OSU Oregon State University Extension Service

Invasive Weeds in Forest Land

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Canada Thistle *Cirsium arvense*

Despite its common name, Canada thistle is not native to Canada; rather, it is from the temperate regions of Eurasia. It is an aggressive, creeping perennial that reproduces from seed and from vegetative buds in its root system. It is difficult to control because its root system is extensive. Horizontal roots may extend 15 feet or more, and vertical roots may grow 6 to 15 feet deep.

Combining control methods is the best form of Canada thistle management. Persistence is imperative so that the weed is continually stressed, forcing it to exhaust nutrient reserves in its roots and eventually die. Infestations start on disturbed ground including roadsides and logged areas. One plant can colonize an area 3 to 6 feet in diameter in 1 or 2 years.

Figure 1.—Mature Canada thistle. Photo: Berry, R.E. and L.B. Coop, IPPC, Oregon State University

Description

Canada thistle is an herbaceous perennial with erect stems 1.5 to 4 feet tall and prickly leaves (Figure 1). Stems are branched, often slightly hairy, and ridged. Leaves are lance-shape and irregularly lobed with spiny, toothed margins; they are borne singly and alternately along the stem. Rose-purple or lavender flower heads appear from June through October in rounded, umbrella-shape clusters (Figure 2). The plants are male or female (that is, dioecious). About 1,000 to 1,500 bristly-plume seeds (achenes) are produced per stem and easily dispersed by wind. Seeds may remain viable in the soil for 20 years. The thistle emerges from its root system in mid- to late spring and forms rosettes (Figure 3). The greatest flush of root-derived plants is in the spring, with another flush in autumn. Seed-derived plants grow slowly and are sensitive to competition, particularly if shaded. Seedlings develop a perennial habit about 2 months after germination.

Management options

Chemical and mechanical methods are available for managing Canada thistle. For this reason, it's best to use an integrated weed management plan, including tactics to prevent the spread of Canada thistle outside infested areas (Figure 4, next page).

Biological control

Cirsium arvense has few or no effective natural enemies in its native Eurasia. At least seven insect species have been intentionally or unintentionally released for Canada thistle control, but they do little damage because their densities are low or because they consume little plant material. Many microorganisms are associated with Canada thistle, but no potential biocontrol agents are known.

Figure 2 (top).—Canada thistle flowers. Figure 3 (lower).—Canada thistle rosette. Photos: Berry, R.E. and L.B. Coop, IPPC, Oregon State University.

Chemical control

Note: Before you apply herbicide on forest land, you must file a "notification of operations" with the Oregon Department of Forestry at least 15 days in advance.

The following information about herbicides is only a brief summary; consult your local Extension agent or Oregon Department of Agriculture representative for specific recommendations for your

situation. Read and follow the herbicide label carefully. Before spraying over or around seedlings, ensure the chemicals pose no hazard.

Applying a directed spray of glyphosate or clopyralid at the flower bud stage, before flowering, or in the fall before the first frost will control Canada thistle. Glyphosate is nonselective (that is, it will kill or injure any plant tissue it contacts); clopyralid is relatively selective, having little effect on grasses. Clopyralid provides the best and most consistent control.

Metsulfuron and aminopyralid or triclopyr products are also effective. Because the thistle's root system is extensive and its seed stays viable a long time, you may need to be repeat herbicide applications for several years.

For details on chemical control, refer to the current edition of the *PNW Weed Management Handbook* and to *Herbicide-resistant Weeds and Their Management*, PNW 437. Both are available from OSU Extension http://extension.oregonstate.edu/catalog/

Mechanical control

Canada thistle can be controlled by hand cutting or mowing before the plant sets seed. However, because of its extensive root system, hand cutting and mowing must be repeated at 3- to 4-week intervals until starch reserves in the roots are exhausted.

Use pesticides safely!

- Wear protective clothing and safety devices as recommended on the label. Bathe or shower after each use.
- Read the pesticide label—even if you've used the pesticide before. Follow closely the instructions on the label (and any other directions you have).
- Be cautious when you apply pesticides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.

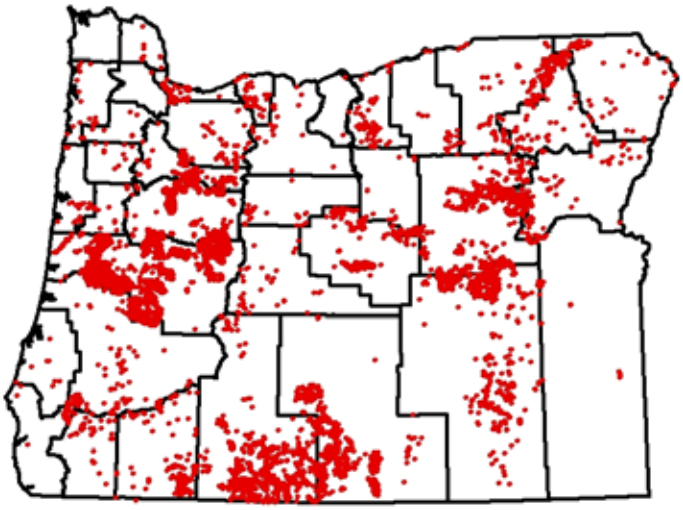

Figure 4.—Canada thistle distribution in Oregon. Map: Weedmapper.

Grazing

Goats and sheep may eat very young plants in the spring, but grazing is the least effective control method for Canada thistle.

For more information

California Department of Food and Agriculture. Encycloweedia. http://www.cdfa.ca.gov/phpps/ipc/weedinfo/

Plant Conservation Alliance, Alien Plant Working Group. http://www.nps.gov/plants/alien/fact/ciar1.htm

Colorado State University Extension Service. http://www.ext.colostate.edu/Pubs/natres/03108.html