



**SOUTH DAKOTA STATE  
UNIVERSITY EXTENSION**



# Noxious Weeds of South Dakota

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Original Publication: 2013

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## **Noxious weeds are a big problem**

Over 3 million acres infested in South Dakota. Statewide losses for noxious weeds exceed \$100 million annually. The acreage and cost will continue to increase unless those responsible take action to control and eradicate noxious weeds on the land.

## **Noxious weed characteristics**

A weed must possess the following characteristics to be declared noxious statewide:

- The weed is perennial.
- The weed has unique capability to spread rapidly.
- The weed is not controllable without special prevention or management.
- The weed is capable of decreasing the value of land.
- The weed is capable of materially reducing the production of crops or livestock.
- The weed is not native to South Dakota.

## **Local noxious weeds**

Weeds may be designated locally noxious upon request from counties and approval from the South Dakota Weed and Pest Control Commission. Local noxious weeds have the following characteristics:

- The weed is biennial, perennial, or a pernicious annual.
- The weed is capable of spreading rapidly.
- The weed is not controllable without special preventative or management practices.
- The weed is capable of materially reducing production of crops or livestock.
- The weed is capable of decreasing the value of the land.

This guide is developed as a pictorial reference guide.

Visit [extension.sdstate.edu](http://extension.sdstate.edu) for more information.

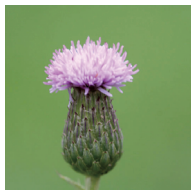


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## Noxious Weeds of South Dakota

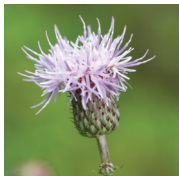
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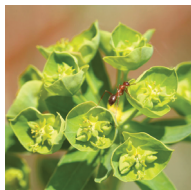


## Canada Thistle

### *Cirsium arvense*

- Weed:** Noxious statewide. Creeping perennial.
- Leaves:** Smooth, medium green, spine-tipped, crinkled margin. Smaller than biennial thistle.
- Stem:** 2- to 5-feet tall, grooved, branching at top.
- Flowers:** Numerous flowers on branched heads. About .75-inch. Usually lavender, may be pink or white. Separate male and female flowers.
- Root:** 10- to 15-feet deep.
- Site:** Grows statewide. Common in pasture and range; also grows in trees and cultivated fields.
- Note:** Difficult to control.





## Leafy Spurge

*Euphorbia esula*

**Weed:** Noxious statewide. Creeping perennial.

**Leaves:** Alternate, long, narrow, drooping, dark green.

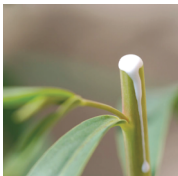
**Stems:** 2- to 3-feet tall. Plant contains milky sap.

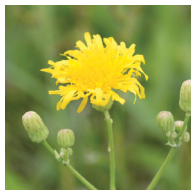
**Flowers:** Small green flowers surrounded by yellow-green bracts. Seed explodes from a 3-celled capsule.

**Roots:** Dark brown with pink buds. May reach 20-feet deep.

**Site:** Grows in all cultivated crops, pastures, range, trees, and wetlands.

**Notes:** Capable of rapid spread. Seed matures 7 to 10 days after first flower color.





## Perennial sowthistle

### *Sonchus arvensis*

- Weed:** Noxious statewide. Creeping perennial.
- Leaves:** Alternate. Dandelion-shaped, 4- to 8-inches. Irregularly lobed, spine-tipped edges.
- Stem:** Smooth, 3- to 7-feet tall. Entire plant contains milky juice.
- Flowers:** Branched clusters, yellow-orange, about 1.5-inches long.
- Roots:** Deep, spreading.
- Sites:** Cultivated fields, pastures, roadsides, especially in wet, moist sites.
- Notes:** Capable of rapid spread. Most persistent in wet area.

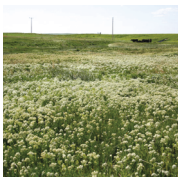




## Hoary cress

*Cardaria draba*

- Weed:** Noxious statewide. Creeping perennial.
- Leaves:** Lower leaves spatulate, tapered, slender base. Upper leaves clasp around stem. Wavy, indented leaf margins.
- Stems:** 1- to 2-feet tall, branched toward top. Fine whitish hairs.
- Flowers:** Small, white, 4-petaled, borne in flat-topped clusters.
- Roots:** 10- to 15-feet deep. Fine, branching, penetrating.
- Sites:** Small, scattered infestations, statewide. Common in roadsides, pastures, and range.
- Notes:** Required treatment in early spring (May). Metsulfuron is more effective than growth regulators (2, 4-D, dicamba, picloram, or aminopyralid).

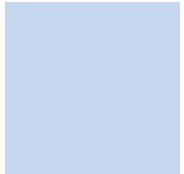




## Purple loosestrife

*Lythrum salicaria*

- Weed:** Noxious statewide. Creeping perennial.
- Leaves:** Opposite, linear, smooth margins, no petiole.
- Stems:** 4- to 8-feet tall. Stiff, woody with 4 to 6 sides. Older plants are heavily branched.
- Flowers:** Purple-magenta, 5- to 6-petalled. Arranged in long spikes.
- Roots:** Very heavy root, new branches from base.
- Sites:** Serious invader in marshes, along streams and in wetlands. Limited to “wild” infestations.
- Notes:** Seed develops in floating capsules.







## Saltcedar

*Tamarix spp.*

- Weed:** Noxious statewide. Perennial shrub or tree.
- Leaves:** Alternate, cedar-like on slender, branched green stems.
- Stems:** Smooth, woody, dark brown to reddish-brown
- Flowers:** White to deep pink. 5-petaled. Formed in finger-like clusters in mid to late summer.
- Roots:** Deep, extensive taproot.
- Sites:** Flood plains along rivers, lakes, and ornamental plantings.
- Notes:** Excessive water consumer; depletes surface water. Very invasive. Spreads from seed or stem fragments.





## **Absinth wormwood**

*Artemisia absinthium*

**Weed:** Local noxious. Perennial.

**Leaves:** 2- to 5-inches long, alternate. Lower leaves deeply divided. Upper leaves linear and less divided. Gray-green.

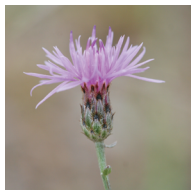
**Stems:** 2- to 4-feet tall, heavily branched. Covered with gray hairs, giving grayish-green cast. Distinct sage fragrance.

**Flowers:** Small, yellow, compact, short-stalked.

**Roots:** Extremely heavy, fibrous root. Perennial crown areas with buds.

**Sites:** Pastures, trees, and roadsides. Primarily east of Missouri River.

**Notes:** Also called "wormwood sage". Aggressive. Control plants in fall (Sept.-Oct.) or spring (May-June) when less than 12-inches tall.



## Spotted knapweed

*Centaurea biebersteinii*

- Weed:** Local noxious. Biennial or short-lived perennial.
- Leaves:** Alternate, deeply divided into narrow segments. Much smaller near top.
- Stems:** 1- to 3-feet tall, hairy branched.
- Flowers:** About .75-inch across, pink to purple, dark spots on flower bracts.
- Roots:** Biennial taproot. Forms rosette first season.
- Sites:** Pasture, range, and roadsides.
- Notes:** Diffuse knapweed similar, but lacks dark spots on flower bracts.

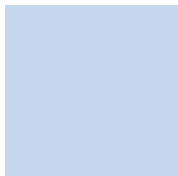




## Diffuse knapweed

*Centaurea diffusa*

- Weed:** Local noxious. Biennial or short-lived perennial.
- Leaves:** Alternate, hairy, narrow, divided. Grayish-green. Basal leaves whorled.
- Stems:** 1- to 2-feet, rough, erect.
- Flowers:** White to rose or purplish. Bract tips under the flower have yellow spine with comb-like teeth.
- Roots:** Long taproot. Rosette first season.
- Sites:** Pasture, range, and roadsides
- Notes:** Very competitive plant.





## Musk thistle

### *Carduus nutans*

**Weed:** Local noxious. Biennial.

**Leaves:** Coarsely toothed, dark green with white midrib. Spine-tipped lobes.

**Stems:** 4- to 6-feet tall. Stout, wing-like growth.

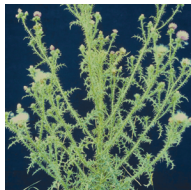
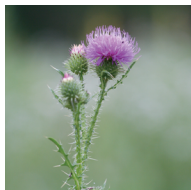
**Flowers:** Large, 2-inch, powder-puff shape. Deep rose to lavender, borne singularly, nodding on curved stem.

**Roots:** Heavy, branching taproot. Forms rosette first season.

**Sites:** Pastures, range, trees, along creeks and dugouts.

**Notes:** Prolific seed producer. Aggressive. Control before bloom at rosette stage in fall or spring.





## Plumeless thistle

*Carduus acanthoides*

- Weed:** Local noxious. Biennial.
- Leaves:** Deeply divided, crinkly, hairy. Lobes tipped with long, yellowish spines. White midrib.
- Stems:** 3- to 5-feet, branched. Spiny, wing-like growth.
- Flowers:** .5 to .75-inch, reddish-purple. Produced in clusters.
- Roots:** Heavy, branched taproot. Forms rosette first season.
- Sites:** Pastures, range, trees, along creeks and dugouts.
- Notes:** Aggressive weed. Control before bloom. Treat at rosette stage in fall and spring.







## Bull thistle

### *Cirsium vulgare*

**Weed:** Local noxious. Biennial.

**Leaves:** Large, deeply lobed, thick, dark green, spine-tipped, covered with hair.

**Stems:** 3- to 6-feet tall. Branched.

**Flowers:** 1- to 2-inches. Shaving-brush shape. Rose to deep purple, spiny base.

**Roots:** Heavy, branched tap root. Forms rosette first season.

**Sites:** Pastures, range, trees, and farmsteads.

**Notes:** Less aggressive than some biennials. Capable of producing dense stands.





## Scotch thistle

*Onoporum acanthium*

**Weed:** Local noxious. Biennial.

**Leaves:** Very large, coarse, gray-green, spine-tipped, have dense hair.

**Stems:** 5- to 6-feet tall. Strongly branched. Heavy winged appendage growth.

**Flowers:** 1- to 2-inches, reddish purple. Sharp bracts on base.

**Roots:** Heavy taproot. Forms rosette first year.

**Sites:** Pasture, range, and disturbed sites in southwest area of state.

**Notes:** Control before bloom.





## **Sulfur cinquefoil**

### *Potentilla recta*

- Weed:** Local noxious. Perennial.
- Leaves:** Alternate on stem. Sparsely hairy. Palmately divided with 5 to 7 leaflets with the longest leaflet in the middle. Leaf margins toothed.
- Stems:** 1- to 3-feet tall. Hairy. 1 to 3 stems that branch just beneath the flowering inflorescence.
- Flowers:** Light yellow with yellow center. 5 petals with notches at the tip. Develop in clusters at the ends of the branches.
- Roots:** Branching taproot. New shoots may emerge from the edges of the root mass, causing old plants to develop a circular pattern of shoots.
- Sites:** Pastures, grasslands, roadsides, waste places.
- Notes:** Most problematic in pastures and grasslands in western South Dakota, where it can be very competitive. Other similar cinquefoil species, such as rough cinquefoil, are common but not as invasive. Rough cinquefoil has 3 leaflets, and the flower petal tips are not notched.

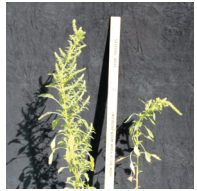


## Field bindweed

*Convolvulus arvensis*

- Weed:** Local noxious. Creeping perennial.
- Leaves:** Arrowhead-shaped, usually rounded tip. Spreading basal lobes.
- Stems:** Smooth, 2- to 7-feet long. Spreads over the ground.
- Flowers:** White or pink, funnel-shaped. About 1-inch. Two finger-like bracts below flower.
- Roots:** 20- to 30-feet deep. Extensive, spreading.
- Sites:** Cultivated fields, pastures, range, trees, roadsides, home grounds. Adapted to dry conditions.
- Notes:** Most widespread noxious weed in South Dakota. Requires 2- to 4-year control plan.





## Palmer Amaranth

### *Amaranthus palmeri*

- Weed:** Local noxious. Pernicious annual.
- Leaves:** Oval to diamond shaped smooth, green, arranged in an alternate pattern
- Stems:** Smooth with no hairs
- Flowers:** Male and female plants female heads are more-prickly
- Roots:** Simple taproot.
- Sites:** contaminated crop fields
- Notes:** The petiole (stalk connecting a leaf to the stem) is longer than the length of the leaf. Where the stem and petiole connect a round spiny ball forms.

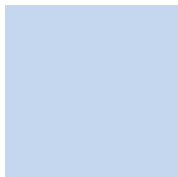
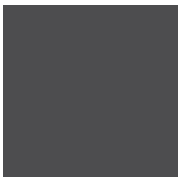




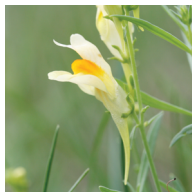
## **Dalmatian toadflax**

### *Linaria dalmatica*

- Weed:** Local noxious. Creeping perennial.
- Leaves:** Light green, alternate, dense, broad-based, heart-shaped, individually clasping the stem. Appear waxy in spring.
- Stems:** Erect, 1- to 3-feet tall, smooth.
- Flowers:** Yellow, about .75- to 1.5-inches. 2-lipped. Bearded, orange throat with straight spur.
- Sites:** Non-cropland, waste areas, grassland, and range. Prefers coarse-textured soils. Black Hills area.
- Notes:** Non-cropland, waste areas, grassland, and range. Prefers coarse-textured soils. Black Hills area.



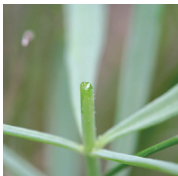




## Yellow toadflax

*Linaria vulgaris*

- Weed:** Local noxious. Creeping perennial.
- Leaves:** Pale green, numerous, narrow, pointed at both ends, 2.5-inches long.
- Stems:** Erect, 1- to 2-feet tall, sparse hairs or smooth.
- Flowers:** Yellow to pale cream, about 1-inch long. Long bearded throat with straight spur. Often flowers in last summer (August).
- Sites:** Non-cropland, waste areas, roadsides, grassland, range, and cultivated fields.
- Notes:** Difficult to control, mildly poisonous to livestock.





## Houndstongue

### *Cynoglossum officinale*

- Weed:** Local noxious. Biennial.
- Leaves:** Alternate, rough. Basal leaves broad, 12-inches long. Upper leaf narrow, clasping.
- Stems:** 1- to 4-feet tall.
- Flowers:** Reddish purple. Fruit divided into 4 nutlets that cling to livestock and clothing.
- Roots:** Heavy taproot. Forms rosette the first year.
- Sites:** Pasture, range, and roadsides. Black Hills area.
- Notes:** Poisonous plant to livestock. Damages liver.





## Common tansy

*Tanacetum vulgare*

- Weed:** Local noxious. Perennial.
- Leaves:** Alternate, compound with oblong segments with toothed edges. Bright green.
- Stems:** 1- to 3-feet, stout, erect, usually smooth. Unpleasant odor.
- Flowers:** Numerous, rounded, button-shaped, bright yellow, in flattened clusters.
- Roots:** Strong, fibrous. Reproduces from short rhizomes.
- Sites:** Roadsides and along streams. Black Hills area.
- Notes:** Aggressive and difficult to control along streams and under trees.





## St. Johnswort

*Hypericum perforatum*

**Weed:** Local noxious. Perennial.

**Leaves:** Opposite, oblong, black dots along margin.

**Stems:** 1- to 3-feet tall. Smooth, branched, erect, somewhat 2-edged.

**Flowers:** Bright yellow, 5-petalled. Black dots along margin.

**Sites:** Rangelands in Black Hills area, roadsides, forests, and non-crop sites.

**Notes:** Considered a poisonous plant; acts as a photo sensitizer to livestock.





## Puncturevine

### *Tribulus terrestris*

- Weed:** Local noxious. Pernicious annual.
- Leaves:** Small, oblong, hairy, divided into compound leaves.
- Stems:** Hairy, prostrate, forms dense mat.
- Flowers:** Small, yellow, 5-petalled. Produced in leaf axils.
- Roots:** Simple taproot.
- Sites:** Roadsides, waste areas, and along sidewalks in open, droughty, trafficked areas.
- Notes:** Seeds form in sharp, thick-spined burs that puncture tires and shoes. Also called "Texas sandbur" or "goathead".





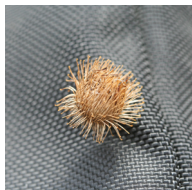
## Common mullein

*Verbascum Thapsus*

- Weed:** Local noxious. Biennial.
- Leaves:** 6- to 18-inches long, densely woolly. Pale yellow-green.
- Stems:** 3- to 7-feet tall, stout, seldom branched, covered with woolly hair.
- Flowers:** 5-lobed, sulfur yellow. About 1-inch across in dense spikes.
- Roots:** Branched taproot. Forms rosette first season.
- Sites:** Range, pastures, and roadsides.
- Notes:** Most common in southwestern South Dakota.







## Common burdock

*Arctium minus*

- Weed:** Local noxious. Biennial.
- Leaves:** Large, heart-shaped, dark green.
- Stems:** 3- to 5-feet tall, branched, hairy, somewhat angular.
- Flowers:** Numerous red-violet flowers surrounded by hooked bracts that form a .5-inch diameter burr at maturity.
- Roots:** Large, fleshy taproot.
- Sites:** Trees, along creeks and streams. Grows statewide.
- Notes:** Burs become entangled in hair and wool. Also called "wild rhubarb".

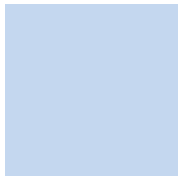




## Giant knotweed

*Polygonum sachalinense*

- Weed:** Local noxious. Creeping perennial.
- Leaves:** Cordate (heart-shaped). May be 6- to 12-inches long and 4- to 8-inches wide. Arranged alternately along stem.
- Stems:** Bamboo-like stems are hollow and swollen at nodes. 5- to 10-feet tall.
- Flowers:** Numerous racemes containing small greenish-white flowers in late summer.
- Roots:** Vigorous rhizomes; roots may extend deep in soil.
- Sites:** Moist areas along ditches, stream banks. Black Hills area.
- Notes:** Very difficult to control with mechanical or chemical means.





## Chicory

*Cichorium intybus*

**Weed:** Local noxious. Perennial.

**Leaves:** Alternate. Lower leaves rosette, toothed. Stem leaves clasp at the base. Narrow. 1- to 3-inches long.

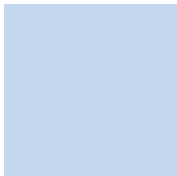
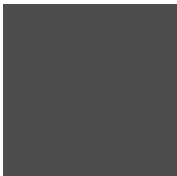
**Stems:** Erect, branched, have ridges. Contain milky latex.

**Flowers:** Blue or purple. Square tip with fine-toothed points.

**Roots:** Taproot, may be branched.

**Sites:** Roadsides, waste areas and pastures.

**Notes:** Used as coffee substitute. May cause dermatitis.





## Poison hemlock

*Conium maculatum*

**Weed:** Local noxious. Biennial.

**Leaves:** Fern-like, finely divided. Leaflets toothed, smooth. Musty odor.

**Stems:** Erect, 3- to 10-feet tall. Highly branched, ridged, smooth with purple blotches.

**Flowers:** White, 5 petals formed in an umbel 1.5- to 3-inches wide.

**Roots:** Taproot.

**Sites:** Moist sites in pasture, range, and roadsides. All parts poisonous.

**Notes:** Can be lethal. Sometimes confused with non-toxic plants such as wild parsnip.





## Eurasian common reed (*Phragmites*)

*Phragmites australis subsp. australis*

- Weed:** Local noxious. Creeping perennial grass.
- Leaves:** Greenish-gray, may be slightly darker than native phragmites. Strap-like and taper to a point. May be up to 2-inches wide and 24-inches long. Alternate on stem. Leaf sheaths on dormant stems may be more difficult to remove on invasive phragmites than on the native.
- Stems:** Often rough and dull and slightly ribbed, whereas the native is often smooth and shiny. Often more rigid than native. Usually dormant stems tan, whereas the native may be reddish. Grows up to 15-feet tall.
- Flowers:** Fluffy flowering plume in mid- to late summer. Inflorescence may be more dense than native phragmites.
- Roots:** Vigorous rhizomes that may form dense mats.
- Sites:** Sunny wetland habitats including marshes, streams or lake shores, ponds, wet meadows, and road ditches. Similar habitat as native phragmites and cattails.
- Notes:** Appearance similar to the native phragmites (*Phragmites australis subsp. americanus*), but more invasive. The native phragmites is not a restricted local noxious weed.



## Flowering rush

### *Butomus umbellatus*

- Weed:** Local noxious. Perennial.
- Leaves:** Erect leaves that may have twisted tips. Thick narrow leaves almost look like stems. Triangular cross section with spongy center.
- Stems:** Erect stems with triangular cross section. May emerge up to 5 feet above water surface.
- Flowers:** Showy umbrella-shaped cluster of 20-50 flowers with pink or white petals. Petals may be  $\frac{3}{4}$ - to 1-inch wide. Some plants may not flower often. Flowers rarely produce seed.
- Roots:** Rhizomes can grow into new plants. Primarily spreads by root fragments.
- Sites:** Shallow water (marshes or edges of streams, ponds, or lakes).
- Notes:** This weed can spread aggressively in shallow-water areas, inhibiting access, crowding out native vegetation, and changing aquatic habitat for fish and other organisms. Vehicles or wildlife can spread seed and root fragments.



## **Black henbane**

*Hyoscyamus niger*

**Weed:** Local noxious. Annual/biennial.

**Leaves:** Alternate on stem. Covered with fine, slightly sticky hairs. Large leaves may be up to 8-inches long and 6-inches wide. Coarsely toothed or shallowly lobed margins. Foul odor.

**Stems:** 1- to 3-feet tall. Thick, coarse, and hairy.

**Flowers:** Large, funnel-shaped showy flowers are greenish-yellow with purple veins and a dark purple center. 5 lobes up to 2-inches across. Visible from May to September. Plants produce long spikes covered with small pineapple-shaped seed pods on one side of the stem.

**Roots:** Fleshy taproot.

**Sites:** Pastures, fencerows, roadsides, waste places, disturbed logging areas.

**Notes:** Most common in the Black Hills area, but may be found throughout western and central South Dakota. May be toxic to humans and livestock, but livestock usually avoid grazing it. Several broadleaf herbicides may effectively control it.





## **Oxeye daisy**

### *Leucanthemum vulgare*

- Weed:** Local noxious. Perennial.
- Leaves:** Basal leaves may be oblong or spatulate with a petiole connecting them to the stem. Leaves are smaller toward the top of the plant and are connected directly to the stem without petioles. Leaves are generally approximately 1-4 inches long. Leaf edges are toothed.
- Stems:** May grow 1-3 ft tall, smooth, and often with a few branches near the top.
- Flowers:** Large flowers often 1.5-2 inches across. Yellow centers with white petals that are often slightly notched at the tip. Flowers appear from late May to early July.
- Roots:** Branched rhizomes and fibrous adventitious roots.
- Sites:** Pastures, meadows, roadsides, open forests, and disturbed areas. Most problematic in the Black Hills but may be found in eastern SD. It does not seem to be highly competitive with grasses in eastern SD.
- Notes:** Populations in the Black Hills may expand quickly, particularly in grazed areas. This unpalatable weed may decrease forage availability.



## White Horehound

### *Marrubium vulgare*

**Weed:** Local noxious. Perennial.

**Leaves:** Opposite, grey-green, rounded with crinkled surface. Hairy above, white woolly underneath. Sharply aromatic when crushed.

**Stems:** Square stem, woody base.

**Flowers:** Small pale purple to white. Dense clusters above nodes. Dry to form brown burs with hooked spines. Each bur contains up to four spear shaped seeds.

**Roots:** Deeply rooted woody tap root with fibrous lateral roots.

**Sites:** Open and disturbed areas, range, pasture and lawns.

**Notes:** Introduced as an ornamental, hardy, and spreads by seed.

Photo credits: US Forest Service



## **The law can be enforced**

The South Dakota Weed and Pest Control Commission is responsible for developing and implementing a statewide control program. South Dakota statute requires every landowner to control noxious weeds on their land. Voluntary compliance is encouraged.

State law provides enforcement procedures used when landowners fail to comply. The laws and regulations are enforced by the South Dakota County Weed and Pest Boards and the South Dakota Department of Agriculture and Natural Resources. Failure to comply initiates a formal process that could result in fines, tax levies, and liens against the lands of the owner.

Uncontrolled noxious weeds that present a nuisance to area lands should be reported to county Weed and Pest officials.

Photo credits: Eurasian common reed, Brenda Sievers; black henbane and flowering rush, Krista Thomas.

Cover photo: Purple loosestrife

# Thistles



**Flowers:** A-perennial sow thistle; B-Canada thistle; C-plumeless thistle; D-tall thistle; E-bull thistle; F-Flodman's thistle; G-musk thistle.



**Leaves:** A-tall thistle; B-bull thistle; C-musk thistle; D-plumeless thistle; E-Flodman's thistle; F-Canada thistle; G-perennial sow thistle.

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