Fact Sheet: Common Buckthorn

Common Buckthorn

Rhamnus cathartica L.
Buckthorn family (Rhamnaceae)

NATIVE RANGE

Eurasia

DESCRIPTION

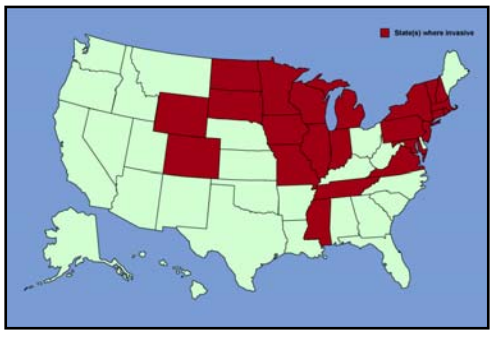
Common buckthorn is a shrub or small tree that can grow to 22 feet in height and have a trunk up to 10 inches wide. The crown shape of mature plants is spreading and irregular. The bark is gray to brown, rough textured when mature and may be confused with that of plum trees in the genus Prunus. When cut, the inner bark is yellow and the heartwood, pink to orange. Twigs are often tipped with a spine. In spring, dense clusters of 2 to 6, yellow-green, 4-petaled flowers emerge from stems near the bases of leaf stalks. Male and female flowers are borne on separate plants. Small black fruits about ¼ inch in cross-section and containing 3-4 seeds, form in the fall. Leaves are broadly oval, rounded or pointed at the tip, with 3-4 pairs of upcurved veins, and have jagged, toothed margins. The upper and lower leaf surfaces are without hairs. Leaves appear dark, glossy green on the upper surface and stay green late into fall, after most other deciduous leaves have fallen.

A similar problem exotic species is *Rhamnus frangula*, glossy buckthorn. Glossy buckthorn does not have a spine at twig tips, leaves are not toothed, and the undersides of the leaves are hairy.

NOTE: Several native American buckthorns that occur in the eastern U.S. that could be confused with the exotic species. If in doubt, consult with a knowledgeable botanist to get an accurate identification. Carolina buckthorn (*Rhamnus caroliniana*), is a lovely native shrub that has finely toothed leaves somewhat resembling those of black cherry, and are smooth on the underside; it produces attractive fruits from August to October. Alder buckthorn (*Rhamnus alnifolia*), is a low-growing shrub that may grow to a maximum of 3 feet in height, and has leaves with 6-7 pairs of veins.

ECOLOGICAL THREAT

Exotic buckthorns tend to form dense, even-aged thickets, crowding and shading out native shrubs and herbs, often completely obliterating them. Dense buckthorn seedlings prevent native tree and shrub regeneration. In fire-adapted ecosystems such as savannas and prairies, the lack of vegetation under buckthorn prohibits fires. Buckthorn control is also of interest to small grain producers; the shrub is an alternate host of the crown rust of oats, which affects oat yield and quality.



DISTRIBUTION IN THE UNITED STATES

Common buckthorn has become naturalized from Nova Scotia to Saskatchewan, south to Missouri, and east to New England.

HABITAT IN THE UNITED STATES

Common buckthorn prefers lightly shaded conditions. An invader mainly of open oak woods, deadfall openings in woodlands, and woods edges, it may also be found in prairies and open fields. It is tolerant of many soil types, well drained sand, clay, poorly drained calcareous, neutral or alkaline, wet or dry.

BACKGROUND
Common buckthorn was introduced to North America as an ornamental shrub, for fence rows, and wildlife habitat. Introduction of buckthorn was based on its hardiness and ability to thrive in a variety of soil and light conditions.

BIOLOGY & SPREAD
Common buckthorn is a dioecious plant, meaning that each plant produces only male or female flowers and fruiting trees are always female. Most of the fruits fall directly beneath the shrubs, creating a dense understory of seedlings characteristic of common buckthorn stands. The plentiful fruit is eaten by birds and mice and is known to produce a severe laxative effect, helping distribute seeds through birds, often far from the parent plant. Buckthorn often establishes beneath trees at the edges of forests and fields.

MANAGEMENT OPTIONS
Mechanical, physical and chemical methods are available for control of common buckthorn and glossy buckthorn (*Rhamnus frangula*), also an invasive exotic plant. Prescribed fire is one method proposed for controlling buckthorn seedlings in fire-adapted natural areas, from late March to early May, most recently by Boudreau and Willson. In the upper Midwest conduct burns as soon as leaf litter is dry; resprouts will be less vigorous due to low carbohydrate levels. Burning every year or every other year in established stands may be required for 5-6 years or more. Unfortunately, buckthorn seedings often grow in low litter areas, unsuitable for frequent prescribed fire. In dense stands, seedlings and saplings may be cut and dropped on site, creating fuel for future fires. Buckthorn seedlings appear vulnerable to fire, perhaps due to their poorly established root structure. Fire will top kill a mature plant, but resprouting does occur. Uprooting of ½ inch diameter seedlings by hand or up to 1 ½ inch diameter using a weed wrench is effective, but care should be taken to avoid excessive disturbance to the soil, which can release buckthorn seeds stored in the soil.

Chemical
Careful application of herbicides has been found to effectively control buckthorn in Illinois. The McHenry County, Illinois, Conservation District (MCICD) reports excellent results using a triclopyr herbicide at the rate of 1:4 herbicide:water with dye on cut stumps during the growing season, from late May to October. The product label suggests avoiding treatment during the spring sap flow. To extend the work season, the use of a triclopyr herbicide was also applied to cut stumps during winter and was reported to be effective by MCICD and the Minnesota Region V State Parks.

Frill application (applying herbicide into the cambial layer of fresh cuts on the tree trunk) using the 1:4 rate of triclopyr herbicide with oil and dye was also effective. Experiments at the University of Wisconsin Arboretum report good results using a mixture of 1 part triclopyr herbicide to 7 parts oil on cut stumps, or a 1 part triclopyr herbicide to 16 parts oil mixture applied as a basal bark treatment to stems less than 3 inches across. For fall applications, the Minnesota Department of Natural Resources, Region V State Parks Resource Management has used a 1 part glyphosate herbicide to 5 parts water mixture applied immediately to cut stumps using a hand sprayer. Initial checks indicated over 85 percent control at the test site.

USE PESTICIDES WISELY: Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations.

NOTICE: mention of pesticide products on this page does not constitute endorsement of any material.

SUGGESTED ALTERNATIVE PLANTS
For home landscaping and wildlife plantings many native low trees and shrubs are available from commercial nurseries. Examples include American elder (*Sambucus canadensis*), Black chokeberry (*Aronia melanocarpa*), and Juneberry (*Amelanchier alnifolia*). Please contact your local native plant society for recommendations of plants native to your particular area.

OTHER LINKS

- http://www.invasive.org/search/action.cfm?q=Rhamnus%20cathartica
- http://nbii-nin.ciesin.columbia.edu/ipane/icat/browse.do?specieId=24

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