

Glossy buckthorn

Rhamnus frangula / *Frangula alnus*

Fact Sheet

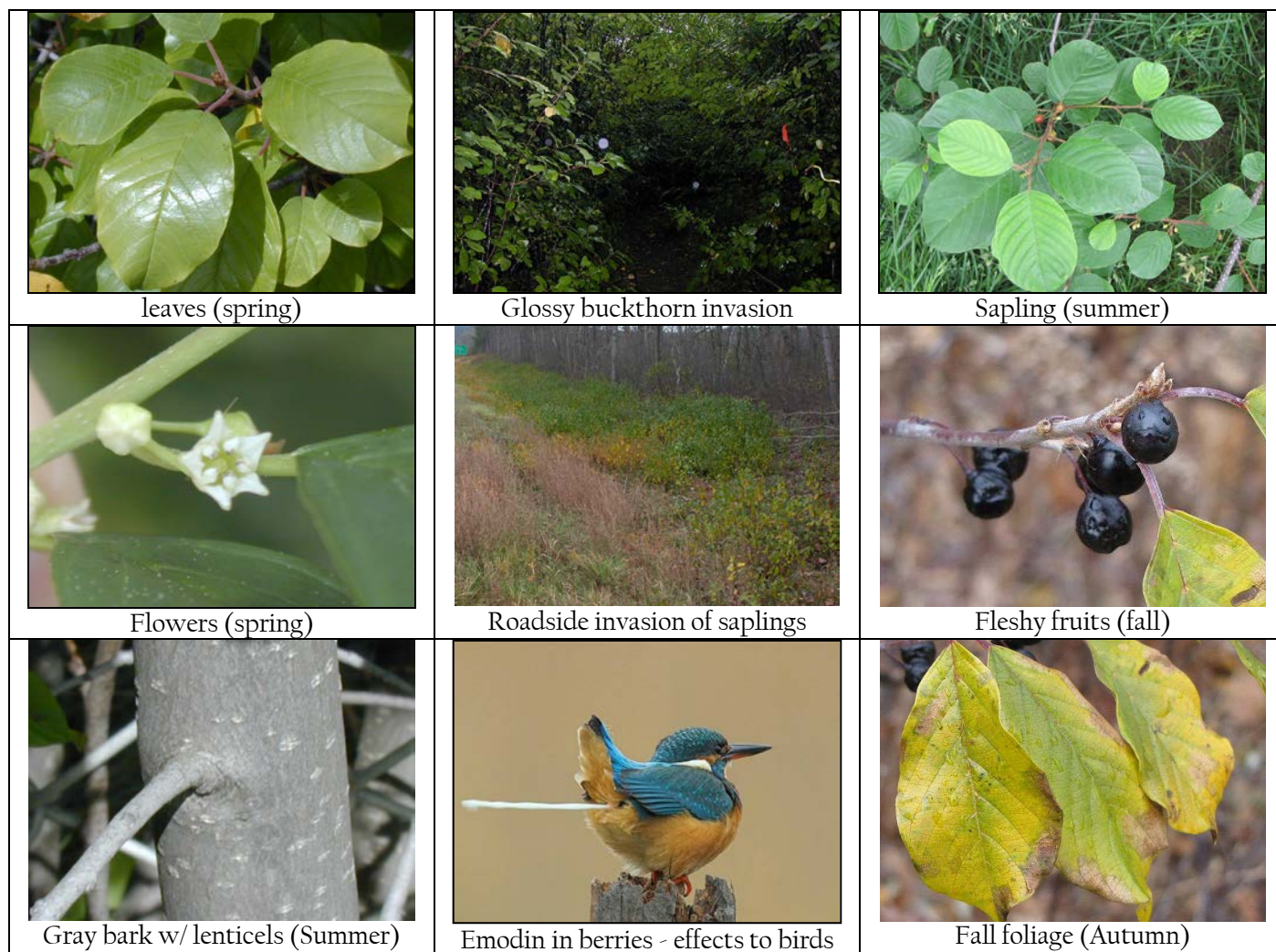
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Common Name: **Glossy buckthorn**

Latin Name: *Rhamnus frangula* / *Frangula alnus*

New Hampshire Invasive Species Status: **Prohibited** (*Agr 3800*)

Native to: **Japan**



Description: Deciduous shrub or small tree measuring 20' by 15'. **Bark:** Grayish to brown with raised lenticels. **Stems:** Cinnamon colored with light gray lenticels. **Leaves:** Alternate, simple and broadly ovate. **Flowers:** Inconspicuous, 4-petaled, greenish-yellow, mid-May. **Fruit:** Fleshy, 1/4" diameter turning black in the fall. **Zone:** 3-7. **Habitat:** Adapts to most conditions including pH, heavy shade to full sun. **Spread:** Seeds are bird dispersed. **Comments:** Highly Aggressive, fast growing, outcompetes native species. **Controls:** Remove seedlings and saplings by hand. Larger trees can be cut or plants can be treated with an herbicide.

General Considerations

Glossy buckthorn can either grow as a multi-stemmed shrub or single-stemmed tree up to 23' (7 m) tall. Leaves are deciduous, simple, and generally arranged alternately. Leaves are dark-green and glossy above while dull-green below. The leaf margins are smooth/entire and tend to be slightly wavy. Flowers are small, about 1/4" and somewhat inconspicuous forming in May to June. They develop and in small clusters of 2-8. Fruits form in mid to late summer and contain 2-3 seeds per berry. In the fall the foliage turns a pale yellow and persists long after most native plants have dropped their foliage.

It is also an alternative host to alfalfa mosaic virus; and crown rust (*Puccinia coronata*) fungi that causes oat rust disease. It has also been linked as a host for the soybean aphid.

Glossy buckthorn is becoming more widespread throughout New Hampshire being spread mainly by frugivorous birds and small mammals. The greatest negative affect of both glossy and common buckthorns is their production anthroquinone, a metabolite occurring in the fruit, bark, and roots. Since berries are essentially the only portion of the plant utilized for food, wildlife foraging in the fall can be exposed to high doses of anthroquinone. Anthroquinone, once ingested, is metabolized into emodin, a laxative. Emodin can have paradoxical effects: in high doses it acts as a cathartic (resulting in moderate to severe diarrhea), whereas at low concentrations/doses it causes retention of stomach/gut contents, both of which cause nutritional deficiencies.

Glossy buckthorn is also one of the first species to invade a forested site where tree and shrub layers have been removed or altered allowing greater levels of light to penetrate to the forest floor. When wildlife that has been feeding on buckthorn fruits seek cover in natural woodland habitats they can create an immense seed bank that lays dormant awaiting for optimum conditions to allow the seeds to germinate. Once they sprout, they grow rapidly and outcompete the desirable forest species allowing it to becoming dominant. Fortunately, Glossy buckthorn seed germination rate is very high and most seeds (in the seed bank) will germinate the first year whereas the second year seedling establishment is significantly diminished.

Control Options

See the following control guides: [Integrated Pest Management \(IPM\) for Woody Plants](#) or the [Control of Invasive Species by Numbers](#)

Cutting mature Glossy buckthorn plants down without treating or removing the rooting system will not kill the plant, it will just promote extensive sucker sprouts to develop, which can make the plant stronger.

<i>Glossy buckthorn</i> Rhamnus frangula/Frangula alnus	
Plant Type	Shrub
Habitat Type	Forests, fields, roadsides, wetlands
USDA Hardiness Zone	3-7
Rooting Structure	Fibrous, shallow and extensive
Environmental Impacts	Contains levels of anthroquinone, which when ingested is metabolized into emodin, a laxative.
Wildlife Impacts	Nutritional deficiencies in birds and small mammals
Leaf arrangement	Alternate
NWI Ranking	FAC
Soil Type	
Soil pH Range	?
Light Requirements	Prefers partial to full sun, shade
Growing Season	
Growth Rate	2 to 4 feet (0.6-1.2 m) per year
Mature Height	10 ft. (3m)
Life Span	Moderate
Reproductive Age	2 years
Flowering Period	April-June
Flower Type	Dioecious
Pollination	Insects
Seed Set	July - August
Seed Per Plant	15,000 -54,000
Scarification Required	No
Cold Stratification	Yes
Seed Longevity	2-6 years
Seed Germination Rate	91%
Seedling Density	?
Other Propagules	Layering, suckering
Dispersal Vectors	Wildlife, water

Sources

Mehrhoff, L., 2001. Invasive Plant Atlas of New England, Catalog of Species, http://www.eddmaps.org/ipane/ipanespecies/shrubs/frangula_alnus.htm

USDA Forest Service invasive species website: <http://www.fs.fed.us/database/feis/plants/shrub/fraaln/all.html>

Invasives.org: <http://www.invasive.org/browse/subinfo.cfm?sub=5649&desc=17>

Bugwood: http://wiki.bugwood.org/Frangula_alnus