

Invasive Plants in Pennsylvania

Musk Thistle

Carduus nutans L.



Photo: Ricky Layson, www.invasive.org

Background:

Also known as nodding thistle, this plant is native to western Europe and Asia. It was accidentally introduced into the United States in the early 1900s. It was first discovered in Tennessee in 1942 and has been declared a noxious weed in many states.

Habitat:

Musk thistle will invade a variety of disturbed areas and grow in neutral to acidic soils. Pastures and meadows are at particular risk because livestock will not eat it. It does not grow well in excessively wet, dry or shady conditions.

Description:

Musk thistle is an herbaceous, biennial plant that grows one to six feet tall. It has showy, red-purple flowers that appear from June to September. Flowers are one to three inches in length and tend to droop once mature. Leaves and multi-branching stems are very spiny. Leaves are dark green, coarsely lobed and have a smooth, waxy surface.



Photo: Loke Tok, Virginia Polytech, www.invasive.org

Range:

Musk thistle is found throughout the continental U.S. except for some New England states and Florida.

Biology and Spread:

Each plant may produce up to 120,000 straw-colored seeds each year. These seeds may remain viable in the soil for over ten years, making control difficult. Seedlings emerge in mid to late July and develop into a rosette of leaves. The second year, the multi-branching stems emerge and flowers bloom.



Photo: Norman Rees, USDA, www.invasive.org

Ecological Threat:

Once this plant is established it can spread rapidly due to high seed production and lack of animals that will feed on it.

How to Control this Species:

Manual and Mechanical

Hand pulling is most effective on small populations and can be done throughout the year, but is most effective prior to flowering. Flowers and seeds should be bagged and disposed of in a landfill to minimize seed dispersal. Minimizing soil disturbance will help limit the chance of plant germination from the seed bank.

Chemical

Foliar application of a systemic herbicide like glyphosate or triclopyr is effective at controlling musk thistle. Apply a two percent solution of herbicide mixed with water and a 0.5 percent non-ionic surfactant to the leaves. Treatment should be done during the rosette stage or prior to flowering. Be sure to follow all label instructions and state herbicide regulations.

Look-A-Likes:

Native species of thistle (*Cirsium* sp.), some of which are rare, could be confused with musk thistle. Before control is attempted, the thistle species in question should be accurately identified.



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Native Alternatives

Musk thistle is not a popular ornamental and is not usually planted intentionally in the landscape. However, after its removal you can replace it with a variety of attractive native plants like butterfly weed (*Asclepias tuberosa*), Joe-pye weed (*Eupatorium dubium*), ironweed (*Vernonia noveboracensis*) and black-eyed Susan (*Rudbeckia fulgida*).



Photo: Jessica Sprajcar, DCNR

References:

Plant Conservation Alliance's Least Wanted List:

<http://www.nps.gov/plants/alien/fact/canu1.htm>

Invasive Species and Ecosystem Health Network:

<http://www.invasive.org>

For More Information:

Plant Invaders of Mid-Atlantic Natural Areas, National Park Service:

<http://www.nps.gov/plants/alien/pubs/midatlantic/midatlantic.pdf>

Invasive Plants Field and Reference Guide, U.S. Forest Service:

http://na.fs.fed.us/pubs/misc/ip/ip_field_guide.pdf

DCNR Invasive Species Site: <http://www.dcnr.state.pa.us/conservationscience/invasivespecies/index.htm>