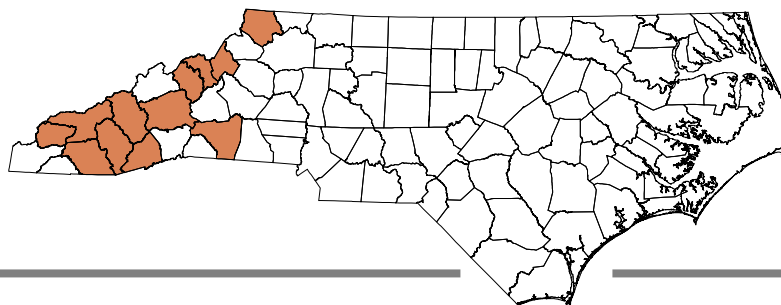


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# Rock gnome lichen

*Gymnoderma lineare*

Endangered (February 5, 1995)



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**Description:** The rock gnome lichen of the reindeer moss family grows in dense colonies of narrow, strap-like lobes, called squamules. The squamules are blue-gray on the upper surface and usually shiny white on the lower surface. Near the base of the lobe, the color darkens to black. The slightly branched squamules are less than 0.04 inch (1 mm) across near the tip, and are usually 0.4-0.8 inch (1-2 cm) long. The squamules grow parallel to the substrate, but the tips curl up almost perpendicularly. The small fruiting bodies (apothecia) occur at the tips of the squamules from July-September. They are colored black or brown, and are no larger than 1 mm across. The fruiting bodies may be sessile, or they may be carried on short stalks (podetia) less than 0.1 inch (1-2 mm) in height. The fruiting bodies are shaped like cylinders. Similar-looking lichens in the genus *Cladonia* do not blacken near the base and have brown or red fruiting bodies.

**Life History:** Very little is known of the life history and population biology of this species. Growth rates and distribution mechanism are not known. Small size of colonies and slow growth rate makes it vulnerable to extirpation by collecting and natural disturbance (slides, floods, drought). Almost always found in association with moss *Andreaea* (and/or *Grimmia*).

**Habitat:** The rock gnome lichen only grows in areas with a great deal of humidity, such as high elevations above 5,000 feet where there is often fog, or in deep river gorges at lower elevations. Habitat is restricted to vertical rock faces occasionally exposed to seepage water. Does well on moist, generally open sites with northern exposures but needs partial canopy coverage on southern or western aspect because it is intolerant of high-intensity solar radiation. High-elevation coniferous forests, red spruce and Fraser fir, usually on rocky outcrop or cliff habitat.

**Distribution:** Endemic to the southern mountains of Tennessee, North Carolina, South Carolina and Georgia. Only 35 populations are known to exist and most are 1 square meter or less in size. The only member of its genus in North America. Populations reported in Ashe, Avery, Buncombe,

Graham, Haywood, Jackson, Macon, Mitchell, Rutherford, Swain\*, Transylvania, and Yancey counties.

**Threats:** Collection, trampling by hikers, climbers, and sightseers. Destruction of Fraser fir forests by exotic insect pests causing changes in the microclimate (increased temperatures) and eventual desiccation of habitat. Logging.

**Management Recommendations:** Protection of plants and habitat from pollution and trampling. Increase public awareness. Encourage landowners to ensure protection and management of site. Monitor for collection, and reroute trails.

\* No record has been reported in this county in the past 20 years.

Source: Murdock, no date; USFWS 1995b, 1997b.