in the fall or spring and develop low lying rosettes in the first year of growth. It is a highly competitive plant that establishes quickly on disturbed sites and can also invade undisturbed plant communities. A single plant can produce 18,000 seeds.

Diffuse knapweed is an extremely tough plant that can tolerate drought, trampling, and very rocky soils. Its roots exude a chemical that inhibits the root growth of other plants.

Knapweeds have become well known because of their almost wholesale degradation of large tracts of rangeland in the northwestern US and parts of southern BC. In winter, plant skeletons break off and tumble in the wind, spreading seed.

Diffuse knapweed can sometimes be confused with spotted knapweed, which sometimes has white-pink flowers, but Diffuse plants are shorter, stiffer, prickly and more of a grey-green.

Habitat:

Diffuse knapweed thrives in semi-arid and arid environments with light, porous soils such as gravelly loam, and loamy sands. It is not tolerant of moist soils, flooding or shade.

Identification:

Stems: Single, erect stems with numerous branches, covered with short, stiff, white hairs. Plants grow up to 1 m tall and have a ball like appearance.

Leaves: Rosette and lower leaves are 5-20 cm long, rough, hairy, grayish green and highly divided. Upper leaves are stalk-less and become smaller towards the flowers.

Flowers: Urn-shaped, creamy white, occasionally pinkish purple and borne solitary or 2-3 at ends of branches. The bracts are yellowish-green and edged with small, rigid, sharp spines.

Seeds: The seeds are light brown to black and about 3 mm long.

Prevention:

Maintain healthy pastures and rangeland as Diffuse knapweed establishes & spreads quickly in disturbed/degraded plant communities. Knapweed contaminated hay or plant skeletons caught in vehicle undercarriages often contribute to spread.

Knapweed seeds have an extremely hard seed coat and can be viable for at least 5-10 years. Therefore knapweed control sites will need to be re-visited for many years. Control is extremely difficult on established infestations.

Control:

Grazing: Rarely grazed because of its spiny nature and extremely bitter taste. Invasive plants should never be considered as forage.

Cultivation: Diffuse knapweed is not a problem in frequently cultivated or irrigated

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Diffuse Knapweed (Continued)

areas.

Burning: Cured infestations can be burned but the degree of control achieved from burning has been conflicting.

Mechanical: Mowing prevents seed production but the remaining root will re-sprout. Digging before flowering can be effective on small infestations but will require several years' effort to eradicate and should be accompanied by sowing desirable plants. Remove as much of the root system as possible to prevent re-sprouting. All plant material should be incinerated or bagged and sent to a waste facility. Diffuse knapweed is very abrasive and bare skin contact can cause irritation, so wear gloves and a long-sleeved shirt.

Chemical: Clopyralid, Dicamba, and Aminopyralid are registered for use on diffuse knapweed. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pest Management Regulatory Agency. Always read and follow label directions. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: Ten biological control agents have been imported to North America; 3 moths, 3 flies, 2 weevils, 1 beetle, and 1 rust. Most are seed-feeders and one is a root-miner. Many of these have become very widespread throughout the northwestern US and southern BC. These agents have caused dramatic reductions in plant size and therefore seed production.

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