

## 37. Harvey Monroe Hall (Taylor 1984)

### Location

This established RNA is on the Inyo National Forest. The S. end of the RNA is only 1 mile (1.6 km) N. of Tioga Pass (Highway 120). It occupies all or portions of sects. 34 and 35 T2N, R24E and sects. 1, 2, 3, 10, 11, 12, 13, and 14 T1N, R24E MDBM (37°58'N., 119°19'W.), USGS Tioga Pass quad (fig. 76). Ecological subsection – Glaciated Batholith (M261Eo).

### Target Element

Alpine Meadows and Sierran Mixed Subalpine Forest

### Distinctive Features

**Long History of Research:** This RNA was one of the first established in California (1933). The Carnegie Institute of Washington's classic studies on genotype-environment interactions made much use of the transplant gardens at the S. end of the RNA. Many related studies were carried out in the 1940s and 1950s at these gardens. Since then, other researchers have used the area, studying social organization of Belding ground squirrels, dynamics of wind-blown detritus in snow banks, and community structuring of subalpine forest birds. A partial bibliography listed by the author of this survey cites 41 references pertaining to the RNA.

**High Floristic and Vegetational Diversity:** Despite the high elevation of the RNA, a great variety of plants and association types occur. The many studies and botanical collections made in the area have made this one of the best-known RNAs botanically. Three hundred ninety-eight taxa of vascular plants in 190 genera and 55 families are represented. An extensive program of vegetation sampling conducted in this survey revealed 10 major habitat types, which were broken down into 31 vegetation alliances and 66 plant associations.

**Rare Plants:** Two species present in the RNA are members of CNPS List 2: *Salix brachycarpa* and *Salix reticulata* ssp. *navalis*. The following are members of CNPS List 4: *Astragalus kentrophyta* var. *danaus*, *Podistera nevadensis*, and *Scirpus clementis*.

**Aquatic Values:** Fifteen lakes occur in the RNA in addition to a number of smaller perennial and ephemeral ponds. Lakes occur on various substrates (metamorphic and granitic) which affect their chemistry and biota. Eight small watersheds of approximately equal size are present, each with a perennial stream. Most of the streams arise from snowmelt. Three glaciers occur in the RNA; the largest is about 160 acres (65 ha).

### Physical Characteristics

The RNA covers 3883 acres (1571 ha). Elevations range from 9600 ft (2926 m) along Lee Vining Creek to 12,590 ft (3837 m) atop Mount Conness. The entire area is drained by Lee Vining Creek, which flows from NW. to SE. Glaciation strongly affected the topography. Several deeply glaciated NE.-facing cirques are present,

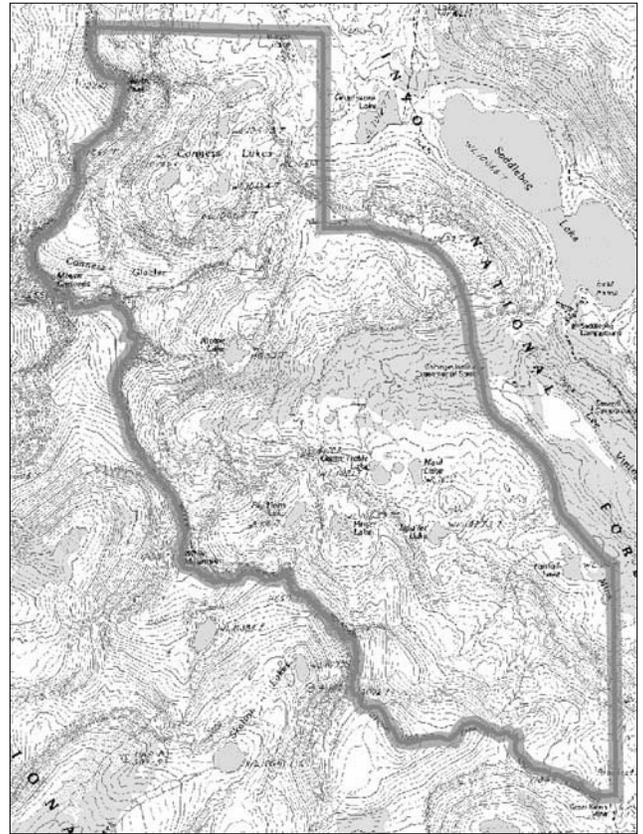


Figure 76—Harvey Monroe Hall RNA

with steep headwalls and flats or lakes at their floors. Much of the lower elevation area is stepped topography resulting from differential erosion along jointing planes in the granitic bedrock. The granitic rocks are part of the Cathedral Peak Quartz Monzonite and the Half Dome Quartz Monzonite. They occupy the W. part of the area. The E. portion is underlain by various metamorphic rocks including Paleozoic

and Mesozoic metasediments, metadacite, banded calc-silicate hornfels, calc-silicate hornfels varying to limestone-marble, and basic metavolcanics. Soils are typically shallow and poorly developed except in meadows. The climate is high Sierran montane with copious winter snowfall. Average annual precipitation is estimated to be more than 25 inches (635 mm). There is great variation in temperature and growing season, between S.- and N.-facing slopes, valley bottoms, and so forth.



**Figure 77—Harvey Monroe Hall, View of typical subalpine landscape representative of the H.M. Hall RNA with *Pinus contorta* in the foreground. (1982)**

### **Association Types**

A total of 374 stands of vegetation were sampled (releve method), and the results classified using the computer-generated TWINSPAN hierarchical system and detrended correspondence analysis ordination to produce the association tables. The

primary division is between dry and wet sites. Within dry sites the next division is made between alpine and subalpine communities (a reflection primarily of temperature differences). The next level of division within dry sites is related to late and early snow-melt patterns. Wet site classification is based on site productivity with graminoid-dominated meadows being 2-3 times less productive than tall, herb-dominated associations. A total of 66 vegetation associations, grouping into thirty-one alliances, were delineated. The following summary lists the ten major habitat types with their corresponding alliances and associations. Sizes for associations are not given.

#### **1. Rock Fissures (91200):**

*Cystopteris fragilis* alliance

*Heuchera rubescens*-*Cystopteris fragilis* association

*Oxyria digyna* alliance

*Draba lemmonii*-*Oxyria digyna* association

#### **2. Scree, Talus and Rock Outcrop Communities (91200):**

*Carex congdonii*-*Arnica amplexicaulis* alliance

*Arnica amplexicaulis*-*Carex congdonii* association

*Sambucus microbotrys*-*Carex congdonii* association

*Artemisia rothrockii* alliance

*Holodiscus dumosus* (*H. microphyllus*)-*Mimulus suksdorfii* association

*Stipa occidentalis*-*Eriogonum nudum* association

*Artemisia rothrockii*-*Monardella odoratissima* association

*Saxifraga nidifica*-*Mimulus rubellus* alliance

*Saxifraga nidifica*-*Mimulus rubellus* association

*Rhodiola integrifolia*-*Selaginella watsonii* association

*Saxifraga bryophora* association

*Polygonum minimum* association

*Penstemon newberryi*-*Streptanthus tortuosus* alliance

*Sedum obtusatum*-*Muhlenbergia montana* association

*Spiraea densiflora* association

*Pentaphylloides floribunda* (*Potentilla fruticosa*) alliance

*Pentaphylloides floribunda*-*Danthonia unispicata* association

**3. Xeric Alpine Communities (91120):**

*Minuartia nuttallii* (*Arenaria nuttallii*)-*Haplopappus macronema* alliance

*Minuartia nuttallii* association

*Calamagrostis purpurascens* alliance

*Calamagrostis purpurascens*-*Leptodactylon pungens* association

*Chrysothamnus monocephalus*-*Leptodactylon pungens* association

*Elymus* (*Sitanion*) *hystrix*-*Phlox covillei* alliance

*Festuca minutiflora*-*Penstemon davidsonii* association

*Podistera nevadensis*-*Erigeron pygmaeus* association

*Astragalus kentrophyta*-*Draba oligosperma* association

*Elymus hystrix*-*Phlox covillei* alliance

*Phlox covillei*-*Eriogonum incanum* association

*Ivesia muirii* association

*Hulsea algida* alliance

*Macronema discoideum* (*Haplopappus macronema*)-*Phacelia frigida* association

**4. Subalpine Forests (86100, 86210, 86220, 86600):**

*Pinus contorta* (lodgepole pine) alliance (fig. 77)

*Pinus contorta*-*Carex rossii* association

*Pinus contorta*-*Thalictrum fendleri* association

*Pinus contorta*-*Ledum glandulosum* association

*Pinus albicaulis* (whitebark pine) alliance

*Pinus albicaulis*-*Poa nervosa* association

*Pinus albicaulis*-*Penstemon davidsonii* association

*Tsuga mertensiana* (mountain hemlock) alliance

*Tsuga mertensiana*-*Arnica cordifolia* association

**5. Snowpatch Communities (91300):**

*Juncus parryi* alliance

*Juncus parryi*-*Eriogonum incanum* association

*Phyllodoce breweri* association

*Carex spectabilis*-*Sibbaldia procumbens* association

*Carex helleri* alliance

*Eriogonum incanum*-*Raillardella argentea* association

*Carex helleri*-*Ivesia lycopodioides* association

*Saxifraga tolmiei*-*Luzula divaricata* association

*Carex breweri* alliance

*Carex breweri* association

**6. Well-Drained Meadows (45220, 45210):**

*Carex exserta* alliance

*Carex exserta*-*Saxifraga aprica* association

*Calamagrostis breweri* alliance

*Calamagrostis breweri*-*Vaccinium caespitosum* association

*Calamagrostis breweri*-*Kalmia microphylla* association

*Salix orestera*-*Calamagrostis breweri* association

- Juncus drummondii*-*Calamagrostis breweri* association  
*Danthonia unispicata* alliance  
*Ptilagrostis (Oryzopsis) kingii*-*Senecio scorzonella* association  
*Phleum alpinum*-*Danthonia unispicata* association  
*Melica bulbosa* alliance  
*Stipa lemmonii*-*Carex stramineiformis* association  
*Juncus balticus* association
- 7. Tall-Herb and Willow Thickets (63500, 45210):**  
*Salix orestera*-*Allium validum* alliance  
*Salix orestera*-*Allium validum* association  
*Salix orestera*-*Senecio triangularis* association  
*Salix planifolia*-*Carex scopulorum* association  
*Veratrum californicum* alliance  
*Veratrum californicum*-*Senecio triangularis* association  
*Senecio triangularis*-*Carex spectabilis* association  
*Arnica mollis* alliance  
*Arnica mollis*-*Arabis davidsonii* association
- 8. Poorly-Drained Meadows (45210):**  
*Carex luzulaefolia* alliance  
*Carex luzulaefolia*-*Ranunculus alismaefolius* association  
*Carex scopulorum*-*Pedicularis groenlandica* alliance  
*Eriophorum crinigerum*-*Carex scopulorum* association  
*Carex scopulorum*-*Pedicularis groenlandica* association  
*Eleocharis pauciflora* association  
*Carex deweyana* alliance  
*Rorippa curvisiliqua*-*Carex deweyana* association  
*Juncus mertensianus* association  
*Carex nigricans* alliance  
*Salix arctica* association  
*Carex subnigricans*-*Dodecatheon alpinum* association  
*Carex nigricans*-*Kalmia microphylla* association  
*Carex vernacula*-*Antennaria alpina* association
- 9. Flowing Springs and Shallow Streams (45210, 63500):**  
*Mimulus tilingii* alliance  
*Claytonia nevadensis* association  
*Mimulus tilingii*-*Poa gracillima* association  
*Deschampsia caespitosa* alliance  
*Deschampsia caespitosa*-*Solidago multiradiata* association
- 10. Shallow Ponds and Standing Water (52430):**  
*Carex rostrata* alliance  
*Torreyochloa (Puccinellia) pauciflora*-*Isoetes bolanderi* association  
*Carex rostrata* association

### **Plant Diversity**

Three hundred ninety-eight taxa of vascular plants are listed.

***Conflicting Impacts***

The area is bounded on the SE. by a good gravel road to Saddlebag Lake and is only a few miles by road from Tioga Pass (Yosemite National Park E. entrance). However, recreational use of the area is apparently not a significant impact in most areas. In the late 1800s and early 1900s sheep apparently overgrazed much of this area. However, no certain evidence of this impact remains.