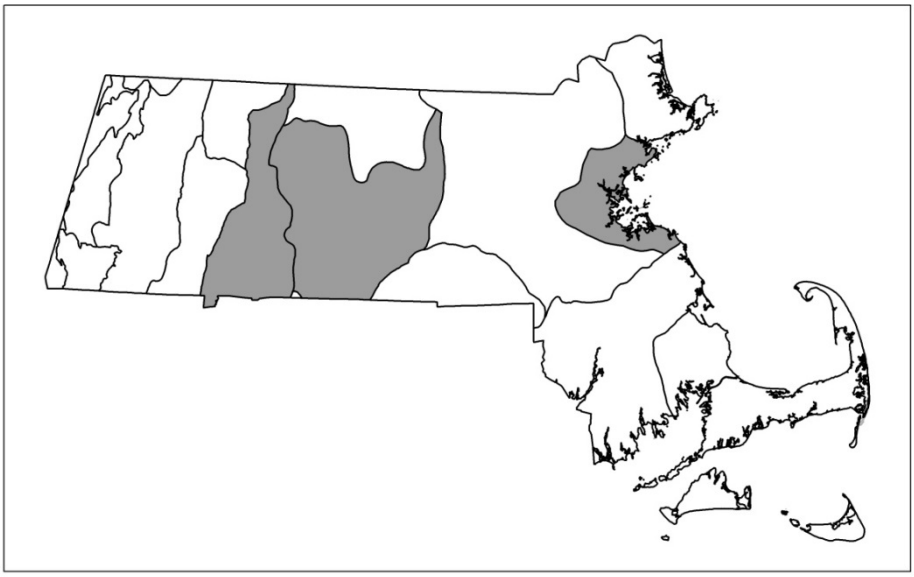
Circumneutral Rocky Summit/Rock Outcrop Community

Community Code: CT2A1B0000

State Rank: S2S3



Concept: A sparsely vegetated open community of grasses, sedges, and herbaceous plants occurring on rocky summits, ridges, or outcrops where the exposed bedrock is circumneutral.

Environmental Setting: This community is found on traprock ridges where it occurs on open ridgetops or steep slopes on exposed traprock. It is found on slopes facing southeast through southwest. These relatively small open areas are often found within an oak-forest matrix near hickory-hop hornbeam communities, with which it shares a number of herbaceous species. The community is also found on other types of circumneutral substrates such as conglomerate. The Circumneutral Rocky Summit/Rock Outcrop Community grades into the Circumneutral Rock Cliff Community near cliffs. Both types of sites are dry with soil confined to cracks in the rock.

Vegetation Description: Grasses, sedges, and forbs dominate this community. Occasional isolated trees of eastern red cedar (*Juniperus virginiana*), shagbark hickory (*Carya ovata*), sweet pignut hickory (*Carya glabra*), and white ash (*Fraxinus americana*) can also be found, so that some examples have an open, savanna-like appearance. The exposed rock is often covered with lichen and mosses (*Polytrichum* sp.). Except for the Carolina rose (*Rosa carolina*) and bearberry (*Arctostaphylos uva-ursi*), which are found on a number of sites, shrubs, including the less common hackberry (*Celtis occidentalis*), are usually restricted to the edge of the openings. The herbaceous layer can be patchy, occupying area between outcrops of rocks, or can be almost continuous where rocks are broken. Dominant species include Pennsylvania sedge (*Carex pensylvanica*), parasol-sedge (*C. umbellata*), poverty grass (*Danthonia spicata*), and little bluestem grass (*Schizachyrium scoparium*). Other species

typically encountered include rusty cliff fern (*Woodsia ilvensis*), rock spikemoss (*Selaginella rupestris*), early saxifrage (*Micranthes virginiensis*), arrow-leaved violet (*Viola sagittata*), small-flowered bittercress (*Cardamine parviflora*), skunk meadow-rue (*Thalictrum revolutum*), strawberry (*Fragaria virginiana*), dwarf dandelion (*Krigia virginica*), pink corydalis (*Capnoides sempervirens*), sleepy catchfly (*Silene antirrhina*), Venus's looking glass (*Triodanis perfoliata*), blue curls (*Trichostema dichotoma*), several species of goldenrods (*Solidago bicolor*, *S. nemoralis*), and other grasses (such as *Aristida dichotoma*, *Panicum* spp., and *Sorghastrum nutans*).

Differentiating Occurrences: Acidic and Calcareous Rocky Summit/Rock Outcrop communities: Presence of columbine (*Aquilegia canadensis*), climbing fumitory (*Adlumia fungosa*), red cedar (*Juniperus virginiana*), pink corydalis (*Capnoides sempervirens*), broad-leaved woodland-sedge (*Carex platyphylla*), ebony spleenwort (*Asplenium platyneuron*), bulblet fern (*Cystopteris bulbifera*), or fragile fern (*C. tenuis*) usually indicates less acidic conditions since these species typically occur in circumneutral outcrops. Presence of plantain-leaf sedge (*Carex plantaginea*), maidenhair spleenwort (*Asplenium trichomanes*), or walking fern (*Asplenium rhizophyllum*) more firmly indicate calcareous conditions. Acidic, Circumneutral, and Calcareous Rock Cliffs: the differentiation between cliffs and rock outcrops/summits is arbitrary. Cliffs are vertical to near vertical (about 60% slope). The assignment to type would be based on overall conditions; it is expected that small (less than about 5000 sq. ft.) patches would be considered to be variation of the surrounding type and would be included in that type. Rocky summit/rock outcrop communities are dominated by bare rock. Ridgetop Pitch Pine - Scrub Oak Communities also occur on rocky ridges, with pitch pine (*Pinus rigida*) and scrub oak (*Quercus ilicifolia*), but usually have less bare rock (this may not be true where abundant visitation has caused loss of plant and soil cover). In Scrub Oak Shrublands, scrub oak is dominant and dense, with few trees, but little bare rock is present. Ridgetop Heathland Community is dominated by heaths, usually lowbush blueberry (*Vaccinium angustifolium*). Depending on size, one site could have multiple types of these communities; if one community type is predominant and the others are in small areas within it, the dominant community type would be named with notes on the variation.

Associated Fauna: Most animals of rock outcrop communities are not sensitive to the chemistry of the rock, but rather are responding to the elevation and dryness of the habitat. Any differences in resident fauna between calcareous and acidic outcrops are most likely due to geographical differences in species distribution rather than to qualitative differences among the types of outcrops. Outcrops tend to be fairly small, and only a part of the habitat of most vertebrate animals. Small mammals of rock outcrop communities include those of dry habitats such as white-footed mouse (*Peromyscus leucopus*), short-tailed shrew (*Blarina brevicauda*) and, in grassy/sedgy areas with some soil accumulation, meadow voles (*Microtus pennsylvanicus*). Snakes would be those of dry areas, such as black racer (*Coluber constrictor*), ringneck (*Diadophis punctatus*), and redbelly snake (*Storeria occipitomaculata*). No turtles, frogs or toads would be expected. Ravens (*Corvus*

corax) are all around high elevations, especially near cliffs where they nest. Invertebrates include tiger beetles.

Public Access: Palmer WMA, Palmer; Mt. Holyoke Range State Park, Amherst/South Hadley/Granby; Mt. Tom State Reservation, Holyoke; Middlesex Fells, Stoneham.

Threats: The major threats are trampling and other uses by people including use of the outcrops as viewpoints. Succession appears to be proceeding slowly, if at all, on many of these sites. However, grazing and possibly fire may contribute to helping keep the areas open. Most sites that are not too steep have evidence of deer browse.

Management Needs: Trails should be kept away from these areas because readily accessible sites are used as viewpoints and picnic areas. Planning of trails should take the fragility of the sites into consideration.

USNVC/NatureServe: *Juniperus virginiana* Woodland Alliance -- *Juniperus virginiana - Fraxinus americana/Danthonia spicata - Poa compressa* Woodland [CEGL006002]; Related to: Central Appalachian Pine-Oak Rocky Woodland (CES202.600) *Schizachyrium scoparium - Danthonia spicata - Carex pensylvanica/Cladonia* spp. Herbaceous Vegetation (not cross-walked to MA from NVC).