



Pilot Butte State Park



Enjoy this high desert landscape while walking Pilot Butte.

Special thanks to Ken Johnson's Biology II students at Mt. View High School for their help with this project.

Please recycle your Nature Trail brochure at the brochure holder at trails end.



Oregon State Parks High Desert District
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Stop 1

Western Juniper

Western juniper (*Juniperus occidentalis*) is the most common tree on Pilot Butte. This native tree has scale-like needles. Many junipers bear male and female cones on separate trees. The male cones are small and yellow; the female cones look like small blueberries. Juniper foliage may be a combination of needles and scales and often has a distinctive smell, especially after a rainstorm.

Stop 2

Pungent Shrub

Sagebrush (*Artemisia tridentata*) thrives in central Oregon. The word tridentata refers to the three lobes, or "teeth," on the sagebrush leaves. Crushed leaves release a strong smell, which makes it easy to identify the plant as sagebrush. Another way to identify sagebrush is to look for the pale yellow flowers that bloom on the top of the plant in the fall.

Stop 3

Mule Deer Pantry

Bitterbrush (*Purshia tridentata*) looks a lot like sagebrush. Bitterbrush does not have a strong smell like sagebrush, but it does have three lobes on each leaf. Bitterbrush, though bitter in taste, is a staple food for deer. Bitterbrush blooms in the spring. Both rabbitbrush and sagebrush bloom in the fall.



Stop 4

Jackrabbit Cover

Rabbitbrush (*Chrysothamnus viscidiflorus*) grows below the trail at this location. People often mistake it for sagebrush. However, rabbitbrush lacks the strong sage odor and has narrow, non-lobed leaves.

It is a member of the composite family, the largest group of flowers, which includes daisies, asters, and sunflowers. Its yellow disc flowers grow in showy clusters of small heads. Rabbitbrush may get its name because it provides shelter for rabbits.



Stop 5

Native Grasses

Bluebunch wheatgrass (*Agropyron spicatum*), and Idaho fescue (*Festuca idahoensis*) are two of the most common native bunchgrasses found here. It's easy to identify wheatgrass by its wheat-like seed heads. Fescue has branched seed heads. These important grasses help prevent erosion and provide food for animals. Cheatgrass is probably the most abundant grass on the Butte. Humans planted this noxious weed, and it is nearly impossible to remove.

Stop 6

Desert Blooms

Common wildflowers here include the sand lily, rock cress, penstemon, paintbrush, buckwheat, yarrow, blazing star, mariposa lily, lupine, and monkeyflower. Wildflowers are usually perennial, and most bloom in the spring. While walking along the path, keep an eye out for the sand lily in early spring. It is a small flower shaped like a white star with showy yellow pistils growing from its center. Also look for rock cress, an upright flower with several clasping leaves, four purple petals, and six stamens.



Stop 7**7,700-Year-Old Soil**

Soils native to Central Oregon are coarse, sandy, high in pumice and low in humus. The closer soil is to pine forests, the more acidic it is; the closer soil is to the sagebrush steppe, the more alkaline it is. Most of the soils lack nitrogen, sulfur, and selenium. Their water-holding capacity is low, but drainage and aeration are good. The light-colored soil in this area is ash, which Mt. Mazama (Crater Lake) deposited when it erupted 7,700 years ago. The eruption dumped about a foot of ash on the Butte and the surrounding area. Wind has removed most of the ash, except on the leeward side of the Butte.

**Stop 8****Birds Abound**

Keep an eye out for these species: red-tailed hawk, American kestrel, northern flicker, house finch, Townsend's solitaire, California quail, black-billed

magpie, Oregon junco, swallow, mourning dove, mountain chickadee and mountain bluebird.

Stop 9**Soil Slipping Away**

Boy Scouts installed these erosion barriers to help prevent soil erosion. Degradation and soil loss are serious problems on Pilot Butte. Hikers who don't stay on the designated paths cause most of the Butte's soil erosion. The Butte's ecosystem is fragile and cannot handle this damage. Please take care of the Butte by staying on its marked trails.

Stop 10**Compaction**

Compaction happens when gravity, feet, traffic, or even rain tamps down soil. Brick-hard soil makes trails easier to hike, but isn't good for plants and animals. Soil compaction results in smaller pores for plants' roots, and it keeps water from getting to roots. This makes plants more vulnerable to wear and disease. Many of Pilot Butte's trails are heavily compacted.

Stop 11**Yellow-Bellied Pines**

A large Ponderosa pine (*Pinus ponderosa*) looms on the left side of the trail. Its bark is shaped like a jigsaw puzzle-piece.

As the tree matures, its bark turns a lighter shade of orange. This is why people



sometimes call Ponderosa pines "yellow-bellied pines." Ponderosas offer food and shelter for wildlife. They grow readily in dry regions, and need a lot of space, with little competition from other trees.

Stop 12**Wildlife Food Source**

Red currant (*Ribes cereum*) is a common shrub of the sagebrush steppe. Its palmate leaves distinguish it from other shrubs of the Butte. "Palmate" describes a leaf that is divided into three or more distinct lobes, like the palm of your hand. Deer and some birds eat the red currant's orange-red fruit. The plant grows near the top and on the north side of the Butte, because it has adapted to growing in cool, shady and moist sites.

Stop 13**Critters**

Many mammals live on Pilot Butte, or visit it regularly. Ground squirrels, western gray squirrels, mule deer, black-tailed jackrabbits, yellow-bellied marmots (rockchucks), chipmunks and coyotes—they're all here.

Stop 14**Growing Together**

Common lichens grow on the rocks and tree trunks above the trail. Lichens are two organisms—algae and fungus—which live together in a mutually beneficial relationship. Moss also grows in this area, on the ground. These mosses have adapted to living in the dry climate of the high desert. They can survive all year because half their body weight is liquid.

**Stop 15****Wildlife Homes**

Below the trail is a good example of a "snag," in this case, a dead juniper. Snags are vital habitat for small, tree-dwelling animals. Notice the hole at eye level. Most likely, it was once a home for a gray squirrel or house finch. More than 20 animal species depend on junipers for food, nesting and habitat.

Stop 16**Geological History**

Pilot Butte is an extinct cinder cone. This stop is the exact location of the fault vent that formed Pilot Butte about 188,000 years ago. Notice the volcanic rock cinders. A fault vent in Paulina Crater raised the Butte 500 feet above the basaltic flatland.

Stop 17**Parasitic Plants**

Mistletoe is a parasite that grows on many plants. Junipers have their own specific mistletoe (*Phoradendron juniperinum*), which is also called witches broom. Juniper mistletoe has yellow-green, small leaves.

Stop 18**Human History**

Early pioneers used Pilot Butte as a beacon to help them locate routes leading to the area. The State of Oregon dedicated Pilot Butte on September 30, 1928, in memory of Terrence H. Foley, an early civic leader. People have donated many thousands of dollars and hours of labor to improve and maintain the visitor facilities you see today.