

Habeck, James R. "The Original Vegetation of the mid-Willamette Valley, Oregon." *Northwest Science* 35.2 (1961): 65-77. (Reviewed by Alexis Steinberg)

Climatic conditions of the Willamette Valley provide for diversified agriculture, but extensive irrigation and livestock grazing have contributed to alteration of the original vegetation of the valley. In a study from 1961, James Habeck aims to provide information about vegetation present in the Willamette Valley prior to European-American settlement (pre-1850). He explores this "original" vegetation through federal land survey records from the 1850s in an attempt to understand present (1960s) changes in local vegetation.

Land Survey Records in the Willamette Valley were initially documented by surveyors from the U.S. Federal Land Office to subdivide "newly claimed" settlement land in the 1850s. Two hundred fifty-two square miles were surveyed and divided into 36 mile-square sections. Habeck identifies specific methods and protocols that each surveyor had to conduct when documenting and dividing sections of land. "Bearing trees" were identified at each of the section's four corners to act as locators for section corner markers. These trees were recorded by common name, diameter, and relative distance and direction from other bearing trees. Surveyors also recorded landscape features, vegetation type, soil and geology characteristics of the area. Treeless boundaries were marked by earth or rock mounds and surveyors were instructed to plant fruiting trees in these places to mark boundaries for the future. From these records, the Land Office developed a generalized vegetation map of the Willamette Valley, identifying the distribution of five major vegetation types: 1) Oak opening, 2) Oak forest, 3) Douglas-fir forest, 4) Bottomland forest and 5) Prairie.

Habeck discusses the 1850s survey results of each of these vegetation-type areas in terms of dominant species and compares vegetation to that of the 1960s. The oak opening vegetation area was recorded as a mixture of grasses, shrubs and some oak trees. Comparatively, Habeck's 1961 study observes very few oak openings and claims these have been disturbed by grazing or become oak forests with the absence of regular Native American burning. Garry oaks, Douglas-firs, red alders and laurels dominated the oak forest vegetation area. Habeck finds that this area, too, has undergone change from cutting and grazing by 1961, and also records the presence of more big-leaf maples and dominant Douglas-fir stands.

The 1850s survey of Douglas-fir stands records this tree's dominance on the eastern and western edges of the valley, along the Cascade and Coastal ranges. A very distinct forest line was observed, thought to be a result of controlled land burning. The bottomland forest vegetation area was recorded as the Willamette River floodplain that was home to Oregon and white ashes, black cottonwood, and a few Douglas-firs and big-leaf maples.

Understory shrubs included Oregon grape, salmonberry, elderberry, rose, hardhack, ninebark and non-woody ferns. By 1961, flood control from dams and agriculture had limited the extent of this vegetation area considerably. The prairie composed the largest recorded area from the 1850s survey. Low wet prairies and upland prairies were home to hazel, Oregon grape, rose, ninebark, grasses and ferns.

Habeck presents an interesting study from 1919 by Nelson of species abundance in this same prairie area (60 years after European-American settlement). Of the 106 grass species identified by Nelson, 55 were introduced and only 51 were native. Habeck reluctantly concludes that “Very little of the original vegetation remains at this time” in the Willamette Valley.

Critique

Habeck's research and study provide important information about some of the earliest European-American documentation of vegetation in the Willamette Valley. His comparison of this information with his own study conducted 100 years later is an important resource for our own comparisons, over 150 years later. There are several problems with Habeck's work that we should consider. The term “original vegetation” is used to indicate pre-settlement (by Euro-Americans) vegetation. It is assumed that persistent land burning by the Kalapuya Native Americans did not change vegetation types, only vegetation absence or presence in certain areas. Habeck does not tell us when “original” began in history. In other words, he does not consider the dynamic and successive environmental process that shaped the Willamette Valley. Also, Habeck does not outline his own methods of research. His comparisons of information from the 1850s surveys with his own in the 1960s seem arbitrary. He provides no scientific evidence of these changes other than his own perception of them. Overall, this work provides a general picture of the dominant environmental types and plant species of the Willamette Valley at the time of European-American settlement and is helpful for understanding and assessing human environmental impacts.

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