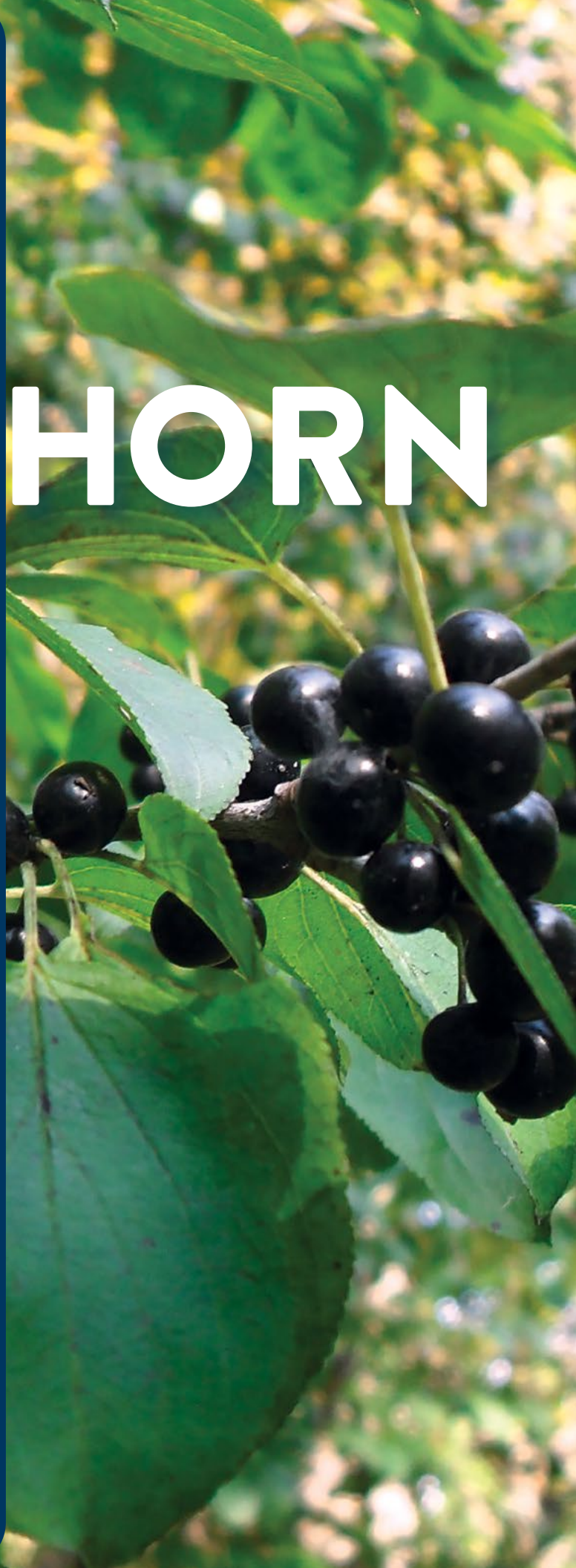


BUCKTHORN

What You Should Know.

What You Can Do.





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



A little history

Common, or European, buckthorn, and glossy buckthorn are the two non-native, invasive buckthorn species found in Minnesota. These buckthorn species were first brought here from Europe as a popular hedging material. They became a nuisance plant, forming dense thickets in forests, yards, parks and roadsides. They crowd out native plants and displace the native shrubs and small trees in the mid-layer of the forest where many species of birds nest.

Glossy buckthorn has been sold by the nursery trade in three different forms, so its appearance can vary. The cultivar *Frangula alnus* 'Columnaris' is narrow and tall; the cultivars *Frangula alnus* 'Asplenifolia' and 'Ron Williams' have narrow leaves that give them a fern-like texture.

Why is buckthorn a problem?

Buckthorn:

- Threatens the future of forests, wetlands, prairies, and other natural habitats.
- Out-competes native plants for nutrients, light, and moisture.
- Degrades wildlife habitat.
- Contributes to erosion by out-competing plants on the forest floor that help hold soil in place.
- Serves as host to other pests, such as crown rust fungus and soybean aphid.
- Creates messy fruits that stain sidewalks and driveways.
- Lacks "natural controls," such as insects or disease that would curb its growth.



**STOP INVASIVE SPECIES
IN YOUR TRACKS.**

PlayCleanGo.org

Common buckthorn

Rhamnus cathartica

SHAPE OF PLANT

10–25 feet tall;
oval form; upright;
frequently multi-stem



HABITAT

Dry to moist areas
such as woodlands,
savannas, abandoned
fields, roadsides. It
will grow in both full
sun and in shade.



LEAVES

Oval, dark green, dull
to glossy; with finely
toothed edges; 3–5
pair of curved leaf veins. Leaves stay dark green
and on the tree late into fall. Easily confused with
dogwoods, plums, and cherries.

FLOWERS

Small, yellow-green color; 4 petals;
produced in May.

STEMS

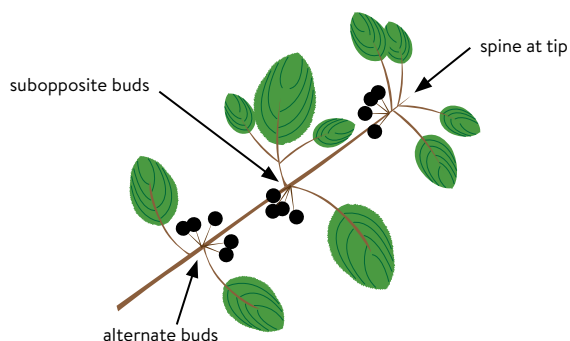
Buds are most commonly sub-
opposite, but can be opposite
or alternate; short, 1/8–1/4-inch
sharp spine at tip of the twig.



Mark Muller

FRUIT AND SEED

Round, berry-like fruit arranged in clusters;
1/4-inch diameter; green (unripe) to black (ripe)
color. Each fruit has 3–4 seeds. Berries persist
throughout mid-winter.



Glossy buckthorn

Frangula alnus

SHAPE OF PLANT

10–18 feet tall; oval
form; upright



HABITAT

Primarily wet areas
(bogs, marshes,
riverbanks, wetlands,
pond edges), but also
will grow in dry areas.
It will grow in both full
sun and in shade.



LEAVES

Oval, smooth, dark
green, glossy, with
toothless edges; 8–9
pair of leaf veins. Leaves get fall color. Easily
confused with native chokecherry.

FLOWERS

Small, creamy-green color; 5 petals; produced in
late May–June.

STEMS

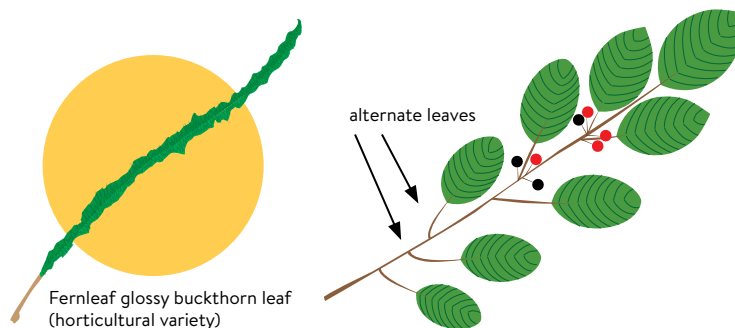
Buds are alternate, fuzzy and brown, and lack
scales; no spine at tip of the twig.

FRUIT AND SEED

Round, berry-like fruit; 1/4-inch
diameter; less fruit than common
buckthorn; red-brown (unripe) to
black (ripe) color. Each fruit has
2–3 seeds. Berries do not persist.



Mark Muller



Reference to chemical brand names and other product brand names in this document does not imply endorsement of those products. The herbicides listed in this brochure may be available under other brand names with the same active ingredient that are equally effective.

What you can do to control buckthorn

Cut stump treatment

Buckthorn plants that are 2 inches in diameter or larger are best controlled by cutting the stem at the soil surface and then treating the cut stump with herbicide or covering the stump to prevent re-sprouting. This can be done effectively with hand tools, chain saws, or brush cutters. Stumps should



be treated within two hours after cutting. Treat with an herbicide containing glyphosate (Roundup, Rodeo, etc.) or triclopyr (many brush killers, Vastlan, Garlon 4, etc.) to prevent re-sprouting. Herbicides can be applied to cut stumps with a paintbrush,

wick applicator, dauber, or a low-volume sprayer. Apply the herbicide to the outermost growth rings next to the bark (see photo). The best time to cut and chemically treat the stumps is in late summer (avoid May and June) and throughout the fall. Always follow herbicide label instructions.



Janet Van Sloun, City of Minnetonka

In cases where more than a few plants are treated, add an indicator dye (available where pesticides are sold) to the herbicide to mark the cut stumps you have treated. Colored flags can help mark cut stumps because the stumps are easily covered and lost under cut brush and leaves.

Basal bark treatment

In this method, chemical is applied through the bark. Low-volume spray applications can be made with Garlon 4, Pathfinder II, and similar oil-based products. This application method uses triclopyr ester mixed with an oil dilutant (e.g., Bark Oil Blue, kerosene, or diesel oil) applied directly to the bark of uncut buckthorn from the root collar up about 12–18 inches. This treatment works best on stems less than 5 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 after the plant dies.

When treating in the fall and winter

Follow herbicide label instructions regarding temperatures at which the herbicide can be applied. Water-soluble herbicides like glyphosate (Roundup, Rodeo, etc.) or triclopyr amine (Vastlan, brush killers, etc.) can be applied to cut stumps when the temperature is above freezing (32° F). Oil-based products of triclopyr ester (Garlon 4, Pathfinder II) can be applied when the temperature is below freezing (below 32° F).

For non-chemical control

Cover the cut stump with a tin can or black plastic (such as a Buckthorn Baggie) to prevent re-sprouting. After cutting the tree, apply the can or plastic over the cut stump and root flare. Use nails to affix the can or a tie to affix the black plastic. Leave in place for one to two years.

If you wish to hand pull plants greater than 3/8-inch, use a hand tool that pulls the shrub out, such as a Root Talon. Hand-pulling tools cause soil disturbance so tamp loose soil back into the ground. Not recommended for sensitive sites or steep slopes. Removing buckthorn by hand is easier if the soil is moist.

Seedlings and small buckthorn plants

If individual plants are less than 3/8-inch in diameter, remove them by hand. Small seedlings can be pulled and will not re-sprout. If pulling individual plants is impractical, spray foliage of short buckthorn or seedlings with herbicide. Glyphosate will kill all actively growing vegetation on which it is sprayed. Triclopyr will kill broadleaf plants and conifers, but not grasses when applied properly. Spray after native plants have gone dormant (about mid-October). Follow all herbicide label instructions. Applications exceeding maximum labeled amounts may result in a non-target injury.

Before you pull or dig buckthorn, contact Gopher State One Call at 651-454-0002 or 800-252-1166 to make sure there are no buried utilities in the area.

Finding buckthorn

Common buckthorn is easily found in late fall when many native shrubs and trees have lost their leaves. Common buckthorn will often have green leaves through November.

Glossy buckthorn does not stay green as late as common buckthorn.

Caution! Many native trees look similar to buckthorn and some native trees hold their leaves into the winter. Before you cut, make sure you are cutting buckthorn and not a native tree.

Disposing of buckthorn

In general, it is best to leave noxious weeds on-site to prevent seed spread. If you must remove material, contact yard waste facilities to see if they accept noxious weeds. Transport for disposal is allowed.

Follow-up is critical

Most viable buckthorn seeds in the soil germinate within two years. Additional seeds may be introduced to the site by animals.

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 pulling or spraying the seedlings is needed.

Woodland management

Managing your woodland is an ongoing process. Removing buckthorn not only will benefit the environment, it provides opportunities to create wildlife habitat, redesign your landscape, and beautify an area. Do not make hasty decisions with your land after you have removed or controlled buckthorn. Think about the goals and objectives you have for your property.

Short-term recommendations include:

- Follow-up buckthorn control in areas where you have previously removed buckthorn.
- Remove any fruit-bearing buckthorn trees.
- Monitor relatively buckthorn-free areas and control buckthorn plants if detected.

Long-term recommendations include:

- Replant desirable tree, shrub, and herbaceous species if species do not return from the seed bank. Check with a local nursery, extension service, Soil and Water Conservation District, or the Minnesota Department of Natural Resources, for assistance on species recommended for your area.
- If you are managing a large area, consider fire as part of a forest management plan.

Legal status

The Minnesota Department of Agriculture lists common buckthorn and glossy buckthorn as restricted noxious weeds. This means that the sale, transport, or movement of these plants is prohibited statewide.

Healthy planting alternatives

Here are a few examples of environmentally-friendly species available at garden centers and nurseries.



High-bush
cranberry
Viburnum
trilobum



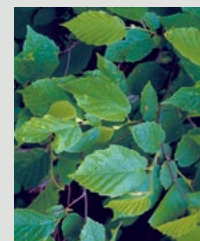
Nannyberry
Viburnum
lentago



Pagoda
dogwood
Cornus
alternifolia



Chokecherry
Prunus
virginiana



American
hazelnut
Corylus
americana



Black
chokeberry
Aronia
melanocarpa



mn DEPARTMENT OF
NATURAL RESOURCES

ECOLOGICAL AND WATER RESOURCES

500 Lafayette Road, St. Paul, MN 55155-4025

888-646-6367

www.mndnr.gov