



**Common Name:** BIGHORN HORNWORT

**Scientific Name:** *Megaceros aenigmaticus* R.M. Schuster

**Other Commonly Used Names:** Appalachian large-horned hornwort

**Previously Used Scientific Names:** none

**Family:** Dendrocerotaceae (branched hornwort)

**Rarity Ranks:** G2G3/S1

**State Legal Status:** Threatened

**Federal Legal Status:** none

**Federal Wetland Status:** none

**Description:** Hornwort (a non-vascular plant related to mosses and liverworts), forming masses of thin, dark green sheets on wet rocks. Plants are up to 1½ inch (3 - 4 cm) long and less than ¼ inch (3 - 4.2 mm) wide, dark blue-green, thick, and crisp; there are no veins or hair-like scales along the margins. Plants produce 2 different forms. The “frilled” form has lobes that are about the same width as the body, and the edges of the plant are fringed, toothed, or distorted. The non-frilled form consists of a narrow strap-like body with many narrow, branching lobes. Plants are not known to reproduce sexually.

**Similar Species:** Bighorn hornwort often occurs with filmy ferns (*Trichomanes* spp.), which have veins and are larger than most hornworts, and with a liverwort (*Dumortiera hirsuta*) that has hair-like scales along the margins.

**Related Rare Species:** This species is the only member of the genus *Megaceros* in North America.

**Habitat:** Shaded, submerged or permanently wet rocks in small streams, spring heads, or waterfall spray zones; rarely on dead wood; usually under rosebay rhododendron. Plants cannot survive the siltation or scouring found in larger streams.

**Life History:** Bighorn hornworts grow in thin, overlapping sheets on wet rocks. Under marginal conditions, plants do not produce reproductive structures at all. In better conditions, female plants will produce egg-bearing structures (archegonia); however, plants that produce sperm-bearing structures (antheridia) have never been seen; presumably they have been destroyed. Thus reproduction is only vegetative, and occurs when fragments of the plants break off and are swept downstream.

**Survey Recommendations:** Surveys may be conducted all year.

**Range:** Georgia, North Carolina, and Tennessee.

**Threats:** Clearing near streams and waterfalls. Loss of Canada hemlock overstory, which provides critical shading, to hemlock woolly adelgid infestations. Recreational use of habitat. Over-collection.

**Georgia Conservation Status:** Only one population is known; it occurs in the Chattahoochee National Forest.

**Conservation and Management Recommendations:** Avoid clearing, logging, and construction near streams and waterfalls. Eradicate hemlock woolly adelgid, which destroys shade-providing hemlocks that border mountain streams. Direct foot traffic away from populations. Limit collection.

**Selected References:**

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

Hicks, M.L. 1992. Guide to the liverworts of North Carolina. Duke University Press, Durham, North Carolina.

Hicks, M.L. and P.G. Davison. 1989. Some rare, endemic, and disjunct liverworts in North Carolina. *Castanea* 54: 255-261.

Hicks, M.L. and J.L. Amoroso. 1996. Bryophyte status survey: *Megaceros aenigmaticus* Schuster. North Carolina Natural Heritage Program and Endangered Species Field Office, U.S. Fish and Wildlife Service, Asheville.



Hyatt, P.E. 2006. Noteworthy collections: *Megaceros aenigmaticus* Schust. (Anthocerotaceae) in Georgia. *Castanea* 71(2): 178.

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

Renzaglia, K.S. and K.D. McFarland. 1999. Antheridial plants of *Megaceros aenigmaticus* in the southern Appalachians: anatomy, ultrastructure, and population distribution. *Haussknechtia* Beiheft 9: 307-316.

Schuster, R.M. 1992. On *Megaceros aenigmaticus* Schust. *The Bryologist* 95(3): 305-315.

Stotler, R.E. and B. Crandall-Stotler. 2005. A revised classification of the Anthocerotophyta and a checklist of the hornworts of North America, north of Mexico. *The Bryologist* 108(1):16-26.

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**Date Compiled or Updated:**

L. Chafin, June 2008: original account

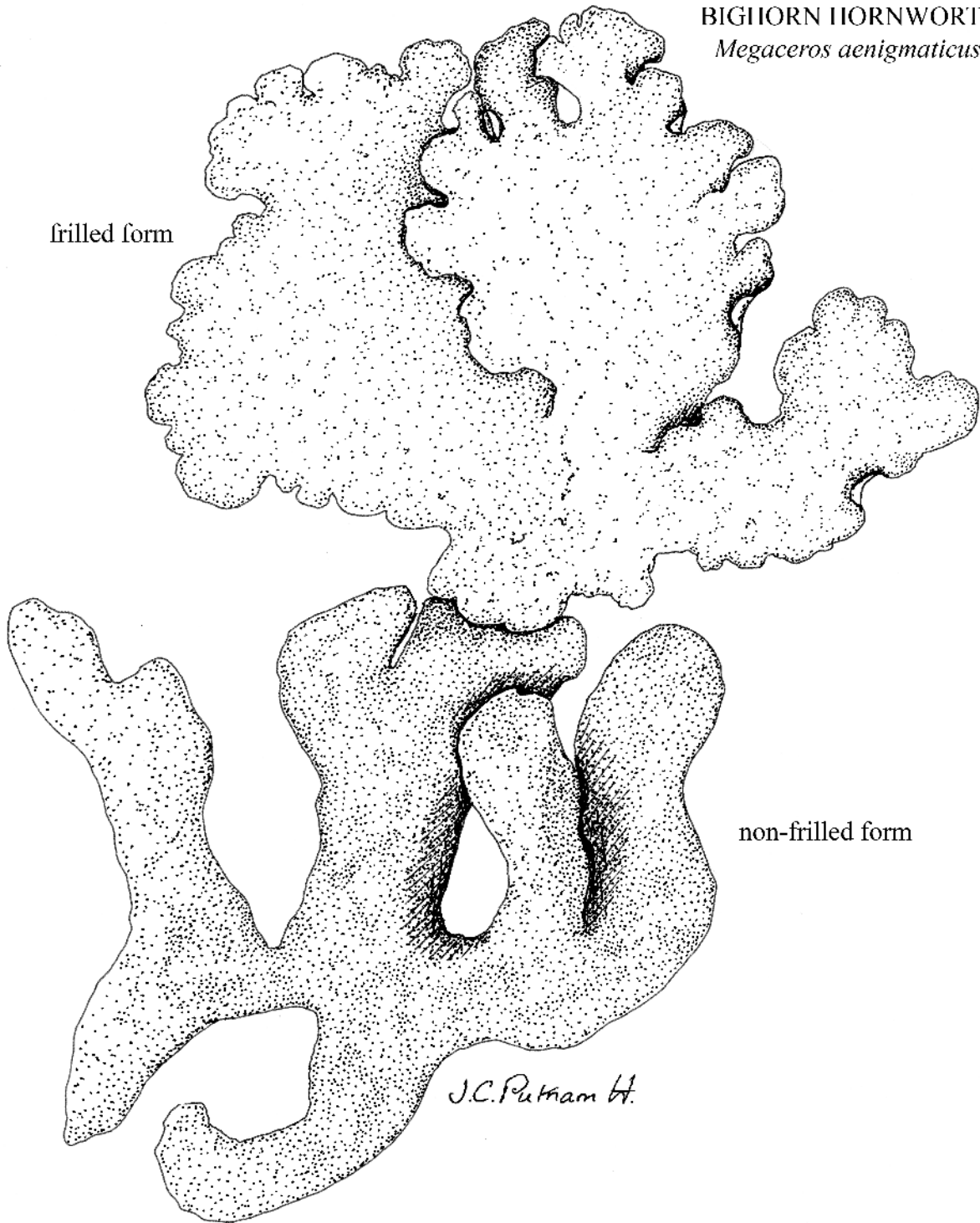
K. Owers, Feb. 2010: added pictures



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*Megaceros aenigmaticus*

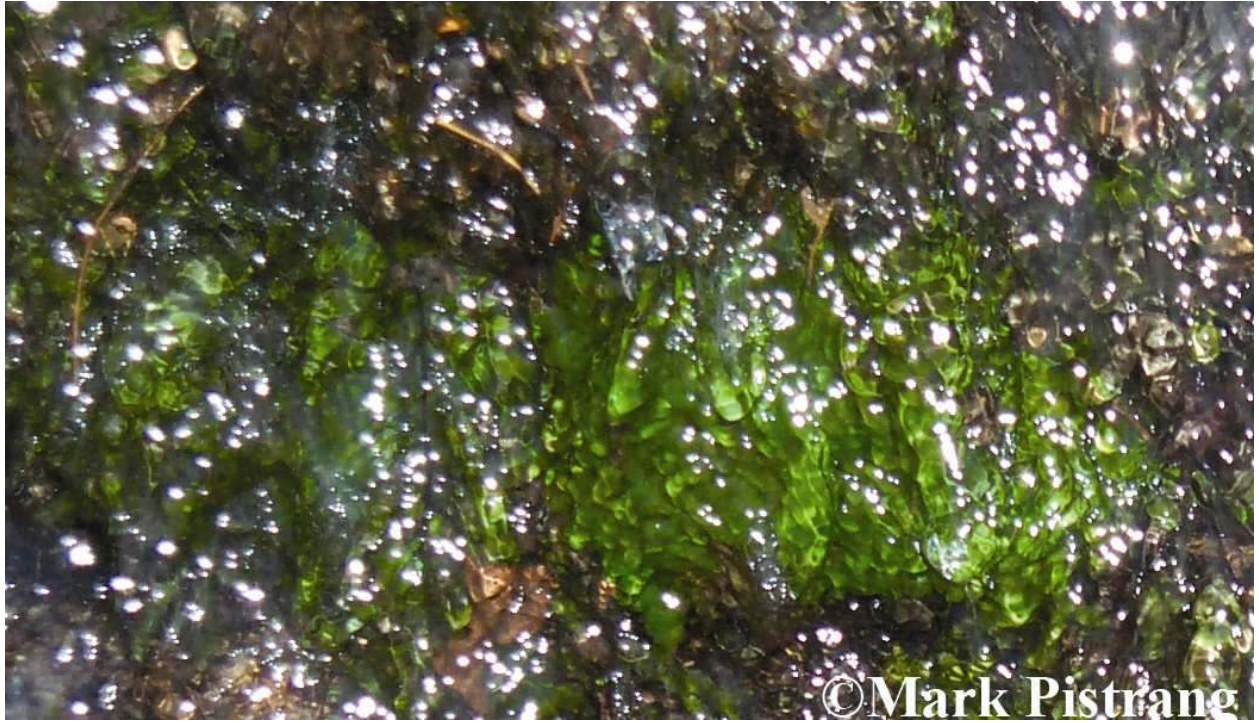
frilled form



non-frilled form

J.C. Putnam H.





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