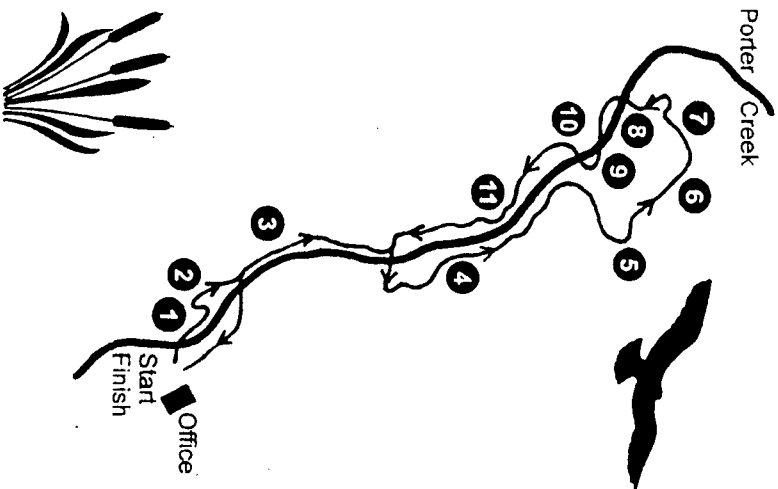


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elcome to the Sierra Foothill Research and Extension

Center's Porter Creek Nature Trail. The trail is a little less than a mile long and consists of 11 stops marked by numbered posts.

This brochure describes each stop, including the history, natural resources and types of research conducted at the Center. Please stay on the trail, close the gates behind you, and enjoy your walk!



1 CALIFORNIA'S WATER

As the population of California grows, water is becoming increasingly scarce. In dry years, there is simply not enough for all the people, plants and animals that need it. Most of the state's water supply comes from melting snow at higher elevations and flows through the foothills. Our Center is studying how water flowing through foothill woodlands is affected by such land management activities as oak tree removal and livestock grazing. This information will help us better manage these lands to ensure a high quality water supply.

2 NATIVE AMERICANS

Several tribes of Native Americans lived in these foothills before European or "white men" displaced them in the 1800s. The foothills provided a moderate climate and abundant food. One of the most important foods was acorns, which Native Americans ground into flour in the holes you see in these rocks. Such holes are always found near water because it was necessary to pour water over the ground acorns to leach out their natural bitter taste. Native Americans also used many other native plants including buckeyes, willows, deergrass, wild onions, and berries.

3 RIPARIAN PLANTING

Plants that grow along streams are called riparian species. Riparian plants are important because they help stabilize soil and filter impurities from the water. In this area, some of the riparian vegetation was removed, increasing potential for erosion. We are trying to restore this area by planting such woody species as willows, cottonwoods, buckeyes and oaks. The shelters around the young plants protect them from browsing animals such as cattle and deer and help the plants grow faster.

4 WILDLIFE HABITAT

In addition to helping filter water and stabilize soil, dense vegetation along creeks provides critical habitat for a variety of wildlife. Most animals don't feel safe in the open, but in the shelter and protection of streamside vegetation, deer, raccoons, skunks and foxes regularly come to the creek to drink and rest. Sometimes you can see their footprints in the soft soil near the water. The vegetation also provides ideal nesting sites for numerous birds. Amphibians and reptiles also rely heavily on these riparian areas for food, water and protection.

5 IMPROVED PASTURES

Most woodlands in California are privately owned. The primary economic activity on these lands is livestock grazing. Cattle and sheep convert stored energy in the green forage plants into meat. Typically, it takes 8 to 15 acres of dry rangeland to feed a cow and a calf for one year. However, by planting more productive plants and by fertilizing and irrigating the pastures, the same amount of forage can be grown on less than an acre. The hillsides above have been converted to "improved pastures" by tilling, removing rocks, seeding, fertilizing and irrigating.

6 OAK WOODLANDS

The type and density of vegetation changes drastically as you climb up from the creek to this rocky hillside. Here the main plants are foothill pines, blue oaks, interior live oaks, and annual grasses and forbs. It's easy to tell the oaks apart in the winter because the live oaks are evergreen, while the blue oaks are "deciduous" and become bare in winter. The larger oaks are probably over 200 years old. These hillsides are extremely dry in summer, but upland species, unlike the riparian plants below, have adapted to these harsh conditions. In the spring, these hillsides are often covered with wildflowers.

7 OAK REGENERATION

Several species of oaks in California are not regenerating well in certain locations. That is, there are not enough seedlings and saplings to replace mature trees that die. On the hillside across the road, we are conducting experiments to learn how to grow oaks better. We have found that these oaks will survive and grow well if sufficient care is taken to plant, protect and maintain them. The most critical factors are adequate weed control and protection from the many animals, such as livestock, deer, rodents and grasshoppers, intent on eating them.

8 DYING OAK TREE

The large, almost-bare tree across the creek is a valley oak which is nearly dead. Even in this condition, however, it is important to wildlife. Notice the small holes on the top part of the trunk. These holes were made by acorn woodpeckers for storing acorns. In the fall, the woodpeckers collect freshly fallen acorns and place them in the holes. Later in the year, when food is scarce, they come back to this "granary tree" to retrieve and feed on the acorns. This tree also provides sites for cavity nesting birds such as bluebirds and swallows. Notice the larger holes on the right stem where these nests are built.

9 MARSH VEGETATION

The vegetation along this portion of the creek differs from that where we stopped earlier (Stop 4). Here, there are few trees, but numerous cattails, reeds, forbs and shrubs. This vegetation provides habitat for several ground nesting birds called rails. We recently discovered a rare species living near here called a black rail. Black rails had never been found in the foothills before, and usually only live in coastal marshes. These birds are secretive and difficult to see, but sometimes you can hear their "kee-kee-kr" three-note call, or their deep, throaty growl.

10 EUCALYPTUS GROVE

The trees on the hillside above you are eucalyptus, which originally came from Australia. The first ones were planted in California more than a hundred years ago. We planted eucalyptus here because they grow very fast, and we wanted to find out which species would produce the greatest amount of wood. After four years, many of the trees grew to more than 50 feet tall. The "best" species tested produced nearly 10 cords of wood per acre per year when watered and fertilized. While we don't want eucalyptus to replace native oaks in the foothills, small eucalyptus plantations may reduce the pressure on oaks by providing a cheaper source of firewood.

11 NATURAL RESOURCES

Even a short walk through these foothills reveals a rich array of natural resources which provide a wide variety of values including water, wildlife habitat, forage, food, and wood products. These areas are also beautiful to look at and walk through. At the Sierra Foothill Research and Extension Center, we're committed to understanding how to manage these resources to maintain or enhance their ecological integrity and the spectrum of benefits they offer to society.



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TRAIL MAP

PORTER CREEK NATURE TRAIL



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