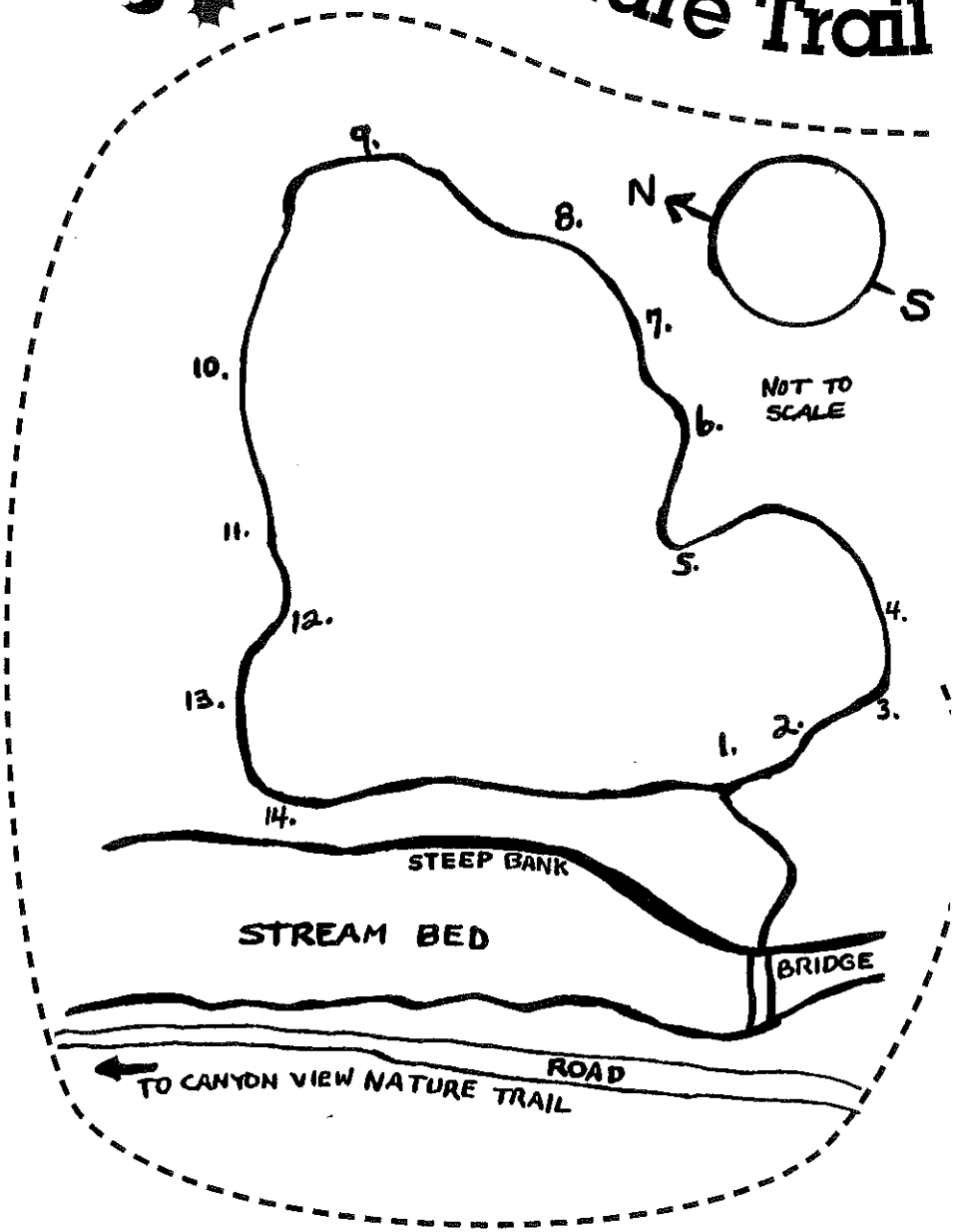
Live Oak Nature Trail



Bailey Canyon Wilderness Park

Sierra Madre, California

Live Oak Nature Trail

Fire, flood, and man's intrusion have caused radical changes in Bailey Canyon Wilderness Park over the years. Nevertheless, the park remains an excellent and unique "nature study park". It has also been registered as a bird sanctuary, so get out your binoculars.

Although small in size, Bailey Canyon Wilderness Park contains several distinct plant associations which invite comparisons. A stop on the bridge will allow a view of these different groups. On the steep, dry slopes, two different drought resistant plant associations live. Because of the elevation here (slightly over 1,000 feet) these two communities overlap and intermingle. The larger shrubs belong to the Chaparral Association, the small, less woody species to the Coastal Sage Scrub. We are at the lower limits of the warm Chaparral Association. The Southern Oak Woodland Plant Community beyond the bridge is a distinctly different community. Although the Riparian Stream-side Plant Community is now a remnant one, it continues to exist due to sufficient root structure that can reach the necessary ground water when surface water is gone during the hot, dry summer months. Approximately 2% of the Earth's surface has a Mediterranean-type climate, and Southern California with its hot, dry summers and mild, rainy winters, is included in this two percent. All these areas have similar vegetative adaptations.

The Live Oak Nature Trail is a fairly level, relatively easy walk on a narrow trail. From the parking lot, walk west through the barbecue/picnic area, to and through the turnstile. Turning right, towards the mountain and debris basin, proceed along the paved road until it becomes a dirt road. Proceed on the dirt road to the foot bridge on your right. After crossing the bridge, you will find marker #1 about 50 feet ahead to your left. The trail is circular and goes counter-clockwise. There are 13 trail markers that refer to the following numbered paragraphs.

1). **ELDERBERRY** (Sambucus caerula) and **MUGWORT** (Artemesia vulgaris) – Right

The slender shrubs to the right and left of the marker are Elderberry, a member of the honeysuckle family. The small white flowers appear in the spring in terminal clusters and turn into bluish berries. The Native Americans called the elderberry "the tree of music", as they made flutes from the branches. The large shoots were used for arrow shafts. Branches served both for bows and the bow drill for friction fire making.

To the right of the trail are numerous plants with long leaves, dark green on top and silvery grey on the underside. The flowers, which bloom from June to October, are tiny, hairy, and yellowish, and grow in dense little clusters branching off the stem. This is Mugwort, used widely by the California Native Americans as a medicinal plant. The local Tongva Native Americans rubbed the juice over the affected area to prevent and cure the rash from poison oak. When the weather is hot, Mugwort is capable of protecting itself from excessive water evaporation from its leaves, by turning them up to expose the silver grey underside. In this way, less heat is absorbed and water loss is reduced.

2). **OAK WOODLAND PLANT COMMUNITY** – Left

You are now entering a Southern Oak Woodland Plant Community. Indicator species are the Coast Live Oak, Golden Currant, Poison Oak, and, not so commonly, the Hillside Gooseberry. The plant by the marker is Hillside Gooseberry (Ribes californicum, var. hesperium). Hillside Gooseberry, as you can see, is a very spiny shrub. It has tubular purplish or greenish flowers about 3/8 inch long with white petals. Its berries, which are about 3/8 to 1/2 inch in diameter, are densely covered with stout spines.

3). **COAST LIVE OAK** (Quercus agrifolia) – Right

This oak species is found growing in the foothill canyons and river beds of Coastal Southern California. The small, tough, leathery leaves are characteristic of a tree that is adapted to live in a hot, dry climate.

The acorns, or fruit of this oak, are fertilized during the summer months. By late summer, the fully matured acorns begin dropping off of the parent trees. It is at this time of year (about mid-September) that we begin to notice the frantic activity of the Scrub Jays. The jays work incessantly from sunrise to dark gathering and planting acorns. Each bird may plant a thousand or more each day! Many of the jay-planted acorns germinate into young oak trees. As a result, the jay plays an important role in the propagation of the oak forest of California.

Acorns were an important food source for local Native Americans. During the early fall months, they gathered tons of the highly nutritious acorns and stored them in granaries. Each day a quantity would be ground into acorn mush. Acorns are valuable food for many wildlife species also. They are especially important to the mule deer, for they are available during the time of year when much of the chaparral vegetation is too dry to be nutritious or palatable.

4). **CALIFORNIA BAY TREE** (Umbellaria california) – Right

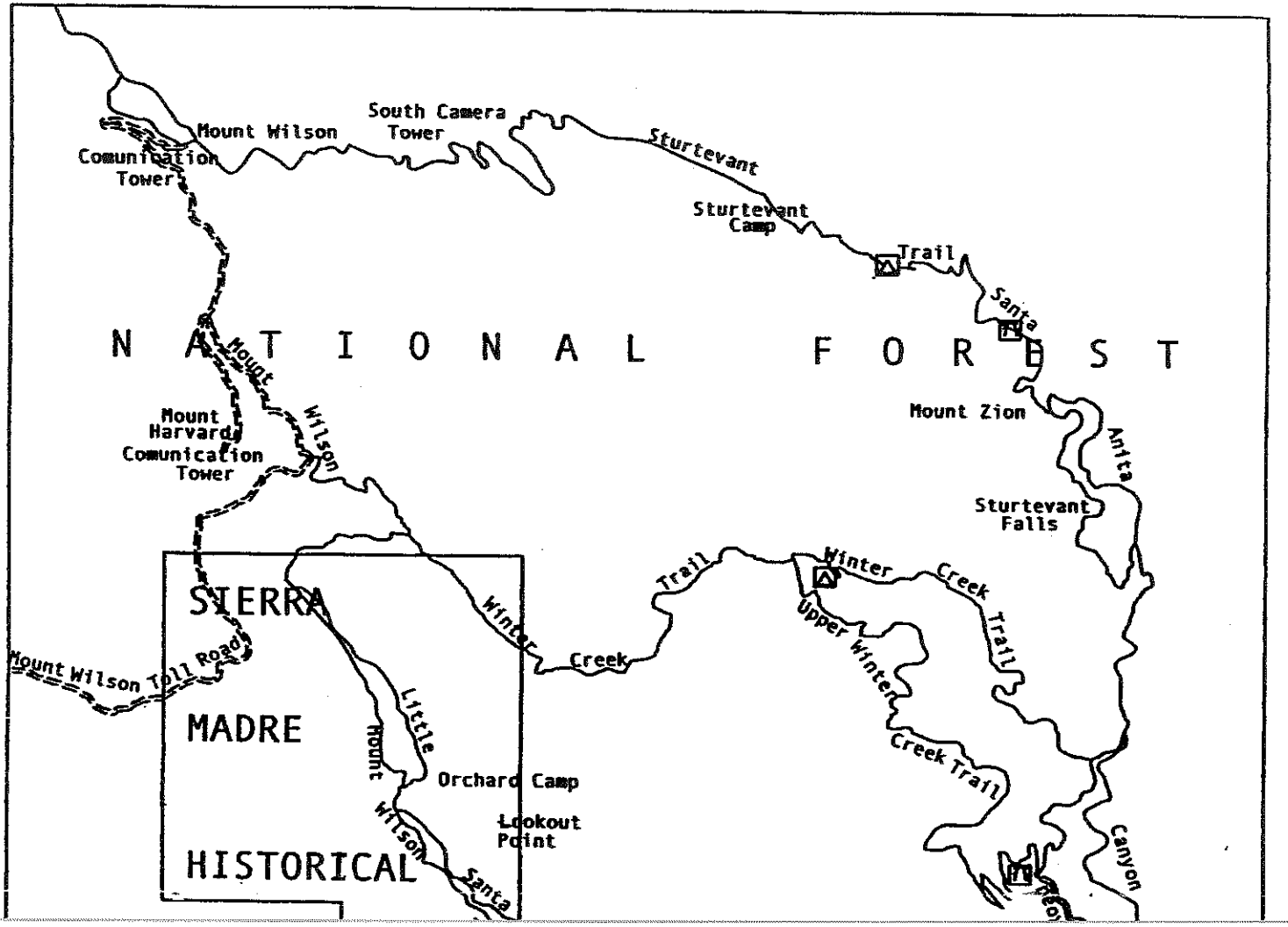
Behind the marker is a small tree which enjoys shady areas and frequently grows to 50-100 feet. It is California Bay Tree or California Laurel. The dark green slender leaves have a strong, pungent odor when crushed, and the flowers are small and greenish-yellow. Fruits turn dark purple. Native Americans wore a leaf under their hat to cure headaches, and roasted the fruit for eating. The leaves are used for seasonings in stew, roasts, etc. The leaves and seeds have properties as an insecticide, and small limbs are used today as louse preventative on chicken roosts.

5). **POISON OAK** (Taxicodendron diversilobum) – Right

This is the plant that can cause a rash and severe irritation when it comes into contact with human skin. It contains an oily substance which covers the leaves and stems. It is this oil which contains the toxic substance responsible for the rash. If you should get the oil on your skin, an immediate washing with soap and cold water will often prevent the much dreaded dermatitis. It is also very dangerous to inhale the smoke of burning poison oak twigs and branches. (Did you ever try to scratch the inside of your lungs?) Although dreaded by humans, Poison Oaks is a favorite food for many kinds of wildlife. It is "ice cream" for the Mule Deer that live in the chaparral community. It is one of the few deciduous shrubs found in the chaparral. Therefore, its leaves are more tender and palatable, more nutritious, and succulent which makes it one of the most desirable wildlife foods. The berries are also relished by many animals. You will do well to learn to recognize this plant. "Leaves of three, let it be" is a rhyme learned by children. The "leaves" are really 3 leaflets on a stem. You will see more Poison Oak on this trail. Keep your eyes open.

6). **COAST SAGEBRUSH** (Artemisia california), **BLACK SAGE** (Salvia mellifera) and **MILKWEED** (Asclepias sp.) – Right

Look closely at the long linear leaves of this shrub. A good way to distinguish this plant from others is by its "feathery" leaf structure. In order to survive the hot, dry summers, Coast Sagebrush becomes dormant. The plant seems dead, but as soon as the weather becomes favorable for growth, it sprouts new foliage. The plant with the dark green, leathery looking leaves is Black Sage and it blooms in early spring. Its square stem is characteristic of the Mint family. The nectar from Black Sage produces one of the best honeys to be found on the market. Bee men will transport their bees many miles so that they have access to the Black Sage nectar. Both the Coast Sagebrush and Black Sage are indicators


Mount Wilson
South Camera Tower
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Sturtevant
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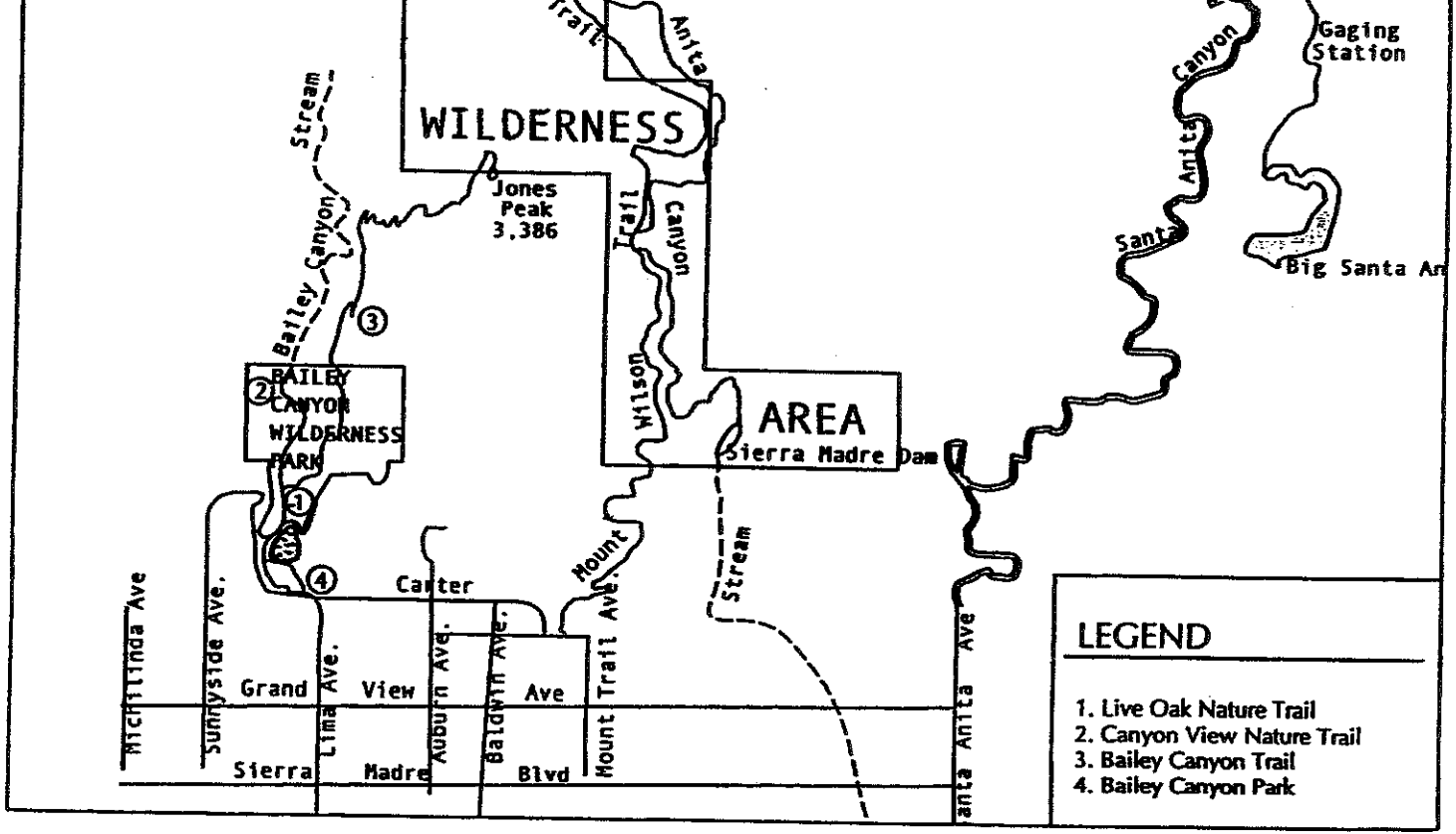
N A T I O N A L F O R E S T
Mount Wilson
Mount Harvard Comunication Tower
Mount Zion
Anita
Sturtevant Falls
Winter Creek Trail
Upper Winter Creek Trail
Winter Creek
SIERRA
MADRE
HISTORICAL
Mount Wilson Toll Road
Little Mount Wilson
Orchard Camp
Lookout Point
Santa
Canyon


WILDERNESS
Jones Peak 3,386
Bailey Canyon Stream
Bailey Canyon
Trail
Anita
Canyon
Wilson
Trail
BAILEY CANYON WILDERNESS PARK
AREA
Sierra Madre Dam
Stream
Mount Trail Ave.
Carter
Grand View Ave
Sierra Madre Blvd
Michillinda Ave
Sunnyside Ave.
Lima Ave.
Auburn Ave.
Baldwin Ave.
Mount Trail Ave.
Santa Anita Ave
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3. Bailey Canyon Trail
4. Bailey Canyon Park
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species for the Coastal Sage Scrub Plant Community. In this area, in open spaces, may be found Milkweed. Its soft, velvety, gray-green leaves are food for the caterpillars of the Monarch butterfly.

7). **COAST SAGEBRUCH, BLACK SAGE, AND LAUREL SUMAC** (Rus laurina) – Right

This thicket, seen behind the Coast Sagebrush, is an example of the overlapping and intermingling of two plant communities. Laurel Sumac is a typical woody shrub of the Chaparral Plant Complex. Laurel Sumac has tough, leathery leaves which help the plant conserve water by preventing excessive evaporation. Like many of the chaparral shrubs, it has a deep, extensive network of roots which can spread out eight feet or more in search of valuable moisture. During the hot summer months, the Sumac leaves will fold up so that a smaller surface area of each leaf is exposed to sunlight. Reducing the surface area helps the shrub retain water by cutting down evaporation. Laurel Sumac is closely related to Poison Oak, but does not cause skin irritation.

8). **VEGITATIVE RE-SPROUTING**

In the 1977 Sierra Madre Fire, the Coast Live Oak was charred. It had been attacked in a number of fires previous to that. Notice how this tree has "come back to life." Re-sprouting such as this is characteristic of trees and shrubs that have been exposed to catastrophic effects of wildfires for thousands of years. These plants have become "fire adapted" that is, although the fire destroys the existing foliage, it at the same time produces a stimulating effect which causes new growth (sucker sprouts) to be produced by the plant. Many of the shrubs sprout from a basal root crown which stores fats and carbohydrates. This is why chaparral is called "fire-type" vegetation. Look for evidence of fire on the other trees and shrubs in the park.

Across the trail from the oak tree and just a little back toward #7 trail marker, was a handsome specimen of Coffee Berry (Rhamnus californica), a plant with the somewhat rounded, deeply veined and shiny green leaves. It is closely related to Cascara, the natural laxative plant,. Native American of the foothills used to use the bark of Coffee Berry to counteract the effects of their dry acorn mush diet. During the fall, Coffee Berry shrubs are covered with darkly colored berries containing two seeds that resemble, in appearance only, the coffee bean. These berries are an important source of food for many wild birds and mammals.

9). **CHAPARRAL THICKET** – Right

The plant complex you see here consists of "sun-loving" species. The plant with the shiny, oval leaves is Sugar Bush (Rhus ovata), also a harmless close relative of Poison Oak. The waxen coat of Sugar Bush berries was used for sugar by the Native Americans.

Behind and to the right of the Chaparral thicket is a shrub with dull green, long linear serrated leaves. This it Toyon or California Holly (Heteromeles arbutifolia), sometimes called Christmas Berry. The Toyon becomes conspicuous during the mid-winter months when its fruit begins to ripen and the whole shrub is covered with bunches of bright berries. Toyon berries feed many of the wild animals in the park. Such mammals as the Dusky-footed Wood Rat and California Ground Squirrel will climb the shrub to harvest the berries before they begin to dry up. Hollywood (land) received its name from this plant.

10). **LIVE OAK'S LAST STAND** – Continue in counter clockwise direction. Trail goes to left. Almost forty years ago, when this trail was developed, all of the large branches of what was a magnificent oak were healthy and strong. In subsequent years, the tree weakened. Some of the sturdy branches crashed to the ground and the trail had to detour. As you can now see the tree is totally dead and stands as a skeleton against the sky. With no life support, it will eventually fall and become a good example of

the process of decomposition, a very necessary function to the maintenance of life in an ecosystem. If it were not for the process of decay, the surface of our planet would be piled high with bodies of dead animals and plants. Nutrients from these corpses are utilized by future living organisms. The breakdown of dead plant and animal tissue is carried on by bacteria and fungi, with additional help from soil animals such as insects and earthworms. See if you can discover some of the ways the old branches on the ground are being helped along in the process of decomposition. Is there evidence of insect intrusion that may have occurred before the branches fell? Could birds have been at work as well? What are the clues? In a number of years, the skeleton of what was a huge coast live oak with massive spreading limbs will disappear altogether.

11). **CANARY ISLAND PINE** (Pinus sp.)

This pine, native to the Canary Islands, was introduced in this area because of its ability to re-sprout after a fire, and has a thick fire-resistant bark which enables it to survive exposure to fire, a natural part of its environment. Please note that this tree shows signs of fire charring.

12). **SYCAMORE TREES** (plantanus racemosa) and WOODPECKERS

One of the few deciduous trees found in the foothills of Southern California. It has large, soft, broad leaves and is sensitive to cold weather. This tree survives the cold by dropping its leaves in the fall and remaining dormant during the winter. The tree survives the cold by dropping its leaves in the fall and remaining dormant during the winter months. Since the leaves of the Sycamore have broad surface areas, a lot of water must be evaporated into the air (by transpiration) to cool them. Consequently, Sycamores are found growing in washes and stream beds where more water during the past years of drought.

Sycamore trees make excellent "woodpecker apartments", where the acorn woodpecker (Melanerpes formicivorus) will enlarge existing holes or neatly construct new ones. The female lays 4 to 5 white eggs in the spring. Woodpeckers are well equipped for their job of wood drilling, for their heads are protected from constant jarring by a double reinforced skull construction. Their food is tree boring insects, ants, flying insects, and acorns.

13). **GIANT WILD RYE GRASS** (Elymus sp.) – Right

To the right of the trail is one of the few remaining native grasses left in the foothills. The other less hardy native species have been replaced by introduced European grasses. Sometimes large bunches of grass will indicate sub-surface water seepage. Do you see the Poison Oak in this area?

14). **POWER OF WATER**

This is an excellent vantage point from which to study the destructive power of water. When this marker was placed here in 1967, it was approximately 40 feet from and not more than 6 feet above the stream bed. A flood in 1938 damaged the amphitheater which stood on the bank to your right. It was built by WPA labor in the early 1930's. The flood of 1969 further damaged the amphitheater and widened the streambed. The 100 year flood of 1978 cut away a large crescent-shaped piece of land from this bank, removed valuable woodland and streamside soil, and almost totally destroyed the amphitheater. The flash flood of 1994 continued the destruction of this area.

GEOLOGY OF THE SAN GABRIEL MOUNTAINS

Look up into the canyon and observe that the San Gabriel Mountains contain many deep canyons and steep sharp ridges. This is typical topography of a youthful mountain range. Although these mountains are youthful in structure (in geological time), they are made of ancient granitic rock. The granite of this range is among the oldest found on the North American continent, some as much as

two billion years old. The San Gabriel Mountains are called a fault-block range because they were built by the action of earthquakes. Each time an earthquake occurs, the mountains rise a little vertically. It has taken hundreds of thousands of years for the mountains to reach their present height. The last significant uplifting (200-300 feet) occurred about 3500 years ago according to geologist. If you hike into the mountains, you will probably notices that they are not solid rock, but rather a pulverized crumbling structure and therefore extremely hazardous if this fact is not kept in mind. The old granites have been pounded to pieces by earthquake activity over the past millions of years. Even as the mountains are being uplifted, water and other natural forces are working to tear them down. The deep canyons and steep, sharp ridges are the product of water sculpturing the face of the land. In the far distant future, the San Gabriel's will be reduced to rolling hills.

TRAIL HISTORY

The Live Oak Nature Trail was developed by volunteer youth groups. Conservation and trail work continues to be done by volunteers, under the auspices of the Sierra Madre Environmental Action Council. The park was dedicated as a Wilderness Park on June 11, 1967. Bailey Canyon is named for R.J. Bailey, who, from the U.S. Government in 1857, received a patent for a portion of the canyon area. He lived there until he sold his ranch in 1881 to Palmer T. Reed.

Trail Guide Courtesy Of The
Sierra Madre Enviromental Action Council
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