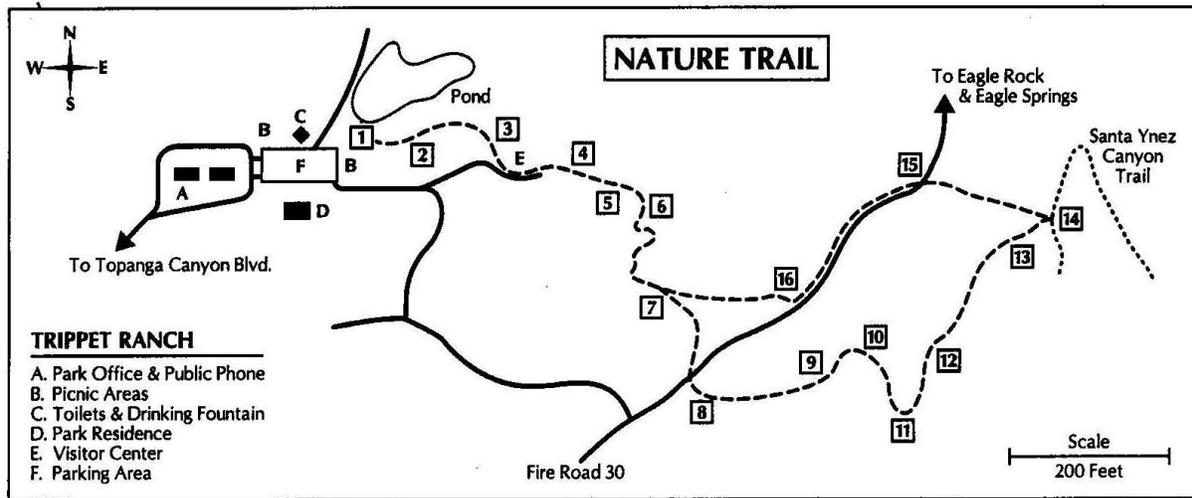


## Topanga State Park Nature Trail



### 1. SEASONAL POND

[Note: Over the drought years the pond has dried up and become overgrown with brush. Animals no longer visit in the morning, so there aren't animal tracks to be identified. We generally omit this stop from our outings. --DRH]

Close your eyes and listen to the sounds of life around the pond. Throughout the year this is a center of activity for many animals of the park. You can smell the water and moist vegetation which attract many inhabitants and visitors.

In spring the pond provides a breeding area for insects and for amphibians such as the Western Toad (*Buffo boreas*) and the Pacific and California Tree frogs (*Hyla regilla* and *Hyla cadaverina*), which must return each year to lay their eggs in water. The eggs hatch into tadpoles which eat and grow in the pond and stream. Later in spring little toads and tree frogs return to life on land hunting for insects, spiders, or sowbugs.

The many birds you hear near the pond find food, shelter, and nesting sites within the protective trees and shrubs. You may see swallows skimming close to the water while feeding on the plentiful insects here. During the hot, dry summer and fall, many animals visit the pond to drink. Can you discover any tracks of recent visitors along the muddy shoreline? Watch for Western Rattlesnakes (*Crotalus viridis*); they also enjoy the moisture and cool shade here during hot weather.

### 2. POISON OAK

Leaflets three, let it be! The oils from any part of the Poison Oak (*Toxicodendron diversilobum*) plant's leaves, flowers, or even leafless stems, may produce a severe allergic rash. You can see poison oak growing here as a shrub as well as climbing a tree trunk like eastern Poison Ivy (*Toxicodendron radicans*). In spring Poison Oak is very attractive with its shiny new leaves and small greenish-white flowers, which

develop into white berries. The leaves turn brilliant red in fall and drop, leaving the branches bare, but still toxic in winter.

The trail continues across gullies eroded by water runoff from heavy winter rains. You can see the rich soil in which these Coast Live Oaks (*Quercus agrifolia*) are deeply rooted.

### 3. SQUIRREL TREE

The well-worn burrow entrance at the base of this fallen live-oak tree once marked the home of a California Ground Squirrel (*Citellus beecheyi*). Here he retreated in safety, stored food, and reared young. Why might a squirrel choose to dig his burrow here under the oak tree?

Tree roots stabilize the soil and provide some scaffolding for his tunnels. Above ground the fallen tree provides a lookout post and, in the fall, acorns to be eaten and stored for the lean months ahead.

Coast Live Oaks (*Quercus agrifolia*) are an important food source for other animals in the park as well. When acorns are plentiful, you may see the noisy blue Scrub Jay (*Aphelocoma coerulescens*) carrying off acorns in his bill. He will bury some of them beneath the leaf litter for a later meal. Perhaps you will find a forgotten acorn sprouting into a new oak tree nearby.

*Follow the fire road and continue on the trail around the near side of the Nature Center.*

### 4. GOPHER HOLES

As you walk through the grassland, you will see many different-sized holes in the ground. The larger open holes are ground-squirrel homes. The smaller holes, plugged with mounds of loose dirt, mark the home and feeding tunnels of Botta's Pocket Gopher (*Thomomys bottae*). He spends most of his time underground feeding on roots and plants which he pulls down into his burrow. He is careful to leave his "doors" closed to keep out Gopher Snakes (*Pituophis melanaleucus*) and other unwanted visitors.

Although gophers are unwelcome in lawns and cultivated fields, their burrowing helps fertilize and aerate the soil in wild areas. **Before you reach into any hole**, realize that there may be another animal inside, such as a toad, beetle, or rattlesnake taking shelter from the sun.

### 5. FALLEN TREE

Although this oak has burned and split in two, you can see from its green leaves that part of the tree is still alive. Fire swept through this woodland in 1973 consuming the central heartwood and weakening the tree. Some of the living layer, just under the bark, was spared. How might fire have entered this tree without burning through its thick, insulating bark? Look at other oaks along the trail for clues.

The decaying wood is alive with wood-boring beetles, termites, and many other small creatures. Fungi too are at work digesting the wood. Before this tree is completely recycled, it will provide food and homes for a wide variety of animals.

## 6. OAK WOODLAND

Here the dense green canopy of the evergreen live oaks creates a relatively cool and moist climate for the plants and animals which live in its shade. On hot, quiet summer days, the oak woodland is still alive with the calls and activity of many birds. Giant Wildrye (*Elymus condensatus*), a native perennial grass, and Hummingbird Sage (*Salvia spathacea*) are common understory plants of the oak woodland.

Gently rub a Hummingbird Sage leaf. You need not pick or crush the leaf to smell its refreshing pungent odor. Notice the many tiny sticky hairs which cover the leaves. In spring, hummingbirds are often busy feeding here from the tubular red flowers of this attractive Sage.

## 7. GRASSLAND

With winter rains and spring warmth, the grassland becomes a bouquet of wildflowers and green grass. The fresh, tender growth is eagerly devoured by plant eaters, from insects to Brush Rabbits (*Sylvilagus bachmani cinerascens*) to Mule Deer (*Odocoileus hemionus californicus*). Predators are attracted to the grassland to hunt these plant eaters. Overhead the Red-tailed Hawk (*Buteo jamaicensis*) soars effortlessly on rising air currents as his keen eyes look for the slightest movement below.

By night the Great Horned Owl (*Bubo virginianus*) takes over this role, hunting in the dark largely by his acute sense of hearing.

An abundance of tiny clay particles in this soil prevents moisture from penetrating deeply. Water from winter rains saturates the soil and then disappears rapidly with the first heat of summer. Shallow-rooted grasses and herbs living here race to grow, flower, and set seed before the summer sun scorches the grassland to brown. Seeds are dispersed to await the winter rains, which begin a new cycle of life.

*Cross the fire road and follow the trail on your right.*

## 8. ANIMAL TRACKS

The sandy areas in the trail are good places to look for signs of who has been by before you. Footprints in the fine sand can tell a story of pursuit and struggle, a near-miss or dinner, or perhaps a beetle just passing through.

Western Fence Lizards (*Sceloporus occidentalis*) may often be seen sunning themselves on rocks or tree trunks here. "Cold-blooded" lizards use solar energy to warm their bodies so that they can move fast enough to catch a meal of insects or spiders. If you watch quietly, a fence lizard (or blue-belly) may do "push-ups" to frighten you away from his territory. He also bobs and displays his blue belly and throat patches to attract females in the spring.

*Continue on the trail under the oaks.*

## 9. OCEAN VIEW

Facing south you can, on most days, see the ocean directly before you and feel a cool, moist onshore breeze. You are also facing the direct rays of the sun through most of the day. Just as you would place

sun-loving plants on the south side of your house, the more drought-tolerant shrubs grow on south-facing mountain slopes.

The western Santa Monica Mountains provide very special growing conditions on their south-facing slopes because they also face the ocean. Night and morning fogs, so common along our coast, bring these plants extra moisture, which collects on their leaves and drips to the soil.

## **10. CHAPARRAL**

As you leave the cool shade of the oak woodland, notice the thin soil on this steep rocky slope. Many different species of shrubs grow together here in a dense, spiny tangle. This community of plants is called chaparral.

Take a moment to look under the chaparral shrubs. There is no understory of plants here as there was in the oak woodland. Where are the signs of decay, which is needed to recycle nutrients back to the soil and into new growth?

You can see dead branches and leaf litter accumulating under the bushes. How will the nutrients locked up in this dead wood be released?

## **11. CANYON VIEW**

Looking toward the ocean, you can trace the canyons which drain water from the hills, combining to form a stream that flows to the sea. The canyon bottoms are marked by taller trees which grow in the rich, moist soil. Look for the dark green rounded crowns of live oak and the pointed tops of California Bay Laurel trees (*Umbellularia californica*).

The tall, graceful trees with light-colored bark are Western Sycamores (*Platanus racemosa*). In spring and summer they are clothed in light green leaves. Follow the taller growth up along the canyons and onto the cool north-facing slopes.

The chaparral-covered hills to your left burned in October 1978 during Santa Ana winds. These hot, dry winds blow toward the ocean, quickly fanning the slightest spark into a brush fire. Compare the new growth since the fire with the mature chaparral to your right.

If you listen quietly for a moment, you will very likely hear the "voice of the chaparral", a series of notes on one pitch accelerating into a trill: "peep peep peep-pee-pee-peepeepepeprrr" like a bouncing ping-pong ball. A small, secretive bird, the Wrentit (*Chamaea fasciata*) is often heard but rarely seen in the chaparral.

## **12. WATER SAVERS**

The climate which draws so many visitors and residents to Southern California provides us with warm, dry, sunny days all summer and mild, occasionally wet, winter days. Plants growing here on the rocky, dry mountain slopes must do without irrigation or lawn sprinklers. They are well adapted to summer drought.

Chaparral shrubs send their roots deep into the rocky soil, tapping water which has seeped down into the cracked rock. Even so, water from the winter rains will be used up before the summer drought is over.

Chaparral shrubs have adapted in many ways to reduce the amount of water lost through their leaves. Look for leaves with these water saving characteristics: small size, waxy coating, light color (especially under-side), folded or curled, or covered with hairs. Can you think of other ways plants might conserve water?

### **13. CHAPARRAL FIRE**

The chaparral you are walking through burned completely in 1978. Everything above ground was reduced to charcoal and ash. That was the beginning of a new cycle of life in the chaparral community. Fire removed the dense layer of shrubs, allowing water and sunlight to reach the soil below.

Many seeds which had lain dormant in the soil for years sprouted, producing hillsides crowded with wildflowers. Some seeds actually require the heat of a fire to crack their heavy seed coats before germination can begin.

Fire is the great recycler of nutrients in the chaparral. Most of the accumulated dead wood was reduced to ash which then fertilized new growth.

Meanwhile, many of the shrubs survived the fire underground. Their living roots continued to hold the soil, and new branches soon sprouted from the root crown. Within about ten years the shrubs will again crowd out the flowers and smaller plants to form a dense cover of chaparral.

### **14. SANDSTONE CLIFFS**

Looking across the canyon, you see prominent tan-colored cliffs. They are part of the Topanga Formation, so named because it is commonly seen in rock outcrops in the Topanga area. These cliffs serve as a reminder of the profound changes which the Santa Monica Mountains have undergone through many millions of years.

Fourteen million years ago the spot where you are now standing was below sea level, a shallow bay in which beach sand was accumulating. Rocks of the Topanga Formation consist of that sand cemented together to form hard sandstone. They contain stream-rounded pebbles and many fossil clams, snails, and sand dollars. Notice the angle to which the once-horizontal layers of rock have been tilted as they were uplifted.

Many times the sea has covered what is now Topanga State Park and left its record in the rocks. Many times the area has been uplifted by faulting and folding and then again lowered by erosion.

*From this point, turn around and follow the trail on the right to the fire road.*

## 15. MOUNTAIN TOPS

Looking north and west, notice that the tops of the mountains around you are all at roughly the same height. These mountain tops were once part of a gently rolling surface near sea level. Thick, loose soil still covers the tops of some ridges, enabling oaks to grow there.

The whole area was uplifted and is now being eroded by the streams we see today. Canyons have been cut as soil and rocks have been gradually washed away, filling part of the San Fernando Valley to the north and forming the Santa Monica Plain to the southeast.

The Santa Monica Mountains are still rising today even as they continue to be eroded away.

*Follow the fire road back downhill.*

At the same time that Topanga sandstone was being deposited in the ocean, the Santa Monica Mountains were the scene of widespread volcanic activity. Some of the hot molten rock erupted into the sea. Some, as seen here in the park, intruded into the sandstone and cooled beneath the surface.

The dark, fine-grained rock along the road is a volcanic rock called basalt. It often fractures into columns or blocks, but it does not show the layering of sandstone or other sedimentary rocks.

Turn right from the fire road onto the trail just before the oak tree.

## 16. INSIDE A FLOWER

Look carefully inside the wildflowers along the path. How many different beetles, bees, or butterflies can you find enjoying a meal of nectar or pollen? Perhaps you will find a spider waiting quietly inside, ready to make a meal of an unsuspecting insect.

In summer when most of the wildflowers have faded, look for funnel-shaped spider webs in the grass. If you touch the sheet-like web with a blade of grass, the spider may run out to see what insect has fallen onto his trap.

The drama of life in the grassland and all along the trail varies from hour to hour, and season to season. Please come back again and enjoy a new experience on this trail or any of the many trails and fire roads of Topanga State Park.

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