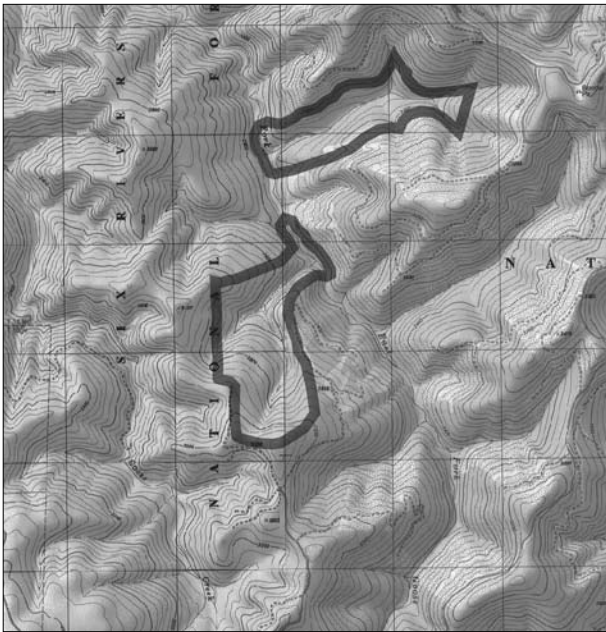


91. Upper Goose Creek (Keeler-Wolf 1987f)



**Figure 181—
Upper Goose
Creek rRNA**

Location

This recommended RNA (rRNA) is on the Six Rivers National Forest, Del Norte County. The study area includes two small units about 7 miles (11 km) NE. of Klamath Glen. The NE. unit lies in T13N, R3E sects. 29, 30, and 31. The SW. unit is in T13N, R3E, sect. 6 and in sect. 31 of T14 N, R3E MDBM (41°33'N., 123°52'W.), USGS Summit Valley and Klamath Glen quads (fig. 181). Ecological subsection – Western Jurassic (M261Aa).

Target Elements

Selected as a representative of the Douglas-Fir-Western Hemlock type (*Pseudotsuga menziesii*-*Tsuga heterophylla*), but actually more representative of Port Orford-Cedar (*Chamaecyparis lawsoniana*)

Distinctive Features

Port Orford-Cedar-Douglas-Fir-Western Hemlock Forest: This forest is poorly represented in California on Federal lands (most stands on private lands have been logged) and was once more widespread in SW. Oregon. However, root rot (*Phytophthora lateralis*) has decimated some of the best Oregon stands. The ravine-bottom stands are characterized by very large individuals of all three species: Port Orford-cedar (POC) that are 5-6 ft (1.5-1.8 m) dbh and 200-225 ft (61-69 m) tall; Douglas-fir, 6-6.5 ft (1.8-2 m) dbh and 240-250 ft (73-76 m) tall; and western hemlock, 2.5-3.5 ft (0.76-1.1 m) dbh and 160-175 ft (49-53 m) tall. These forests are remnants of moist Tertiary environments when western hemlock and POC coexisted over a much larger area. POC and western hemlock are climax species indicated by abundant regeneration in forest shade, whereas Douglas-fir is seral. Ages of some of the largest POC may exceed 1000 years. The Adorni RNA also contains similar vegetation, but has no hemlock, is dominated by Douglas-fir throughout, and has smaller and younger POC individuals.

Douglas-Fir-Hardwood Forests: These locally most extensive forest types are typical of many lower-elevation areas in the W. Klamath Mountains ecological section. The various slope aspects and successional states of the Upper Goose Creek forests will provide important baseline information on the ecology of this most economically important forest in the Klamath Mountains ecological section. The effects of fire and logging on succession of this forest type can be elucidated by studying these forests' composition, slope exposure, and history of disturbance.

Physical Characteristics

Both units occupy portions of two small side drainages of the East Fork of Goose Creek. The NE. unit covers 140 acres (57 ha), the SW. 320 (130 ha). Elevations range from 1830 to 2450 ft (558-747 m) at the NE. unit and 1840-3440 ft (561-1049 m) in the SW. unit. The NE. unit has the predominant NW.- and SE.-facing slopes about equally represented, whereas the SW. unit has virtually all slope aspects except due S. Inner gorges of both small drainages are steep, and both units have permanent streams.

The rock type is Late Jurassic metasediment (Galice formation). Soils belong to the Sheetiron and Hugo complexes, the former predominating. Very wet

winters and occasional summer storms provide the area with an average annual rainfall of somewhat more than 100 inches (2540 mm). Coastal summer fog is occasional, and temperatures are moderate.

Association Types

Eighteen 100-m² plots were sampled in the POC-Douglas-fir-western hemlock forest. For additional vegetation sampling in this area, see Keeler-Wolf (1988b).

Douglas-Fir-Dominated Forests (82420): 111 acres (45 ha) NE. unit, 222 acres (90 ha) SW. unit. These forests cover the majority of the area. They occur in relatively xeric situations upslope from the POC-Douglas-fir-western hemlock types. They may be divided into N.- and S.-facing slope types.

The N.-facing type is characterized by a canopy of Douglas-fir with a subcanopy layer dominated by giant chinquapin (*Chrysolepis chrysophylla*) and a dense shrub layer dominated by *Rhododendron macrophyllum*. Other important understory species are tanoak (*Lithocarpus densiflorus*), *Vaccinium ovatum*, *Gaultheria shallon*, and *Xerophyllum tenax*. Total shrub and herb cover averages about 90 percent.

On S.- and W.-facing slopes without recent crown fire damage, the Douglas-fir canopy is more open relative to N.-facing slopes. There is a hardwood subcanopy dominated by tanoak, with Pacific madrone (*Arbutus menziesii*) and canyon live oak (*Quercus chrysolepis*). The understory also differs from N.-facing Douglas-fir forests with *Gaultheria shallon* frequently dominant in relatively low total cover, along with smaller amounts of *Berberis nervosa*, *Pteridium aquilinum*, *Rubus ursinus*, *Arctostaphylos cinerea*, *Toxicodendron diversilobum*, *Iris* sp., *Xerophyllum tenax*, and *Campanula prenanthoides*.

Port Orford-Cedar-Douglas-Fir-Western Hemlock (82200): 31 acres (13 ha) on SW. unit, 32 acres (13 ha) NE. unit. This association is restricted to very mesic ravines and bottomlands and may be divided into two subtypes: POC-Douglas-fir and western hemlock. Characterized by tall, dense trees with heights up to 250 ft (76 m) and dbh up to 6.5 ft (2 m), this forest averages 1440 trees/ha and a basal area cover of 204 m²/ha. POC has a higher overall importance value than Douglas-fir but a lower basal area. Western hemlock is third in importance. Small understory trees form a scattered layer including *Acer circinatum*, tanoak, bigleaf maple (*Acer macrophyllum*), Pacific dogwood (*Cornus nuttallii*), and giant chinquapin. *Ericaceous* shrubs dominate the understory, covering an average of 40 percent of the ground. *Gaultheria shallon*, *Rhododendron macrophyllum*, *Berberis nervosa*, *Vaccinium parvifolium*, and *V. ovatum* are the principal species. Although 25 species of herbs were recorded in the samples, only three (*Polystichum munitum*, *Blechnum spicant*, and *Coptis lacinata*) account for anything more than trace cover.

The second subtype is characterized by hemlock dominance and tends to be best developed on alluvial flats and relatively gentle slopes. The understory is sparser than the former type because of dense shade and litter. *Oxalis oregana* and *Polystichum munitum* are the most characteristic understory species. The western hemlock-dominated forest typically occurs on the most mesic sites with the deepest soils and the gentlest topography.

Successional Forest (81100, 81400, 37530): 43 acres (18 ha) SW. unit, 12 acres (5 ha) NE. unit. Large areas of surrounding vegetation have been disturbed by crown fire, clear-cutting, or both, over the past 60 or more years. Recent clearcuts are frequently dominated by *Ceanothus velutinus* var. *laevicaulis* with resprouts of tanoak, madrone, giant chinquapin, and canyon live oak along with shrubs such as *Rosa gymnocarpa*, *Rubus leucodermis*, and *Toxicodendron diversilobum*. Skid trails and more heavily disturbed areas are dominated by naturally seeding thickets of Douglas-fir saplings. In addition, Douglas-fir has been planted uniformly

throughout most of these cuts. Older successional forests tend to have broad-leaved evergreens dominant in a low 35- to 40-ft (11- to 12-m) canopy with occasional emergent survivor Douglas-fir. Tanoak and madrone tend to dominate on S.-facing exposures while giant chinquapin is an additional codominant on more N.-facing exposures.

Riparian Woodland (61130, 81A00): The low-volume side streams have a scattered bordering layer of red alder (*Alnus oregona*) up to 32 inches (81 cm) dbh and more than 100 ft (31 m) tall overlying a dense, largely deciduous shrub layer dominated by *Ribes bracteosum*, *Euonymus occidentalis*, *Rubus spectabilis*, and *Rhamnus purshiana*. Herbs of this association include *Boykinia elata*, *Mitella ovalis*, *Aralia californica*, *Athyrium filix-femina*, *Adiantum pedatum*, *Tellima grandiflora*, *Carex ormantha*, *Agrostis longiligula*, *Calamagrostis foliosus*, *Woodwardia fimbriata*, *Petasites palmatus*, and *Aquilegia formosa* (fig. 182).

The riparian zone along the main East Fork of Goose Creek is characterized by more sun, flooding, and alluvium than the riparian zone along the side streams. The red alder trees are relatively small, and many of the more shade-loving species are absent. *Phacelia bolanderi* is characteristic of the gravelly alluvium areas along this stream.

Plant Diversity

Ninety-six taxa are listed.

Conflicting impacts

Logging roads may potentially act as transport routes for *Phytophthora lateralis*, the root rot fungus lethal to POC. The SW. unit has more integrity because most of the drainage is within proposed boundaries of RNA. The NE. unit is more vulnerable because its drainage is heavily traversed by roads. Clearcuts and other human disturbances affect edges of both units but not core areas of the target element. There is no erosion associated with human-mediated impacts on side streams, but the main East Fork of Goose Creek shows some increased downcutting, probably resulting from clear-cutting upstream. Despite shortcomings, this rRNA probably contains the best available examples of POC-Douglas-fir-western hemlock forest in California.

Figure 182—Upper Goose Creek, plunge pool of small waterfall in western hemlock/Port Orford-cedar forest in northeast unit of Upper Goose Creek rRNA. *Adiantum pedatum* var. *aluticum* on cliff walls. (1986)

