

22. Cub Creek (Lassen National Forest 1981, Taylor and Randall 1978)

Location

This established RNA is on the Lassen National Forest. It lies about 12 miles (19 km) S. of Mineral, occurring in portions of sects. 13, 14, 15, 23, 24, and 25 T27N, R4E and sects. 18, 19, 20, 29, and 31 T27N, R5E MDBM (40°10'N., 121°9'W.), USGS Butte Meadows and Jonesville 15' quads (*fig. 45*). Ecological subsections – Lassen-Almanor (M261Dm) and Shingletown-Paradise (M261DI).

Target Element

Mixed Conifer Forest

Distinctive Features

Successional Trends in Mixed Conifer Forest:

Throughout the elevational range of forest in the drainage, only white fir (*Abies concolor*) shows an abundance of individuals of smaller size classes (*fig. 46*). At present there are no data suggesting white fir mortality patterns change with age. Thus, barring fire intervention, forest composition may change towards strong white fir dominance and reduced diversity of associated canopy species. The Cub Creek watershed shows a wide variety of possible study sites for investigations of long-term successional trends within the mixed conifer and adjacent zones.

Large Size and Ecological Integrity: The preservation of the area as an entire watershed will be useful for ecosystem-wide studies, and the large area of the RNA will enable many studies to take place within its boundaries without the need to select additional locations.

Physical Characteristics

The area covers 3922 acres (1587 ha) that include the majority of the Cub Creek watershed. Cub Creek is a low-order tributary of Deer Creek, draining the W. slope of the S. Cascades. Elevations range from 3725 to 6703 ft (1136-2044 m). Gross topography is moderately steep (25-40°). However, because of many small cliffs less than 66 ft (20 m) high, the microtopography is more rugged than indicated on topo-graphic maps. The stream runs in a NW. direction, making NE. and SW. slopes the predominant aspect in the area.

Rocks are entirely Pliocene volcanics. Vertical cliffs are primarily breccia and often capped by resistant andesite. Soil depth is greatest on NE.-facing slopes, but no detailed account of soils was available at the time of the survey. Climate is typical summer-dry, winter-wet with total annual precipitation at Mineral averaging 51.5 inches (1309 mm). Mineral's average annual temperature is 46 °F (7.6 °C) with a January average of 30.6 °F (-0.8 °C) and a July average of 63.0 °F (17.2 °C).

Association Types

Seven plots were sampled in the mixed conifer forest and four in the red fir zone.

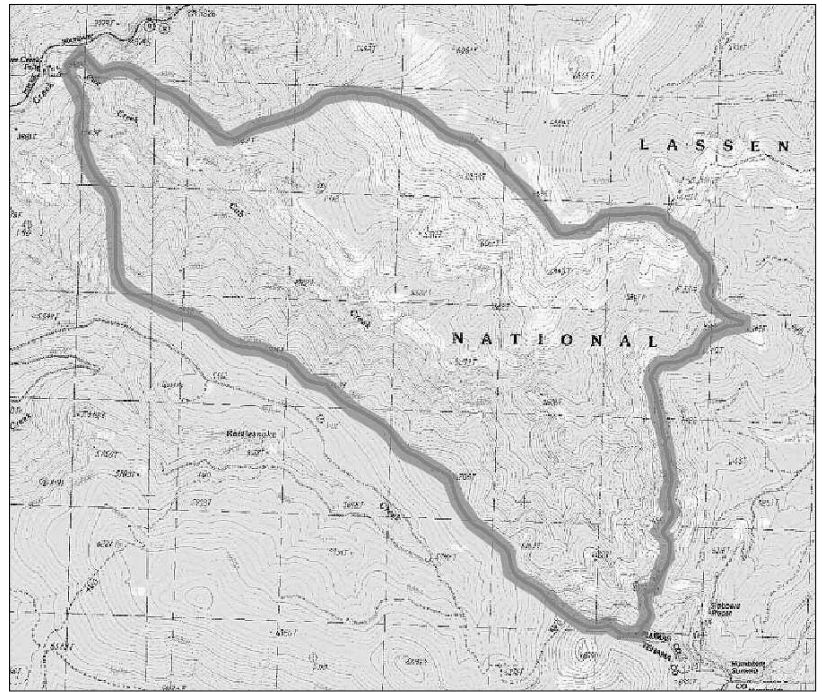


Figure 45—Cub Creek RNA

***Arctostaphylos patula*-*Quercus vaccinifolia* (37510):** 974 acres (397 ha). This is a seral brush association that is trending toward forest in most sites. *A. patula*, *Ceanothus integerrimus*, and *Q. vaccinifolia* dominate the vegetation, forming a closed canopy 1-1.5 m tall. Herbs are sparse. On very rocky sites at lower elevations within the drainage this may be a climax type.

Ponderosa Pine/Douglas-Fir/Incense-Cedar (*Pinus ponderosa*-*Pseudotsuga menziesii*-*Libocedrus decurrens*) (84230): 901 acres (365 ha). This association shows the typical variation in dominance between the five principal dominants of the Sierran mixed conifer forest: ponderosa pine, Douglas-fir, sugar pine (*Pinus lambertiana*), incense-cedar, and white fir. Incense-cedar has the highest frequency of occurrence, followed by Douglas-fir, ponderosa pine, and sugar pine. Basal area ranges from 89 to 124 m²/ha, and density ranges from 808 to 1050 trees/ha. Shrubs are not indicated on the samples. Herbs are represented by *Bromus marginatus*, *Polygala cornuta*, *Viola lobata*, *Pedicularis densiflora*, *Iris hartwegii*, *Carex multicaulis*, *Arceuthobium campylopodum*, *Hieracium albiflorum*, and *Galium bolanderi*, most of which are less than one percent cover.

***Sitanion hystrix*-*Chrysothamnus nausiosus* (35400):** 481 acres (191 ha). This association occupies rocky or shallow soil sites at the highest elevations within the Cub Creek basin. These sites are dry and well-drained with little snow cover in winter because of wind exposure. The vegetation is composed of cold-desert type species. Other species beside the two definitives include *Penstemon laetus*, *Phacelia frigida* ssp. *dasyphylla*, *Calyptridium umbellatum*, *Eriophyllum lanatum* ssp. *integrifolium*, *Artemisia arbuscula*, *Leptodactylon pungens* ssp. *hookeri*, *Calochortus leichtlinii*, *Sanicula tuberosa*, *Phlox diffusa*, *Pteryxia terebinthina* var. *californica*, *Allium plauticaule*, *Galium hypotrichium*, *Eriogonum microthecum*, *Penstemon deustus*, *Collomia tinctoria*, and *Eriogonum ursinum*.

Red Fir (*Abies magnifica*)-White Fir-Western White Pine (*Pinus monticola*) (84240, 85310): 1366 acres (552 ha). The four plots yield basal area cover of 56-123 m²/ha, with white fir, red fir, and western white pine dominating the canopy. Densities range from 301 to 1902 trees/ha. This forest shares some species of shrubs and herbs with the montane chaparral, and it appears that most of the montane chaparral in the drainage will succeed to this type of forest. Shrub and herb species include *Quercus vaccinifolia*, *Smilacina racemosa amplexicaulis*,



Figure 46—Cub Creek, view of the southwest-facing slopes at the head of Cub Creek. Montane chaparral alternates with patches of *Abies concolor*-*Abies magnifica* reproduction. *Arctostaphylos patula* and *Ceanothus integerrimus* dominate the chaparral. Cliffs are formed from resistant volcanic rocks. Barren areas within the chaparral are vegetated by the *Sitanion hystrix*-*Chrysothamnus nauseosus* association. (1976)

Penstemon gracilentus, *Monardella odoratissima* ssp. *pallida*, *Arctostaphylos nevadensis*, *Ribes viscosum* ssp. *hallii*, *Chrysopsis breweri*, *Acer glabrum*, *Pyrola picta*, and *Chimaphila menziesii*.

Douglas-Fir-Pacific Dogwood (*Cornus nuttallii*) (84110): 160 acres (64 ha). Douglas-fir is the dominant canopy species and occurs with white fir, incense-cedar, Pacific dogwood, California black oak (*Quercus kelloggii*), and bigleaf maple (*Acer macrophyllum*). This type occurs on only the lower NE.-facing slopes of the area. One plot sampled in this type indicates a near-equal importance of Douglas-fir and incense-cedar, with much lower importance of other tree species. Shrubs are apparently very sparse (none listed), and herbs include *Goodyera oblongifolia*, *Pteridium aquilinum pubescens*, *Disporum hookeri* var. *trachyandrum*, *Corallorhiza maculata*, *Trientalis latifolia*, *Asarum hartwegii*, and *Chimaphila umbellata* ssp. *occidentalis*.

***Carex microptera*-*Glyceria striata* (45100):** 40 acres (16 ha). Meadows are few in number and small. Among the species included in this association are *Veratrum californicum*, *Muhlenbergia filiformis*, *Deschampsia elongata*, *Mimulus primuloides* ssp. *pilosellus*, *Sagina saginoides* ssp. *hesperia*, *Hypericum anagalloides*, *Taraxacum officinale*, *Epilobium oregonense*, *Mimulus guttatus*, *Trifolium longipes*, *Veronica americana*, and *Viola adunca*.

Plant Diversity

Two hundred thirty-one plant taxa are listed.

Conflicting Impacts

No conflicts of major importance are indicated. Access to the lower reaches of the drainage is somewhat difficult. Slopes are steep and rugged, limiting to some degree the ease of scientific study.