

BUCKTHORN:

What You Should Know. What You Can Do.




Buckthorn leafs out early and retains leaves late into the fall, creating dense shade that helps it to out-compete many native plants.

Q. What happens when buckthorn has been planted as an ornamental shrub, a hedgerow, shelterbelt, or as a tree in your backyard?

A. An impenetrable, messy thicket grows that:

- Out competes our native plants for nutrients, light, and moisture.
- Degrades wildlife habitat.
- Threatens the future of forests, wetlands, prairies, and other natural habitats.
- Contributes to erosion by shading out other plants that grow on the forest floor.
- Serves as host to other pests, such as crown rust fungus and soybean aphid.
- Forms an impenetrable layer of vegetation.
- Creates messy fruits that stain sidewalks and driveways.
- Lacks 'natural controls' like insects or disease that would curb its growth.

A little history





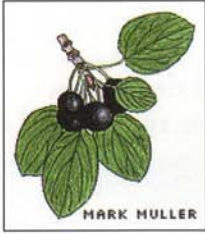
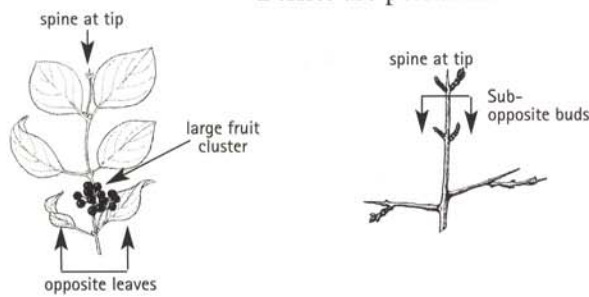
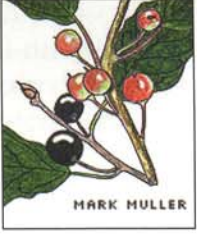
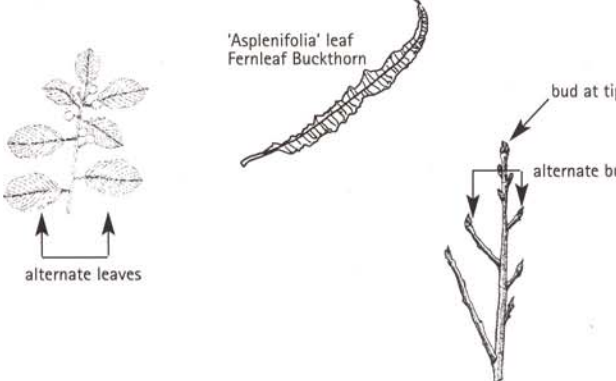
Buckthorn is not native to this country. Common or European buckthorn, and glossy buckthorn are the two non-native invasive buckthorn species found in Minnesota. European buckthorn was first brought to the state from Europe in the mid-1800s as a very popular hedging material. It escaped and became a nuisance plant, forming dense thickets in forests, yards, parks, and roadsides. It crowded out native plants and displaced the native shrubs and small trees in the mid-layer of the forest where many species of birds nested. European buckthorn is found nearly every Minnesota county, despite the fact that the sale, transport, and movement of these plants is prohibited. Glossy buckthorn, also from Europe, has been sold by the nursery trade in two different forms. The cultivar "Columnaris" is narrow and tall; the cultivar "Aspenifolia" spreads up to 10 feet and has narrow leaves that give it a ferny texture.



The Minnesota Department of Agriculture has declared Common or European buckthorn (*Rhamnus cathartica*) and glossy buckthorn (*Rhamnus frangula*) as **restricted noxious weeds**. This means that the sale, transportation or movement of these plants is **prohibited** statewide by the Minnesota Department of Agriculture.

Common Buckthorn

Glossy Buckthorn

Scientific Name	<i>Rhamnus cathartica</i>	<i>Frangula alnus</i>
Other Common Name	European Buckthorn	Fen Buckthorn, Alder Buckthorn
Nursery Cultivars	None	<i>Columnaris</i> (Tall hedge buckthorn) <i>Asplenifolia</i> (Fernleaf buckthorn)
Shape of Plant	Height: 10-25 feet; oval form, upright	Height 10-18 feet; oval form, upright
Habitat	Dry areas, like woodlands, savannahs, abandoned fields, roadsides. It will grow in both full sun and in shade.	Primarily wet areas (bogs, marshes, riverbanks, wetlands, pond edges). It will also grow in dry areas. It will grow in both full sun and in shade.
Leaves	 <p>Egg-shaped with finely tooth edges: dark green, dull to glossy. 3-5 pair curved leaf veins. Leaves stay dark green and on the tree late into autumn.</p> <p>LUKE SKINNER</p>	 <p>Oval, smooth, dark, glossy, with toothless edges. 8-9 pair of leaf veins. Leaves stay green late into fall.</p> <p>LUKE SKINNER</p>
Flowers	Small, yellow-green in color. 4 petals produced in month of May.	Small, creamy-green color 5 petals produced in late May-June.
Stems	Buds are opposite. Sharp thorn at tip of the twig.	Buds are alternate. NO thorn at tips of twig.
Fruit and Seed	<p>Arranged in large clusters round, berry-like fruit - 1/4" diameter. Green/black color. Each fruit has 3-4 seeds. Berries are persistent.</p>  <p>MARK MULLER</p> 	<p>Round, berry-like fruit - 1/4" diameter produces less fruit than the common buckthorn. Red/brown to black in color. Each fruit has 2-3 seeds Berries are not persistent.</p>  <p>MARK MULLER</p> 

Finding Buckthorn

Buckthorn is easily found in the late fall when native shrubs and trees have lost their leaves. Buckthorn will often still have green leaves into the month of December. It is hard to miss!

What You Can Do To Control Buckthorn!

NOTE: It takes a long term commitment to successfully manage buckthorn.

Controlling Seedlings or Small Buckthorn Plants



BRUCE LARSON

For individual plants: If less than $\frac{3}{8}$ inch in diameter, **remove by hand**. Small seedlings can be pulled and will not re-sprout. If greater than $\frac{3}{8}$ inch, use a hand tool that pulls the shrub out, such as a "Weed Wrench" or "Root Talon". The "Weed Wrench" comes in four different sizes and will remove buckthorn stems up to 2.5 inches in diameter. The Weed Wrench can cause some soil disturbance so extra care is needed on sensitive sites or steep slopes. Removing by hand is easier if the soil is moist. Before you pull or dig buckthorn out of your soil, Contact Gopher State One Call (1-800-252-1166) to ensure there are no buried utilities in the area.

If pulling individual plants is impractical spray foliage of short buckthorn or seedlings with a herbicide. Glyphosate (one brand name is Roundup) will kill all actively growing vegetation on which it is sprayed. Triclopyr will kill broadleaf plants and will not harm grasses when applied properly.



MN DNR

Controlling Large Buckthorn

Buckthorn plants that are two inches in diameter or larger, are best controlled by **cutting the stem at the soil surface and then cover or treat the stump** to prevent re-sprouting.



CINDY LUETH

This can be effectively done with hand tools (for a few plants), chain saws or brush cutters. If only cutting a few stumps, they can be covered with a tin can or black plastic to prevent re-sprouting. Otherwise,

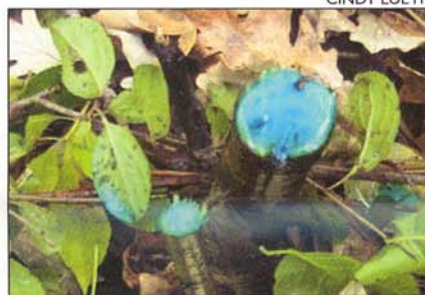
stumps should be treated immediately after cutting (within 2 hours) with a herbicide containing Triclopyr (such as Ortho Brush-B-Gon or Garlon 3A or 4) or Glyphosate (Roundup) to prevent re-sprouting.



CINDY LUETH

The best time to cut and chemically treat the stumps is in late summer and throughout the fall. Herbicides can be applied to cut stumps with a paint-brush, wick applicator or a low volume sprayer. When using water-soluble herbicide products like Ortho Brush-B-Gon, Garlon 3A, or any of the Glyphosate products, treat only the cut surface. When using oil-based prod-

ucts like Garlon 4, treat the cut surface and the remaining bark to the ground line. In cases where more than a few plants are treated, add an indicator dye (available where pesticides are sold) to the herbicide to mark cut stumps you have sprayed. Colored flags can also help mark cut stumps. When buckthorn is cut, the stumps are easily covered and lost under cut brush.



CINDY LUETH

For **basal stem treatment**, a method that applies chemical through the bark, low volume spray applications can be made with Garlon 4 and similar oil-based products. This application method uses Triclopyr ester mixed with an oil diluent (i.e. Bark Oil Blue, kerosene or diesel oil) applied directly to the bark of buckthorn from the root collar up about 12-18 inches. This treatment works best on stems less than 2-3 inches in diameter. An ultra low volume spray wand should be used to minimize herbicide use and reduce the potential for non-target injury. Buckthorn treated in this fashion can be left standing or cut at a later date.

Seed Viability

Note: *Buckthorn seeds in the soil can remain viable for up to five years.* Follow-up control of seedlings that emerge after initial control efforts is important on all sites. With no follow-up control, buckthorn will come back. Fire offers a long-term management option in grassland or savanna cover-types. Burning will need to be done every two to three years. If burning is not an option, a follow up treatment of the seedlings (pulling or spraying) is needed.

Life After Removal of Buckthorn

After buckthorn control, many sites may require replanting of desirable tree, shrub, and herbaceous species. Removing buckthorn will not only benefit the environment, it provides opportunities for you to create wildlife habitat, re-design your landscape, and beautify an area.

Do not make hasty decisions with your land, once you have removed and/or controlled buckthorn. Think about your goals and objectives for your property. And 'pause.' If you are re-planting in the same places buckthorn once grew, the soil will benefit if you wait one or two years before re-planting other trees and shrubs.

Following are some alternative plantings that can be used in place of buckthorn. Check with a local nursery, extension service, Department of Natural Resources, or Department of Agriculture for assistance on species recommended for your area. Here are a few ideas for replacing buckthorn:

Alternative plantings for buckthorn

Several species of native trees and shrubs display characteristics similar to buckthorn. The following plants are an example of some of the environmentally-friendly species available at garden centers and nurseries. Note: The plants shown are just a sampling of alternatives.

High-bush cranberry (*Viburnum trilobum*)



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This multi-stemmed bush has lovely spring flowers and persistent red berries. Left unpruned, it will grow tall, but it can be pruned into a dense hedge. The European species (*Viburnum opulus*) is often sold in nurseries, but is

invasive, and should be avoided.

Nannyberry (*Viburnum lentago*)

Nannyberry is a tall shrub that grows in a variety of soils. It spreads gradually from a central clump, forming nicely shaped thickets. It has sweet, edible, blue-black fruits.



WELBY SMITH

Chokecherry



WELBY SMITH

(*Prunus virginiana*)

Chokecherry grows in a variety of soil types. It develops into a tall shrub on rich, loam soils. On dry, sandy soil, it takes on a shorter, bushier form. The bright berries make a delicious jelly and are an important wildlife food.

Grey dogwood (*Cornus racemosa*)

Commonly forms thickets at wetland margins, woods edges, steambanks, low spots in prairies and savannas, and along roadsides and abandoned fields. It tolerates a variety of soil types. Good for filling slopes or edges.



WELBY SMITH

WELBY SMITH



Pagoda dogwood (*Cornus alternifolia*)

Native to rich, deciduous forests but is also commonly planted as a small ornamental tree. It prefers rich, loam soil where the rooting area is protected from summer heat

or drought. Branches spread in horizontal layers giving the tree a beautiful form.

American hazelnut (*Corylus americana*)

A widespread shrub in dry to moist forests and woodlands. It grows in a variety of soil types and tolerates dry, sandy soil or gravelly slopes. In the open, it sends up many stems forming clumps. Great food and cover for wildlife.



WELBY SMITH



WELBY SMITH

Black chokeberry (*Aronia melanocarpa*)

Typically grows at the margins of lakes and wetlands-places where the soil is fairly rich and moist, and where it can get partial sun. It is colonial, but not aggressive. It has attractive white flowers in early summer, and shiny black berries with lovely red foliage in the autumn.



For more information:

Visit the Minnesota Department of Natural Resource Website at:
<http://www.dnr.state.mn.us/invasives/terrestrialplants/woody/buckthorn/index.html>

Or contact the Minnesota Department of Natural Resources
(651) 296-6157 (Metro area) or (888) MINN-DNR (elsewhere)

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