

32. Green Island Lake (Fiedler and others 1986)

Location

This recommended RNA is on the Lassen National Forest. It lies about 16 miles (26 km) SW. of Canyon Dam. The area occupies portions of sects. 5, 6 T25N, R6E and sects. 1, 2 T25N, R5E MDBM (40°03'N., 121°22'W.) USGS Jonesville and Belden quads (fig. 66). Ecological subsection – Lassen-Almoanor (M261Dm).

Target Element

Moss Bog

Distinctive Features

Meadow and Aquatic Resources: Meadows are found throughout the area either as small patches in forest openings or as large successional types surrounding lakes (fig. 67). Four permanent lakes and five ephemeral ponds occur in the area. The large lakes are described individually. They vary in their productivity, with Saucer Lake being deeper and less productive than Green Island Lake, which contains a large population of introduced but reproducing brook trout as well as numerous aquatic insects and plants. Frog Lake is also relatively productive. Several small streams are partially included in the rRNA, and the main streams of Firstwater and Soda creeks form the E. and N. boundaries, respectively. Although there are no true quaking bogs in the area, the wet meadows bordering Green Island and Frog lakes are well-developed and diverse. A great variety of aquatic insects inhabit the aquatic habitats of this basin.

Vegetation Dynamics and Diversity: The vegetation at this rRNA consists of an interdigitation of forest, meadow, riparian thickets, and montane chaparral communities in a dynamic arrangement. Various stages of succession are present, ranging from lake to meadow to lodgepole pine (*Pinus contorta* ssp. *murrayana*) forest to red fir (*Abies magnifica*) forest, or from chaparral to upper-elevation mixed conifer forest. Portions of the area are underlain by ultramafic (serpentinite) rock, which is vegetated with an open form of montane chaparral.

Rare Fauna: Wolverine (*Gulo gulo*, State-listed threatened species, Forest Service-listed sensitive species) and northern goshawk (*Accipiter gentilis*, California species of special concern, Forest Service-listed sensitive species) have been seen in the basin.

Physical Characteristics

This study area covers 1185 acres (480 ha). Elevations range from 5280 ft (1609 m) at the junction of Firstwater and Soda creeks to 7088 ft (2160 m) atop the ridge at the SW. corner. The area drains to the NE. with moderate to steep topography. The lakes occupy a cirque basin and were formed by Pleistocene glacial action and, in some cases, by organic damming of outlet streams. Lakes range from less than one acre to 14-acre (6-ha) Green Island Lake.

The area is near the northernmost extension of the Sierra Nevada ecological section, with Cascades volcanic rocks within 1 mile (1.6 km) to the N. and W. Most of the area is mapped as underlain by the Calaveras formation (primarily metasedimentary phyllite, quartzite, and metachert, but also some meta-volcanics). However, there are large areas of ultramafic rock, perhaps associated with the Melones fault zone. Soils are not described. Weather records are

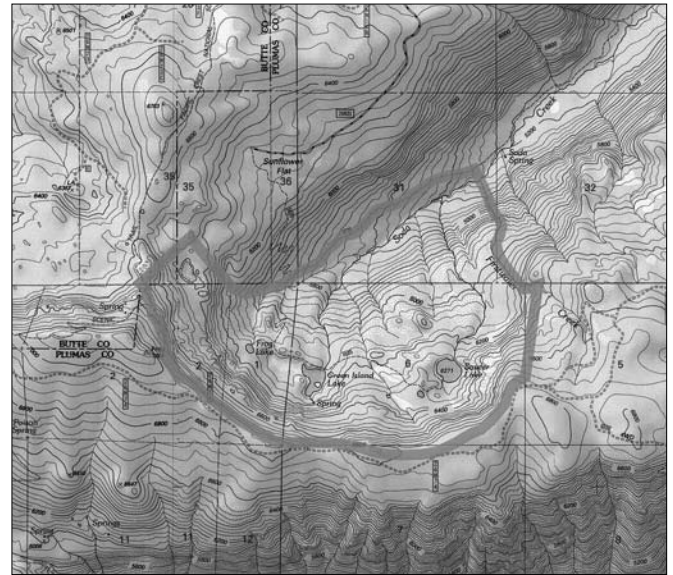


Figure 66—Green Island Lake rRNA

summarized from Canyon Dam and Chester, both with different climates than the rRNA. Precipitation is estimated (Rantz 1972) at 70-80 inches (1778-2032 mm) annually, with most falling as snow in the winter.

Association Types

The montane coniferous forest was sampled along three transects using the point-centered quarter technique. Vegetation of the hydric associations is qualitatively described.

Montane Coniferous Forest (84180, 85310): 820 acres (332 ha). In general, this forest is open (boulders scattered throughout) and dominated by red fir (*Abies magnifica*). One transect at the upper elevations on N.- and NE.-facing slopes was relatively closed forest strongly dominated by red fir (88 percent relative cover) with 337 trees/ha and 79 m²/ha basal area. In the more open sites (transects 2 and 3), red fir still dominates and averages 220 trees/ha with a basal area of 28 m²/ha. However, red fir makes up only 40 percent of the cover. Other important species include white fir (*Abies concolor*), western white pine (*Pinus monticola*), and lodgepole pine (*Pinus contorta* ssp. *murrayana*). The density and cover values of these three species are 183/ha, 23 m²/ha; 2/ha, 15 m²/ha; and 44/ha, 19 m²/ha, respectively. At elevations below the transects, Jeffrey pine (*Pinus jeffreyi*) and sugar pine (*P. lambertiana*) also occur.

Understory vegetation is dominated by scattered-to-dense montane chaparral shrubs including *Quercus vaccinifolia*, *Arctostaphylos nevadensis*, *Prunus emarginata*, and *Ribes roezlii*. Forty-four herbs are listed for this forest. These vary depending on site conditions and include *Aster elatus*, *Allium campanulatum*, *Aquilegia formosa*, *Calyptridium umbellatum*, *Corallorhiza maculata*, *Delphinium depauperatum*, *Gayophytum decipiens*, *Hackelia nervosa*, *Ligusticum grayi*, *Osmorhiza occidentalis*, *Phacelia purpusii*, *Pyrola secunda*, *Sarcodes sanguinea*, and *Trifolium productum*.

Figure 69—Grizzly Mountain, California black oak forest on NW-facing slope showing typical multiple stems from base and arching interlocking canopy ca. 45 ft (14 m) high. (1986)



Figure 67—Green Island Lake, “floating bog” (*Carex hystrix*) at Frog Lake. (around 1986)

Chaparral (37510): 311 acres (126 ha). This association is broken into two phases. The larger portion is a sparse type on ultramafic ridges and openings. *Arctostaphylos nevadensis* and *Quercus vaccinifolia* occur as scattered shrubs with large rocky openings with perennial forbs such as *Calochortus leichtlinii*, *Erysimum* spp., *Monardella odoratissima* ssp. *pallida*, *Achillea millefolium*, and *Sanicula tuberosa*. A smaller area of closed chaparral is dominated by *Arctostaphylos patula*, with occasional *Quercus vaccinifolia* and *Spiraea densiflora*. The herb understory of this type is sparse.

Alder Riparian (63500): 34 acres (14 ha). Streams of the area support a riparian scrub of *Alnus tenuifolia* with occasional *Acer glabrum* var. *torreyi* at the higher elevations. A small clone of aspen (*Populus tremuloides*) occurs along upper Soda Creek. *Alnus tenuifolia* thickets also occur adjacent to meadows at the lower elevations. The herbaceous flora includes *Sphenosciadium capitellatum*, *Senecio triangularis*, *Heracleum lanatum*, *Lilium* sp., *Perideridia parishii*, and *Polygonum bistortoides*.

Wet Meadow (45100): 20 acres (8 ha). Wet meadows occur most extensively adjacent to the three main lakes. These are densely vegetated meadows bordering forest vegetation in recently glaciated terrain. Most can be classified as stringer-type meadows. Eighteen species are listed as characteristic, including *Achillea millefolium*, *Calochortus nudus*, *Carex* spp., *Danthonia unispicata*, *Dodecatheon jeffreyi*, *Erythronium purpurascens*, *Juncus howellii*, *J. nevadensis*, *Potentilla glandulosa*, and *Veratrum californicum*.

Aquatic Communities/Submerged Macrophytes (52430): 29 acres (12 ha). This association is well developed in the area and includes the submerged macrophytes *Potamogeton filiformis* var. *macounii*, *Isoetes bolanderi*, and *Ranunculus aquatilis* var. *capillaceus*. The floating macrophytes are concentrated near the shores of all three main lakes. They include *Ruppia maritima*, *Potamogeton* spp., and *Sagittaria cuneata*.

The emergent zones are well developed at all three lakes and were considered the "floating bog" target during initial reconnaissance. Species (24 listed) include *Carex rostrata*, *C. vespertina*, *C. hystricina*, *Menyanthes trifoliata*, *Potentilla palustris*, and *Heleocharis acicularis*.

Plant Diversity

One hundred fifty taxa are listed.

Conflicting Impacts

The area is relatively isolated and undisturbed. All three lakes have introduced populations of either brook or rainbow trout.