

Wildlife Conservation Land Priority Habitat Management Guidelines

Rock Outcrops



Protected species associated with rock outcrops in the Southern Blue Ridge eco-region include peregrine falcon, Southern rock vole, Alleghany woodrat, green salamander, Southern rock shrew, timber rattlesnake, Eastern woodrat, Eastern small-footed bat, crevice salamander and Southern zig-zag salamander. Occurrence may be elevation dependent with some species.



North Carolina Wildlife Resources Commission

1722 Mail Service Center
Raleigh, NC 27699-1722
Phone: (919) 707-0050
ncwildlife.org

Habitat Description

Rock outcrop habitat is comprised of numerous distinct ecological community types described in the North Carolina Wildlife Action Plan (NCWAP). These community types include boulderfields, rocky summits, granitic domes, acidic cliffs, mafic cliffs, granitic flatrocks, and talus slopes. High elevation rock outcrops occur only in the highest mountain ranges within the Southern Blue Ridge eco-region. Low elevation rock outcrops are found in the Southern Blue Ridge, but also in some areas of the piedmont eco-region.

In general rock outcrops are often characterized as open canopy communities with patchy vegetation due to variability in soil depth and moisture content; however, specific rock outcrop habitats can occur within a forested setting (e.g., boulderfields within northern hardwood forests or small rock outcrops within any forest habitat).

Lichens and mosses occur on bare rock and other vegetation may develop in deep moss mats or crevices (oatgrass species, sedges, mountain dandelion). Woody plants or trees such as mountain laurel, Catawba rhododendron, table mountain pine, red spruce, various oaks, and yellow birch may occur in the deepest soil mats, rock crevices, and at the edge of these habitats.

Water seepage through rock crevices may provide moisture for amphibians, mosses, lichens, and wetland vegetation. Regardless of ecological classification, rock dominates the surface of the land.

Many wildlife species utilize rock outcrop habitat without regard to elevation (e.g., peregrine falcon), whereas others will utilize only high elevation rock outcrop habitats (e.g., rock voles and rock shrews). However, many wildlife species and even more plant species are associated with both high and low elevation rock communities. The elevation limits for each species are quite variable.

The conditions present at individual rock outcrops are unique, owing to geology, geography, elevation, moisture, and landscape position. They may contain discreet communities or they may be dispersed among a variety of other community types that are connected through local geology and landscape conditions. As such, the extent of habitat that each rock outcrop provides is dependent upon the entire set of conditions in and surrounding the surface rock. Those conditions influence its use by plants and animals dependent upon the surface rock and may include significant amounts of adjacent ecological community types.

Management Strategies – Wildlife Conservation Land Program (WCLP)

High elevation rock outcrops are extremely rare, have a very restricted range, and are subject to extreme environmental conditions. Each site can have a somewhat unique set of problems particular to it, ranging from almost no impact to a high degree of impact. Common threats across the range of high elevation rock outcrops include recreation, development, and forest succession.

The two major problems most associated with low elevation rock outcrops include development and recreational impacts. However, many more low elevation rock outcrops are subjected to short term habitat alterations (e.g., forestry operations) than high elevation rock outcrops due to land ownership patterns, proximity to markets, accessibility, and other factors.

This habitat type cannot be created. The only option is to try to protect these unique areas.

Under the WCLP, landowners with both high and low elevation rock outcrops must be willing to institute appropriate restrictions upon use of the areas to minimize the direct impact upon the habitat and its wildlife. This entails closure of sensitive areas at certain times or permanently to stop direct (trampling, loss of habitat to recreation developments - trails, vistas, etc.) and indirect human impacts (disturbance).

Maintenance of biologically significant areas, including peregrine falcon nesting areas, reptile den sites, and significant salamander occurrences may require active management of outcrops to reduce intrusion by alder, rhododendron, and other species, which contributes to the disappearance of some vertebrates. Use of a hand crew to manually cut down encroaching woody vegetation with chainsaws or brush blades is the preferred method. Any use of herbicides and surfactants will need to be of low toxicity to wildlife.

A buffer of sufficient width will be needed to minimize negative impacts to the site and its wildlife. A resource professional can assist with delineating the area to be protected.

Conservation easements are strongly encouraged to help permanently protect these sites.

This and other priority habitat types are listed as habitats of concern in the North Carolina Wildlife Action Plan (NCWAP) and more detailed information concerning each habitat type may be found at www.ncwildlife.org/fs_index_07_conservation.htm.



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