Common Name: BOG SPICEBUSH

Scientific Name: *Lindera subcoriacea* B.E. Wofford

Other Common Names: none

Previously Used Scientific Names: none

Family: Lauraceae (Laurel)

Rarity Ranks: G2/S1?

State Legal Status: Special Concern

Federal Legal Status: none

Federal Wetland Status: OBL

Description: **Shrub** with erect stems to 13 feet (4 meters) tall; new **twigs** hairy; older **branches** with small, whitish, spongy patches and a faint lemon smell when cut. **Leaves** $1^{1}/_{2}$ - 3 inches (5.6 - 6.8 cm) long on female-flowered plants and $3^{1}/_{2}$ - 4 inches (9 - 10.5 cm) long on male-flowered plants, simple, alternate, entire, somewhat thick and leathery, dark green on the upper surface, pale green and hairy on the lower surface; leaf base wedge-shaped, leaf tip blunt; leaf stalk grooved; young leaves with faint lemon smell when crushed, older leaves are odorless; leaves emerge after flowering. **Female and male flowers** on separate plants, in paired clusters along the stems; flowers with 6 pale yellow petals, appearing before the leaves. **Fruit** to ⅜ inch (1 cm) long, oval, bright red, on short, slender stalks (tips of the fruiting stalks are not enlarged).

Similar Species: Spicebush (*Lindera benzoin*) is a common shrub of streamsides and rich, moist slopes that also flowers in March; its leaves have a strong spicy or medicinal smell and pointed tips; leaves are thin, not leathery, and green on both surfaces. Sassafras (*Sassafras albidum*) flowers about the same time, but does not have paired flower clusters; its leaves smell spicy not lemony.

Related Rare Species: See pondberry (*Lindera melissifolia*) on this website.

Habitat: Shrubby, seepage wetlands with peaty-mucky soils and continuous water source, such as hillside bogs, streamside thickets, streamheads, and pocosins; usually with sphagnum moss.

Life History: Bog spicebush reproduces sexually and, primarily, by root suckering, forming large clumped stands, usually consisting of 5 or fewer genetic individuals. Bog spicebush is dioecious – female and male flowers are held on separate plants. Female-flowered shrubs have smaller leaves with shorter hairs; microscopic differences between female and male plants include wax patterns on the leaf surfaces and features of the stomata. Bog spicebush and often forms extensive colonies of all-female or all-male plants. Because of habitat fragmentation, female and male colonies are often widely separated, thus reducing the chances of sexual reproduction. Although no studies of the reproductive biology of this species have been conducted, it is likely that its flowers are pollinated by bees and flies, as is the common species of spicebush (*Lindera benzoin*). Common spicebush produces more fruit and sets more seed when given more light; it seems likely that bog spicebush would also benefit from increased light. Common spicebush is a host plant for spicebush swallowtail (*Papilia troilus*), which lays its eggs singly on the lower surface of the leaves; it is not known if swallowtails also use bog spicebush.

Bog spicebush is currently at risk of infection by laurel wilt disease, a fungal (*Raffaelea* sp.) infection that kills trees and shrubs in the laurel family. The fungus is carried by an exotic insect, the red bay ambrosia beetle *(Xyleborus glabratus*), and blocks water-conducting cells of infected plants, resulting in wilted leaves and, ultimately, death. Laurel wilt has spread quickly along the southeastern coast and caused extensive mortality among red bay (*Persea* spp.). Laurel wilt is likely to spread inland, infecting and killing rare species in the laurel family such as bog spicebush, pondspice (*Litsea aestivalis*), and pondberry (*Lindera melssifolia*), as well as common species such as sassafras (*Sassafras albidum*) and spicebush (*Lindera benzoin*).

Survey Recommendations: Surveys are best conducted during flowering (March) and fruiting (mid-summer) when fruits are red.

Range: Georgia, Florida, Alabama, Mississippi, Louisiana, South Carolina, North Carolina, and Virginia.

Threats: Clearing, draining, and filling wetlands. Fire suppression in surrounding uplands and fire exclusion from wetlands. Sedimentation in wetlands from road-building and upland development. Fragmentation of habitat can destroy all the male plants or all the female plants in an area, leaving the remaining plants unable to sexually reproduce.

Georgia Conservation Status: Five populations are known; only one occurs on conservation land.

Conservation and Management Recommendations: Protect seepage wetlands from clearing, draining, and filling. Following fuel reduction in overgrown sites, allow fires in adjacent uplands to periodically burn into and across wetlands. Avoid placing firebreaks in the transition zones between uplands and wetlands. Create canopy gaps using prescribed fire or hand-clearing. Protect streamside wetlands from siltation and other disturbances during road and bridge building. In populations that are missing females, re-introduce females, and vice versa.

Selected References:

Anderson, L.C. 1999. Striking sexual dimorphism in *Lindera subcoriacea* (Lauraceae). Sida 18 (4): 1065-1070.

Chafin, L.G. 2007. Field guide to the rare plants of Georgia. State Botanical Garden of Georgia and University of Georgia Press, Athens.

Chafin, L.G. 2000. Field guide to the rare plants of Florida. Florida Natural Areas Inventory, Tallahassee.

FNA. 1997. Flora of North America, Vol. 3, Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, New York.

Gordon, K.L., R.L. Jones, and J.B. Wiseman, Jr. 1986. Status report - *Lindera subcoriacea* B.E. Wofford. U.S. Fish and Wildlife Service, Jackson, Mississippi.

NatureServe. 2007. NatureServe Explorer. Arlington, Virginia.
http://www.natureserve.org/explorer
Nelson, G. 1996. Shrubs and woody vines of Florida. Pineapple Press, Sarasota, Florida.

Niesenbaum, R.A. 1993. Light or pollen – seasonal limitations on female reproductive success in the understory shrub *Lindera benzoin*. Journal of Ecology 81(2): 315-323.

Sorrie, B.A. 1992. *Lindera subcoriacea* element stewardship abstract. The Nature Conservancy, Arlington, Virginia.

Weakley, A.S. 2007. Flora of the Carolinas, Virginia, Georgia, and surrounding areas. University of North Carolina Herbarium, Chapel Hill. http://www.herbarium.unc.edu/flora.htm

Wofford, B.E. 1983. A new *Lindera* (Lauraceae) from North America. Journal of the Arnold Arboretum 64: 325-331.

Author of Species Account: Linda G. Chafin

Date Compiled or Updated:
L. Chafin, May 2007: original account
K. Owers, Feb. 2010: added pictures

BOG SPICEBUSH

Lindera subcoriacea