

# FEATURED WEED: DIFFERENTIATING NATIVE FROM EXOTIC THISTLES

Fifteen thistle species grow in Montana, of which five are exotic and considered weedy or invasive.

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We have all probably heard the expression, “The only good thistle is a dead thistle.” This is likely because the most visible and abundant thistle species are those such as Canada thistle (*Cirsium arvense*) and bull thistle (*Cirsium vulgare*) which are considered invasive and often included on state and county noxious weed lists. Some thistle species in Montana can be problematic, but most Montanans do not realize that we also have beneficial native thistles. These thistles are native to Montana and better off alive than dead due to their beautiful flowers and foliage and resources they provide for wildlife (Figure 1A). Plus, why spend precious time and money controlling native thistles while there are plenty of exotic, invasive weeds out there to control?

This article will discuss why it is important to differentiate between native and exotic thistles and give a few tips to help tell the difference.

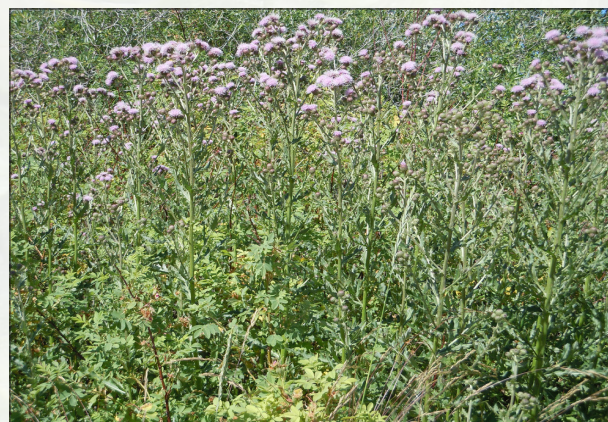
Identifying exotic thistles and differentiating them from natives before attempting to control them with herbicides or by other means is critical. Invasive exotic thistles can spread quickly and form dense stands with disturbance (Figure 2). They also have poor forage value and their sharp spines can limit recreational activities and injure livestock and pets. Compared to exotic thistles, native thistles do not spread quickly when a source of disturbance is introduced, are rarely or never reported as invasive, and are important for wildlife. For example, birds eat thistle seed, and some birds may time their nesting around thistle flowering, using plumes on thistle seeds to line their nests. Bees, wasps, flies and beetles feed on thistle pollen and become food sources for other wildlife. For some large ungulates such as elk, native thistles are a source of forage.



**FIGURE 1. A) Meadow thistle (*Cirsium scariosum*) is a beautiful native thistle that inhabits mountain meadows at low to high elevations. B) They often inhabit less disturbed areas and tend to form less dense stands than exotic thistles.**



**FIGURE 2. Canada thistle (*Cirsium arvense*) is a noxious weed that can form dense stands in disturbed habitats.**



PHOTOS BY MATT LAVIN, MSU



From a weed management perspective, differentiating among exotic thistles is important because a perennial (i.e., a plant that lives more than two years) thistle with rhizomes (i.e., horizontal underground stems) will require different control measures than annual (i.e., lives only one year) or biennial (i.e., a plant that lives only two years, producing leaves the first year and seeds/flowers the second) species that have taproots. For example, species with taproots, such as bull thistle, may only live for a year or two, and simply cutting them with a hoe below the soil surface may kill them. In contrast, a patch of rhizomatous, perennial Canada thistle will require a long-term management plan to target its extensive root system.

Here are some key features used to identify thistles and a few tips to help determine a native or exotic thistle:

- Bracts on flowering head. Bracts are tiny, leaf-like structures that form a cup around the base of flowers (Figure 3). They are an important diagnostic feature of thistles. We often refer to the size of individual bracts, height or width of bracts collectively, or structures that appear on bracts such as spines.
- Structures along the stem. Some exotic thistles have spiny wings (Figure 4) that extend along the entire length of the stem. Native thistles may have short sections of the stem that appear winged, but wings will not extend along the entire length.
- Root system and growth habit. Canada thistle is an exotic rhizomatous thistle that is on the Montana noxious weed list. Rhizomatous species spread by underground shoots

that develop some distance from the mother plant. No native thistles are rhizomatous, and they will generally not be found in extensive dense patches.

- Habitat characteristics. In general, native thistles grow in less disturbed areas than exotics do (Figure 1B). However, some native thistles can also colonize disturbed areas like roadsides. Habitat alone is not a satisfactory way to tell native from exotic thistles, but it can be a clue.

A new publication from Montana State University Extension is designed to help identify invasive exotic thistles and verify whether a thistle is native or exotic, thus helping to determine if control strategies are necessary. The publication, *Guide to exotic thistles of Montana and how to differentiate from native thistles* (EB0221), includes a tutorial of how to use a simple dichotomous key and a brief description of the important anatomical features and terms that are needed to successfully identify the thistle. Photos of all 15 thistles found in Montana and brief descriptions of habitat are included.

Printed copies of the thistle publication are free and can be ordered from Montana State University Extension Publications at (406) 994-3273, or at <http://store.msuextension.org/>. Additionally, an electronic version can be downloaded from the Extension store at <http://store.msuextension.org/> (search for EB0221).

If you have a question about thistle identification or need help with identification of any plant, contact your MSU county or reservation Extension agent or the Schutter Diagnostic Lab ([www.diagnostics.montana.edu](http://www.diagnostics.montana.edu)) for assistance. ■

**FIGURE 3. Musk thistle (*Carduus nutans*) has broad, triangular bracts that are wide at the base and bend backward.**



**FIGURE 4. Some exotic thistles like this scotch thistle (*Onopordum acanthium*) may have wings along the entire length of the stem.**

