



Common Name: ROCK GNOME LICHEN

Scientific Name: *Cetradonia linearis* (Evans) J.C. Wei & Ahti

Other Commonly Used Names: none

Previously Used Scientific Names: *Gymnoderma lineare* (A. Evans) Yoshimura & Sharp, *Cladonia linearis* A. Evans

Family: Cladoniaceae (reindeer moss)

Rarity Ranks: G2/S1

State Legal Status: Endangered

Federal Legal Status: Endangered

Federal Wetland Status: none

Description: Lichen growing in dense colonies up to 2 square yards (2 square meters) in size. Colonies consist of many, very narrow, strap-shaped, slightly branched lobes (**squamules**), $\frac{3}{8}$ - $\frac{7}{8}$ inch (1 - 2 cm) long and less than $\frac{1}{16}$ inch (1 mm) wide. Upper surface of the lobes is dark blue-gray grading to black at the base; lower surface is shiny white. Lobes grow parallel to the

rock surface but curl up and outward at the tip. Black or dark brown fruiting bodies (**apothecia**), less than $\frac{1}{16}$ inch (1 mm) wide, develop on the tips and, occasionally, the sides of the lobes.

Similar Species: Some reindeer lichens (*Cladonia* spp.) have strap-like lobes but they are not black at the base, and their fruiting bodies are brown or red.

Related Rare Species: Orange bush lichen (*Teloschistes exilis*, Special Concern) grows on the bark of trees and shrubs in the Black Belt prairies in Houston County, and on the bark of oaks in oak-pine woodlands over limestone in Early County; it has many fine, orange branches with round, flat fruiting bodies.

Habitat: Moist, rocky cliff faces at high elevations, usually shaded, often growing with the mosses *Andreaea* or *Grimmia*.

Life History: Lichens are a combination of two very different organisms: an inner core of algae (or cyanobacteria) photosynthesizes and provide nutrients; an outer layer of fungus provides the means of sexual reproduction and protection from the elements. While rock gnome lichen produces spores from fruiting bodies (apothecia) on the strap-like lobes from July–September, it appears that the primary means of reproduction is vegetative, with fragments breaking off the lobes and forming new lichens.

Survey Recommendations: Surveys may be conducted all year.

Range: Endemic to the Southern Appalachians of Georgia, North Carolina, and Tennessee.

Threats: Trampling by climbers and hikers, soil erosion, unauthorized collection. Development of nearby habitat. Clearing for trails or timber removal near populations.

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

Conservation and Management Recommendations: Protect sites from collectors, climbers, and hikers. Avoid logging, clearing, or trail construction in the vicinity.

Selected References:

Brodo, I.M, S.D. Sharnoff, and S. Sharnoff. Lichens of North America. Yale University Press, New Haven, Connecticut. <http://www.lichen.com/bigpix/Glineare.html>

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

Esslinger, T. L. 2006. A cumulative checklist for the lichen-forming, lichenicolous and allied fungi of the continental United States and Canada. North Dakota State University. <http://www.ndsu.nodak.edu/instruct/esslinge/chcklst/chcklst7.htm>

Federal Register. 1995. *Gymnoderma lineare* (rock gnome lichen) determined to be endangered. Fish and Wildlife Service 50 CFR Part 17, RIN 1018-AC23, Endangered and Threatened Plants. <https://www.gpo.gov/fdsys/pkg/FR-1995-01-18/pdf/95-1174.pdf>

NCNHP. 2001. Guide to federally listed endangered and threatened species of North Carolina. North Carolina Natural Heritage Program, Raleigh, North Carolina. <http://www.enr.state.nc.us/NaturalHeritage/Images/125.pdf>

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

USFWS. 1996b. Rock gnome lichen (*Gymnoderma lineare*) species accounts. U.S. Fish and Wildlife Service, Washington, D.C. <http://endangered.fws.gov>

Weakley, A.S. 2007. Flora of the Carolinas, Virginia, Georgia, and surrounding areas. University of North Carolina Herbarium, Chapel Hill.

Yoshimura, I. and A.J. Sharp. 1968. A revision of the genus *Gymnoderma*. American Journal of Botany 55(5): 635-640.

Author of species account: Linda G. Chafin

Date Compiled or Updated:

L. Chafin, Oct. 2007: original account

K. Owers, Jan. 2010: updated status and ranks, added pictures

G. Krakow, Apr. 2016: updated links under NCNHP. 2001 and Federal Register. 1995.



©Hugh and Carol Nourse

Apothecia

ROCK GNOME LICHEN

Cetradonia linearis

