

Buckthorn: What you can do about this invasive species

Common and glossy buckthorn are classified as **Restricted Noxious Weeds**. The sale, transportation or movement of these plants are *prohibited* statewide by the Minnesota Department of Agriculture.

What is buckthorn?

Introduced to North America from Europe in the 1800s, Common Buckthorn (*Rhamnus cathartica*) and Glossy Buckthorn (*Rhamnus frangula*) are non-native, invasive shrubs. Used as hedgerows, ornamental shrubs and shelterbelts, they also grow into small trees.

Each buckthorn fruit produces two to four seeds that remain viable up to six years. Birds eat the fruit and then deposit the seeds everywhere. Buckthorn is hardy – it tolerates shade, full-sun, drought and bad soil. As a result, it quickly moves from well-kept yards to other areas.

Why is the buckthorn hedge, shrub or tree in my backyard or the woods harmful?

Buckthorn has a longer growing season than most native plants. It leafs out early in spring and often remains green into December. Its lush, impenetrable thicket out-competes native plants for light, moisture and nutrients.

- Plant diversity in forests is reduced because an impenetrable, understory layer is formed.
- Wildlife and song bird habitat is destroyed.
- The messy fruit stains cars, decks and concrete.
- Buckthorn seeds contain a laxative. Birds deposit the very hardy seeds over large areas.
- No natural insects and plant disease controls exist to contain buckthorn's spread.
- Buckthorn contributes to erosion by shading out plants on the forest floor.
- The plant is host to crop pests, such as crown rust fungus and soybean aphid.

Why is buckthorn difficult to destroy?

A single stem of buckthorn cut to the ground will re-sprout from the stump. These multiple new stems will grow up to six feet in a single season, creating a very large shrub in one to two years.



How can I battle buckthorn?

If you follow the steps below, your success rate against buckthorn will be reasonably high. However, each berry contains two to four seeds and seedlings may appear where the stump was removed or treated. Check the area diligently. You CAN win the battle if you persist.

1. Seedlings, small trees and shrubs

Pull by hand or use a Weed Wrench that is available for no charge from the City. This manually-operated tool clamps onto a stem up to three inches in diameter and operates as a lever to uproot woody plants. See *The Weed Wrench* section, page 3.

2. Large shrubs and stumps

For buckthorn greater than three inches, use a handsaw and cut as close to the ground as possible.

Then, follow one of these options:

- DIG the stump out.



Call before you dig!!

Gopher State One Call
Metro area 651-454-0002
MN Toll-free 1-800-252-1166

City staff member and volunteers work together to control buckthorn!

How can I battle buckthorn?

2. Large shrubs and stumps *continued*

- Use the herbicide Ortho Brush-B-Gon (8 percent Triclopyr), which is available in your local hardware or garden center. It is most effective when used from August through January. **DO NOT DILUTE! For safety, it is extremely important to read and carefully follow the label safety directions.** Purchase a hand spray bottle to use exclusively for this herbicide. Properly mark the spray bottle before pouring in the herbicide. When done, return the unused portion to the original container and discard at

the Hennepin County Problem Waste Facility on 96th and Humboldt. PLEASE NOTE! If rain is predicted within four hours or if the temperature is consistently below freezing, do not cut and treat the shrubs.

3. Disposal of branches

Have your garbage hauler pick them as part of your yardwaste service or, for a fee, you can take them to the compost site in Burnsville. Call 952-736-1915 for hours and location.

IDing the invader

For help identifying buckthorn see *below*, check out the Internet, ask your local garden center or contact the City at 952-563-8760.

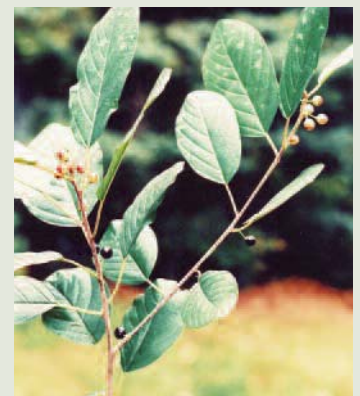
Common or European Buckthorn

Scientific name	<i>Rhamnus cathartica</i> .
Nursery cultivars	None.
Type of habitat	Invades dry areas, like woodlands, savannas, prairies, abandoned fields and roadsides; grows in full sun to dense shade.
Shape of plant	Height is 10 - 25 feet; upright, oval form.
Leaves	Egg-shaped with finely toothed edges; dark green, dull to glossy; opposite at tip of stem, 3 - 5 pairs of curved leaf veins; leaves stay dark green and on the tree late into autumn.
Stems	Opposite buds; sharp thorn at tip of twig.
Flowers	Produced in May; small, yellowish-green color; four petals.
Fruit and seed	Round berry-like fruit, 1/4" diameter; arranged in large clusters; green to black color; each fruit contains three to four seeds.



Glossy, Fern or Alder Buckthorn

Scientific name	<i>Rhamnus frangula</i> .
Nursery cultivars	<i>Columnaris</i> (Tall Hedge Buckthorn) – narrow, columnar form. <i>Asplenifolia</i> (Fernleaf Buckthorn) – narrow, fern-like leaves.
Type of habitat	Invades wet areas, like bogs, marshes, river banks, wetlands and pond edges; will grow in full sun or dense shade.
Shape of plant	Height is 10-18 feet, upright, oval form.
Leaves	Oval-shaped with toothless edges (<i>Rhamnus frangula</i>) or narrow and fernlike (<i>asplenifolia</i>); dark green and glossy, underside of leaves may be hairy; alternate on stem; 3 - 5 pairs of curved leaf veins; leaves stay green and on the tree late into autumn.
Stems	Alternate buds; No thorn at tips of twig.
Flowers	Produced in late May - June; small, creamy-green color; five petals.
Fruit and seeds	Round berry-like fruit – 1/4" diameter; produces less fruit than Common Buckthorn; red-brown to black color; each fruit contains two to three seeds.



How to operate the Weed Wrench (woody plant puller)

Weed wrenches can be reserved at no charge by calling the City of Bloomington at 952-563-8751. Loppers and small hand saws are also available.

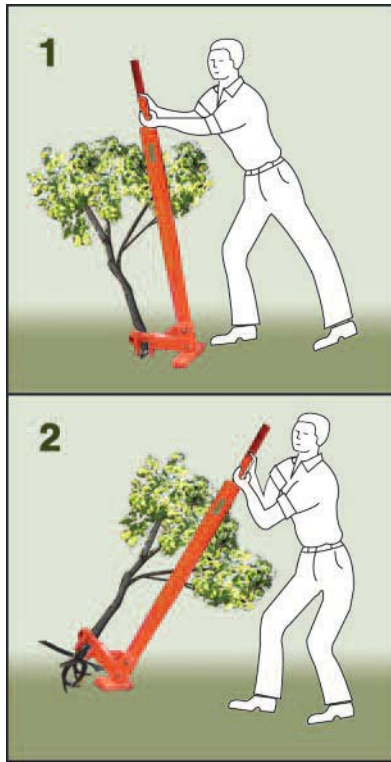
Placing the jaws

Open the jaw until the jaw-catch engages. You can do this by bumping the nose of the tool on the ground while pushing the handle forward. The jaws will stay open while you place them around the stem. Disengage the jaw-catch by putting your toe on top of the lifter arm behind the jaw and giving the handle a tug. If the jaw shows any tendency to slip upward, keep pressure with your foot on the lifter arm until the jaw is solidly clamped on. See #1.

If the plant spreads at ground level and has branches interfering with strong placement of the jaw, grab the interfering branches with the Weed Wrench and rip them off to gain access to the stronger stem. Or, use a loppers or pruning saw to get the branches out of the way. For needled or thorned plants, saw it off a few inches above ground before pulling the root; then you won't have the top stabbing you while you work the Weed Wrench.

Extracting the plant

Once the jaw is clamped on, give a short hard pull. If it starts to give way, just keep pulling. If it doesn't, don't try to pull it in one stroke. Instead, begin "pumping" the handle – rhythmically pulling hard, then relaxing. The soil will fracture a little more with each pump, the ground will begin to heave, and finally you will hear a muffled "pop" deep underground when the taproot releases. This is a great trick for defeating stubborn plants. In a tough case, dig around the plant with a series of pick or mattock strokes to break the surface soil and some of the lateral roots, then try pumping the Weed Wrench handle again. You rarely need to resort to this. The pumping technique is also useful for gently coaxing a root out of the soil when a weak stem might otherwise break before the root pulls free. See #2.



Tough roots and soft soil

In rare situations a plant may be growing where the surface soil is soft but the roots are down into hard soil; this can cause the heel (fulcrum) of the Weed Wrench to dig into the soil instead of lifting the plant out. A scrap of plywood placed under the fulcrum solves this.

Defeating sawed-off stubs

Plants cut off at ground level present a trickier, but not impossible, situation. The roots are now bigger and stronger than the top, and new stems rip off easily. It takes a surprisingly small nub of the original stem to provide a good grip for pulling the root. Sometimes cutting the bushy re-sprouted branches out of the way helps, or digging a little soil away from the main stem to expose enough of it to grab. Scraping the jaw back and forth sideways on the ground past the stem stump is frequently all it takes to dig the jaw faces down far enough to grip the root.

Keep the fulcrum flat on the ground

Always have the fulcrum flat on the ground before attempting a pull. On level ground this isn't an issue, but on hillsides you might be tempted to take a pull with only one end of the fulcrum touching while you place the jaw straight on a vertical stem. Better to have the fulcrum in full contact with the ground, even if it means gripping the stem at an angle – it will still pull just fine. Failure to heed this can bend the fulcrum at the lifter arm, or in some cases, bend the lifter arm at the fulcrum. This damage can be repaired, but it's much easier to just avoid it. Weed Wrench has been used on all angles of terrain, even cliff faces. You can always find a way to pull effectively without harming the tool.

Cautions

- **Watch behind you!** Be prepared for the plant to suddenly break loose when the roots pull free, a branch breaks off or a bad jaw placement slips off. Brace yourself to avoid falling over a bank or onto a sharp object.
- **Watch around you!** Be careful of people nearby. Carry the larger sizes on your shoulder with the head behind you and the lever arm in front where you can see its swing.
- **Watch out for your eyes!** Always be cautious when pulling plants that have thorns or stiff branches at eye-level; wear eye protection if necessary.
- **Watch out for your fingers!** The jaws have tremendous gripping force. Keep your fingers away from areas where pinching or scissoring actions occur.

Weed Wrench continued

Know the tool's limits

Various factors can affect your success using the Weed Wrench: soil too hard, taproot lodged in bedrock, roots tangled with an adjacent plant's, or in the case of some tree species, what appears to be a sapling may be a root sucker growing from a large root of an adjacent mature tree. Savvy operators will know when to stop before they bend the tool. Don't put a cheater pipe on the grip handle for more leverage, it will only bend the handle. Don't put two people on it. It is designed to work with the strength of one person, not a team.

Maintenance

- The jaw facings will collect dirt and bark until eventually their gripping ability is reduced. A Weed Wrench still works with the teeth clogged, it just works better with them clean. Pick the teeth clean with an ice pick, screwdriver or similar sharp tool. This is more safely and easily done in a shop with a vise to hold the tool than in the field. Soaking the jaw faces in water for ten minutes before you start cleaning is a big help.
- A little oil on the moving parts, especially during the break-in period or in wet climates, will help your Weed Wrench operate smoothly.
- If the jaw-catch mechanism freezes up after use in rain or mud, remove the Allen screw, spring and steel ball to clean and lubricate them. When you re-assemble, adjust the Allen screw pressure so that the jaw stays open against gravity when you lift the tool off the ground, and the jaw closes easily when you want it to.

Source: The Weed Wrench Company.

Educate your friends and neighbors

Spread the message about buckthorn!
Oftentimes, your neighbors may not know that buckthorn is a problem. Education is the first step in understanding the invasiveness of this exotic shrub.

Web sites

MN Dept of Natural Resources

Phone: 651-296-2835
www.dnr.state.mn.us.html

Yard and Garden Brief – Common Buckthorn Identification

University of Minnesota Extension Services
www.extension.umn.edu/projects/yardandgarden/ygbriefs/h402buckthorn-common.html

Agencies

Invasive Species Program

Minnesota Dept of Agriculture
90 West Plato Blvd., St. Paul MN 55107-2094
PH: 651-296-8328
www.mda.state.mn.us

Harmful Exotic Species Program

MN Dept of Natural Resources
500 Lafayette Rd, Box 25,
St. Paul MN 55155-4025
PH: 651-297-1464

Sources: Minnesota Department of Natural Resources, Friends of the Parks and Trails of St. Paul and Ramsey County.

What plants would work well in an area after the buckthorn is removed?

If you chemically treat a buckthorn stump, you can safely plant a native shrub in the area after two weeks. With careful selection, a wonderful, non-invasive shrub will provide a habitat and food source for wildlife.

Check with your local nursery for special features of natives such as fast growing, edible fruits, red stems in winter, fragrant, preferable soil type or bird/butterfly attracters. See *below*.

Native shrubs

Name	Species	Height in feet	Width in feet	Fall leaves	Flowers	Light
Speckled Alder	<i>Alnus rugosa</i>	15 - 20	15 - 20 Spreading	Yellow	Reddish/green	
Saskatoon Serviceberry/Juneberry	<i>Amelanchier alnifolia</i>	8 - 10	5 Wide	Orange/yellow	White	
Regent Serviceberry	<i>Amelanchier alnifolia "Regent"</i>	5	5 Rounded/upright	Yellow to red	White	
Black Chokeberry	<i>Aronia melanocarpa</i>	6	6	Red/purple	White	
Silky Dogwood	<i>Cornus amomum</i>	6 - 12	6 - 12 Oval	Red	White	
Red - Osier Dogwood	<i>Cornus stolonifera</i>	8	8	Dark red	White	
Gray Dogwood	<i>C. racemosa</i>	8 - 12	6 - 10 Spreading	Purple to red	White	
American Filbert "Hazelnut"	<i>Corylus americana</i>	6 - 12	6 - 10	Copper red	Green	
Dwarf Bush Honeysuckle	<i>Diervilla lonicera</i>	3	3	Red	Yellow	
Leatherwood	<i>Dirca palustris</i>	3 - 6	3 - 6	Insignificant	Yellow	
Common Witch Hazel	<i>Hamamelis virginiana</i>	20	15	Yellow	Yellow	
Winterberry	<i>Ilex verticillata</i>	6 - 8	6 - 8 Rounded	Yellow	White/green	
Dwarf Ninebark	<i>Physocarpus opulifoliu</i>	4 - 6	4 - 6	Insignificant	Pink/white	
Choke Cherry	<i>Prunus virginiana</i>	20 - 35	12 - 15 Upright	Yellow to orange	White	
Smooth Sumac	<i>Rhus glabra</i>	6 - 8	10 - 12	Bright red	Green-yellow	
Early Wild Rose	<i>Rosa blanda</i>	4	6	Red	Pink	
Swamp Rose	<i>Rosa palustris</i>	6	5	Red	White-Pink	
Red Willow	<i>Salix sericea</i>	6 - 8	6 Upright	Insignificant	None	
Canada Elder	<i>Sambucus Canadensis</i>	10	8	Yellow	White	
Meadowsweet	<i>Spiraea alba</i>	5	7	Yellow	White	
Snowberry	<i>Symphoricarpos albus</i>	5	5 Round	Insignificant	pink	
Coralberry	<i>Symphoricarpos orbiculatus</i>	3	4	Yellow	White/green	
Nannyberry	<i>Viburnum lentago</i>	15 - 20	10 - 20	Maroon red	White	
Downy Arrowwood	<i>V. rafinesquianum</i>	6 - 8	6 - 8 Upright	Orange-red	White	
American Cranberry	<i>Viburnum trilobum</i>	6 - 12	6 - 12	Red-purple	White	
Wolfberry	<i>Symphoricarpos occidentalis</i>	2 - 4	4 - 6	Insignificant	White - pink	
Wahoo	<i>Euonymus atropurpurea</i>	10-15	10-12	Bright red	Purple	

Understory trees (small trees to very tall shrubs)

Name	Species	Height in feet	Width in feet	Fall leaves	Flowers	Light
Downy Serviceberry	<i>Amelanchier arborea</i>	15 - 25	10 - 15	Orange/yellow	White	
Blue Beech "Musclewood"	<i>Carpinus caroliniana</i>	20 - 30	20 - 30 Round/broad	Yellow to red	Green	
Downy Hawthorn	<i>Crataegus mollis</i>	25	25	Red	White	
American Plum	<i>Prunus americana</i>	20 - 35	20 - 35 Horizontal	Dark red	White	
Allegheny Serviceberry/Shadblow	<i>Amelanchier laevis</i>	15 - 25	10 - 15	Orange/yellow	White	
Pagoda Dogwood	<i>Cornus alternifolia</i>	15 - 20	15 Round/horizontal	Dark red-purple	White	
Ironwood	<i>Ostrya virginiana</i>	30	30 Broad	Yellow	Green yellow	
Pin Cherry	<i>Prunus pensylvanica</i>	20 - 35	10 - 20 Columnar	Bright red/orange	White	
Pussy Willow	<i>Salix discolor</i>	20	10 Upright	Insignificant	Silvery gray	