

Minnesota Noxious Weeds

Includes native and non-native species for comparison

m DEPARTMENT OF
TRANSPORTATION

Updated January 30, 2023

***Edited for species that are specific to Cook County, MN**

All pages, except Garden Valerian and Marsh Thistle, were developed by the Minnesota Department of Transportation for the publication "Minnesota Noxious Weeds". A complete version can be downloaded at: <https://www.dot.state.mn.us/roadsides/vegetation/>



MINNESOTA NOXIOUS WEED LAW

Minnesota Statutes, sections 18.75 to 18.91

Prohibited - Eradicate

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, transportation, propagation, or sale of these is prohibited except as allowed by Minnesota Statutes, Section 18.82. Measures must also be taken to prevent and exclude these species from being introduced into Minnesota.

Prohibited - Control

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, propagation, sale, or transportation of these plants is prohibited except as allowed by Minnesota Statutes, Section 18.82.

Restricted

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

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.

DALMATIAN TOADFLAX

Linaria dalmatica (L.) Mill.

Prohibited - Eradicate

Common Names

Broadleaf Toadflax, and Wild Snapdragon

Life Cycle

Herbaceous perennial

Native Range

Western Asia and southeast Europe

Look-a-Likes

[Balkan Catchfly \(pg 61\)](#)

[Yellow Toadflax \(pg 71\)](#)

Habitat

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.

Means of Spread

Reproduction is primarily by seed that is viable in the seed bank up to 10 years, but the plant also forms colonies via vegetative reproduction from roots.

Toxicity

Dalmatian toadflax contains an iridoid glycoside (a quinoline alkaloid) and is toxic to some livestock, including cattle.



Identification

Plant - A short-lived perennial that grows up to 4 feet tall.

Leaves - Alternate leaves 1 to 3 inch in length clasp stems, are wider and more heart-shaped than similarly flowered yellow toadflax (*Linaria vulgaris*).

Flower - Erect, spike-like racemes of yellow snapdragon-like flowers with orange center markings. Flowers are 1 to 1½ inches long with slender spurs extending downward from the back.

Bloom Time - May to September

Seed and Fruit - On average 140 to 250 seeds are contained in ½ inch long pods. Seeds are dark in color, flattened, angular and three-edged with a slight, narrow wing on each edge. Mature plants produce up to 500,000 seeds with viability up to 10 years.

Root - Produces both taproots and rhizome (underground lateral stems). Roots can grow 4 to 10 feet deep and can extend 10 feet from the parent plant.

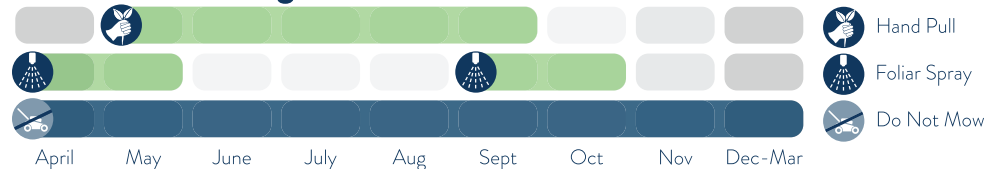


Management

Mechanical - Manual methods including, cutting, hand pulling or tillage if done repeatedly and in conjunction with other treatments may control infestations. Mowing equipment can spread seed and root fragments to uninfested areas.

Chemical - A surfactant is necessary for foliar absorption under the thick waxy leaves.

Treatment Timing



Dalmatian Toadflax

Biological - A variety of beetles, weevils and moths are commonly used in the western United States on large infestations though results of specific bioagents are not documented. Biological controls are not an eradication tool therefore are inappropriate for an eradicate species.

Effective herbicide formulations: chlorsulfuron, dicamba, diflufenzopyr, imazapic, picloram.

Marsh Thistle

Cirsium palustre

Prohibited - Control
Cook County ONLY

Common Names

European Swamp Thistle, Marsh Plume Thistle

Life Cycle

Herbaceous biennial or Monocarpic Perennial

Native Range

Europe and Siberia

Look-Alikes

Canada Thistle, Bull Thistle, Plumeless Thistle, Swamp Thistle

Habitat

Grows best in moist acidic soils. It can be found in any disturbed areas as long as its moisture requirements are met. It is common on roadsides and in wet ditches. It is also somewhat shade tolerant, and therefore can be found in moist woods.

Means of Spread

Marsh thistle can produce up to 2,000 seeds per plant. These seeds can be transported parachute-style on windy days, but generally can only travel short distances. Methods of longer-range dispersal include birds, water, vehicles, and equipment.



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Identification

Plant - Herbaceous, biennial 4-7 feet tall.

Leaves - First-year rosettes are spiny, long, deeply lobed and hairy on the underside. On second-year flowering plants, leaves are 6 to 8 inches long near the base, shorter toward the top, and tipped with spines. Note: Be careful when handling this plant as its spines are capable of piercing human skin..

Flower - produces clusters of 12 or more purple flowers (up to 0.75" wide) at the tips of leafless branches in the upper stem. There are no stem branches below the flowers, and the unbranched stems have spiny leaf bases called wings.

Bloom Time - June to August

Seed and Fruit - Small, rugged and elongated with a tuft of feathery bristles at the top and dispersed by the wind. Marsh thistle can produce up to 2,000 seeds per plant. These seeds can be transported parachute-style on windy days, but generally can only travel short distances. Methods of longer-range dispersal include birds, water, vehicles, and equipment.

Root - Fibrous

Management

Mechanical - Hand-pull or dig rosettes. Repeated pulling and mowing (minimum three times per growing season) will weaken second-year plants; mow when flower buds are about to open.

Chemical - Foliar spray glyphosate during the early bolting phase when plants are 6-10" tall, during the bud-to-flower phase or applied to rosettes in the fall. Foliar spray with clopyralid or aminopyralid.



Treatment Timing



Effective herbicide formulations: aminopyralid, clopyralid, and glyphosate.

KNOTWEEDS

Polygonum spp.

Prohibited - Control

Go to [Knotweed Comparison \(pg 102\)](#) for key differences.

Bohemian Knotweed

Polygonum × bohemicum (J. Chrtek & Chrtkova) Zika & Jacobson

Giant Knotweed

Polygonum sachalinense F. Schmidt ex Maxim

Japanese Knotweed

Polygonum cuspidatum Siebold & Zucc.

Common Names

Knotweed, Mexican Bamboo, Japanese Bamboo

Life Cycle

Herbaceous perennial

Native Range

Bohemian knotweed is a hybrid of giant knotweed and Japanese knotweed that has been documented in Japan. Giant knotweed is native to Japan and Japanese knotweed is native to China, Japan, Korea, and Taiwan.

Look-a-Likes

Bamboo
False buckwheat

Habitat

Prefers moist soils in full sun to partial shade. Plants readily inhabit moist roadside ditches, wetlands, and areas along rivers and streams. However, plants will thrive on dry soils.

Means of Spread

Can spread both vegetatively and by seed. Rhizomes allow knotweed to spread quickly and aggressively and new colonies can form from very small stem or rhizome fragments. Not the primary means of spread.

Identification

Plant - They are large perennial plants with non-woody stems. Stems are smooth, green with reddish-brown blotches and hollow between swollen nodes where leaves attach. Depending on species, can grow anywhere from 5 to 20 feet tall. Plants die back every winter, and brown stems persist.

Leaves - Alternate, and simple. Tips of leaves are blunt. Leaves are variable based on species, and fall off the stalks after first frost.

Flower - Branched flower structures at leaf attachments holding many small, creamy white to greenish flowers.

Bloom Time - August to September

Seed and Fruit - Small, black, 3-sided, contained in a papery husk.

Root - Extensive underground rhizome system that can grow 60+ feet away from the original colony. Rhizomes can grow through structures and pavement.

Management

Mechanical - Knotweed is invigorated by mechanical disturbance, and any management is recommended to be coupled with a chemical treatment. Smothering infestations with a thick tarp for several seasons can reduce subsequent growth.

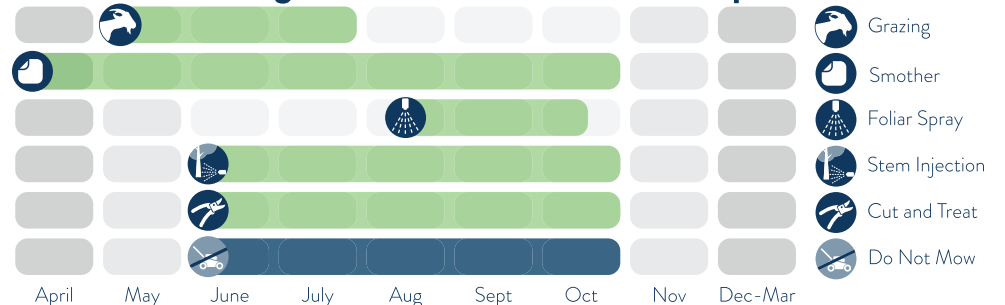
Chemical - Foliar spraying is most effective after plants have gone to flower, and before the first frost in fall. Stalks are cold sensitive and will die back after frost events.

Cultural - Goats will graze on young knotweed stalks.

Fire - Fire promotes invigorated regrowth of stems. Can be used to remove old stems.



Treatment Timing



Effective herbicide formulations: 2,4-D, aminopyralid, glyphosate, imazapyr, triclopyr, triclopyr + 2,4-D.

WILD PARSNIP

Pastinaca sativa L.

Prohibited - Control

Check out MnDOT's [Carrot Comparison Guide](#) for identification and key differences.

Common Names

Parsnip

Life Cycle

Herbaceous monocarpic perennial

Native Range

Eurasia

Look-a-Likes

[Golden Alexanders](#) (pg 84)

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 species.

Means of Spread

Spreads primarily by seeds. Seeds are moved off infested sites by animal and human activity or wind and water movement. Seed is reported to be viable in soil for up to 4 years.

Toxicity

Contact with the sap and exposure to sunlight can produce painful, burning blisters (phytophotodermatitis).



Identification

Plant - Herbaceous, often stated to be biennial but is classed as a monocarpic perennial. First year as basal rosette with mature stems developing a hollow, grooved flowering stalk potentially reaching 5 feet.

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

Flower - 12 to 35, 5-petaled, small yellow flowers on wide, flat umbels of 15 to 25 umbellets approximately 2 to 6 inches across.

Bloom Time - June to July

Seed and Fruit - Seeds are small, broad, oval, slightly ribbed, and are produced in the umbels several weeks after flowering.

Root - Long thick taproot that is similar in appearance and smell to cultivated parsnips.

Management

See MnDOT Factsheet:

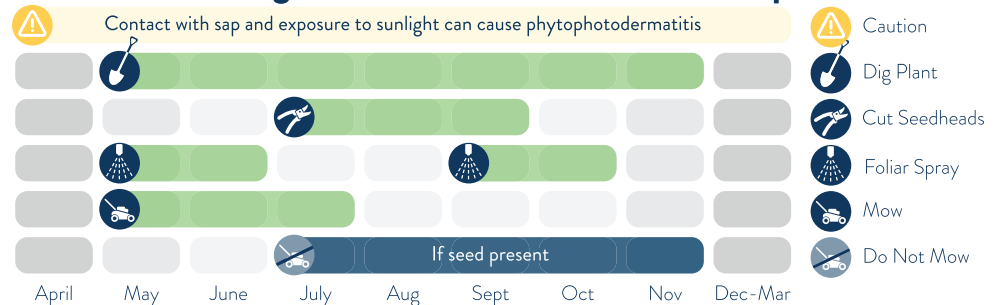
[Work Safely Around Wild Parsnip](#)

Appropriate protective clothing including gloves, goggles and long sleeve shirts should be worn and contact with the stems should be avoided.

Mechanical - When possible plan early mowing at first inflorescence, then monitor and repeat as plants will likely resprout, bolt and flower. Mowing during the secondary inflorescence may prevent seed production that season. If cutting or mowing after seed set, clean equipment to leave seeds on the infested site.



Treatment Timing



Chemical - Foliar applications in the spring and fall targeting rosettes can greatly reduce seed production.

Fire - Prescribed burns can kill germinating seedlings and strengthen native plant communities.

Effective herbicide formulations: 2,4-D, dicamba + 2,4-D, aminocyclopyrachlor + chlorsulfuron, chlorsulfuron, glyphosate, metsulfuron.

PURPLE LOOSESTRIFE

Lythrum salicaria L.

Prohibited - Control

Common Names

Spiked Loosestrife, Purple Lythrum

Life Cycle

Herbaceous perennial

Native Range

Eurasia

Look-a-Likes

[Dame's Rocket \(pg 65\)](#)

[Fireweed \(pg 83\)](#)

Habitat

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.

Means of Spread

Reproduces both by seed and vegetative means which allows it to quickly invade new landscapes. Each flower spike can produce thousands of seeds that are easily dispersed by wind, water, animals, and humans.



Identification

Plant - Herbaceous, wetland perennial, 4 to 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. Leaf pairs are positioned at right angles to the leaf pairs above and below.

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

Bloom Time - July to September

Seed and Fruit - Tiny seeds are released from 2-parted capsules.

Root - Thick and woody roots. On mature plants, roots are extensive and can send out 30 to 50 shoots, creating a dense web. Pieces of the roots and stem fragments can also produce new plants.

Management

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

Chemical - Purple loosestrife is a semi-aquatic to aquatic species, it is important to use only herbicides that are labeled and approved for use in or around water.

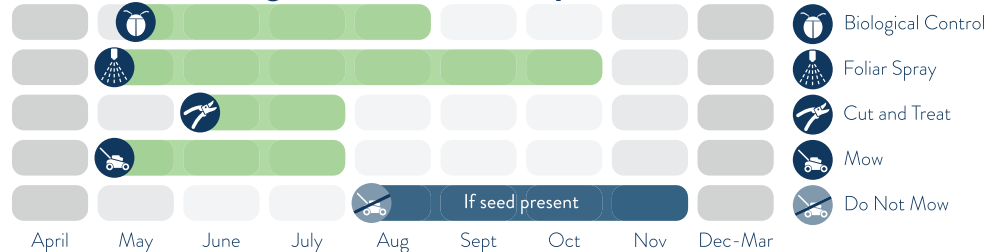
Biological - Biological control agents in the form of two leaf feeding beetles of the same genus (*Galerucella californiensis* and *G. pusilla*) have been very effective in Minnesota.



Above left: *Galerucella pusilla*.



Treatment Timing



Effective herbicide formulations: 2,4-D, aminocyclopyrachlor, glyphosate, imazamox, imazapyr, metsulfuron + aminopyralid, triclopyr.

Garden Valerian

Valeriana officinalis

Prohibited - Control Cook County ONLY

Common Names

Garden Heliotrope, Common Valerian, White Valerian, Greek Valerian

Life Cycle

Herbaceous perennial

Native Range

Europe and Asia

Habitat

A successful inhabitant of disturbed areas of roadsides and prairies. It also invades forests, wetlands, marshes, woodland swamps, grasslands, and stream edges. It is tolerant of many different soil types. Often planted in personal gardens..

Means of Spread

Early emergence, vigorous growth habits and the ability to self-seed give this species a competitive advantage resulting in the displacement of native species. Small oblong capsules release abundant powdery seeds that can easily be dispersed by wind.

Identification

Plant - Herbaceous, perennial 1-5 feet tall.

Leaves - The basal and stem leaves are similar and are opposite. They are pinnately divided into 11-21 lanceolate segments that have dentate margins (some are entire). As the leaves go up the stems, the petioles get shorter. The leaves often have a few hairs on the underside.

Flower - Valeriana officinalis has fragrant, white or pale pink flowers that are arranged in umbels. Each flower measures 0.2 in. (4 mm) long.

Bloom Time - June to August

Seed and Fruit - The fruit are small and lanceolate-oblong in shape, measuring 0.1-0.2 in.(3-5 mm) long. Seeds are wind dispersed.

Root - White, fleshy rhizomes with thick fibrous roots and a pungent odor.

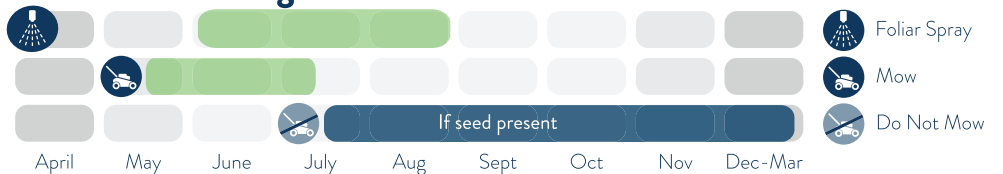
Management

Mechanical - Pull, cut or mow plants before flowering. At minimum, cut flower heads or pull entire plant before seeding begins.

Chemical - Foliar applications can be made during plant bolting flowering, and in the rosette stage.



Treatment Timing



Canada Thistle

Effective herbicide formulations: aminopyralid, triclopyr, and glyphosate.

LEAFY SPURGE

Euphorbia esula L.

Prohibited - Control

Common Names

Spurge, Wolf's Milk

Life Cycle

Herbaceous perennial

Native Range

Eurasia

Look-a-Likes

Cypress spurge

[Yellow rocket \(pg 70\)](#)

Habitat

Dry sites in full sun, but tolerance of a range of conditions allows them to invade moist, rich soils as well.

Means of Spread

Produces seed that explodes from the seedpods and can travel up to 20 feet. The seed is durable and can remain viable up to 10 years. Reproduction can be vegetative from buds on roots, rhizomes and root cuttings.

Toxicity

Milky sap is toxic to cattle and horses. Contact with human skin can cause rashes.



Identification

Plant - Herbaceous, perennial to 3 feet tall. Broken stems of many *Euphorbia* spp. produce a milky sap (latex).

Leaves - Alternate, linear to lance-like, bluish-green and 1 to 4 inches in length.

Flower - There are no petals or sepals on the small yellowish-green flowers. Upper stem leaves or bracts develop just below flowers and are yellow-green in color providing the appearance of yellowish petaled flowers. The bracts develop before the true flowers.

Bloom Time - May to August

Seed and Fruit - Three-celled capsules that expel seeds up to 20 feet. Each cell contains a seed.

Root - Deep roots to 21 feet with extensive horizontal roots allow plants to store vast reserves.

Management

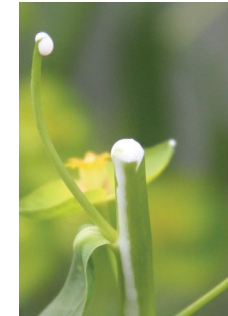
Appropriate protective clothing including gloves and long sleeves should be worn.

Mechanical - Cutting or mowing if timed before flower development can reduce or limit seed production.

Chemical - Repeated herbicide applications during the early spring and autumn can effectively reduce spurge.

Cultural - Grazing goats and sheep can effectively limit the spread of infestations.

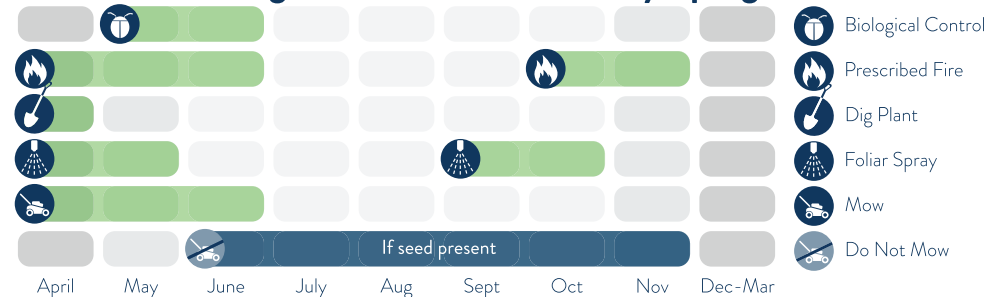
Biological - Biological control agents are available for controlling leafy spurge. Flea beetles (*Aphthona lacertosa*) are widely used in Minnesota. Flea beetles are collected late May to early June and released. Stem and root boring beetles (*Oberea erythrocephala*) provide some control.



Below: *Aphthona lacertosa*.



Treatment Timing



Fire - Early spring prescribed fire is compatible with biological control.

Effective herbicide formulations: 2,4-D, aminocyclopyrachlor, dicamba, glyphosate, imazapic, picloram.

SPOTTED KNAPWEED

Centaurea stoebe L. subsp. *micranthos* (Gugler) Hayek

Prohibited - Control

Go to [Knapweed Comparison \(pg 101\)](#) for key differences.

Common Names

Bushy Knapweed

Life Cycle

Herbaceous biennial or short lived perennial

Native Range

Eurasia

Look-a-Likes

[Brown Knapweed \(pg 10\)](#)

[Canada Thistle \(pg 25\)](#)

[Diffuse Knapweed \(pg 14\)](#)

[Meadow Knapweed \(pg 30\)](#)

[Yellow Starthistle \(pg 24\)](#)

Habitat

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

Means of Spread

Seeds are the primary means of reproduction and a mature plant produces thousands of seeds that may remain viable. Allelopathic properties (chemicals exuded by the plant) can suppress the germination of seeds of other plants nearby.



Identification

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

Leaves - Simple, alternate, greyish-green basal rosette leaves up to 6 inches long have deep sinuses. Alternate leaves on mature stems vary from smaller, 1 to 3 inch, versions of the basal leaves to very small linear leaves near the top.

Flower - Pink to purple color (rarely white) and multi-parted texture. Below the petals, flowers are held together by bracts that are stiff and tipped with darkened hairs.

Bloom Time - July to September

Seed and Fruit - 1/8 inch long, brownish, tufted seeds.

Root - Stout taproot with secondary roots.

Management

Appropriate protective clothing including gloves and long sleeves should be worn.

Mechanical - Cutting or mowing will not kill populations. Hand pulling small populations can be effective but will leave bare disturbed soil.

Chemical - Foliar spraying in early spring and late fall, targeting rosettes, can be effective.

Biological - Approved biological control agents used in Minnesota are seedhead weevils (*Larinus minutus* and *L. obtusus*) and a root-boring weevil (*Cyphocleonus achates*). Weevils are collected July through September and released. A combination of seedhead and root boring weevils work together, infestations can be reduced over years.

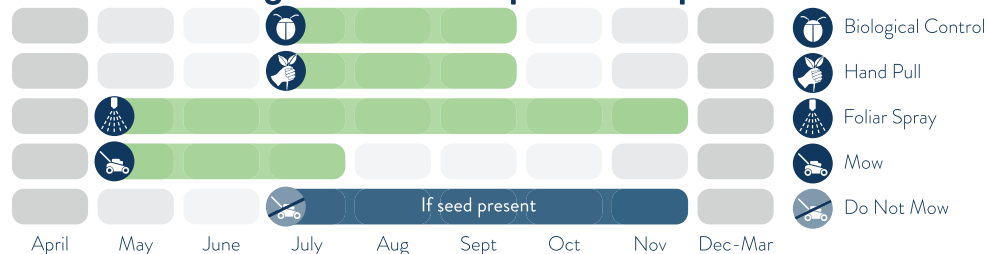


Above: *Larinus minutus*.

Below: *Cyphocleonus achates*.



Treatment Timing



Fire - Fire will not kill spotted knapweed, but improve surrounding plant communities. Spring burns are compatible with biological control efforts.

Effective herbicide formulations: aminocyclopyrachlor, aminopyralid, clopyralid, glyphosate, imazapyr, picloram.

COMMON TANSY

Tanacetum vulgare L.

Prohibited - Control

Common Names

Tansy, Bitter Buttons, Golden Buttons

Life Cycle

Herbaceous perennial

Native Range

Eurasia

Look-a-Likes

[Goldenrods \(pg 85\)](#)

Habitat

Found most often in open, disturbed areas typical of stream and river banks, trail edges, roadsides, gravel pits and old farmsteads or pastures. Can be found in riparian areas, but most often in dry, well drained soils in full sun.

Means of Spread

Spreads primarily by rhizomes and seeds. Seeds are lightweight and easily moved by wind, water, wildlife, equipment, etc.

Toxicity

Alkaloids in common tansy are toxic to humans and livestock if consumed in high quantities.



Identification

Plant - Herbaceous, perennial reaching 2 to 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 edges and 2 to 12 inches long, typically smaller near the top of plants. Leaves are strongly aromatic (bitter) when crushed.

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

Bloom Time - July to October

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

Root - Extensive, sturdy and fibrous rhizome system. Broken sections easily resprout.

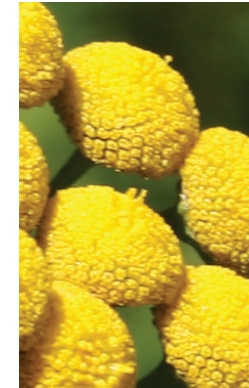
Management

Appropriate protective clothing including gloves and long sleeves should be worn.

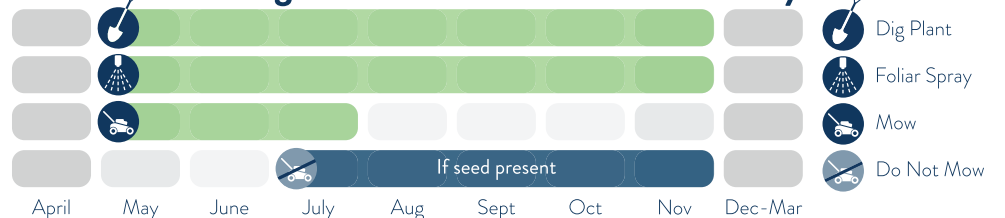
Mechanical - Tilling can spread common tansy by spreading small root segments. Pulling also may leave root segments in the ground which may resprout. Mowing to prevent seed production should be timed just prior to flowering.

Chemical - Apply as foliar applications in spring.

Cultural - Goats and sheep will graze on common tansy, but is toxic to all livestock in high quantities.



Treatment Timing



Common Tansy

Fire - Can eliminate competition and create favorable conditions for common tansy by opening the canopy and preparing bare soil. Plants are top killed and follow up with other management methods is necessary.

Effective herbicide formulations: 2,4-D, glyphosate, imazapyr, metsulfuron.

ASIAN BUSH HONEYSUCKLE

Lonicera spp.

Restricted

Check out MnDOT's [Asian Bush Honeysuckles Guide](#) for identification and key differences.

Amur Honeysuckle

Lonicera maackii [Rupr.] Herder

Bell's Honeysuckle

Lonicera × bella Zabel [*morrowii* × *tatarica*]

Morrow's Honeysuckle

Lonicera morrowii

Tatarian Honeysuckle

Lonicera tatarica L.

Common Names

Non-native Bush Honeysuckles, Honeysuckle

Life Cycle

Woody perennial

Native Range

Eurasia

Look-a-Likes

[Japanese Honeysuckle](#) (pg 17)

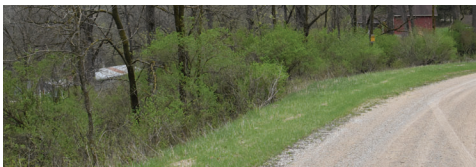
[Native Honeysuckles](#) (pg 88)

Habitat

Shade-intolerant plants often found along the forest edges. Also found in disturbed, open upland sites such as roadsides, and abandoned pastures or fields.

Means of Spread

Reproduces asexually by root suckering. Prolific seed producer dispersed by birds.



Identification

Plant - Perennial woody shrubs, multi-stemmed and ranging in heights of 6 to 15 feet tall (Bell's to 20 feet, Amur to 30 feet). All nonnative bush honeysuckles have hollow stems with a brownish pith.

Leaves - Opposite, egg-shaped to lanceolate (Amur has lance-shaped with drawn out tips). Other species have rounded to acute leaf tips with tapered, straight or heart-shaped leaf bases. Surfaces range from smooth and hairless on Tatarian to pubescent (hairy) on Amur and Morrow's. Leaf lengths are 1 to 2½ inches.

Flower - Fragrant pairs of tubular flowers approximately ¾ to 1 inch across. Color ranges from cream to white (Amur and Morrow's) or pink (Bell's) fading to yellow. Tatarian produces white, pink or red to crimson not fading to yellow.

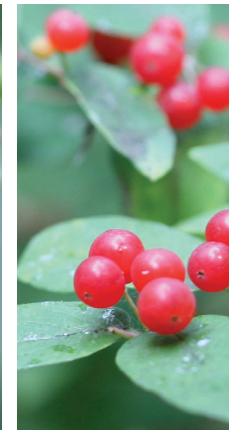
Bloom Time - May to June

Seed and Fruit - Most species bright red, Tatarian red to orange. The ¼ inch berries are in clusters of 2 to 4, mature in late summer and are readily eaten by birds that then disperse the oval, flattened seeds. Amur honeysuckle fruit can be dark red to purplish, persists into winter and is held on stalks (peduncles) shorter than the leaf stalks (petioles).

Root - Fibrous, shallow, and readily produce suckers.

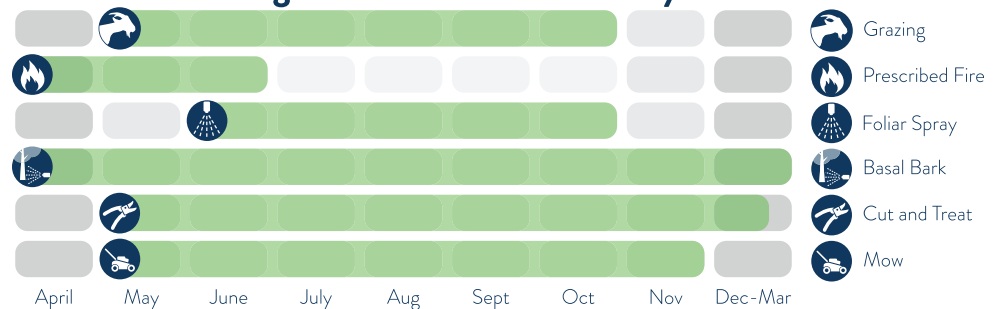
Management

Mechanical - Mowing alone will not kill plants. When pulling and digging suspend roots above ground to ensure they dry out. Plants should be disposed of on site or contained.



Treatment Timing

Asian Bush Honeysuckles



Chemical - Foliar spray once plants have fully leafed out.

Cultural - Goats will readily graze on honeysuckles

Fire - Prescribed fire can be useful to kill seedlings, and drain energy from mature plants .

Effective herbicide formulations: 2,4-D, 2,4-D + picloram, 2,4-D + triclopyr, aminopyralid, dicamba, glyphosate, imazapyr, metsulfuron, triclopyr.

COMMON BUCKTHORN

Rhamnus cathartica L.

Restricted

Common Names

European Buckthorn, Buckthorn

Life Cycle

Woody perennial

Native Range

Europe

Look-a-Likes

[Cherries and Plum \(pg 77\)](#)

[Glossy Buckthorn \(pg 46\)](#)

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 complete exclusion of other species.

Means of Spread

Ripened berries drop directly beneath the plants where a dense understory of seedlings is eventually produced. The fruits are also highly attractive to birds and small mammals.



Identification

Plant - Tall shrub at 20 to 26 feet with potential to become a small tree reaching 36 feet. Often one to a few stems with diameters up to 5 to 6 inches and occasionally larger. Light colored lenticels on shiny grey to brown bark. Many twigs are terminated by a small thorn-like spine between dark colored, scale covered buds. Cut stems have orange heartwood and yellow sapwood.

Leaves - Sub-opposite, at times appearing opposite and on fast growing sprouts alternate. Shiny green, 1 to 2½ inches, oval with tiny teeth on leaf edges. Veins curving to the tip of the leaf (arcuate venation) provide a strong identification characteristic and green leaves persisting into autumn.

Flower - Dioecious, male and female flowers on separate plants, small, 4-parted and green.

Bloom Time - May to June

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

Root - Extensive, shallow, and fibrous root system.

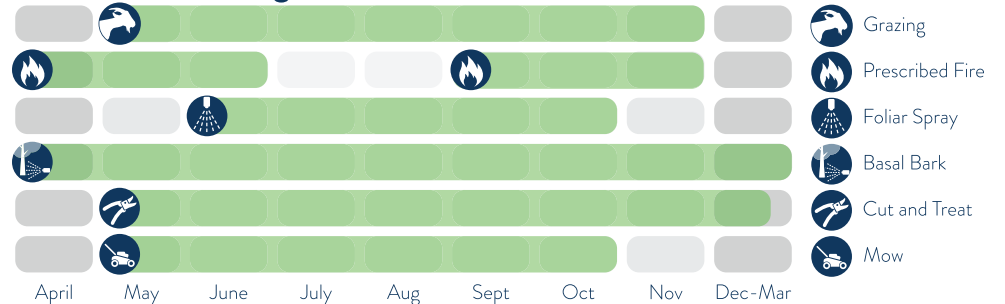
Management

Mechanical - 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.

Chemical - Foliar spray once plants have fully leafed out.



Treatment Timing



Common Buckthorn

Cultural - Goats will readily graze on common buckthorn.

Fire - Prescribed fire will kill germinating seedlings and strengthen surrounding plant community.

Effective herbicide formulations: 2,4-D, glyphosate, imazapyr, metsulfuron, picloram, triclopyr.

GARLIC MUSTARD

Alliaria petiolata (M. Bieb.) Cavara & Grande

Restricted

Common Names

Jack by the Hedge, Hedge Garlic, Penny Hedge, Poor Man's Mustard

Life Cycle

Herbaceous biennial

Native Range

Europe

Look-a-Likes

[Dame's Rocket](#) (pg 65)

[Narrowleaf Bittercress](#) (pg 31)

[Yellow Rocket](#) (pg 70)

Habitat

An invader of shady, moist forests or woodland settings but also invades oak savannas and disturbed areas in full sun. Garlic mustard may inhibit the growth of beneficial fungi associated with native plants thus causing a decline in herbaceous cover.

Means of Spread

Spreads by seed that matures June into July and can be dispersed about 6 inches when pods burst at maturity. Seed remains viable in soil for up to 5 years.



Identification

Plant - Herbaceous, biennial with 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 remains green through winter. Foliage on flowering stems is alternate, triangular, coarsely toothed and stalked. Foliage has the odor of garlic when crushed.

Flower - Clustered, four-parted, white flowers are approximately 1/3 inch across.

Bloom Time - April to June

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

Root - Slender taproot with fibrous secondary roots.



Management

Mechanical - Manual methods include pulling plants in early spring prior to flowering 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 pods are present, plants should be disposed of on site or contained (e.g., bagged) and removed to an approved facility. Seeds can still mature if pulled plants are left on the ground.

Chemical - Herbicide applications to foliage in spring and fall can reduce flowering populations.

Treatment Timing



Biological - Biological control agents are under investigation, and approved for release in Canada at this time. The United States is still assessing the species. One insect being studied is *Ceutorhynchus scrobicollis*, a crown and stem-mining weevil.

Fire - Direct heating bolted plants will sterilize seed, or prevent seed from maturing. Prescribed fire will kill germinating seedlings and top kill rosettes.

Effective herbicide formulations: 2,4-D, glyphosate, imazapic, metsulfuron, triclopyr.

JAPANESE BARBERRY

Berberis thunbergii DC.

Restricted

Go to [Japanese Barberry Restricted Cultivars \(pg 100\)](#) to see which cultivars are restricted for sale in Minnesota.

Common Names

Thunberg's Barberry, Red Barberry

Life Cycle

Woody perennial

Native Range

East Asia and Japan

Look-a-Likes

[Common Barberry \(pg 26\)](#)

Korean Barberry

Habitat

Prefers well drained soils in full sun to partial or deep shade. Forest edges, open forests and other woodlands yet also found in old fields, areas of disturbance and can survive in wetland soils.

Means of Spread

Japanese barberry seeds are spread by birds; plants also spread vegetatively by low branches that will root when they come in contact with soil. It is also spread through intentional ornamental and landscaping plantings.



Identification

Plant - Perennial woody shrubs, multi-stemmed, typically 3 to 6 feet tall. Stems are grooved or angular and ranging in color from grey to reddish-brown with yellow sapwood. Single, ½ inch long spines occur at nodes where leaves attach. Lateral spine branches if present may be very small.

Leaves - Alternate, typically clustered so not appearing alternate. Leaves are simple, narrow near the twig and described as obovate (wider towards the end). The leaf edge or margin is smooth and occasionally there is a minute spine tip or point at the ends of leaves.

Flower - Small (¼ to ½ inch) yellowish flowers suspended under the foliage. Therefore not considered showy. Japanese barberry flowers are typically individual but flowers may be in clusters of 2 to 4.

Bloom Time - May to early June

Seed and Fruit - Bright red, dry flesh, a true berry that persists into and through winter. The ½ inch long ellipsoidal berries, like the flowers, will be solitary or in clusters of 2 to 4.

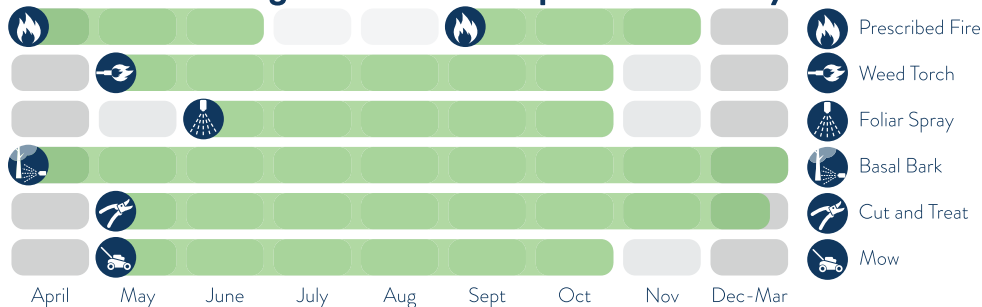
Root - Sprawling rhizomes that sends up new shoots and can sprout from small fragments.

Management

Mechanical - Mowing can prevent or delay seed production but typically is not considered an eradication method. For small numbers of plants manual methods including cutting, digging, and hand pulling if done repeatedly. When pulling and digging suspend roots above ground to ensure they dry out. Cutting of stems must be accompanied by herbicide treatments or resprouting will occur.



Treatment Timing



Chemical - Foliar spray plants once entirely leafed out.

Fire - Prescribed fire or weed torching can kill seedlings, smaller plants, and drain energy from mature plants.

Effective herbicide formulations: dicamba + 2,4-D, glyphosate, imazapyr, metsulfuron, triclopyr.

CROWN VETCH

Securigera varia (L.) Lassen

Restricted

Common Names

Crownvetch, Purple Crown Vetch

Life Cycle

Herbaceous perennial

Native Range

Eurasia

Look-a-Likes

[Alfalfa \(pg 60\)](#)

[American Vetch \(pg 73\)](#)

[Canadian Milkvetch \(pg 76\)](#)

[Hairy Vetch \(pg 67\)](#)

Habitat

Old fields, pastures and roadsides. Crown vetch has been planted extensively for forage products and along roadsides and steep embankments for erosion control.

Means of Spread

Spreads through seeds and vegetatively through rhizomes. It can be introduced to new areas by moving soil infested with rhizome fragments.



Identification

Plant - Erect, perennial plant at 1 to 2 feet tall that forms dense tangled masses of reclining 2 to 6 feet long stems.

Leaves - Alternate, compound leaves, odd-pinnate with 11 to 25 oval, smooth-edged leaflets often with a minutely pointed tip. Leaves are stalkless.

Flower - Up to 6 inch long, erect flower stalks support dense umbels or crown-like clusters of 10 to 25, 5-parted, 1/3 to 1/2 inch long pinkish flowers.

Bloom Time - May to September

Seed and Fruit - Erect, narrow, multi-segmented, pointy-tipped, angular pods containing up to 12 seeds are clustered at ends of upright stalks.

Root - Aggressive rhizomes, growing horizontally up to 10 feet and vegetatively producing new plants.

Management

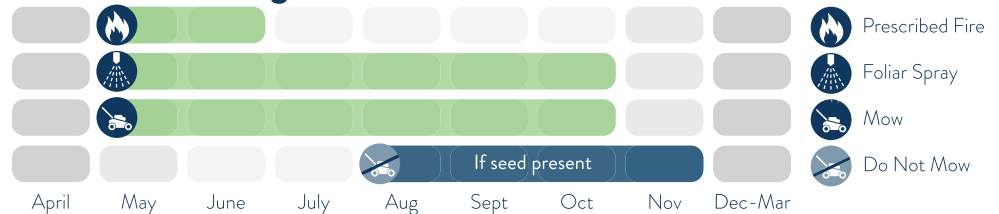
Mechanical - Cutting or mowing will reduce vigor but not eliminate an infestation. Plan to mow several times a season and monitor to time operations with a goal to prevent seed set. Mow cautiously as large infestations often conceal erosion.

Chemical - Foliar application during active growing periods.

Fire - Prescribed fire can be used with other management tactics to encourage stands of native grasses that will compete for resources. However, monitoring is necessary as crown vetch will resprout after burns.



Treatment Timing



Effective herbicide formulations: 2,4-D, aminopyralid, clopyralid, dicamba, glyphosate, metsulfuron, picloram, sulfometuron, triclopyr.

SIBERIAN PEASHRUB

Caragana arborescens Lam.

Restricted

Common Names

Caragana

Life Cycle

Woody perennial

Native Range

Siberia, China, Kazakhstan, Mongolia

Look-a-Likes

Forsythia

[Honey Locust \(pg 86\)](#)

Habitat

Prefers full sun (tolerates some shade) and is tolerant of poor growing conditions such as poor dry soils, cold temperatures, windy sites and tolerates salt.

Means of Spread

Seed is released late July into August. Seed is forcibly ejected as pods audibly pop to expel seeds. Plants are self compatible.



Identification

Plant - Oval, often a multi-stemmed shrub 15 to 20 feet in height and 12 to 18 feet in width. Occasionally a single stemmed tree. Stems are greenish, shiny, becoming grey and can have paired spines at nodes. Spur shoots develop on some older branches. Like many members of the Fabaceae family this plant fixes nitrogen.

Leaves - Alternate, compound with an even number of pinnate leaflets (8 to 12). Each leaflet is approximately 1/2 to 1 inch long, elliptic-oblong in shape. Fuzzy at emergence, later much less so and bright green.

Flower - Pea-like flowers are bright yellow and about 1/2 to 1 inch long. Flowers are arranged in clusters or as singles.

Bloom Time - May to early June

Seed and Fruit - Slender, cylindrical, sharply pointed pods (peapod like) 1 1/2 to 2 inches long. Yellow-green changing to brown, splitting (audibly) and curling to release 3 to 5 seeds. Split, empty pods persist on the shrub.

Root - Extensive, fibrous root system which has been used for erosion control.

Management

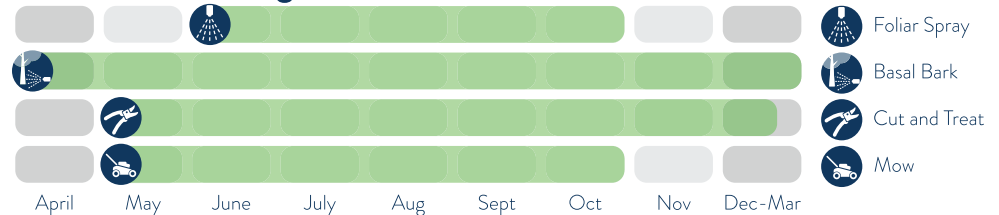
Mechanical - Hand pull when soils are moist, or repeated cutting of stems can be effective. Site must be monitored for potential resprouts and for seed germination in disturbed soils. Follow-up with an applicable herbicide.

Chemical - Foliar spray when fully leaved out. Make cuts as close to the ground as possible to reduce chance of resprouting.

Cultural - Goats, sheep and cattle will graze on Siberian peashrub.



Treatment Timing



Effective herbicide formulations: glyphosate, triclopyr.

WILD CARROT

Daucus carota L.

Restricted

Check out MnDOT's [Carrot Comparison Guide](#) for identification and key differences.

Common Names

Queen Anne's Lace, Bird's Nest

Life Cycle

Herbaceous biennial

Native Range

Eurasia

Look-a-Likes

[Burnet Saxifrage](#) (pg 62)

[Caraway](#) (pg 63)

[Erect Hedgeparsley](#) (pg 66)

[Poison Hemlock](#) (pg 34)

[Water Hemlock](#) (pg 98)

[Wild Chervil](#) (pg 69)

Habitat

Dry to moist, disturbed soils in full sunlight. Tolerant of a variety of soils and partial shade.

Means of Spread

Reproduces entirely by seed. The seed is wind and animal dispersed. The dried umbels will break off and tumble long distances, spreading seed. The hooked spines on the seed can attach to clothing or animal fur and help to disperse it. One plant can produce up to 40,000 seeds.



Identification

Plant - Herbaceous, biennial, first year as a basal rosette. Basal leaves are clustered, up to 5 inches long and arch away from a central location. Second year flowering plants attain heights of 3 to 4 feet on hollow stems that are hairy to sparsely hairy and striped with light colored lines.

Leaves - Alternate, finely divided leaves are widely spaced on upper stems and up to 4 inches across by 2 inches wide. Stem and basal leaves are fern-like, narrowly lobed described as bipinnate-pinnatifid. Underside of leaves may be slightly hairy along veins. Leaves are attached to stems with sheaths.

Flower - many small ($\frac{1}{8}$ inch), 5-petaled, white flowers (florets) make up a flat-topped compound umbel 2 to 5 inches across. Compound umbels are dense with 20 to 90 umbellets of which each has 15 to 60 flowers. Outer flower petals are large in comparison to others. Some have singular red flower in the center. Has very prominent, often branched bracts under main umbels and smaller sometimes linear (unbranched) bracts under umbellets making up the larger floral display.

Bloom Time - June to September

Seed and Fruit - Each floret produces 2 seeds. Seeds are flat and bristly to catch passing fur or clothing. Entire seed clusters may break off plants in winter to roll across the snow distributing seed.

Root - Long, white taproot.

Management

Mechanical - Hand pulling is effective but root fragments remaining may resprout.



Treatment Timing



Chemical - Target plants at rosette stage for foliar herbicide applications.

Fire - Should be used to improve native plant community. Will likely not outcompete healthy vegetation and will decline on its own.

Effective herbicide formulations: 2,4-D, aminopyralid, chlorsulfuron, dicamba, glyphosate, imazapic, imazapyr, metsulfuron, picloram, triclopyr. *2,4-D resistant populations have been found in Michigan.*

WINGED BURNING BUSH

Euonymus alatus (Thunb.) Siebold

Restricted

Common Names

Burning Bush, Winged Eunonymus, Winged Wahoo, Corky Spindletree

Life Cycle

Woody perennial

Native Range

Asia including far eastern Russia, central China, Korea and Japan.

Look-a-Likes

[American Bittersweet](#) (pg 72)

[Burning Bush](#) (pg 75)

[Round Leaf Bittersweet](#) (pg 36)

Habitat

Full sun to part shade prefers moist, well drained soil. A shrub that is very adaptable to poor soil conditions and tolerates; compaction, wide pH range, heat, drought and pollution. Described as very urban tolerant. Will tolerate full shade as a spindlier plant with less brilliant fall color.

Means of Spread

Reproduces by seed which is spread by wildlife.



Identification

Plant - Form is typically a rounded, multi-stemmed shrub up to 10 feet tall. Young stems are very green and develop significant ¼ inch tall, thin, corky, brown wings. After the first season bark matures to greyish-brown and wings may persist.

Leaves - Opposite, simple, elliptical to obovate (wider above the middle). Length is about 1½ to 3 inches and the edge of the leaf is finely serrated (little teeth). Brilliant scarlet to red fall color.

Flower - Clusters of three pale yellow-green, ½ inch flowers with rounded petals.

Bloom Time - mid-May to June

Seed and Fruit - Husk is a dark red, ¼ to ½ inch capsule that splits to reveal a red-orange aril (a berry-like fruit).

Root - Deep and fibrous root system.

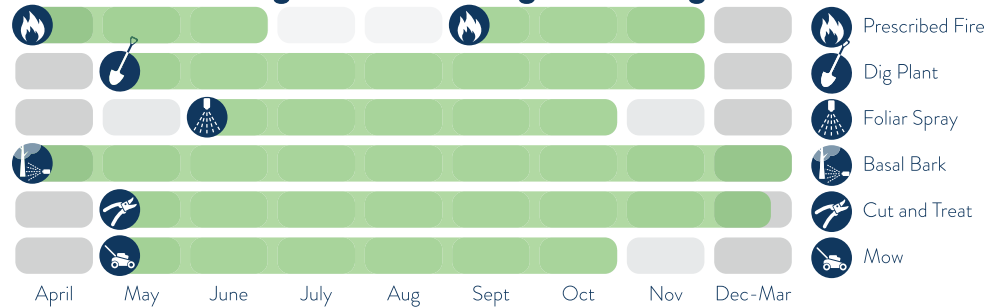


Management

Mechanical - Hand pulling when soils are moist, or repeated cutting of stems can be effective. The site must be monitored for potential resprouts and for seed germination in disturbed soils. These resprouts and seedlings require additional treatments or subsequent follow-up with an applicable herbicide.

Chemical - Smaller shrubs can be controlled with foliar applications, while larger shrubs can be controlled with cut stump or basal bark.

Treatment Timing



Fire - In forested settings, if conditions are right to carry a fire, seedlings/saplings can be damaged or killed.

Effective herbicide formulations: glyphosate, triclopyr.

AMUR & TATARIAN MAPLE

Acer spp.

Specially Regulated

Amur Maple
Acer ginnala Maxim.

Tatarian Maple
Acer tataricum L.

Common Names

Acer ginnala Maxim. - Ginnala Maple
Acer tataricum L. - Tatar Maple

Life Cycle

Woody perennial

Native Range

Eurasia

Look-a-Likes

[Norway Maple \(pg 58\)](#)

[Red Maple \(pg 91\)](#)

[Silver Maple \(pg 93\)](#)

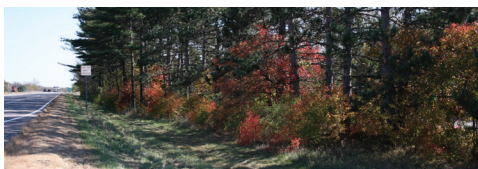
[Sugar Maple \(pg 95\)](#)

Habitat

Full sun or partial shade in well drained moist soils. Will tolerate dry conditions, salt and pH range of 6.1 to 7.5. A frequent invader of savannas, prairies and forests where native shrubs, trees and forbs can be displaced.

Means of Spread

Each tree can produce 5,000 or more fruits per year. The seeds are winged samaras, mostly landing within 100 yards of the parent tree, but a small portion can be carried long distances by wind and water.



Identification

Plant - Woody perennial, large shrub or small tree up to 20 feet in height. Mature bark is faint grey developing thin vertical stripes.

Leaves - Opposite, 1 to 3 inch long simple leaves are three lobed with center lobe extending past shorter side lobes and edges (margins) are doubly toothed. Bright green early in the season and producing brilliant fall colors in hues of red, yellow and gold-orange. Tatarian maple tends to have duller foliage, and less prominent lobing compared to Amur maple.

Flower - Fragrant, but not showy, loose clusters of pale yellow to creamy white flowers appear in early spring.

Bloom Time - May to June

Seed and Fruit - Approximately ¾ to 1 inch long, paired, winged seed structures called samaras. The samara pair hang at close to a right angle almost parallel to one another. Initially, seed is very red in color, maturing to a light brown.

Root - Shallow, fibrous roots.

Management

Mechanical - Hand pulling or cutting can eliminate small infestations of seedlings and saplings while digging or cutting larger material can be effective. Monitor and follow up with additional treatments as necessary.

Chemical - Small plants or resprouting stumps can be treated with foliar herbicide applications. Cut stump and basal bark work on larger shrubs.

Fire - Prescribed fire will set back plants and may top kill seedlings but plants will likely resprout.

Special Regulation

Any person, corporation, business or other retail entity distributing Amur or Tatarian maple or its cultivars for sale within the state, must have information directly affixed to the plant or container packaging that it is being sold with, stating the following: **“Amur and Tatarian maple should only be planted in areas where the seedlings will be controlled or eradicated by mowing or other means. Amur and Tatarian maple should not be planted closer than 100 yards from natural areas.”**



Left: Amur maple

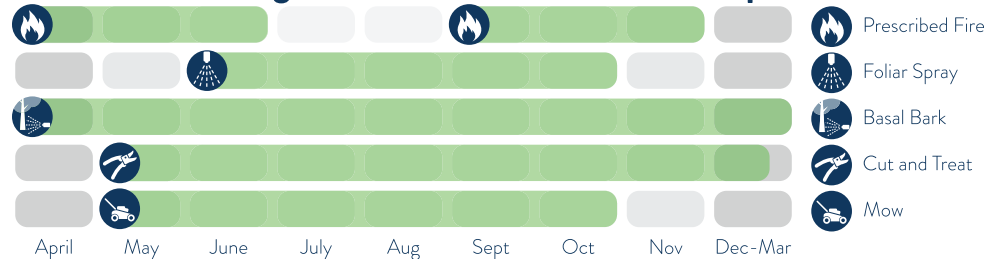


Right: Tatarian maple



Treatment Timing

Amur & Tatarian Maple



Effective herbicide formulations: glyphosate, triclopyr.

NORWAY MAPLE

Acer platanoides L.

Specially Regulated

Common Names

'Crimson King', 'Columnare', 'Erectum', 'Olmsted', 'Drummondii', 'Emerald Queen', 'Globosum', 'Schwedleri', and 'Summershade', and any other cultivar capable of producing viable seed.

Life Cycle

Woody perennial

Native Range

Central and eastern Europe and western Asia

Look-a-Likes

[Amur & Tatarian Maple \(pg 55\)](#)

[Red Maple \(pg 91\)](#)

[Silver Maple \(pg 93\)](#)

[Sugar Maple \(pg 95\)](#)

Habitat

Seedlings and saplings are very tolerant of shade and will alter the forest floor species composition excluding spring ephemerals and other tree/ shrub species.

Means of Spread

Reproduce by seed which can be spread by wind and water.



Identification

Plant - Medium sized trees that can attain heights of 50 to 80 feet. Bark becomes greyish black with shallow furrows at maturity. Stout olive-brown twigs with lenticels have purplish, terminal, rounded buds that are significantly larger than other species at 1/4 to 3/8 inch.

Leaves - Opposite, simple, 4 to 7 inches wide with palmate veins leading out to 5 or 7 sharply toothed lobes. Color by variety ranges from dark green to purple.

Flower - Yellowish to greenish-yellow flowers appear just before leaf emergence. Due to large numbers of 1/3 inch flowers the display is showy.

Seed and Fruit - Paired, winged samaras are widely separated. The wings are almost straight across from one another. Each samara is approximately 1 1/2 to 2 inches in length. Seed matures in late summer and some may persist on the tree into winter.

Root - Shallow fibrous roots that are notorious for growing along the surface.

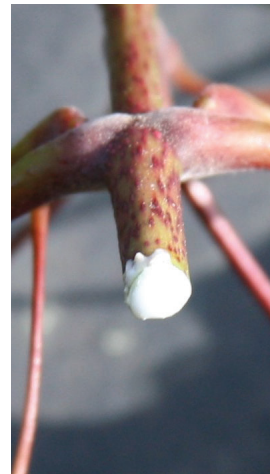
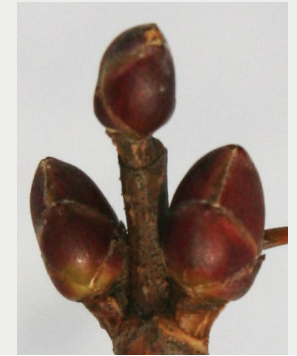
Management

Mechanical - hand pulling or repeated cutting of stems can be effective for smaller plants. The site must be monitored for potential resprouts and for seed germination in disturbed soils. These resprouts and seedlings require additional treatments or subsequent follow-up with an applicable herbicide.

Chemical - Smaller trees can be controlled with foliar herbicide applications. Cut stump, basal bark, and girdling (with herbicide) are options for larger trees.

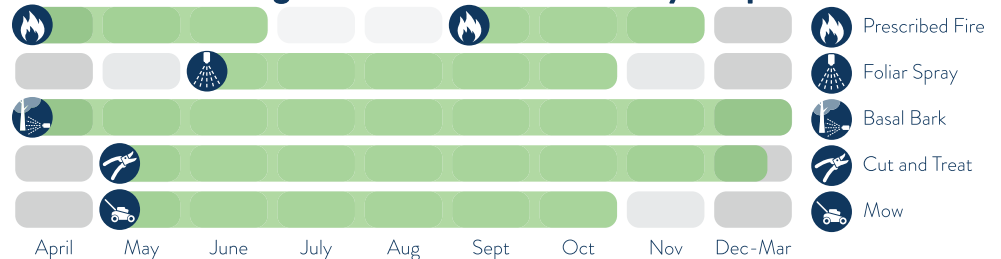
Special Regulation

Any person, corporation, business or other retail entity distributing Norway maple or its cultivars for sale within the state, must have information directly affixed to the plant or container packaging that it is being sold with, stating the following: **“Norway maple should only be planted in areas where the seedlings will be controlled or eradicated by mowing or other means. Norway maple seed is wind dispersed so trees should not be planted closer than 100 yards from natural areas.”**



Treatment Timing

Norway Maple



Fire - In forested settings, if conditions are right to carry a fire, seedlings/saplings can be damaged or killed.

Effective herbicide formulations: glyphosate, triclopyr.

POISON IVY

Toxicodendron spp.

Specially Regulated

Western poison ivy

Toxicodendron rydbergii (Small) Green

Eastern poison ivy

T. radicans (L.) Kuntze subsp. *negundo* (Greene) Gillis

Life Cycle

Woody perennial

Native Range

North America

Although irritating to humans, poison ivy is a native plant that benefits wildlife by providing a food source to birds, and mammals.

Look-a-Likes

Box Elder

Raspberry

[Woodbines \(pg 99\)](#)

Habitat

Thrives in disturbed areas such as roadsides, trail sides, fence rows, parks and can also be found in prairie and forested settings.

Means of Spread

Spreads primarily by shoots arising from an extensive shallow, horizontal root system and aboveground vining. New populations are started by transportation of seeds primarily by wind, water, or animals.

Toxicity

Contact with oily sap (urushiol) from broken plant parts can cause blistering, even in winter. May persist in compost. Oil can stay on and transfer from pets, tools, toys and other objects for long periods. **Do not burn**, can adhere to smoke particles from burning poison ivy and be taken into airways and lungs.

Identification

Plant - A 1 to 2 foot native shrub (western poison ivy), or climbing vine (eastern poison ivy) with grey to tan bark and little if any branching. Eastern poison ivy has small aerial roots that attach to structures.

Leaves - Alternate, compound leaves, 3 shiny or dull surfaced leaflets. Leaflet edges are variable from smooth to very coarsely toothed. Lower leaf surfaces are pale and often hairy.

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

Bloom Time - June to July

Seed and Fruit - Creamy white to tannish berry-like drupes, approximately ¼ inch diameter. Drupes mature in late summer and persist through the winter.

Root - Fibrous rhizome with root crown.

Management

See MnDOT Factsheet:

[Work Safely Around Poison Ivy](#)

Appropriate protective clothing including gloves, and long sleeve shirts should be worn and contact with the stems should be avoided. Wash all equipment/clothing after exposure.

Mechanical - Cutting or mowing can inhibit flowering but must be continued in order to deplete energy reserves and to deplete seed banks.

Chemical - Herbicide applied to foliage or to cut stems are effective. Repeat applications will be required to exhaust seed banks.

Special Regulation

Must be eradicated or controlled for public safety along rights-of-ways, trails, public accesses, business properties open to the public or on parts of lands where public access for business or commerce is granted. Must also be eradicated or controlled along property borders when requested by adjoining landowners.



Treatment Timing



Poison Ivy

- Caution
- Grazing
- Prescribed Fire
- Foliar Spray
- Cut and Treat
- Mow

Cultural - Goats and sheep that have been acclimated to feed on poison ivy may be used to reduce large populations.

Fire - Prescribed fire generates potentially harmful smoke. While prescribed fire can provide control, this tool should not be the first choice.

Effective herbicide formulations: 2,4-D, aminocyclopyrachlor, glyphosate, imazapyr, triclopyr.

ALFALFA

Medicago sativa L.

Non-native

Common Names

Lucerne

Life Cycle

Herbaceous perennial

Native Range

Southwest Asia

Look-a-Likes

[American Vetch \(pg 73\)](#)

[Canada Thistle \(pg 25\)](#)

[Canadian Milkvetch \(pg 76\)](#)

[Crown Vetch \(pg 43\)](#)

[Hairy Vetch \(pg 67\)](#)

[Knapweeds \(pg 101\)](#)

Habitat

Introduced to North America for livestock forage and is an agriculture crop. Adapted to many climates and common in roadside ditches, and similar disturbed areas.



Identification

Plant - Fabaceae family, 4-sided stem supports a 1 to 3 foot tall plant.

Leaves - Alternate, 3-parted, compound leaves with individual leaflets measuring $\frac{3}{8}$ to $1\frac{1}{8}$ inches long, stipulate (leaf-like appendages where leaves attach to stems).

Flower - 5-parted, purplish to blue (occasionally cream colored) and approximately $\frac{1}{4}$ to $\frac{1}{2}$ inch long.

Bloom Time - June to September

Seed and Fruit - Coiled pods, mature to a brown color.

Root - Deep, fast growing root that can reach depths of 50 feet. New stems emerge from woody root crown.



Key Differences

Leaves - Alfalfa has compound leaves. Thistles and knapweeds have simple leaves with lobes, not compound.

Flower - Alfalfa has a clustered, somewhat conical flower head. Thistles and knapweeds are disk flowers with ray flowers on the edges.



Top left: Alfalfa flowers

Top right: Crown vetch flowers

Bottom left: Canada thistle flower

Bottom right: Spotted knapweed flower



CARAWAY

Carum carvi L.

Non-native

Check out MnDOT's [Carrot Comparison Guide](#) for identification and key differences.

Common Names

Meridian Fennel, Persian Cumin

Life Cycle

Herbaceous biennial

Native Range

Eurasia and North Africa

Look-a-Likes

[Burnet Saxifrage](#) (pg 62)

[Common Yarrow](#) (pg 79)

[Erect Hedgeparsley](#) (pg 66)

[Water Hemlock](#) (pg 98)

[Wild Carrot](#) (pg 53)

[Wild Chervil](#) (pg 69)

Habitat

Prefers full sun, disturbed soils and tolerate drier roadside conditions.



Identification

Plant - Herbaceous biennial that can grow 1 to 4 feet tall. Stems are smooth, hairless, and shiny.

Leaves - Sparse alternate stem foliage is pinnately compound. Upper stem leaflets are deeply incised and smaller. Sheaths present at attachments to the hairless stem.

Flower - Umbels, flat-topped with 3 to 10 umbellets. Each umbellet holds up to 20 white (pinkish) florets. Petals are mostly equal in size and they are notched.

Bloom Time - June to August

Seed and Fruit - Seeds are oval, ribbed with no hooks or hairs. About to ¼ inch long. Fragrant when crushed, foliage and seeds used as an herb.

Root - Fibrous taproot.



Key Differences

Leaves - Wild carrot has obvious, showy, branched bracts beneath umbels. Caraway may have up to 4, burnet saxifrage may have 1 bract while erect hedgeparsley may have 2 or more narrow bracts at bases of compound umbels and up to 8 tiny bracts under umbellets.

Bloom Time - Burnet saxifrage, caraway and erect hedgeparsley bloom June to September. Wild chervil blooms April to June.

Seed and Fruit - Wild carrot seeds are about ⅛ inch with ridges covered by stiff bristles (not hooked). At maturity wild carrot folds its seed structure into what is often described as a bird's nest. Erect hedgeparsley seeds are covered in stiff hooked hairs.



Top left: Burnet saxifrage leaf

Top right: Caraway leaf

Center left: Erect hedgeparsley leaf

Center right: Poison hemlock leaf

Bottom left: Wild carrot leaf

Bottom right: Wild chervil leaf

Comparison of carrot family flowers - [Page 62](#)

Comparison of carrot family seeds - [Page 66](#)

Comparison of carrot family stems - [Page 69](#)

COMMON MULLEIN

Verbascum thapsus L.

Non-native

Common Names

Great Mullein, Woolly Mullein, Flannel Plant

Life Cycle

Herbaceous monocarpic perennial

Native Range

Eurasia and north Africa

Look-a-Likes

[Grecian Foxglove \(pg 16\)](#)

Moth Mullein

Habitat

Shade intolerant. Easily establishes in disturbed areas, along roadsides

Identification

Plant - Herbaceous monocarpic perennial that spends its first year as a rosette before bolting and producing seed. Can grow anywhere from 5 to 10 feet tall. Plants develop a large center spike covered in flowers, and sometimes grow smaller auxiliary spikes around the base of the main spike.

Leaves - Alternate and decrease in size further up the stem. Covered in soft hairs giving each leaf the texture of flannel. Basal leaves can be 15 inches long. As the plant matures, leaves fall off the stem leaving a brown stalk that persists.

Flower - Yellow with 5 petals. Grow densely clustered along a spike, with only a few flowers blooming at a time. Each flower is $\frac{3}{4}$ inch wide and have 5 orange stamen and a green style in the center.

Bloom Time - June to September

Seed and Fruit - Flowers mature into two-capsuled, circular pods that cover the entire spike. Each pod contains many small, black seeds, and single plants can produce up to 180,000 seeds.

Root - Deep taproot, with fibrous lateral roots.

Key Differences

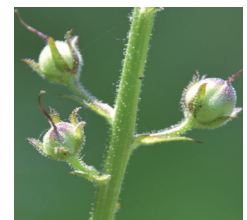
Leaves - Common mullein leaves are rounded and visibly hairy. Grecian foxglove leaves are lanced and dark green. Moth mullein leaves are hairless and lanced with lobing.

Flower - Grecian foxglove has white, bell-shaped flowers with brown veining. Moth mullein flowers can either be white or yellow and have stamen that look like moth antennas. Spikes are much narrower on both Grecian foxglove and moth mullein.

Seed and Fruit - Grecian foxglove capsules are two parted and spiked. Capsules split at maturity releasing seed.



Top left: Common mullein flower
Top right: Moth mullein flower (may also be yellow)
Bottom left: Grecian foxglove flower



Top left: Common mullein seed pods
Top right: Moth mullein seed pods
Bottom left: Grecian foxglove seed pods



DAME'S ROCKET

Hesperis matronalis L.

Non-native

Common Names

Dame's Violet, Mother-of-the-evening, Sweet Rocket

Life Cycle

Herbaceous biennial or short lived perennial

Native Range

Central and southern Europe

Look-a-Likes

[Fireweed](#) (pg 83)

[Garlic Mustard](#) (pg 45)

[Narrowleaf Bittercress](#) (pg 31)

Phlox

[Purple Loosestrife](#) (pg 35)

[Yellow Rocket](#) (pg 70)

Habitat

Prefers partial to full shade. Commonly found in disturbed areas, rights-of-ways, forest edges, and meadows. Prefers medium to high moisture environments.

Identification

Plant - Herbaceous, biennial with first year plants being basal rosettes. Second year flowering plants can attain heights of 2 to 4 feet and can produce more than one flowering stem.

Leaves - Alternate, lanced shaped leaves that are larger near the base. Margins are finely toothed and attach to the stem with no or minimal petiole. Leaves and stems are covered in small hairs.

Flower - Loose, clustered, and rounded. Each inflorescence has 4 petals. Flowers can vary in color from purple, pink, or white and are approximately ½ inch across. Flowers are sweetly fragrant.

Bloom Time - May to August

Seed and Fruit - Slender seed pods (siliques) grow from each flower, and can reach 5 inches long. As plants mature, the pods split and release small black seeds.

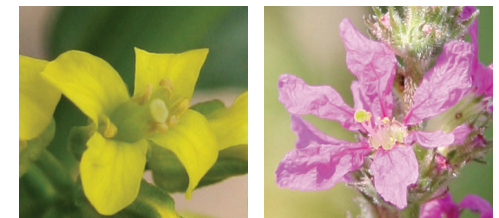
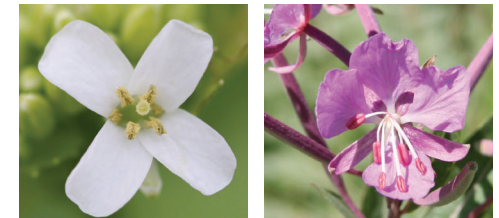
Root - Slender taproot with fibrous secondary roots.

Key Differences

Leaves - Garlic mustard has rounded, kidney shaped leaves with a strong garlic smell when crushed. Yellow rocket has similar kidney shaped leaves. Fireweed leaves have smooth margins.

Flower - Native phlox species have 5 petals. Purple loosestrife flowers grow up a square spike. Yellow rocket has yellow flowers. Garlic mustard and narrowleaf bittercress have white flowers.

Seed and Fruit - Garlic mustard, narrowleaf bittercress, and yellow rocket siliques are much smaller (1 to 2 inches long).



Dame's rocket flower color diversity. White (top left), purple (top right) and pink (bottom left).

Top left: Dame's rocket flower
Top right: Phlox flower
Center left: Garlic mustard flower
Center right: Fireweed flower
Bottom left: Yellow rocket flower
Bottom right: Purple loosestrife flower

Comparison of leaves - [Page 83](#)



HAIRY VETCH

Vicia villosa Roth.

Non-native

Common Names

Winter Vetch, Fodder Vetch

Life Cycle

Herbaceous annual, biennial, or short lived perennial

Native Range

Eurasia

Look-a-Likes

[Alfalfa \(pg 60\)](#)

[American Vetch \(pg 73\)](#)

[Canadian Milkvetch \(pg 76\)](#)

Cow Vetch

[Crown Vetch \(pg 43\)](#)

Habitat

Prefers dry old fields, pastures and roadsides. Readily invades disturbed areas but struggles to invade well established vegetation.

Identification

Plant - Fabaceae family, hairy vetch is a nonnative, short-lived perennial (biennial) with a spreading, viney form and has tendrils that assist climbing nearby plants up to 3 feet.

Leaves - Alternate, compound leaves, pinnately divided. Hairy vetch has 5 to 10 pairs of leaflets and tendrils are often found terminal on the compound leaves.

Flower - Hairy vetch has 10 to 40, 5-parted, pink to purple flowers about 3/4 inch in length in a one-sided cluster.

Bloom Time - May to September

Seed and Fruit - Pea-like pods, 1/2 to 3/4 inch long, that hang. Seed pods are green while maturing and once mature are grey/black to brown and hairy.

Root - Deep, fibrous taproot.

Key Differences

Leaves - Crown vetch has no stipules, no leaf stalk and no tendrils.

Flower - Crown vetch has a dense cluster (crown-like) not one-sided or spike-like.

Seed and Fruit - Crown vetch's pods stand erect, they are angled, and multi-segmented.



Top left: Hairy vetch flowers

Top right: American vetch flowers

Bottom left: Canadian milkvetch flowers

Bottom right: Crown vetch flowers

Comparison of vetch leaves - [Page 73](#)

Comparison of vetch seed pods - [Page 76](#)



YELLOW ROCKET

Barbarea vulgaris W. T. Aiton

Non-native

Common Names

Wintercress, Herb Barbara, Rocketcress

Life Cycle

Herbaceous biennial

Native Range

Eurasia

Look-a-Likes

[Garlic Mustard \(pg 45\)](#)

[Leafy Spurge \(pg 29\)](#)

[Narrowleaf Bittercress \(pg 31\)](#)

Habitat

Considered a weed of lawns, gardens and agricultural fields. Often along roadsides and other disturbed sites. An infestation of yellow rocket indicates a disturbed site on which ground cover of native forbs and grasses is thin.



Identification

Plant - Biennial plant (also described as perennial) that forms a basal rosette its first year. Subsequent growing seasons, flower stalks are erect at 8 to 36 inches tall, typically multi-branched and terminated by clusters of bright yellow flowers.

Leaves - Basal leaves and some stem leaves are pinnately lobed to deeply toothed and up to 6 inches in length. Often the terminal end of leaves is a larger rounded lobe in addition to 1 to 4 lesser side lobes. Leaves near the top of the plant are alternate, typically smaller, oval and often stalkless.

Flower - Crowded, rounded clusters of bright yellow stalked flowers. Flower clusters are terminal to branch ends. Individual flowers range from 1/3 to 1/2 inch wide and have 4 bright yellow petals. As flower clusters elongate, flowers are produced above with seed pods produced below flowers. Each flower is surrounded by a stiff bract resembling a spine. Flowering occurs in bands and various times. Larger bracts at the flower head base do not extend past the top of the flower head.

Bloom Time - April to June

Seed and Fruit - Slender pods develop along stems as flower clusters stretch upwards. The roundish pods are approximately 1 inch long, upward curved and contain small brown seeds at maturity.

Root - Stout taproot.



Key Differences

Leaves - Leafy spurge leaves are simple (not lobed) and narrowly linear at 1 to 4 inches in length.

Flower - Leafy spurge has greenish white flowers with no petals. The greenish-yellow bracts beneath the true flowers provide the appearance of a petaled flower. Confusion occurs due to overlap in bloom periods. Garlic mustard and narrowleaf bittercress have white flowers.



Top left: Yellow rocket flower

Top right: Garlic mustard flower

Bottom left: Leafy spurge flower

Bottom right: Narrowleaf bittercress flowers



AMERICAN VETCH

Vicia americana Muhl. Ex Willd.

Minnesota Native

Common Names

Purple Vetch

Life Cycle

Herbaceous perennial

Look-a-Likes

[Alfalfa \(pg 60\)](#)

[Canadian Milkvech \(pg 76\)](#)

Cow Vetch

[Crown Vetch \(pg 43\)](#)

[Hairy Vetch \(pg 67\)](#)

Habitat

Old fields, pastures and roadsides.



Identification

Plant - Fabaceae family, American vetch is a native perennial with a spreading, viney form and typically has tendrils that assist in climbing nearby plants up to 3 feet.

Leaves - Alternate, compound leaves, pinnately divided. American vetch has 4 to 8 pairs of leaflets and tendrils terminal on the compound leaves. American vetch has toothed stipules at the base of its compound leaves.

Flower - American vetch has 2 to 9 flowers in a one-sided cluster. Flowers are 5-parted, pink to purple and about 3/4 inch in length.

Bloom Time - May to September

Seed and Fruit - Pea-like pods that hang. American vetch's pods are about 1 inch long. Similar to hairy vetches pea-like pod.

Root - Fibrous taproot.



Key Differences

Leaves - Crown vetch has no stipules, no leaf stalks and no tendrils.

Flower - Crown vetch has a dense crown-like flower cluster.

Seed and Fruit - Crown vetch's pods stand erect, they are angled, and multi-segmented.



Top left: American vetch leaf

Top right: Hairy vetch leaf

Bottom left: Canadian milkvech leaf

Bottom right: Crown vetch leaf

Comparison of vetch flowers - [Page 67](#)

Comparison of vetch seed pods - [Page 76](#)



BURNING BUSH

Euonymus atropurpureus Jacq.

Minnesota Native

Common Names

Eastern Wahoo, Euonymus

Life Cycle

Woody perennial

Look-a-Likes

[American Bittersweet \(pg 72\)](#)

[Round Leaf Bittersweet \(pg 36\)](#)

[Winged Burning Bush \(pg 54\)](#)

Habitat

Prefers forested river corridors, floodplains, and margins of sloughs. Tolerates partial to full shade, flooding, and sedimentation.



Identification

Plant - Tall understory shrub with a single upright stem that can grow 13 feet tall with a diameter of 1½ inches. Four faint corky ridges are visible and run the length of the stem. Ridges become less pronounced as stem matures. Bark is smooth and grey to light brown.

Leaves - Simple and opposite leaves that mature to deep red in fall. Elliptical with a drawn out tip and fine serrations around the margins.

Flower - Four smooth, ovate petals with reddish purple color, ¼ inch in diameter. Flowers have both male and female parts.

Bloom Time - Early June to mid-July

Seed and Fruit - Red colored, four lobed, leathery husk. Husk splits when mature exposing 1 to 4 red fruit, each with one seed.

Root - Extensive, slow growing rhizome which sends up single stems that are interconnected.



Key Differences

Plant - American and round leaf bittersweet are vines. Corky ridges remain along stems on winged burning bush.

Leaves - Bittersweet leaves are alternate.

Flower - Burning bush has red flowers. American bittersweet have white flowers. Round leaf bittersweet and winged burning bush have pale green flowers.

Seed and Fruit - Burning bush fruit have 4 lobes with up to 4 fruit, while other species capsules split to reveal a single fruit or paired fruit (winged burning bush). Bittersweet fruit are 3 parted and spherical.



Top left: Burning bush fruit

Top right: Winged burning bush fruit

Bottom left: American bittersweet fruit

Bottom right: Round leaf bittersweet fruit

Comparison of bittersweet & burning bush flowers - [Page 72](#)

CANADIAN MILKVETCH

Astragalus canadensis L.

Minnesota Native

Common Names

Canada Milkvetch, Milkvetch

Life Cycle

Herbaceous perennial

Look-a-Likes

[American Vetch \(pg 73\)](#)

Cow Vetch

[Crown Vetch \(pg 43\)](#)

[Hairy Vetch \(pg 67\)](#)

Habitat

Used for livestock forage and as an agriculture crop. Common in roadside ditches, and similar disturbed areas.



Identification

Plant - Herbaceous, monocarpic perennial. At maturity, it is 3 to 8 feet tall with erect, ridged, and prickly stems.

Leaves - Alternate, odd-pinnate, compound leaves with 21 to 31 oblong leaflets, about 1½ inches long. Leaves measure 5 to 9 inches long and there are no tendrils.

Flower - 5-parted, cream colored and approximately ¾ inch long. Milkvetch has a tall, spike-like, clustered, conical flower head with as many as 75 flowers.

Bloom Time - June to September

Seed and Fruit - Thickened, fuzzy, 2-parted pods with a pointed tip, mature to a brown color.

Root - Fibrous taproot.



Key Differences

Leaves - Crown vetch has 11 to 25 oval leaflets while Canadian milkvetch has 21 to 31 oblong leaflets.

Flower - Canadian milkvetch flowers are white where American, cow, crown, and hairy vetches have purple to pink flowers.



Top left: Canadian milkvetch seed pods

Top right: American vetch seed pods

Bottom left: Hairy vetch seed pods

Bottom right: Crown vetch seed pods

Comparison of vetch flowers - [Page 67](#)

Comparison of vetch leaves - [Page 73](#)



CHERRIES AND PLUM

Prunus spp.

Minnesota Native

Black Cherry

Prunus serotina Ehrh.

Choke Cherry

Prunus virginiana L.

Pin Cherry

Prunus pensylvanica L. f.

American Plum

Prunus americana Marshall

Common Names

Prunus serotina Ehrh. - Wild Cherry, Rum Cherry

Prunus virginiana L. - Bitter-berry, Virginia Bird Cherry

Prunus pensylvanica L. f. - Fire Cherry, Bird Cherry, Red Cherry

Prunus americana Marshall - Wild Plum

Life Cycle

Woody perennial

Look-a-Likes

[Callery Pear \(pg 57\)](#)

[Common Buckthorn \(pg 42\)](#)

[Glossy Buckthorn \(pg 46\)](#)

Habitat

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

Identification

Plant - Plums, choke cherry 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, grey to brown bark that is often shiny and lenticeled. Couple that bark and American plum's thorn-like twigs and it is no surprise that these species are frequently confused with buckthorn.

Leaves - Alternate, elliptic to oblong or ovate, typically finely toothed with acuminate or drawn out leaf tips.

Flower - Numerous five-parted, white, fragrant flowers 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, American plum (wild plum) is one of the earliest trees to bloom, typically small groups of trees clumped along forest edges.

Bloom Time - May to June

Seed and Fruit - Choke and black cherry panicles (loose, hanging clusters) of black fruit are readily taken by birds. Pin cherry fruits mature to a bright red. Plums have a ¾ to 1 inch, reddish to purplish fruit that contains a large seed.

Root - Sprawling woody roots.

Key Differences

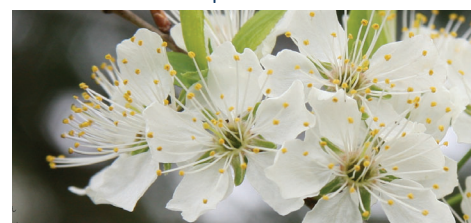
Leaves - *Prunus* species have glands on the leaf petioles. Common buckthorn has arcuate (curved) venation.

Flower - Five-parted, white, fragrant flowers are fairly showy or obvious.

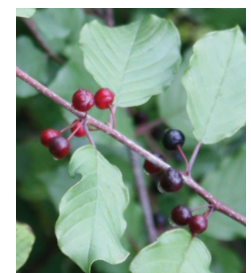
Seed and Fruit - Birds eat fruits of cherries and plums after ripening. Buckthorn fruits remain on shrubs into late winter.



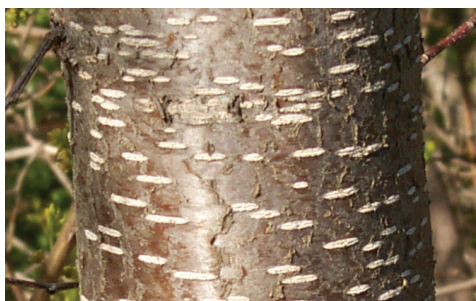
Top left: Black cherry flowers
Top right: Choke cherry flowers
Bottom: American plum flowers



Top left: Black cherry fruit
Top right: Choke cherry fruit
Bottom left: Pin cherry fruit
Bottom right: American plum fruit



Top left: Common buckthorn fruit
Top right: Glossy buckthorn fruit
Bottom left: Callery pear fruit



COMMON HOPS

Humulus lupulus L.

Minnesota Native

Common Names

Hops, American Hops, Beer Hops

Life Cycle

Herbaceous perennial

Look-a-Likes

[Cucumbers \(pg 81\)](#)

[Japanese Hops \(pg 18\)](#)

[Woodbines \(pg 99\)](#)

Habitat

Moist soils, disturbed sites in woodlots and along fence rows.

Identification

Plant - Herbaceous, perennial vine, rhizomatous (spreads by rhizomes), and can grow to around 20 feet. Leaf petioles and annual stems with stout hooked hairs.

Leaves - Opposite, for the most part 3 lobed (up to 5 lobes), higher on the vine leaves may be unlobed. Typically, a cordate (heart shaped) base to the leaf and leaves nearly as broad as long. Petioles attaching the leaf to the vine are shorter than the length of the leaf. At the stem intersection, there is a large, papery, upward facing bract. Leaf undersides are covered in yellow glands.

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

Bloom Time - July to August

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

Root - Woody rhizome with root crown.

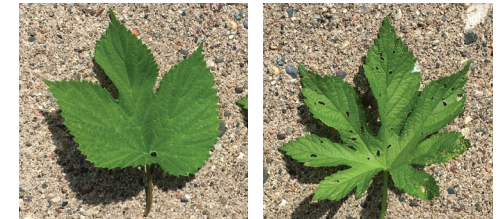
Key Differences

Plant - Japanese hops is an annual, and does not contain the resins found in common hops that are used for brewing.

Leaves - Japanese hops has leaves with 5 to 9 lobes. Petioles are longer than the length of the leaf. Bracts at the petiole base are smaller, face downward, and are split down the middle.

Seed and Fruit - Female cones on Japanese hops are much smaller and do not typically persist over the winter.

Root - Japanese hops has a taproot.



Above left: Common hops leaf
Above right: Japanese hops leaf



Above left: Common hops bracts
Above right: Japanese hops bracts



Above left: Common hops petiole
Above right: Japanese hops petiole

Below: Yellow glands on underside of common hops leaf



COMMON YARROW

Achillea millefolium L.

Minnesota Native

Common Names

Yarrow, Milfoil, Plumajillo

Life Cycle

Herbaceous perennial

Look-a-Likes

[Burnet Saxifrage \(pg 62\)](#)

[Caraway \(pg 63\)](#)

[Erect Hedgeparsley \(pg 66\)](#)

[Poison Hemlock \(pg 34\)](#)

[Water Hemlock \(pg 98\)](#)

[Wild Carrot \(pg 53\)](#)

[Wild Chervil \(pg 69\)](#)

Habitat

Mesic to dry soils, full to partial sun often in prairies, along roadsides and woodland edges.



Identification

Plant - Perennial, herbaceous plant reaching heights of 1 to 3 feet. Stems are pale green, hollow and typically covered with fine hairs. Plants are often unbranched except near the top.

Leaves - Alternate, narrow and finely divided, single or double pinnate, very fern-like. Stem leaves are sessile (no leaf stalk) and near top of plants, typically smaller. Leaflets are longest at the middle of the rachis and shorter near the tip and base.

Flower - Terminal branched flower structures (compound corymb) of numerous 5-parted flower heads. Each flower head consists of 5 ray florets and 5 disk florets. Florets are typically whitish to pale cream. White flowers on a flat-topped structure brings about confusion with the carrot family.

Bloom Time - June to September

Seed and Fruit - Like the flowers, branched, terminal clusters. Florets are replaced by seeds (achenes) lacking hairs.

Root - Fibrous root with rhizomes



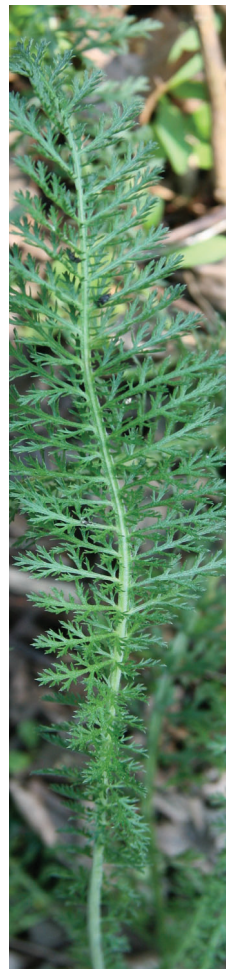
Key Differences

Plant - Member of the aster family, not carrot family.

Flower - Terminal branched panicles or compound corymb versus carrot families compound umbels.

Bottom left: Common yarrow basal leaf

Bottom right: Common yarrow upper leaf



Above left: Common yarrow flowers

Above right: Water hemlock flowers



Above left: Common yarrow leaf

Above right: Wild carrot leaf



COW PARSNIP

Heracleum maximum W. Bartram

Minnesota Native

Check out MnDOT's [Carrot Comparison Guide](#) for identification and key differences.

Common Names

American Cow Parsnip, American Hogweed, Indian Celery

Life Cycle

Herbaceous perennial

Look-a-Likes

[Giant Hogweed](#) (pg 15)

Great Angelica

[Poison Hemlock](#) (pg 34)

Habitat

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

Toxicity

Although to a lesser extent than giant hogweed and wild parsnip, contact with the sap and exposure to sunlight can produce painful, burning blisters (phytophotodermatitis).

Identification

Plant - Perennial, single-stemmed large plants at 3 to 10 feet tall. Fuzzy stems are hollow and described as foul smelling.

Leaves - Alternate, compound, 3-parted with toothed, palmate leaflets. Leaves can grow up to 2 feet wide. The petiole or leaf stalk has an enlarged base that clasps the stem.

Flower - 8 to 30 small, white, 5-parted flowers with notched petals, in a 4 to 8 inch flat umbel, 8 to 30 umbellets. Cow parsnip outer flower petals are often larger, irregular, and notched.

Bloom Time - June to July

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

Root - Short, fibrous taproot.

Key Differences

Plant - Giant hogweed has purplish stems with coarse hairs and can grow up to 20 feet tall.

Leaves - Giant hogweed has strongly dissected leaves up to 5 feet wide.

Flower - Umbels on giant hogweed are curved, where cow parsnip umbels are flat. Umbels on great angelica are spherical.



Top left: Cow parsnip umbel

Top right: Giant hogweed umbel

Bottom left: Great angelica umbel



Top left: Cow parsnip leaf

Top right: Giant hogweed leaf

Bottom left: Great angelica leaf



EASTERN RED CEDAR

Juniperus virginiana L.

Minnesota Native

Common Names

Red Cedar, Cedar, Red Juniper

Life Cycle

Woody perennial

Look-a-Likes

[Northern White Cedar \(pg 90\)](#)

[Saltcedar \(pg 51\)](#)

Habitat

Originally inhabited rocky outcrops, cliffs, and bluff prairies. Agriculture and fire prevention measures have expanded suitable habitats where it now thrives along field edges, pastures, and disturbed areas.



Identification

Plant - Small to medium evergreen tree that can reach heights of 50 feet. Bark is thin, brownish-red, and peels in thin strips. Heartwood is deep red.

Leaves - Opposite and persist on the branch for 4 to 6 years. Red cedars have juvenile and adult leaves. Adult leaves are dark green, scale-like, compressed, and overlapping. They are up to ¼ inch long and ⅛ inch wide. Juvenile leaves are more needle like, ⅙ inch wide, divergent, and found on younger growth.

Flower - Dioecious and cone-like (strobili). Fruit producing cones are typically ¼ inch wide, with yellow to blue-green scales. Pollen cones are ⅛ inch wide with yellow to light brown scales. Pollen is released early spring.

Bloom Time - mid-April to May

Seed and Fruit - Berries develop after flowering and mature to a blue fruit with waxy surface, ¼ diameter. Each fruit contains 1 to 3 egg-shaped seeds, and persist throughout winter.

Root - Shallow, fibrous root system.



Key Differences

Leaves - Saltcedar leaves drop off the branches every year where eastern red and northern white cedar leaves persist for several seasons.

Flower - Saltcedar has white to pink tiny flowers, while both eastern red and northern white cedar have strobili.

Bloom Time - Saltcedar can continue to bloom throughout the growing season.

Seed and Fruit - Saltcedar produces tiny tufted seeds, and northern white cedars produce cones.



Left: Female strobili (above) and form (below)
Right: Male strobili (above) and form (below)



Top left: Eastern red cedar leaves
Top right: Northern white cedar leaves
Bottom left: Saltcedar leaves



Comparison of cedar and saltcedar seed -
[Page 90](#)



FIREWEED

Chamerion angustifolium (L.) Holub subsp. *angustifolium*

Minnesota Native

Common Names

Great Willowherb

Life Cycle

Herbaceous perennial

Look-a-Likes

[Dame's Rocket](#) (pg 65)

[Purple Loosestrife](#) (pg 35)

Habitat

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



Identification

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

Leaves - Alternate, crowded leaves that are lance-like and stalkless.

Flower - Four-parted, colors range from pink to purple. The flowers are showy at $\frac{3}{4}$ to $1\frac{1}{2}$ inches wide and arranged along a tall terminal spike.

Bloom Time - June to August

Seed and Fruit - Long, slender capsules or pods that split to release small seeds with long tufted hairs.

Root - Fibrous rhizome.



Key Differences

Plant - Purple loosestrife has a 4 to 6 sided stem.

Leaves - Purple loosestrife leaves are opposite. Dame's rocket leaves are toothed and lances shaped where fireweed has long linear leaves.

Flower - Fireweed has 4-parted flowers (purple loosestrife has 5-parted flowers). Dame's rocket flower colors are variable from white to deep purple.



Top left: Fireweed leaves

Top right: Dame's rocket leaves

Center left: Phlox leaves

Center right: Garlic mustard leaf

Bottom left: Purple loosestrife leaves

Bottom right: Yellow rocket leaves

Comparison of flowers - [Page 65](#)



GOLDEN ALEXANDERS

Zizia spp.

Minnesota Native

Check out MnDOT's [Carrot Comparison Guide](#) for identification and key differences.

Golden Alexander

Zizia aurea (L.) W.D.J. Koch

Heart-leaved Golden Alexander

Zizia aptera (A.) Fernald

Common Names

Golden Zizia, Meadow Zizia

Life Cycle

Herbaceous perennial

Look-a-Likes

[Wild Parsnip](#) (pg 38)

Habitat

Moderately moist to wet - sandy, loamy soils, full sun to shade.

Identification

Plant - Herbaceous, perennial reaching 1 to 2 feet tall.

Leaves - Alternate 2 to 3 inch stem leaves, mostly three-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 upper stem leaves.

Flower - Compound umbels of numerous 5-parted, yellow flowers.

Bloom Time - May to July

Seed and Fruit - Not as flat as wild parsnip seeds. Ridged, slightly oval and when mature becomes tan, appears dry and splits into two parts.

Root - Fibrous taproot.

Key Differences

Plant - Golden alexanders have smooth, shiny stems compared to the grooved stem of wild parsnip.

Leaves - Basal leaves of wild parsnip are pinnately compound with 5 to 15 leaflets.

Flower - Incurved yellow petals cover the flower center. Wild parsnips yellowish petals remain tightly curled against the sides of flowers.

Seed and Fruit - Wild parsnip seeds are typically larger and flatter.



Above left: Golden alexander flowers
Above right: Wild parsnip flower



Above left: Golden alexander leaf
Above right: Wild parsnip leaf

Below: Heart-leaved golden alexander leaf



GOLDENRODS

Solidago spp.

Minnesota Native

Common Species

Canada Goldenrod

Solidago canadensis

Showy Goldenrod

Solidago speciosa

Stiff Goldenrod

Solidago rigida

Tall Goldenrod

Solidago altissima

Life Cycle

Herbaceous perennial

Look-a-Likes

[Common Tansy \(pg 27\)](#)

Habitat

Goldenrod species thrive in a variety of sites. They can be found in dry to wet prairies, dry to moist forests and on a variety of roadsides. Partial to full sun.



Identification

Plant - Perennial plants, often clumped, typically erect, single stems. Species typically ranges in height from 1 to 4 feet while species may reach heights of 7 feet.

Leaves - Alternate, simple, depending on species leaves are lance shaped, may or may not be toothed and may or may not be hairy.

Flower - Yellow ray flowers typically arranged in branched clusters. Depending on species the inflorescence may be pyramidal, flat-topped or one-sided.

Bloom Time - July to September

Seed and Fruit - Dry, light seeds often tufted with light-colored to brownish hairs easily carried by wind.

Root - Deep and fibrous rhizome.



Key Differences

Leaves - Tansy foliage is pinnately divided, toothed and aromatic when crushed.

Flower - Goldenrod flowers have ray petals surrounding central, disk-like florets. Common tansy has clusters of flowers in each "button".

Seed and Fruit - Tansy seed is not tufted and persists into winter in the flower heads.



Above: Grey goldenrod - *Solidago nemoralis*
Left: Canada goldenrod - *Solidago canadensis*
Below: Stiff goldenrod - *Solidago rigida*



Above left: Goldenrod flowers
Above right: Common tansy flowers



Above left: Goldenrod leaves
Above right: Common tansy leaf



MARSH MARIGOLD

Caltha palustris L.

Minnesota Native

Common Names

Yellow Marsh Marigold, Kingcup, Cowslip

Life Cycle

Herbaceous perennial

Look-a-Likes

[Lesser Celandine \(pg 48\)](#)

Habitat

Grows in partial shade to full sun. Prefers margins of wet areas such as marshes and swamps, or floodplains. Can tolerate growing in shallow water.

Toxicity

Contains protoanemonin and consumption of raw leaves can be fatal to humans and livestock.



Identification

Plant - Species in the buttercup family that blooms in early spring. Grows in clusters with thick, hollow, branching stems that can reach 8 to 24 inches tall.

Leaves - Kidney shaped with heart-like bases. Leaves typically stay low to the ground, up to 4 inches long with 2 to 6 inch petioles. Margins are finely toothed. Leaves rarely extend up the stalk.

Flower - Plants have several flowering stems. Flowers are 1 to 1½ inches wide with 5 to 9 rounded petal-like sepals that are bright yellow. The sepals surround a ring of stamen in the center of the flower.

Bloom Time - April to May

Seed and Fruit - Seeds mature in curved capsules that split open at maturity. Each capsule is about ¾ inch long and contain multiple oval seeds.

Root - Fibrous, sprawling roots.



Key Differences

Plant - Lesser celandine has a creeping growth pattern, and only grows 11 inches tall.

Leaves - Lesser celandine leaves are much smaller, coarsely toothed, and come to a point. Bulbils form at the leaf axils.

Flower - Lesser celandine flower have 8 to 12 petals that are highly glossy, and have three sepals on the back of the flower.

Seed and Fruit - Lesser celandine seed heads are small, clustered and tubular.

Root - Lesser celandine has a tuberous root structure.



Above left: Marsh marigold flower
Above right: Lesser celandine flower



Above left: Marsh marigold clustered form
Above right: Lesser celandine creeping form



Above left: Marsh marigold seed head
Above right: Lesser celandine seed head



NATIVE HONEYSUCKLES

Diervilla lonicera and *Lonicera* spp.

Minnesota Native

Common Species

Northern Bush Honeysuckle (shrub)
Diervilla lonicera Mill.

Fly Honeysuckle (shrub)
Lonicera canadensis Marsh.

Swamp Fly Honeysuckle (shrub)
Lonicera oblongifolia [Goldie] Hook.

Mountain Fly Honeysuckle (shrub)
Lonicera villosa [Michx.] J. A. Schultes

Hairy Honeysuckle (vine)
Lonicera hirsuta Eat.

Wild Honeysuckle (vine)
Lonicera dioica L.

Life Cycle

Woody perennial

Look-a-Likes

[Asian Bush Honeysuckles \(pg 40\)](#)

[Japanese Honeysuckle \(pg 17\)](#)

Habitat

Woodland habitats with some species tolerant of deeper shade while others require partial sun. Swamp fly and mountain fly honeysuckles are typically found in moist soils such as forested swamps or bogs.

Identification

Plant - Shrubs range in heights up to 3 feet for northern bush honeysuckle on up to 6 feet for fly honeysuckles. Twining vines may be sprawling, standing weakly or climbing to heights of 9 to 15 feet (hairy and wild) on up to 24 feet for the uncommon grape honeysuckle.

Leaves - Opposite. Bush honeysuckle has lance-shaped leaves with a long tip, serrated and ciliated margins with hairs possibly present on surfaces or mid-veins. Fly honeysuckles have elliptical to oblong shapes with blunt or acute tips. Vining honeysuckles tend to have rounded or ovate leaves except terminal leaf pairs tend to be fused.

Flower - Tubular. Northern bush honeysuckles have a yellow flower while wild honeysuckles are red. Others, like fly honeysuckle, vary from pale yellow to white.

Bloom Time - May to July. Northern bush honeysuckle as late as September.

Seed and Fruit - Typically berry-like, typically red except for bush honeysuckles beaked, capsule with sepals attached.

Root - Suckering roots, branches can root if they come in contact with the ground.

Key Differences

Plant - Native bush honeysuckles have solid piths, typically white. Vine forms have hollow stems, white piths.

Leaves - Northern bush honeysuckle has serrated, lance shaped foliage. Vining honeysuckles tend to have rounded foliage with the terminal pair of fused leaves.



Top: Hairy honeysuckle vining form
Center: Wild honeysuckle red flowers
Bottom: Wild honeysuckle fused foliage



Above: Fly honeysuckle flower
Below: Fly honeysuckle fruit and leaves



Left: Northern bush honeysuckle shrub form
Below: Northern bush honeysuckle flower (left) and beaked fruit (right)



NATIVE PHRAGMITES

Phragmites australis subsp. *americanus* Saltonstall

Minnesota Native

Check out MAISRC's [Identify Invasive Phragmites](#) guide for identification and key differences.

Common Names

American Common Reed

Life Cycle

Perennial grass

Look-a-Likes

[Amur Silvergrass](#) (pg 39)

[Non-native Phragmites](#) (pg 32)

Habitat

Shorelines of lakes and rivers as well as pond edges and freshwater marshes. Disturbed areas and roadsides can support native Phragmites very well.



Identification

Plant - Perennial grass. Stand density can be similar to introduced common reed but, stands often have other native plants interspersed.

Leaves - Summer leaves are yellowish green. Leaves and leaf sheaths will drop from plants in winter leaving bare, glossy, reddish stems. Ligule length typically $\frac{1}{32}$ to $\frac{1}{16}$ inch wide.

Flower - Green to purplish-green plumes inflorescence with a sparsely, branched density and flag to one side.

Bloom Time - July to September

Seed and Fruit - Inflorescences are fuzzy when seeds are ripe.

Root - Extensive system of rhizomes.



Key Differences

Plant - Stems on native Phragmites are smooth and mature to a red color during the summer, while non-native Phragmites stems are rough and remain green.

Leaves - Native Phragmites mostly shed both leaves and leaf sheaths by mid-winter. The ligule is a strong characteristic for distinguishing invasive from native Phragmites. The ligule on non-native Phragmites appears as a discrete narrow line compared to a short flap of tissue on native Phragmites. Both species will have a short fringe of hairs on the ligule.

Flower - Plumes on non-native Phragmites are much denser and persist on the plant throughout the winter.

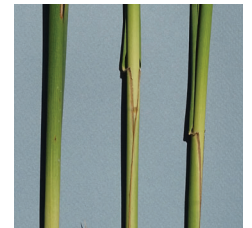
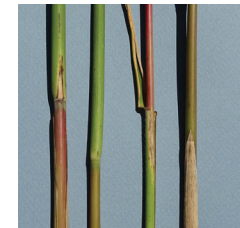


Below: Native Phragmites (left) next to non-native Phragmites (right) in August



Above left: Native Phragmites plumes

Above right: Non-native Phragmites plumes



Above left: Native Phragmites stems

Above right: Non-native Phragmites stem



Above left: Native Phragmites leaf sheath

Above right: Non-native Phragmites leaf sheath



Above left: Native Phragmites ligule

Above right: Non-native Phragmites ligule

NORTHERN WHITE CEDAR

Thuja occidentalis L.

Minnesota Native

Common Names

Swamp Cedar, Eastern White Cedar, American Arborvitae

Life Cycle

Woody perennial

Look-a-Likes

[Eastern Red Cedar \(pg 82\)](#)

[Saltcedar \(pg 51\)](#)

Habitat

Dominates swamps and peat swamps. Prefers moist, slightly acidic, upland forests. Also grows along rocky lake shores and cliffs but growth is stunted.



Identification

Plant - Medium sized evergreen tree or shrub that can grow up to 80 feet tall with a 3 foot diameter. Grows in a triangular form. Grey to reddish brown bark that separates in long, narrow strips.

Leaves - Opposite, scale like leaves that grow in a flat, fan shape. Each leaf is green to yellowish green and 1/8 inch to 1/4 inch long. Leaves persist on branches for several years.

Flower - Flowers are dioecious and cone-like (strobili) and can appear on different branchlets of the same tree. Fruit producing cones are typically 1/8 inch wide, with multiple yellow to brown scales with black tips. Pollen cones are 1/8 inch wide with dark brown scales. Strobili are found at the terminal end of the branchlet.

Bloom Time - April to May

Seed and Fruit - Cones ripen each fall. Oblong and greenish brown, and up to 1/2 inch long. Cones mature to dark brown and scales separate to release on average 8 seeds. Seed are elliptical, brown, flattened with wings, and 1/4 inch long.

Root - Woody, wide spreading root system.



Key Differences

Leaves - Saltcedar leaves drop off the branches every year where eastern red and northern white cedar leaves persist for several seasons. Saltcedar leaves do not grow in a flat form.

Flower - Saltcedar has white to pink tiny flowers, while both eastern red and northern white cedar have strobili.

Bloom Time - Saltcedar can continue to bloom throughout the growing season.

Seed and Fruit - Saltcedar produces tiny tufted seeds, and eastern red cedars produce berries encapsulating seeds.

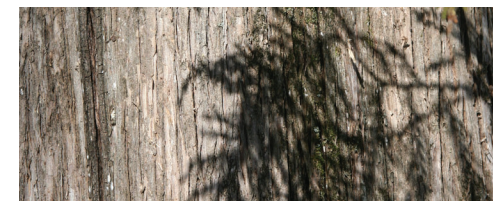


Top left: Eastern red cedar fruits

Top right: Northern white cedar cones

Bottom left: Saltcedar tufted seeds

Comparison of cedar and saltcedar leaves - [Page 82](#)



RED MAPLE

Acer rubrum L.

Minnesota Native

Common Names

Swamp Maple, Scarlet Maple

Life Cycle

Woody perennial

Look-a-Likes

[Amur and Tatarian Maple \(pg 55\)](#)

[Norway Maple \(pg 58\)](#)

[Silver Maple \(pg 93\)](#)

[Sugar Maple \(pg 95\)](#)

Habitat

Common inhabitant in hardwood and conifer forests. Fire suppression efforts have expanded its range. Tolerant of seasonal flooding and drought, but will not tolerate sedimentation.



Identification

Plant - Large tree that can grow 95 ft tall with a 2 foot diameter. Young bark is light grey to brown and matures to scaled ridges. Branches are reddish brown and hairy.

Leaves - Opposite and simple leaves that are deciduous. Petioles are 2½ to 5 inches long, and hairy along the margins near the base. No stipules. The leaf base is cordate to truncate. Leaves are deeply, palmately three to five lobed, and finely toothed. Leaves turn bright red in the fall.

Flower - Flowers are clustered on lateral buds in bunches of 2 to 6. Male and female flowers are on different trees. Female flowers are bright red while males are yellow to pink. Form in early spring before leaves appear. Flowers lack petals and are insect pollinated.

Bloom Time - March to early May

Seed and Fruit - Paired samaras with papery husks with wings that mature mid-May to early June.

Root - Extensive woody rhizome network.

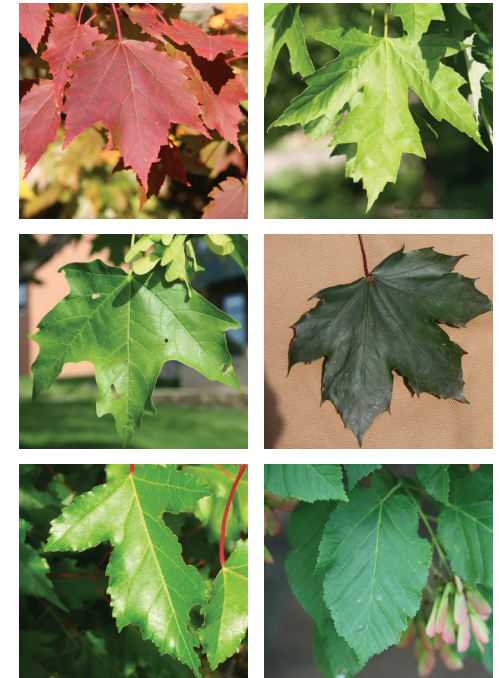


Key Differences

Plant - Norway maple has milky sap, while sugar maple has clear sap. Amur and Tatarian maples typically have multiple stems.

Leaves - Norway and silver maples typically have 5 lobes. Silver maple leaves are deeply lobed. Sugar maples margins have fewer teeth than red maples and sinuses are U-shaped. Amur and Tatarian maple have an elongated middle lobe.

Seed and Fruit - Samaras mature in the spring, where Amur, Tatarian, Norway, and sugar maple samaras mature in autumn.



Top left: Red maple leaf

Top right: Silver maple leaf

Center left: Sugar maple leaf

Center right: Norway maple leaf

Bottom left: Amur maple leaf

Bottom right: Tatarian maple leaf

Comparison of maple flowers - [Page 93](#)

Comparison of maple samaras - [Page 95](#)



SPECKLED ALDER

Alnus incana (L.) Moench subsp. *rugosa* (DuRoi) Clausen

Minnesota Native

Common Names

Grey Alder

Life Cycle

Woody perennial

Look-a-Likes

[European Alder \(pg 44\)](#)

Green Alder

Habitat

Typically found in wetlands. Often found along streams, lake shores and wetland margins. Prefers moderate acidity, full sun yet tolerates part shade.



Identification

Plant - Woody, perennial, multi-stemmed shrub or small trees often leaning into one another forming a tangle to walk through. Heights of 26 feet can be attained with typically small diameters of 6 inches or less. Green alder (*A. viridis*), another Minnesota native shrub reaches 14 feet, and is found in drier upland habitats.

Leaves - Alternate, simple with toothed shallow lobes. About 2 to 4 inches long and 1¼ to 2½ inches wide.

Flower - Male catkins are typically 1½ to 3½ inches when dormant and extend in spring to release pollen. Female catkins are less than ¼ inch long and typical bloom is March to early May.

Bloom Time - March to early May

Seed and Fruit - Female cones mature late summer and release tiny flattened samaras during the winter months. Dispersal is via wind and water.

Root - Shallow, woody rhizome.



Key Differences

Plant - European alder is a medium tree with a single trunk, while native alders are typically multi-stemmed shrubs.

Leaves - European alder leaves have a notched tip.



Top left: Speckled alder leaf
Top right: European alder leaf
Bottom left: Green alder leaf

Green alder - *Alnus viridis* (Vill.) DC. subsp. *crispa* (Ait.) Turrill.



Top: Green alder leaf with fine serrations
Bottom left: Green alder upright female flowers and drooping male catkins
Bottom right: Green alder maturing female cones



SUGAR MAPLE

Acer saccharum Marshall

Minnesota Native

Common Names

Rock Maple, Sugar Tree, Sweet Maple

Life Cycle

Woody perennial

Look-a-Likes

[Amur and Tatarian Maple \(pg 55\)](#)

[Norway Maple \(pg 58\)](#)

[Red Maple \(pg 91\)](#)

[Silver Maple \(pg 93\)](#)

Habitat

Well drained, moist, loamy soil. Intolerant of flooding and will not survive in flood plains. Seedlings are very tolerant of deep shade. Saplings also tolerate shade, persisting in the understory for a long period before a gap opens to allow maturity. Common in late successional mesic forests.

Identification

Plant - Woody perennial, large trees to 100 feet tall with trunk diameters to 3 feet. Bark is smooth grey to brown when young becoming darker and furrowed later.

Leaves - Opposite, simple, typically 5 lobed. Three of the lobes similar in size while the base lobes are much reduced in size. Sinuses are rounded cutouts between the lobes, U-shaped. Leaves turn orange in the fall.

Flower - Flowers appear with leaf emergence. Clusters of 8 to 15 yellow-green drooping flowers. Wind and insect pollinated.

Bloom Time - April to early June

Seed and Fruit - Double samaras mature in the autumn, U-shaped and each samara is approximately 1 inch long. Seeds fall in the autumn prior to the leaves and germinate the following spring.

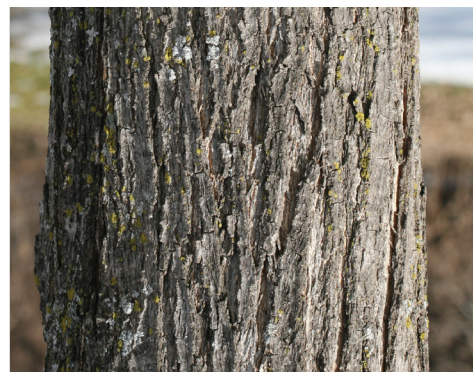
Root - Extensive woody rhizome network.

Key Differences

Plant - Norway maple has milky sap, while sugar maple has clear, sweet sap. Amur and Tatarian maples typically have multiple stems.

Leaves - Norway and silver maples typically have 5 lobes. Silver maple leaves are deeply lobed. Red maples margins more teeth than sugar maples and sinuses are V-shaped. Amur and Tatarian maple have an elongated middle lobe.

Seed and Fruit - Samaras mature in autumn, where red and silver maple samaras mature in the spring. Norway maple samaras are horizontally aligned.



Top left: Red maple samaras
Top right: Silver maple samaras
Center left: Sugar maple samaras
Center right: Norway maple samaras
Bottom left: Amur maple samaras
Bottom right: Tatarian maple samaras

Comparison of maple flowers - [Page 93](#)

Comparison of maple leaves - [Page 91](#)



SUMAC

Rhus spp.

Smooth Sumac

Rhus glabra L.

Staghorn Sumac

Rhus typhina L.

Common Names

Rhus glabra L. - White Sumac, Upland Sumac

Rhus typhina L. - Stag-horn Sumac

Life Cycle

Woody perennial

Look-a-Likes

[Amur Cork Tree \(pg 56\)](#)

[Black Walnut \(pg 74\)](#)

[Tree of Heaven \(pg 23\)](#)

Habitat

Both sumac species prefer full sun. Both are found along forest edges and in forest openings. However, they may also be found near lakes or rivers or even on the drier extremes of rocky outcrops, prairie and savanna habitats. Sumacs are a common sight along dry roadsides.



Identification

Plant - Smooth sumac is a shrub that grows up to 18 feet tall, and staghorn sumac is considered a shrub or small tree reaching heights up to 36 feet. Both develop clonal, multi-stemmed colonies. The names are indicative of the hairiness of the plants. Smooth sumac has smooth bark, fruits and foliage while staghorn has very fuzzy twigs, fruit and leaf parts.

Leaves - Alternate, odd pinnate compound. Smooth sumac has 9 to 23 hairless, sessile (no stalk) leaflets while staghorn sumac has 13 to 27 hairy, sessile leaflets. Both species have serrated (toothed) leaflet edges. Leaflets are dark green on top and pale green on the bottom.

Flower - Dioecious species, male and female flowers on separate plants. Pyramidal multi-branched, stalks of greenish, 5 parted flowers. Many 1/4 inch greenish flowers are showy and are held on terminal, pyramidal structures that can be 15 inches tall by 9 inches wide.

Bloom Time - June to July

Seed and Fruit - The pyramidal structure of female flowers will be replaced by red fruits called drupes, each contains a single seed. Fruits are rounded, slightly flattened, and will hold on through winter and potentially into the following summer.

Root - Extensive, woody rhizome.



Key Differences

Plant - Tree of heaven has smooth twigs similar to smooth sumac, but twigs and small branches of tree of heaven are very stout with very large leaf scars. Amur cork tree and black walnut have distinctively different leaf scars.

Leaves - Tree of heaven has 11 to 25 or more smooth leaflets that have smooth edges and glands near leaf bases. Leaf color is a consistent green top and bottom. Amur cork tree leaves are opposite.

Seed and Fruit - Tree of heaven, clusters of slightly twisted, single-seeded samaras. Amur cork trees produce a black berry, and black walnut produce large nuts.



Top left: Sumac fruit

Top right: Amur cork tree fruit

Bottom left: Black walnut nut

Bottom right: Tree of heaven samaras



SWAMP THISTLE

Cirsium muticum Michx.

Minnesota Native

Common Names

Marsh Thistle

Life Cycle

Herbaceous biennial

Look-a-Likes

[Canada Thistle \(pg 25\)](#)

[Musk Thistle \(pg 68\)](#)

[Plumeless Thistle \(pg 33\)](#)

Habitat

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

Identification

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

Leaves - Alternate, deeply divided leaves have lance-like or oblong segments that are described as softly spiny.

Flower - Purple to pink 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 - July to October

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

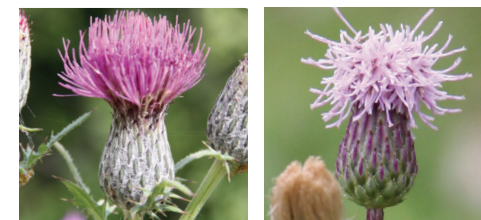
Root - Fleshy taproot.

Key Differences

Plant - Stems are hairy or woolly, not spiny.

Leaves - Deeply divided foliage that is softly spiny.

Flower - Swamp thistle has woolly, non-spiny bracts with a light colored dorsal ridge.



Top left: Swamp thistle flower
Top right: Canada thistle flower
Bottom left: Plumeless thistle flower
Bottom right: Musk thistle flower

Comparison of thistle stems - [Page 68](#)

Below: Flodman's thistle, *Cirsium flodmanii*, is another native thistle in Minnesota.



WATER HEMLOCK

Cicuta maculata L.

Minnesota Native

Check out MnDOT's [Carrot Comparison Guide](#) for identification and key differences.

Common Names

Spotted Water Hemlock, Spotted Parsley, Spotted Cowbane

Life Cycle

Herbaceous biennial or short-live perennial

Look-a-Likes

[Burnet Saxifrage \(pg 62\)](#)

[Caraway \(pg 63\)](#)

[Erect Hedgeparsley \(pg 66\)](#)

[Poison Hemlock \(pg 34\)](#)

[Wild Carrot \(pg 53\)](#)

[Wild Chervil \(pg 69\)](#)

Habitat

Partial shade is tolerated but preference is full sun with wet to moist fertile soils with organic material. Often found in wet meadows and pastures and other similar sites like moist to wet roadside ditches. Prefers more moisture than poison hemlock and typically, does not compete or occur with poison hemlock.

Toxicity

All plant parts are highly toxic and can be deadly to humans and livestock if ingested.

Identification

Plant - Herbaceous, biennial (short-lived perennial), first year as a basal rosette. Second year water hemlock is a lightly branched, 3 to 6 feet tall, plant. Stems are smooth (no hairs), hollow (lower portion), appear ridged due to veins and are light green or pinkish or reddish purple.

Leaves - Alternate, generally triangular in form. Compound leaves are pinnate or doubly pinnate with 3 to 7 leaflets. Leaflets are not fern-like. Leaflets are 1 to 4 inches long by ½ - 1¼ inches wide. Leaflets are toothed and veins appear to terminate in the notch between teeth - not at the tip. Petiole to stem attachments are partially covered by a sheath.

Flower - Petals are notched at the tip and narrowed at the base. Flowers are five-petaled, white and held as flat or slightly dome-shaped, loose, open compound umbels. Each umbel is comprised of 10 to 20 domed umbellets each holding 12 to 15 flowers. Main branches (rays) of umbels are not subtended by bracts. Secondary branches of umbellets have lanceolate bracts with scarious (thin, dry, membranous) margins.

Bloom Time - June to August

Seed and Fruit - Seeds are schizocarps splitting at maturity to two carpels (individual seeds). Seeds are ⅓ inch long and angular. There are no hairs.

Root - Clustered white taproots.

Key Differences

Plant - Wild carrot stems are hollow and sparingly hairy to hairy. Poison hemlock stems are spotted.

Leaves - Leaflets are not fern-like.

Flower - Wild carrot has obvious, showy, branched bracts beneath flower umbels and umbellets.

Seed and Fruit - Wild carrot seeds are also about ⅓ inch with ridges covered by stiff bristles. At maturity wild carrot folds its seed structure into what is often described as a bird's nest.



Above left: Water hemlock umbels
Above right: Poison hemlock umbels



Above left: Water hemlock leaf
Above right: Poison hemlock leaf



Above left: Water hemlock seeds
Above right: Poison hemlock seeds



BARBERRY CULTIVAR RESTRICTIONS

Restricted Cultivars

Japanese barberry, *Berberis thunbergii*, (pg 47) cultivars prohibited from sale. These plants average greater than 600 seeds per plant.

'Anderson' (Lustre Green™)
 'Angel Wings', 'Antares'
 'Bailgreen' (Jade Carousel®)
 'Bailone' (Ruby Carousel®)
 'Bailsel' (Golden Carousel® *B. koreana* x *B. thunbergii* hybrid)
 'Bailtwo' (Burgundy Carousel®) *B. thunbergii* var. *atropurpurea*
 'Crimson Velvet'
 'Erecta'
 'Gold Ring'
 'Inermis'
 'JN Redleaf' (Ruby Jewel™)
 'JN Variegated' (Stardust™)
 'Kelleris'
 'Kobold'
 'Marshall Upright'
 'Monomb' (Cherry Bomb™)
 'Painter's Palette'
 'Pow Wow'
 'Red Rocket'
 'Rose Glow'
 'Silver Mile'
 'Sparkle'
 'Tara' (Emerald Carousel® *B. koreana* x *B. thunbergii* hybrid)
 Wild Type (parent species – green barberry)

'Tara' (Emerald Carousel®; *B. koreana* x *B. thunbergii* hybrid)



Above left: Grooved, reddish-brown stem, single spines at nodes.
 Above center: Foliage and racemes of fruits. Above right: Form



Above left: *B. thunbergii* 'Bailone' Ruby Carousel®
 Above right: *B. thunbergii* 'Bailtwo' Burgundy Carousel®

Korean barberry (*B. koreana*) for comparison



Bottom Left: Toothy foliage and more than 10 rounded fruits per raceme.

Bottom Center: Close-up of Korean barberry leaf edge.

Bottom Right: Korean barberry serrulate margin leaf.

Below: Unknown *Berberis* species / cultivar holding fruit at leaf out in April.



KNAPWEED COMPARISON

Centaurea spp.











	Life Cycle	Habitat	Leaves	Flowers	Bracts	Root		
<p>Brown Knapweed <i>Centaurea jacea</i> L.</p> <p>Page 10</p>	Perennial	Sunny areas with moist soils.	Lanced and undivided. Leaves grow smaller near the top.		Mostly pink/purple, some having white centers. Flowers borne at the ends of branches.		Papery, rounded, and wide at tip appearing raggedly torn.	Woody taproot
<p>Diffuse Knapweed <i>Centaurea diffusa</i> (Lam.)</p> <p>Page 14</p>	Biennial or short-lived perennial	Sunny areas with well drained soils.	Lower leaves highly divided leading to narrow upper leaves.		Usually white, but sometimes pink or purple, urn-shaped, and either solitary or borne in clusters.		Comb like spines.	Taproot
<p>Meadow Knapweed <i>Centaurea x moncktonii</i> C.E. Britton</p> <p>Page 30</p>	Perennial	Sunny areas with moist soils.	Lanced & stalkless, lobing may be present on lower leaves.		Pink/purple but occasionally white flowers on ends of branches.		Rounded at tip with fine fringe.	Woody to fleshy taproot
<p>Spotted Knapweed <i>Centaurea stoebe</i> L. ssp. <i>micranthos</i> (Gugler) Hayek</p> <p>Page 37</p>	Biennial	Sunny areas with well drained soils.	Lower leaves divided leading to narrow upper leaves.		Small, oval, pink to purple, produced at the end of branched stems.		Brown to black triangular spot on tip.	Stout taproot
<p>Yellow Starthistle <i>Centaurea solstitialis</i> L.</p> <p>Page 24</p>	Winter annual	Sunny, open areas with a variety of moisture levels.	Narrow with winged stem. Lower leaves deeply lobed. Covered in woolly hair.		Yellow and approximately 5/8 inch in diameter.		Stiff spine tip that can be 3/4 inch long.	Taproot

Table adapted from sources:

<http://your.kingcounty.gov/dnrp/library/water-and-land/weeds/Brochures/knapweed.pdf>

<http://bugwoodcloud.org/mura/mipn/assets/File/KnapweedBrochure072814WEB.pdf>

KNOTWEED COMPARISON

Polygonum spp.










Knotweeds (pg 28)	Plant	Leaves	Leaf Hair	Flowers
<p>Japanese Knotweed <i>Polygonum cuspidatum</i> Siebold & Zucc.</p>	<p>Height 5-8 feet (10 feet), potentially multiple branches. Typically, only female flowers.</p> 	<p>2 to 7 inches long with a truncate base. Tips of leaves are acuminate.</p> 	<p>Undersides of leaves along veins may have brown, fuzzy ridges.</p>	<p>Typically, plants with female flowers only. If male flowers present, likely sterile. Branched flower structures are longer than nearby leaves.</p> 
<p>Bohemian Knotweed <i>Polygonum × bohemicum</i> (J. Chrtek & Chrtkova) Zika & Jacobson</p>	<p>Can display intermittent characteristics of both species. Heights from 6 to 16 feet. Typically few, but potentially several branches.</p> 	<p>2 to 12 inches long and width about $\frac{2}{3}$ of length. Leaf bases may be straight across or rounded. Leaf tip may be blunt, gradually tapered or pointed.</p> 	<p>Few to no hairs on the leaf edges (margin) and veins under leaves may have stiff, broad-based, small hairs.</p>	<p>Fertile female flowers. Male flowers, also fertile, consist of anthers attached to long stamens extending beyond a flower's petals. Structure is branched with variable length.</p> 
<p>Giant Knotweed <i>Polygonum sachalinense</i> F. Schmidt ex Maxim.</p>	<p>Larger plant attaining heights of 9 to 20 feet. Typically few or no branches that appear to be drooping.</p> 	<p>Up to 12 inches across and 6 to 14 inches long with rounded lobes at the base (heart-shaped). Leaves feel notably thin.</p> 	<p>Undersides of leaves may have scattered, segmented hairs early in the season.</p>	<p>Perfect flowers (male + female) and fertile. Branched, flower structures of giant knotweed are compact, shorter than nearby leaves.</p> 

Table adapted from sources:

https://bugwoodcloud.org/mura/mipn/assets/File/Knotweed%20Brochure%205_14_18%20WEB.pdf

<https://kingcounty.gov/services/environment/animals-and-plants/noxious-weeds/weed-identification/invasive-knotweeds.aspx>

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Johnsongrass
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Dalmatian toadflax Diffuse Knapweed
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Diffuse Knapweed Spotted Knapweed
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Canadian Milkvetch Japanese Honeysuckle
Common Teasel Japanese Hops
Common Yarrow Poison Hemlock
Crown Vetch Water Hemlock
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Garlic Mustard Knotweed spp.
Johnsongrass Wild Carrot

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American Vetch	Goldenrod spp.
Balkan Catchfly	Grecian Foxglove
Bur Cucumber	Heart-Leaved Golden Alexander
Burnet Saxifrage	Leafy Spurge
Canada Thistle	Marsh Marigold
Canadian Milkvech	Narrowleaf Bittercress
Caraway	Northern White Cedar
Common Mullein	Plumeless Thistle
Common Tansy	Purple Loosestrife
Common Yarrow	Swamp Thistle
Cow Parsnip	Wild Carrot
Dame's Rocket	Wild Chervil
Erect Hedgeparsley	Wild Cucumber
Fireweed	Wild Parsnip
Garlic Mustard	Yellow Rocket
Golden Alexander	

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Black Locust	Johnsongrass
Black Swallow-wort	Knotweed spp.
Canada Thistle	Leafy Spurge
Common Barberry	Multiflora Rose
Common Buckthorn	Musk Thistle
Common Tansy	Northern Bush Honeysuckle
Cow Parsnip	Pale Swallow-wort
Crown Vetch	Phragmites – native and non-native
Cypress Spurge	Porcelain Berry
Dalmatian Toadflax	Purple Loosestrife
Diffuse Knapweed	Round Leaf Bittersweet
Garlic Mustard	Russian Knapweed
Giant Hogweed	Saltcedar
Glossy Buckthorn	Spotted Knapweed
Grey Alder	Teasel – common and cutleaf
Honeysuckle spp.	Tree of Heaven
Japanese Barberry	Yellow Starthistle
Japanese Honeysuckle	Yellow Toadflax

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Minnesota Noxious Weeds

University of Georgia Center for Invasive Species and Ecosystem Health. 2022. *Integrated Pest Management*. Online. <https://wiki.bugwood.org/>.

Common Buckthorn	Multiflora Rose
Common Tansy	Spotted Knapweed
Dalmatian Toadflax	Wild Parsnip
Glossy Buckthorn	

University of Georgia Center for Invasive Species and Ecosystem Health, and the National Park Service. 2022. *Invasive Plant Atlas*. Online. <https://www.invasiveplantatlas.org/>.

Amur Maple	Erect Hedgeparsley
Brown Knapweed	Giant Hogweed
Callery Pear	Japanese Honeysuckle
Common Teasel	Norway Maple
Cutleaf Teasel	Siberian Peashrub
Dalmatian Toadflax	

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Black Swallow-wort	Norway Maple
European Alder	Round Leaf Bittersweet
Japanese Barberry	Siberian Peashrub
Japanese Honeysuckle	Tree of Heaven
Narrowleaf Bittercress	Winged Burning Bush
Non-native Phragmites	Yellow Starthistle

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American Bittersweet	Siberian Peashrub
Black Locust	Winged Burning Bush
Norway Maple	

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Amur Maple	Japanese Hops
Canada Thistle	Knotweed spp.
Common Buckthorn	Multiflora Rose
Common Tansy	Non-native Phragmites
Cutleaf Teasel	Plumeless Thistle
Dame's Rocket	Purple Loosestrife
Giant Hogweed	Round Leaf Bittersweet
Glossy Buckthorn	Spotted Knapweed
Japanese Barberry	Wild Parsnip

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Alfalfa	Prunus spp.
Hairy Vetch	Yellow Rocket
Balkan Catchfly	

CITATIONS - PHOTOS

Minnesota Noxious Weeds

[Black Swallow-wort \(pg 9\)](#)

Twining vines – Minnesota Department of Agriculture (MDA)

Sprouting plants – Emilie Justen, MDA

All other images – Dave Hanson, Minnesota Department of Transportation (MnDOT)

[Brown Knapweed \(pg 10\)](#)

Infestation, and root – Monika Chandler, MDA

Bracts, and leaf – Dave Hanson, MnDOT

Flower – Christina Basch, MnDOT

[Common Teasel \(pg 11\)](#)

Full plant next to road – Monika Chandler, MDA

All other images – Christina Basch, MnDOT

[Cutleaf Teasel \(pg 12\)](#)

Spines on underside of leaf – Dave Hanson, MnDOT

All other images – Christina Basch, MnDOT

[Dalmatian Toadflax \(pg 13\)](#)

Stem close up, flower and seed pod – Christina Basch, MnDOT

All other images - Dave Hanson, MnDOT

[Diffuse Knapweed \(pg 14\)](#)

All images – Monika Chandler, MDA

[Giant Hogweed \(pg 15\)](#)

5398967 – Stem - Robert Vidéki, Doronicum Kft., Bugwood.org

5452748 – Umbel - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

5452695 – Roots - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

People walking through giant hogweed – Frazier Valley Regional District

UGA1460060 – Leaf - Donna R. Ellis, University of Connecticut, Bugwood.org

UGA2121077 – Person holding leaf - Thomas B. Denholm, New Jersey Department of Agriculture, Bugwood.org

[Grecian Foxglove \(pg 16\)](#)

Rosette – Dave Hanson, MnDOT

All other images – Christina Basch, MnDOT

[Japanese Honeysuckle \(pg 17\)](#)

Infestation – Monika Chandler, MDA

Leaves and buds, flowers, stem – Anthony Cortilet, MDA

5408377 - Fruit - Karan A. Rawlins, University of Georgia, Bugwood.org

5453472 - Basal leaf - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

[Japanese Hops \(pg 18\)](#)

Female cone, and male flowers – Dave Hanson, MnDOT

Leaves, rosette, infestation, and vine – Christina Basch, MnDOT

[Johnsongrass \(pg 19\)](#)

1556498 - Roots - Ohio State Weed Lab, The Ohio State University, Bugwood.org

5358456 – Seedling - Howard F. Schwartz, Colorado State University, Bugwood.org

5391774 – Inflorescence - Barry Rice, sarracenia.com, Bugwood.org

5403108 - Leaf - Rebekah D. Wallace, University of Georgia, Bugwood.org

5427569 – Infestation - Chris Evans, University of Illinois, Bugwood.org

5437533 – Seed - Bruce Ackley, The Ohio State University, Bugwood.org

[Pale Swallow-wort \(pg 20\)](#)

5537165 - Infestation - David Nisbet, Invasive Species Centre, Bugwood.org

Flower comparison, leaf, and seed pods – Dave Hanson, MnDOT

Close up of flower, and root – Christina Basch, MnDOT

[Palmer Amaranth \(pg 21\)](#)

All images – Shane Blair, MDA

[Red Hailstone \(pg 22\)](#)

Infestation – Monika Chandler, MDA

Flower, and leaf – Christina Basch, MnDOT

Fruit - Rob Hille, [CC BY-SA 4.0](#), via Wikimedia Commons

[https://commons.wikimedia.org/wiki/File:Thladiantha_dubia_R.H.\(10\).jpg](https://commons.wikimedia.org/wiki/File:Thladiantha_dubia_R.H.(10).jpg)

Tuber - Rob Hille, [CC BY-SA 4.0](#), via Wikimedia Commons

[https://commons.wikimedia.org/wiki/File:Thladiantha_dubia_R.H.\(26\).jpg](https://commons.wikimedia.org/wiki/File:Thladiantha_dubia_R.H.(26).jpg)

[Tree of Heaven \(pg 23\)](#)

Seedling, back leaf gland, and bark – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Yellow Starthistle \(pg 24\)](#)

Flower close up – Christina Basch, MnDOT

Plant in bloom, rosette, basal leaf – Monika Chandler

UGA1459661 - Wavy leaf - Steve Dewey, Utah State University, Bugwood.org

UGA1350005 - Seeds - Cindy Roche, Bugwood.org

[Canada Thistle \(pg 25\)](#)

Seed and mature seed head – Monika Chandler, MDA

Leaf and stem – Christina Basch, MnDOT

Flower close up and flowering field – Dave Hanson, MnDOT

[Common Barberry \(pg 26\)](#)

All images - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

[Common Tansy \(pg 27\)](#)

Root and leaf – Christina Basch, MnDOT

Full plant, flowers, and seedhead – Dave Hanson, MnDOT

[Knotweeds \(pg 28\)](#)

Flowering stem, hollow stem, and infestation – Dave Hanson, MnDOT

Sprouting plant, green stem with spots, and stems in winter – Christina Basch, MnDOT

[Leafy Spurge \(pg 29\)](#)

Infestation, seed, and *Aphthona* biocontrol – Monika Chandler, MDA

Immature seed capsules – Christina Basch, MnDOT

Flower, latex, and leaf – Dave Hanson, MnDOT

[Meadow Knapweed \(pg 30\)](#)

Leaf - Monika Chandler, MDA

All other images – Tom Jacobson, MnDOT

[Narrowleaf Bittercress \(pg 31\)](#)

5449291, 5449238 - Flowers, and stem - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

All other images – Monika Chandler, MDA

CITATIONS - PHOTOS

Minnesota Noxious Weeds

[Non-native Phragmites \(pg 32\)](#)

Ligule – Christina Basch, MnDOT

Stem with leaf, cluster of stems with plumes - Julia Bohnen, University of Minnesota

All other images – Dave Hanson, MnDOT

[Plumeless Thistle \(pg 33\)](#)

Seedhead – Monika Chandler, MDA

All other images – Dave Hanson, MnDOT

[Poison Hemlock \(pg 34\)](#)

Full plant – Monika Chandler, MDA

Stem, and flower – Christina Basch, MnDOT

Leaf, seed, and bracts – Dave Hanson, MnDOT

[Purple Loosestrife \(pg 35\)](#)

Infestation, *Galerucella pusilla*, flower, and leaf – Dave Hanson, MnDOT

Full plant, stem, and root – Christina Basch, MnDOT

[Round Leaf Bittersweet \(pg 36\)](#)

Infestation – Monika Chandler, MDA

All other images – Christina Basch, MnDOT

[Spotted Knapweed \(pg 37\)](#)

Larinus biocontrol, and *Cyphocleonus* biocontrol – Monika Chandler, MDA

Flower and upper leaf – Christina Basch, MnDOT

Rosette, basal foliage, and infestation – Dave Hanson, MnDOT

[Wild Parsnip \(pg 38\)](#)

Leaf, umbellet, and infestation – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Amur Silvergrass \(pg 39\)](#)

5478812 - Stem - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Seedhead next to ruler – Monika Chandler, MDA

All other images – Dave Hanson, MnDOT

[Asian Bush Honeysuckles \(pg 40\)](#)

Infestation – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Black Locust \(pg 41\)](#)

All images – Dave Hanson, MnDOT

[Common Buckthorn \(pg 42\)](#)

Young bark and berries – Dave Hanson, MnDOT

All other images – Christina Basch, MnDOT

[Crown Vetch \(pg 43\)](#)

All images – Dave Hanson, MnDOT

[European Alder \(pg 44\)](#)

All images – Dave Hanson, MnDOT

[Garlic Mustard \(pg 45\)](#)

Rosette, seedling, and silique – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Glossy Buckthorn \(pg 46\)](#)

Multi-stemmed base – Monika Chandler, MDA

All other images – Dave Hanson, MnDOT

[Japanese Barberry \(pg 47\)](#)

Infestation and fruit – Monika Chandler, MDA

Flower and bark – Christina Basch, MnDOT

‘Rose Glow’ leaves – Dave Hanson, MnDOT

[Lesser Celandine \(pg 48\)](#)

Sepals – Christina Basch, MnDOT

All other images – Maggie Barnick, MDA

[Multiflora Rose \(pg 49\)](#)

Flowers and fruit – Dave Hanson, MnDOT

All other images – Christina Basch, MnDOT

[Porcelain Berry \(pg 50\)](#)

Foliage – Paul Kortebein

All other images – Dave Hanson, MnDOT

[Saltcedar \(pg 51\)](#)

Full plant and flowers – Dave Hanson, MnDOT

5405637 - Leaf and stem - Bonnie Million, Bureau of Land Management, Bugwood.org

5477202 - Seed - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

[Siberian Peashrub \(pg 52\)](#)

All images – Dave Hanson, MnDOT

[Wild Carrot \(pg 53\)](#)

Top of flower – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Winged Burning Bush \(pg 54\)](#)

Bark and hand holding branch – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Amur & Tatarian Maple \(pg 55\)](#)

All images – Dave Hanson, MnDOT

[Amur Cork Tree \(pg 56\)](#)

Tree, leaf and sapwood – Dave Hanson, MnDOT

All other images – Christina Basch, MnDOT

[Callery Pear \(pg 57\)](#)

All images – Dave Hanson, MnDOT

[Norway Maple \(pg 58\)](#)

All images – Dave Hanson, MnDOT

CITATIONS - PHOTOS

Minnesota Noxious Weeds

[Poison Ivy \(pg 59\)](#)

Eastern poison ivy leaves and aerial roots – Christina Basch, MnDOT
Fruit, flowers, and western poison ivy plant – Dave Hanson, MnDOT

[Alfalfa \(pg 60\)](#)

1316035 – Flower close up- Keith Weller, USDA Agricultural Research Service, Bugwood.org
All other images – Dave Hanson, MnDOT

[Balkan Catchfly \(pg 61\)](#)

Dalmatian toadflax flower – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[Burnet Saxifrage \(pg 62\)](#)

Poison hemlock, wild chervil flowers – Christina Basch, MnDOT
All other images – Dave Hanson

[Caraway \(pg 63\)](#)

Wild chervil leaf – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[Common Mullein \(pg 64\)](#)

Full plant, seedhead, leaf, rosette, winter form – Dave Hanson, MnDOT
Grecian foxglove, moth mullein, common mullein flower close up – Christina Basch, MnDOT

[Dame's Rocket \(pg 65\)](#)

White, pink and purple flower close up, and infestation – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[Erect Hedgeparsley \(pg 66\)](#)

Wild chervil seed – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[Hairy Vetch \(pg 67\)](#)

All images – Dave Hanson, MnDOT

[Musk Thistle \(pg 68\)](#)

Canada thistle stem, front flower, and infestation – Christina Basch, MnDOT
Full plant, side flower, stem (must, Plumeless, and swamp thistle) – Dave Hanson, MnDOT

[Wild Chervil \(pg 69\)](#)

Wild chervil beaked seed/flower, close up of wild chervil stem – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[Yellow Rocket \(pg 70\)](#)

5449291 - Narrowleaf bittercress flower - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
All other images – Dave Hanson, MnDOT

[Yellow Toadflax \(pg 71\)](#)

Yellow toadflax full plant and panicle, leaf, comparison side by side, and seed head – Monika Chandler, MDA
Dalmatian toadflax flower – Christina Basch, MnDOT
Dalmatian toadflax leaf, yellow toadflax close up flower, various flowering stages – Dave Hanson, MnDOT

[American Bittersweet \(pg 72\)](#)

American bittersweet bark, unsplit orange capsules – Monika Chandler, MDA
Round leaf bittersweet male and female flowers, round leaf bittersweet leaf unfurling – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[American Vetch \(pg 73\)](#)

All images – Dave Hanson, MnDOT

[Black Walnut \(pg 74\)](#)

Amur cork tree leaf scar – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[Burning Bush \(pg 75\)](#)

Round leaf bittersweet fruit – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[Canadian Milkvetch \(pg 76\)](#)

American vetch seed pods - Walter Siegmund, [CC BY-SA 3.0](#), via Wikimedia Commons
https://commons.wikimedia.org/wiki/File:Vicia_americana_3230.JPG
All other images – Dave Hanson, MnDOT

[Cherries & Plum \(pg 77\)](#)

All images – Dave Hanson, MnDOT

[Common Hops \(pg 78\)](#)

Common hops and Japanese hops (leaf, bract, petiole), and glands on leaf underside – Christina Basch, MnDOT
Leaf with fruit, dried fruit, female and male flowers, and stem – Dave Hanson, MnDOT

[Common Yarrow \(pg 79\)](#)

Close up of common yarrow and water hemlock flowers – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[Cow Parsnip \(pg 80\)](#)

UGA1460060 - Giant hogweed leaf - Donna R. Ellis, University of Connecticut, Bugwood.org
UGA5272016 - Giant hogweed umbel - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Cow parsnip leaf comparison, cow parsnip stem, great angelica umbel and leaf – Christina Basch, MnDOT
Cow parsnip flowers, seed, basal leaves, and plant – Dave Hanson, MnDOT

[Cucumbers \(pg 81\)](#)

All images – Dave Hanson, MnDOT

[Eastern Red Cedar \(pg 82\)](#)

5405637 - Saltcedar leaf - Bonnie Million, Bureau of Land Management, Bugwood.org
All other images – Dave Hanson, MnDOT

[Fireweed \(pg 83\)](#)

All images – Dave Hanson, MnDOT

[Golden Alexanders \(pg 84\)](#)

Wild parsnip flower and leaf – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

[Goldenrods \(pg 85\)](#)

Common tansy leaf – Christina Basch, MnDOT
All other images – Dave Hanson, MnDOT

CITATIONS - PHOTOS

Minnesota Noxious Weeds

[Honey Locust \(pg 86\)](#)

All images – Dave Hanson, MnDOT

[Marsh Marigold \(pg 87\)](#)

Marsh marigold flower close-up, lesser celandine close-up and seed head – Maggie Barnick, MDA

Lesser celandine and marsh marigold form – Christina Basch, MnDOT

Marsh marigold in bloom (3 images), marsh marigold seed head, marsh marigold leaf – Dave Hanson, MnDOT

[Native Honeysuckles \(pg 88\)](#)

All images – Dave Hanson, MnDOT

[Native Phragmites \(pg 89\)](#)

Fall native Phragmites stems - Dave Hanson, MnDOT

Close up of native Phragmites leaf sheath and red stem, native Phragmites stand next to non-native Phragmites stand, non-native Phragmites inflorescence - Ken Graeve, MnDOT

Lower native Phragmites stems in nature, groups of stems of native and non-native Phragmites, non-native Phragmites leaf sheath, native and non-native Phragmites ligules, and native Phragmites inflorescence - Julia Bohnen, University of Minnesota

[Northern White Cedar \(pg 90\)](#)

5477202 - Saltcedar seed - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

All other images – Dave Hanson, MnDOT

[Red Maple \(pg 91\)](#)

Red maple bark – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Riverbank Grape \(pg 92\)](#)

Grape and bittersweet bark side by side – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Silver Maple \(pg 93\)](#)

All images – Dave Hanson, MnDOT

[Speckled Alder \(pg 94\)](#)

All images – Dave Hanson, MnDOT

[Sugar Maple \(pg 95\)](#)

All images – Dave Hanson, MnDOT

[Sumacs \(pg 96\)](#)

Amur cork tree fruit – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Swamp Thistle \(pg 97\)](#)

Musk thistle flower – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

[Water Hemlock \(pg 98\)](#)

Poison hemlock leaf, and seed. Water hemlock seed, bracts, leaflet, and umbel – Dave Hanson, MnDOT

All other images – Christina Basch, MnDOT

[Woodbines \(pg 99\)](#)

Poison ivy leaf – Christina Basch, MnDOT

All other images – Dave Hanson, MnDOT

Treatment timing graphics

Dave Hanson and Christina Basch, MnDOT

[Knapweed Comparison \(pg 101\)](#)

Brown knapweed leaf, diffuse knapweed flower and leaf, meadow knapweed flower and leaf, spotted knapweed flower, yellow starthistle leaf – Monika Chandler, MDA

Brown knapweed flower, spotted knapweed leaf – Dave Hanson, MnDOT

Yellow starthistle flower– Christina Basch, MnDOT

[Knotweed Comparison \(pg 102\)](#)

Japanese knotweed leaf – Dave Hanson, MnDOT

Giant knotweed leaf – Christina Basch, MnDOT

All other images – Monika Chandler, MDA

Minnesota Noxious Weeds

<http://www.dot.state.mn.us/roadsides/vegetation/index.html>

Minnesota Noxious Weed Law

Find more information at:

[Minnesota Department of Agriculture](#)

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