Common Name: **GEORGIA PLUME**

Scientific Name: *Elliottia racemosa* Muhlenberg ex Elliott

Other Commonly Used Names: Elliottia

Previously Used Scientific Names: none

Family: Ericaceae (heath)

Rarity Ranks: G2G3/S2S3

State Legal Status: Threatened

Federal Legal Status: none

Federal Wetland Status: none

Description: Small **tree or shrub** up to 33 feet (10 meters) tall, with 1 or more trunks, forming thickets from root sprouts; **bark** gray, vertically cracked; **twigs** slightly 3-angled. **Leaves** 1½ - 4¾ inches (4 - 12 cm) long and 1 - 2 inches (3 - 5 cm) wide, deciduous, alternate, folded upwards along the midvein, tapering at both ends, with a tiny bristle at the tip; upper surface dark green and smooth, lower surface pale and covered with soft hairs; **leaf stalks** reddish. **Flower clusters** ("plumes") showy, 6 - 12 inches (15 - 30 cm) long, erect at the ends of upper branches. **Flowers** with 4 - 5 narrow, white **petals**, about ½ inch (1.2 - 1.4 cm) long, curved strongly backwards when fully open; the knob-tipped style extends well beyond the petals. **Fruit** a round capsule about ⅜ inch (1 - 1.2 cm) wide, splitting into 4 - 5 sections.

Similar Species: Snowbell (*Styrax americana*) has showy, white flowers with 5 petals curved strongly backwards; they are held singly in the angle between leaf and twig, not in an erect cluster. Big-leaf snowbell (*S. grandifolia*) has drooping clusters of white, 5-petaled flowers.

Habitat: Sand ridges, evergreen hammocks, outcrops of ultramafic or serpentine rock, and Altamaha Grit.

Life History: Although Georgia plume blooms profusely, it rarely produces seeds and apparently spreads only by root sprouts, forming large patches of clonal shrubs with low genetic diversity. Its flowers are visited by numerous types of insects and a few plants even set seeds, yet seedlings have not been observed in the wild. One possible explanation of low seed set may be due to the fact that Georgia plume plants are incapable of self-pollination and, since most populations are clonal, there is little or no opportunity for cross-pollination. However, when seeds are collected and greenhouse-grown, they produce viable seedlings that readily transplant to the wild, suggesting that environmental factors play at least as large of a role in this problem as do reproductive limitations. Georgia plume grows in habitats that were historically maintained by frequent, low-intensity fires; the absence of fire likely limits reproduction in some ways not yet discovered.

Survey Recommendations: Surveys are best conducted during flowering (June–August).

Range: Georgia plume is found only in Georgia; it was once known in South Carolina but that population has been destroyed.

Threats: Clearcutting and conversion of habitat and fire suppression.

Georgia Conservation Status: More than 50 populations have been discovered, but many of these are now destroyed or very reduced in size; only 9 populations are protected on conservation lands. None have been known to produce seedlings.

Conservation and Management Recommendations: Use hand-clearing or low-intensity fire to reduce competing woody vegetation; smaller plants will survive fire by root-sprouting, older plants will be killed by hot fires and are best burned with cool fires during the winter. Closely monitor the results of all burning and modify burn plans accordingly. Protect sites from clearcutting and mechanical clearing. Continue to research causes of inability of plants to reproduce in the wild.

Selected References:

Ceska, J.F., J.M. Averett, and J.M. Affolter. 2005. Stimulating germination of *Elliottia racemosa* Muhlenberg ex Elliott seed using charate extract solution. Georgia Plant Conservation Alliance News 3: 23. State Botanical Garden of Georgia, Athens.

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

Del Trici, P. 1987. Lost and found: *Elliottia racemosa*. Arnoldia 47(4): 2 - 8.

Duncan, W.H. and M.B. Duncan. 1978. *Elliottia* in the Piedmont of Georgia. Castanea 43: 182-184.

Godt, M.J.W. and J.L. Hamrick. 1999. Population genetic analysis of *Elliottia racemosa* (Ericaceae), a rare Georgia shrub. Molecular Ecology 8: 75-82.

Kirkman, L.K., C.L. Brown, and D.J. Leopold. 2007. Native trees of the southeast. Timber Press, Portland, Oregon.

Kral, R. 1983. A report on some rare, threatened, or endangered forest-related vascular plants of the South. Technical Publication R8-TP2. United States Forest Service, Atlanta.

Lance, R. 2004. Woody plants of the southeastern United States: a winter guide. University of Georgia Press, Athens.

NatureServe. 2007. NatureServe Explorer. Arlington, Virginia.
http://www.natureserve.org/explorer

Patrick, T.S., J.R. Allison, and G.A. Krakow. 1995. Protected plants of Georgia. Georgia Department of Natural Resources, Natural Heritage Program, Social Circle.

Sanders, B. 2004. William Bartram=s botanical discoveries in Georgia. Tipularia 19: 8-17.

Santamour, F.S., Jr. 1967. Cytology and sterility in *Elliottia racemosa*. University of Pennsylvania, Morris Arboretum Bulletin 18(3):60-63.

Schupska, S. 2008. UGA researcher works to keep plant from extinction: Georgia plume finds new way to live thanks to UGA horticulturist Hazel Wetzstein. Georgia FACES 17 January 2008 - University of Georgia College of Agricultural and Environmental Sciences. http://georgiafaces.caes.uga.edu/storypage.cfm?storyid=3315

Thompson, D. 2005. Unraveling the *Elliottia racemosa* puzzle. Georgia Plant Conservation Alliance News 3: 24-25. State Botanical Garden of Georgia, Athens.

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

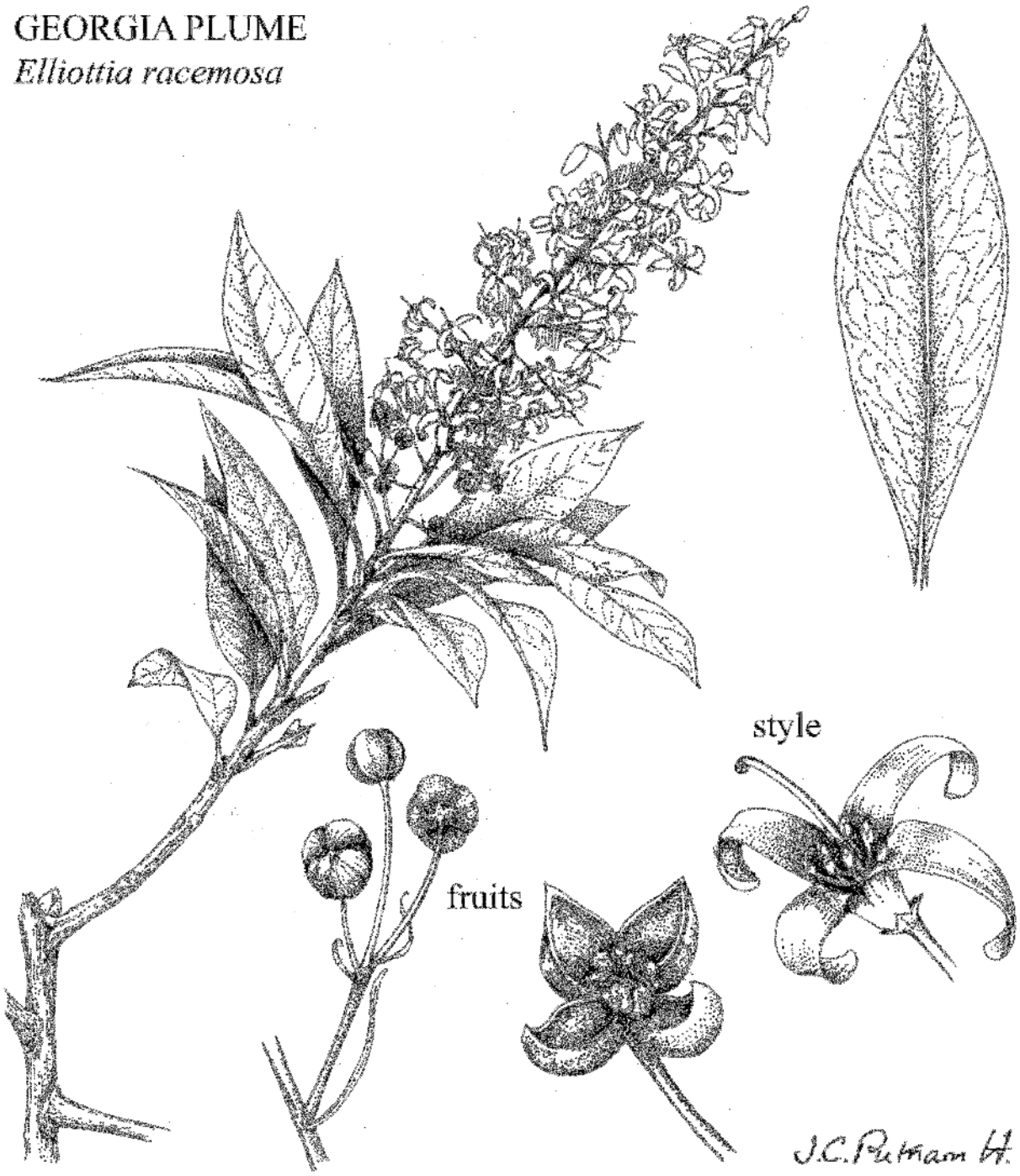
Wood, C.E., Jr. 1961. Genera of Ericaceae. Journal of the Arnold Arboretum 42: 20-23.

Author of species account: Linda G. Chafin

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

GEORGIA PLUME

Elliottia racemosa



Inflorescence