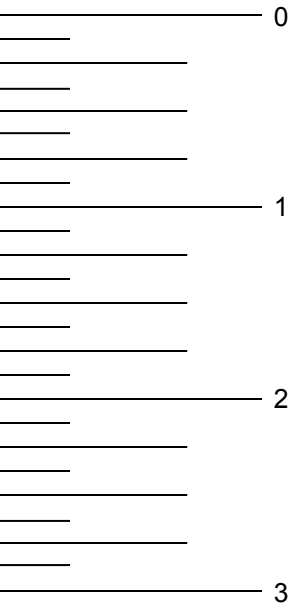
Wyoming Thistle Field Guide

Native and Non-native

Bonnie Heidel

B-1316
February 2022



About the author: Bonnie Heidel is lead botanist at the Wyoming Natural Diversity Database where she collects and maintains information on rare plants in the state. She is a weed control ally in work and pastimes.

Design: Andrea Perez, Tanya Engel

Front cover photo: Wyoming thistle (*Cirsium pulcherrimum* var. *pulcherrimum*) has a species scientific name derived from the Latin word “pulchra”, meaning beautiful. Photo: Bonnie Heidel

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Introduction

Thistles are common across Wyoming. Many people associate thistles with invasive weeds, but Wyoming has 19 native thistles! This guide presents all thistles in Wyoming to enable the user to distinguish native from invasive ones. Numerous photos are provided with brief descriptions to assist with identifications. However, the most reliable method for identification is to use a key, which step by step, and character by character, will lead the user to the correct species name. The keys presented in this guide are intended for non-experts. See pages 6–7 for thistle plant terms. Getting to know native plants is always worthwhile, and learning to distinguish among the many thistle species will allow the user to focus control efforts only on the weed species, and to appreciate the natives as valuable in Wyoming landscapes.

Why is thistle identification important?
Native thistles provide valuable resources to insects, birds and small mammals. They attract an abundance of nectar- and pollen-feeding insects, many of which are important pollinators. Bumblebees, longhorned bees, leafcutter bees, sweat bees, hover flies, beetles, moths and butterflies, including monarchs and regal fritillaries, are all visitors to thistle flowers (Eckberg et al. 2017). In addition, many kinds of herbivorous insects, including butterfly and moth caterpillars, feed on the leaves and stems of our native thistles.

And, of course, a number of bird species rely heavily on thistle seeds for nourishment. Thistle seeds are very high in protein and are available during the breeding season and late into the fall. Even large herbivores, such as elk, feed on thistles.

Non-native thistles, on the other hand, display a variety of characters that outweigh any benefits they may bring. In particular, non-native thistles are capable of rapid spread, displacing all kinds of native species.

They impact agriculture, degrade habitat quality, decrease animal and plant diversity, and reduce land value. In fact, non-native thistles are arguably one of the most economically detrimental groups of invasive plant species across the United States. Not all invasive thistles spread in the same way, so effective control of invasive thistles depends on correct identification.

Unfortunately, native thistles are often mistaken for invasive thistles and treated as weeds, to the detriment of the landscape and inefficient use of treatment resources. This makes identification of native thistles just as important as identification of invasive thistles.
Know the difference!

What is a thistle?

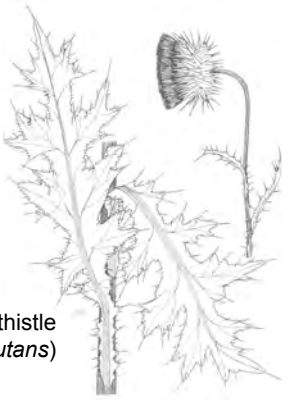
The Wyoming Thistle Field Guide addresses a closely related group of plants in the Aster Family (Asteraceae; also called the Sunflower Family). They are in three genera (*Cirsium, Carduus, Onopordum*) that all bear a common name of "thistle", and they belong to the same taxonomic tribe (*Cardueae*).

You'll see a common pattern as you use this guide. They have flower heads, each of which is composed of many small flowers (florets), surrounded by series of bracts (the involucre).This is true for all members of the Aster Family. This field guide does not require investigating the very small features of flowers or the resulting seeds (achenes). We know thistles by their prickliness—most have sharp spines on the leaves and flower heads.

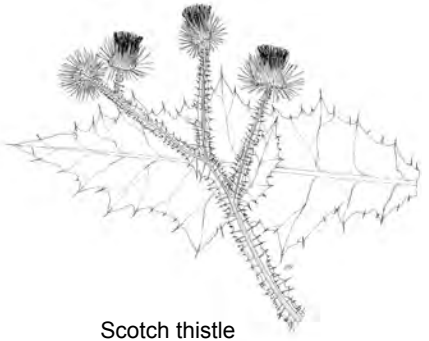
"Thistle" is also commonly used in the names of other prickly genera within the Aster Family including Globe thistle and Sow thistle, but they have spherical flower heads (Globe thistle) or yellow flowers (Sow thistle) rather than upturned flower heads with purple to white flowers of the thistles covered in this guide. Do not be deceived by common names—even prickly plants outside of the Aster Family have been called thistles, e.g., Russian thistle.

The line drawings on the next page depict the most common species in each of the thistle genera included in this guide. Learn to recognize them—they are designated as noxious weeds in the state. The non-technical key will help identify these three and the additional two noxious thistles in the state. It will also help you confirm if a thistle in question is native.

Canada thistle
(*Cirsium arvense*)



Musk thistle
(*Carduus nutans*)

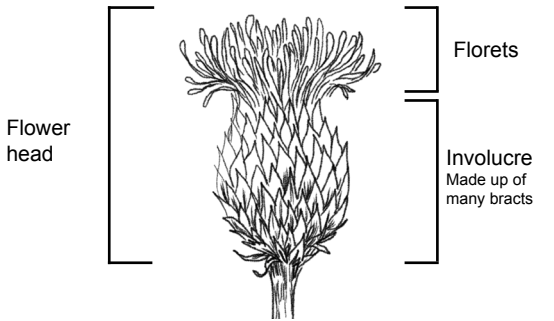


Scotch thistle
(*Onopordum acanthium*)

Illustrations: John H. Rumley, *Vascular Plants of the Intermountain West, USA,* Volume 5, reprinted with permission of New York Botanical Garden.

Things to look for

1. Look for **bracts** on each **flower head**, in a series from the outer bracts (lower, bottommost) to inner bracts (top, uppermost). The bract series is also called the **involucre**. The length of the involucre is a useful measurement. Pick the biggest flower head (flowering or past) on the plant to measure and use the ruler on the inside of the front cover. Bracts may have distinctive features such as a ridge, a fringed tip, a particular shape (narrow or broad), or particular surface (smooth, hairy, etc.). A hand lens may be necessary.



2. Here's an easy clue. What color are the flowers (**florets**)? Our native thistles have white or creamy-white flowers; thistles with pink to purple flowers may be native or non-native.

3. Look at the base of the stem. Dense colonies of separate stems indicates the presence of horizontal underground stems (**rhizomes**).

4. Look for prominent **spiny wings** on the stem. If spiny wings run up and down the full length, then it is a non-native thistle. If spiny wings are interrupted or absent along the stem, then it could be native or non-native.

Plants growing as a cluster of basal leaves radiating out from a central point (**rosette**) can be difficult to identify. If there are stalks with flower heads from the prior year, they might give you enough clues to determine whether or not the thistle is non-native.

Illustrations: Katherine Benkman

How to use this guide

To identify an unknown thistle, turn to the dichotomous key on page 9. The key consists of a series of two mutually exclusive statements, known as couplets. Starting with the first couplet, choose the statement that best fits the unknown thistle. The corresponding number will lead to another couplet and ultimately to the plant's name. Below is an example.

1a. Plant has spiny winged stems the entire length.....2
1b. Plant does not have spiny winged stems the entire length.....5

The two choices, 1a and 1b, form a couplet. If your unknown plant has spiny winged stems the entire length, then proceed to couplet 2.

2a. Involucres are less than ¾" long, and flower heads are typically densely clustered on short stalks...Plumeless thistle (*Carduus acanthoides*)
2b. Involucres are greater than ¾" long, and flower heads are mostly solitary on longer stalks.....3

If the plant matches the description in 2a, then choose "Plumeless thistle". If it matches the description in 2b, then proceed to couplet 3. Always read each couplet carefully before proceeding to the next step. When you arrive at a name, always check the species description to be sure it is consistent with your plant. If it is not, re-evaluate the choices you made in getting to this place in the key. For native thistles, you might also cross-check identifications against the map on pages 66–67.

Key to Wyoming thistles—Part 1

1a. Plant has spiny winged stems the entire length.....2

1b. Plant does not have spiny winged stems the entire length.....5

2a. Involucres are less than ¾" long, and flower heads are typically densely clustered on short stalks.....Plumeless thistle (*Carduus acanthoides*)

2b. Involucres are greater than ¾" long, and flower heads are mostly solitary and on longer stalks.....3

3a. Foliage is silver gray or bluish gray in appearance....Scotch thistle (*Onopordum acanthium*)

3b. Foliage is green, not gray.....4

4a. Bracts are broad and triangular, flower heads often nod or bend.....Musk thistle (*Carduus nutans*)

4b. Bracts are narrow, needle-like; flower heads are upright.....Bull thistle (*Cirsium vulgare*)

5a. Plants arise from rhizomes, often forming dense colonies; involucre is less than ¾" long.....Canada thistle (*Cirsium arvense*)

5b. Plants arise from taproots or branched rootstock; involucre is greater than ¾" long...6

6a. Upper leaf surface is covered with many short, sharp spines; outer bracts tend to point outward rather than upward.....Bull thistle (*Cirsium vulgare*)

6b. Go to the Part 2 Key, pg. 20
The Part 2 Key covers all native thistles.

Bull thistle

Cirsium vulgare

Robert Dorn

Jennifer Ackerfield

Biennial arising from a taproot, with one to many stems 1 ft–5 ft tall. **Flowers** are dark purple to pinkish-purple. **Involucres** are 1"–1½" long. **Flower heads** have urn-shape outlines that tapers on top and are in loose clusters. **Bracts** have needle-like tips and tend to point outward more than upward. **Leaves** have narrow lobes tipped with spines, and the upper leaf surface is covered by many short, bristly spines. **Stems** are usually much-branched, with spiny wings that usually extend for at least ¾" below leaf.

Things to look for:

Bracts with fine needle-like tips that tend to point outward more than upward, leaves with upper leaf surface that is rough and covered by short bristly spines.

Noxious Weed
Non-native

Ben Legler

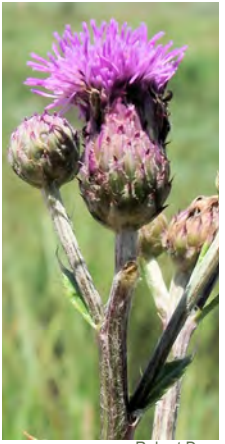
Statewide in roadsides, pastures, thickets, lowlands and other disturbed areas, within grasslands and woodlands.

Wendy Haas

Robert Dorn

Canada thistle

Cirsium arvense



Robert Dorn

Perennial arising from underground rhizomes, with stems ½ ft–4 ft tall, often forming colonies. **Flowers** are pink or purple. **Involucres** are small, ½"–¾" long. **Flower heads** are solitary and often forming a flat-topped inflorescence. **Bracts** are hairless, pressed tight to the flower head, with fine bristles rather than spines, and often have distinct white midribs. **Leaves** have wavy margins and spine-tipped irregular lobes. **Stems and leaves** have short hairs, often densely woolly on lower leaf surface.

Things to look for:

Small flower head, bracts that end in fine bristles rather than stiff thorns, flower heads sometimes appear to form a flat-topped inflorescence, wavy leaf margin, often forming dense colonies.

Noxious Weed
Non-native

Robert Dorn

Bonnie Heidel

Statewide in roadsides, field margins, other disturbed areas and wet meadows, within grasslands, sagebrush and woodlands.

Musk thistle

Carduus nutans

Robert Dorn

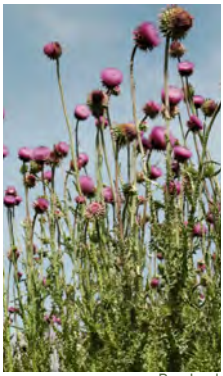
Ben Legler

Biennial arising from a stout taproot, with one to several stems 1½ ft–7 ft tall. **Flowers** are rose purple. **Involucres** are wider than long, 1¼"–3" wide. **Flower heads** are solitary and often nod when in full flower. **Bracts** are broadly triangular, with a spine tip, and lowermost bracts are often bent backward. **Leaves** have spiny margins and surfaces that range from hairless to densely hairy. **Stems** are usually much-branched with spiny wings that run for most of the length of the stem without interruption. Basal leaves of vegetative plants have a silvery outline as seen from above.

Things to look for:

Large solitary flower heads that often nod, bracts broadly triangular, lowermost bracts often bend backwards, stems spiny-winged much of length.

Noxious Weed
Non-native



Ben Legler

Julie Kraft

Robert Dorn

Statewide in roadsides, pastures, lowlands, and other disturbed areas, within grasslands and woodlands.

Plumeless thistle

Carduus acanthoides

Robert Dorn

Biennial arising from a stout taproot, with one to several stems 1½ ft–5 ft tall. **Flowers** are pale pink to purple. **Involucres** are small, ½"–¾" long. **Flower heads** are solitary. **Bracts** in outer position have a spine tip. **Leaf** surfaces are sparsely hairy above, more hairy below. **Stems** are usually much-branched with spiny wings the full length of the stem.

Things to look for:
Small, solitary flower heads, stems spiny-winged the full length.

Noxious Weed
Non-native

Southeastern Wyoming in roadsides, pastures, fields, other disturbed areas, usually within grasslands.

Robert Dorn

Scotch thistle

Onopordum acanthium

Robert Dorn

Biennial arising from a stout taproot, with one to many stems 1 ft–7 ft tall. **Flowers** are purple, violet, reddish, or pinkish-white. **Involucres** are about ¾" long. **Flower heads** are in loose clusters. **Bracts** all have spines. **Leaves** have a bluish gray or silvery gray appearance and margins of leaves ae usually toothed rather than lobed. **Stems** have spiny wings running the entire length.

Things to look for:

Leaves with cobwebby hairs giving grayish appearance, stems that are spiny-winged the full length.

Noxious Weed
Non-native

Robert Dorn

Jennifer Ackerfield

Robert Dorn

Statewide in roadsides, pastures, thickets, lowlands, and other disturbed areas, within grasslands and woodlands.

Cirsium key, adapted from Dorn (2001) following Rocky Mountain Herbarium nomenclature (Nelson 2018)

1a. Outer bracts are broader than inner bracts; the inner bracts have a fringed top; only known in the Black Hills .....Drummond's thistle (*Cirsium drummondii*)
1b. Outer bracts are the same width as inner bracts; the inner bracts lack a fringed tip.....2

2a. Flower heads are often in terminal clusters, usually equaled or exceeded by several leaves; leaves are often not much reduced upward.....3
2b. Flower heads are solitary or in loose clusters, never much exceeded by leaves; leaves are much reduced upward.....9

3a. The base of most leaves has a wing that extends along stem for at least ¼" below.....4
3b. The base of most leaves clasps stem but does not extend as a wing along the stem; sometimes all leaves are basal.....6

4a. Leaves are white, woolly-hairy on underside; mountains of northern Wyoming.....White thistle (*Cirsium hookerianum*)
4b. Leaves are without hairs or with a few loose hairs on underside.....5

5a. Bracts have cobwebby hairs often extending between bracts; mountain slopes and talus of northern Wyoming.....Murdock's thistle (*Cirsium eatonii* var. *murdockii*)

5b. Bracts are without hairs or nearly so; shale hills in Sweetwater Co.....Ownbey's thistle (*Cirsium ownbeyi*)

6a. Bristles on top of the seed are as long or longer than the florets, usually over 1" long, flowers are usually white and densely clustered; bracts are hairless, with a short spine; moist open woodlands and roadsides in Bighorn Mtns and Yellowstone NP.....Elk thistle (*Cirsium foliosum*)

6b. Bristles on top of the seed are shorter than the florets, 1" or less long; inner bracts sometimes fringed; flower color varies from white to pink or purple, flower heads clustered or not.....7

7a. Leaves are thin, mostly lobed 2/3 or less to midrib; main spines usually flexible, rarely long and stout; plants are rarely stemless; meadows in or near mountains.....Meadow thistle (*Cirsium scariosum* var. *scariosum*)

7b. Leaves are thickish, often lobed over 2/3 to midrib; main spines are often long, stout, and stiff...8

8a. Plants are mostly stemless; heads are densely clustered; leaf tips are mostly rounded or obtuse; meadows and stream banks.....Stemless thistle (*Cirsium scariosum* var. *americanum*)

8b. Plants have stems that are ½-4 ft. tall; heads are usually somewhat scattered; leaf tips are mostly acute; plains, hills, and alkaline meadows.....Colorado thistle (*Cirsium scariosum* var. *coloradense*)

9a. Bract margins, at least the inner ones, are fringed, and usually expanded near tip.....10

9b. Bract margins are not fringed and taper to the tip, rarely slightly expanded near tip.....11

10a. Inner bracts have long, slender, pointed tips; bristles on top of the seed are ½"-1" long; open woodlands and clearings of southeastern Wyoming.....Fringed thistle (*Cirsium clavatum* var. *americanum*)

10b. Most inner bracts have broad, clear tips; bristles on top of the seed are ¾"-1½" long; plains, hills, and meadows.....Colorado thistle (*Cirsium scariosum* var. *coloradense*)

11a. Leaves clasp the stem or, if they extend below the leaves, then for less than ½".....12

11b. Leaves extend along the stem for more than ½".....17

12a. Leaf upper surface is usually greenish, lower surface is white with woolly hairs, sometimes the margin of stem leaves are wavy or toothed (not lobed); moist places.....Flodman's thistle (*Cirsium flodmanii*)

12b. Leaf upper surface is usually gray, lower surface may be white or not; leaves are usually deeply lobed.....13

13a. Leaves are sparsely woolly-hairy beneath, gray-green above; hills and meadows of northwestern Park Co.....Graygreen thistle (*Cirsium cymosum* var. *canovirens*)

13b. Leaves are usually rather densely woolly-hairy on underside.....14

14a. Involucre is usually wider than long.....15

14b. Involucre is usually longer than wide.....16

15a. Flowers are deep to pale purple; involucre of larger flower heads often greater than 1¼" long; plains, hills, slopes, and disturbed areas of eastern and central Wyoming.....Wavyleaf thistle (*Cirsium undulatum*)

15b. Flowers are white to pink-purple; involucre of larger flower heads often less than 1¼" long; dry slopes of Uinta Co.....Tracy's thistle (*Cirsium tracyi*)

16a. Involucre is ¾"-1" long; shale slopes of Lincoln Co. (also reported from Carbon Co.)..... Barneby's thistle (*Cirsium barnebyi*)

16b. Involucre is 1" or greater, unless bracts have cowbwebby hairs.....17

17a. Leaves are hairless or with a few loose cobwebby hairs.....Go back to 5

17b. Leaves are woolly-hairy at least on the underside.....18

18a. Leaf extensions along stem of lower leaves are usually longer than those of uppermost leaves, or the bracts have cobwebby hairs, or both.....19

18b. Leaf extensions along stem of lower leaves are shorter than or about equal to those of uppermost leaves; bracts lack cobwebby hairs.....20

19a. Wings on the stems extend downward from leaf bases, wings of lower leaves usually longer than those of upper leaves; stems below flower heads are woolly-hairy, with few spines or spiny wings; slopes and flats.....Greene's thistle (*Cirsium inamoenum* – includes var. *davisii* and var. *inamoenum*)

19b. Wings on stems extend downward from leaf bases, wings of upper leaves usually longer than those of lower leaves; stems below flower heads are hidden by spines or spiny wings; mountain slopes.....White thistle (*Cirsium hookerianum*)

20a. Involucre is 1¼"-1¾" long; bracts with a stout spine that bend outward from the flower head.... .....Yellowspine thistle (*Cirsium ochrocentrum var. ochrocentrum*)
20b. Involucre of mature heads is ½"-1¼" long. Bracts are mostly ¼" or less wide.....21

21a. Involucre usually as wide as long or wider; spines at tips of bracts ¼" long or greater; the upper leaf surface is slightly woolly-hairy; plains, hills, and disturbed areas.....Prairie thistle (*Cirsium canescens*)
21b. Involucre is usually longer than wide; spines at tips of bracts less than ¼" long.....22

22a. Upper leaf surface is generally hairless or nearly so and distinctly green; mature flower heads are often loosely scattered along upper stem and usually four or fewer; plains, hills, slopes, and disturbed area.....Wyoming thistle (*Cirsium pulcherrimum* var. *pulcherrimum*)
22b. Upper leaf surface is mostly woolly-hairy and whitish to gray; mature flower heads are usually densely clustered at tip of stem and usually four or more; barren hills of central Wyoming..... Beaver Rim thistle (*Cirsium pulcherrimum* var. *aridum*)

Barneby's thistle

Cirsium barnebyi

Perennial arising from a taproot, with one to few stems 1 ft–1¾ ft tall. **Flowers** are lavender-purple. **Involucres** are about ¾" long. **Flower heads** are in a loose cluster. **Bracts** are hairless to sparsely hairy, with a spine. **Leaf surfaces** on upper and lower sides are densely white to grayish woolly. **Stems** are often white-woolly.

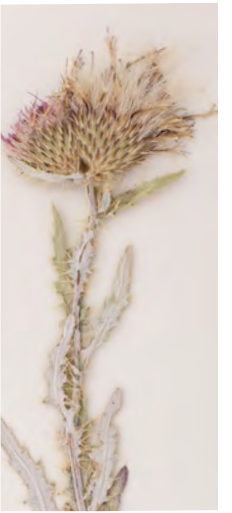
Things to look for:
Small flower heads usually in loose clusters and usually as long as wide, leaves hairy on both sides.

Known from an area of Lincoln County on shale slopes, within desert scrub and sagebrush; also reported from Carbon County.

Beaver Rim thistle

Cirsium pulcherrimum var. *aridum* (*Cirsium aridum*)

Bonnie Heidel



Perennial arising from a branched rootstock, with one to few stems ½ ft–1½ ft tall. **Flowers** are white to rose pink. **Involucres** are ¾"–1¼" long, wider than long. **Flower heads** are usually 4 or fewer. **Bracts** may have long cobwebby hairs or none, with a spine. **Leaves** are white or gray woolly on top with dense white hairs below, with spiny margins. **Stems** usually have cobwebby hairs, sometimes spiny-winged for short distances below leaves.

Things to look for:

Flowers usually white, usually four or fewer flower heads, leaf surfaces with dense cob-webby hairs below and less hairy above.

Bonnie Heidel

Bonnie Heidel

Central Wyoming in barren uplands on chalky, gravelly, or fine-textured sandy-shale, within sagebrush.

Colorado thistle

Cirsium scariosum var. *coloradense* (*Cirsium coloradense, C. tioganum* var. *coloradense*)

Ben Legler

Biennial arising from a taproot, with a stout, single stem ½ ft–4 ft tall. **Flowers** are usually white, sometimes lavender or pinkish purple. **Involucres** are 1"–1½" long. **Flower heads** are in a cluster. **Bracts** are narrowed to a short spine tip usually with a clear, fringed margin. **Leaves and stems** have cobwebby hairs, sometimes hairless on upper leaf surface. **Bristles** on top of the seed are ¾"–1" long.

Things to look for:

Flowers usually white, flower heads in loose cluster on a stout stem, leaves and stems with cobwebby hairs, leaf tips mostly coming to a sharp point.

Bonnie Heidel

Bonnie Heidel

Southern and central Wyoming in alkaline wet meadows and lowlands, within sagebrush.

Drummond's thistle

Cirsium drummondii

Robert Dorn

Biennial or short-lived perennial arising from a taproot, with a single stout stem ½ ft–2¼ ft tall, or sometimes stemless. **Flowers** are rose-purple. **Involucres** are 1¼"–2¼" long. **Flower heads** form a cluster. **Bracts** have a ridge and short hairs on margins. Outer bracts are broader than inner ones. The outer usually have spines at tips and the inner usually have fringed tips and a ridge. **Leaves and stems** with sparse long hairs, becoming hairless.

Things to look for:

Large flower heads, inner bracts wider than outer bracts and fringed at tip, stout stem or stemless.

Beth Burkhart

Beth Burkhart

Only known from the Black Hills, in open woodlands, clearings, and meadows.

Elk thistle

Cirsium foliosum

Jennifer Whipple

Biennial or short-lived perennial arising from a taproot, with a single stout stem ¾ ft–2½ ft tall. **Flowers** are white to pale pink. **Involucres** are ¾"–1" long. **Flower heads** are usually in a dense cluster. **Bracts** are hairless, with a short spine. **Leaves** have sparse hairs on both sides, and stems are densely hairy. **Bristles** on top of the seed are as long or longer than florets.

Things to look for:

Flowers usually white, small flower heads usually in a dense cluster, stout stem.

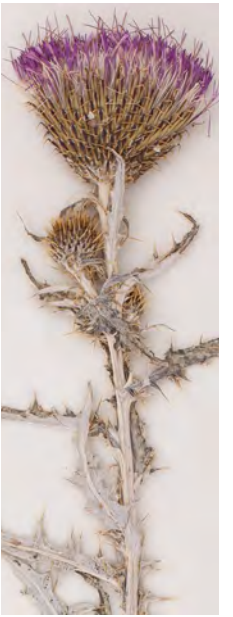
Jennifer Ackerfield

Jennifer Whipple

Only known from a few locales in Bighorn Mountains and Yellowstone National Park in moist, open woodlands and roadsides.

Flodman's thistle

Cirsium flodmanii



Robert Dorn

Perennial arising from horizontal roots, with one to few stems 1 ft–3 ft tall. **Flowers** are deep purple to pink. **Involucres** are ¾"–1½" long. **Flower heads** are solitary. **Bracts** have a ridge and short spine, sometimes with cobwebby hairs. **Leaves** are white woolly below, becoming greenish above, those on the stem are shallowly to deeply lobed.

Things to look for:

Flower heads solitary, stem leaves shallowly to deeply lobed.

Bonnie Heidel

Robert Dorn

Statewide in moist meadows, lowlands and roadsides, within grasslands and sagebrush.

Fringed thistle

Cirsium clavatum var. *americanum* (*Cirsium centaureae*)

Bonnie Heidel

Biennial or short-lived perennial arising from a taproot, with one to few stems ¾ ft–3 ft tall. **Flowers** are white to lavender-purple, forming a loose cluster. **Involucres** are ¾"–1¼" long. **Flower heads** are in loose clusters. **Bracts** are fringed, translucent at the tip, hairless or with hairs at the margin. **Leaves** hairy below. **Bristles** on top of the seed are ½"–1" long.

Things to look for:

Flowers usually white, inner bracts with fringed margins and translucent tips, leaves hairy below, dark green and hairless above.

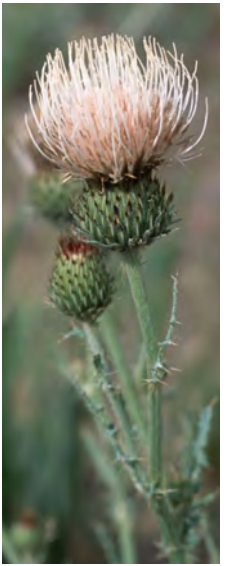
Bonnie Heidel

Bonnie Heidel

Southeastern Wyoming in open woodlands and clearings.

Graygreen thistle

Cirsium cymosum var. *canovirens (Cirsium canovirens)*



Jennifer Whipple

Biennial or short-lived perennial arising from a stout taproot, usually with a single stem, 1 ft–3¼ ft tall. **Flowers** are creamy white to purplish. **Involucres** are ¾"–1" long, and wider than long. **Flower heads** are solitary. **Bracts** have a ridge, may have cobwebby hairs at the margins, and at least the outer bracts are spine-tipped. **Leaves** have long, sparse hairs, more on the bottom leaf surface than the upper.

Things to look for:
Flowers usually white, flower heads solitary, bracts have a ridge.

Jennifer Whipple

Jennifer Whipple

Only known from northwestern corner of Park County in dry meadows and roadsides, within sagebrush and woodlands.

Greene's thistle

Cirsium inamoenum (Includes var. *inamoenum and* var. *davisii; Cirsium subniveum misappl.*)

Bonnie Heidel

Biennial or short-lived perennial arising from a taproot, with one to several stems 1 ft–3¼ ft tall. **Flowers** are white to pink-purple. **Involucres** are ¾"–1¼" long. **Flower heads** are in loose clusters on densely hairy stalks. **Bracts** have a ridge and cobwebby hairs along the margins. Outer bracts are spine-tipped. **Leaves** usually have dense hairs on the lower leaf surface, less on the upper.

Things to look for:

Flower heads in loose clusters on densely hairy stalks. Flowers of var. *inamoenum* are white or pale lavender, those of var. *davisii* are dark lavender to pink-purple.

Bonnie Heidel

Bonnie Heidel

Western Wyoming in dry meadows and rocky slopes, within sagebrush and woodlands.

Meadow thistle

Cirsium scariosum var. *scariosum*

Richard Spellenberg

Bonnie Heidel

Biennial arising from a taproot, with a stout, single stem to 1½ ft tall or occasionally stemless. **Flowers** are usually pink to purple. **Involucres** are 1"–1½" long. **Flower heads** form a dense cluster. **Bracts** are narrowed to a spine tip usually with a clear, fringed margin. **Leaves and stems** have cobwebby hairs, except sometimes hairless on upper leaf surface. **Bristles** on top of the seed are about ½" long.

Things to look for:

Flowers usually pink to purple, flower heads in dense cluster on stout stem or stemless, leaves and stems with cobwebby hairs, leaf tips mostly rounded.

Julie Kraft

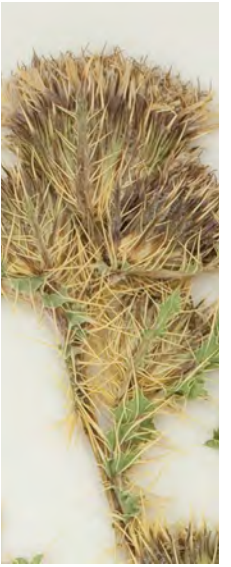
Northwestern and southern Wyoming in montane meadows and open woods, within sagebrush and woodlands.

Julie Kraft

Murdock's thistle

Cirsium eatonii var. *murdockii* (*C. murdockii*)

Charmaine Delmatier



Perennial arising from a taproot, also having creeping roots, with one to several stems, ¾ ft–2½ ft tall. **Flowers** are yellowish-white to lavender, pink or purple. **Involucres** are ¾"–1¼" long. **Flower heads** form a loose cluster. **Bracts** are often deep purple, with sparse or dense hairs, and with spines. The lower bracts often have branched spines. **Leaves** are green, hairless, and finely-divided into narrow spine-tipped lobes. **Leaves and stems** are variously hairless or hairy.

Things to look for:

Bracts often deep purple, lower bracts often have spines that are branched.

Charmaine Delmatier

Northern Wyoming in dry meadows and rocky slopes, in woodlands and above tree line.

Charmaine Delmatier

Ownbey's thistle

Cirsium ownbeyi

Bonnie Heidel

Perennial arising from a taproot, with one to several stems, 1½ ft–2½ ft tall. **Flowers** are white to rose pink. **Involucres** are ¾"–1" long. **Flower heads** are in loose clusters. **Bracts** have long spines, and are hairless except for slender hairs at the margins. **Leaves** are green, hairless, and finely-divided into narrow, spine-tipped lobes. **Stems** are hairless or lightly pubescent and spiny-winged between leaves.

Things to look for:

Flowers usually white, bracts hairless except at margins, leaves hairless and finely-dissected with narrow lobes, stems hairless or lightly pubescent.

Bonnie Heidel

Walter Fertig

Bonnie Heidel

Only known from an area of Sweetwater County in barren uplands of shale and sandy-clay, within sagebrush and pinyon-juniper woodlands.

Prairie thistle

Cirsium canescens

Bonnie Heidel

Biennial or short-lived perennial arising from a taproot, with one to few stems 1½ ft–3 ft tall, densely hairy. **Flowers** are creamy white or yellowish-white. **Involucres** are usually 1¼" or less long, and at least as wide as long. **Bracts** have a dark ridge and spine tip. **Leaves** near bottom of stem have elongate lobes 3–6 times longer than wide, leaf surfaces have cobwebby hairs above, dense woolly hairs below.

Things to look for:

Flowers white, bracts with a ridge, lower leaves with elongate lobes.

Bonnie Heidel

Bonnie Heidel

Statewide in uplands and roadsides, within grasslands and sagebrush.

Stemless thistle (Dinnerplate thistle)

Cirsium scariosum var. *americanum*
(Cirsium tioganum var. *tioganum)*

Bonnie Heidel

Perennial arising from a taproot, stemless. **Flowers** are usually white, sometimes pink-tinged. **Involucres** are ¾"–1¼" long. **Flower heads** are in a compact cluster. **Bracts** are narrowed to a short spine tip usually with a clear fringed margin. **Leaves** are lobed or unlobed, with leaf tips that are often rounded or obtuse and hairless or nearly so on upper surface, with gray woolly hairs on lower surface. **Bristles** on top of the seed are about ½"–1" long.

Things to look for:
Flowers usually white, flower heads in a dense cluster, no stem.

Bonnie Heidel

Bonnie Heidel

Southcentral Wyoming in wet meadows, within woodlands.

Tracy's thistle

Cirsium tracyi

Al Schneider

Perennial arising from a taproot, with one to few stems 1¼ ft–3 ft tall. **Flowers** are lavender to white or pink purple. **Involucres** are ¾"–1" long. **Flower heads** are solitary. **Bracts** have a ridge and may be hairless or with sparse cobwebby hairs. **Leaves** are gray woolly on the bottom, less so on top. **Stem leaves** are shallowly or deeply lobed on the margins.

Things to look for:

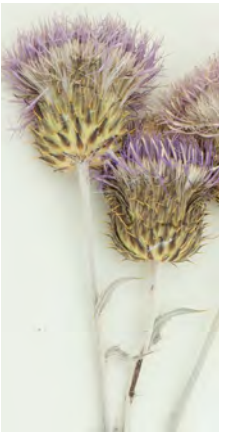
Flower heads solitary, stem leaves shallowly to deeply lobed.

Al Schneider

Only known from a couple of records in Uinta County in dry, open, or wooded slopes, within sagebrush.

Wavyleaf thistle

Cirsium undulatum



Robert Dorn

Perennial arising from a taproot, with one to few stems 1¼ ft–3 ft tall. **Flowers** are deep to pale purple. **Involucres** are ¾"–1½" long. **Flower heads** are solitary. **Bracts** have a ridge and may be hairless or with sparse cobwebby hairs. **Leaves** are white woolly on both sides, especially below. **Stem leaves** are toothed or shallowly lobed on the margins, but basal leaves are deeply lobed.

Things to look for:

Flower heads solitary, stem leaves toothed or shallowly lobed.

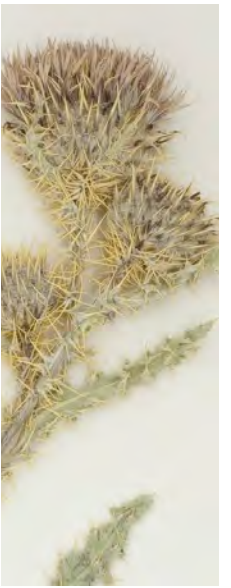
Ben Legler

Robert Dorn

Statewide in uplands and roadsides, within grasslands and sagebrush.

White thistle

Cirsium hookerianum



Ben Legler

Biennial or short-lived perennial arising from a taproot, usually with a single stem, ¾ ft–2¾ ft tall. **Flowers** are white to pale purple. **Involucres** are ¾"–1¼" long. **Flower heads** are variously solitary or clustered. **Bracts** have cobwebby hairs and spines and sometimes have a ridge. **Leaves and stems** have woolly white hairs, especially on the lower leaf surface.

Things to look for:

Flowers usually white, outer bracts with cobwebby hairs, leaves with densely matted hairs on underside, less hairy above.

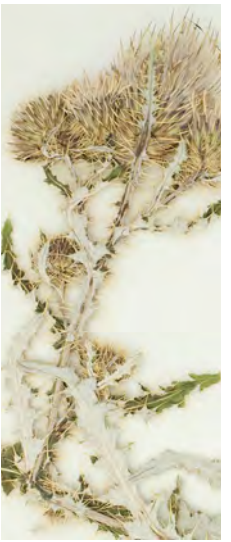
Ben Legler

Ben Legler

Northern Wyoming in mountain meadows and woodlands.

Wyoming thistle

Cirsium pulcherrimum var. *pulcherrimum*



Bonnie Heidel

Perennial arising from a branched rootstock, with one to few stems ½ ft–2½ ft tall. **Flowers** are white to rose pink. **Involucres** are ¾"–1¼" long, and wider than long. **Flower heads** are often in groups of four or more. **Bracts** may have long cobwebby hairs or be hairless, with a spine. **Leaves** have dense white hairs below and are hairless or nearly so on top, with spiny margins. **Stems** usually have cobwebby hairs, sometimes spiny-winged for short distances below leaves.

Things to look for:

Flowers usually white, flower heads four or more, leaf surfaces with dense cobwebby hairs below and little or no hairs above.

Bonnie Heidel

Jennifer Ackerfield

Most of state in uplands and roadsides, within sagebrush and woodlands.

Yellowspine thistle

Cirsium ochrocentrum
(Ours is *C. o.* var. *ochrocentrum*)

Robert Dorn

Perennial arising from creeping roots, with one to many stems 1¼ ft–3 ft tall, densely hairy. **Flowers** are pink to purple, rarely white. **Involucres** are 1"–1¾" long, about 2" wide. **Flower heads** are clustered. **Bracts** have a ridge, sometimes have cobwebby hairs, and outer bracts have a stout spine that bends outward from the flower head. **Leaves** have cobwebby hairs, more on the lower leaf surface than the upper.

Things to look for:
Flower heads as wide or wider than long, leaves densely hairy below, less hairy above.

Robert Dorn

Jennifer Ackerfield

Robert Dorn

Mainly southeastern Wyoming in uplands and roadsides, within grasslands.

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Acknowledgments

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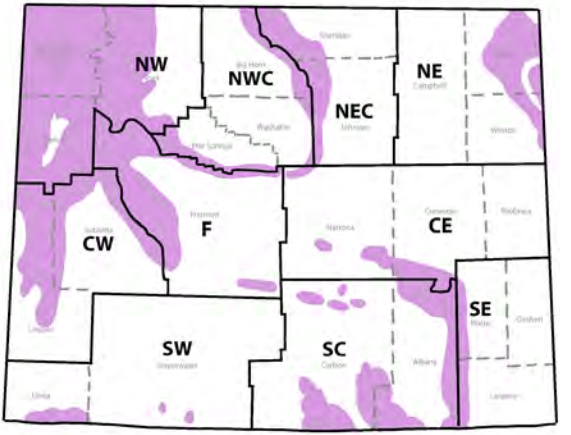
Internet addresses change and pages can disappear over time. If you find problems with any of the listed web sites in this publication, please contact the Wyoming Natural Diversity Database, wndd@uwyo.edu, (307) 766-3023.

Native thistles by region[1]



NW — Park, Teton
Elk thistle
Flodman's thistle
Graygreen thistle
Greene's thistle
Meadow thistle
Murdock's thistle
Prairie thistle
Wavyleaf thistle
White thistle
Wyoming thistle
Yellowspine thistle

NE — Campbell, Crook, Weston
Drummond's thistle
Flodman's thistle
Prairie thistle
Wavyleaf thistle
Wyoming thistle

NWC — Big Horn, Hot Springs, Washakie
Colorado thistle
Flodman's thistle
Greene's thistle
Meadow thistle
Murdock's thistle
Wavyleaf thistle
White thistle
Wyoming thistle

NEC — Johnson, Sheridan
Colorado thistle
Elk thistle
Flodman's thistle
Meadow thistle
Murdock's thistle
Prairie thistle
Wavyleaf thistle
White thistle
Wyoming thistle
Yellowspine thistle

[1]Regions are grouped by counties. Purple shaded areas are mountains.

CE — Converse, Natrona, Niobara
Colorado thistle
Flodman's thistle
Meadow thistle
Prairie thistle
Wavyleaf thistle
Wyoming thistle
Yellowspine thistle

SE — Goshen, Laramie, Platte
Flodman's thistle
Meadow thistle
Prairie thistle
Wavyleaf thistle
Wyoming thistle
Yellowspine thistle

SC — Albany, Carbon
Colorado thistle
Flodman's thistle
Fringed thistle
Meadow thistle
Prairie thistle
Stemless thistle
Wavyleaf thistle
Wyoming thistle
Yellowspine thistle

SW — Sweetwater, Uinta
Beaver Rim thistle
Colorado thistle
Flodman's thistle
Fringed thistle
Greene's thistle
Meadow thistle
Ownbey's thistle
Tracy's thistle
Wavyleaf thistle
Wyoming thistle

F — Fremont
Beaver Rim thistle
Colorado thistle
Flodman's thistle
Fringed thistle
Greene's thistle
Meadow thistle
Murdock's thistle
Prairie thistle
Wavyleaf thistle
White thistle
Wyoming thistle
Yellowspine thistle

CW — Lincoln, Sublette
Barneby's thistle
Beaver Rim thistle
Greene's thistle
Meadow thistle
Murdock's thistle
Prairie thistle
Wavyleaf thistle
Wyoming thistle

Index

***Non-native thistle**

Musk thistle (*Carduus nutans*) is a common weed of roadsides and disturbed places in Wyoming. Photo: Robert Dorn

University of Wyoming
UW Extension, Biodiversity Institute,
Wyoming Natural Diversity Database

Wyoming Weed and Pest Council
WYOWEED.ORG

U.S. Department of the Interior
Bureau of Land Management

Wyoming Conservation Districts

USDA Forest Service
U.S. Department of Agriculture

USDA
United States Department of Agriculture
Natural Resources Conservation Service

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