

Chapter VI. Precontact Vegetation Types and Zones (ca. 1800)

The study area contains a wide diversity of native plants and animals typical of the western Cascades of Oregon, including the southern-most extent of Alaskan yellow cedar and northern-most extent of Shasta red fir. Although Douglas-fir currently dominates most of the study area -- with the exception of higher elevation peaks and ridgelines -- relict stands and groves of white oak, ponderosa pine, sugar pine, redcedar, and chinquapin strongly indicate past conditions, when Douglas-fir populations were more limited and savannas, grasslands, brakes, and berry fields were more extensive.

Precontact Vegetation Zones: Forest Types and Subtypes

Leiberg (1900: 245) provided a good definition of forest types and subtypes in his report on the southern Oregon Cascades, based on his 1899 field observations:

The term forest type, as here employed, is used to define large aggregations of one or many species of trees, usually comprised within definable territorial limitations . . . The term subtype is applied to a multitude of lesser groupings of the species which form this type. Collectively they give each type its characteristic features . . . The duration of the forest type is indefinite. While undoubtedly subject to evolutionary changes, its modifications or transitions to other types are so slow as to be quite imperceptible to us. Not so with subtypes, they frequently change, sometimes two or three times in a generation. Forest fires are fertile causes for inducing such rapid changes. But even when left undisturbed a subtype rarely persists in any particular locality for more than 250 or 300 years.

I have chosen to use the more general term “zones” – identified by a characteristic tree or vegetation type for each area – to describe the combination of types and subtypes that existed in late precontact time. In this manner, research findings indicate that four primary “zones” can be used to represent basic vegetation types and sub-types that existed in the South Umpqua study area 200 years ago: Oak Zone; Pine Zone; Douglas-fir Zone; and Subalpine Zone. For the most part, the zones represent a west to east change in elevations, with the Oak Zone located to the west in the lowest elevations; the Pine Zone located more easterly, at greater elevations and along slopes adjacent to the Oak Zone; the Douglas-fir Zone adjacent to the Pine Zone on steeper lands and higher elevations; and the Subalpine Zone along the ridgelines and peaks at the highest elevations and eastern-most locations in the study area.

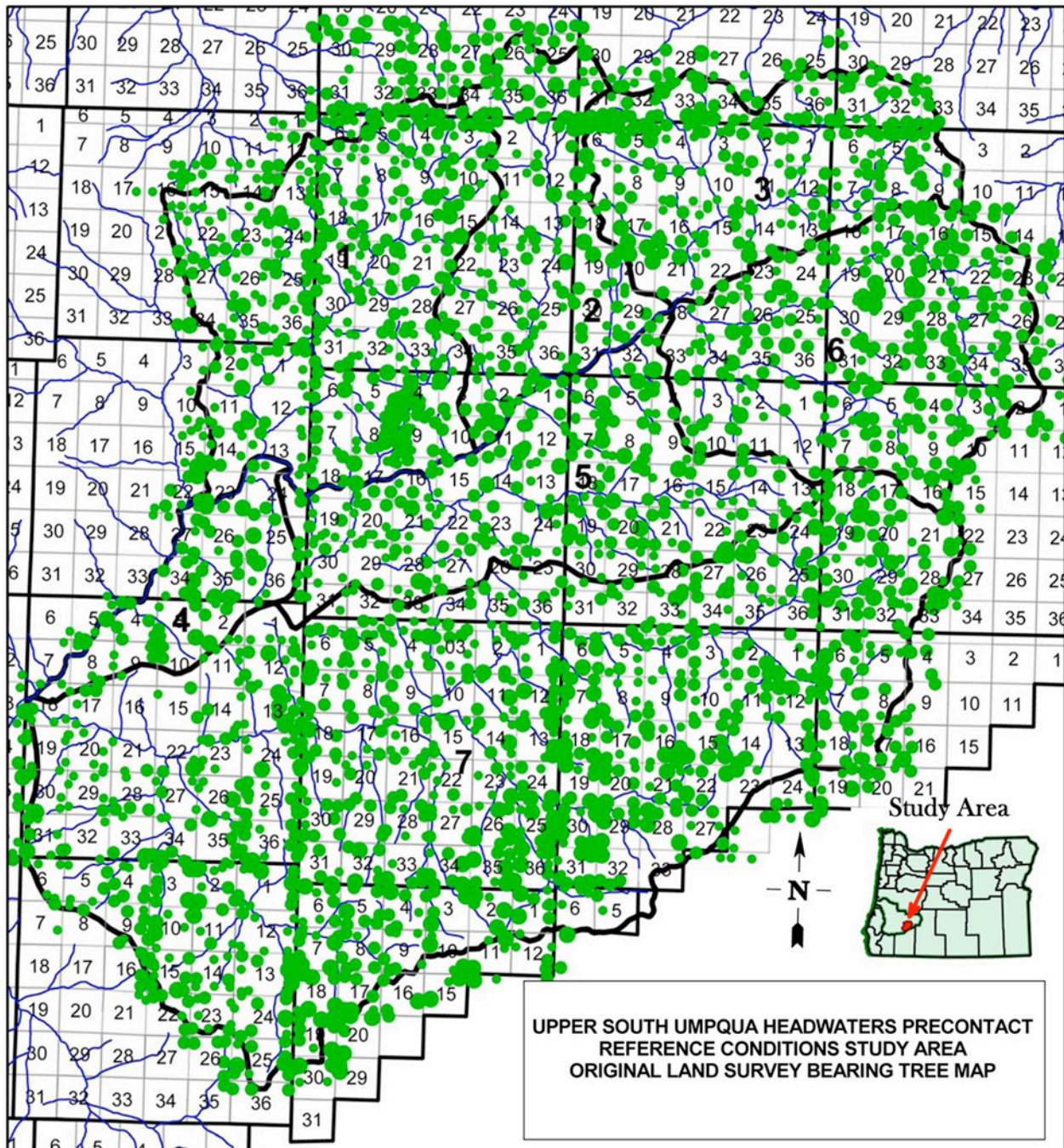
These zones were derived by using the principal datasets and methods described in Chapter II, with the direct assistance of forester Mike Dubrasich, who was also familiar with the local landscape and species

(see Appendix B), for analytical and definitional purposes. GLO notes and GIS maps of bearing trees and understory vegetation were of particular value during this process, often involving direct use of field notes for specific locations: http://www.ORWW.org/Rivers/Umpqua/South/Land_Surveys/Index.html.

The proliferation of Douglas-fir throughout the study area since 1800 provided some difficulty in determining localized conditions before its dramatic increases in population, volume, and range that apparently began taking place in the 1700s, or perhaps even somewhat earlier (see Chapter III). Map 6.01 shows the extent of Douglas-fir bearing tree distribution throughout the study area by the time GLO surveys had been completed in the 1930s. Note the large number of small (under 18-inch) and medium (18-inch to 36-inch) diameter trees represented on the map. Field observations and measurements determined that the vast majority of these trees had germinated sometime after 1825, during historical time. The question then became whether they were primarily a product of reforestation (e.g., following a stand replacement wildfire event or insect infestation) or of invasive reproduction -- entering and populating savannas, woodlands, grasslands, and brush fields that had previously been dominated by other species. Again, field observations and measurements demonstrated that it was the latter instance; see Figure 2.06 as one measure of this change in the Squaw Flat area and Figure 6.01; a photograph taken near Squaw Flat in 2010 that illustrates how this change appears on the ground. Note the majority of the trees in the photograph appear to be less than 8-inches in diameter and would not be represented on the Figure 2.06 graph.

Map 6.02 shows the distribution and size classes of other species of GLO bearing trees in the study area, absent Douglas-fir. For the most part, the larger- and medium- diameter trees represent late precontact and early historical distributions of forest and woodland trees prior to extensive Douglas-fir invasions. For example, note the oak bearing trees in Tsp. 30 S., Rng. 1 W. (see Map 1.02 for reference), which was surveyed in the Pickett Butte area in 1858 (Hathorn 1858). A comparison with Map 6.01 shows scattered, widely spaced small- or medium-sized Douglas-fir trees in that area at that time. Figure 6.02 further illustrates the resulting change in forest type (or sub-type) during the 152 years subsequent to the original survey.

Another example from Map 6.02 is shown in the Abbott Butte area (see Chapter II), which was first surveyed in 1937 (Carter and Dawson 1937) and shows a preponderance of large-diameter “Hem-Fir,” which the surveyors more accurately described as “mostly white, Noble, silver, and Shasta fir” (see Figure 2.03). Note, again, the relatively wider-spaced and smaller-diameter Douglas-fir bearing trees



- Doug-Fir Under 18 Subbasins 3 = Black Rock Subbasin 6 = Castle Rock Subbasin
- Doug-Fir 18 to 36 1 = Boulder Subbasin 4 = Zinc Subbasin 7 = Jackson Subbasin
- Doug-Fir over 36 2 = Quartz Subbasin 5 = Buckeye Subbasin

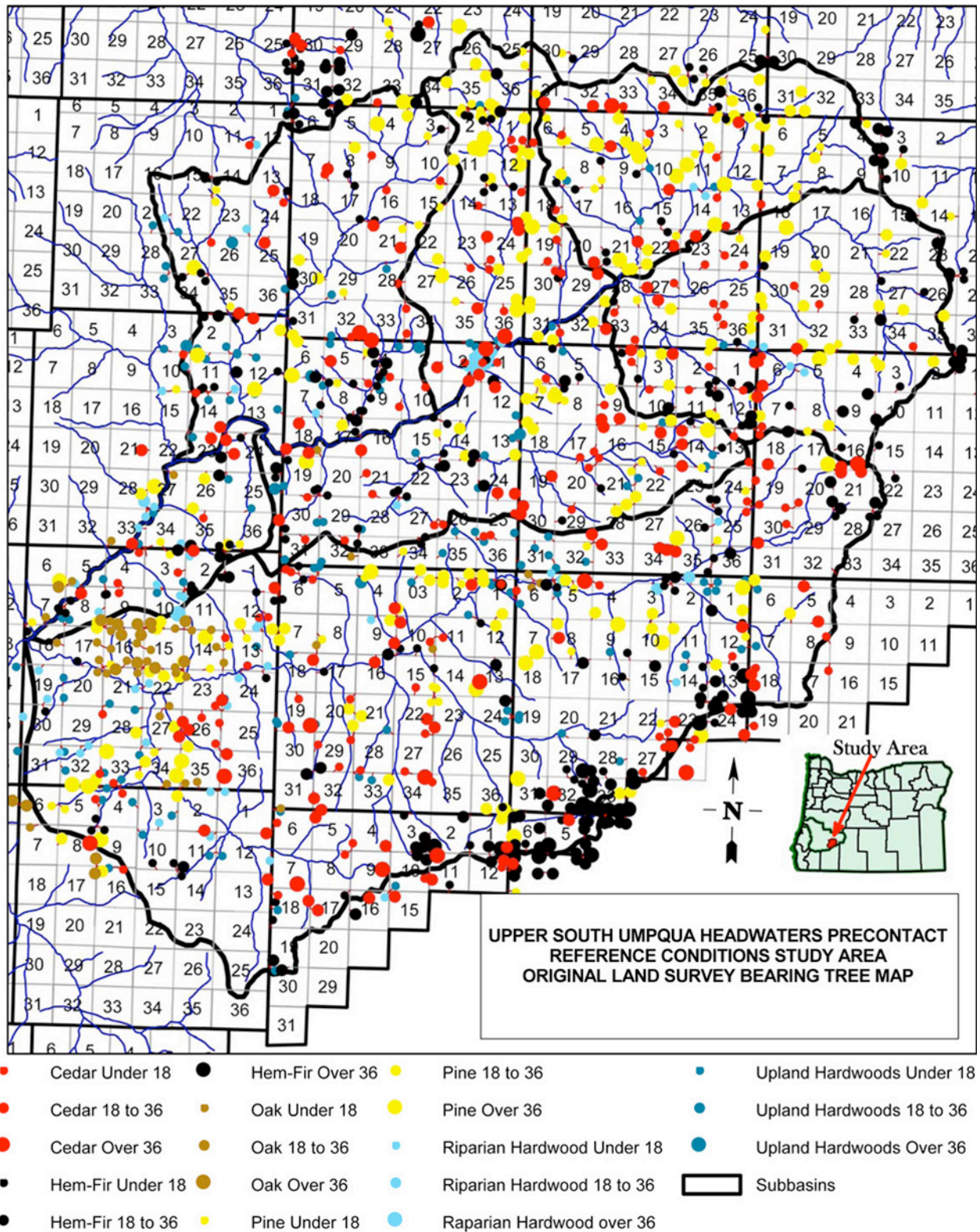
Map 6.01 GLO Douglas-fir bearing trees, as located and measured from 1856 to 1937.



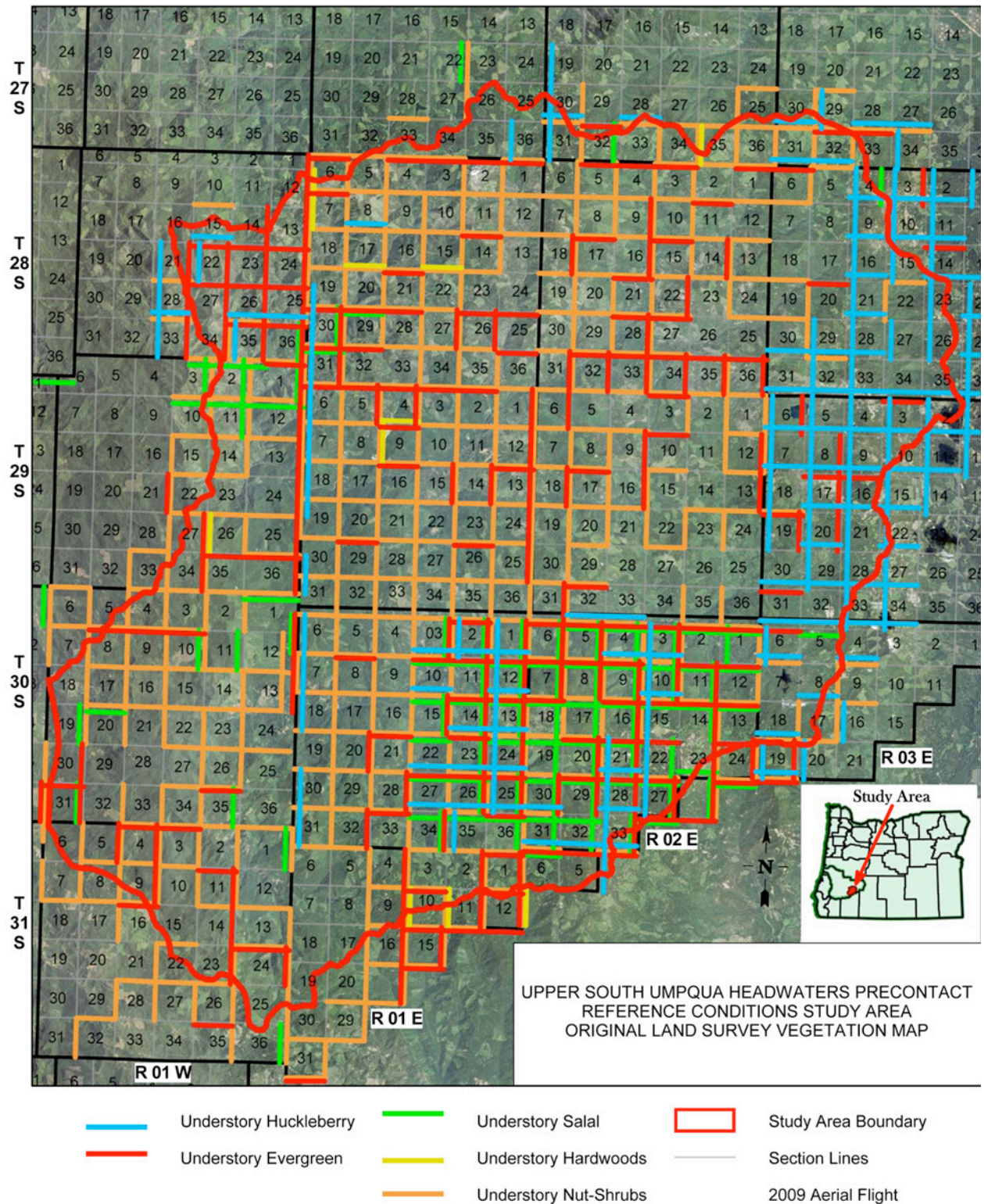
Figure 6.01 Late precontact pine woodland with invasive Douglas-fir and madrone, Squaw Flat, 2010.

measured in this same general area. Table 2.05 more clearly shows the continued invasion of this area of grasslands and shrublands by conifers during the past 100 years.

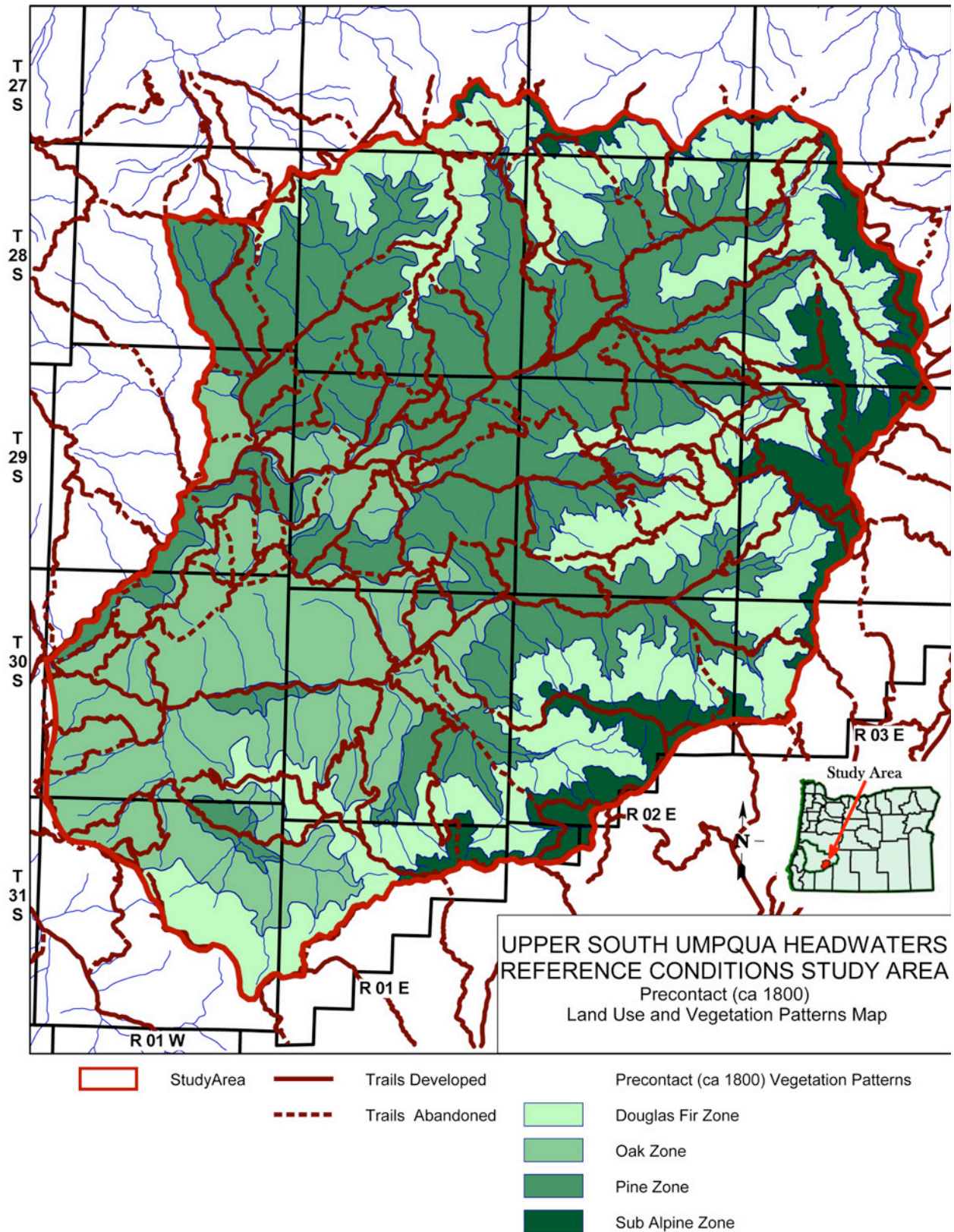
Map 6.03 shows GLO descriptions and locations of understory vegetation, which add more detail to an understanding and description of precontact forest conditions. These patterns are shown in conjunction with a 2009 geo-referenced aerial fly-over, which provides further context to changed forest conditions from the 1857-1937 GLO surveys to the present time. The location of huckleberries at higher elevations and along ridgelines are expected and self-explanatory – and give a good idea as to when, and by whom, primary foot-trails were used in precontact times (see Chapter III). Less obvious, but just as important, is the grouping of oak, chinquapin, and hazel into “Understory Nut-Shrubs” locations. These plants provided important sources of protein to native peoples and animal wildlife and were obviously visited during the fall season for hunting and gathering purposes – but hazel also provided a very important source of weaving material, and hazel clumps were burned and shoots were also gathered at different times of the year for those purposes, too (Anderson 2005). Salal berries were another important food crop, and these plants also indicated more general associations with other species as well. The same can be said for “Understory Evergreens,” which included yew (Hartzell 1991) and madrone – important for fuel, food, medicinal, and construction materials, and also good indicators of associated native plant and animal species.



Map 6.02 GLO Non-Douglas-fir bearing trees, as located and measured from 1856 to 1937.



Map 6.03 GLO Understory vegetation types, as located and measured from 1856 to 1937.



Map 6.04 Ca. 1800 land use patterns: vegetation zones and primary foot-trails network.

Map 6.04 represents the culmination of precontact forest type and subtype analysis for the study area, in conjunction with ca. 1800 foot-trail locations (see Chapter III). It is a combination of forest vegetation types and land use patterns, providing good insights as to what types of vegetation were on the landscape in late precontact time, where people were most likely to be present within that landscape, and during what times of the year.

The remainder of this chapter provides brief descriptions of each of the vegetational zones represented in Map 6.04, and a current figure depicting typical conditions within those zones at this time.

Oak Zone

White oak and pine savannahs, extensive grassland meadows and prairies, and patches of Douglas-fir, redcedar, and pine typified much of the western and lower elevation (below 2,400 feet) portions of the



Figure 6.02 Old-growth relict pine and oak with invasive Douglas-fir, Pickett Butte, 2010.

study area 200 years ago. The presence and arrangements of these plants, as well as widespread populations of camas, cat's ears, fawn lilies, iris, tarweed, yampah, and hazel, indicate regular systematic use of the landscape by people – most likely Takelman-speakers -- at that time. The average number of trees larger than saplings per acre was probably ten or less. Human occupation of this zone was likely year-round, with relatively large seasonal villages and campgrounds near the mouth of Jackson Creek and at South Umpqua Falls; two locations that (according to historical reports) were heavily used during times of anadromous salmonid and lamprey eel runs.

Pine Zone

The presence of ponderosa pine and sugar pine with little understory vegetation typified much of the mid-slope (2,400 to 3,800 foot elevation) areas in the study area 200 years ago. The pine zone was typically open and park-like with large, widely spaced pines; patches of oak, chinquapin, serviceberry, and hazel; scattered stands of Douglas-fir; and grassy meadows. The average number of 8-inch diameter and larger trees per acre was likely less than 20. The location and age of remnant old-growth trees indicate regular seasonal use of the pine forestlands by Takelmans from lower elevations and southern Molalla from



Figure 6.03 Old-growth relict pine and Douglas-fir on Black Rock Fork, 2010.

higher elevations. The harvesting of ponderosa pine cambium in the spring and sugar pine, hazel, and chinquapin nuts in the fall may have been times of most intensive occupation of this zone. Hunting for game animals with dogs by Molallans likely occurred on a year-round basis, depending on the daily and seasonal movements of deer, bear, and elk.

Douglas-fir Zone

Although Douglas-fir was present in almost every type of environment in the study area 200 years ago, it existed in nearly pure stands from 3,800 to 5,000 feet elevation, separating the lower elevation pine stands from the higher elevation subalpine vegetation types. Due to generally steep slopes, isolated location, seasonal snow, and relative lack of food plants, accessible water, and animals, this zone likely experienced the least amount of daily use and occupation by people. Although the densest stands of trees in the study area occurred in this zone, they were still often open and park-like with only 20 to 30 trees



Figure 6.04 Invasion of elderberry orchard by Douglas-fir, true fir, and pine, near Wolf Prairie, 2010.

per acre. Grassy meadows and fern brakes also existed throughout this zone. Established ridgeline and streamside trails were regularly used by both game animals and people to reach lower and upper elevations, where food and freshwater were more available. Ridgeline trail networks that crisscrossed this zone were regularly burned to promote grassy meadows, bracken fern, beargrass, serviceberry and other food and fiber plants.

Subalpine Zone

As described in Chapter III, the highest elevations of the study area (above 5,000 feet) formed an international precontact network of foot trails that connected tribes of the South Umpqua with Indian nations in California, Washington, the Columbia Basin, and beyond. This seasonal “travel zone” was covered in snow much of the year, but contained extensive fields of forbs and grasses, huckleberries, manzanita, and other berries, fruits, nuts, bulbs, edible roots, and fuels that were readily available at other times. The existence of numerous year-round springs, likely “vision quest” sites, flats, benches, and gently sloping ridgelines add further evidence of intensive year-round and seasonal use; particularly by southern Molallan hunters, who used dogs and snowshoes to hunt elk and other prized game animals throughout the study area. In late summer and early fall, other Tribes undoubtedly visited these lands to

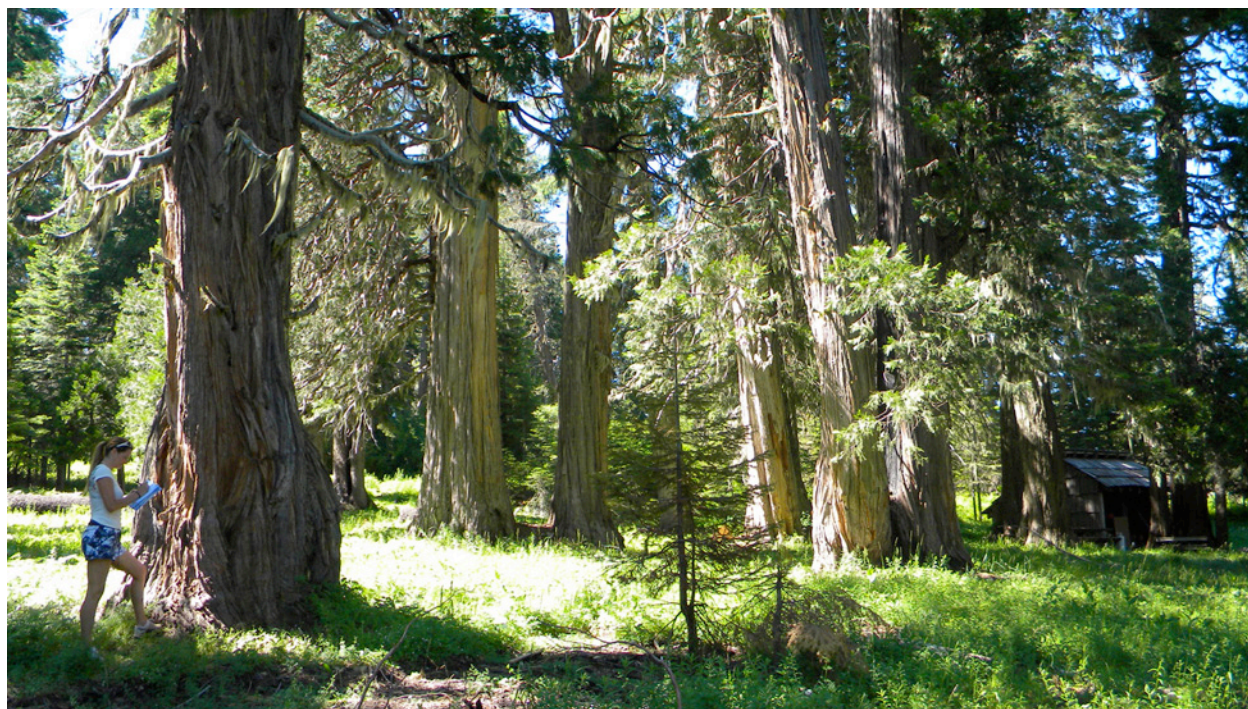


Figure 6.05 Old-growth cedar and cabin on perimeter of French Junction prairie, 2010.

hunt, harvest huckleberries and beargrass, and to move trade goods along the landscape. Takelmans from lower elevations likely gathered at Huckleberry Lake and Quartz Mountain, among other locations, during summer and fall; Takelma-speaking Latgawans probably used Huckleberry Lake and Hershberger Mountain areas as well. Klamaths likely moved slaves and other trade goods along the eastern ridgelines, following the Klamath Trail to campgrounds in the Black Rock and French Junction areas, before heading north along Camas Creek into the North Umpqua Basin, or south into the Rogue River basin. It is also possible that Paiutes from the east, southern Molallans from the north, and Kalapuyan-speaking Yoncallans from the northwest also entered the area at these times; also possibly for reasons of trade, harvesting of favored crops, spirit quests, or simply visiting friends and relatives. This area has the most extensive fields of prized huckleberries, which contained scattered trees; principally Douglas-fir and Shasta red fir.