

72. Ruth (Thornburgh 1981, Cheng 1998)

Location

This established RNA is on the Six Rivers National Forest, Trinity County. It is about 3 miles (5 km) SW. of the town of Forest Glen. It includes all or part of sects. 27, 34, 35, and 36 T1S, R7E HBM (40°20'N., 123°22'W.), USGS Forest Glen quad (fig. 145). Ecological subsection – Eastern Franciscan (M261Ba).

Target Element

Pacific Ponderosa Pine-Douglas-Fir (*Pinus ponderosa*-*Pseudotsuga menziesii*)

Distinctive Features

Pacific Ponderosa Pine-Douglas-Fir Forest: This forest type described as SAF type 244 (Eyre 1980) is not well represented in the California RNA system (see Doll Basin RNA and Hale Ridge RNA). The definition of this type, in which ponderosa pine and Douglas-fir together comprise a majority of the stocking and in which white fir (*Abies concolor*) is only a minor associate, is well met in the 166 acres (67 ha) of the Douglas-fir-ponderosa pine phase of the mixed conifer forest.

Other Related Vegetation Types: Adjacent to the ponderosa pine-Douglas-fir forest are related coniferous forests. In the fir-pine-Douglas-fir phase of mixed conifer forest, most young trees are white fir and, thus, could be considered mixed conifer forest (Holland type 84230). The lower-elevation, mixed evergreen type contains a small amount of ponderosa pine and is similar to the ponderosa pine phase of the mixed evergreen forest described in Sawyer and others (1977). The oak-conifer woodland and the montane chaparral associations are successional series and represent various seral conditions within the general realm of the target element, thus indicating typical successional directions after fire or prolonged slope disturbance.

Together, the relatively large size and elevational span of the area include a wide variety of association types typical of xeric exposures in the inner North Coast Ranges and adjacent S. Klamath Mountains ecological section.

Physical Characteristics

This established RNA covers 630 acres (255 ha) on the SW.-facing slopes of South Fork Mountain (original surveyed area is 1339 acres, 542 ha). Elevations in the survey range from 2800 ft near the Mad River to 5760 ft (853-1756 m) atop Pickett Peak (final boundary elevations are 3920-5760 ft, 1195-1756 m). Small streams have dissected the relatively uniform slope into several draws with steep W.- and S.-facing slopes. The area has some unstable slopes with evidence of recent movement.

The South Fork Mountain Fault crosses the area at about 4000 ft (1219 m). Most of the area is above this fault, where moderate slopes (5-50 percent) and benches prevail. Below the faultline slopes are steeper (70-100 percent). Rocks NE. of the fault are South Fork Mountain schist. Rocks SW. of the fault are Franciscan assemblage graywacke. However, only a few areas have outcrops.

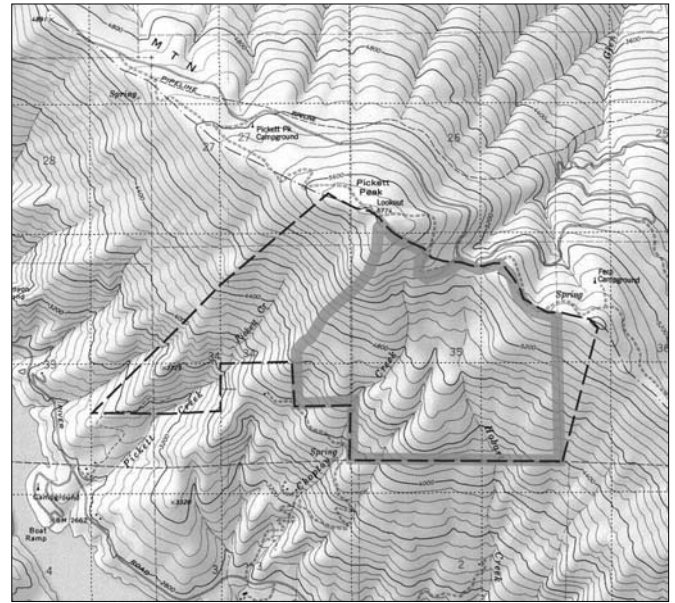


Figure 145—Ruth RNA

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

Soils include Bins-Nanny-Woodseye families, Skalan-Kistirn-Holland families, and Albus-Race families. Climate is typical for the inner North Coast Ranges, with average annual precipitation estimated at 70 inches (1778 mm), most falling from November to March. For the mid-elevations the January mean minimum temperature is 32 °F (0 °C), and the July mean maximum is 90 °F (32 °C).

Association Types

Thirty-six releves were sampled, and the information is arranged in an association table. Several additional 100- by 50-ft (5000 ft², 465 m²) plots were sampled for density and basal area of trees.

Mixed Conifer Forest (84110, 84230, 84240): 502 acres (203 ha). This association has been divided into three phases: Douglas-fir-ponderosa pine (target, 84110), white fir (84240), and fir-pine-Douglas-fir (84230).

The Douglas-fir-ponderosa pine phase (about 166 acres, 67 ha) is similar to Pacific ponderosa pine-Douglas-fir (SAF type 244), the target element for the area. It occurs between 4000 and 4800 ft (1219-1463 m) on SW.- to SE.-facing slopes. It is the most xeric of the three phases. The forest is dominated by scattered large Douglas-fir and ponderosa pine over dense young understory Douglas-fir and ponderosa pine. Diameter of the typical dominants ranges from 50 to 60 inches (1.27-1.52 m) with occasional large specimens up to 85 inches (2.2 m) dbh. Understory trees are typically about 14 inches (36 cm) dbh (range 6-34 inches or 15-86 cm). These trees resulted from a fire 80-90 years before the survey. Variation in proportions of Douglas-fir and pine in stands is high. Incense-cedar, sugar pine, canyon live oak, and California black oak also occur as young understory individuals. Average basal area is 88 m²/ha (range 71-106). Site index for Douglas-fir is 140 ft (43 m) for 100 years; for ponderosa pine it is 128 ft (39 m) for 100 years.

The understory is very sparse with a few scattered saplings of canyon live oak and *Toxicodendron diversilobum* and a very sparse representation of such herbs as *Pteridium aquilinum* and *Hieracium albiflorum*.

The fir-pine-Douglas-fir phase represents the true mixed phase of the mixed conifer forest with white fir, ponderosa pine, and Douglas-fir in an all-aged stand (273 acres, 111 ha). This phase occurs between 4400 and 5200 ft (1341-1585 m). Topography is moderate with large areas of level benches and slight SW.-facing slopes. Stand structure is quite varied, and white fir, sugar pine, ponderosa pine, incense-cedar, or Douglas-fir may dominate. White fir has the highest densities in the younger age classes; ponderosa pine dominates the larger size classes with Douglas-fir as the second dominant species (*fig. 146*). Incense-cedar is scattered as individuals and small groves. Sugar pine is the least common tree, occurring typically as widely scattered giants. Average basal area for this type is 138 m²/ha (range 61-235), with 100-year site index for Douglas-fir averaging 130 ft (40 m). Shrub and herb layers average less than 5 percent cover and include *Bromus tectorum*, *Hieracium albiflorum*, *Pyrola picta*, *Pteridium aquilinum*, and *Adenocaulon bicolor*.

The white fir phase (63 acres, 26 ha) occupies the upper elevations of the mixed conifer forest, usually above 5000 ft (1524 m). Typical sites are moderately SW.-facing slopes with gravelly loam soils. White fir is the only species with an all-age distribution in this phase; the other species (e.g., ponderosa pine and incense-cedar) usually occur only as large individuals. The average basal area is 150 m²/ha (range 126-172). The 100-year site index for white fir is 100 ft (31 m). Understory is very sparse (<1 percent) with scattered *Amelanchier alnifolia*, *Rosa gymnocarpa*, *Elymus glaucus*, *Pyrola picta*, and *Pteridium aquilinum*. This type is similar to the white fir types described in Sawyer and Thornburgh (1977).

Oak-Conifer Woodland (71120, 81340): 243 acres (98 ha), not included in the RNA. This type is actually a mosaic of California black oak stands, small grassy meadows, and clumps of Douglas-fir or ponderosa pine, or both, which lie between the upper limit of the mixed evergreen forest and the lower end of the montane chaparral. Typical stands consist of an even canopy of large California black oak, ponderosa pine, and Douglas-fir over saplings of Douglas-fir or ponderosa pine. Some stands are a true woodland of California black oak with a thick fern-grass understory dominated by *Pteridium aquilinum* and *Elymus macounii*.

Soils are clay-rich, and occasional slumps and bare erosional slopes indicate instability. The combinations of mobile soils and SW.-facing xeric slopes probably explain the presence of oak-conifer woodland and not forest at this site. Succession appears to be proceeding toward the white fir phase of the mixed conifer forest type. Very little of this forest is actually included within the final RNA boundaries.

Montane Chaparral (37510, 37541, 71110): 128 acres (52 ha). Above 5000 ft (1524 m) the area is covered by a large expanse of chaparral dominated by *Quercus garryana* var. *breweri*, *Q. vaccinifolia*, *Symphoricarpos mollis*, and *Arctostaphylos patula*. Slopes are moderate to steep SW.-facing, and soils are very rocky gravelly loam. Within the chaparral are patches of medium-sized Oregon white oak (*Quercus garryana*), with a grass-fern understory containing some white fir seedlings (Holland 71110). Also some young, pure clumps of white fir are located within the chaparral. The successional trend is toward the white fir phase of mixed conifer forest.

Mixed Evergreen Forest (81100): 92 acres (37 ha), not included in the RNA. This forest is dominated by Douglas-fir and characterized by the presence of the hardwoods Pacific madrone (*Arbutus menziesii*), California black oak (*Quercus kelloggii*), and canyon live oak (*Q. chrysolepis*). Ponderosa pine occurs as an occasional codominant. This association occurs below the South Fork Mountain Fault. Throughout, the forest stands are dominated by large Douglas-fir and ponderosa pine overlying a younger pole-size mixture of Douglas-fir and the hardwoods. This younger size class became established 80-90 years before, following a fire. Most stands contain a few saplings and seedlings.

Four different stands are described from 0.2-acre (0.08-ha) samples. These stands are a few large Douglas-fir over smaller California black oak and Douglas-fir; large Douglas-fir and ponderosa pine over smaller madrone, canyon live oak, and black oak; even-aged canyon live oak and madrone with a few Douglas-fir; and large black oak with pole-size Douglas-fir and ponderosa pine.

The understory is usually sparse, with less than 2 percent cover. A small amount of sapling canyon live oak and Douglas-fir are scattered throughout.

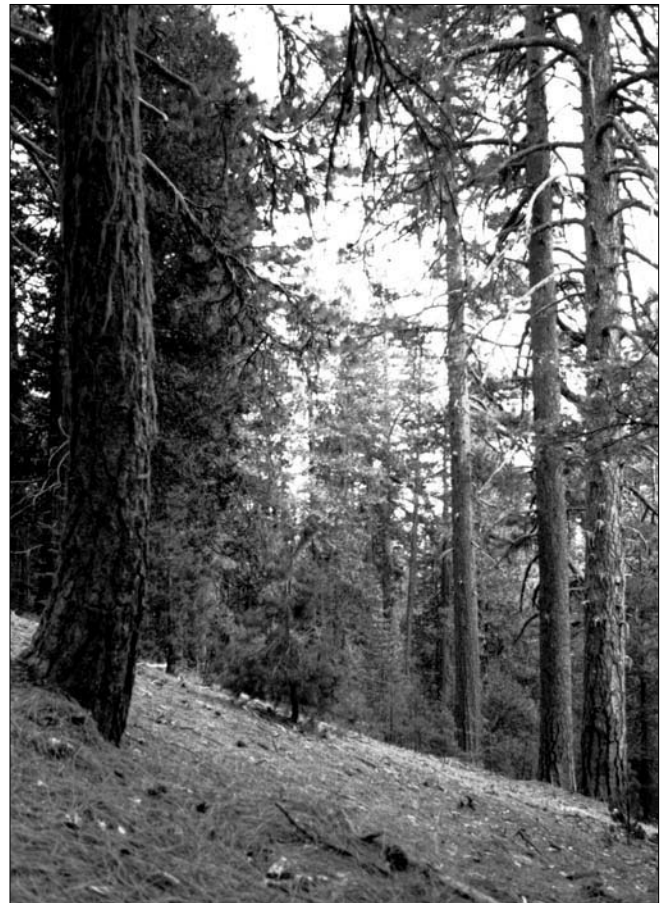


Figure 146—Ruth, ponderosa pine dominated stand of mixed coniferous forest on southwest-facing exposure in Ruth RNA. (1988)

Hieracium albiflorum and *Bromus tectorum* are the most common herbs. Basal area for trees averages 121 m²/ha (range is 78-152 m²/ha). One-hundred-year-old Douglas-fir average 120 ft (37 m) tall.

White Alder (*Alnus rhombifolia*) Riparian (61510, 45400): This association is limited to very small areas adjacent to streams and seeps. Other woody species besides white alder include bigleaf maple (*Acer macrophyllum*), giant chinquapin (*Chrysolepis chrysophylla*), *Rubus ursinus*, *Corylus cornuta* ssp. *californica*, and large incense-cedars. Herbs include *Asarum hartwegii*, *Mimulus guttatus*, *M. moschatus*, *Viola glabella*, *Tolmiea menziesii*, *Lilium pardalinum*, *Athyrium felix-femina*, *Juncus effusus*, *Hypericum anagalloides*, and *Cystopteris fragilis*.

Plant Diversity

One hundred fifty-eight taxa are in the updated list in the establishment record.

Conflicting Impacts

Past and present cattle grazing may have encouraged the relatively high densities of non-native grasses such as *Bromus tectorum* now present. However, cattle grazing does not appear to have affected conifer establishment and is not a significant factor in most of the RNA. An old tractor trail crosses part of the area, and scattered trees have been felled near it.