BUCKTHORN
(*Rhamnus cathartica*)

Description: Buckthorn, also referred to as common or European buckthorn, is a member of the Rhamnaceae or buckthorn family. Buckthorn is a moderate to fast-growing shrub or small tree that can reach 6 to 20 feet in height with a comparable spread. The bark is rough, gray to brown in color, with prominent, often elongated, light-colored lenticels. Branches are slender, somewhat grayish, gray-green, or brown in color, with a terminal bud that is a modified spine. Leaves are sub-opposite, simple, elliptic or ovate, 1 1/2 to 3 inches long, about half as wide as they are long, with two to three main lateral veins. Leaves are glabrous with tips that are abruptly acuminate, the base is rounded to cuneate, and margins are irregularly serrate with several teeth. Leaves are generally dark glossy green above and light green below. Small flowers are yellowish green in color, 4-petaled, and born in axillary umbels. Fruits are a drupe- like berry, 1/4 inch in diameter, glossy, and black in color.

Buckthorn

Plant Images:

Bark with spine

Leaves and fruits

Flowers

Distribution and Habitat: Buckthorn is native to Europe and Asia and is now considered to be naturalized in the eastern and midwestern United States. The tree grows in neutral to alkaline, well-drained, clayey to sandy soils, and poorly drained calcareous soils. Buckthorn can tolerate a small amount of shade but prefers the sunny exposures of western or southern slopes. The tree will typically flourish in fence rows, woodland edges, pastures, ravines, and roadsides.

Life History/Ecology: Buckthorn is a hardy, rapid-growing shrub or small tree that exhibits a long growing season. The tree reproduces primarily through prolific seed production but can also resprout after being cut. Seedlings can readily germinate under partial light conditions and begin to produce seeds after a few years of establishment. Buckthorn flowers from May through June and fruits ripen from August through September. Seeds can remain viable in the soil for two to three years. Leaves can remain on the tree late in the growing season.

History of Introduction: Buckthorn is native to Europe and western and northern Asia. The tree was most likely introduced into North America during the 1800s, for shelter belts, hedges, and wildlife habitats. Buckthorn did not become naturalized in the United States until the early 1900s. In North Dakota, buckthorn has been occasionally found in eastern, central and northwestern woodlands of the state. Occurrences of the tree have been reported east of the Missouri River in Divide, Burke, Mountrail, Ward, McLean, Bottineau, Pembina, Grand Forks, Nelson, Cass, Barnes, LaMoure, Ransom, Richland, and Sargent counties. Buckthorn has also been reported in Towner county in the southwestern part of the state.

Effects of Invasion: Buckthorn is an aggressive species that can thrive in a variety of habitats. The tree can quickly invade natural areas and displace desirable native species. Consequently, biodiversity may be eliminated over time. Trees leaf out early and retain leaves late into the fall, thus creating a dense shade which can prevent native trees, shrubs, and wildflowers from establishing.

Control:
Management objectives for buckthorn control should involve early detection and rapid response once populations are detected. Large, mature stands of buckthorn are almost impossible to completely eradicate, but small populations of the species can be adequately controlled. Buckthorn reproduces by seed production, therefore control measures that reduce seed production or dispersal should be implemented. Infestations should be monitored for several years to prevent re-establishment.

Mechanical - Hand pulling or grubbing can be effective control methods for small seedlings. Mowing or cutting in early and late June for several years can reduce stem heights and infestations. Prescribed burning can be variable. Spring burns may kill small seedlings when root reserves are low and reduce re-sprouting. Burning buckthorn in late April or early May when the tree has leafed out earlier than most species may be effective. However, burning at the incorrect time may actually stimulate re-sprouting. Annual prescribed burns may reduce populations, but may also furnish limited control because of little fire build-up due to the dense understory of buckthorn stands. Girdling may be effective if conducted in the winter and followed with a herbicide application. When girdling, a band of bark around the tree trunk slightly deeper than the cambium should be removed by making two parallel cuts 3 to 4 inches apart. The xylem of the tree should remain intact because if girdled too deep, buckthorn will respond by resprouting. Trees that are girdled generally die within 1 to 2 years and will not re-sprout if cut properly.

Chemical - Glyphosate and triclopyr can be effective in controlling buckthorn. Cut-stump methods can be effective if the trunk is cut as close to the ground as possible and herbicides are immediately applied to the cut surface of the tree. A basal bark spray treatment may also be successful. Basal applications or broadcast spray of picloram or hexazinone have provided buckthorn control as well.

Contact your local county extension agent for recommended use rates, locations, and timing.

Biological - No biological control agents are available for Buckthorn control, but the tree is susceptible to *Puccina coronata* or oat rust.

References:

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Buckthorn and leaves and fruits photographs courtesy of J. C. Schou, Biopix.dk.

Bark with spine and flowers photographs courtesy of Chris Evans, The University of Georgia (www.invasive.org).