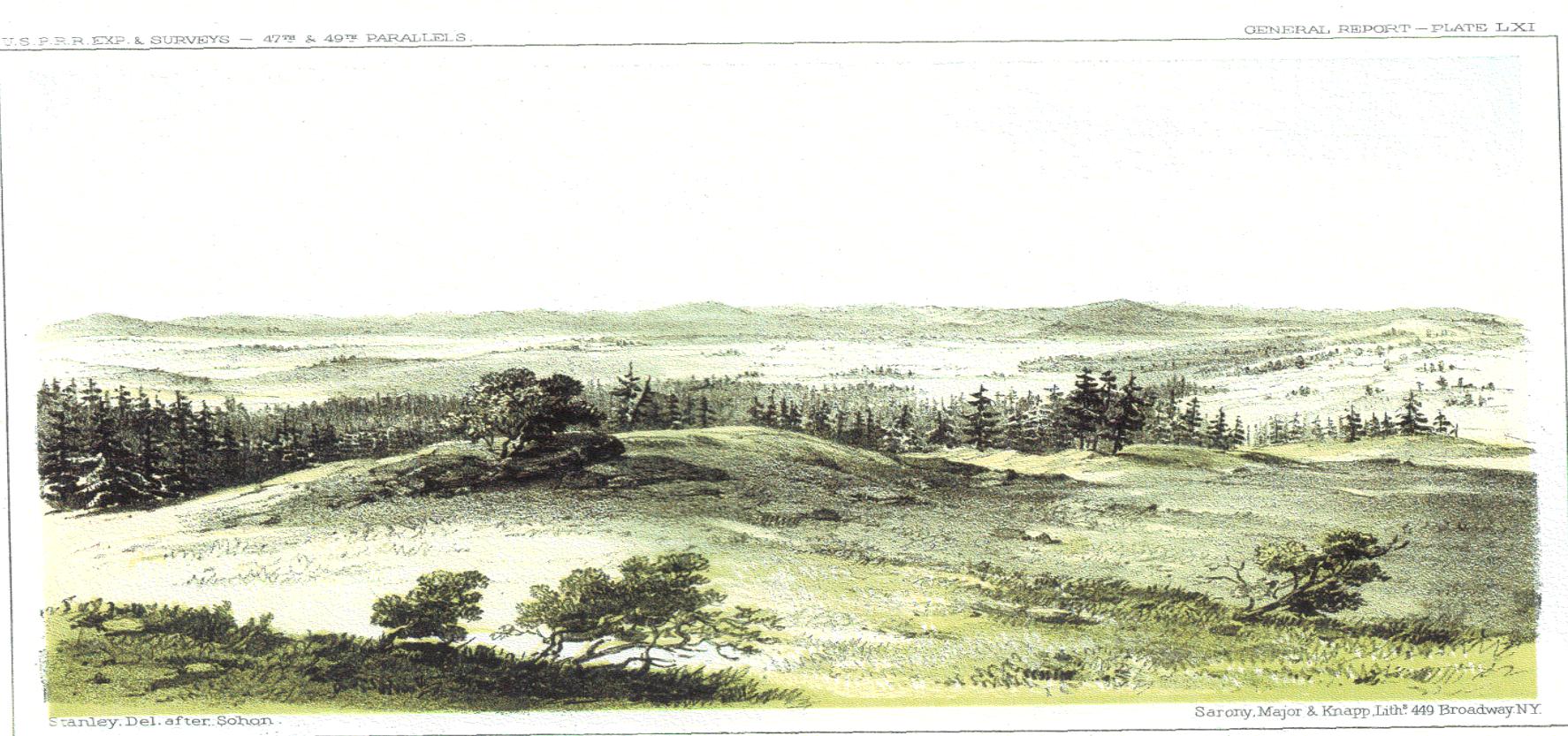


The Palouse Prairie

The Palouse region

The region of southeastern Washington and adjacent Idaho that has rolling hills on deep soils is known as the *Palouse*. On its eastern border, this region is bounded by the forests of northern Idaho, and the Snake River forms its southern boundary. To the north and west, the Palouse is bounded by areas of flat terrain and shallow soils, places where the deep soils were scoured away by ice or water during past glaciations or floods. Some scientists use a more inclusive definition of the Palouse; they consider areas to the west and south and even parts of northwestern Montana to be part of the Palouse.



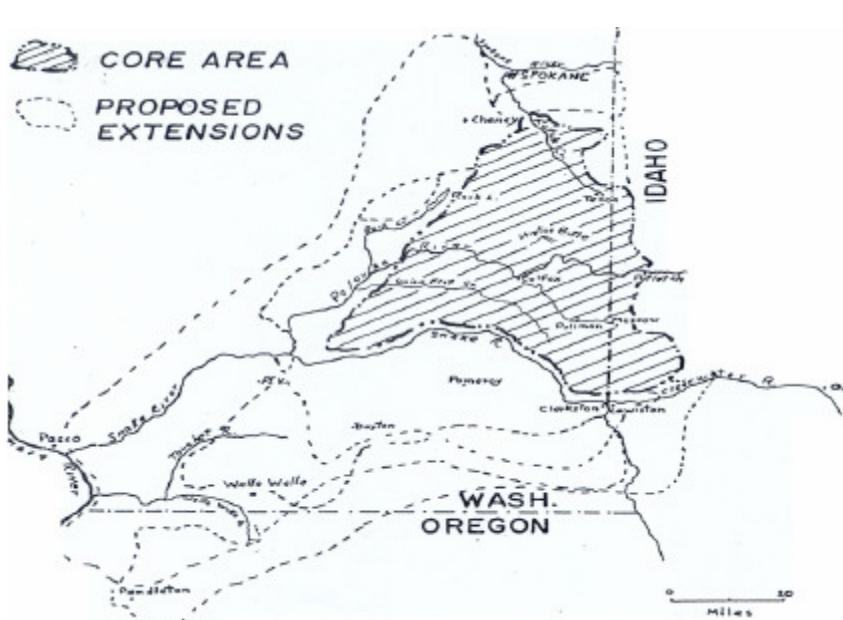
This lithograph from the mid-nineteenth century shows how the Palouse landscape looked to a member of an exploratory expedition. (From I.I. Stevens, 1860. Reports of explorations and surveys, to ascertain the most practicable and economical route for a railroad from the Mississippi River to the Pacific Ocean. Made under the Secretary of War in 1853-5, 36th Congress 1st Session, Senate Executive Document Part I, General Report.)

"Its beauty was wild and untrammeled and the undulating hills were covered with luxuriant grasses."

-- Moscow homesteader, 1880s



Palouse rolling hills. (Photo courtesy of Alison Meyer.)

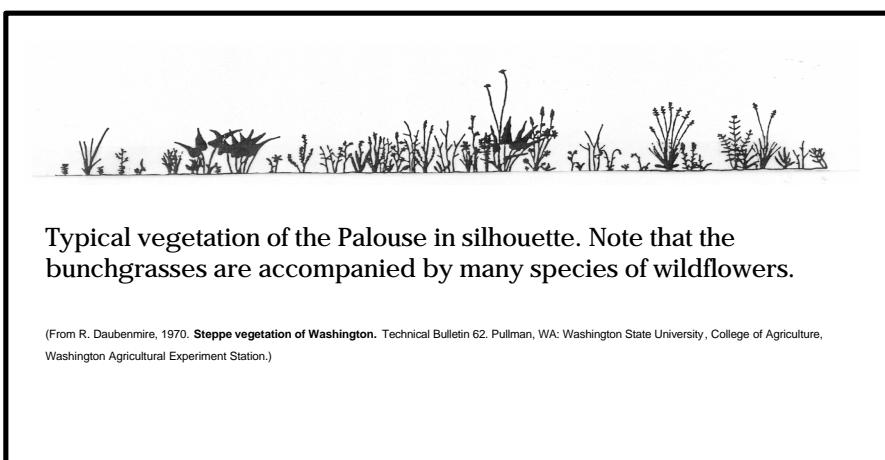


This map shows the boundaries of the Palouse according to different investigators. A core area of agreement extends north of the Snake River to Cheney, Washington, west almost to the confluence of the Palouse and Snake Rivers, and east along a portion of the Clearwater River. This is indicated by the stippled area on the figure. Some investigators include considerable area to the west and south in the Palouse Region, however.

(From H. H. Caldwell, 1961. The Palouse in diverse disciplines. *Northwest Science* 35:115-121.)

The typical vegetation of the Palouse

One hundred fifty years ago the typical vegetation throughout the Palouse consisted of perennial bunchgrasses, which grew in tufts or clumps, accompanied by many different kinds of "wildflowers." Together, the grasses and flowers gave the appearance (in spring and early summer at least) of a lush meadow, or Palouse Prairie. This type of vegetation occurs in relatively moist environments, where the climate is almost wet enough to support the growth of trees. The principal bunchgrasses of Palouse meadows were Idaho fescue, bluebunch wheatgrass, and prairie junegrass. Short shrubs, especially snowberry and wild rose, were common. Mosses and lichens were an important but inconspicuous feature.



Typical vegetation of the Palouse in silhouette. Note that the bunchgrasses are accompanied by many species of wildflowers.

(From R. Daubenmire, 1970. *Steppe vegetation of Washington*. Technical Bulletin 62. Pullman, WA: Washington State University, College of Agriculture, Washington Agricultural Experiment Station.)



A typical Palouse Prairie, Washington State University's Kramer Prairie, in the 1950s. Note the shrub thickets. (Photo by Rexford Daubenmire, courtesy of Washington State University Libraries Manuscripts, Archives, and Special Collections.)



Palouse prairie vegetation. (Detail of photo courtesy of Alison Meyer.)

Examples of wildflowers that are common on the Palouse Prairie



Stiff yellow Indian paintbrush
Castilleja pallida
(Photo by Dave Skinner)



Taper-leaf penstemon
Penstemon confertus
(Photo by Dave Skinner)



Little sunflower
Helianthella uniflora
(Photo by Dave Skinner)



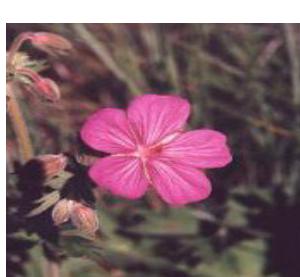
Arrowleaf balsamroot
Balsamorhiza sagittata
(Photo by Trish Heekin)



Clearwater penstemon
Penstemon venustus
(Photo by Dave Skinner)



Silky lupine
Lupinus sericeus
(Photo by Dave Skinner)



Sticky purple geranium
Geranium viscosissimum
(Photo by Dave Skinner)



Prairie smoke
Geum triflorum
(Photo by Dave Skinner)



Meadow death-camas
Zigadenus venenosus
(Photo by Dave Skinner)



Western hawkweed
Hieracium albertinum
(Photo by Dave Skinner)

Animals of the Palouse

The distinctive ecosystem called Palouse Prairie is more than just plants. Wildlife was abundant. Deer and elk fed on the Palouse Prairie plants, but bison were rare. Small mammals such as ground squirrels, gophers, and voles were common. Badgers, hawks, and owls fed on these prey species, and hummingbirds pollinated some of the more brightly-colored flowers. The Brewer's sparrow, which depends upon shrub thickets for nesting, was once abundant in the Palouse, but it has become extremely rare and now must rely on sagebrush stands outside of the region. In the spring, huge flocks of the sharp-tailed grouse gathered on dancing grounds, where male birds danced to attract females.

Many other important members of the Palouse Prairie community were less obvious. A variety of insects played important roles pollinating flowers and dispersing seeds.

The environment below the surface of the soil also teemed with life. Fungi, bacteria, algae, and invertebrates recycled matter, breaking down the massive underground root systems of plants that died. The activities of these organisms affected and were affected by soil fertility and texture in complex ways. Areas with especially deep, moist soils provided habitat for giant earthworms that reached up to 3 feet in length! These worms were found nowhere else in the world. It is not known whether they still exist in the Palouse. They have not been seen in recent decades, in spite of several attempts to find them.

The first people of the Palouse

Prior to Euroamerican settlement, the Palouse River drainage was inhabited primarily by the Palouse people. The Nez Perce people spent much of their time in the southern part of the Palouse Prairie, its northern fringes were used by the Coeur d'Alenes and Spokanes, and the Cayuses used the area to the southwest. These patterns were fluid, however, with much overlap between the different groups. The annual cycle of hunting and gathering tracked seasonal changes in plant productivity. The cycle began with gathering roots at low elevations in spring; as the seasons progressed, plant and animal resources were harvested at progressively higher elevations.



Camas was an important staple in the diet of the Native American peoples of the Palouse. A portion of one season's camas harvest is shown here. (Photo courtesy of the National Park Service, Nez Perce National Historical Park, Spalding, ID. Photo Number NEPE-HI-0773.)

Special plant communities



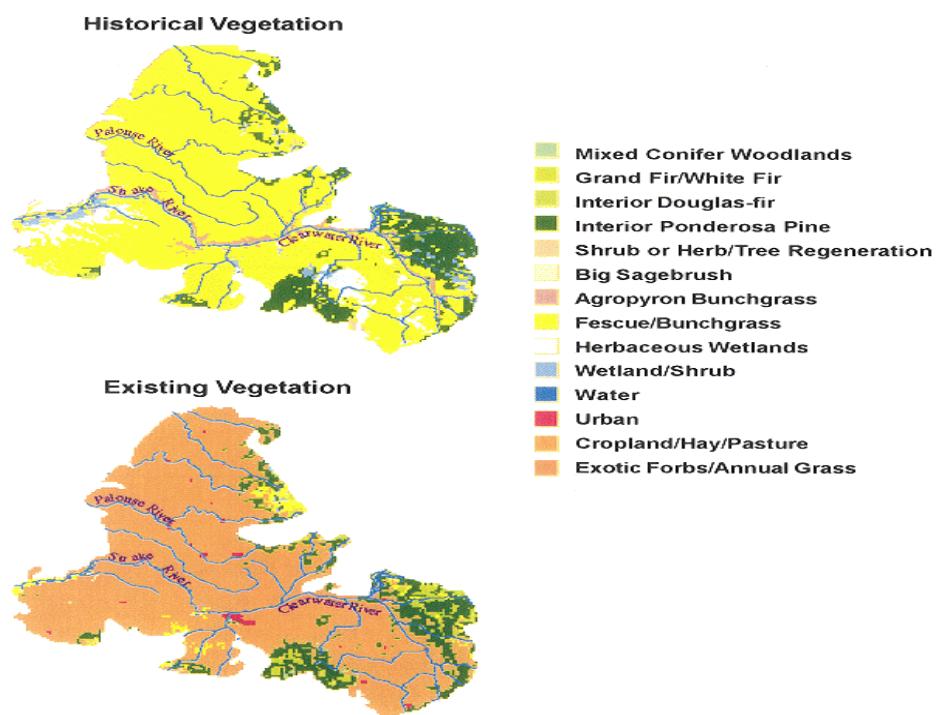
Camas stand near Spangle, WA (west of the Palouse region). (From photo by Rexford Daubenmire, courtesy of Washington State University Libraries Manuscripts, Archives, and Special Collections.)

The Palouse is not the only place where bunchgrasses dominate the potential natural vegetation. Bunchgrass zones extend west to the Cascades, north into Canada, south into Utah, and east into Montana. Bunchgrass communities that were similar in most respects to the Palouse Prairie communities also occurred in the canyons of the Snake, lower Salmon, Imnaha, Grande Ronde, and Clearwater rivers.

On sites that had distinctive conditions because their soils were unusually moist or dry or shallow, different plant communities occurred. In places that were relatively dry (such as south-facing hillsides), the bunchgrasses were not accompanied by a lot of wildflowers. On more moist sites (such as north-facing hillsides), thickets of black or Douglas' hawthorn or forests of ponderosa pine and perhaps Douglas-fir occurred. Low-lying swales that were wet in spring supported dense stands of camas that 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.

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 deception that on first sight I could have sworn it was water."

Changes in land use



Historic (circa 1900) and existing (circa 1990) vegetation. (From A.E. Black, E. Strand, P. Morgan, J. M. Scott, R. G. Wright, C. Watson. 1998. Biodiversity and land-use history of the Palouse Bioregion: Pre-European to present. Chapter 10 in T.D. Sisk, editor. *Perspectives on the Land Use History of North America: A Context for Understanding Our Changing Environment*. Biological Science Report USGS/BRD/BSR-1998-0003 (Revised September 1999). U.S. Department of the Interior, U.S. Geological Survey, Biological Resources Division. 104 p. Available online at <http://biology.usgs.gov/luhna/chap10.html>)

As anyone who lives in or has visited the Palouse knows, this landscape is both strikingly beautiful and very useful. Capable of producing impressive yields of grains and legumes, the Palouse has become one of the most productive agricultural regions in the world. But as the land has been put to use for agricultural purposes, the native prairie and the plants associated with it have declined.

The Palouse has been dramatically altered within the last 150 years by agriculture, and virtually all remaining examples have been invaded to some extent by aggressive alien species, weeds that were either deliberately or accidentally introduced from the Old World. Palouse Prairie is now considered one of the rarest ecosystems in the United States.

Weeds: the biggest threat

The native bunchgrasses of the Palouse do not have adaptations that make it easy for them to recolonize a site that has been cultivated. So when the Palouse was cultivated, they were not in a good position to cope with the change. As a result, the native grass species became less abundant. The same thing is true for many species of wildflowers characteristic of the Palouse.

At about the time that the Palouse was cultivated, plants that were adapted to cultivation arrived in the region. These included many species of exotic grasses and wildflowers native to Eurasia. These species evolved in agricultural regions, and consequently they have developed the ability to germinate on areas of bare soil that are exposed after cultivation. For instance, the grasses cheatgrass or downy brome, medusahead, and wild oats and broad-leaved plants such as oxeye daisy, Canada thistle, field bindweed (morning glory), and teasel became more abundant at the expense of the native Palouse Prairie plants. Now that these introduced weeds are present throughout the region, any disturbance that results in the creation of bare areas provides sites that can readily be colonized by these troublesome invaders.

What can you do to protect and preserve Palouse Prairie?

If you own land containing a prairie remnant, you are in a position to help preserve these special places. You can do so through a voluntary conservation agreement, or **easement**, in which you set restrictions on the future development of your land.

- These agreements are entirely voluntary.
- You may qualify for tax breaks if you set up such an agreement.
- You can customize your easement to fit the particular needs of your family and your situation.
- You can receive assistance with your easement from the Palouse Land Trust.

For more information about conservation easements and the tax advantages they confer, contact

Palouse Land Trust
PO Box 8506
Moscow, ID 83843
(208) 882-5248
archie@moscow.com; <www.palouselandtrust.org>

If you do not own a prairie remnant, you can still help in the effort to preserve our natural heritage. You can do so by contributing to a local organization concerned with prairie preservation, such as:

Palouse Prairie Foundation,
PO Box 8952
Moscow, ID 83843
ppf@palouseprairie.org; <www.palouseprairie.org>

Palouse-Clearwater Environmental Institute
PO Box 8596
Moscow, ID 83843
(208) 882-1444
pcei@pcei.org; <www.pcei.org>

Idaho Native Plant Society, White Pine Chapter
PO Box 8481
Moscow, ID 83843 <www.idahonativeplants.org/localact.htm>

You can also volunteer to help restore native prairie vegetation and manage prairie remnants. Volunteers are often needed to collect seeds, raise plants, and control weeds. For more information contact Palouse Prairie Foundation or Palouse-Clearwater Environmental Institute.

If you are interested in restoring native Palouse Prairie vegetation on your land, you have a fascinating challenge in store. Regardless of whether you have a small yard or acres of land, growing native Palouse Prairie plants can be very rewarding, but it is also tricky, and under some circumstances, it can actually create problems for native plants. For these reasons, you should discuss your particular situation with someone knowledgeable about Palouse Prairie restoration before you begin. For more information, contact the Palouse Prairie Foundation.

Creation of this display was funded by a Community Challenge Grant from the Idaho Department of Fish and Game.

The Palouse Prairie Foundation, P.O. Box 8952, Moscow, ID. November 2002. www.palouseprairie.org