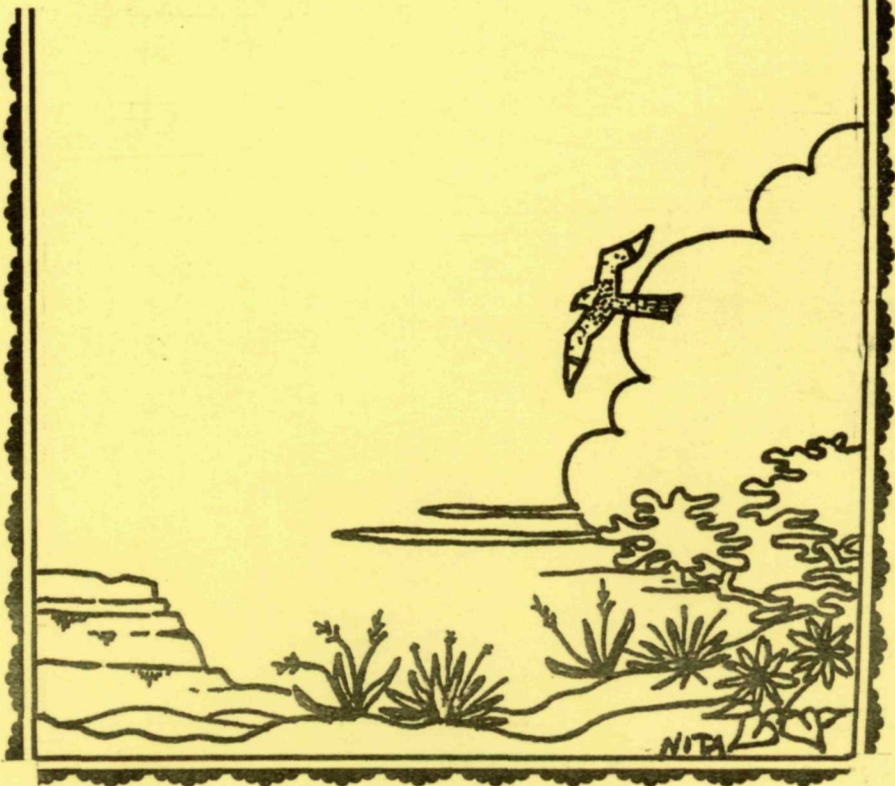


**THE**  
**BUNCHGRASS**  
**PRAIRIE**  
**NATURE**  
**TRAIL**



# COULEE DAM

## NATIONAL RECREATIONAL AREA

Here in Spring Canyon you are in a BUNCHGRASS PRAIRIE COMMUNITY within an UPPER SONORAN LIFE ZONE. This area is characterized by cold winters and hot, dry summers. The balance of life in these harsh extremes is very delicate. In the Bunchgrass Prairie moisture is scarce--rain filters rapidly through the sandy soil, leaving no surplus beyond that which the plants can immediately absorb. As you walk along the Bunchgrass Prairie Nature Trail you will notice that life flourishes with its own unique qualities inherent in its evolution and adaptation . . . . . if you have a flower and plant identification book, bring it along. There are many more plants than those we have listed here to discover.



LOOK & LISTEN, WALK QUIETLY AND STAY ON THE TRAIL so that the habitats of the plants and animals within this area remain protected and secure. Because of the fragile balance of life in this desert-like climate, plants and animals need and appreciate our concern--we ask that flowers be left on the plants, safe in their own home so they will mature and reproduce again.

A WORD OF CAUTION. . .this is an environment which supports a member of the RATTLESNAKE family, *Crotalus viridis oreganus*, Pacific Northern Rattlesnake, so do stay alert. Look carefully where you step, sit, or put your hands. These snakes want to avoid you as much as you want to avoid them, and will if you give them a chance. It is best to wear loose-legged pants and boots or sturdy walking shoes. Sandals and especially bare feet should be avoided.

. . . . . now enjoy the particular quietness that exists here . . . listen to the sounds as they blend together, look at the plants of the area. How have they adapted to their environment? How do you imagine early man might have used them? Do you see any signs of our local inhabitants--animals, birds or reptiles? And how have they and the plants learned to share this living environment?

1. Before the arrival and intensive agriculture of the white man, Eastern Washington was covered by several types of bunchgrasses. These perennial plants have dense basal tussocks and a deep root system which enable them to survive the dry summers. Spiked wheatgrass, *Agropyron spicatum*, characterized by its slender stems and narrow terminal spikes, was used by Native Americans as drying mats for their summer berry harvest. Indian ricegrass, *Oryzopsis hymenoides*, which has a diffuse, feathery crown, was gathered, dried and then ground into flour for bread or mush. Giant wild rye, *Elymus cinereus*, has dense, slightly flattened spikes which somewhat resemble wheat. Also commonly seen is needlegrass, *Stipa comata*, which has long twisted awns attached to each seed and resembles a cluster of miniature spears. How would the seed of this plant be dispersed?

2. Cheat grass, *Bromus tectorum*, this abundant, low-growing annual grass with long, nodding spikelets, is actually an introduced species, native to Europe. It was first brought to Montana in 1870 with the railroads, and has successfully spread and competed with the native plants, especially in areas disturbed by overgrazing or fire. This grass is most beneficial in preventing erosion; however, its sharp, barbed seeds may cause infection in livestock. The seeds germinate in early fall, creating a green carpet in October as well as in early spring.

3. Horsebrush, *Tetradymia canescens*, is the abundant, pale grayish-green shrub with

small, narrow leaves. It's tiny yellow flowers form in groups of four per head. This plant resembles rabbit brush, *Crysothamnus naseouses*, which has darker, thin green leaves, sometimes sticky stems, and small yellow flowers in clusters of as many as 25 per head. The yellow flower was used by Native Americans as a dye, and the sap of rabbit brush can be processed into a rubber similar to that of the rubber tree. Both plants have a waxy coating on their narrow leaves as added protection against water loss and are members of the sunflower family.

4. Spring Bloomers. One of the most beautiful sights in springtime is seeing this hillside covered with flowers, particularly the bright bluish-purple lupine, *Lupinus sericeus*, and the pink and white evening primrose, *Denothera pallida*. The leaves of the lupine have tiny hairs to prevent water loss and the slender leaves of the evening primrose also serve the same purpose. Yet springtime is not the only time of year these hillsides are in bloom. Look closely, for throughout the entire summer and fall you can see at least one species of plant in bloom.

5. Arrow-leaf Balsom Root, *Balsamorhiza sagittata*, provides an arrow-like characteristic when leaf and stem are observed. The hairs and light color of the large leaves help prevent water loss, but when temperatures get too great, its leaves die back. Balsom root grows best when

it can catch the afternoon sun and utilize shady mornings to absorb the dew from cooler air. The yellow heads of this plant resemble a small sunflower which is a related species. Native Americans ate the roots of this plant in early spring as a vegetable and ground the seeds for flour.

6. Watershed areas in arid climatic regions will often support plant growth different from their surroundings. This gully acts as a major drainage system for the exposed areas nearby. Because of this and the fact that the area is partially shaded from the sun, the wild rose, *Rosa woodsii*, is able to grow well here. The fragrant pink flowers of spring, along with its red "hips" (the fruit) and ever present finger "prickers" help to identify this plant.

7. Northern Prickly Pear, *Opuntia fragilis*. Look very closely and observe the prickly pear cactus, a plant which quickly comes to mind when one thinks of a desert. It conserves water by use of a thick, waxy coating over its stems, and after a rain-storm it rapidly swells with the additional moisture. Many plants are leaf producers but in the case of cactus, leaves have become spikes for protection and the stem produces the food source. In late fall you may see an occasional yellow flower. Many people of the desert Southwest still "peel" off the waxy coat to eat the pulpy inside as a vegetable or make cactus jelly and candy. From the name *fragilis*, however, you can realize that this local species not only breaks easily but also grows back very slowly.

8. Sagebrush, *Artemisia tridentata*. Sage is perhaps the most common shrub in western North America, yet, on this trail it is less common than many other shrubs. Sagebrush is very adaptable and although it grows fairly well here, in areas with increased moisture it grows much larger. The limited surface area of its small leaves, their light color and profuse "hairiness" all help retain life-giving moisture absorbed by the extensive and efficient root system. Notice the difference in shape between these leaves and the linear ones of the horse brush. The Natives used sagebrush as seasoning in cooking as well as a medicinal herb, hair tonic, and tea.

9. Lichens are the crusty, green, brown or orange-colored splotches you see on the rocks. They are actually two plants living together, helping each other; a fungus which gives shape and anchors the plant to the rock and an algae which provides a food source and gives the plant its color. Lichens are called pioneer plants because they are the first to "settle" on rocks, and start the slow process of decomposition by secreting a weak acid throughout their lifetime. As the rock crumbles, organic material and minerals are deposited which help to build the surrounding soil. Then the mosses and other small plants take hold and each succeeding community adds to the process of populating Mother Earth.

10. Service berry, *Amelanchier alnifolia*. In the Appalachian mountains, early pioneers were usually isolated by winter snow and unable to hold church services. Spring was heralded by the coincidental blooming of this bush and the

arrival of the preacher--thus, gaining its name. It is browsed by both wild and domestic animals, while the berries are eaten by birds and bears. They ripen in summer and may be eaten raw or used in making jelly, muffins, or pie. A mixture of service berry and meat, called pemmican, was a staple of the Native American diet. Quality arrow shafts were also made from the straight young shoots of this bush.

The tall thin plant just below the service berry bush is common mullein, *Verbascum thapsus*, an introduced species from Eurasia. The name comes from Latin "mulandrum" or leprosy, since it was thought to help cure the disease. However, mullein actually does have several uses. Peasants would scrape the hairs off the leaves to make candlewicks; the dried leaves when smoked created mild relief for asthmatics, and medicinal teas could also be made from this plant.

11. Desert Aromatics. Many plants in dry areas produce aromatic oils as a by-product of photosyntheses. One herb, the dense, white-flowered yarrow, *Achillea millefolium*, was used by Native Americans as a tonic to treat "that run down feeling," also the astringent action of the crushed leaves stops bleeding. Another useful plant adapted to this dry environment is the short, gray-green leaved desert buckweed, *Eriogonum niveum*. The dense, ball-like clusters of flowers dry to a rusty-red color which makes lovely winter arrangements. The seed provides a major source of food for birds and rodents, and the nectar, favored by bees, makes delicious honey.



12. Antelope brush, *Purshia tridentata*, is also known as bitterbrush from the taste of its small berries. This bushy shrub is related to a rose and in spring is covered with small yellow flowers which fragrant the air with a cinnamon-like smell. In late fall when the bitter berries drop to the ground, deer enjoy eating the branch tips, making it one of the single most important browse shrubs in many parts of the west. These bushes also provide hiding places and shade for many small critters.

13. Listen closely and observe for any sudden movements around the rocks, as many creatures make their homes in this area. Occasionally a coyote will make her den near the rocks or a deer may find shelter here during the winter and in the heat of summer. Marmots and snakes sun themselves on the rocks and birds search for food. Red tail hawk, owl, oriole, magpie and swallow are only a few of the birds you might observe. Listen for a lonely cricket, the hum of a bee or possibly see the flightly movement of a colorful butterfly. In the early morning there's a good chance you will see animal tracks on the trail.

14. This area in Eastern Washington was considered desolate until 1933, when the Columbia Basin Project was begun. From this vantage point you can see the top of the Grand Coulee Dam, a historic structure and considered by many to be one of the greatest architectural achievements ever. Its role as power producer and flood control matron are prominent images in the development of the

Pacific Northwest. If you are interested in its history, or current statistical data, we recommend taking a tour, starting at the Visitor Arrival Center located just below the dam.

15. Ice age overlook. According to geologists, about 20,000 years ago an ice sheet over one-half mile thick blocked the Columbia River just west of here near the site of Grand Coulee Dam. This huge glacial ice dam backed water up 400 feet higher than where you are now standing. From here there would have been a white field of ice and snow stretching north to the horizon with the tops of the distant mountain peaks appearing only as islands. You would have felt biting winter temperatures of  $-75^{\circ}\text{F.}$ , and heard the roar of the river as it flowed south, gouging out the Grand Coulee just seven miles southwest of here. About 12,000 years ago the glacier melted, and the Columbia River returned to its original channel, turning northward as it does today.

We hope you have enjoyed your walk around the BUNCHGRASS PRAIRIE NATURE TRAIL. Feel free to keep this booklet if it will be of benefit to you. If it has already served your purpose, please place it in the return box at the end of the trail.

For more information, the following books are available at the National Park Service Headquarters, 1008 Crest Drive in Coulee Dam, weekdays 8:00 a.m. to 4:30 p.m.

TREES, SHRUBS AND FLOWERS TO KNOW IN WASHINGTON, Lyons, 1956, Kim Dent & Sons, Ltd., Canada

BIRDS OF NORTH AMERICA, A Guide to Familiar American Species, Robins, Bruun, Zim & Singer, 1966, Golden Press

WEEDS OF EASTERN WASHINGTON & ADJACENT AREAS Xerpha M. Gaines & H.G. Swan, Camp Na Bor Lee Association, Inc., 1972

LEWIS CLARK'S FIELD GUIDE TO WILD FLOWERS OF THE ARID FLATLANDS IN THE PACIFIC NORTHWEST, Lewis J. Clark, Gray's Publishing, Ltd., Sidney, BC Canada

### References

FLORA OF THE PACIFIC NORTHWEST, Hitchcock & Cronquist, University of Washington Press Seattle, WA and London, England, 1973

LEWIS CLARK'S FIELD GUIDE TO WILD FLOWERS OF THE ARID FLATLANDS IN THE PACIFIC NORTHWEST, Lewis J. Clark, Gray's Publishing, Ltd., Sidney, BC, Canada

WILD EDIBLE PLANTS OF THE WESTERN UNITED STATES Donald R. Kirk, Naturegraph Publishers, Healdsburg, CA, 1970



Genus—Agropyron  
(wheatgrass)

Species—Spicatum  
(spiked)

**Spiked Wheatgrass**

**COULEE DAM NATIONAL RECREATION AREA**

**NATIONAL PARK SERVICE**