

The causes and consequences of loss of a culturally significant resource: seasonally moist meadows in the Palouse region

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Seasonally wet meadows were a critical resource for native peoples of the Palouse region of the Columbia Plateau. These wetlands supported dense stands of camas and provided many important things to native people, including large quantities of a nutritious food, a stable source of food that could be stored for long periods of time, an economically valuable resource controlled by women, a place where people could gather in summer to socialize, and a valuable item for trade. After Euroamerican missionaries and settlers arrived in the region, land was converted to a privately-owned commodity. This, combined with the results of farming (erosion, wetland drainage, and encroachment by exotic plant species), dramatically altered seasonally wet meadows. Water tables dropped and reed canarygrass, an aggressive forage grass, displaced native plants. As a result, it became difficult for native people in the Palouse to obtain this culturally important food.

KEY WORDS: seasonal wetlands, camas, wet meadows, landscape privatization, land ownership, Palouse Bioregion, Columbia Plateau, Nez Perce Tribe, Coeur d'Alene Tribe, Palouse Tribe

Introduction

The Palouse region comprises the eastern portion of the Columbia Plateau in eastern Washington and adjacent northern Idaho (Caldwell 1961). This landscape is characterized by rolling hills and deep, fertile loessal soils. This area is drained by the Palouse River and its tributaries and is sometimes termed the "Palouse Prairie." Precipitation falls mainly in autumn, winter, and spring. Most of the streams are intermittent, and the upland soils are well drained, so there is little surface water in summer; however water accumulates low-lying areas in winter and spring. The typical native vegetation on uplands is meadow steppe. Prior to widespread grazing and

cultivation, perennial caespitose grasses, accompanied by herbaceous dicots and low shrubs, typically dominated the uplands (Weaver 1917; Daubenmire 1970), while parts of the landscape that were wet in winter and spring developed a distinctive plant community dominated by dense stands of camas (or *qémes*, *keh-mes*) *Camassia quamash*, a liliaceous forb with edible corms that were an important food for the region's native people. Aggregations of camas also covered much of the southeastern corner of the region. This "Camas Prairie" occupied a fairly level plateau above the Clearwater River. It too has loessal soils, but they are shallower than those of the Palouse Prairie and tend to be less well drained (Barker et al. 1983; Lichthardt and Moseley 1997).

The conspicuous flowers of camas are usually bluish purple or pale blue, although they can also be white. When explorers first arrived in the Palouse region, they noted that the extensive stands of flowering camas resembled water (De Voto 1953; Baird 1999b). Camas meadows were not monolithic, however. Other plants that could tolerate wet soils in spring and dry soils in summer grew among the camas. These included tufted hairgrass (*Deschampsia cespitosa*), sedges (*Carex* spp.), and a variety of forbs such as American bistort (*Polygonum bistortoides*), straightbeak buttercup (*Ranunculus orthorhynchus* var. *orthorhynchus*), cow parsnip (*Heracleum maximum*), meadow death-camas (*Zigadenus venenosus*), nine-leaf lomatium (*Lomatium triternatum*), velvet lupine (*Lupinus leucophyllus*), northern bedstraw (*Galium boreale*), cinquefoil (*Potentilla gracilis*), northern mule's ears (*Wyethia amplexicaulis*), western blue flag or iris (*Iris missouriensis*), and broad-fruit mariposa (*Calochortus nitidus*) (Weddell 2002). All of these plants could tolerate wetness, but many of them did not require saturated soils and also grew on the drier slopes.

Prior to Euroamerican settlement, the Nez Perce people lived in the Camas Prairie and its environs, while the Palouse River drainage was inhabited by the Palouse tribe. The northern fringes of the Palouse Prairie were also used by the Coeur d'Alene and Spokane peoples (Walker 1982). These patterns of land use were fluid, however, with joint areal use by different tribes being common (Chalfant 1974a,b,c). Throughout the region, underground plant parts made up a substantial part of the diet (Hunn 1981, 1990; Hunn et al. 1998). The annual cycle of hunting and gathering tracked seasonal changes in plant productivity. It began with gathering roots at low elevations in spring; as the seasons progressed, plant and animal resources were harvested at progressively higher elevations (Slickpoo and Walker 1973; Marshall 1977). This pattern of subsistence required access to large areas, a fact that was noted in 1855 by George Gibbs, a member of Isaac Stevens' exploring party: "They require the liberty of motion for the purpose of seeking, in their proper season, roots, berries, and fish, where those articles can be found" (Gibbs 1855:423).

This paper explores how changes in land ownership and use following the arrival of Euroamericans made it difficult for native people of the Palouse region to continue gathering and using camas in traditional ways. The fate of the camas meadows illustrates how changes in social organization (replacement of traditional patterns of land utilization by privately-owned croplands and pastures), transformed the landscape (replacing wetland plant communities with crops and species tolerant of large-scale disturbances), and undermined traditional patterns of resource use.

The camas meadows: a critically important resource

Nutritional value of camas

Seasonally wet meadows provided a critical resource for the first people of the Palouse. The ethnographer Herbert Spinden considered camas “the most important of all vegetal foods” for the Nez Perce (Spinden 1974:201). In many ways, camas is an ideal food plant. When properly processed it is tasty and nutritious and can be stored for long periods of time without spoiling. In addition, it was easy to find, and native people could count on obtaining it in large quantities each year. For these reasons, camas was a staple in the diets of the tribes of the Columbia Plateau. Some authorities estimate that more than 50% of native peoples’ food energy came from root foods (Hunn 1980, 1990; Hunn et al. 1998). The camas bulb stores large amounts of carbohydrate in the form of inulin, an indigestible polysaccharide that is converted by slow cooking into a digestible sugar, accounting for the sweet tasted of cooked camas (Konlande and Robson 1972).

Social and cultural value of camas

Archeological evidence suggests that about 4,000 years ago, camas and other plants with edible roots became more abundant and also more important in the diets of Plateau peoples. Around this time, they also began staying in semi-permanent villages throughout the winter. Some authorities believe that one reason winter villages developed was because people could store enough camas and other root foods to make it through the winter without traveling. The amount of cooperation between families probably also increased during this period, as groups of families began to spend the winter together (Ames and Marshall 1982; Thoms 1989; Mastrogiuseppe 2000).

Camas and other root foods had another interesting effect on the social relationships within Plateau groups. Women dug and processed root foods, and the products of their labor belonged to them. This gave them considerable economic power and status. For instance, they could trade surplus foods with distant groups to obtain horses and other material possessions. Their status also extended to other spheres of life including political and spiritual realms (Ackerman 1982; 1995).

Native peoples actively managed habitats to benefit camas. By digging, they mixed and aerated the soil, and harvesting thinned the camas population. In addition, women returned immature bulbs and some mature ones to the soil and transplanted others. These actions probably increased the productivity of camas meadows. Oliver Marcy commented that “The Kamas is an inexhaustible source of food to the Indians, for though they dig the bulbs in great quantities, the new bulbs grow larger and better on the ground that is dug over” (Baird 1999b:50). There are also reports of the Nez Perce deliberately burning dry camas meadows to improve food production (Marshall 1999).

The people of the Palouse region prized camas highly. When the Nez Perce shared camas with members of the Lewis and Clark expedition, Clark commented in his journal that “the natives are extremely fond of this root and present it [to] their visiters as a great treat” (Thwaites 1905:131). In the newsletter of the Sacred Heart Mission on the Coeur d’Alene Reservation in 1939, an anonymous contributor described camas as:

“delicious. It makes the Coeur d’Alenes smack their lips when eating. The camas—one of most precious foods” (Anon. 1939:307).

A Nez Perce story of Coyote and the Monster of Kamiah tells how Coyote provided camas for people to eat. In this story, the Monster ate all the people and Coyote rescued them by descending into body of the Monster and cutting loose the Monster’s heart. As he descended into the body of the Monster, “he left along the way great *keh-mes* (Camas bulbs) and great serviceberry [*Amelanchier alnifolia*] fields, saying ‘Here the people will find them and be glad’” (Slickpoo 1972:202). During winter, when children listened to this and other legends, they would snack on camas and other dried foods.

Because berries and root foods had so much spiritual importance, a girl’s first gathering of roots and berries was a significant occasion for the girl, her family, and her tribe. When a Spokane girl received her first digging stick the occasion was recognized with a rite of passage, and when she died it marked her grave. In addition, she ritually cleaned and saved the first camas she dug and kept it in a hide bag that she wore around her neck whenever she dug camas (Ross 1998).

Camas gathering was an occasion for people to socialize and for different tribes to trade. A Coeur d’Alene described the summer “resort” at De Smet, Idaho, where his people were joined by neighboring tribes: “The Nez Perce, the Cayouse, the Palouse, the Spokanes, the Calispel Indians used to come annually in the summer time and camp They would play stick games. Pony horse racing. Two mile running foot racing” (Anon. 1939:307). The possession of high quality camas also gave the native peoples in the Palouse status with other groups in the region; the camas of the Nez Perce territory was considered especially valuable (Anastasio 1972).

The Loss of the Camas Meadows

The influence of missionaries

Lewis and Clark would not have survived without the aid of their indigenous helpers, who understood how to meet their needs by hunting, fishing, and gathering plants and animals that were available in their environment. But the missionaries and others who arrived in the wake of the Lewis and Clark expedition sought to persuade the aborigines to give up their way of life and become farmers (Table 1). When Rev. Henry Spalding and his wife settled among the Nez Percés in 1836, Spalding deplored their mode of earning a living as much as their religion: “When we arrived, the nation was . . . without a hoe, plow, or cow; depending upon roots, fish and game; without letters, without law, or a knowledge of the Sabbath or redemption” (Baird 1999a:28). Accordingly, the Spaldings set about teaching “the principles of ‘the Bible’ and of ‘the plow’” (quoted in Baird 1999a:35). A. L. Downer, a resident of Lewiston and government official wrote that “religious teaching would no doubt prove a great blessing to them, in connection with the moral lessons taught in the schools . . . both in learning as well as in agriculture” (Baird 1999a:21). Along with taking up farming, the Indians were expected replace their communal patterns of land utilization with private ownership. The botanist Charles Geyer admired the success with which Spalding taught the Nez Percés that they “must

acquire property, to become independent of hunting, and that that property must be realized by rearing domestic animals and tilling the land” (Geyer 1846:517).

Privatization of land

Geyer’s view was consistent with the United States government’s Indian policies in the middle and late nineteenth century. These policies emphasized alienating Native Americans from their lands first by restricting them to reservations and then by settling them on privately-owned farms (Hoxie 1984; Hurt 1987; Hagan 1988). Communal land title was viewed as an impediment to these goals. Alice Fletcher, the ethnographer who spent several years assigning allotments to Nez Perces, argued that regardless of the preferences of the tribes, land should not under any circumstances “be patented to a tribe. The principle is wrong” (Mark 1988:106).

Between 1850 and 1887, the US government sought to remove Indians to reservations so that land outside the reservations could be opened to settlement. This policy affected all of the tribes of the Palouse. In 1855 Isaac Stevens, governor of Washington Territory, and representatives of the Nez Perce nation signed a treaty in which the Nez Perce ceded to the United States all their lands except for reservation lands to which they retained title. Stevens signed a similar treaty with representatives of the Yakama and other confederated tribes and bands of central and eastern Washington in the same year. Representatives of the Palouse tribe were among the signatories of this treaty, although their participation may have been coerced (Sprague 1998). The boundaries of both these reservations were reduced by subsequent agreements. The Coeur d’Alene and Spokane Reservations were created by executive orders. When the boundaries of the Coeur d’Alene reservation were subsequently ratified by Congress, some bands of Spokane Indians were also removed to the Coeur d’Alene Reservation (United States Institute for the Development of Indian Law [1974]; Palmer 1998; Ross 1998).

In 1887 Congress passed the General Allotment Act or Dawes Severalty Act (24 US Stat 338), which provided for allotments of farmland to be given to Indians: 160 acres to male heads of families, 80 acres to unmarried adults, and 40 acre to children under 18, or double those amounts for grazing land (Washburn 1975). This act accomplished two things. First, it converted Indian lands to privately-owned parcels that could be sold as a commodity (Wester 1999). This was a radically different way of relating to the land. Chief Joseph expressed the difference this way: “We do not plant; we harvest only the grain and berries that Mother Earth willingly gives us” (quoted in Howard 1971:130). Second, the Dawes Act allowed unallotted reservation land to be sold, resulting in further losses of Indian lands (Gates 1936). In the case of the Nez Perces, this policy led to the loss of over 70% of the reservation (Mark 1988; James 1993). Local newspapers celebrated this development: “the day is not far distant when actual settlers will be cultivating and rendering productive these broad acres so long locked up in the unused public domain” proclaimed the *Lewiston Teller* in 1891 (James 1993:12).

Changes in land use

In the late 1870s, substantial numbers of immigrants began arriving in the Palouse region; more than 7,000 settlers were reported there by the census of 1880 (Meinig 1995). Many of them settled in the seasonally wet meadows adjacent to streams such as Union Flat Creek, where they raised hay, grazed livestock, and planted crops. The town of Moscow, Idaho, was originally called “Hog Heaven” because the local supply of camas provided abundant food for settlers’ pigs.

The Camas Prairie, which was less accessible, was settled later. After allotment was completed, hundreds of claims were filed. By 1897, about 3,600 settlers had fenced 2,800 quarter sections and begun cultivating over 12,000 acres of the Camas Prairie. On November 13, 1897 a writer for the *Spokesman-Review* remarked on the “transformation of this country from a cayuse-dotted wilderness to an agricultural district producing 300,000 bushels of splendid grain” (Meinig 1995: 368).

Native people actively resisted these changes. The control of camas grounds was particularly contentious, and disputes sometimes led to violent conflicts (Beal 1972). Nevertheless, as the settlers acquired more land, stands of camas gave way to croplands and pastures. Botanist John Leiberg described the result: “With the advance of settlements came the utilization of the camass fields as hay meadows. This ended the existence of the plant, except as a weed in the farmers’ fields” (Leiberg 1897:37-38).

Farming removed native vegetation, which led to increased soil erosion. Between 1910 and the 1930s, summer fallowing, stubble burning, and dry cropping of peas resulted in severe soil erosion (Kaiser 1961; Jennings et al. 1990). By 1935 a Soil Conservation Service scientist reported that erosion had caused dramatic downcutting of stream channels and that as a result the water table had receded, permitting “bottom lands and small meadows formerly considered too wet to farm . . . to be farmed” (Victor 1935:18). In meadows along the South Fork of the Palouse River, the conversion of wet meadows to cultivable land reportedly took only 10-12 years. Erosion was accompanied by high rates of siltation in streams and adjacent wetlands.

By the late 1930s, many farmers were aware that soil loss was a serious problem, but erosion rates remained high. The estimated annual soil loss from Whitman County between 1939 and 1950 was 8.8 million tons (Kaiser 1961). One measure that farmers took to address this problem was to plant perennial grasses in within-field drainages (Jennings et al. 1990). This probably reduced the extent of native wetland species as the non-natives spread to other wetland areas. Reed canarygrass (*Phalaris arundinacea*), which was planted to reduce erosion, was an especially aggressive colonizer of stream channels and lowlands throughout the region. Although this species is native to parts of the Inland Northwest (Merigliano and Lesica 1998), neither the Washington State University Ownbey Herbarium nor the University of Idaho Stillinger Herbarium has any wild specimens collected in the Palouse region prior to 1938. (The first specimen for the Palouse region was collected by R. Daubenmire in a “muddy roadside ditch” 5 mi north of Moscow in 1938, WSU Ownbey Herbarium Spec. No. 261001). In 1937, however, a nursery was growing this species in eastern Washington (WSU Ownbey Herbarium Specs. No. 308302 and 308307). The source of seed for these plantings may have been Oregon’s Coquille Valley, where reed canarygrass had been grown for seed production since 1885. The aggressive form that subsequently invaded wet meadows in eastern

Washington and northern Idaho may be descended from this cultivar (Stannard and Crowder 2001).

Wetland drainage further reduced the extent of camas meadows. Beginning in the 1930s, government agencies such as the Soil Conservation Service encouraged farmers to drain moist meadows (Mitsch and Gosselink 2000). During the 1950s, many of the wet depressional areas of the Palouse were drained (Figure 1).

As a result of these changes, important camas sites in the Palouse and Camas Prairies were drastically altered. Camas grounds became rare, and those that remained were often privately owned or sprayed with pesticides or herbicides. These problems made it difficult to gather camas in the traditional way. In the mid-1960s, two thirds of 50 Nez Perce surveyed by Scrimsher (1967) indicated that they liked camas. It was not easy to obtain this food, however. Harbinger (1964:28) found that “The only place where camas may be procured is . . . over difficult and dangerous roads. It is in an isolated area, and all supplies must be brought in. . . . Not everyone has an automobile, and not everyone can spare the time required to camp there. Women are brought by husbands or relatives and then left there, with no means of transportation and no means of communications, beyond a ranger station a few miles away.”

Many aspects of native culture were undermined by the privatization of the Palouse landscape and the alteration of seasonally wet meadows. The network of social relationships that was grounded in traditional ways of using and managing natural resources began to unravel, and sometimes health problems developed when refined foods replaced the traditional diet. Yet the old ways did not completely die out, although it is difficult to follow those ways when the landscape that permitted them has been reorganized. Recently, however, there has been a resurgence of interest in the presettlement landscape, and many people from the tribes, community organizations, universities, and government agencies of the Palouse have become interested in restoring parts of that landscape such as camas meadows and in reviving traditional ways of relating to the natural world.

A.

B.

Figure 1. Wetland drainage projects in the South Palouse Soil Conservation District, Whitman County, Washington, 1953. A. State soil scientist and technician inspecting tile laying job. Photo W-846. B. Wetland slated for drainage, bordered by tile interception ditch. Photo W-925. Photos from Verle Kaiser files, Box 3, folder 145, courtesy of Washington State University Manuscripts, Archives, and Special Collections.

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Year	Tribe	Remarks	Source
1835	Spokane	said to be growing wheat	Teit (1930)
1836	Nez Perce	“the missionaries have so far succeeded as to render the greater part of the tribe independent of hunting, by cultivating the soil, and rearing cattle and sheep”	Geyer (1846:517n)
1837	Spokane	had taken up some farming	Chalfant (1974b)
1846	Palouse	“small patches of land under cultivation”	Lowe in Sprague (1998)
1855	Palouse	the Palouse “raised corn, wheat and potatoes”	Grover in Sprague (1998)
1860	Palouse	crops planted and irrigated by the Palouse on islands between the mouth of the Tucannon and Alpowa	Engle in Sprague (1998)
1865	Nez Perce	“the Indians are raising more wheat and other grains each year”; “There is an increasing disposition manifested by these Indians to raise more grain and vegetables, and depend less upon wild roots, Kouse [<i>Lomatium</i> spp], and Kammas, for subsistence”	Downer in Baird (1999a:20, 21)
1865	Nez Perce	“they now raise yearly from 15,000 to 25,000 bushels of grain”	Spalding in Baird (1999a:26)
1880	Palouse	raised “wheat, oats, barley, potatoes, and other vegetables” on allotted lands	Hunter in Sprague (1998)
1881	Coeur d’Alene	marketed 30,000 bushels of wheat and other agricultural surplus	Bischoff 1974

Table 1. References to farming among Native Americans of the Palouse region prior to 1885.