

# The Historical Significance of Camas Meadows for Native Peoples in Idaho

Prepared by

Bertie J. Weddell  
*Draba* Consulting

For the U.S. Environmental Protection Agency

The images in on this web site are not to be used for commercial purposes. They may be used for scientific and educational uses provided proper credit is given to the source cited in the caption.

These materials were developed as part of a project undertaken by scientists at the University of Idaho, *Draba* Consulting, and the Idaho Department of Fish and Game. Researchers on this project are studying the ecology and history of Idaho's wetlands, especially the wet meadows ("camas meadows") of the Palouse Region of southeastern Washington and adjacent parts of Idaho. We are also working to increase awareness of the environmental and cultural significance of these wetlands by showing how the Palouse landscape changed after Euroamericans came to the region and by providing information for people who want to put back some of what has been lost. Funding is provided by U.S. Environmental Protection Agency Wetland Grants Program.

**Acknowledgments.** The assistance of Diane Mallickan, Nez Perce National Historical Park; Josiah Pinkham, Nez Perce Tribe Cultural Resources; and Gwen Carter, Nez Perce Tribe Water Resources, in reviewing materials for this web site is gratefully acknowledged. The Idaho Department of Fish and Game provided cost-share funding, administrative, and technical support for this project.

Wet meadows in low-lying depressions were a critically important resource for the first people of this region. The beautiful flowers of camas grew in these meadows in great profusion, and native peoples valued the bulbs of this special plant a great deal. The significance of camas is explored below. First, however, here is some background information about the original inhabitants of the state we now call Idaho and their environments.

[LINKS]

**Native People Before Idaho**

**The Environments of Idaho and the Resources They Provided to Native People**

**The Camas Meadows**

**The Values of Camas**

**The Loss of the Camas Meadows**

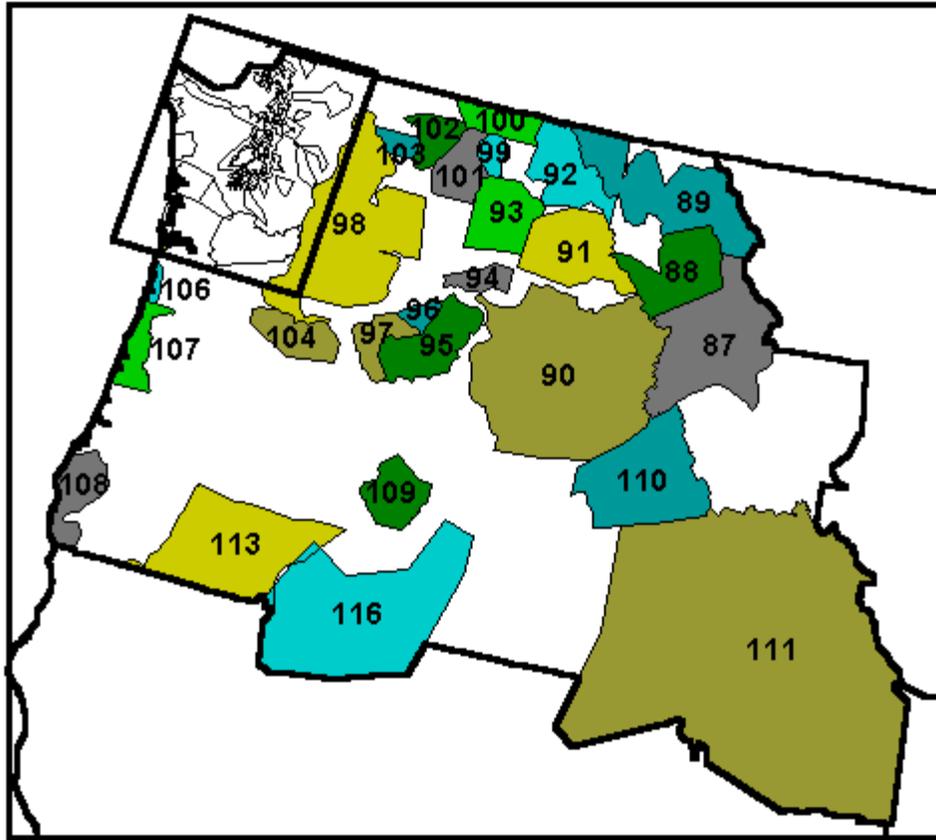
## **Native People Before Idaho**

Long before there was a state of Idaho, there were people living there. The Native Peoples in Idaho belong to two main cultural groups. The people living in the **northern** part of the state are part of the **Plateau** cultural group (Walker 1982).

This includes:

- the **Nez Perce**,
- the **Palouse**,
- the **Coeur d'Alene**,
- the **Spokane**,
- the **Kalispel**, and
- the **Kootenai** peoples.

The aboriginal territories of these groups were the drainage basins of Columbia Plateau. These rivers empty into the Columbia River or the middle Snake River.



Indian land areas for the Northwest, except for northwestern Washington. The maps in this project were published in a June 1992 report for the Legacy Resource Management Program as part of the Native American and Settler Communities Project. Authors are [Frederick L. Briuer, Ph.D.](#), and Gary A. Hebler, U.S. Army Engineer Waterways Experiment Station. Funding for preparing these pages was provided by the Legacy Resource Management Program. The primary source map for this layer is "Indian Land Areas Judicially Established", 1978. The source map portrays results of cases before the U.S. Indian Claims Commission or the U.S. Court of Claims in which an American Indian tribe proved its original tribal occupancy of a tract within the continental United States. Map code: 87 Flathead, 88 Upper Pend d'Oreille, 89 Kootenai, 90 Nez Perce, 91 Coeur d'Alene, 92 Kalispel, 93 Spokane, 94 Palouse, 95 Cayuse, 96 Walla Walla, 97 Umatilla, 98 Yakima, 99 Colville, 100 Lake Tribe, 101 Sanpoil-Nespelem, 102 Okanogan, 103 Methow, 104 Warm Springs, 106 Tillamook, 107 Tillamook, 108 Coquille, 109 Snake, 110 Lemhi, 111 Shoshone, 113 Klamath, 116 Northern Paiute.

The people living in the **southern** part of the state belong to the **Great Basin** cultural group.

This includes primarily

- the **Shoshone and Bannock** people,

as well as

- **Northern Paiute** people.

The aboriginal territories of these groups were the drainage basins of rivers that empty into the upper Snake River (above the mouth of the Boise River), except for the southeastern corner of the state, which is part of the Great Salt Lake drainage basin.

## The Environments and the Resources They Provided to Native Peoples

### Environments

The environments of the Plateau cultural area of northern Idaho and the Great Basin cultural area of southern Idaho were similar in many ways (Azvedo 1986; Chatters 1998; Walker 1998).

- Summers were hot and dry. Most precipitation fell in winter, which allowed snow to accumulate in the high elevations of the mountains. When the snowpack melted in spring, it flowed in streams and rivers.

This environment supported distinctive plant communities in **uplands** (areas not characterized by saturated soil during the growing season) and **wetlands** (areas where the soil was saturated for at least part of the growing season).

- In depressions or poorly drained areas, standing water accumulated, forming a variety of wetland types, including lakes, ponds, marshes, and wet meadows.
  - Some areas were flooded in spring but dried out by summer. These **seasonally wet meadows** supported dense populations of **common camas** (*Camassia quamash*), a blue-flowered member of the lily family, as well as other plants that could tolerate wet soils in spring and dry soils in summer.
  - Other areas held standing water throughout the spring and part or all of the summer in most years. These included **marshes**, areas dominated by herbaceous (non-woody) plants such as **sedges** (*Carex* spp.), **cattails** (*Typha* spp.), **bulrushes** (*Scirpus* spp.), and **rushes** (*Juncus* spp.). An important food that grew in shallow waters such as the margins of Lake Coeur d'Alene was *wapato* or water potato (*Sagittaria latifolia* spp.). Women gathered the starchy tubers of wapato by digging in mud with their toes (Mastrogiuseppe 2000).
  - In southern Idaho, salts accumulated in poorly drained depressions, resulting in saline wetlands with distinctive **salt-tolerant vegetation**.
- Along the courses of rivers and streams, deciduous trees and shrubs, such as **cottonwoods** (*Populus* spp.), **aspens** (*Populus tremuloides*), **alders** (*Alnus* spp.),

**willows** (*Salix* spp.), **hawthorns** (*Crataegus columbiana*, *C. douglasii*) **maples** (*Acer* spp.), **dogwood** (*Cornus sericea*), **gooseberries** (*Ribes* spp.), chokecherries (*Prunus* spp.), and **birches** (*Betula* spp.) were typical.

### Resources

These habitats provided native people with abundant resources. Some of the most important resources in the Plateau region were:

- fish, from the rivers, streams, and lakes;
- game and plant foods—such as “roots” (edible underground storage organs), berries, leaves, stems, flowers, bark, mushrooms, and lichens—from the forests and prairies; and
- camas, a valuable root food that was abundant in the seasonally wet meadows.

In addition, in southern Idaho, where other resources were less abundant,

- nuts, other seeds, and insects made up a substantial part of the diet.

The environment also provided the resources used for tools, medicines, and building materials, and for spiritual purposes. In particular,

- tules (bulrushes, *Scirpus* spp., and cattails, *Typha* spp.) and sedges, which were available in the marshes, and Indian hemp (*Apocynum cannabinum*), which grew in river valleys, were important in the construction of dwellings, mats, bags, rope, and baskets.

**Key points:** The native peoples who lived in what is now the state of Idaho belonged to two main cultural groups, the Plateau tribes in the north and the Great Basin tribes in the south. The wetland and upland (nonwetland) habitats of both areas provided a variety of plant and animal foods, including fish, game, and plants. In both the north and the south, root foods, including camas bulbs from seasonally wet meadows, were an important resource.

The significance of these wet meadows for native peoples in northern Idaho is explored in more detail below.

**For more information see:**

Azvedo, W. L. 1986. Introduction. Pp. 1-14 in *Handbook of North American Indians*. W. C. Sturtevant, gen. ed., W. L. Azvedo, vol. ed. Vol. 11: Great Basin. Smithsonian Institution, Washington, DC.

Chatters, J. C. 1998. Environment. Pp. 29-48 in *Handbook of North American Indians*. W. C. Sturtevant, gen. ed., D. E. Walker, vol. ed. Vol. 12: Plateau. Smithsonian Institution, Washington, DC.

Mastrogiuseppe, J. 2000. Nez Perce ethnobotany: A synthetic review. Report to Nez Perce Historical Park, Spalding, Idaho. Project # PX9370-97-024.

Walker, D. E., Jr. 1982. *The Indians of Idaho*. University Press of Idaho, Moscow.

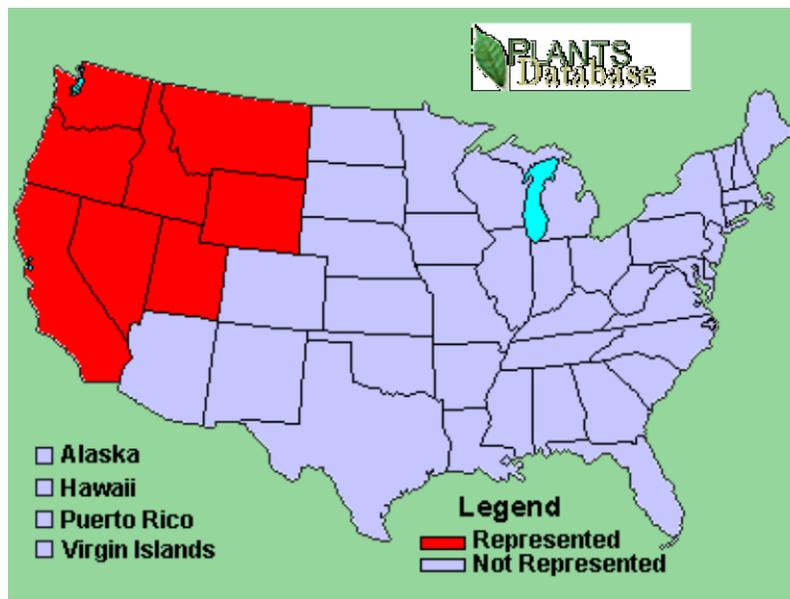
Walker, D. E., Jr. 1998. Introduction. Pp. 1-7 in *Handbook of North American Indians*. W. C. Sturtevant, gen. ed., D. E. Walker, vol. ed. Vol. 12: Plateau. Smithsonian Institution, Washington, DC.

## The Camas Meadows

Places where surface water accumulated in spring, including high plateaus and topographic depressions, were typically dominated by camas (or *qémes*, *keh-mes*), an important food plant. The camas plant has an edible bulb and showy flowers. The latter are usually bluish purple or pale blue, but they can also be white.



Common camas. Photos courtesy of USDA, NRCS. 2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.



States in which common camas (*Camassia quamash*) occurs. © Image generated using gd 1.2 software from Quest Protein Database Center. Copyright 1994, 1995 @ USDA, NRCS. 2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>), National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Camas plants were so dense in the wet meadows that early explorers mistook the masses of blue flowers for water. In 1806 Meriwether Lewis wrote in his journal that the camas resembled “a lake of fine clear water, so complete is this despection that on first Sight I could have sworn it was water” (De Voto 1953:402). Similarly, Oliver Marcy, a scientist with a road-building project between Lewiston, Idaho and Virginia City, Montana wrote in 1866 that glades of camas had “the azure blue of a lake” (Baird 1999:50).



Camas meadow near Spangle, Washington, May 27, 1951. Photo by Rexford Daubenmire, courtesy of Washington State University Libraries Manuscripts, Archives, and Special Collections.

Although camas was so dense that the flowers appeared to merge into a sheet of blue, quite a few other wetland plants grew amongst the camas (Weddell 2002). In northern Idaho and eastern Washington, these included:

- American bistort (*Polygonum bistortoides*), buttercups (*Ranunculus* spp.), and several kinds of sedges. These plants grew only in places where the soils were wet in spring.

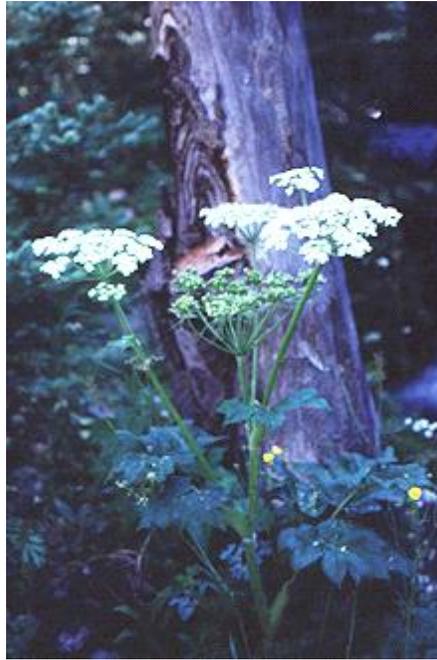


American bistort. Photo courtesy of USDA, NRCS. 2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>). National Plant Data Center. Baton Rouge, LA 70874-4490 USA.

- In addition, many plants that did not require wet soils but could tolerate temporary wetness grew in the camas meadows. These included 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*).



Northern bedstraw. Photo courtesy of USDA, NRCS. 2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.



Cow parsnip. Photo courtesy of USDA, NRCS. 2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

\* As its name suggests, death camas is poisonous. It is easy to tell death camas from common camas when the plants are in flower, because death camas has white flowers that differ from the flowers of common camas in shape. But after the flowers have withered, it becomes difficult to tell them apart. Since camas bulbs were not collected until the flowering season had passed, native women had to be quite knowledgeable to be able to distinguish the delicious and nutritious camas from the poisonous death camas. This knowledge was passed down from one generation to the next, a process which was facilitated by the fact that families stayed at traditional campsites year after year.



Top: flowering stems of death camas. Bottom: death camas bulb. Photo courtesy of Cornell University Poisonous Plants Informational Database, <http://www.ansci.cornell.edu/plants/alphalist.html>.

- In wetter areas, spike-rushes (*Eleocharis* spp.), rushes (*Juncus* spp.), and sedges (*Carex* spp.) were prominent, as well as field mint (*Mentha arvensis*).



Field mint. Photo courtesy of USDA, NRCS. 1995-Midwestern Westland Flora @ PLANTS, The PLANTS Database, Version 3.1 (<http://plants.usda.gov>), National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Camas was extremely important to both the Plateau and the Great Basin tribes of Idaho. The role of this pivotal resource is described in more detail below. [See **The Values of Camas, The Loss of the Camas Meadows.**]

### **For more information see:**

Baird, D. W., ed. 1999. With Bird and Truax on the Lolo Trail: Building the Virginia City to Lewiston Wagon Road, 1865-1867. University of Idaho Library, Moscow.

De Voto, B. (ed.). 1953. Original journals of the Lewis and Clark expedition, selections. Houghton Mifflin, Boston.

Weddell, B. J. 2002. Historical vegetation of seasonally moist depressions in the South Fork of the Palouse River watershed. Unpublished report funded by the U.S. Department of the Interior Environmental Protection Agency.

## **Camas: A Critically Important Resource**

In many ways, camas is an ideal food plant. When properly processed it is tasty and nutritious (see **The Nutritional Value of Camas**) and can be stored for long periods of time without spoiling. For these reasons, camas was a staple in the diets of the Plateau tribes. Some authorities estimate that more than 50% of their food energy came from root foods (Hunn 1990, Hunn et al. 1998).

Native people regarded camas as a sacred gift that was given especially to the people of the Plateau. (See [The Social and Cultural Values of Camas.](#))



A portion of one season's camas harvest. Courtesy of the National Park Service, Nez Perce National Historical Park, Photo Number NEPE-H1-0773.

### **The Influence of Camas Meadows on the Social Organization of Plateau Peoples**

Camas was a predictable and nutritious food resource, and large amounts of it were concentrated in certain places. These characteristics had important consequences for the social organization on the Plateau. Archaeological evidence suggests that one reason winter villages developed may have been 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 when winter settlements developed, as groups of families spent 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. Women in Plateau cultures had equal or complementary roles in political and spiritual realms as well

as in economic life (Ackerman 1995).

**Early habitat management.** 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 to new spots. 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 1999:50). There are also reports of the Nez Perce deliberately burning dry camas meadows to improve food production (Marshall 1999).

**Key points:** Root foods such as camas were a critical resource for peoples of the Plateau, and it was regarded by them as a sacred gift. The availability of concentrated supplies of camas in seasonally wet meadows contributed to the development of winter villages and to egalitarian relationships between the sexes in Plateau societies.

\* \* \*

Native people developed highly effective methods of harvesting and processing camas. They managed wet meadow habitats in ways that enhanced their productivity, and also developed means of processing and storing camas bulbs so as to maximize their food value and “shelf life.”

**For more information see:**

Ackerman, L. A. 1995. Complementary but equal: Gender status in the Plateau. Pp. 75-100 in L. F. Klein and L. A. Ackerman, eds. *Women and Power in Native North America*. University of Oklahoma Press, Norman.

Ames, K. M. and A. G. Marshall. 1982. Villages, demography, and subsistence intensification in the southern Plateau. *North American Archaeologist* 2:25-52

Baird, D. W., ed. 1999. With Bird and Truax on the Lolo Trail: Building the Virginia City to Lewiston Wagon Road, 1865-1867. University of Idaho Library, Moscow.

Hunn, E. S. with J. Selam and Family. 1990. *Nch'I-Wána "The Big River": Mid-Columbia Indians and Their Land*. University of Washington Press, Seattle.

Hunn, E. S., N. J. Turner, and D. H. French. 1998. Ethnobiology and subsistence. Pp. 525-545 in *Handbook of North American Indians*. W. C. Sturtevant, gen. ed., D. E. Walker, vol. ed. Vol. 12: Plateau. Smithsonian Institution, Washington, DC.

Marshall, A. G. 1999. Unusual gardens: The Nez Perce and wild horticulture on the eastern Columbia Plateau. Pp. 173-187 in D. D. Goble and P. W. Hirt, eds., *Northwest lands, northwest peoples: Readings in environmental history*. University of Washington Press, Seattle.

Mastrogiuseppe, J. 2000. Nez Perce ethnobotany: A synthetic review. Report to Nez Perce Historical Park, Spalding, Idaho. Project # PX9370-97-024.

Thoms, A. 1989. The northern roots of hunter-gatherer intensification: Camas and the Pacific Northwest. Ph.D. Dissertation, Washington State University, Pullman.

## The Values of Camas

### The Nutritional Value of Camas

Native peoples prized camas highly.

its flavor—delicious. It makes the Coeur d’Alenes smack their lips when eating. The camas—one of most precious foods. The good Mother Earth gives it to the Coeur d’Alene Indians (Anon. 1939:307).

Euroamericans were less enthusiastic, however. They found it unappealing and hard to digest. When the Nez Perce shared camas with members of the Lewis and Clark expedition, the famished party of explorers had trouble digesting it. Clark commented in his journal that “the natives are extremely fond of this root and present it [to] their visitors as a great treat. . . . [But] our men who were half Starved made so free a use of this root [that] it made them all sick for several days after” (Thwaites 1905:131).

But laboratory analyses by scientists have confirmed what native peoples already knew: slow roasting of camas is an effective way of turning indigestible compounds into pleasant-tasting, nutritious food (Konlande and Robson 1972). The camas bulb stores large amounts of carbohydrate in the form of **inulin**, a substance that people are unable to digest. Slow cooking converts inulin to a digestible sugar, however. The result is a concentrated energy source with a sweet taste.



### The Social and Cultural Values of Camas

The Nez Perce story of the Heart of the Monster tells how the Ni-Míi-puu, or Nez Perce people, were created and how Coyote provided camas for them to eat. In this story, the Monster of Kamiah eats all the people and Coyote rescues them by descending into body of the Monster and cutting loose his heart.

. . . Coyote said, “Now you inhale me. You have already swallowed all the people, so you should swallow me too, so I won’t be lonely.” The Monster did not know that Coyote had a pack strapped to his back with five flintstone knives, a flint fire-making set, and some pure pitch in it.

Now the Monster inhaled like a mighty wind. He carried Coyote right towards him, but as Coyote went, he left along the way great *keh-mes* (Camas bulbs) and great serviceberry 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 were so important, young girls needed to become skilled at obtaining these items. A girl’s first gathering of roots and berries was therefore a significant occasion for the her, her family, and her tribe. The Nez Perce celebrated this event with a feast to honor and encourage her efforts. 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.

Three miles from DeSmet is a place named by the Coeur d’Alene Indians “Ne logulko,” the place standing of big pine trees in a tract of flat land. Ne Logulko was summer resort for the Coeur d’Alene Indians extending many hundred years ago. The Nez Perce, the Cayouse, the Palouse, the Spokanes, the Calispel Indians used to come annually in the summer time and camp at Ne Logulko. They would play stick games. Pony horse racing. Two

mile running foot racing. The women folks dig camas because Ne logulko camas has good delicious flavor (Anon. 1939:307).

The camas of northern Idaho was of exceptionally good quality, and people came from far and wide to trade for it. The control of this prized resource gave the native peoples in north Idaho status with other groups in the region.

**Key points:** The seasonally wet meadows in which camas grew provided many important things to native people in northern Idaho, including:

- \* large quantities of a tasty and 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, which enhanced prestige with other groups.

**For more information see:**

Anon. 1939. An old time Indian's story. *The Coeur d'Alene Teepee* 2:307-308.

Konlande, J. E. and J. R. K. Robson. 1972. The nutritive value of cooked camas as consumed by Flathead Indians. *Ecology of Food and Nutrition* 2:193-195.

Ross, J. A. 1998. Spokane. Pp. 271-282 *in Handbook of North American Indians*. W. C. Sturtevant, gen. ed., D. E. Walker, vol. ed. Vol. 12: Plateau. Smithsonian Institution, Washington, DC.

Slickpoo, A. P., Sr. 1972. *Nu mee poom tit wah tit* (Nez Perce legends). Nez Perce Tribe of Idaho.

Thwaites, R. G. (ed.) 1905. Original journals of the Lewis and Clark expedition, 1804-1806. Vol. 5. Arno Press, New York.

## The Loss of the Camas Meadows

Lewis and Clark would not have survived without the aid of their native helpers, who understood how to survive by hunting, fishing, and gathering the 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 wanted to change the way the Indians lived. They wanted native people to give up their traditional ways and become farmers. The Indians, they thought,

must acquire property. . . and that . . . property must be realized by rearing domestic animals and tilling the land (Geyer 1846:517 footnote).

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).

Native people actively resisted these changes. The control of camas grounds was particularly contentious, and disputes sometimes led to armed conflicts such as the “Bannock War” over the “Big Camas Prairie” in southern Idaho (Statham 1975; Smith 1978).

Nevertheless, as the settlers acquired more and more land, cultivation and livestock grazing replaced hunting and gathering. Farmers grazed their pigs, cows, and sheep in the camas meadows and planted crops on the surrounding hills.

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).

The first settlers to the region were attracted to the lowlands, and these were the first to be cultivated (Meinig 1995). Later, when the hillsides were plowed, the native bunchgrass vegetation was stripped away. This increased soil erosion, caused stream channels to deepen, and lowered water tables. As a result, the low-lying meadows were no longer wet in spring, and settlers were able to farm them (Victor 1935). Later, in the 1930s, camas and associated plants suffered still more losses when government programs encouraged farmers to drain moist meadows.

As a result of these changes, important camas grounds along Paradise Creek near Moscow, and near DeSmet and Weippe were lost. 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. When anthropology student Lucy Harbinger interviewed Nez Perce informants in 1963 about the importance of food plants for the maintenance of their cultural identity, she found that

The only place where camas may be procured is . . . a three hour drive from Lapwai and about two hours from Kamiah, 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 (Harbinger 1964:28).

The loss of the camas meadows was devastating. Many aspects of native culture were undermined by this sweeping transformation in the landscape. 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. Fewer and fewer people followed the traditional ways.

Yet the old ways did not completely die out. They have not been forgotten, although it is difficult to follow those ways when the landscape that supported them is gone. There is now renewed interest in restoring parts of that landscape and in reviving the traditional ways of relating to the natural world. The loss has been a blow to biological diversity and to cultural diversity. Yet, if we understand what has been lost, perhaps some of the missing pieces of the landscape can be restored along with the cultural connections embedded in them.

**For more information see:**

- Geyer, C. A. 1846. Notes on the vegetation and general character of the Missouri and Oregon Territories, made during a botanical journey in the state of Missouri, across the South pass of the Rocky Mountains, to the Pacific, during the years 1843 and 1844. *London Journal of Botany* 5:198-208, 285-310, 509-524.
- Harbinger, L. J. 1963. The importance of food plants in the maintenance of Nez Perce cultural identity. M.A. thesis, Washington State University, Pullman.
- Howard, H. A. 1971. *Saga of Chief Joseph*. Caxton Printers, Ltd., Caldwell, ID.
- Leiberg, J. B. 1897. General report on a botanical survey of the Coeur d'Alene Mountains in Idaho during the summer of 1895. *Contributions from the U.S. National Herbarium*, vol. 5, no. 1.
- Meinig, D. W. 1995. *The Great Columbia Plain: A Historical Geography, 1805-1910*. University of Washington Press, Seattle.
- Smith, H. L. 1978. *Camas: The plant that caused wars*. Smith, Smith, and Smith Publishing Co., Lake Oswego, OR.
- Statham, D. S. 1975. A biogeographic model of camas and its role in the aboriginal economy of the northern Shoshoni in Idaho. *Tebiwa (Journal of the Idaho State Museum)* 18(1):59-80.
- Victor, E. 1935. Some effects of cultivation on stream history and topography of the Palouse Region. *Northwest Science* 9:18-19.