USDA Forest Service

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Noxious Weed Prevention

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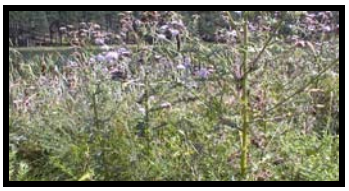
Definition of Noxious Weeds

What exactly is a noxious weed? Some weeds are native to South Dakota and Wyoming, but are they noxious? The best definition available for a noxious weed is any species of plant, annual, biennial, or perennial, reproduced by seed, root, or underground stem, which when established is or may become destructive and difficult to control by ordinary means of farm practices. The main differences between a common weed and a noxious weed include the noxious weed's high capacity for destruction and the extreme difficulty in controlling or eradicating the invading species. Some characteristics of a noxious weed follow: The weed is not controlled without special prevention or management. The weed is capable of decreasing the value of land and reducing crop or livestock production. The weed is not native to the area and spreads rapidly.



Canada thistle in full bloom.

Weeds are expensive! In South Dakota, annual losses from noxious weeds exceed $80 million. Nationwide, annual losses exceed approximately $5 billion. The cost will continue to increase unless responsibility is taken to control noxious weeds on the land. The following information may help in the prevention of growing noxious weed problems.

Why are Noxious Weeds a Problem?

Noxious weeds have been described as a slow, creeping wildfire that often goes unnoticed. Western ecosystems are adapted to recover from true wildfires, but they are not adapted to recover from the invasion of noxious weeds. A noxious weed invasion is much like a wildfire scar that never heals. Seed production per plant follows: Leafy spurge, 140; Canada thistle, 680; Kochia, 15,000; Spotted knapweed, 25,000; Wooly cupgrass, 40,000; Purslane, 52,000; Lamb's quarters, 72,000; Yellow starthistle, 170,000; and Common mullein, 223,000. What does this do? A weed invasion impacts wildlife by reducing forage; modifying habitat (replacing a grass community with less desirable plants); and changing how a species interacts within its environment.

Why are Noxious Weeds a Problem? (cont.)

Noxious weeds are a problem in our Fisheries and Riparian Areas. Many noxious weeds have poor root structures and allow erosion to increase. Sedimentation has proven to decrease the reproductive success of trout. Saltcedar uses 200 gallons of water per day, possibly drying up or damaging wetland areas. Purple loosestrife chokes out wetlands and is toxic to fish and wildlife. In Pastures and Hay Production, noxious weeds force out desirable grasses and forbs, decreasing the yield in pasture or field. Very often, rangelands can be reduced 65 to 90 percent! Houndstongue, Leafy spurge, and Common tansy are toxic to horses and cause irreparable harm to their livers. Noxious weeds impact Endangered Species and Biodiversity. One study found that outside a dense patch of Leafy spurge, 11 different native species were found; only three had managed to survive inside the infestation. Noxious weeds alter the soil structure, soil moisture, and organic matter. Noxious weeds change Land Values and Economic Impacts. The estimated impact of Leafy spurge in Wyoming, Montana, North Dakota, and South Dakota is $129.5 million. In Oregon, noxious weed density on the property reduced a $2 million land transaction by $200,000. Breaking up roots by plowing only increases the number of plants. Weeds are expensive!

Canada thistle taking over a riparian area along Spring Creek.

Canada Thistle Identification

One noxious weed that is on the South Dakota Noxious Weed List is the Canada thistle, Cirsium arvense. The South Dakota Noxious Weed List and ID book can be picked up at the county extension office. Canada thistle is a very aggressive plant, perennial by rhizomes, that grows two to six feet in height. The weed often persistently spreads in many pastures. Roots are from 10 to 15 feet deep in the soil. Flower heads are numerous, 3/4 to 1 1/4 inches in diameter, and are usually lavender, but may be pink or white surrounded by spintless bracts. There are separate male and female plants. The stems of the plant are grooved and branched at the top. Leaves are alternate, smooth and spine-tipped with a crinkled margin. Breaking up roots by plowing only increases the number of plants. The local county weed board has also placed this weed on its noxious weed list.

Canada thistle

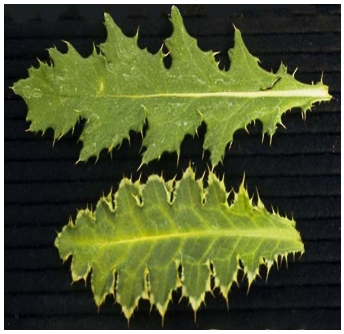
Biological Control for Canada Thistle

Since Canada thistle is not native to the Americas, it does not have any natural enemies for control. Biological control measures were introduced into the Black Hills in the early 1980s. These beetles and flies were used to control but not eliminate the Canada thistle. The only drawback was that some insects also attacked the native thistle. So certain insects were banned from further release. Biological control measures include the thistle defoliating beetle, Cassia rubiginosa; Thistle stem mining weevil, Ceutorhynchus litura; Thistle stem gall fly, Urophora cardui; and Thistle flowerhead weevil, Larinus planus.

Informational signs located throughout the Black Hills help stop the spread of noxious weeds.

Canada Thistle Photos

Canada thistle in the rosette stage. This photo was taken one day after the Battle Creek Fire. If left uncontrolled, this plant can colonize an area three to six feet in diameter in one or two years.



The upper leaf surface of mature leaves is dark green and hairless while the lower surface is light green in color and may have hairs.

Canada thistle at the bolting stage. Notice the young sprout in the center of the rosette. Flowers are present from June through August.

SOME FACTS ABOUT THE CANADA THISTLE

Canada thistle grows in a variety of soils and can tolerate up to two percent salt content. It is most competitive in deep, well-aerated, productive, cool soils. It usually occurs in 17 to 35 inch annual precipitation zones or where soil moisture is adequate. It is less common in light, dry soils. Canada thistle develops from seed or vegetative buds in its root system. Horizontal roots may extend 15 feet or more, and vertical roots may grow six to 15 feet deep.

Biological Control Photos

Larinus planus feed on thistle foliage but generally cause little damage.

Adult and larvae stage Cassida rubiginosa feed on foliage.

Urophora cardui or Gall fly attacks the stems rather than the flower heads. The insect-likes damp, shaded, and uncultivated habitats.

These insects were tested in controlled conditions for as long as ten years before introduction to the local areas. They will not munch on your favorite flowers or vegetable garden. Host-specific insects are sometimes the only logical method to get a weed patch under control. Biological control measures will not completely get rid of the noxious weeds because the insects will not eat themselves out of house and home. They do, however, reduce seed production. Wildlife and/or domestic cattle also eat some of the seed heads.

Other Methods of Control

Use of multiple treatments are the best for Canada thistle. Chemicals with biological and mechanical methods should be considered depending on funds and/or time. Herbicides containing picloram, clopyralid, 2,4-D, or dicamba effectively control Canada thistle. All applications need to be in accordance with the labels of each type product. Some chemicals require a state license before you can purchase them. Any questions may be answered through the local chemical company or the county weed and pest supervisor. Effective treatment is not to drown the plant in liquid but to lightly mist the plant. Each chemical reacts differently with each type of plant. The plant must absorb the chemical into the root system for proper control measures. In this case, less is better.

Field of Dreams for a Larinus planus, Thistle bud weevil.

USDA Forest Service

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Canada thistle can take over a drainage in just a couple of years.

Purple does not go well with green in this case.

The Mystic Ranger District totals over 320,000 acres and is basically in the "middle" of the Black Hills. The Black Hills area consistently rates as one of the top five tourist destinations in the nation. The Black Hills has had some major fires in the past few years that have complicated the efforts of controlling noxious weeds within these particular areas. Fire can enhance noxious weed growth by opening up the canopy to light and removing the vegetation. The ideal situation for noxious weeds includes light, no competition, and enhanced soils. In addition, people traveling on or off roads continually help spread noxious weed seeds. If you notice that your yard has developed new species of plants, think about where you rinse off your car or trailer. Even hiking or walking the friendly dog can move the weed seeds to new areas.

Just how big can some noxious weeds get?

Local Contacts

When you do have questions about noxious weeds or even about your flower garden, make sure you contact the proper person for the correct answer. If the weeds are on private lands, please contact your local weed and pest supervisor. In Pennington County, call Scott Guffey at 605-394-5320. On National Forest System lands for the Mystic Ranger District, contact Gene Bolka at 605-343-1567. These people can point you in the right direction if there are questions about noxious weeds. You may also call the South Dakota Department of Agriculture for Ron Moring or Spike King at 605-773-3796. Numerous websites are also available for your quest for information. Just try typing in "Canada Thistle." These websites cater to the one type of thistle. Many more noxious weeds are out there. We will keep you informed with noxious weed updates about what is going on in the Mystic District.