

Minnesota Noxious Weeds

<http://www.dot.state.mn.us/roadsides/vegetation/pdf/noxiousweeds.pdf>



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Prohibited: Control List

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Restricted Noxious Weeds

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Minnesota Native Plants

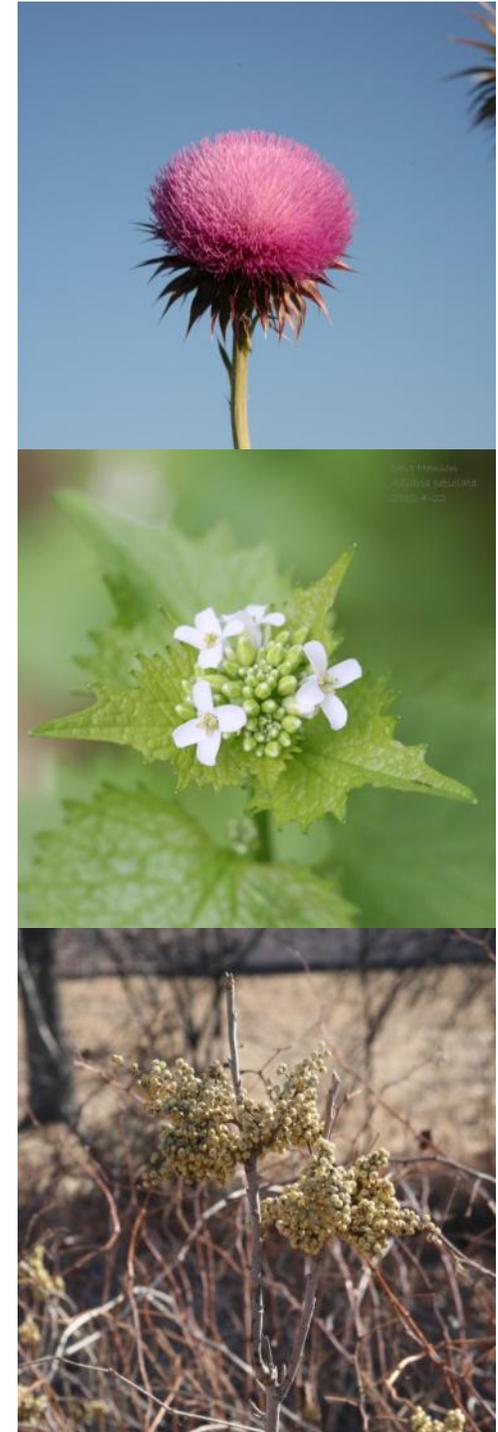
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[Definitions](#) of noxious weed categories and herbicide [disclaimer](#).

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Prohibited: Eradicate

Oriental bittersweet : *Celastrus orbiculatus* Thunb.



Identification: Compare to [American bittersweet](#) (*Celastrus scandens*).

Plant: Woody, perennial vines up to 60 feet long, reaches tree tops and covers fences. Kills vegetation (esp. trees and shrubs) either by covering (shading), strangling or sheer weight of vines causing breakage. Stem diameters of 4 inches documented in Minnesota.

Leaves: Alternate, finely-toothed, elliptical leaves, nearly as wide as long at 2-5 inches.

Flower: Small, inconspicuous, greenish flowers clumped in the leaf axils along the stem. *American bittersweet* flowers are similar in size and color but are found terminal on vine branches (on the ends).

Bloom time is May to June.

Fruit and Seed: Yellowish, 3-parted capsule encloses orange-colored, 3-parted, berry-like arils. Each aril contains 1-2 seeds. There are separate fruiting (female) and non-fruiting (male) plants. *American bittersweet's* 3-parted fruit is more red, the 3-parted capsule is more orange and fruits are terminal on the vine branches (on the ends).

Life History: Vegetative reproduction occurs from below-ground rhizomes, above-ground stolons and suckering of roots.

Birds will eat the arils during the winter and disperse the seeds. Seeds germinate late spring.

Habitat: Readily invades disturbed, open, sunny sites, yet Oriental bittersweet is moderately tolerant of shade allowing it to grow in open woodlands.

Management:

Biological controls have not been identified for this plant.

Mowing and **prescribed fire** typically are not viable options due to the presence of fences and or other vegetation.

Cutting of stems can be used to kill above ground portions of the plant especially if the infestation is covering large areas or is climbing high into forest canopy. Combine with herbicide applications for best results. If vines are fruiting, bag the plants and remove from the site for disposal when possible.

Herbicides that act systemically such as formulations of triclopyr and glyphosate can be applied as foliar, basal bark or cut stem applications. Foliar applications are reserved for easy to reach foliage, re-sprouting or along fence lines. Once the foliage is out of reach, application to cut stems or basal bark will yield the best results.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Burning is not recommended								
	Basal Bark	■	■	■	■	■	■	■	■	■
	Foliar		■	■	■	■	■	■	■	
	Cut stem				■	■	■	■	■	■
	Mow	Mowing is not recommended.								
	Don't mow									
Flowering Period			■	■						

Prohibited: Eradicate

Japanese Hops : *Humulus japonicus* Siebold & Zucc.



Above: Male flower structure.
Below: Female flower structure.



Identification: Compare to [common hops](#) (*Humulus lupulus*).

Plant: Herbaceous, annual vine trailing on the ground or climbing vegetation and infrastructure. Stems are covered with downward pointing prickles.

Leaves: Opposite, 6 inch by 6 inch leaves with 5-7 (maybe 9) palmate lobes. Compare to common hops that is typically 3-lobed occasionally 5. Leaves are rough and edges are toothed. Two bracts (stipules) are at the base of the leaf stalk.

Flower: Male flowers and female flowers are on separate plants (dioecious). Flowers are small and greenish to reddish, not showy. The male flowers are branched clusters (panicles) while the female flower is a drooping structure that is rather plump and composed of overlapping reddish bracts or scales (hops).

Bloom time is July into August.

Fruit and Seed: Single flattened seeds from each female flower. Each inflorescence produces several seeds.

Life History: An annual plant germinating early spring and growing quickly as summer progresses. Vines quickly cover trees and shrubs weighing them down to the point of breakage and limiting their sunlight. Japanese hops flower in July-August, seeds mature in September. Soon after a killing frost, fragile hop vines fall apart dispersing their seed.

Habitat: Hops tolerate disturbed roadside conditions if there is moist soil. Plants prefer conditions found in riparian areas including full sunlight and exposed soils that are moist and rich.

Management:

Manual methods including **cutting** and **pulling**, while labor intensive, can be successful on small infestations. These efforts should be focused on early season work when the plants are small and limited entanglement with surrounding vegetation and structures has occurred.

If the area is accessible to mowers and the vines have limited structure for climbing, such as trees and fences, then **mowing** is an effective method to control maturity and seed production.

Herbicides include pre-emergent and post-emergent applications. Both are useful since this is an annual plant with prolific seed production capabilities. Pre-emergent should be applied prior to the growing season beginning in late March or early April. Once germination has occurred a switch to foliar applications should be made in an effort to keep the plants from maturing and producing seed.

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn									
	Post-emerge									
	Pre-emerge									
	Mow									
	Don't mow									
Flowering Period										

Prohibited: Eradicate

Giant Hogweed : *Heracleum mantegazzianum* Sommier & Levier



UGA1460060



UGA2121077



UGA5272016

Identification: Compare to [cow-parsnip](#) (*Heracleum lanatum*).

Plant: Herbaceous, biennial giant at 10-15 feet tall (potentially 20 feet). When flowering the second year, 2-4 inch hollow stalks are a mottled reddish-purple with sturdy bristles.

Leaves: Alternate, up to 5 feet across, compound leaves with 3 deeply incised (cut) leaflets which may be further divided. The spotted leaf stalks, underside of leaves and stems are covered with coarse white hairs.

Flower: Large, flat umbels of small white florets together creating massive displays up to 2½ feet in diameter.

Bloom time is June to July.

Fruit and Seed: Seed is large, flattened, with visible brown resin canals.

Life History: A single plant can produce upwards of 1500 seeds before it dies and the seed disperses to disturbed sites such as roadsides and empty lots. The first season basal rosette foliage can be 1-5 feet across with the flower stalk typically appearing in the second season. When the plant dies a large bare patch of soil results which creates a good seed bed and potentially creates erosion problems.

Habitat: Moist soils of woodlands and riparian zones with partial shade as found on woodland edges.

Management: **Caution!** Use protective clothing, goggles or face mask, contact with the bristles (stiff hairs) or sap of the plant can cause severe blistering and swelling when combined with exposure to sunlight (phyto-photo-dermatitis).

Manual methods including cutting and removal by hand are effective on small infestations. The focus of this method is to prevent seed production. Remove any flower or seed heads from the site. Roots systems can be weakened by repeated cutting but consider removal for best results. After cutting monitor the site for follow-up treatment needs.

Herbicide applications of triclopyr or glyphosate are effective when applied early season to the basal rosettes. If manual methods such as cutting are used early in the season, plan on returning to chemically treat re-sprouts.



UGA1148089

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn									
	Foliar	Before the plant flowers.								
	Cut stem									
	Mow									
	Don't mow					Cut and remove roots and or seeds by hand for disposal.				
Flowering Period										

Prohibited: Eradicate

Yellow starthistle : *Centaurea solstitialis* L.



Identification:

Plant: Herbaceous, annual with heights of 6 to 36 inches. Plants start as a biennial or winter annual with a basal rosette the first season. Mature plants are described as bushy with a grayish or bluish cast to the otherwise green color.

Leaves: Basal leaves are lobed, dandelion-like at about 8 inches. Basal leaves may not persist as plants bolt to flower. Stem leaves are alternate, narrow to oblong and an extended leaf attachment provides a winged appearance to the stems.

Flower: Approximately 1 inch long flowers with substantial 3/4 inch yellowish spines emanating from the bracts beneath the flower. Flowers are terminal and solitary on the stem.

Bloom time is June to August.

Fruit and Seed: Each terminal flower produces between 35 to 80 plumeless or plumed seeds.

Life History: Yellow starthistle is a strong invader. Due to a lack of tufting on some of the seeds, reliance is on animals and humans for movement any distance from the parent plant.

Habitat: Periods of summer drought favor infestations on disturbed sites such as roadsides. Also an invader of prairies, fields, woodlands and pastures where the spines can cause injury to grazing animals.

Management: Limit the movement of seed on grazing animals, mowing equipment and vehicles.

Biological controls are not yet available in Minnesota. As of 2005 six insects had been identified to control this plant. These insects affect the seed production and studies indicate reductions of as much as 50%.

Mowing, monitor the infestation and time mowing at the early flowering stage, soon after spine development.

Herbicides formulations of clopyralid and picloram applied as foliar applications early in the growing season appear to be most effective.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn									
	Foliar	■	■	■						
	Cut stem		■	■						
	Mow		■	■						
	Don't mow					■	■	■	■	
Flowering Period				■	■	■				

Prohibited: Eradicate

Common teasel : *Dipsacus fullonum* L.



UGA1459703



UGA1459708



UGA1459713

Bracts may be longer than flower head

Identification: Compare to Cut-leaved teasel flower bracts and leaf shape.

Plant: Herbaceous, biennial, first identifiable as a basal rosette (photo to left). At maturity 2-7 feet tall with erect, ridged and prickly stems.

Leaves: On upright stems - opposite, stalkless (sessile), cup-forming, up to 12 inches long by 3 inches wide, hairless, yellowish to reddish-green, lance-shaped with a wavy edged margin. Central leaf vein forms a whitish line on top with stout prickles below.

Flower: Many white to lavender purple flowers, 4-parted and irregular. Dense, cylindrically clustered head up to 4 inches tall and 1½ inches wide. Some flower bracts taller than the flower cluster.

Bloom time is June to October.

Fruit and seed: Each floret or small flower produces 1 fruit capsule containing a gray-brown, slightly hairy seed.

Life History: During the rosette stage, which may extend beyond 1 season, the plant creates a substantial tap root, up to 24 inches long by 1 inch wide at the crown.

Each flower head can produce upwards of 2000 seeds with germination success of 30-80%. Seed on immature heads may still ripen. Seed is viable for approximately 2 years with typical dispersal up to 50 feet. Seed may be transported longer distances via water.

Habitat: Disturbed, open sunny site with moist to dry soils. Common on roadsides and disturbed areas.

Management:

Cutting of the root below ground and removal of as much as possible will limit sprouting. Cutting and removal can be on either life stage with tools such as a dandelion puller or a sharp shovel.

Mowing of the rosette stage does not kill the plant, however mowing of the flowering stalks can disrupt seed production. After mowing or cutting of flowering plants monitor for new flower heads. Cut flower heads should be removed from the area as they may produce or contain viable seed.

Prescribed fire can be used to increase competition from native warm season grasses, if they are present. Fire can also be used in combination with follow-up herbicide treatments. Keep in mind, high density infestations (large numbers of plants) will not burn well.

Herbicides such as metsulfuron methyl, clopyralid, triclopyr or 2,4-D amine are broadleaf specific herbicides that work on teasel at the rosette stage. Glyphosate is applicable but care must be exercised since it is not broadleaf specific.

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn									
	Foliar									
	Cut stem	Not applicable.								
Flowering Period	Mow	Mowing is not recommended: mowing does not kill the plant and flowering may still occur. Seed dispersal can occur if mature plants are mowed. Mower scalping creates a good seed bed.								
	Don't mow	Mowing is not recommended: mowing does not kill the plant and flowering may still occur. Seed dispersal can occur if mature plants are mowed. Mower scalping creates a good seed bed.								
Flowering Period										

Prohibited: Eradicate

Cut-leaved teasel : *Dipsacus laciniatus* L.



Lobed or cut leaves

Clustered flower and short bracts



Mowing and it's effect on teasel flowering.

Identification: Compare to common teasel flower bracts and leaf shape.

Plant: Herbaceous, biennial, first identifiable as a basal rosette. Matures to 2-7 feet tall with erect, ridged and prickly stems.

Leaves: On upright stems - opposite, stalkless (sessile), cup-forming, up to 12 inches long by 3 inches wide, hairless, lance-shaped, lobed with sinuses cut almost to the midrib. Prominent leaf vein with stout prickles below.

Flower: Many white to lavender purple flowers, 4-parted and irregular. Dense, cylindrically clustered head up to 4 inches tall and 1½ inches wide. Flower bracts are not taller than the flower cluster.

Bloom time is July to September.

Fruit and seed: Each floret or small flower produces 1 fruit capsule containing a gray-brown, slightly hairy seed.

Life History: During the rosette stage, which may extend beyond 1 season, the plant creates a substantial tap root, up to 24 inches long by 1 inch wide at the crown.

Each flower head can produce upwards of 2000 seeds with germination success of 30-80%. Seed on immature heads may reach viability. Seed is viable for approximately 2 years with typical dispersal up to 50 feet. Seed may be transported longer distances via water.

Habitat: Disturbed, open sunny site with moist to dry soils. Common on roadsides and disturbed areas.

Management:

Cutting of the root below ground and removal of as much as possible will limit sprouting. Cutting and removal can be on either life stage with tools such as a dandelion puller or a sharp shovel.

Mowing of the rosette stage does not kill the plant, however mowing of the flowering stalks can disrupt seed production. After mowing or cutting of flowering plants monitor for new flower heads. Cut flower heads should be removed from the area as they may produce or contain viable seed.

Prescribed fire can be used to increase competition from native warm season grasses, if they are present. Fire can also be used in combination with follow-up herbicide treatments. Keep in mind, high density infestations (large numbers of plants) will not burn well.

Herbicides such as metsulfuron methyl, clopyralid, triclopyr or 2,4-D amine are broadleaf specific herbicides that work on teasel at the rosette stage. Glyphosate is applicable but care must be exercised since it is not broadleaf specific.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar	
Herbicide	Burn										
	Foliar										
	Cut stem	Not applicable.									
	Mow	Mowing is not recommended: mowing does not kill the plant and flowering may still occur. Seed dispersal can occur if mature plants are mowed. Mower scalping creates a good seed bed.									
	Don't mow										
Flowering Period											

Prohibited: Eradicate

Dalmatian toadflax : *Linaria dalmatica* (L.) Mill.



5405705



UGA1459807

Identification:

Plant: A short-lived herbaceous perennial up to 4 feet tall. Base may be woody and plant is often branched.

Leaves: Waxy stems and leaves. The 1-3 inch long leaves clasp the stem, are wider and more heart-shaped than similarly flowered butter-and-eggs (*Linaria vulgaris*).

Flower: Erect, spike-like racemes of yellow flowers with orange center markings. The flowers have long slender spurs.

Bloom time is May to September.

Fruit and Seed: On average 140-250 winged seeds are contained in ½ inch long pods.

Life History: Reproduction is primarily by seed, but the plant also forms colonies via vegetative reproduction from the roots.

Habitat: Rapidly colonizes disturbed sites such as roadsides, rail right-of-way, and other locations including cultivated ground. Prefers a drier site in coarse, well-drained soils.

Management: Advice - identify and treat early.

Biological controls are not available in Minnesota. Two flower feeding beetles (*Brachypterolus pulicarius* and *Gymnetron antirrhini*) are being investigated.

Manual methods including **cutting, mowing, hand pulling** or **tillage** if done repeatedly and in conjunction with other treatments may control infestations. **Grazers** eat the flowers, but may also carry the seeds.

Herbicide combinations of picloram and chlorsulfuron or imazapic and chlorsulfuron or diflufenzopyr and picloram and chlorsulfuron are being used in some areas. Formulations of chlorsulfuron, dicamba, picloram or imazapic have had reported success. Re-treatment is likely necessary.



UGA1416005

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn									
	Foliar	■	■				■	■		
	Cut stem									
	Mow									
	Don't mow									
Flowering Period			■	■	■	■	■			

Prohibited: Eradicate

Grecian foxglove : *Digitalis lanata* Ehrh.



Identification:

Plant: Herbaceous, perennial beginning its first year as a basal rosette with a single flowering stalk from 2-5 feet tall in subsequent years.

Leaves: Alternate, smooth, stalk-less upper leaves with toothless edges are narrow (lance-shaped). Basal leaves are more oval with rounded tips and are densely woolly.

Flower: Many tubular flowers attached to a central stalk (raceme) with bloom progression from the bottom to the top of the stalk. The flowers have a brown or purple veined upper hood and a creamy-white, elongated lower lip.

Bloom time is June to July

Fruit and seed: The 2-parted seed capsule splits to release tiny reddish-brown seed with 3-4 year viability. The hook-covered seed pods are easily caught on clothing or fur and transported to new locations.

Life History: A perennial plant that blooms following its first year as a basal rosette. Each flower produces numerous seeds that are viable for up to 4 years. The small wingless seeds are easily transported by birds, animals, human activity as well as wind and water.

Habitat: Minnesota sites are in full sun to partial shade along roads, woodland edges and in open fields.

Management: **Caution!** Grecian foxglove contains toxins (cardiac glycosides) that can be absorbed through the skin. These compounds are harmful to livestock and humans. Do not pull or handle this plant without protective clothing, in particular, rubber gloves and long sleeves are recommended.

Repeated mowing or cutting to prevent flowering throughout the year and over several years can drain plants of energy and help control an infestation. Since flowering can occur on mowed, short stems follow-up treatments with herbicide may be necessary.

Prescribed fire, there is no research information available at this time.

Herbicide applications in May and again in July are beneficial to knock down plants before flowering can occur. A fall application is also recommended to kill basal rosettes that were missed earlier or that developed during the season. Metsulfuron-methyl formulations are recommended for good control.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn									
	Foliar		■	■		■	■	■	■	
	Cut stem									
	Mow		■	■						
	Don't mow				■	■	■	■	■	
Flowering Period				■	■					

Prohibited: Control

Garlic mustard : *Alliaria petiolata* (M. Bieb.) Cavara & Grande



Identification:

Plant: Herbaceous, biennial with the first year plants being basal rosettes. Second year flowering plants can attain heights of 4 feet and can produce more than one flowering stem.

Leaves: Basal rosettes with coarsely toothed, kidney-shaped foliage remain green through the winter. Foliage on the flowering stem is more-or-less triangular, coarsely toothed and stalked. Foliage has the odor of garlic when crushed.

Flower: A cluster of small 4-parted, white flowers that are approximately 1/8 inch across.

Bloom time is April to June.

Fruit and Seed: The 1-2 1/2 inch long slender seed pods are very recognizable and contain numerous black, shiny seeds.

Life History: Reproduction is by seed that matures June into July and can be dispersed about 6 inches when the pods burst at maturity. Seed remains viable in the soil for up to 5 years. Plants that have flowered and are cut or pulled should be removed from the site as the seed can continue to mature.

Habitat: An invader of shady, moist forests or woodland settings but also invades oak savannas and disturbed areas in full sun. It is reported that garlic mustard will inhibit the growth of beneficial fungi associated with native plants thus causing a decline in herbaceous cover.

Management:

Bio-controls have not been identified for this plant.

Manual methods include pulling plants in early spring prior to seed set and cutting plants back to the ground as they bolt for flowering, prior to flower opening. Monitor the site as cutting may need to be repeated. If mature flowers or seed are present the plants should be piled and burned or removed from the site in bags for disposal.

Prescribed fire can be run through in the fall to kill basal rosettes.

Herbicide applications to foliage with formulations of triclopyr, metsulfuron-methyl, or imazapic. Use glyphosate or 2,4-D after native plants have entered dormancy and garlic mustard is still active.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn							Yellow	Yellow	
	Foliar	Dark Blue						Dark Blue	Dark Blue	Dark Blue
	Cut stem									
	Mow	Green	Green							
	Don't mow			Red	Red	Red	Red	Red	Red	
Flowering Period		Light Red	Light Red	Light Red						

Prohibited: Control

Narrowleaf bittercress : *Cardamine impatiens* L.



Identification:

Plant: Herbaceous, annual or biennial starting the first season as a basal rosette and in the second season sending up a smooth flower stem to approximately 2 feet in height.

Leaves: Basal rosette leaves are pinnately compound with 3-11 round lobed leaflets. Leaves on the flowering stem, while still pinnately compound, likely will not have rounded lobes but 6-20 lance or arrowhead shaped leaflets. The edges of the flowering stem leaves may be smooth or sharply toothed.

An important differentiation from other plants can be found at the point where the leaf attaches to the stem, look for narrow pointed ears or auricles that grasp and may extend beyond the stem.

Flower: Small (0.1 inch), white 4-parted flowers. The white petals may not be present.

Bloom time is May to August.

Fruit and Seed: Similar to other members of the mustard family, the seed pods are long (0.6 - 0.8 inch) and slender. Seed ripens from May to September and is dispersed short distances from the plant.

Life History: Reproduction is by seed. Seed pods average 10-24 seeds and individual plants can produce thousands of seeds. Movement of seeds is aided by water, animals and human activities.

Habitat: Typically found in moist woodlands, forested areas and on the margins of thickets. River bottom sites, stream-banks and other moist areas are very good habitat and provide avenues for dispersal. This plant can tolerate a variety of conditions and has also been reported in areas such as roadsides, vacant lots, as well as yards and gardens.

Management: Recommendations at this time focus on hand pulling infestations. Good advice from the Minnesota Department of Agriculture in reference to controlling narrowleaf bittercress;

“Following guidelines for controlling other biennial mustards such as garlic mustard, *Alliaria petiolata*, may be helpful.”

Hand pulling timed to prevent flower and/or seed production is recommended. Subsequent re-treatments will be required due to germination and recruitment from the seedbank. If flowers or seed pods are present on the plants, bagging and removal are recommended as seed will mature even after being pulled from the ground. If infestations are large or dense, consider the need for ground cover to prevent erosion and to provide competing vegetation.

Prescribed fire can be run through in the fall to kill basal rosettes.

Herbicide applications to foliage with formulations of triclopyr, metsulfuron-methyl, or imazapic. Use glyphosate or 2,4-D after native plants have entered dormancy and narrowleaf bittercress is still active.



Copy of timing treatments for Garlic Mustard (*Alliaria petiolata*) control.

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn							Yellow	Yellow	
	Foliar	Dark Blue						Dark Blue	Dark Blue	Dark Blue
	Cut stem									
	Mow	Green	Green							
	Don't mow			Red	Red	Red	Red	Red	Red	
Flowering Period			Light Red							

Prohibited: Control

Plumeless thistle : *Carduus acanthoides* L.



Identification: Compare to Minnesota native - swamp thistle (*Cirsium muticum*).

Plant: Herbaceous, biennial reaching heights of 1-4 feet. Unlike native thistles, the stems of plumeless thistle are winged and spiny.

Leaves: Edges of rosette leaves are wavy with yellowish spines. Stem leaves are alternate, attached directly to the stem and typically have hairs on the underside along the mid-vein.

Flower: Numerous stem branches support terminal, single, composite flowers that are ½ to 1½ inches wide. Linear or narrow bracts with short spines are found immediately below the pink to purple flowers.

Bloom time is July to October.

Fruit and Seed: Small seeds approximately 1/16 inch long described as straw colored and tufted with fibers on the terminal end. The fibers aid in wind dispersal.

Life History: Reproduction is by seed and seeding is prolific building a large seed bank in a short period of time. Thus, control measures should focus on eliminating seed production and exhaustion of the seed bank. Movement is greatly increased by animal and/or human activities such as mowing or haying.

It is reported that musk thistle (*Carduus nutans*) and plumeless thistle hybridize.

Habitat: Infestations are found on dry to moist soils in woodlands, waste areas, along roadsides, ditches and stream banks.

Management:

Bio-controls have been identified but have had limited success.

Cutting taproots 1-2 inches below ground is effective but time consuming for large numbers of plants. **Mowing** should be timed at flower bud stage to prevent seed production and should be repeated 2-3 times per season to be effective. Care should be taken to avoid spreading seed with hay or straw and with mowing and vehicle movement through infestations.

Prescribed fire can be used to encourage stands of native grasses that will outcompete thistle. However, monitoring is needed to check for thistle that germinates in bare soil soon after burns are completed.

Herbicide applications timed at the early bolting phase are foliar applications of 2,4-D ester or dicamba formulations. For foliar applications at the budding to flower stage or fall applications to basal rosettes turn to formulations of aminopyralid, clopyralid, metsulfuron-methyl or triclopyr.

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Yellow	Yellow	Yellow			Yellow	Yellow	Yellow	
	Foliar	Dark Blue	Dark Blue	Dark Blue				Dark Blue	Dark Blue	
	Cut stem									
	Mow		Green	Green						
	Don't mow				Red	Red	Red	Red	Red	
Flowering Period			Pink	Pink	Pink	Pink	Pink			

Prohibited: Control

Musk or nodding thistle : *Carduus nutans* L.



Identification: Compare to Minnesota native - [swamp thistle](#) (*Cirsium muticum*).

Plant: Herbaceous, biennial thistle that is a basal rosette in its first season. Second season, mature flowering stalks can be 1-7 feet tall.

Leaves: Rosettes can be 20 inches or more in diameter with rosette foliage deeply lobed, a light colored midrib and leaf edges that are light colored and spiny. Foliage on the flowering stalk is alternate with spiny wings from the leaf bases onto the stem and both surfaces are without hairs. Compare to *plumeless thistle* foliage that is hairy below.

Flower: Large at 1½-3 inches wide and deep pinks to purple. Composite flowers are solitary on branch ends, often nodding with large dark-colored spiny bracts beneath. Compare to *plumeless thistle* flowers that are ½ to 1½ inches wide with short spiny bracts and winged stems.

Bloom time is June to August.

Fruit and Seed: Seeds are tufted with feathery plumes that are easily wind dispersed and most are deposited within 160 feet of the plant. Do not mow after seed has developed as this strongly aids dispersal.

Life History: Plants have thick taproots but no rhizomes; thus, musk thistle is not as clonal as Canada thistle. Seed production is high with individual plants producing thousands of seed which can persist in the seed bank up to 10 years.

Habitat: Infestations are found on dry to moist soils in woodlands, waste areas, along roadsides, ditches and stream banks.

Management:

Bio-controls have been identified but have had limited success.

Cutting taproots 1-2 inches below ground is effective but time consuming for large numbers of plants. **Mowing** should be timed at flower bud stage to prevent seed production and should be repeated 2-3 times per season to be effective. Care should be taken to avoid spreading seed with hay or straw and with mowing and vehicle movement through infestations.

Prescribed fire can be used to encourage stands of native grasses that will outcompete thistle. However, monitoring is needed to check for thistle that germinates in bare soil soon after burns are completed.

Herbicide applications timed at the early bolting phase are foliar applications of 2,4-D ester or dicamba formulations. For foliar applications at the budding to flower stage or fall applications to basal rosettes turn to formulations of aminopyralid, clopyralid, metsulfuron-methyl or triclopyr.

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Yellow	Yellow	Yellow			Yellow	Yellow	Yellow	
	Foliar	Dark Blue	Dark Blue	Dark Blue				Dark Blue	Dark Blue	
	Cut stem									
	Mow		Green	Green						
	Don't mow				Red	Red	Red	Red	Red	
Flowering Period			Pink	Pink	Pink	Pink				



Identification: Compare to Minnesota's native - [swamp thistle](#) (*Cirsium muticum*).

Plant: Herbaceous, perennial with grooved, non-spiny, hairy and typically upright stems to a height of 2-6+ feet tall.

Leaves: Alternate, simple, pinnately lobed leaves that are generally lance-shaped. The leaves are irregularly lobed, with toothed, spiny edges. The leaves are stalkless (sessile) and at maturity are downy or hairy on the underside.

Flower: Male and female (dioecious) 3/4 inch flowers occur singly on the end of branches. The disk or composite inflorescence is comprised of numerous purple to pinkish small florets. Bracts below the inflorescence do not have spines on the tips.

Bloom time is June to October.

Fruit and Seed: Tufted light brown seeds are easily dispersed by wind. Do not mow after seed has developed as this strongly aids seed dispersal.

Life History: Reproduction can occur from seed, root cuttings and from rhizomes. Clonal stands are common and spread can be significant from roots that can grow horizontally 10-12 feet per year.

Habitat: A successful inhabitant of disturbed areas such as roadsides and old fields but will also move into open woodlands and prairies. This plant is also found where water levels fluctuate such as in wet meadows, along stream banks and ditches.

Management:

Bio-controls have been identified but have had limited success.

Cutting or mowing targets plants that are approximately 3 inches tall and the process must be repeated throughout the season to maintain the plants at 3 inches or less in height. Continuing this approach for several years can drain the plants of reserves.

Repeated **prescribed fire** can be used to encourage stands of native grasses that will outcompete thistle. However, monitoring is needed to check for thistle that germinates in bare soil soon after burns are completed.

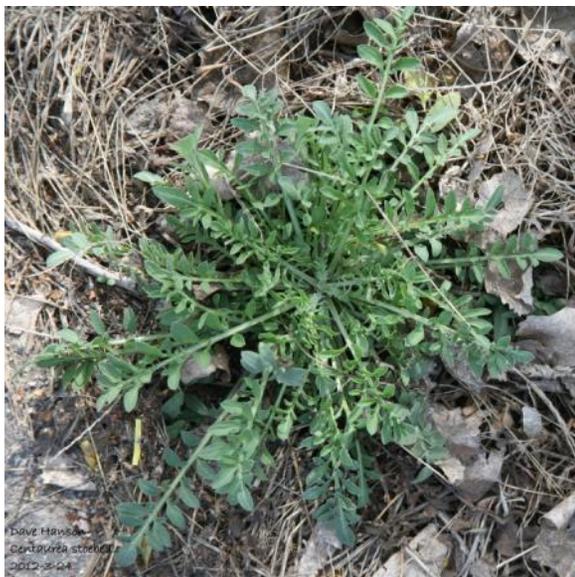
Herbicide foliar sprays with formulations of clopyralid, aminopyralid, or metsulfuron-methyl. These foliar applications are made as the plants bolt, prior to flower set, or in late summer/early autumn to rosettes.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Yellow	Yellow	Yellow						
	Foliar	Dark Blue	Dark Blue				Dark Blue	Dark Blue		
	Cut stem		Dark Purple	Dark Purple						
	Mow		Green	Green						
	Don't mow				Red	Red	Red	Red	Red	
Flowering Period			Light Red	Light Red	Light Red	Light Red	Light Red	Light Red	Light Red	

Prohibited: Control

Spotted Knapweed : *Centaurea stoebe* L. ssp. *micranthos* (Gugler) Hayek



Above: basal rosette,
Right: basal foliage,
Below: Mature foliage.



Identification: Compare to several other knapweeds, not described in this guide.

Plant: Herbaceous, classed as a short-lived perennial living 1-4 years. Initial stage is a rosette before the plant produces 1-6 stems ranging from 1-4 feet tall.

Leaves: Basal rosette leaves up to 6 inches long have deep sinuses. Alternate leaves on mature stems vary from smaller, 1-3 inch, versions of the basal leaves to very small linear leaves near the upper end.

Flower: Strongly resemble the flowers of thistles in their pink to purple color (rarely white) and multi-parted texture. Below the petals, the flower is held together by bracts that are stiff and tipped with darkened hairs.

Bloom time is July to September.

Fruits and Seed: Small (1/8 inch long), brownish, tufted, seeds.

Life History: Allelopathic properties (chemicals exuded by the plant) can suppress the germination of seeds of other plants nearby. Plant removal can lead to bare patches of soil subject to erosion.

Seeds are the primary means of reproduction and a mature plant can produce thousands of seeds that may remain viable in the soil for up to 5 years. The seeds are moved short distances by wind while animal and human activity disperse seeds far and wide.

Habitat: Prefers disturbed sites with gravelly or sandy dry soils. Roadsides, abandoned lots, old fields and gravel pits are all likely habitat that can support large infestations.

Management: **Caution!** Gloves and long sleeves are recommended when handling spotted knapweed as it is known to irritate the skin.

Bio-controls approved for use in Minnesota are a root-boring weevil (*Cyphocleonus achates*), seedhead flies (*Urophora affinis* and *U. quadrifasciata*) and seedhead weevils (*Larinus minutus* and *L. obtusus*). As populations of the insects build and additional control measures are brought to bear, infestations can be reduced.

While **cutting, mowing** and **prescribed fire** can encourage competition from native grasses and help reduce the extent of an infestation they will likely not eradicate it.

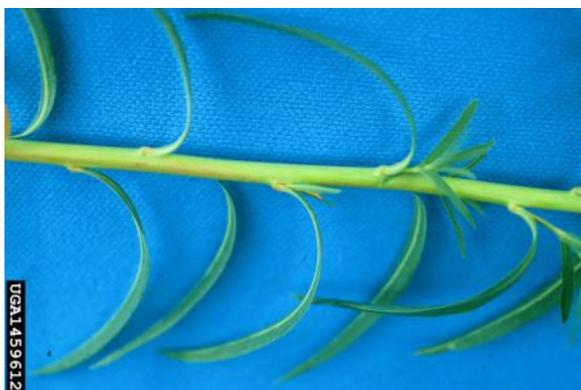
Herbicide formulations including aminopyralid, clopyralid, glyphosate, imazapyr, aminocyclopyrachlor, and picloram have demonstrated control with foliar applications.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Yellow	Yellow							
	Foliar				Dark Blue					
	Cut stem									
	Mow		Green	Green						
	Don't mow				Red	Red	Red	Red	Red	
Flowering Period					Light Red					

Prohibited: Control

Leafy spurge : *Euphorbia esula* L.



Identification: Similar to *invasive cypress spurge* (*E. cyparissias*) and *introduced yellow-rocket* (*Barbarea vulgaris*).

Plant: Herbaceous, perennial to 3 feet tall. *Cypress spurge* is 8-14 inches tall. Broken stems of many *Euphorbia* spp. produce a milky sap (latex) that is a good identification characteristic.

Leaves: Alternate, linear to lance-like, bluish-green and 1-4 inches in length. *Cypress spurge* leaves are approximately 1 inch in length, alternate or whorled and narrower than leafy spurge leaves.

Flower: There are no petals or sepals to the small yellowish-green flowers. Upper stem leaves or bracts develop just below the flower and are yellow-green in color. The bracts develop before the true flowers.

Bloom time is May to August.



Left: Leafy spurge
Right: Cypress spurge.

Fruit and Seed: Three-celled capsules that expel seeds up to 20 feet. Each of the three cells contains a seed.

Life History: Leafy and cypress spurge reproduction can be vegetative from buds on roots, rhizomes and root cuttings. The ability to reproduce vegetatively makes these difficult plants to control. Deep roots to 21 feet and extensive horizontal roots allow the plants to store vast reserves providing the ability to recover after removal attempts. Seed production is significant with plants producing on average 140 seeds per stem. Seeds can remain viable in the soil up to 8 years.

Habitat: Leafy and cypress spurge readily invade dry sites in full sun, but the ability to tolerate a range of conditions allows them to invade moist, rich soils as well.

Management: **Caution!** Some people are sensitive to the sap of spurges and develop skin rashes after pulling or handling plants, so gloves and long clothing are recommended. The milky sap of the spurges is toxic to cattle and horses.

Bio-controls are available with at least 15 insects identified and approved for controlling leafy spurge. Flea beetles (*Aphthona* spp.) are widely used in control programs in Minnesota. Additionally in Minnesota, stem and root boring beetles (*Oberea erythrocephala*) provide some control.

Cutting or mowing if timed before flower development can reduce or limit seed production. Grazing goats and sheep can effectively limit the spread of infestations.

Prescribed fire is another tool that helps drain plants of reserve energy. Control of the spurges typically requires a multi-tactic approach - eliminate or reduce seeding, exhaust the seed bank, and drain the reserves of existing plants while attempting to encourage native plants for competitive cover. So, consider spring mowing or fire with a fall application of imazapic.

Herbicide controls are applied as foliar applications and usually involve formulations of aminocyclopyrachlor, picloram, 2,4-D, glyphosate, dicamba, or imazapic.

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Yellow	Yellow	Yellow				Yellow	Yellow	
	Foliar	Dark Blue	Dark Blue				Dark Blue	Dark Blue		
	Cut stem									
	Mow	Green	Green							
	Don't mow			Red	Red	Red	Red	Red	Red	
Flowering Period			Light Red	Light Red	Light Red	Light Red				

Prohibited: Control

Purple loosestrife : *Lythrum salicaria* L.



Identification: Compare to native [fireweed](#) (*Chamerion angustifolium*) and its round stem.

Plant: Herbaceous, wetland perennial reaching 4-7 feet tall with a 4 to 6 sided wood-like stem.

Leaves: Opposite, sometimes whorled, lance-shaped, and downy with a slightly wavy yet smooth edge. The leaf pairs are positioned at right angles to the leaf pairs above and below.

Flower: Each plant can have from 1 to many spikes of pinkish-purple flowers. The center of the flower is yellowish and surrounded by 5-7 petals that have a wrinkled appearance.

Bloom time is July to September.

Fruit and seed: Tiny seeds are released from 2-parted capsules. Mature plants can produce upwards of 1 million seeds.

Life History: Reproduction by seed and rhizomes produces large monoculture infestations.

Habitat: Purple loosestrife can be found on upland sites but is best known as an invader of wetlands or aquatic habitats such as ditches, wet meadows, ponds, marshes, river and stream banks as well as lake shores. Purple loosestrife disrupts aquatic habitats as it displaces wetland emergent species.

Management:

Bio-controls in the form of 2 leaf feeding beetles of the same genus (*Galerucella calmariensis* and *G. pusilla*) have been very effective in Minnesota. In addition the root-mining weevil (*Hylobius transversovittatus*) also provides some control while a flower feeding weevil (*Nanophyes marmoratus*) dramatically impacts seed production.

Mowing is seldom an option due to the wet environment. **Cutting** of flower spikes can be an effective control of seed production but all spikes should be removed from the site. **Hand pulling or digging** of the plants can also be effective but care should be taken to remove the entire root system if possible. Resprouting can occur from roots and root segments left in the ground or on the site.

Herbicide labeled for aquatic? Pay attention and choose herbicides properly labeled for the site. The following herbicides provide control, have formulations labeled for use on rights-of-way and near water; 2,4-D, glyphosate, imazamox, metsulfuron-methyl+aminopyralid, triclopyr, Imazapyr and aminocyclopyrachlor.

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn									
	Foliar									
	Cut stem									
	Mow									
	Don't mow									
Flowering Period										



Identification: Compare to [golden alexanders](#) (*Zizia aurea*) and [heart-leaved golden alexanders](#) (*Z. aptera*).

Plant: Herbaceous, classed as a monocarpic perennial indicating that the plant dies after bearing fruit. Early life form is a basal rosette with the mature hollow, grooved flowering stalk potentially reaching 5 feet.

Leaves: During the basal rosette stage, leaves can be 6 inches in height and are pinnately compound with 5-15 leaflets. Flowering stalk leaves are alternate with 2-5 leaflets that become smaller near the top of the stem. Leaflets are coarsely toothed, with sinuses cut to varying depths creating lobes of various sizes. The base of the leaf stalks wrap or clasp the stem.

Flower: Many 5-petaled, small yellow flowers on wide, flat umbels of 2 to 6 inches.

Bloom time is June to July.

Fruit and Seed: Flattened oval seeds.

Life History: Typical life span is two years, first year as a basal rosette. At this stage, it is one of the first plants to green up in the spring and one of the last to brown down in the fall providing opportunities for scouting and treating. Mid to late summer, the mature second-year plants will bolt, flower and set dozens of seed per plant. The seeds are moved off the infested site by animal and human activity or wind and water movement. The seed is reported to be viable in the soil for up to 4 years.

Habitat: Disturbed sites such as roadsides and abandoned fields or lots. Can occur in wet meadows but dry to mesic soils are more typical. Full to partial sun is a must for this plant.

Management: **Caution!** Use protective clothing, goggles or face mask, contact with the bristles or sap of the plant can cause severe blistering and swelling when combined with exposure to sunlight (phyto-photo-dermatitis).

Bio-controls have not been identified.

Cutting or mowing after seed set should not be done as the seed will be spread from the infested site. Only cut after seed-set if the plants can be collected and removed from the site for disposal. If a site is mowed early in the season it must be monitored as the plants will likely re-sprout, bolt and flower.

Prescribed fire can be used to encourage stands of native grasses for competition. However, follow-up treatments (herbicide or cutting) are still required to prevent seed production.

Herbicide controls include foliar applications of 2,4-D or metsulfuron-methyl to the rosette stage in the May-June timeframe and again in September-October. If glyphosate is to be applied to rosettes it is recommended to hold off until late fall to prevent damage to native plants that should then be dormant.

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn									
	Foliar		■	■			■	■		
	Cut stem									
	Mow		■	■						
	Don't mow				■	■	■	■	■	
Flowering Period				■	■	■	■			



Identification:

Plant: Herbaceous, perennial reaching 2-5 feet in height. Stems appear woody, are slightly hairy to smooth and at the base are purplish-red.

Leaves: Alternate, pinnately divided, toothed on the edges and 2-12 inches long, typically smaller near the top of the plant. Leaves are strongly aromatic when crushed.

Flower: Single stems support the multi-branched, flat cluster of bright yellow button-like flowers. Each ¼-½ inch wide button is comprised of many small florets and the flower heads, like the leaves, are strongly aromatic.

Bloom time is July to October.

Fruit and seed: Small, yellowish-brown, dry, 5-toothed crowned seeds.

Life History: Reproduction is both vegetative from rhizomes and root fragments or by seed. Seeds are dispersed by wind, water and human activities such as vehicle traffic and mowing.

Habitat: Found most often in open, disturbed areas typical of trail edges, roadsides, gravel pits and old farmsteads or pastures. Common tansy readily invades areas with dry, well drained soils in full sun.

Management: **Caution!** The alkaloids contained in common tansy are toxic to livestock and humans if consumed in quantity. Toxins can also be absorbed through the skin so gloves are recommended when handling or pulling this plant.

Bio-controls have not been identified.

Mechanical methods like **tilling** can spread common tansy by spreading small root segments. **Pulling** also may leave root segments in the ground which may resprout.

Cutting or mowing to prevent seed production can be effective and should be timed just prior to flowering.

Prescribed fire can eliminate competition and create favorable conditions for common tansy by opening the canopy and preparing bare soil. However, fire can remove dead cover material thus allowing for better control with herbicide applications.

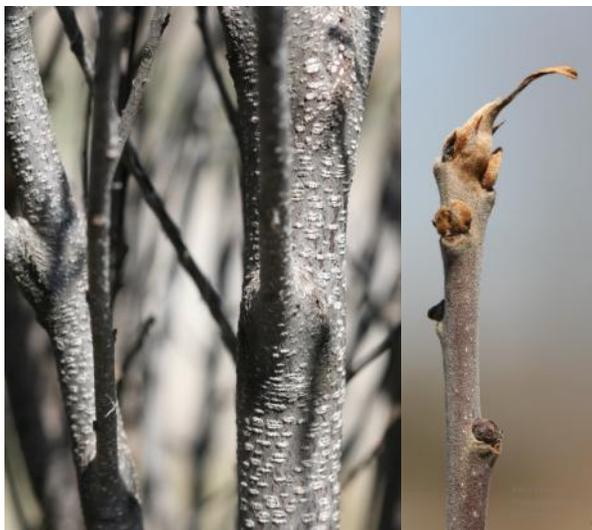
Herbicide control with formulations of metsulfuron-methyl, imazapyr, glyphosate or 2,4-D provide good control when applied as foliar applications in the spring.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn									
	Foliar				■	■	■	■	■	
	Cut stem									
	Mow		■	■						
	Don't mow				■	■	■	■	■	
Flowering Period					■	■	■	■		

Restricted

Glossy buckthorn : *Frangula alnus* Mill.



Identification: Compare to the [cherries and wild plum](#) (*Prunus* spp.)

Plant: Shrub or small tree at 20 feet in height, often multi-stemmed with prominent light-colored lenticels on dull grayish to dark brown bark. Heartwood may be orange to pinkish and sapwood may be yellowish, both can help in identification.

Leaves: Alternate, glossy, 2-3 inch leaves with prominent parallel veins terminating near a smooth edge. Undersides are slightly hairy and dull. Leaves will likely persist longer in the autumn than native deciduous shrubs, but they will turn yellow and drop.

Flower: Not showy, small, 5-petaled, yellowish and borne in clusters in the leaf axils.

Bloom time is May to September.

Fruit and Seed: Clustered in the leaf axils along the stem, initially reddish maturing to purplish-black in late summer into autumn. Each fruit contains 2-3 seeds, dispersed by birds.

Life History: Reproduction is by seed and while birds disperse the seed, dense thickets suggest much of the seed drops close. Shades out native shrubs and forbs creating monocultures in sites that typically support very diverse flora.

Habitat: An invader of wetlands including sedge meadows, sensitive acidic bogs and calcareous fens. Tolerant of shade, yet will perform well in full sun on upland sites.

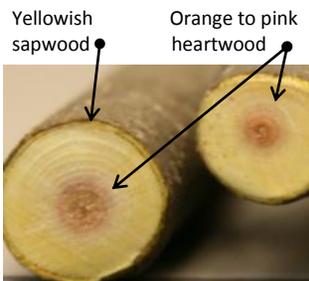
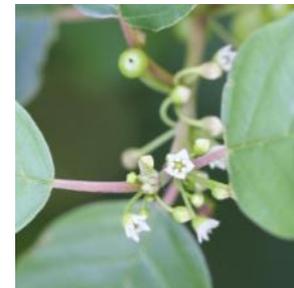
Management: Caution should be exercised to avoid the creation of large bare patches and/or extensive soil disturbance. Both scenarios lead to soil erosion and create good seed beds for the next glossy buckthorn generation.

Bio-controls have not been identified.

Hand pulling or the mechanical advantage provided by a weed-wrench can help control small infestations. **Cutting** of stems must be accompanied by herbicide treatments or resprouting will occur. **Mowing** is typically not an option in sensitive wetland areas, but on upland sites may be a useful tool in seedling and small diameter stem control.

On upland sites **prescribed fire** can be used to control seedlings and small diameter stems and if used consistently can drain larger plants of reserves and provide control. However, sprouting will occur and a follow-up herbicide application should be considered.

Herbicide formulations of triclopyr, imazapyr, metsulfuron-methyl, 2,4-D, glyphosate or picloram are used as foliar applications. Herbicides include triclopyr or glyphosate for late autumn into winter applications to basal bark, cut stumps or frill cuts.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Yellow	Yellow	Yellow			Yellow	Yellow	Yellow	
	Foliar		Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	
	Cut stem				Dark Purple					
	Mow									
	Don't mow									
Flowering Period			Red	Red	Red	Red	Red	Red		

Restricted

Common buckthorn : *Rhamnus cathartica* L.



Identification: Compare to the [cherries and wild plum](#) (*Prunus* spp.)

Plant: Tall shrub at 20-26 feet with the potential to become a small tree reaching 36 feet. Often 1 to a few stems with diameters up to 5-6 inches and occasionally larger. Light-colored lenticels on shiny gray to brown bark leads to confusion with young native cherries and plums (*Prunus* spp.). Many twigs are terminated by a small thorn-like spine.

Leaves: Sub-opposite at times appearing opposite and on fast growing sprouts alternate. Shiny green, 1-2½ inches, oval with tiny teeth on the edge of the leaf. Strong identification characteristics are the veins curving to the tip of the leaf (arcuate venation) and leaves persistent and green late into the autumn.

Flower: Male and female (dioecious) on separate plants, small, 4-parted and green.

Bloom time is July to September.



Fruit and Seed: Fruit on female plants only. At maturity a purplish-black, small (¼ inch), berry-like fruit held close to the stem in clusters. Typically, 3-4 seeds per fruit. Strong identification characteristic are these blackish fruits held close to the twig late into the winter.

Life History: Reproduction is by seed and dispersal is often aided by birds. Heavy seed production combined with stems and stumps that sprout vigorously when damaged make control difficult.

Habitat: A strong competitor on upland sites in a variety of soil types and moisture regimes. Common buckthorn thrives in the understory, on the forest edge or in full sun often to the complete exclusion of other species.

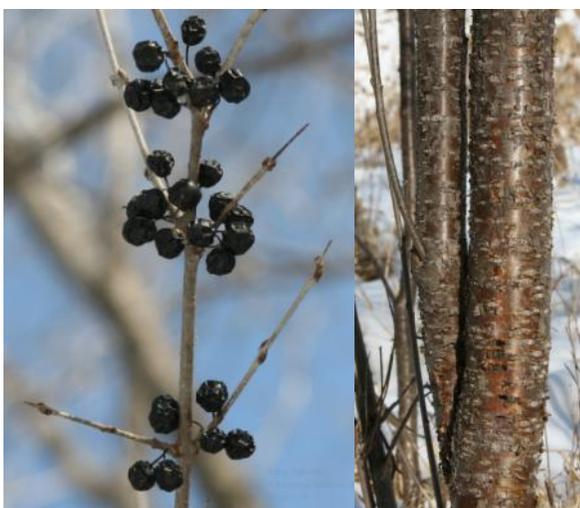
Management: Keep in mind, if funds and/or time are limited female plants are the fruit producers and should be targeted first. Caution should be exercised to avoid the creation of large bare patches and/or extensive soil disturbance. Both scenarios lead to soil erosion and create good seed beds for the next common buckthorn generation.

Bio-controls have not been identified.

Hand pulling or the mechanical advantage provided by a **weed-wrench** can help control small infestations. **Cutting** of stems must be accompanied by herbicide treatments or resprouting will occur. **Mowing** is typically not an option in sensitive wetland areas, but on upland sites may be a useful tool in seedling and small diameter stem control.

Prescribed fire is used to control seedlings and small diameter stems and if used consistently can drain larger plants of reserves and provide control. However, sprouting will occur and a follow-up herbicide application should be considered.

Herbicide formulations of triclopyr, imazapyr, metsulfuron-methyl, 2,4-D, glyphosate or picloram are used as foliar applications. Herbicides include triclopyr or glyphosate for late autumn into winter applications to basal bark, cut stumps or frill cuts.



		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Yellow	Yellow	Yellow			Yellow	Yellow	Yellow	
	Foliar		Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	
	Cut stem			Dark Purple						
	Mow									
	Don't mow									
Flowering Period					Light Red	Light Red	Light Red			

Restricted

Multiflora rose : *Rosa multiflora* Thunb.



Dave Hanson
Rosa multiflora
2009-6-11

Identification:

Plant: Shrub with 6-13 feet long, wide arching canes reaching 6-15 feet tall. The canes armed with stiff, downward curved thorns form an impenetrable thicket.

Leaves: Alternate, pinnately compound, 5-11 sharply-toothed leaflets. The oval leaflets are nearly smooth on the topside and are covered with short hairs below. There are fringed stipules where the leaf attaches to the stem.

Flower: Numerous, showy, 5-parted, fragrant and white to slightly pink, ½-1½ inch across.

Bloom time is May to July.

Fruit and Seed: Rose hips, ¼ inch diameter, bright red fruits, develop during the summer months and persist into the winter.

Life History: Plants reproduce by seed and by cane tips with ground contact taking root. The plants are prolific seed producers and seeds are viable in the seedbank for up to 20 years.

Habitat: Readily invades disturbed areas such as woodlands, prairies, roadsides, along streams and has become a problem in pastures where it discourages grazing.

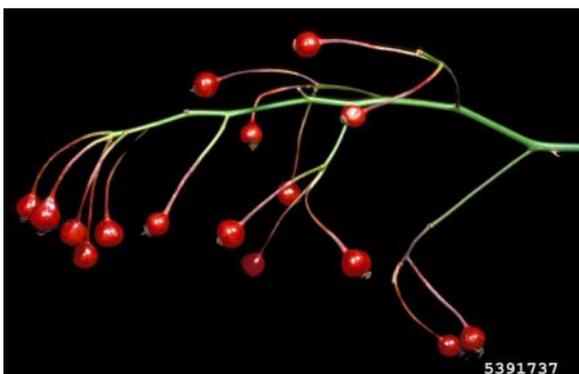
Management:

Bio-controls have not been identified.

Cutting or mowing frequently during the growing season (3-6 times) for 2-4 years can achieve good control of infestations.

Prescribed fire in the spring will provide good control of small stems and seedlings.

Herbicide applications to cut stems and to resprout stems with systemic herbicides such as glyphosate have proven successful. As with most plants, late season applications of herbicides are effective as plants are moving photosynthates to storage in the root systems.



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		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Yellow	Yellow	Yellow						
	Foliar				Dark Blue	Dark Blue	Dark Blue			
	Cut stem					Dark Purple	Dark Purple	Dark Purple		
	Mow	Green	Green	Green	Green	Green	Green	Green	Green	
	Don't mow									
Flowering Period			Light Red	Light Red	Light Red					



Identification: Information provided below focuses on western poison ivy [*T. rydbergii* (Small) Green] which is a frequently occurring shrubby plant in MN. Common poison ivy [*T. radicans* (L.) Kuntze subsp. *negundo* (Greene) Gillis] differs in that it is potentially a larger shrub (up to 10 feet) and possibly a vine in southeastern Minnesota’s riparian areas and is not common in Minnesota (Smith, 2008).

Plant: A 1-2 foot shrub with gray to tan bark and little if any branching.

Leaves: Alternate, compound leaves, 3 shiny or dull surfaced leaflets. The edges of the leaflets are variable from smooth to very coarsely toothed. The lower surface is pale and often hairy.

Flower: Small, greenish flowers on erect spikes (panicles). The flower spikes are borne in leaf axils on new or current years growth with male and female flowers on separate plants (dioecious).

Bloom time is June to July.

Fruit and Seed: Creamy white to tannish berry-like drupes, approximately ¼ inch diameter. Drupes mature in August through September and persist through the winter providing a good identification characteristic.

Life History: Forms dense colonies by seed and through vegetative reproduction by surface or subsurface rhizomes.

Habitat: Invades disturbed areas such as roadsides, trail sides, fencerows, parks and can also be found in prairie (full sun) and forested settings (partial shade).

Management: **Caution!** Use protective clothing, rubber gloves and long sleeves, contact with the sap (urushiol) from broken plant parts can cause blistering (dermatitis). Smoke from burning poison ivy can deliver the urushiol to airways and lungs. Do not compost as resprouting can occur and the urushiol may persist in the compost. Urushiol can stay on pets, tools, toys and other objects for long periods to be effectively transferred and cause irritation at a later date.

Grazing, cutting or mowing can inhibit flowering but must be continued in order to deplete energy reserves in the plants and to deplete the seed bank.

Prescribed fire generates potentially harmful smoke, see cautionary note above. So, while prescribed fire can provide control and often does control infestations of poison ivy, this tool should not be the first choice.

Herbicide formulations of triclopyr, 2,4-D, glyphosate, imazapyr or aminocyclopyrachlor applied to the foliage or to cut stems are effective. Repeat applications will be required to exhaust the seed bank.



Left: Shrub form
Above: Vine form

		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.-Mar
Herbicide	Burn	Yellow	Yellow							
	Foliar		Dark Blue	Dark Blue	Dark Blue					
	Cut stem					Dark Purple	Dark Purple	Dark Purple	Dark Purple	
	Mow	Dark Green	Dark Green	Dark Green	Dark Green					
	Don't mow									
Flowering Period				Light Red	Light Red					



C. orbiculatus, yellowish husks, fruit in leaf axils

C. scandens, orange husks and bright red arils

Identification: Provided for comparison to [Oriental bittersweet](#).

Plant: Woody vine, twiny, no tendrils or aerial roots to assist in climbing.

Leaves: Elliptic to oblong or ovate, typically twice as long as wide. At bud break, leaf edges unroll in a scroll-like fashion. 

Flower: **Key difference** is seen in the terminal panicles of numerous 5-parted flowers. Dioecious plants (male and female plants) producing small, rather inconspicuous whitish flowers.

Bloom time is May to June.

Fruit and Seed: Like the flowers, terminal panicles. **Key difference:** Terminal clusters of fruits with orange colored husks covering bright red 3-parted arils (fleshy, berry-like fruits) that contain 1-2 seeds each. Fruits persist into late winter.

Habitat: Typically found in rich soil, full to partial sun often along roadsides and woodland edges.



Terminally clustered fruits, orange husks and bright red arils.



Foliage typically twice as long as wide. Oriental tends toward oval.



Staminate (male) flowers with yellow pollen.



Pistillate (female) flowers clustered at branch ends



H. lupulus, developing stout, hooked hairs.

Identification: Provided for comparison to [Japanese hops](#).

Plant: Herbaceous, perennial vine, rhizomatous (spreads by rhizomes). Leaf petioles and annual stems with stout hooked hairs.

Leaves: Opposite, **key difference** - leaves are for the most part 3 lobed, higher on the vine leaves may be unlobed. Typically, a cordate (heart shaped) base to the leaf and leaves nearly as broad as long.

Flower: Inconspicuous, wind pollinated and dioecious (male and female) plants.

Bloom time is July to August.

Fruit and Seed: Fruiting structure is cone like, comprised of papery bladders covering individual seeds. Fragrant when crushed. Fruit persists into late winter.

Habitat: Moist soils, disturbed sites in woodlots and along fencerows.



H. lupulus, 3-lobed and un-lobed leaves.



H. lupulus, 3-lobed, opposite leaves.



H. lupulus seed in winter.



Identification: Provided for comparison to [giant hogweed](#).

Plant: Perennial, single-stemmed large plants at 3-10 feet tall. Fuzzy stems are hollow and described as foul smelling. **Key difference** - hogweed has purplish stems with coarse hairs.

Leaves: Compound, 3-parted with toothed, palmate leaflets. The petiole or leaf stalk has an enlarged base that clasps the stem. **Key difference** - hogweed has strongly dissected leaves up to 4 feet wide.

Flower: Many small, white, 5-parted flowers with notched petals packed into a 4-8 inch flat umbel. **Key difference** - the outer flowers are often larger with irregular, notched petals.

Bloom time is June to July.

Fruit and Seed: Many flattened fruits that when dry split into 2 seeds.

Habitat: Often found in rich, moist soils along streams or river bottoms in full to partial sun.



Clasping, 3-parted leaf



Outer flowers, larger, notched and irregular.





Identification: Provided for comparison to non-native thistles; [musk](#), [plumeless](#) and [Canada thistle](#).

Plant: Biennial, mature plants from 2-7 feet tall with multiple-branches terminated by many heads. Stems are not spiny but woolly, especially lower portions of the plant.

Leaves: **Key difference** - deeply divided leaves have lance-like or oblong segments that are described as softly spiny.

Flower: Purples to pinks typically not white. Composite flowers are 1½ inches wide held together by whitish, woolly, non-spiny bracts that have a visible light-colored dorsal (central) ridge.

Bloom time is July to October.

Fruit and Seed: Tufted seed matures and is wind-dispersed late summer into autumn.

Habitat: Swamps, bogs and areas like wet meadows, moist woods and thickets.

Key difference: Woolly, non-spiny bracts with a light colored dorsal ridge



Identification: Provided for comparison to [purple loosestrife](#).

Plant: Perennial, erect single stems reaching 2-6 feet tall.

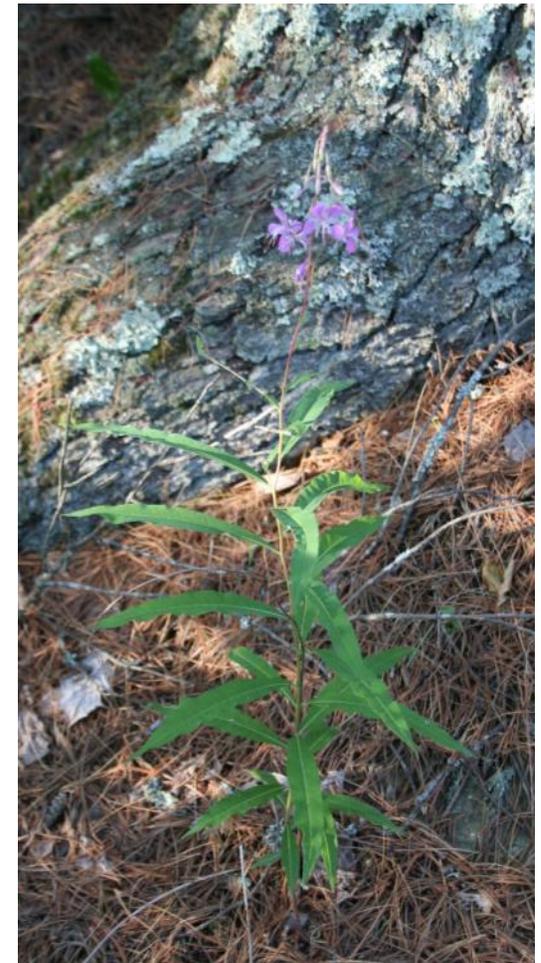
Leaves: **Key difference** - alternate (*not opposite*), crowded leaves that are lance-like and stalkless.

Flower: **Key difference** - four-parted (*not 5-parted*), colors range from pink to purple. The flowers are showy at ¾ to 1½ inches wide and arranged along a tall terminal spike.

Bloom time is June to August.

Fruit and Seed: **Key difference** are long, slender capsules or pods that split to release small seeds with long tufted hairs.

Habitat: Often present following burns on moist soils at forest edges or in clearings.





Above: Mature, bright red fruit and foliage of pin cherry.

Below: Flower of black cherry and maturing fruit of chokecherry.



Identification: Provided for comparison to [glossy](#) and [common buckthorn](#).

Plant: Plums, chokecherry and fire or pin cherry are small sized trees. Black cherry may be a small tree, but reaches medium to large tree status. All have smooth, gray to brown bark that is often shiny and lenticled. Couple that bark and American plum's thorn-like twigs and it is no surprise that it is frequently confused with buckthorn.

Leaves: Elliptic to oblong or ovate, typically finely toothed with acuminate or drawn out leaf tips.

Flower: **Key difference** is seen in the numerous 5-parted, white, fragrant flowers that are fairly showy or obvious. Cherries have panicles of white fragrant flowers while the plum's white flowers are clustered along the stem. In Minnesota wild plum is one of the earliest trees to bloom, typically small groups of trees along the forest edge.

Bloom time is May.

Fruit and Seed: **Key difference** in choke and black cherries are the panicles (loose, hanging clusters) of black fruit that is readily taken by birds. Pin or fire cherry fruit matures to a bright red. Plums have a ¾-1 inch, reddish to purplish fruit that contains a large seed.

Key difference - birds will eat the fruits of the cherries and plums soon after they ripen. Fruits of the buckthorns will remain on the trees into late winter.

Habitat: Typically found in rich soil, full to partial sun often along roadsides and woodland edges.

Below: Thorns of wild plum on a dead branch. Wild plum flowers and fruit.





Identification: Provided for comparison to [wild parsnip](#).

Plant: Herbaceous, perennial reaching 1-2 feet tall. **Key difference** - golden alexanders smooth, shiny stems compared to the grooved stem of wild parsnip.

Leaves: **Key difference** can be seen in the 2-3 inch stem leaves, mostly 3-parted with finely toothed edges. Basal leaves of heart-leaved golden alexanders are simple and oval (heart-shaped) while those of golden alexanders are compound like the upper stem leaves. **Key difference** - the basal leaves of wild parsnip are pinnately compound with 5-15 leaflets.

Flower: Terminal panicles of numerous 5-parted, yellow flowers.

Bloom time is May to July.

Fruit and Seed: Similar to wild parsnips - when mature appears dry and splits into 2 parts.

Key difference - wild parsnip seeds are ridged or ribbed. The seeds of golden alexanders appear similar but are smooth.

Habitat: Found in moderately moist to wet - sandy, loamy soils, full sun to shade.



Citations / Resources:

Black Merel R., Emmet J. Judziewicz. 2009. Wildflowers of Wisconsin and the Great Lakes Region: a comprehensive field guide. Univ of Wisconsin Press. 275 pages

Invasive.org – images at Bugwood. Online. <http://www.invasive.org/species/forbs.cfm>

Factsheets. Online. <http://www.nps.gov/plants/alien/fact.htm>

Minnesota Department of Agriculture. 2011. Biological Control. Online. www.mda.state.mn.us/plants/pestmanagement/biocontrol.aspx

Minnesota Department of Transportation. 2011. *Herbicide Options for Vegetation Control on Mn/DOT Rights-of-Way*. Internal Document. herbicidepreseasonables.pdf

Mortenson, Carol. 2003. *Noxious Weeds of Minnesota*. Leech Lake Division of Resources Management.

Smith, Welby R. 2008. *Trees and shrubs of Minnesota: the complete guide to species identification*. Minneapolis, MN: University of Minnesota Press.

Wisconsin DNR. 2010. *A field Guide to Terrestrial Invasive Plants in Wisconsin*. Ed. Thomas Boos, Kelly Kearns, Courtney LeClair, Brandon Panke, Bryn Scrivner, and Bernadette Williams.

Wisconsin Department of Natural Resources factsheets:
Online. <http://dnr.wi.gov/invasives/species.asp?filterBy=Terrestrial&filterVal=Y>
Online. http://dnr.wi.gov/invasives/publications/manual/manual_list.htm

Prohibited: Eradicate List

Oriental bittersweet: *Celastrus orbiculatus* Thunb.

Image citations – Foliage, immature seed – Ken Graeve – MnDOT
Fruit, vines, stump – Dave Hanson - MnDOT.
Identification and management:
<http://www.nps.gov/plants/alien/fact/pdf/ceor1.pdf>
http://dnr.wi.gov/invasives/fact/ori_bittersweet.htm
<http://www.invasive.org/browse/subinfo.cfm?sub=3012>

Japanese hops: *Humulus japonicus* Siebold & Zucc.

Image citations – Bugwood.org:
Flower, foliage - Leslie J. Mehrhoff, University of Connecticut.
Identification and management:
<http://www.nps.gov/plants/alien/fact/pdf/huja1.pdf>
<http://dnr.wi.gov/invasives/fact/japanhops.htm>

Giant hogweed: *Heracleum mantegazzianum* Sommier & Levier

Image citations – Bugwood.org:
Flower - Leslie J. Mehrhoff, University of Connecticut;
Flower and pen - USDA APHIS PPQ Archive, USDA APHIS PPQ;
Leaf - Donna R. Ellis, University of Connecticut;
Foliage to human - Thomas B. Denholm, New Jersey Department of Agriculture.
Identification and management:
http://www.na.fs.fed.us/fhp/invasive_plants/weeds/giant-hogweed.pdf
<http://dnr.wi.gov/invasives/fact/hogweed.htm>

Yellow starthistle: *Centaurea solstitialis* L.

Image citations – Bugwood.org:
Flower up-close - Peggy Greb, USDA Agricultural Research Service;
Bolting stage - Cindy Roche;
Mature foliage, basal rosette - Steve Dewey, Utah State University.
Identification and management:
<http://www.nps.gov/plants/alien/fact/pdf/ceso1.pdf>
<http://www.invasive.org/browse/subinfo.cfm?sub=4390>
<http://www.fs.fed.us/foresthealth/technology/pdfs/Starthistle.pdf>

Common teasel: *Dipsacus fullonum* L.

Image citations – Bugwood.org:
Flowering head close-up - David Cappaert, Michigan State University;
Flower group, basal rosettes, seed head - Steve Dewey, Utah State University.
Identification and management:
<http://www.illinoiswildflowers.info/weeds/plants/teasel.htm>
<http://dnr.state.il.us/inpc/pdf/VMG%20Teasels%20revised%202007.pdf>
<http://www.fs.fed.us/database/feis/plants/forb/dipspp/all.html>
<http://www.invasiveplantatlas.org/subject.html?sub=3018>

Cut-leaved teasel: *Dipsacus laciniatus* L.

Image citations: Flower head, multiple stems - Dave Hanson, MnDOT;
Roadside infestation, rosette foliage – Tina Markeson, MnDOT.
Identification and management:
http://dnr.wi.gov/invasives/fact/teasel_cut.htm
<http://dnr.state.il.us/inpc/pdf/VMG%20Teasels%20revised%202007.pdf>
<http://www.invasiveplantatlas.org/subject.html?sub=5545>
http://www.missouriplants.com/Whiteopp/Dipsacus_laciniatus_page.html

Dalmatian toadflax: *Linaria dalmatica* (L.) Mill.

Image citations – Bugwood.org:
Foliage - Linda Wilson, University of Idaho;
Flowering plant - Utah State University Archive, Utah State University;
Flower spike up-close - Richard Old, XID Services, Inc.
Identification and management:
http://na.fs.fed.us/fhp/invasive_plants/weeds/dalmatian-toadflax.pdf
http://wiki.bugwood.org/HPIPM:Dalmatian_toadflax
<http://www.invasiveplantatlas.org/subject.html?sub=5939>

Grecian foxglove: *Digitalis lanata* Ehrh.

Image citations: Flower and seed spike, rosettes – Tina Markeson, MnDOT.
Identification and management:
<http://www.minnesotawildflowers.info/flower/grecian-foxglove>
<http://www.mda.state.mn.us/en/plants/badplants/foxglove.aspx>

Citations / Resources continued:

Prohibited: Control List

Garlic mustard: *Alliaria petiolata* (M. Bieb.) Cavara & Grande
Image citation: Basal rosette - Dave Hanson, MnDOT.
Image citations – Bugwood.org:
Flower, foliage, form - Steven Katovich, USDA Forest Service;
Fruit - Chris Evans, River to River CWMA.
Images and good identification write-up: Minnesota wildflowers
<http://www.minnesotawildflowers.info/flower/garlic-mustard>
Management: <http://www.ipm.msu.edu/garlicMge.htm>

Narrowleaf bittercress: *Cardamine impatiens* L.

Image citations – Bugwood.org:
All images - Leslie J. Mehrhoff, University of Connecticut.
Identification and management:
<http://www.minnesotawildflowers.info/flower/narrow-leaf-bittercress>
<http://www.invasive.org/browse/subinfo.cfm?sub=11539>

Plumeless thistle: *Carduus acanthoides* L.

Image citations – Bugwood.org:
Flower, stem, foliage - Steve Dewey, Utah State University;
Form - Richard Old, XID Services, Inc.
Images and good identification write-up: Minnesota wildflowers
<http://www.minnesotawildflowers.info/flower/plumeless-thistle>
Identification and management:
http://dnr.wi.gov/invasives/fact/thistles_plum.htm
http://wiki.bugwood.org/HPIPM:Plumeless_thistle

Musk or nodding thistle: *Carduus nutans* L.

Image citations: all images - Dave Hanson, MnDOT.
Write-up from the USGS – United States department of the Interior
Northern Prairie Wildlife Research Center (NPWRC)
<http://www.npwrc.usgs.gov/resource/plants/exoticab/pipecard.htm>
Other images and good identification write-up: Missouri Plants
http://www.missouriplants.com/Pinkalt/Carduus_nutans_page.html

Canada thistle: *Cirsium arvense* (L.) Scop.

Image citations: all images - Dave Hanson, MnDOT
Write-up from the USGS – United States department of the Interior
Northern Prairie Wildlife Research Center (NPWRC)
<http://www.npwrc.usgs.gov/resource/plants/exoticab/pipecircs.htm>
Identification and management:
<http://www.minnesotawildflowers.info/flower/canada-thistle>
http://dnr.wi.gov/invasives/fact/canada_thistle.htm

Spotted knapweed: *Centaurea stoebe* L. ssp. *micranthos* (Gugler) Hayek

Image citation:
Flower-top view, basal rosette, rosette foliage - Dave Hanson, MnDOT.
Image citations – Bugwood.org:
Flower-side view- Cindy Roche;
Foliage - James H. Miller, USDA Forest Service.
Images and good identification write-up: Minnesota wildflowers
<http://www.minnesotawildflowers.info/flower/spotted-knapweed>
Discussion and management considerations:
<http://dnr.wi.gov/invasives/fact/pdfs/knapweedFactsheet.pdf>
http://wiki.bugwood.org/Centaurea_stoebe_ssp_micranthos
<http://www.mda.state.mn.us/plants/badplants/knapweed.aspx>
<http://wiki.bugwood.org/Archive:Knapweed>

Leafy spurge: *Euphorbia esula* L.

Image citation:
Flowers up-close - Dave Hanson, MnDOT
Image citations – Bugwood.org:
Foliage, flower - Steve Dewey, Utah State University.
Images and good identification write-up: Minnesota wildflowers
<http://www.minnesotawildflowers.info/flower/leafy-spurge>
<http://www.mda.state.mn.us/plants/badplants/leafyspurge.aspx>
<http://www.mda.state.mn.us/plants/badplants/leafyspurge-educ-module.aspx>

Purple loosestrife: *Lythrum salicaria* L.

Image citations: all images - Dave Hanson, MnDOT
Images and good identification write-up: Minnesota wildflowers
<http://www.minnesotawildflowers.info/flower/purple-loosestrife>
Write-up on identification and control options:
<http://www.nps.gov/plants/alien/fact/lysa1.htm>
<http://wiki.bugwood.org/Archive:Loosestrife>
<http://dnr.wi.gov/invasives/fact/loosestrife.htm>
http://kbe.prf.jcu.cz/files/prednasky/ekologie_mokradu/lythrum_biocontrol_in_mn.pdf
<http://www.dnr.state.mn.us/invasives/aquaticplants/purpleloosestrife/index.html>

Citations / Resources continued:

Wild parsnip: *Pastinaca sativa* L.

Image citation: foliage – Tina Markeson, MnDOT.
Image citations – Bugwood.org:
Rosette - Bruce Ackley, The Ohio State University;
Flower - John Cardina, The Ohio State University.
Images and good identification write-up: Minnesota wildflowers
<http://www.minnesotawildflowers.info/flower/wild-parsnip>
Identification and management:
<http://dnr.wi.gov/invasives/fact/parsnip.htm>
http://wiki.bugwood.org/Pastinaca_sativa

Common tansy: *Tanacetum vulgare* L.

Image citations: all images - Dave Hanson, MnDOT.
Images and good identification write-up: Minnesota wildflowers
<http://www.minnesotawildflowers.info/flower/common-tansy>
Identification and management:
<http://dnr.wi.gov/invasives/fact/tansy.htm>
<http://www.fs.fed.us/database/feis/plants/forb/tanvul/all.html>

Restricted Noxious Weeds:

Glossy buckthorn (and all cultivars): *Frangula alnus* Mill.

Image citations: all images - Dave Hanson, MnDOT.
Identification and management:
http://dnr.wi.gov/invasives/fact/buckthorn_gloss.htm
http://wiki.bugwood.org/Frangula_almus
<http://www.fs.fed.us/database/feis/plants/shrub/fraaln/all.html>

Common or European buckthorn: *Rhamnus cathartica* L.

Image citations: all images - Dave Hanson, MnDOT.
Identification and management:
http://dnr.wi.gov/invasives/fact/buckthorn_com.htm
http://wiki.bugwood.org/Rhamnus_cathartica

Multiflora rose: *Rosa multiflora* Thunb.

Image citations: flower, foliage, form, - Dave Hanson, MnDOT
Image citations – Bugwood.org:
Hips/seed - Barry Rice, sarracenia.com.
Identification and Management:
<http://dnr.wi.gov/invasives/fact/rose.htm>
http://wiki.bugwood.org/Rosa_multiflora#MANAGEMENT.2FMONITORING

Specially regulated plant:

Poison ivy: western [*Toxicodendron rydbergii* (Small) Green]
common [*T. radicans* (L.) Kuntze subsp. *negundo* (Greene) Gillis]
Image citation: all images - Dave Hanson, MnDOT
Identification and Management: http://dnr.wi.gov/invasives/fact/ivy_poison.htm

Minnesota Native Plants:

For the native plants the following guide book was referenced:
Black Merel R., Emmet J. Judziewicz. 2009. Wildflowers of Wisconsin and the
Great Lakes Region: a comprehensive field guide. Univ of Wisconsin Press. 275 pages

American bittersweet: *Celastrus scandens* L.

Image citation: all images - Dave Hanson, MnDOT.
Identification:
<http://dendro.cnre.vt.edu/dendrology/syllabus2/factsheet.cfm?ID=913>

Common hops: *Humulus lupulus* L.

Image citation: all images - Dave Hanson, MnDOT.
Identification:
http://www.hort.purdue.edu/newcrop/duke_energy/humulus_lupulus.html

Cow-parsnip: *Heracleum lanatum* Michx.

Image citation: all images - Dave Hanson, MnDOT.
Identification:
<http://www.minnesotawildflowers.info/flower/common-cow-parsnip>

Swamp thistle: *Cirsium muticum* Michx.

Image citation: all images - Dave Hanson, MnDOT.
Identification:
<http://www.minnesotawildflowers.info/flower/swamp-thistle>

Fireweed: *Chamerion angustifolium* (L.) Holub ssp. *angustifolium*
Epilobium angustifolium L.

Image citation: all images - Dave Hanson, MnDOT.
Identification:
<http://www.minnesotawildflowers.info/flower/fireweed>

Golden alexanders: *Zizia aurea* (L.) W.D.J. Koch

Image citation: all images - Dave Hanson, MnDOT.
Identification:
<http://www.minnesotawildflowers.info/flower/heart-leaved-alexanders>

Photos Page 2: Musk thistle, garlic mustard and Poison ivy.
Dave Hanson, MnDOT

Definitions of the noxious weed categories from the Minnesota Department of Agriculture web page: <http://www.mda.state.mn.us/plants/badplants/noxiouslist.aspx>

State Prohibited Noxious Weeds

Prohibited noxious weeds are annual, biennial, or perennial plants that the commissioner designates as having the potential or are known to be detrimental to human or animal health, the environment, public roads, crops, livestock or other property. There are two regulatory listings for prohibited noxious weeds in Minnesota:

Eradicate List: Prohibited noxious weeds that are listed to be eradicated are plants that are not currently known to be present in Minnesota or are not widely established. These species must be eradicated, meaning all of the above and below ground parts of the plant must be destroyed, as required by Minnesota Statutes, Section 18.78. Additionally, no transportation, propagation, or sale of these plants is allowed. Measures must also be taken to prevent and exclude these species from being introduced into Minnesota.

Controlled List: Prohibited noxious weeds listed to be controlled are plants established throughout Minnesota or regions of the state. Species on this list must be controlled, meaning efforts must be made to prevent the spread, maturation and dispersal of any propagating parts, thereby reducing established populations and preventing reproduction and spread as required by Minnesota Statutes, Section 18.78. Additionally, transportation, propagation, or sale of these plants is prohibited.

Restricted Noxious Weeds

Restricted noxious weeds are plants that are widely distributed in Minnesota and are detrimental to human or animal health, the environment, public roads, crops, livestock or other property, but whose only feasible means of control is to prevent their spread by prohibiting the importation, sale, and transportation of their propagating parts in the state except as allowed by Minnesota Statutes, Section 18.82. Plants designated as Restricted Noxious Weeds may be reclassified if effective means of control are developed.

Specially Regulated Plants

Specially regulated plants are plants that may be native species or have demonstrated economic value, but also have the potential to cause harm in non-controlled environments. Plants designated as specially regulated have been determined to pose ecological, economical, or human or animal health concerns. Plant specific management plans and or rules that define the use and management requirements for these plants will be developed by the Minnesota Department of Agriculture for each plant designated as specially regulated. Measures must also be taken to minimize the potential for harm caused by these plants.

Reference herein to any specific commercial products, process, or service by tradename, trademark, manufacturer, or otherwise, does not constitute or imply its endorsement, recommendation, or favoring by Mn/ DOT and the State of Minnesota.

Minnesota Noxious Weeds

<http://www.dot.state.mn.us/roadsides/vegetation/pdf/noxiousweeds.pdf>

Based on the 12/09/2011 list developed by:
Minnesota Noxious Weed Advisory Committee
and Minnesota Department of Agriculture.

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Cover photo: Purple loosestrife infestation,
Ramsey County, MN. Dave Hanson, MnDOT.

May, 2012