

BULL THISTLE: Options for control

Bull Thistle, a class-C noxious weed in Lincoln County, Washington (*Cirsium vulgare*) belongs to the Asteraceae family. Also known as Common thistle, Spear thistle, Roadside thistle and Plumed thistle, derives from Eurasia.

Native to Europe, western Asia, and North Africa, bull thistle is now naturalized and widespread throughout the United States (including Hawaii and southeast Alaska) and southern Canada and on every other continent except Antarctica. It probably was introduced to eastern North America during colonial times as a contaminant in seed and/or ballast and scattered to locations in western North America in the late 1800s or early 1900s.

Bull thistle reproduces only by seed, and individual plants set seed only once before dying. Large individuals may produce tens of thousands of wind-dispersed seeds. Seeds usually germinate in the spring and fall and have a 95% germination rate. The seeds

are short-lived and most on or near the soil surface do not remain viable for more than a year. Seeds buried at a depth of five inches may remain viable for up to three years. Tilling, grazing or other soil disturbance may cause these seeds to germinate. Seeds ripen and are released from early July through October, occasionally later along the coast. Studies indicate that most seeds fall within three feet of the parent plant, but up to 10 percent may travel distances of more than ninety feet, even on days with little wind.

Flowering may occur from early June until the first snowfall or hard frost. A single flower head can produce from 40 to over 250 seeds, and individual plants may have anywhere from one to 475 flower heads or more. Bull thistle requires moist soil and prefers full sun, it cannot tolerate shade. While primarily found in rural pastures and fields, it can also be found in vacant city lots. It is commonly found in over-grazed pastures and disturbed areas.



Most plants remain in the rosette stage for the first year.



Leaves are green and rough with coarse hairs above and finer hairs on the underside.



Leaf blades extend down petiole and along stem, forming long, prickly wings.

Key identifying traits

- **Leaves** are long, sharp and deeply lobed.
- Is the **only** thistle that has **spines** on the **surface** of the leaf.
- **Leaf** underside has cottony hairs.
- The **base** of the **leaves** attach to the **stem** like protruding spines.
- **Stems** are prickly and winged.
- **Flower heads** are purple and 1.5 to 2 inches in diameter.
- **Bristles** on the pappus are feathery.

Biology and ecology

- Bull thistle is a **biennial**.
- **Flowers** are bisexual.
- Bull thistle **reproduces by seed only**.
- Individual plants **die after setting seed**.
- Mature plants can grow up to **7 ft.** tall and produce **4,000 seeds** per plant.
- Prefers full sun, **cannot tolerate** shade.
- Requires **moist soil**, and is most vigorous on heavier soils and soils with a high nitrogen content.
- Will **not** survive in cultivated fields.
- Bull thistle is **unpalatable** to wildlife and livestock.



Leaves on stems of bolted plants alternate, up to 1 ft. long, are lanceolate and deeply lobed.



Bull thistle plants may have 1 to 450 flower heads.



The flower head bases are covered in spine-tipped bracts.

CONTROL MEASURES:

For this and other publications, see our website at: www.co.lincoln.wa.us/weedboard

Prevention:

- Beware of fill dirt, hay and seed from outside your area. **Early detection** is vital to prevent invasion.

Biological:

- The Bull thistle seed head gall fly *Urophora stylata* lays eggs on closed flower buds June and July. Many larvae are needed to completely prevent seed production. There is limited distribution in Washington state.
- Goats will eat seedlings, rosettes, and flower heads.

Cultural:

Healthy competitive vegetation helps lessen chance of invasion, but doesn't preclude it.

Mechanical:

- Small infestations can be effectively hand-pulled or dug up.

- Mowing is effective in preventing seeding out.
- Individual bull thistle plants can be physically removed by cutting below the crown in early spring prior to bolting and flowering to prevent seed development and distribution.

Chemical:

- Thistles that are actively growing and in the rosette to flower stage of growth can be controlled with a post emergent herbicide application.
- Selective herbicides that are effective on bull thistle include 2,4-D, dicamba (Vanquish or Banvel), a combination of the two (Weedmaster) or aminopyralid (Milestone).
- **Always** use a **surfactant** due to the hairy leaf surface.
- **Read the label** instructions before applying.



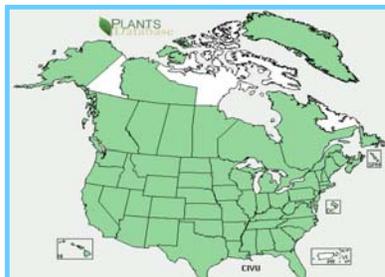
Bull thistle reproduces entirely by seed, so a successful management program must focus on preventing seed production.



Prevent seeds from spreading to other un-infested areas by washing vehicles, equipment, boots and animals that have been in infested areas.

Manage grazing areas to promote grass and clover vigor. Graze uniformly and move animals from area to area in a planned sequence.

Bull thistle does not compete well in areas with thick, tall grasses and forbs. Preserving disturbances or overuse are good preventive measures



Photos and references courtesy of: Photos: Rich Old, XID Services; Steve Dewey; Britt Slattery, U.S. Fish and Wildlife Services; Forest & Kim Starr, U.S. Geological Survey; Steve Baskauf; Wikipedia; NWCB written findings; University of California; Minnesota DNR; bcadventure.com.

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