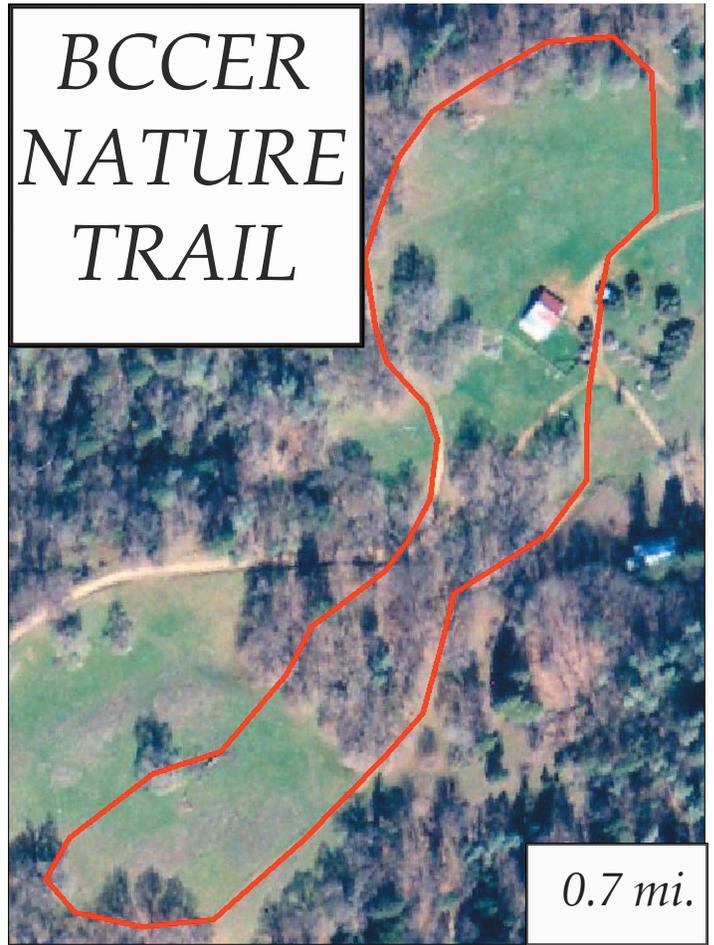
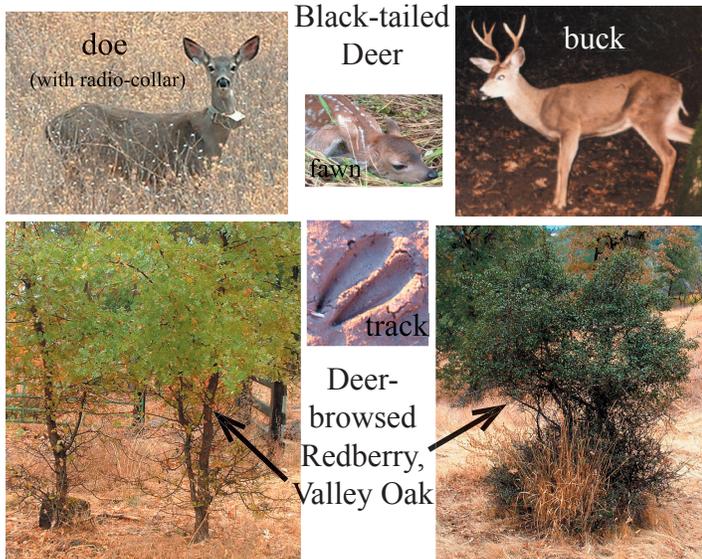


(1) GEOLOGY

Study the rocks under the Display and the geology poster. Note that long periods elapsed between the various formations. During these periods erosion would have shaped the landscape into valleys and ridges so that the next deposition, whether lava or mud flow, would have filled low areas before building on itself as a continuous layer. In other words, the boundary between formations would be expected to be irregular, maybe even as rough as the current topography. During the last 4 million years Chico Creek carved the canyon we see today, cutting through or into each of the formations.



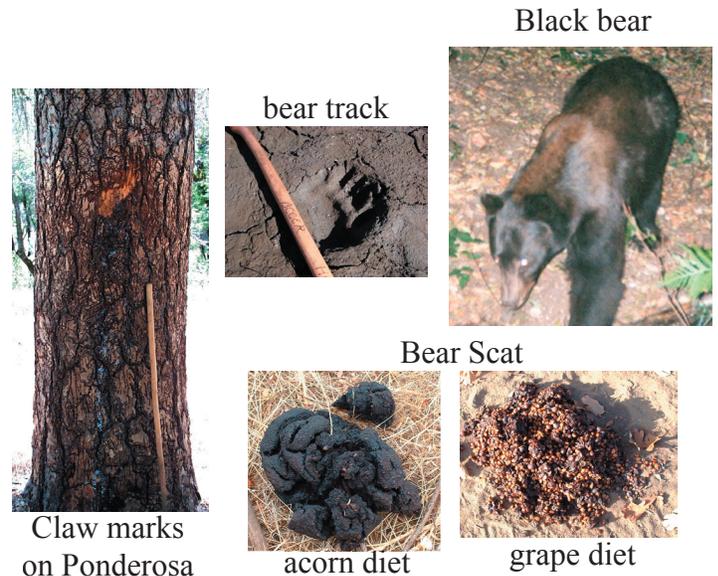
The fig and olive trees were planted on the old homestead around 1860. Birds and mammals are attracted to the fruits and inadvertently distribute their seeds. While these trees and their offspring obviously provide wildlife food, they also displace native plants better integrated into the ecosystem. Management of such exotic species is a big problem for the reserve. The figs and olives, combined with the water source make the Kiosk area an excellent site for wildlife observation.



This guide follows counterclockwise. Some stations are marked, others must be inferred; look for interesting things all along the trail



Many species of wildlife occupy the BCCER. You may be lucky enough to see some if you walk quietly and stay alert. Although many are nocturnal or shy and seldom seen, all leave signs of their activities if you know what to look for.



(2) HABITAT PILES

These brush piles were created with slash removed to create a “fire-safe” zone around the headquarters. Although unsightly, they provide favored cover for quail, songbirds, small mammals, and reptiles as well as a myriad of insects.



We made three piles because we were working by hand and the piles became too high to easily throw more brush on. Which do you think would make better habitat, three moderate piles or one very large one?



(3) FIVE OAKS

Oaks are a very valuable part of this ecosystem. They add structure and shade and their various parts serve as food for hundreds of animal species. Note the use of the post by acorn woodpeckers as a granary for storing acorns. If you look closely you may be able to identify several species of acorns in the post as well as tooth marks where a bear tried to rob the cache. Acorn woodpeckers live together in colonies, each of which maintains one to several granaries, which they share among themselves but vigorously defend against outsiders and other competitors such as squirrels. As you continue along the trail, look for other acorn granaries. What materials seem to be preferred?



Western Rattlesnake

The Ecological Reserve may be considered to be an oak-dominated landscape, supporting populations of 7 species of oaks. Five of the seven are growing within 100 feet of this site. See if you can identify all five here; then, as you walk the trail, try to identify oaks you pass. Do the different species seem to be distributed randomly or clumped in particular habitats?

Deciduous Oaks			Evergreen Oaks	
Black Oak	Blue Oak	Valley Oak	Interior Live Oak	Canyon Oak

Many plants produce fleshy, energy-rich fruits containing hard seeds that pass unharmed through digestive systems. These plants “pay” birds and mammals to disperse their seeds. The following berries can be found growing along the BCCER Nature Trail. They ripen at different times so don’t expect to find all in fruit. Animals benefit from the different ripening times by having food available over an extended period. The plants benefit from having the undivided attention of the seed dispersers. Can you observe any animals picking berries or find animal scat with identifiable seeds in it?



Toyon



Snow Berry



Manzanita



Osoberry



Coffeerry



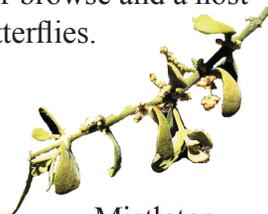
Elderberry

Other locally important food berries include poison oak and mistletoe. Mistletoe seeds are sticky even after they pass through a bird’s gut so adhere to branches.

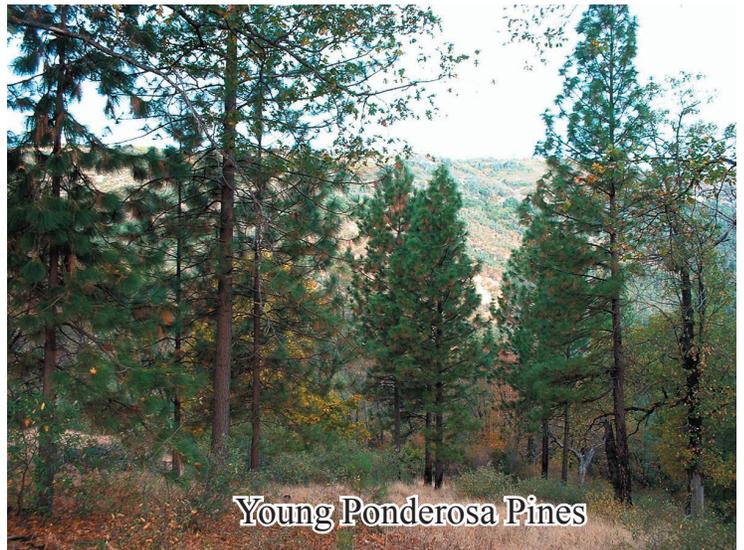
Mistletoe is also a favored deer browse and a host plant for several species of butterflies.



Western Bluebird



Mistletoe



Young Ponderosa Pines

(4) YESTERDAY AND TODAY

In the northern hemisphere, slopes that face partly or completely to the north receive less direct heating from the sun so remain cooler and moister than level ground or slopes with different aspects. Accordingly they support vegetation typical of higher (cooler) elevations. North slopes in the BCCER typically had extensive stands of Ponderosa Pine with Douglas fir and Incense Cedar intermingled. The large conifers were logged out but are being gradually replaced by young ones. As the young trees mature, the ecosystem will become more shaded and less brushy and the common species of animals will change. Among others, we might see more flying squirrels and saw-whet owls.



Northern Saw-whet Owl



Northern Flying Squirrel

(5) MAPLE



This is a Big-leaved Maple. Its large, thin leaves describe it but also suggest its habitat: shady, moist areas such as north slopes.



(6)

There's life in the old tree yet even though it has been dead for at least 20 years. Fungi, bacteria, and termites are utilizing the wood as an energy source. Some beetles, sowbugs, slugs and earthworms feed on the fungi and bacteria or directly on the wood. Ants, wasps, predatory beetles, slender salamanders, skinks, sharp-tailed snakes, and fence lizards utilize the log for cover and prey on the associated invertebrates. Birds and mice build nests under the trunk or in its cavities. Gopher snakes, rattlesnakes, foxes, and skunks visit to hunt for insects, mice, and lizards.



Calif. Slender Salamander



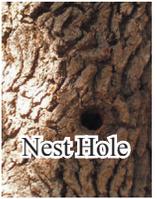
Western Skink

At the edge of the meadow to the north a ponderosa and a gray pine stand side by side against the sky line. Their names tell them apart: Ponderosa on the left, Gray or Foot-hill Pine on the right.



(7) You be the naturalist

There are so many things at this site: elderberry, coffeeberry, parallel holes made by a sapsucker in the bark of the coffeeberry, granary holes with acorns in the bark of the valley oak, nest and den holes in the oak, moss growing on the (shady) north side; there was even a pile of bear scat when we made the trail.



Nest Hole



Sapsucker holes

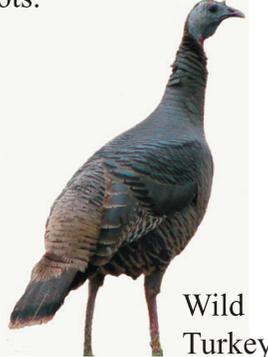
(8) OAK SAVANNA



How old are these large valley oaks? We may never know. Oaks are difficult to core and likely to be hollow, obscuring much of their history. It has been said that oaks require a few hundred years to get their growth, then a few hundred more to die.

Certainly these trees have been standing here longer than Europeans have been in the area. They have witnessed the extirpation of grizzlies, wolves, and elk and the nearly complete replacement of native grasses with European annual grasses. Now they too, are gradually dying off and, sadly, there are no young oaks to replace them. Seedlings are common but none seem to survive through the sapling stage. One obvious possibility is that deer keep them browsed off, but anecdotal reports suggest that deer were more abundant when these trees were small. Perhaps the native grasses, being perennial, provided an alternative food source in late summer. Perhaps the presence of wolves made the deer shy of feeding in open meadows away from cover. Perhaps the problem is not deer at all, but pocket gophers nibbling off roots or voles chewing off the bark (rodents may be more abundant now because of reduced predation, with the wolves gone, coyotes and bobcats decimated by efforts at predator control and hawks reduced by food chain buildup of pesticides). We may never know the reason, but it will be sad if these magnificent oaks die off with no replacements.

BCCER personnel have placed "tree guards" around some seedlings to protect them from being browsed or girdled. Gophers, however, can still reach the roots.



Wild Turkey



Striped Skunk