

**Spotted knapweed**  
(*Centaurea stoebe*)

**Plant:** This is a short-lived perennial that grows from two inches to four feet high. The plant has a strong taproot and lateral roots. Flowers are surrounded by oval bracts with black tips. One plant produces up to 300 flower heads, producing up to 140,000 seeds. Flowers bloom in summer and resemble both Canada thistle and bachelor button. Reproduction is primarily by seed, but shoots can start from a root. Spotted Knapweed produces a toxin called "catechin" that eradicates plants around it.

**Habitat:** This is a highly adaptable plant and found nearly everywhere in Montana. It will thrive in sunny, arid conditions in course soil and especially in disturbed areas.

**Treatment:** herbicide, biocontrol, hand pulling and targeted grazing. It has seven different biocontrol insects released to manage the plant.



**Yellow toadflax**  
(*Linaria vulgaris*)

**Plant:** Yellow toadflax is a perennial plant introduced to North America as an ornamental. Unlike Dalmatian toadflax, yellow toadflax only grows to a height of one to two feet and plants have multiple stems. Leaves are numerous, pale green to gray-green in color, always narrow and pointed at both ends, have smooth margins and are alternate on the stem. The showy, snapdragon type flower grows on stalks in dense clusters of fifteen to twenty at the ends of the stems. Flowers are pale to bright yellow with orange throats and a downward pointing yellow spur. Plant produces up to 30,000 seeds annually and has an extensive horizontal root system and reproduces through creeping roots or seed.

**Habitat:** A variety of areas including rangeland, pastures, forests, right-of-ways, cultivated fields, and gravel pits.



*Hand pulling can be effective against spotted knapweed and houndstongue because they have tap roots. The noxious weeds with extensive and/or rhizomatous root systems are not well controlled by hand pulling; these include Dalmatian and yellow toadflax and Canada thistle.*

Our forests are vulnerable to stresses from insects and disease, invasive species, uncharacteristic fire, and climate change. As new threats emerge and old threats resurface, the **Helena National Forest** is actively developing new tools to anticipate and educate on emerging forest threats.

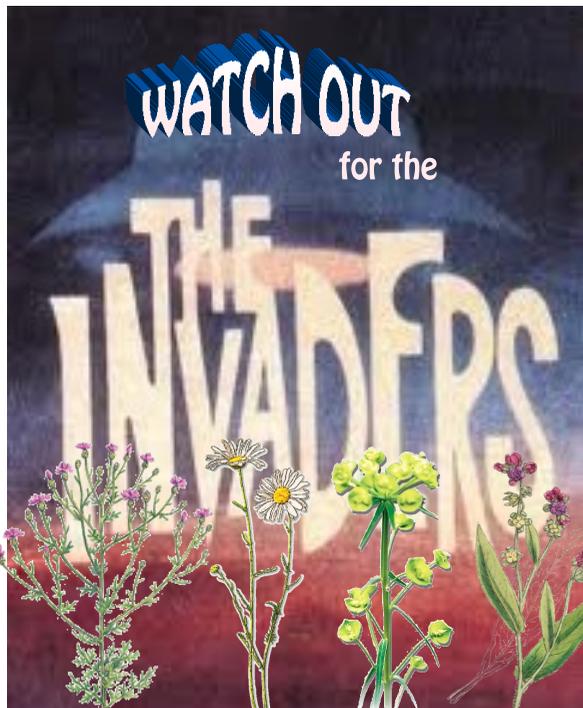
We hope this will help you to identify some of the noxious weeds that threaten our natural resources and encourage you to learn more about healthy land management practices.

For more information, please go to [www.mtweed.org](http://www.mtweed.org) or contact the Helena National Forest at 406-449-5201

Produced by the  
Montana Discovery Foundation  
in partnership with the Helena National Forest  
2880 Skyway Drive  
Helena MT 59602




The USDA Forest Service is an equal opportunity employer



**Spotted knapweed**  
(*Centaurea stoebe*)

**Plant:** This is a short-lived perennial that grows from two inches to four feet high. The plant has a strong taproot and lateral roots. Flowers are surrounded by oval bracts with black tips. One plant produces up to 300 flower heads, producing up to 140,000 seeds. Flowers bloom in summer and resemble both Canada thistle and bachelor button. Reproduction is primarily by seed, but shoots can start from a root. Spotted Knapweed produces a toxin called "catechin" that eradicates plants around it.

**Habitat:** This is a highly adaptable plant and found nearly everywhere in Montana. It will thrive in sunny, arid conditions in course soil and especially in disturbed areas.

**Treatment:** herbicide, biocontrol, hand pulling and targeted grazing. It has seven different biocontrol insects released to manage the plant.



**Yellow toadflax**  
(*Linaria vulgaris*)

**Plant:** Yellow toadflax is a perennial plant introduced to North America as an ornamental. Unlike Dalmatian toadflax, yellow toadflax only grows to a height of one to two feet and plants have multiple stems. Leaves are numerous, pale green to gray-green in color, always narrow and pointed at both ends, have smooth margins and are alternate on the stem. The showy, snapdragon type flower grows on stalks in dense clusters of fifteen to twenty at the ends of the stems. Flowers are pale to bright yellow with orange throats and a downward pointing yellow spur. Plant produces up to 30,000 seeds annually and has an extensive horizontal root system and reproduces through creeping roots or seed.

**Habitat:** A variety of areas including rangeland, pastures, forests, right-of-ways, cultivated fields, and gravel pits.

**Treatment:** herbicide and biocontrol.



*Hand pulling can be effective against spotted knapweed, houndstongue because they have tap roots. The noxious weeds with extensive and/or rhizomatous root systems are not well controlled by hand pulling; these include Dalmatian and yellow toadflax and Canada thistle.*

Our forests are vulnerable to stresses from insects and disease, invasive species, uncharacteristic fire, and climate change. As new threats emerge and old threats resurface, the **Helena National Forest** is actively developing new tools to anticipate and educate on emerging forest threats.

We hope this will help you to identify some of the noxious weeds that threaten our natural resources and encourage you to learn more about healthy land management practices.

For more information, please go to [www.mtweed.org](http://www.mtweed.org) or contact the Helena National Forest at 406-449-5201

Produced by the  
Montana Discovery Foundation  
in partnership with the Helena National Forest  
2880 Skyway Drive  
Helena MT 59602




The USDA Forest Service is an equal opportunity employer

**Canada thistle**  
(*Cirsium arvense*)



**Plant:** Canada thistle can reach heights of four feet and forms deep, extensive root systems, making it difficult to control. Creeping horizontal roots sprout new plants and can reach more than nineteen feet in one season. These roots can also go as deep as twenty two feet. Rosettes are smooth, have irregular lobes and have spine tipped edges. Thistle leaves are distinctive as they are thorny, alternate and deeply lobed. Leaves are lance-shaped and the edges have yellowish spines. Stems can grow tall, are often branched, slightly hairy, and lack spines. Canada thistle flowers tend to be smaller than other thistle species. One plant is capable of producing over 3,000 seeds annually. This plant reproduces by both seed and root, but primarily from the roots.  
**Habitat:** Abandoned fields or lots, abandoned gravel pits, pastures, right-of-ways, roadsides, railway embankments, lawns, gardens, and agricultural fields.  
**Treatment:** herbicide, biocontrol, cutting.

**Canada thistle**  
(*Cirsium arvense*)



**Plant:** Canada thistle can reach heights of four feet and forms deep, extensive root systems, making it difficult to control. Creeping horizontal roots sprout new plants and can reach more than nineteen feet in one season. These roots can also go as deep as twenty two feet. Rosettes are smooth, have irregular lobes and have spine tipped edges. Thistle leaves are distinctive as they are thorny, alternate and deeply lobed. Leaves are lance-shaped and the edges have yellowish spines. Stems can grow tall, are often branched, slightly hairy, and lack spines. Canada thistle flowers tend to be smaller than other thistle species. One plant is capable of producing over 3,000 seeds annually. This plant reproduces by both seed and root, but primarily from the roots.  
**Habitat:** Abandoned fields or lots, abandoned gravel pits, pastures, right-of-ways, roadsides, railway embankments, lawns, gardens, and agricultural fields.  
**Treatment:** herbicide, biocontrol, cutting.

**Houndstongue**  
(*Cynoglossum officinale*)



**Plant:** A biennial forb with deep tap roots. The rosette leaves resemble a dogs tongue in shape. Leaves are alternate, up to one foot in length and up to three inches wide and are soft and velvety. Plants can grow up to four feet in height. Flowers are five petaled, reddish-purple in color with four triangular, rounded seeds which bloom in June and July. Seeds are sticky, small brown nutlets. The entire plant has soft white hairs on it. The single tap root is thick, black and woody. It reproduces from seed only and each plant can produce up to 2,000 seeds. The plant dies after its second year.  
**Habitat:** Prefers well drained, relatively sandy and gravelly soils; also found in shady areas and under the canopy of forests and wetter grasslands.  
**Treatment:** cutting/mowing, herbicide, hand pulling, mechanical. Plant carries an alkaloid poison that can kill livestock through loss of production of liver cells.

**Houndstongue**  
(*Cynoglossum officinale*)



**Plant:** A biennial forb with deep tap roots. The rosette leaves resemble a dogs tongue in shape. Leaves are alternate, up to one foot in length and up to three inches wide and are soft and velvety. Plants can grow up to four feet in height. Flowers are five petaled, reddish-purple in color with four triangular, rounded seeds which bloom in June and July. Seeds are sticky, small brown nutlets. The entire plant has soft white hairs on it. The single tap root is thick, black and woody. It reproduces from seed only and each plant can produce up to 2,000 seeds. The plant dies after its second year.  
**Habitat:** Prefers well drained, relatively sandy and gravelly soils; also found in shady areas and under the canopy of forests and wetter grasslands.  
**Treatment:** cutting/mowing, herbicide, hand pulling, mechanical. Plant carries an alkaloid poison that can kill livestock through loss of production of liver cells.

**Dalmation toadflax**  
(*Linaria dalmatica*)



**Plant:** Like its close cousin yellow toadflax, Dalmatian toadflax produces showy snapdragon-type yellow flowers, however, it is easier to identify due to its long, erect appearance and waxy coating. Dalmatian toadflax has a tap root that can go as deep as ten feet, but will also produce lateral roots that can extend out from the parent plant for ten to twelve feet. Leaves are heart shaped and clasp the stem alternately. Blooms are nearly identical to yellow toadflax flowers. Flowering occurs from mid-summer to early fall. Seeds can remain viable for up to ten years and each plant can produce up to 500,000 seeds annually. It reproduces by seed and by root.  
**Habitat:** Typically found along disturbed sites, roadsides, clear cuts, transitional forest-grassland, right-of-ways, fences, cultivated fields, pastures, and rangelands.  
**Treatment:** herbicide, targeted grazing, and biocontrol.

**Dalmation toadflax**  
(*Linaria dalmatica*)



**Plant:** Like its close cousin yellow toadflax, Dalmatian toadflax produces showy snapdragon-type yellow flowers, however, it is easier to identify due to its long, erect appearance and waxy coating. Dalmatian toadflax has a tap root that can go as deep as ten feet, but will also produce lateral roots that can extend out from the parent plant for ten to twelve feet. Leaves are heart shaped and clasp the stem alternately. Blooms are nearly identical to yellow toadflax flowers. Flowering occurs from mid-summer to early fall. Seeds can remain viable for up to ten years and each plant can produce up to 500,000 seeds annually. It reproduces by seed and by root.  
**Habitat:** Typically found along disturbed sites, roadsides, clear cuts, transitional forest-grassland, right-of-ways, fences, cultivated fields, pastures, and rangelands.  
**Treatment:** herbicide, targeted grazing, and biocontrol.

**Oxeye daisy**  
(*Leucanthemum vulgare*)



**Plant:** An herbaceous perennial with numerous stems from 1-3 ft. tall. Stems are slender, erect, and may emerge from the root crown or singly from an upturned rhizome. Stalked basal leaves are spoon-shaped and broadly toothed. Stem leaves are alternate, smooth, glossy, and dark green. The leaf stalks are short and clasp the stem. Solitary flower heads are composed of 15-30 white ray florets surrounding a compact yellow disc with a depressed center. Flowers occur singly at the ends of stems and bloom from June to August. A typical plant produces over 500 seeds that spread by wind or animals and remain viable in the seed bank for 2-3 years. The root system is comprised of shallow, unbranched roots and rhizomes.  
**Habitat:** Adapted to coarse and medium textured soil; common in native grasslands, pastures, disturbed areas, open woods, meadows, and roadsides.  
**Treatment:** cutting/mowing, herbicide, hand pulling, mechanical.

**Oxeye daisy**  
(*Leucanthemum vulgare*)



**Plant:** An herbaceous perennial with numerous stems from 1-3 ft. tall. Stems are slender, erect, and may emerge from the root crown or singly from an upturned rhizome. Stalked basal leaves are spoon-shaped and broadly toothed. Stem leaves are alternate, smooth, glossy, and dark green. The leaf stalks are short and clasp the stem. Solitary flower heads are composed of 15-30 white ray florets surrounding a compact yellow disc with a depressed center. Flowers occur singly at the ends of stems and bloom from June to August. A typical plant produces over 500 seeds that spread by wind or animals and remain viable in the seed bank for 2-3 years. The root system is comprised of shallow, unbranched roots and rhizomes.  
**Habitat:** Adapted to coarse and medium textured soil; common in native grasslands, pastures, disturbed areas, open woods, meadows, and roadsides.  
**Treatment:** cutting/mowing, herbicide, hand pulling, mechanical.