

Fire Ecology Trail



This trail will introduce you to the common shrubs of Eaton Canyon and the concept of fire ecology; how native plants and animals respond to fire. Please stay on the trail and do no disturb the plant or wildlife.

Stop 1. The Fire Story.

The area you are about to visit burned in the brush fire of October 27, 1993, which burned through nearly 6,000 acres of the foothills, included approximately 2/3 of the Eaton Canyon Natural Area, and destroyed the Nature Center building. The slopes and flats in the Park continue to recover from the fire and the plants on this trail show several ways that plants regrow following fire. Fire has been a natural factor in the San Gabriel Mountain foothills for many thousands of years.



The Coastal Sage Scrub plant community in the San Gabriel Valley occurs generally below 1,500 feet on sloping land below the foothills. This community of low, scrubby plants is the most endangered vegetation type in Southern California, because of pressures from urbanization, flood control projects, and rock quarries. California Sagebrush is the dominant shrub with other common associates being White Sage, Black Sage, and Flat-topped Buckwheat. Plants in this group are adapted to the hot, dry summers and cool, moist winters we have in Southern California. Their leaves may be small, sticky, hairy or whitish-coated, to reduce water loss and often are fragrant. Many species are drought deciduous; they lose their leaves to reduce stress during the dry Summer and Fall months.

Individual plants of the **Chaparral** community, which dominates the slopes above the park, are found on the trail. Plants in these communities commonly respond to fire in two ways. They may regrow from seed from the original plant before the fire or they may resprout vigorously from the basal stump (burl) and roots left behind. Species using these two strategies are called "Seeders" vs. "Sprouters". Many plants use both techniques to reestablish. Some seeds require heat to break a tough outer coat and some need charcoal or smoke from fire to sprout. Look for evidence of charred wood at the bases and on old stems of shrubs along the trail.

Stop 2. Coffeeberry: *Rhamnus californica*

This attractive plant has a black fruit with a seed that resembles coffee beans. Indians used the berries as a laxative to offset their high fiber diet of acorns. Deer, Coyote and Band-tailed Pigeons feed on these berries. The Coffeeberry here resprouted from the roots and lower stems left by the fire.

Stop 3. Scale Broom: *Lepidospartum squamatum*

The Scale Broom shrub, a member of the Dandelion group of the Sunflower family, has rigid broom-like green branches and is found only in washes and on alluvial fans.



The leaves are usually reduced to tiny scales along the stem, except briefly in the rainy season when the hairy, gray-green leaves appear on new stems.

Fall brings an abundance of golden yellow flowers, resembling tiny dandelions. Miniature parachute pulls of seeds provide the familiar seed dispersal method of this plant group. Scale Broom has recovered well following the fire, resprouting from the root base.

Stop 4. Laurel Sumac: *Malosma (Rhus) laurina*

Leaves of Laurel Sumac are shaped somewhat like a taco shell and contain a strong-smelling compound which may repel some insects. A waxy coating also prevents moisture loss from the leaves. Indians took advantage of this odor while hunting because it disguises human scent, allowing them to get closer to



their prey.

This is one of our most abundant shrubs and responds very well after fire with an enlarged, hardened basal burl, mostly underground, from which numerous new shoots sprout shortly following the fire. The burl is filled with buds waiting to form new stems when the fire burns away the old stems.



Stop 5. Showy Penstemon: *Penstemon spectabilis*



This plant derives part of its name from the five (pen) stamens (stemon) the flowers contain. One stamen is sterile and covered with hairs. The beautiful lavender flowers bloom in the spring. Showy Penstemon has spread widely after the fire and covers several acres here.

Stop 6. Flat-topped Buckwheat: *Eriogonum fasciculatum*

This perennial Buckwheat with its pretty pink and white flowers, produces a nectar which is much favored by bees. Usually, a few flowers will be found blooming throughout the year, although late spring is the main blooming season. Notice the tiny, bundled leaves.

Indians bolted the stems and leaves which were then used to treat bladder problems. This buckwheat is a *pioneer plant* that colonizes open spaces following floods, fires or other disturbances.

Stop 7. Western Sycamore: *Platanus racemosa*

The pale-barked tree above you is best recognized by its five-fingered leaves, somewhat like a maple, and balls of flower clusters which hang from the branches. Sycamore is generally associated with riparian woodlands but may be found some distance from standing water. A great shade tree in summer, it drops its leaves in the winter. The black-chinned hummingbird gathers soft fuzz from the underside of sycamore leaves to add to its nest.

Stop 8. Openings

Not all animals like brush or tree cover, at least not all the time. Some need openings to feed. Some annual plants will grow only in the full sun

of the open areas. Many wildflowers, like the tiny Suncup, often fill these openings in the Coastal Sage Scrub community.

Stop 9. Mountain View

Look to the North here, between these two oaks. All of the mountain slopes you see burned in the October 1993 fire. Henninger Flats is located in the long, flat ridge of pine trees to the east (right). Erosion greatly increases following fires on steep slopes and canyon bottoms - much of this material flows through the canyon during major storms.

Stop 10. Golden Current: *Ribes aureum*

Golden Currant is usually found in the shade of the oaks or other large shrubs. Clusters of bright yellow flowers appear in late winter through early spring, followed by smooth, round berries which turn yellow to red to black. Indians and early settlers ate them fresh or dried the ripe berries for later use. Many wildlife species, including birds feast on the berries as well.



Stop 11. Whipple Yucca: *Yucca whipplei*

This familiar plant of the foothills and hillside chaparral is neither a "cactus" nor a "succulent" but a member of the Lily Family (formerly placed in the Agave Family). The long, stiff, spine-tipped leaves must be avoided by hikers but were useful to local Indians as a needle and thread, as cordage and for making sandals.

After 8 to 12 years of basal growth the yucca sends up its large flower stalk, produces showy masses of cream colored flowers, then dies. Flower pollination is accomplished by the Yucca Moth whose larvae benefit from eating some of the seeds in the developing pod. This is a classic ecological concept called mutualism.

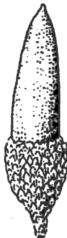
Stop 12. Coast Live Oak: *Quercus agrifolia*

The Coast Live Oak is a member of the beech family, and the most widespread of about a dozen oak species in Los Angeles County. It is called "live" because it doesn't shed all its leaves in the winter. Leaves are curled downward to decrease water loss. Many oaks in the canyon, though burned severely, survived the fire with their thick bark and have resprouted lush growth from the branches and



even main trunks.

Acorns of this and other oaks were very important to Indians and early pioneers. The acorns have almost the same amount of protein and carbohydrates and almost 5 times the fiber of wheat! Acorns were ground and then leached to create a flour used to make acorn meal and bread.



Stop 13. Mulefat: *Baccharis salicifolia*



Mulefat is a very common shrub found all over Southern California in damp to wet environments. Its willow-like leaves range from 1 to 3½ inches long with scattered teeth around the outer half. This Sunflower Family shrub has male and female bushes which bear slightly different flowers.



Stop 14. Yerba Santa: *Eriodictyon crassifolium*

Yerba Santa (Holy herb) is a good example of plant adaptation to a dry climate. Notice the feathery feel of the felt-like leaves. The tiny hairs on the leaves act as shade protection, preserving moisture inside the leaf. Like Flat-topped Buckwheat, the Yerba Santa is a pioneer plant and spreads readily after fire, sprout from underground runners or rhizomes. Yerba Santa was used by Gabrielino Indians and Spaniards as a cure for sore throats.

Stop 15. California Sagebrush: *Artemisia californica*

California Sagebrush, a pleasant scented low shrub with feathery narrow gray leaves, is a dominant member of the Coastal Sage Scrub plant community. It may be found in almost all parts of Eaton Canyon, from hillside to stream bottom. The early Spanish used it as a tea for bronchial problems, as well as a wash for wounds and swelling. Early miners used it to drive fleas from their bedding. Sagebrush resprouts from the root base but also grows back from seed following fire.

On your way to the next stop, think about what you would do if you were an animal and a fire came through.

Fire and Animals

Fire affects animals as well as plants, but some survive better than others. The Dusky-footed Woodrat lives in a large house of sticks and many are killed during fires. Cottontail Rabbits and California Ground Squirrels live underground and can take shelter there or flee ahead of the fire.



Birds, of course, can fly but some may head deep into shrubs for cover and perish in the fire. Mule Deer, Coyotes and many birds were seen in the canyon, immediately following the fire and populations have recovered well.



Stop 16. Little-leaf Redberry: *Rhamnus crocea*

Little-leaf Redberry has rounded, hard, leathery leaves and, in the late summer through fall bears bright red berries. It grows on brush-covered slopes of low and middle elevations in Southern California.



Stop 17. Prickly Pear: *Opuntia littoralis*

The Prickly Pear cactus grows in dense clusters with flat, broad, oval pads covered with numerous spines. The pads are actually flattened stems, not leaves. The showy yellow flowers attract numerous insects and are followed by reddish-purple fruits. These Cactus apples (or pears) are delicious in jellies and jams. After the spines have been removed. Fleshy water-filled pads allow cactus to survive fire quite well, unless there are heavy grasses growing among the patches. The grasses concentrate the fire within the stand of prickly pears and the extreme heat may kill the cactus.

Stop 18. Honeysuckle: *Lonicera subspicata*

Honeysuckle is found on dry brushy slopes below 5,000 feet throughout the coastal ranges of Southern California. This dense shrub, often tangled with Poison Oak or other bushes, offers attractive homes and hiding places for animals in the Coastal Sage Scrub community. White to cream-colored flowers appear in spring followed by twin berries. Often you can see a gall (insect house of a tiny wasp) on the Honeysuckle. These galls look like rose buds - often turning it from green to red about the time the tiny larva matures. Notice that the Sycamore



saplings, just to the right here are growing back from the burned dead snag.

Stop 19. Poison Oak: *Toxicodendron diversilobum*

Poison Oak is one of the most common plants in the Park. It is easily recognized by its leaves, each of which is divided into three separate leaflets. The leaves of Poison Oak are green during most of the late winter early spring growing season, but may turn red or yellow in the summer or fall. Like other deciduous plants, Poison Oak drops its leaves in late fall and winter.



All parts of the plant contain an oil that causes blistering and itching upon contact with human skin, but has no effect on animals. Wash with soap and water as soon as possible if you believe you came in contact with this plant.

Stop 20. Matilija Poppy: *Romneya coulteri*

This spreading shrub produces our largest and showiest flowers; six to eight inches across with six crinkled white petals and a bright yellow center. Matilija Poppy is one of those plants requiring smoke or charcoal for the seed to germinate. It primarily spreads through underground stems (called 'rhizomes').

Eaton Canyon Nature Center Associates (ECNCA) and the Community have worked with the County of Los Angeles Parks & Recreation Department to build a new facility.

ECNCA and staff serve over 130,000 people annually, educating the public about the habitat native to the San Gabriel Valley and Los Angeles County. There is no other similarly equipped facility in the San Gabriel Valley.

In addition, we provide on-site environmental education programs for elementary school children. Your continued support allows trails such as this one to be maintained and our community outreach programs to continue.

Happy trails!

Text by Eaton Canyon Nature Center Staff
Illustrations by Madame Wallace

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Eaton Canyon Natural Area Park

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Park open from sunrise to sunset for your enjoyment

Nature Center open Tuesday through Sunday
9:00A.M. – 5:00P.M.

County of Los Angeles
Department of Parks and Recreation