Thistle Defense

Despite their reputation, thistles are much more complex – and important – than people realize

Text and photos by Chris Helzer

There's no way to sugar coat it: Thistles have a bad reputation. Most landowners cringe at the very mention of the word, because it stirs up memories of long, hot days chopping thistles or the smell of 2, 4-D. But thistles are a much more complex – and important – group of plants than most people realize.

There are actually 10 species of thistles in the state, not counting other plants with "thistle" in their name, such as sow-thistle, star-thistle and Russian thistle. Of those 10, five are native to the state and rarely cause problems for landowners. Of the five species not native to Nebraska, three – musk thistle, Canada thistle and plumeless thistle – are noxious weeds that landowners are required by law to control. The other two non-native species are bull thistle and scotch thistle, each of which can be problematic in some situations and/or regions of the state.

Because not all thistles are nuisance species, it's important to know how to separate the good from the bad. The easiest way to tell native thistles from non-native thistles is to look at the underside of the leaf – in Nebraska, all of our native thistles have dense, pale-colored hairs on the bottom side of the leaf, making them look white or silver. The only non-native thistle that occasionally has pale undersides on its leaves is Canada thistle, and it has other characteristics that separates it from other thistles. For example, Canada thistles are perennials that spread by underground rhizomes, so they are almost always in thick patches, and they also tend to grow in low or moist soil, particularly in western Nebraska. Finally, Canada thistles have much smaller and more abundant flowers than other thistles in the state, with the green part of the flower (beneath the pink) usually measuring ½-inch or less in diameter. In general, if you see a thistle with bright white undersides to the leaves, it's a native thistle and it's not necessary to kill it.

When dealing with non-native thistles, it's important to understand their life histories and growth strategies. With the exception of Canada thistle, all of the non-native thistles are biennials that you can basically treat like big, spiny dandelions. Like dandelions, they usually produce a rosette in the fall and then bloom and die the next spring/summer. Because they have to start over from seed each year, dandelions and biennial thistles require open space and little competition from neighboring plants – that's why you see dandelions most frequently in portions of your lawn that are dry, recently disturbed or in other situations where the grass is weak. And that's why biennial thistles are usually most abundant in overgrazed areas of pastures or around windmills, as well as steep creek banks or other places where bare soil is exposed.

When thinking about the control of biennial non-native

Left: Native Flodman's thistle, showing white undersides of leaves.

Opposite: Native tall thistle, also showing the bright white underside of the leaf.

The native Platte thistle is becoming increasingly rare.

thistles, the best long-term option is to increase the competitiveness of other plants around them. Chopping or spraying biennial thistles can remove the current year's crop, but they will re-occur in the same place the next year unless you can change the conditions of the site to make them less successful competitors. Musk thistles and other biennials usually don't stand up well against a good stand of native prairie plants, so encouraging a healthy stand of grasses and wildflowers is the best way to get rid of musk thistles. Broadcast herbicide application can often be counterproductive if it's done in a way that removes other nearby broadleaf plants that could have helped compete against the thistles. Spot-spraying or chopping problem plants and altering grazing or other management of the site is usually the best long-term strategy. Canada thistles can be more aggressive than the other non-native thistles, especially in the western half of the state, and although their large patches can sometimes necessitate broadcast herbicide spraying, the more selective you can be with your control methods, the easier it will be for the area to recover and for other, more beneficial species to move in and compete with the thistles.

While non-native thistles can cause real problems for landowners, native thistles, like all other native plants, play important roles in the functioning of native ecosystems. All thistles (including the non-native ones) are important sources of nectar and pollen for a wide variety of insects. They also provide large seeds that are good food sources for a number of birds and other wildlife species. In particular, goldfinches use thistles for both nesting

Tall thistle was included in the seed mix for this prairie restoration and is a welcome part of the native flora at The Nature Conservancy's Platte River Prairies near Wood River.

PHOTO BY ERIC FOWLER

One of many wildlife species that feed on thistle seeds, American goldfinches delay their nesting period to ensure the availability of seeds for their young.

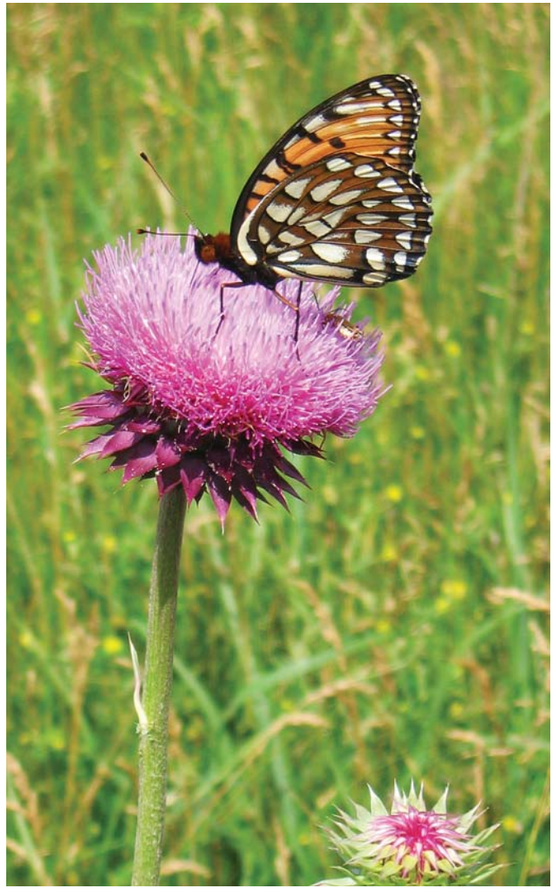
materials and food. In fact, goldfinches time their nesting season so that their nestlings hatch about the time that thistle seeds are ripe, and then feed regurgitated thistle seeds to their young.

Three of the state's native species – wavy-leaf, Flodman's and Platte thistle – are perennials. Because of that, they tend to spread across the landscape much more slowly and are less tied to bare ground and severely disturbed sites. However, they do respond well under very intense grazing, because their spines make them unattractive to cattle. Like any other wildflower, if the surrounding competition is removed and they are allowed to reproduce, they will become more abundant over time. For this reason, they are often listed as pasture weeds, along with other non-palatable native wildflowers such as verbenas and ironweeds. If any of these species become too abundant in a pasture, however, altering the grazing system to allow more recovery time for grasses between grazing bouts is an effective strategy to reduce their numbers.

Like musk thistle, the remaining two native thistle species – tall thistle and yellow-spine thistle – are biennials and favor disturbed areas where surrounding vegetation is weakened. However, they tend to be less aggressive than non-native species. Like dandelions, their population numbers can increase or decrease quickly, depending upon conditions, but while some consider them unsightly, they do provide important benefits as wildlife habitat and food sources. In eastern Nebraska, tall thistle blooms much later than other thistle species and is heavily used by pollinators during the fall.

Recently, Dr. Svata Louda and her students at the University of Nebraska-Lincoln have found new evidence promoting the value of native thistle species. Their data suggests that the presence of native thistles, particularly tall thistle, in a landscape helps control non-native thistles such as bull thistle. The native insects that feed on tall thistle also attack the seeds of bull thistle, eating ¾ or more of the seeds from most plants. The researchers found that landscapes with abundant tall thistle had many fewer bull thistle plants than areas where tall thistle was absent.

As with anything else, when dealing with thistles it pays to be well-informed. Knowing which species are noxious or



Regal fritillary butterfly (rare species) on non-native musk thistle. Musk thistle is not only non-native but also an official noxious weed.

non-native and which are native can save you time and money. In addition, selective control methods can help maintain the vigor of other plants that help to compete against non-native thistles. Finally, while they will probably never become the most popular wildflowers in the state, keeping native thistles around really can provide a range of benefits, including food for wildlife and insects and, potentially, assistance with controlling non-native thistle populations.

If you want more information, the Nebraska Department of Agriculture has put together an excellent booklet that helps with the identification of Nebraska's thistle species and provides background information on each of them. To order copies of "The Thistles of Nebraska," *contact the Department of Agriculture at (402) 471-2394.*

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