

# Thistles of Cook County

By Ellen Sobieck (US Forest Service)

Cook County has four non-native invasive thistles: three biennials (Plumeless, Musk, and Bull thistle) and one perennial (Canada thistle). The two most common thistles (Bull and Canada) have become established in many areas of the county where they crowd out native plants and limit human recreation. Due to their aggressive character, these non-native thistles have been the target of control efforts by local residents and agencies. Many individuals participating in these invasive thistle management activities may not realize we also have native thistles in the Arrowhead Region. Three native thistle species that have been reported in Cook County: *Cirsium muticum* (Swamp thistle), *Cirsium flodmanii* (Flodman thistle), and *Cirsium pumilum* var. *hillii* (Hill's thistle).

The most abundant native thistle in Cook County is the Swamp thistle. As its name suggests, it is found in damp low-lying woodland areas, wet meadows, and near rivers. It is a long-stemmed plant noted for its ribbed stem and widely spaced, nearly spineless leaves. These features distinguish it from other native and non-native thistles.

Flodman thistle is more commonly found in western Minnesota but can be found sporadically in the Arrowhead region (See Jack Greenlee's article). It prefers damp, open areas, such as meadows, prairies, and pastures. Similar to Swamp thistle, Flodman thistle's spines are less dense and prickly than non-native thistles. Flodman thistle stems have a mottled white appearance due to its long, woolly,



Continued on page 4

white hairs becoming tangled into bunches. Its leaves are shiny green on top and white-woolly on the underside. Its leaves are almost at right angles to the stem resulting in its distinctive "flipping appearance". Compared to the other native thistles, Flodman thistle is the most prone to becoming weedy and has been declared a noxious weed in at least one Canadian province.

Hill's thistle is Cook County's spiniest and shortest native thistle reaching only two feet at maturity. In addition, its leaves are oblong to elliptical with serrated edges and tiny dense spines along the edge. Hill's thistle prefers open, dry, sandy areas where it plays a key role in stabilizing soil after disturbance. Unfortunately, Hill's thistle has been replaced by more aggressive non-native species in many of these areas leading to its placement on Minnesota's Species of Special Concern list in 1984.

Native and non-native thistles often occupy the same habitat in Cook County, which can make it difficult to differentiate between them. Please review the following and share it with others participating in invasive plant management to help recognize and identify native thistle populations in the field.



# Flodman thistle: Another thistle to watch for in Cook County

Apparently thistles are a timely topic. In the same issue I was working with Ellen Sobieck on her thistle identification article, I received this information from Jack Greenlee.

By Jack Greenlee (US Forest Service)

Thistles are tough to identify, so when my weed crew excitedly told me they found a thistle species they had not seen before, I was skeptical. It was growing in a gravelly open area next to some busy railroad tracks near Idington, about halfway between Virginia and Cook, MN, and they collected some. After looking at the plants they brought back to me, I had to agree: this thistle is different.

It turned out to be Flodman thistle (*Cirsium flodmanii*), a thistle native to North America and found mainly in the northern Great Plains. The habitat for this species is prairies, meadows, and pastures, often found in damp soil. The sources I checked said it is more competitive than most other native thistles, so it has potential to infest large areas and behave more like an invasive species.

Identification: Flodman thistle is a perennial thistle 2-3 feet tall with a creeping root system.

Unlike the other thistles commonly found in northeast Minnesota, the undersides of Flodman thistle leaves are covered with a thick layer of grayish-white hairs. It can be distinguished from Canada thistle (*Cirsium arvense* - non-native) and swamp thistle (*Cirsium muticum* - native) because the flowering head on these two species does not have any spines, while the flowering head of Flodman thistle does have spines. Three other non-native thistles (*Cirsium vulgare* - bull thistle, *Carduus acanthoides* - plumeless thistle, *Carduus nutans* - musk thistle) in northeast Minnesota also have spines on the bracts that surround the each flower head, but the spines on Flodman thistle are the smallest of the bunch.

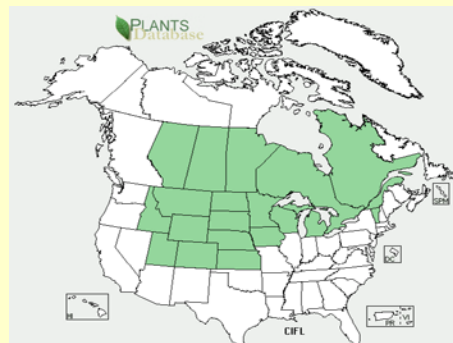
According to the Minnesota Department of Natural Resources vascular plant checklist (MNTaxa, available online at: [http://www.dnr.state.mn.us/eco/mcbs/plant\\_lists.html](http://www.dnr.state.mn.us/eco/mcbs/plant_lists.html)), Flodman thistle is actually known to occur in southwest Cook County. If you are interested in learning more about thistle identification, check out this link - The Thistles of North Dakota (<http://www.ag.ndsu.edu/pubs/plantsci/weeds/w1120/w1120w.htm>). This publication has all the species that occur in northeast Minnesota and is a great identification tool.



Northeastern Minnesota thistles with spiny heads (left to right): Flodman, Bull, Plumeless, Musk



NE MN thistles without spiny heads (left to right): Canada, Swamp



Distribution of Flodman thistle

Identification Information		Habitat	Deducing thistles
<p><i>Cirsium muticum</i> (Swamp thistle)</p> <p><b>Native</b></p>	<ul style="list-style-type: none"> <li>• Biennial; blooms July- September</li> <li>• Stem: 3-5 ft. tall, green, ribbed with fine hairs</li> <li>• Leaves: alternate, deeply lobed, nearly spineless, often widely spaced on the stem</li> <li>• Lower leaves up to 8" long by 3" wide</li> <li>• Flowers: dark purple to lavender, up to 1.5" long with dark green almost spineless bracts</li> </ul>	Swamps, low-lying meadows and woodlands	<ul style="list-style-type: none"> <li>• Found in wetter habitat and has greater space between leaves than other native thistles</li> <li>• Lacks bract spines and woolly-white stem of Flodman's.</li> <li>• Taller and fewer spines on its leaves than Hill thistle</li> </ul>
<p><i>Cirsium flodmanii</i> (Flodman's thistle)</p> <p><b>Native</b></p>	<ul style="list-style-type: none"> <li>• Biennial or short-lived perennial; blooms June-August</li> <li>• Stem: 2-3 ft. tall, slender with fine velvety coating</li> <li>• Leaves: alternate, gray-green, deeply lobed with white-woolly undersides and short spines at edges. Lobes generally triangular and base leaves up to 6" long</li> <li>• Flowers: pinkish to deep purple, up to 1-1.5" across with slender spines from bracts</li> </ul>	Sun; moist prairies	<ul style="list-style-type: none"> <li>• Like most natives, its spines are less dense/prickly than the non-natives</li> <li>• Its leaves are at nearly right angles to stem, which creates its distinct "flipping appearance", and differentiates it from other native and non-native thistles</li> </ul>
<p><i>Cirsium pumilum var. hillii</i> (Hill's thistle)</p> <p><b>Native</b></p>	<ul style="list-style-type: none"> <li>• Perennial; blooms June-August</li> <li>• Stem: 1- 2 ft. tall, stout, woolly, often single or slightly branched</li> <li>• Leaves: alternate, lobed with wavy edges, oblong to elliptic, with dense white downy undersides. Edges have many short spines. Leaves up to 8" in length</li> <li>• Flowers: reddish to deep purple singular flower at top of stem ranging 1.5-3" across</li> </ul>	Sun; open fields and prairies, sandy soil, disturbed areas	<ul style="list-style-type: none"> <li>• Short in stature and singular flower head contrasts with other natives</li> <li>• The spiniest of native thistles; lacks the spiny stem wings of the Bull thistle and the sparse pubescent, branching stem of the Canada thistle.</li> </ul>
<p><i>Cirsium arvense</i> (Canada thistle)</p> <p><b>Non-native Invasive</b></p>	<ul style="list-style-type: none"> <li>• Perennial; blooms June-September</li> <li>• Stem: 2-5 ft. tall, light green, slender, spiny, sparsely pubescent, branches at top</li> <li>• Leaves: alternate, up to 6" long with spines along its wavy edges. Lower leaves deeply lobed with spine at each tip while upper leaves narrower and toothed. Sparse hair on leaf undersides</li> <li>• Flowers: lavender to pink, occasionally white Flower heads up to 3/4" across with purplish bract tips. Noted for numerous heads per plant</li> </ul>	Sun; disturbed areas, old fields	<ul style="list-style-type: none"> <li>• Young plants do NOT develop as rosettes</li> <li>• Abundant flower heads</li> <li>• Forms large colonies from extensive horizontal root system</li> <li>• Differ from natives by lacking white striped bracts on its flower heads</li> <li>• Lacks woolly pubescence surrounding the bracts which is characteristic of the native Swamp thistle</li> </ul>
<p><i>Cirsium vulgare</i> (Bull Thistle)</p> <p><b>Non-native Invasive</b></p>	<ul style="list-style-type: none"> <li>• Biennial; blooms June-September</li> <li>• Stem: 2-6 ft. tall, hairy, covered w/ small spine-tipped leaves called "stem wings"</li> <li>• Leaves: alternate, up to 6" long, lobed w/coarse hair on upper surface and woolly underside. Long, sharp spines at midrib and lobe tips</li> <li>• Flowers: reddish to purple 1 ½-2" across. Spines extend around base; bracts also tipped with spines</li> </ul>	Sun; dry fields, disturbed areas	<ul style="list-style-type: none"> <li>• Lacks the native thistles' white-striped bracts on their flower heads</li> <li>• The bull thistle's spiny stem wings, hairy upper side and woolly underside separate it from other invasive thistles such as Canada thistle</li> </ul>