

94. White Mountain (White Mountain Natural Area) (Taylor 1979)

Location

This established RNA is on the Inyo National Forest, in Mono County. It lies in the S. White Mountains about 16 miles (26 km) NE. of Bishop. It occupies portions of sects. 1, 12, 13, 14 of T5S, R34E and sects. 6, 7, 8, 18 of T5S, R35E MDBM (37°31'N., 118°11'W.), USGS Mt. Barcroft quad (fig. 187). Ecological subsection – White Mountains (241Dj).

Target Element

Bristlecone Pine (*Pinus longaeva*)

Distinctive Features

Research in Bristlecone Pine Woodland: The area has been used extensively by scientists since the early 1950s as a site for dating ancient bristlecone pines (e.g., Schulman 1954). Additional studies on the vegetation patterns exhibited by the local bristlecone pine stands have also been done in the RNA (e.g., edaphic restrictions between woodland and *Artemisia* scrub, Wright and Mooney 1965), as has paleoclimatic work relating to fossil timberlines (LaMarche and Mooney 1967).

Rare Plants: The following species known from the RNA are listed by CNPS: *Astragalus kentrophyta* var. *danaus* (List 4), *Lomatium foeniculaceum* ssp. *inyoense* (List 4), bristlecone pine (List 4), and *Scirpus rollandii* (List 2). *Carex scirpiformis*, although not listed by CNPS, is apparently a first record for California.

Physical Characteristics

The area covers 2303 acres (932 ha) (listed as 2004 acres [811 ha] in the forest plan) and ranges in elevation from 9439 to 11,434 ft (2877-3485 m). The area lies on the E. side of the White Mountain crest and is drained by Poison Creek and the South Fork of Cottonwood Creek; both are ephemeral in the RNA. Slopes are steep, averaging 30° and are E.- to SE.-trending for the most part. No evidence of Pleistocene glaciation occurs within the area, although Pleistocene-patterned ground is evident at the summit area.

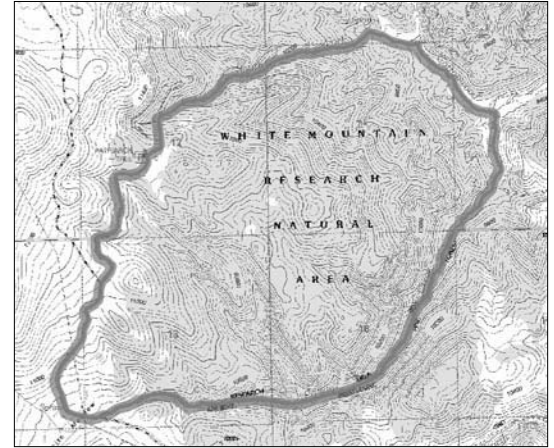
Bedrock varies from the Precambrian Reed dolomite and Wyman formation (also calcareous) to extensive outcrops of granitic rock (Jurassic quartz monzonite), which outcrop mostly N. of the area. Soils are shallow lithosols. Annual precipitation is about 14 inches (347 mm), and temperatures are cold, with the mean annual temperature about 34 °F (1.3 °C).

Association Types

Seven 706-m² plots were sampled in the bristlecone pine association. No acreages are given for the associations.

Bristlecone Pine Association (86400): Bristlecone pine forms an open, subalpine woodland in the upper reaches of the area. Canopy cover is about 15-20 percent maximum. Bristlecone pines in this vegetation are almost always multi-trunked and massive. Basal area and density of bristlecone pine average 59.7 m²/ha and 128 stems/ha.

Bristlecone Pine/*Cercocarpus intricatus* Association (86400): Subalpine forests on dolomite below about 10,170 ft (3100 m) are an admixture of bristlecone pine with or without the shrub *Cercocarpus intricatus* (fig. 188). No sampling is provided, although there is a limited description.



**Figure 187—
White Mountain
RNA**



Figure 188—White Mountain, lower reaches of White Mountain RNA at junction of South Fork Cottonwood Creek with Poison Creek. *Pinus longaeva* – *Cercocarpus intricatus* vegetation is seen on the slopes in the background. *Pinus flexilis* – *Cercocarpus ledifolius* and *Artemisia tridentata* ssp. *vaseyana* vegetation is seen in the foreground slopes. Small meadow in foreground is bordered by *Artemisia cana* ssp. *bolanderi* and *Salix pseudocordata*. (1977)

common species include *Linum lewisii*, *Astragalus calycosus*, *A. kentrophyta* var. *danaus*, and *Hymenoxys cooperi*. The type is restricted to the upper slopes of the area just at timberline on N. slopes or snow accumulation areas. It covers about 10 percent of the area.

***Artemisia rothrockii* Association (35220):** Low shrubs dominate this type, predominantly *A. rothrockii* and *Chrysothamnus viscidiflorus*. Additional species include *Stipa pinetorum*, *Lupinus meionanthus*, *Agoseris glauca*, and *Cryptantha jamesii*. This vegetation is limited to calcareous substrates at the upper elevations of the area. *A. rothrockii* dominates shallow depressions or drainages filled with colluvium. Cover is moderately high. This association covers about 10 percent of the area.

Aspen (*Populus tremuloides*) Association (81B00): Aspen forms dense clones on mesic lower sites along Poison and the South Fork of Cottonwood creeks. The understory is dense with such species as *Elymus cinereus*, *Agropyron trachycaulum*, and *Artemisia dracunculus*.

Meadows (45210, 45220): Meadow vegetation occurs at the junction of Poison and the South Fork of Cottonwood creeks and on the SW. corner on rolling slopes. The latter locale is dominated by *Juncus balticus*, *Poa fendleriana*, *Muhlenbergia richardsonis*, and *Carex douglasii*. Meadows along the lower reaches of the area are perennially wet, whereas the upper meadow is dry by midsummer. The lower meadows have a willow border (*Salix leutea* and *S. pseudocordata*) with *Artemisia cana* dominant at high calcium sites along with *Carex praegracilis*, *Melica bulbosa*, and *Muhlenbergia richardsonis*. The meadow proper is dominated by *Deschampsia caespitosa*, *Carex nebrascensis*, *C. scirpiformis*, *Scirpus pumilis*, and *Sisyrinchium idahoense*.

Plant Diversity

One hundred seventy-six species of vascular plants are listed.

Conflicting impacts

A gravel road leading to the Patriarch Grove, a well-visited tourist site, forms the upper boundary. A short trail with rest benches enters the area for several hundred meters. However, direct human impact is negligible over most of the area except the nature trail, where some litter and cut snags are apparent. The meadow areas have been grazed fairly heavily (considered a serious threat to the populations of *Carex scirpiformis* and *Scirpus rollandii* in 1979), and there is some trespass of livestock into the upper edge of the area near Campito Meadow.

Limber Pine/*Cercocarpus ledifolius* Association (86400, 86700): Limber pine codominates the tree canopy of the lower slopes in the area with bristlecone pine on rocky sites. Canopy cover is higher than in the upper-slope bristlecone pine woodland, approaching 50 percent, and bristlecone pine trunks are more tapered. *Cercocarpus ledifolius* replaces *C. intricatus*, and hybrids are common.

***Phlox covillei*/*Eriogonum gracillipes* Association (91140):** This type is limited to alpine sites underlain by Reed dolomite. Vegetation is sparse (<30 percent cover). *P. covillei* and *E. gracillipes* are diagnostic and dominant. Other