

60. Mount Pleasant (Keeler-Wolf and Keeler-Wolf 1981, Keeler-Wolf 1989m)



Figure 122—Mount Pleasant RNA

Dashed line =
Ecological study area
Solid gray line = RNA
Boundary

Location

This established RNA is on the Plumas National Forest, Plumas County. It is 5 miles (8 km) N. of the resort area along the S. shore of Bucks Lake. It lies within portions of sects. 2, 10, 11, 14, 15, and 22 of T24N, R7E MDBM (39°57'N., 121°10'W.), USGS Bucks Lake quad (fig. 122). Ecological subsection – Greenville-Graeagle (M261Ed) and Bucks Lake (M261Ee).

Target Elements

Red Fir (*Abies magnifica*)

Distinctive Features

Compared to other surveyed Sierra Nevada red fir candidate RNAs (Green Island Lake cRNA, Onion Creek study area, Merced River cRNA, Teakettle Creek study area), Mount Pleasant has the following distinctions:

Red fir is overwhelmingly the dominant tree throughout forested portions. Red fir is reproducing in many different cover and stand types including S. and W. aspects rare or absent at other sites. Growth rates appear to be very rapid on SW.

exposures; the RNA may have one of the most quickly maturing and reproducing red fir forests known.

The local mode of red fir reproduction differs from the standard type for the species (e.g., continual versus the typical pulse type, as described in Rundel and others [1977]). There is regular reseeding and a high percentage of uneven-age classes throughout the area in different stands. Continual reestablishment may result from high annual precipitation providing mesic conditions necessary for optimum germination and growth of seedlings.

All trees are short-cone bract *A. magnifica*, but only about 30 miles (48 km) N., most red fir is exserted-bract *A. magnifica* var. *shastensis*.

Mount Pleasant is the only red fir RNA with a well-represented bog flora, rare in the Sierra Nevada (see Grass Lake RNA).

Mount Pleasant is the only red fir RNA completely on granitic rock, the most widespread rock in the higher Sierra Nevada.

Rare Plants: *Penstemon neotericus* (CNPS List 4), *Sparganium minimum* (CNPS List 3)

Physical Characteristics

The area studied in the ecological survey is about 1785 acres (722 ha); however, the established RNA is 1416 acres (573 ha). Elevations range from 5800 to 7120 ft (1768-2170 m). Slope aspect is primarily SW. with a gentle gradient to the summit of Mount Pleasant. The survey also encompasses portions of the steep, glaciated NE.-facing escarpment of the mountain (not within the established RNA).

The principal rock type is granodiorite. Near the summit area are small andesitic dikes. The climate is montane Californian with exceptionally high winter precipitation. Mean April 1 snow depth at the snowcourse at the edge of the area (5910 ft, 1801 m) is 95 inches (241 cm). Mean winter snow depth may be more than 144 inches (366 cm) at the higher elevations. Estimated mean annual precipitation is 85-90 inches (2159-2286 mm) (Rantz 1972).

Association Types

A total of fifteen 0.1-ha plots were sampled in the red fir forest.

Red Fir Forest (85310, 84240): 1094 acres (443 ha). Red fir forests range from sheltered 175-ft (53-m) tall groves of 60- to 70-inches (1.5- to 1.8-m) dbh trees with little understory to open park-like stands with well-developed shrubby to herbaceous understories. Over the elevation gradient, red fir occurs as a codominant with white fir (*Abies concolor*) at low elevations, forms extensive monospecific forests throughout the mid-elevations, and codominates with western white pine (*Pinus monticola*) and locally with mountain hemlock (*Tsuga mertensiana*) at the highest elevations. Tree densities on the plots vary from 200 to 720/ha (mean 381), seedlings and saplings (all individuals <6 ft, or 1.8 m) range from 100 to 6030/ha, and basal area cover ranges from 32 to 189 m²/ha (mean, 98 m²/ha). Herb and shrub cover vary greatly from open to closed stands.

Three main subtypes of *A. magnifica* forest are identified: a relatively xeric, shallow-soil, open forest characterized by the presence of mountain chaparral shrubs (five shrub and six herb species characteristic); an open forest with poor shrub layer but dense herbs (22 species characteristic) in the *Monardella-Chrysopsis* union of Oosting and Billings (1943); and a closed forest with no shrub layer and sparse herbs (15 species listed) ranging from shade-tolerant meadow border species to more xerophilic ericaceous interior forest species (fig. 123).

Mountain Riparian (63500): 109 acres (44 ha). This association is dominated by *Alnus tenuifolia* with *Salix orestera* and *S. caudata*. Other woody species include *Sorbus californicus*, *Cornus stolonifera*, *Sambucus microbotrys*, *Salix ligulifolia*, *Spiraea douglasii*, *Lonicera conjugialis*, *Leucothoe davisiae*, and *Kalmia polifolia* var. *microphylla*. There are many hydrophilic herbs and grasses, including *Aconitum columbianum*, *Athyrium felix-femina*, *Boykinia major*, *Circaea alpina* var. *pacifica*, *Epilobium angustifolium*, *Lilium pardalinum*, *Mitella breweri*, *Thalictrum fendleri*, and *Viola glabella* (23 species listed as characteristic).

A distinctive phase on the NE. escarpment is dominated by *Salix orestera* with *Rhamnus alnifolia*, aspen (*Populus tremuloides*), *Sorbus californica*, *Spiraea douglasii*, and *Athyrium alpestre* var. *americana*.

Rock Outcrops (91200): 125 acres (51 ha), not included in the RNA. Mostly on NE.-facing granitic escarpment, this association includes a shrub-dominated mesophilic subtype with *Acer glabrum* var. *torreyi*, *Ribes nevadense*, *Spiraea densiflora*, *Heuchera rubescens* var. *glandulosa*, *Juncus nevadensis*, *Luzula divaricata*, *Phyllodoce breweri*, *Poa hansenii*, *Primula suffrutescens*, *Saxifraga bryophora*, and *Silene douglasii*. There is also a xeric subtype with *Sedum obtusatum* ssp. *boreale*, *Zauschneria californica* ssp. *latifolia*, *Penstemon newberryi*, *P. deustus*, *Cheilanthes gracillima*, *Eriogonum lobbii*, *Streptanthus tortuosus* var. *orbicularis*, and *Arenaria nuttallii* ssp. *fragilis*.

Mountain Chaparral (37510, 37542, 37520): 85 acres (34 ha). This association is primarily an edaphic climax in this area, occurring on rocky ridgetops or escarpments. Dominants vary with *Quercus vaccinifolia*, *Chrysolepis sempervirens*, and *Ceanothus velutinus* on relatively mesic or deeper soils. *Arctostaphylos nevadensis* and *A. patula* commonly dominate on shallowest or driest exposures. There are few herbs.

Meadow (45110, 45210): 55 acres (22 ha). Three subtypes occur, varying from wet to moist. Thirty-six species are listed as typical for the wet subtype, including *Cardamine breweri*, *Carex jonesii*, *C. nervina*, *Deschampsia caespitosa*, *Epilobium hornemannii*, *Glyceria elata*, *Habenaria dilitata* var. *leucostachys*, *H. sparsiflora*, *Juncus nevadensis*, *Luzula subcongesta*, *Saxifraga oregana*, *Sphenosciadium capitellatum*, and *Viola adunca*.

The moist subtype is more extensive, with 22 typical species including *Achillea lanulosa*, *Aster elatus*, *Delphinium depauperatum*, *Deschampsia danthonoides*, *Gilia capillaris*, *Lewisia nevadensis*, *Ligusticum grayi*, *Mimulus breweri*, *Penstemon oreocharis*, *Perideridia parishii*, and *Veratrum californicum*.

The moist, NE.-facing granite bench subtype has 14 species not present in other subtypes, including *Agrostis variabilis*, *Arnica diversifolia*, *Aster campestris* var. *bloomeri*, *Carex spectabilis*, *Phacelia procera*, *Phyllodoce breweri*, *Poa epilis*, *Potentilla drummondii*, and *Saxifraga bryophora*. It bears some similarities to subalpine meadows (Holland 45210).

Dry Meadow (45120): 10 acres (4 ha). This is a minor association within the red fir zone at the head of valleys above meadows and riparian scrub, often on N. or NW. exposures. The soil is deep decomposed granite. Late snowmelt and well-drained soil here may preclude establishment of forest. Herbs include *Astragalus bolanderi*, *Calyptridium umbellatum*, *Castilleja paysonae*, *Eriogonum umbellatum* var. *polyanthum*, *E. ursinum*, *Haplopappus bloomeri*, *Lupinus obtusilobus*, *Penstemon laetus* ssp. *leptosepalus*, and *Phlox diffusa*.



Figure 123—Mount Pleasant, a complex of wet and moist meadow habitat surrounded by montane riparian thicket and dense red fire forest in Mount Pleasant RNA. (1981)

Bog-Fen (51110, 51200): 20 acres (8 ha). Two subtypes occur: submerged and raised. Submerged bog species include *Menyanthes trifoliata*, *Sparganium minimum*, *Potamogeton natans*, *Nuphar polysepalum*, *Heleocharis acicularis* var. *bella*, *H. montevidensis*, *Carex rostrata*, and *C. limosa*. Raised bog species include *Sphagnum* sp., *Drosera rotundifolia*, *Mimulus primuloides* var. *pilosellus*, *Castilleja lemmonii*, *Pedicularis attolens*, *Aster alpigenus* ssp. *andersonii*, *Carex angustior*, *C. gymnoclada*, *C. senta*, *Camassia leichtlinii* ssp. *suksdorfii*, *Poa palustris*, *Polygonum bistortoides*, *Viola macloskeyi*, *Vaccinium occidentale*, and *Kalmia polifolia* var. *microphylla*.

Lodgepole Pine (*Pinus contorta* ssp. *murrayana*) Forest (86100): 43 acres (17 ha). This association forms narrow border groves along larger meadows and stream courses. Regeneration is healthy, with several age classes; some trees are up to 45 inches (1.1 m) dbh and 135 ft (41 m) tall. Some areas of dead snags suggest water level fluctuations or infestations of needle miners. The understory is a subset of adjacent meadow and riparian associations.

Plant Diversity

Two hundred forty-five species of vascular plants are listed for the area.

Conflicting Impacts

Cattle grazing has been a consistent pressure on the area for many years. By the end of the summer, grazing exerts a strong visual impact on the vegetation of the bog, meadow, and riparian areas. There is evidence of increased erosion and habitat degradation in hydric associations. The area is now part of Bucks Lake Wilderness. About 2 miles (3.2 km) of a lightly used portion of the Pacific Crest Trail traverses the upper elevations.