

affect forest cover patterns? These questions are addressed more explicitly in Chapter IV, placed into chronological context in Chapter V, and answered, based on the “weight of evidence,” in Chapter VI.

#### Broadcast Burning (1500-1999)

Kalapuyan families in the Soap Creek Valley area used fire for vegetation management purposes in early historical times. This practice has been termed “pyroculture” (Gilsen 1989), and involved periodic use of broadcast burning over large areas of the landscape to control unwanted plants, including Douglas-fir and possibly poisonoak, to the advantage of desired plants, including oak, camas, filberts, blackberries, tarweed, strawberries, nettles, brackenferns, arrowwood, and huckleberries (Minore 1972; Boyd 1986; Gilsen 1989). The widespread use of this practice is evidenced by persistent patterns and species of plants that exist to this time (see Table 13) and by thousands of prehistoric artifacts in Soap Creek Valley and adjacent areas used to process food, medicine, dyes, construction materials, tools, and other vegetable products (Fig. 23). Other uses of broadcast burning include hunting, curing of tarweed seeds prior to harvest, increased ease of nut gathering (acorns and filberts), and creation of useful woody sprouts (including hazelnut and arrowwood) for manufacturing arrows, baskets, huts, and other purposes (Boyd 1986; Gilsen 1989). According to Santiam Kalapuyan (see Map 10), Joseph Hudson (born “Pa-pe-a”; see Appendix H), burning was done for other reasons as well (Jacobs (1945):

When it was summertime they burned over the land, when they wanted to eat grasshoppers. When they burned the land, then they burned the grasshoppers (too). And then they (women) gathered up the grasshoppers, and they ate those grasshoppers it is said. I do not know what they did to them, when they wanted to eat them. Maybe they cooked them, and on the other hand perhaps they did not cook them. I never saw them eat them. Those people long ago only spoke of it.

Lucy Thompson (named Che-na-wah Weitch-ah-wah at her birth in the 1850s to a northern California Yurok family of recognized oral traditionalists)

described prehistoric use of fire for weeding purposes in the Douglas-fir Region (Thompson 1991):

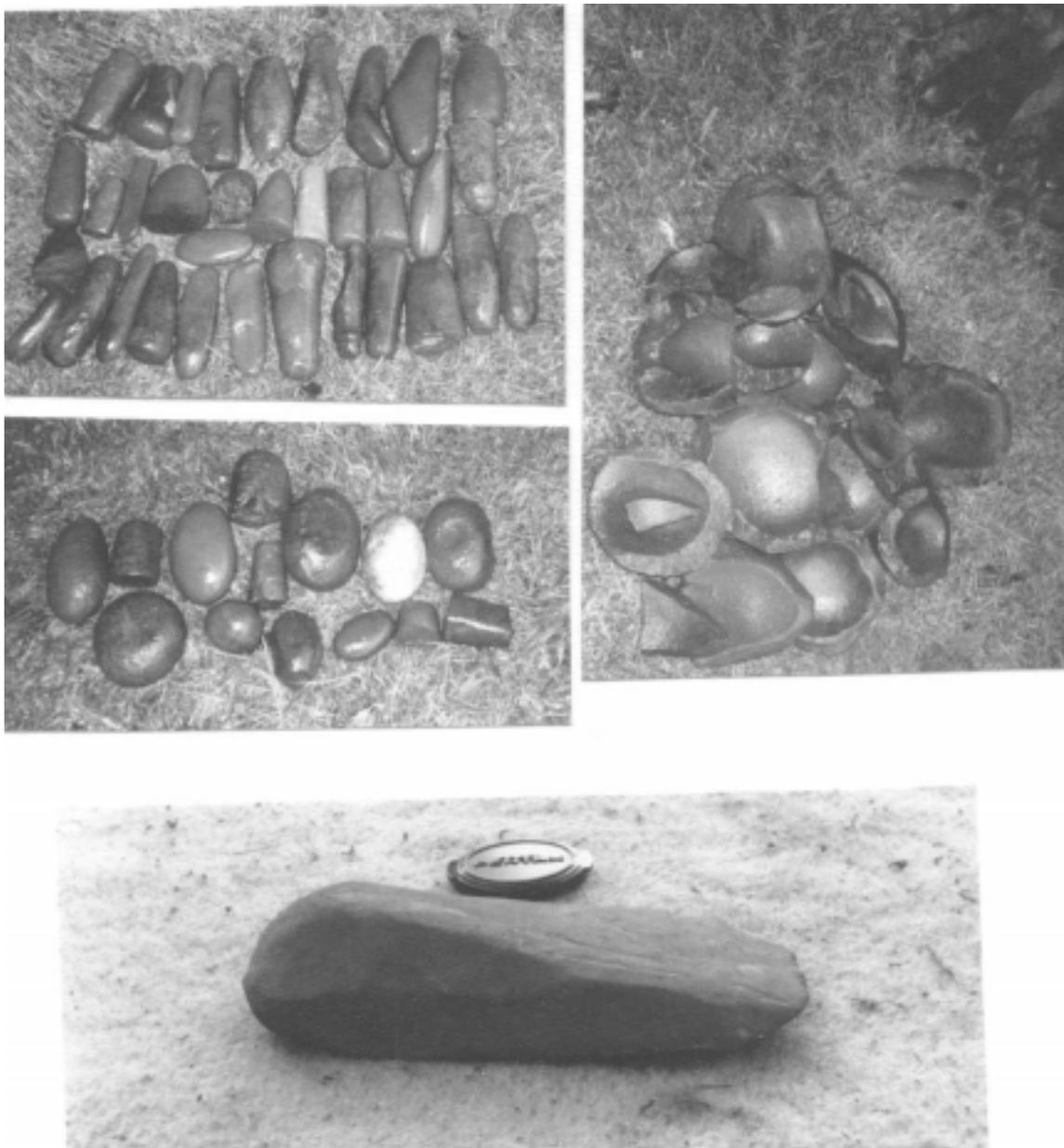
All the oak timber was owned by the well-to-do families and was divided off by lines and boundaries as carefully as the whites have got it surveyed today. It can easily be seen by this that the Indians have carefully preserved the oak timber and have never at any time destroyed it.

The Douglas fir timber they say has always encroached on the open prairies and crowded out the other timber; therefore they have continuously burned it and have done all they could to keep it from covering all the open lands.

The decimation of western Oregon Indian populations by disease in the early 1830s resulted in less broadcast burning. Two primary reasons for the reduction were: 1) fewer people to continue burning the hundreds of thousands of acres of prairies and savannah established and maintained by previous, more populous, generations, and 2) reduced need to produce or harvest the relatively vast amounts of food and other products needed and used by the earlier, much larger, populations.

The advent of settlement and subsequent conversion of Soap Creek Valley lands to livestock pasturage in the mid-1840s put an end to Indian burning practices. Broadcast burning continued to be used as a tool by pioneer landowners and their geographic descendants for clearing fields (Hanish 1994; Olson 1994) or logging sites of slash and other flammable debris (Thomas & Schroeder 1936; Longwood 1940; Vanderburg 1995). In the mid-1900s, field burning frequency increased as commercial grass seed growers began to use annual fire to help control weeds and pests, clear out rank growth, and favor select seed crops (Rohner 1993). These practices, and their purposes, were very similar to those used by Kalapuyan resource managers over 100 years earlier. Annual field burning practices have continued in Soap Creek Valley to the mid-1990s, but public sentiment against smoke in the Willamette Valley has served to greatly reduce broadcast burning through most of Benton County, including Soap Creek Valley, during the past five years (Rowley 1998: Personal communication; personal observations).

Fig. 23. Soap Creek area prehistoric vegetation processing tools. These mortars and pestles are among hundreds of artifacts found by Soap Creek area farmers since settlement (Smith 1992: personal communication; Rohner 1993; Hanish 1994; Dickey 1995). The stone wedge may have split timbers for construction and/or large logs for firewood. Grinding tools were probably used to process camas, tarweed seeds, blackberries, filberts and/or acorns that grew throughout the Soap Creek Valley area (Collins 1951; Aikens 1975; Boyd 1986; Gilson 1989). Pat Smith collection. Photographs by Terri Trosper and Barbara Elliott (1992) and Kevin Sherer (1990: wedge).



## Farming and Ranching (1846-1999)

Beginning in 1846, the first European American settlers in Soap Creek Valley (see Maps 2, 4, and 11; Table D.2) introduced agricultural practices that included livestock grazing (see Fig. 24; [Olson 1994](#)), fruit orchard planting ([Cook 1995](#); [Vanderburg 1995](#)), and fencing and plowing, in preparation for sowing market products; chiefly wheat and oats (Fagan 1885; Longwood 1940; [Rohner 1993](#); [Cook 1995](#); [Murphy 1995](#)). Much local effort was directed initially toward the raising of livestock for gold miners in California, southern Oregon, and Idaho (Longwood 1940; Jackson 1980; Zybach & Meranda 1989). As mine field productivity waned through time, and railroads made transcontinental trade of farm products possible, Soap Creek Valley farmers began concentrating on other produce, including milk, eggs, prunes, and nuts (Longwood 1940; [Rohner 1993](#); [Murphy 1995](#)). In the late 1800s, many local soils became unsuited for wheat production because of “soil depletion” (Longwood 1940; [Cook 1995](#); [Murphy 1995](#)). The introduction of internal combustion engines in the early 1900s (see Fig. 25) and increased local knowledge allowed for “deep plowing” and crop rotation practices to rejuvenate depleted soils ([Glender 1994](#); [Cook 1995](#); [Murphy 1995](#)). The contemporaneous emigration of European (chiefly German, Italian, Norwegian, Russian, Swedish, and Swiss) families to Soap Creek Valley ([Glender 1994](#)) coincided with regional trends to smaller farms and more diversified crops (Longwood 1940; [Rohner 1993](#); [Glender 1994](#)) made possible by technological change. By WW I, increased diversity of Soap Creek Valley crops and cultures likely helped local families respond to vastly changed international conditions, including widespread use of telephones, radios, railroads and automobiles ([Olson 1994](#)). As a partial result, local farmers were able to produce crops demanded during time of the war, including navy beans, feed corn, and poultry (Longwood 1940; [Rohner 1993](#); [Olson 1994](#); [Cook 1995](#)).

The early 1920s were generally viewed as a time of prosperity, and many farmers in the Soap Creek Valley area owned telephones, automobiles and tractors ([Glender 1994](#)). Modern farming practices, implemented on an experimental basis in the early 1900s, had been adopted by most families ([Cook 1995](#)). Some of the first row crops in the grass seed industry were planted along the banks of Soap Creek, to the northwest of Coffin Butte, shortly after WW I. Income from commercial harvests of Hardinggrass was good enough at that time for

Map 11. US GLO/PLS cadastral map, T. 10 S., R. 5 W., 1854 (Hathorn 1854b). Provisional and DLC pioneers focused initial land claims in Soap Creek Valley on tillable soils deposited by Bretz Flood events over 12,000 years before their arrival (see Maps 2 and 5; Table D.2). For consolidation and subdivision of pioneer claims, see Rohner (1993) and Cook (1995).

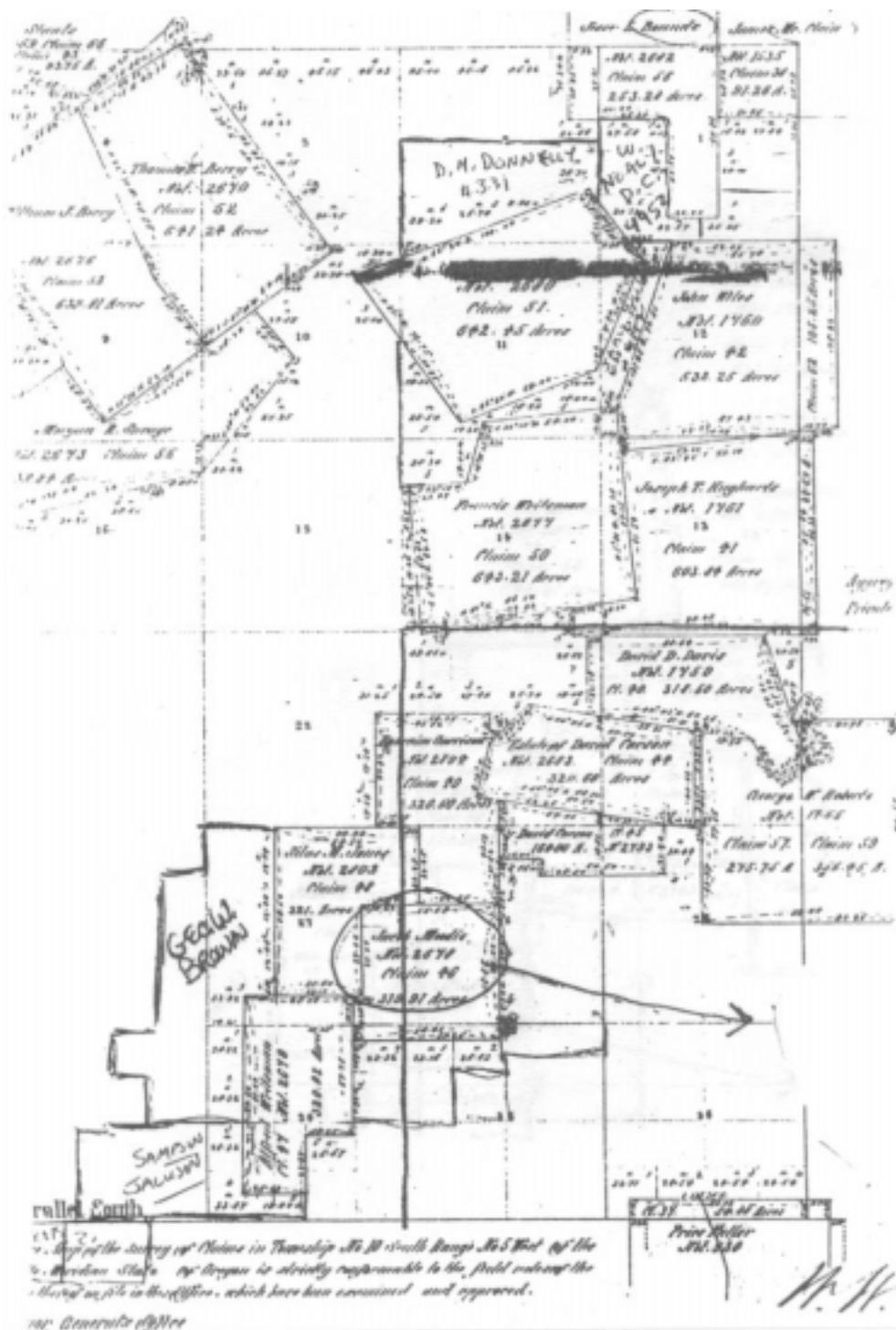


Fig. 24. Glen Moore Ranch, view SE from house, c.1899. This is a view of the old Alfred Writsman DLC (Map 11; Table D.2), looking toward current location of Soap Creek Schoolhouse (Map 2; Table 2) and McDonald Forest (Map 3). Photograph by Samuel Moore. Printed by permission of Myra Moore Lauridson and the Soap Creek Schoolhouse Association.



Fig. 25. Glender horse and tractor, c.1910. Photograph, taken near Glender barn, N. of Glender Hill (see Fig. 2; Map 2; Table 2), documents transition from livestock to combustion engines in Soap Creek Valley. Fuel needs of early 20th century Soap Creek Valley families quickly shifted from pasture and hay (see Fig. 18) for plowing, mowing, and transportation needs, to gasoline and diesel. Photograph provided by Eugene Glender, photographer unknown.



landowners to contract most harvesting labor to others (Oregon Weekly Journal 1923; Rohner 1993). Hardinggrass, not cultivated after 1941, continues to grow wild in small patches along Soap Creek ditches and roadsides (personal observation).

The Great Depression in the late 1920s, lasting until the start of WW II in 1941, was a difficult time for Soap Creek Valley farmers. Many lost their land to creditors, or were forced to sell at poor terms (Hanish 1994; Vanderburg 1995). New cars were repossessed, became old or disabled, and new families moved in and out of the area en masse, seeking employment as loggers, pole peelers, hop pickers, sawmill workers, truck drivers, farm hands, or whatever other employment might be gained (Hanish 1994; Vanderburg 1995; Hindes 1996). Local job opportunities for women, outside of the home, were generally limited to school teaching (Cook 1995; Dickey 1995).

In 1941, most farms and land in Soap Creek Valley (see Fig 26) were purchased by the US government for Army field combat training purposes, as a portion of Camp Adair (Berg 1983; Rohner 1993). Farmers were allowed to sell their livestock, or harvest their last planted crops, but only a small strip of farms to the south of Soap Creek Road (see Map 2) remained in private hands. Upon government acquisition of these lands, fences were torn down, buildings destroyed, rock mined, roads built, pioneer graveyards relocated, livestock removed, and cropland and forestland was used for military training purposes (Berg 1983; Dunn 1990; Polk County Museum Association 1992; 1993; Rohner 1993; Glender 1994; Rawie 1995).

Following the war, most Soap Creek Valley farmland was obtained by OSC Schools of Forestry and Agriculture for student education and research (Jackson 1980; Berg 1983; Dunn 1990; Rowley 1996; Davies 1997), developed into residential “hobby farms” (small farming or ranching operations generally less than 10 acres in size that provide supplemental income and/or recreational activity for their owners: see Grabe 1990), or developed into a community landfill (Webber 1996: personal communication). Currently, most commercial farming and ranching in Soap Creek Valley is performed by the OSU College of Agricultural Sciences Beef Barn operation (Miller 1996: personal communication). Virtually all other farming activities involve pasturage of pet horses, incidental

Fig. 26. Central Soap Creek Valley aerial photo, c.1950. Photograph shows degree of settlement, afforestation, and reforestation that has taken place in central Soap Creek Valley at approximate midpoint in time and distance between upper and lower photographs in Fig. 21. Note clearly visible DLC property boundaries dating to 1840s' Carson and Garrison provisional land claims (see Maps 2, 5 and 10; Table D.2). This aerial was used for classroom exercises by OSC Forestry students in the early 1950s (Rowley 1998: personal communication; photograph by Delano Aerial Surveys, Portland, OR. Annotations by author.)



management of established orchards, and/or raising of non-commercial gardens and occasional crops (Grabe 1990; Miller 1996: personal communication). A few local farming families continue to manage some croplands of their own and occasionally contract with absentee landowners to raise crops on adjacent lands (Webber 1996: personal communication).

#### Forestry and Logging (1846-1999)

“Forestry” and/or “logging” refer to European American practices with a basis in scientific methodology (MacCleery 1992). The first logging in Soap Creek Valley was performed with horses, oxen, axes, and cross-cut saws by pioneers of 1846-1858 to clear roadways and survey lines, build cabins, construct fences and bridges, and produce firewood and lumber (Thomas & Schroeder 1936; Longwood 1940). Kalapuyans quite likely peeled cedar, gathered acorns, harvested firewood, and, perhaps, occasionally felled trees in the Soap Creek Valley area (Wisner 1992). However, Kalapuyan tree management practices are generally unknown and are not considered to be forestry or logging practices for the purposes of this study.

The first commercial sawmills in Soap Creek Valley were probably established around 1890, near Sulphur Springs and the Soap Creek Schoolhouse (see Map 2; Table 2; Thomas & Schroeder 1936; Longwood 1940; Wisner 1992; Olson 1994). Clearcut logging practices were often employed to supply these early mills. Logs were mostly moved directly to the mill, downhill by horses (Rowley 1990: personal communication). In the early 1900s, most forestry practices in Soap Creek Valley were related to clearing young stands of oak and conifer to create pasture (Bagley 1915; Longwood 1940; Olson 1994; Cook 1995). Trees cut during these operations were piled and burned (Hanish 1994), converted to firewood (Cook 1995), and/or used for fencing (see Fig 18; Olson 1994).

In 1914 and 1915, changes in income tax laws and increases in the value of Douglas-fir logs resulted in the measure of timber volumes on private lands within the county (see Map 12 and Table 14; Benton County Commissioners 1914; Bagley 1915; Longwood 1940), including Soap Creek Valley timberlands. Table 14

is a copy of a portion of a typical cruise table constructed for this project (Bagley 1915; see Appendix G). It summarizes timber volumes on one of the most heavily timbered section in Soap Creek Valley at that time, Tsp. 11 S., Rng. 5 W., sec. 5. “Yellow fir” refers to old-growth Douglas-fir, “red fir” is second-growth Douglas-fir, and “white fir” is now called grand fir. Bagley (1915) noted the yellow fir “is a coarse grade and shows much defect” and the red fir “is mostly second growth of a very common grade,” but the logging condition was “favorable as the entire section would log easily.” He also noted that “nearly all” of the SE quarter of the section “could be cultivated when timber is removed,” but that the “balance of the section is steep and rough; good for grazing only.”

Map 12 is a sample of the maps produced during the 1915 timber cruise (Bagley 1915), one of two produced in conjunction with Table 14 (see Appendix G). This map shows, roughly, how timber was distributed within the section. More distinct distributions can be made with the aid of early aerial photographs, such as the 1936 series that produced Figs. 7 and 26 (see Chapter V). Both map and table demonstrate how each section was divided and cruised in 16 separate, standard PLS 40-acre square subdivisions, or “tracts.”

Table 15 summarizes 1850s and 1880s PLS survey data for all BTs in Soap Creek Valley (see Map 2; Appendix F) This table helps identify likely locations and sources of tree seed for afforestation and reforestation processes since those times. Benton County cruise data for 1915 conifer timber volumes in Soap Creek Valley (see Table 14; Map 12; Appendix G; Bagley 1915) are correlated to BT species and locations in Table 15. These maps and tables show that a significant amount of commercial timber, including old-growth Douglas-fir, existed in Soap Creek Valley before WW I. Most of this timber was contained in a few thousand acres of steep Soap Creek headwaters that had been avoided by pioneer settlers and early farmers and ranchers (see Maps 2, 3, 5, 11, and 12).

In the 1920s, several small mills and a logging and sawmill camp were established in Soap Creek Valley (Glender 1994; Vanderburg 1995; Hindes 1996; Rowley 1996). Most log transport was still performed by horses, however contemporary forestry practices called for the broadcast burning of logging debris in order to reduce the potential for wildfire and to hasten the

Map 12. Bagley timber cruise map, T. 10 S., R. 5 W., S. 5, 1915 (Benton County Commissioners 1914; Bagley 1915). This map shows the location of the north-south Sulphur Springs to Oak Creek/Bald Hill trail described by Vanderburg (1995) for the 1930s and the Sulphur Springs to Kings Valley/Airlie trail described by Olson (1994) for the late 1800s. Note the size and location of relict native grasslands in relation to buildings and early automobile roadways. These early routes were apparent extensions of prehistoric Kalapuyan foot trails and early historical livestock trails (Braman 1987; Zybach et al., 1990).

