

# Leona Canyon

Regional Open Space Preserve



## Local Indian Uses of Plants A Self-Guided Trail

## Welcome

A wooded landscape tucked into an urban corridor, Leona Canyon in Oakland, California invites one's curiosity on a natural and cultural journey. Many forces have shaped this canyon: geologic, ecologic and historical to name a few. The descriptive self-guiding brochure "Local Indian Uses of Plants" will help you and students learn some of the many ways the indigenous people of what we now call Oakland and the East Bay were able to live so well here for so long.

Educators and leaders who visit with their classes will find the opportunity to address multiple California Curriculum Standards across subject matter including Science, History and Social Science, and English—on one field trip.

Accessible by public transit, simply dial 511 for the BART and/or bus schedule that serves Merritt College, the jumping-off point for the "Local Indian Uses of Plants" self-guided trail. Specific directions from the bus stop to the trailhead are located under "Getting to Leona Canyon and parking," below.

The wild beauty of the canyon is magnetic, so plan more than one field trip! We encourage students to use this descriptive self-guiding brochure and visit on their own, either for extra-credit or pleasure.



## A brief background for educators and leaders

The place now known as the East Bay, including Oakland, was home to some 25 local tribes, who spoke Ohlone and Bay Miwok languages, including the Jalquin/Irgin of the areas traversed by the creeks now known as San Leandro, San Lorenzo, and Hayward. In most areas their villages were located every three to five miles, with populations of about 60 to 90 persons. They, and their ancestors, lived in the East Bay for about 13,500 years.

During your visit, learn some of the many ways they used plants in their daily lives, including for food, medicines, tools, dye, fire making and basketry. Read how they used such methods as pruning, digging, and burning to help the plants they used grow more vigorously, straighter, and in greater numbers.<sup>1</sup>

The plant use information in this brochure is primarily based on the knowledge of Rumsien elder Isabel Meadows and Mutsun elder Ascención Solorsano. The Rumsien and Mutsun were the tribes of the places now known as Monterey and San Juan Bautista. They are the only Ohlone tribes for which we have detailed plant use information.

## Getting to Leona Canyon and parking

Park along Campus Drive near its intersection with Canyon Oaks Drive and follow the sign posts to the trailhead at Lot E on the Merritt College campus. From Campus Drive you'll walk along a short dirt pathway that leads uphill to a paved road on the campus. Follow the edge of this paved road uphill, and in a few yards you'll spot the sign for Lot E.

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<sup>1</sup> It requires training to use pruning, digging, and burning techniques to ensure the health of the environment, and it isn't something you should try on your own. While East Bay Regional Park District ordinances prohibit plant gathering, the district does permit local native peoples to gather particular plant resources that enable them to continue their ancestral traditions. The District has also reintroduced a limited amount of prescribed burning to maintain bunchgrass prairies and control invasive plants. While this burning isn't specifically based on old-time practices, it can tip the balance in favor of native plant species.

## Consider taking public transportation

Reach Merritt College using an AC Transit Line 54 bus from the Fruitvale BART Station in Oakland. The bus line ends at the flag pole at the main entrance to Merritt College. To reach the trailhead from the bus stop, walk downhill to the sidewalk along Campus Drive, turn left, then look for the sign post near the intersection of Campus Drive at Canyon Oaks Drive (see previous paragraph).

The buses run at regular intervals during the week and less often on Saturdays. They do not run on Sundays or during the annual campus closure at the end of December.

For the full bus schedule, see the AC transit website at [www.actransit.org](http://www.actransit.org) or call 511.

For a map of Leona Canyon, or information about the park, see [www.ebparks.org/parks/leona](http://www.ebparks.org/parks/leona).

## Before you begin walking, what you should know

This guide will lead you on a moderate, one-mile walk through open brushland and shady, wooded canyons, taking you down, then back up the same trail. Some of the slopes are too steep for many wheelchair users, but you can visit the lower end of the canyon off Canyon Oaks Drive (see park map). There is one bench in the shade at the lower end of this self-guided trail.

Dress in layers, as area fog can chill, while sunny patches may be warm. Bring drinking water and wear sturdy walking shoes.

*A few tips and cautionary words:* Western poison oak (illustrated here) grows along the trail. When touched, it can cause a skin rash. Poison hemlock—a deadly poisonous plant when ingested—also grows here, so please stay on the trail. While rattlesnakes, ticks, mosquitoes, and poisonous plants occur here, by taking a few simple precautions such as staying on trails, wearing insect repellent and sun block, and checking for ticks after hiking, the dangers are minimal. (If you would like more information about ticks or other animals and plants, you can visit your local East Bay Regional Park District nature center, or phone them to request brochures.)



## Facilities

There are no drinking fountains and restrooms provided on this regional trail.

## Suggestions for educators and leaders who wish to use this trail with students

Before you visit Leona Canyon, show your students a current watershed map of the area that starts at the Bay's shoreline and rises to Leona Canyon. (Examples for watershed: <http://mappery.com/map-of/Sausal-Creek-Watershed-Trail-Map>, or <http://museumca.org/creeks/>) Where have streams been “undergrounded” or channeled? Describe a variety of habitats found from shoreline to canyon (e.g. estuary, salt-marsh, grasslands, oak-woodland, riparian and freshwater).

View a map that generally reflects geographic regions occupied by local tribes. Name the communities that now occupy these areas. Descendants of these indigenous people live here today.

This review provides an opportunity to discuss the rich natural resources and topography that have attracted people of different cultures—over thousands of years—to settle or use resources in what is now the Oakland/East Bay area. What were the consequences people experienced upon the arrival of others from different cultures? Did these peoples leave spoken and/or written words or artifacts? If so, how are these interpreted and by whom? Does Oakland's cultural landscape continue to change?

## Help us protect this place and these plants

The ability of the Ohlone, Bay Miwok and their ancestors to thrive here for thousands of years without damaging this place (and, in fact, enhancing it) required an encyclopedic knowledge of the environment, adherence to a wide-range of cultural rules, and the development of a close, personal relationship with the plants and animals, whether potentially dangerous or not. Lucy Smith (Mihilakawna Pomo), who was born in 1906, explained this relationship in the late 1970s, when she recalled the early lessons her mother taught her:

We had many relatives and we all had to live together; so we better learn how to get along with each other. My mother said it wasn't too hard to do. It was just like taking care of your younger brother or sister. You got to know them, find out what they liked and what made them cry, so you'd know what to do. If you took good care of them you didn't have to work as hard. Sounds like it's not true, but it is. When that baby gets to be a man or woman they're going to help you out. You know, I thought she was talking about us Indians and how we are supposed to get along. I found out later from my older sister that mother wasn't just talking about Indians, but the plants, animals, birds—everything on this earth. They are our relatives and we better know how to act around them.<sup>2</sup>

Consider expressing the hope that one day your students might come to know nature as well as the Jalquin/Irgin, or individuals like Lucy Smith.

One of the beauties of nature is its unpredictability, and, once the students are reassured and comfortable, you can help them become more attuned to nature's moods, so that their innate curiosity and joy in those moods can be unleashed. Consider having your students do some quiet listening or quiet walking to become more aware of the animals around them. Have them observe the shapes, colors, and textures of nature. Have them notice the smells of nature.

Next, consider having your students think about the things in their day-to-day lives that are necessary for them to live. Then have your students think about what it would be like to know nature so well that all of those needs could be met without supermarkets, stores, and manufactured objects. Have them imagine what it would be like to live in a world where the average village had 70 or so people, and where learning took place one-on-one with an older, respected relative. Have them think about how living in a small village might change their relationships with the people around them.

Finally, have your students consider what it would be like to live in a world where they knew every animal, plant, rock outcrop, creek, and curve and bend in the landscape, as well as they know their own neighborhood today. Have them visualize what they can do to ensure that places like this always exist.

***Please help us protect this beautiful place by taking only memories and leaving only footprints.***

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<sup>2</sup> From David W. Peri and Scott M. Patterson, *Ethnobotanical Resources of the Warm Springs Dam-Lake Sonoma Project Area, Sonoma County, California* (San Francisco: U.S. Army Corps of Engineers, 1979).

## #1 Useful plants everywhere you look



*evergreen huckleberry*



*woodland strawberry*



*California blackberry*

Evergreen huckleberry is related to blueberries and cranberries. Its berries taste delicious, as do those of woodland strawberries and California blackberries growing at this stop. They were enjoyed by local Indians, as was the tea that can be brewed from yerba buena, a type of mint you see growing here in the spring and the summer. Local Indians made medicines for healing sores and relieving dysentery and diarrhea from a blackberry root.

The grizzly bears that once lived here enjoyed these berries too. The tule elk that once grazed in this area ate the new sprouts and greenery of California blackberry.

French broom grows as a bush here, reminding us that this park also has some plants that came from other parts of the world. French broom is the most widespread, in California, of the four brooms that invaded North America. It was probably introduced in the Bay Area in the mid-1800s from Europe for planting in people's gardens.



*yerba buena*



*French broom*



*coyote bush*

## #2 Poisonous plants grow on and near the useful ones

Western poison oak grows among the coyote bush found here. Coyote bush provides a place near grasslands for rabbits and other small mammals to hide from predators. Local Indians brewed coyote bush leaves in water to make a tea for “a general remedy.”

Some birds nest in western poison oak and eat its berries. Western poison oak has a substance in its sap called urushiol<sup>3</sup> that, when touched, can cause a skin rash to form up to several days later. Urushiol comes to the surface of stems and leaves that have been damaged, including by chewing and sucking insects.



*western poison oak*

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<sup>3</sup> pronounced ū-rū'shē-ōl

Despite being susceptible to the rash, local native peoples used western poison oak shoots for basketry. They wrapped acorn meal in its leaves before baking it in hot coals within a soil-covered pit in the ground. Why do you think they were able to use this plant for these purposes while, at the same time, they were allergic to it? You can find out more about this in an article, “Eating Poison Oak,” which describes how Rumsien Ohlone elder Alex Ramirez was taught to use this plant as medicine. This article is referenced at the end of this trail guide.

Also growing nearby is poison hemlock, a member of the carrot family. This plant family includes some of the most edible and some of the most poisonous plants in the world. Poison hemlock is native to Europe and contains substances that are deadly poisonous when eaten. Note the characteristic purple splotches on the stem.



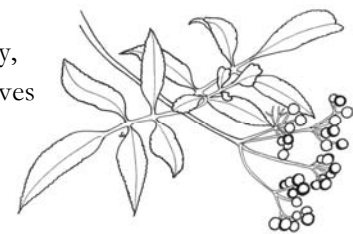
*poison hemlock*

### #3 Music and more

The wood, leaves and berries of this tree-like shrub, called blue elderberry, are all useful. Local native peoples ate its berries. They made a tea with the leaves for treating colds and for a laxative.

Local Indians pruned or burned this plant to get straight, hollow shoots for making flutes and pipes. They also used the shoots for fire making.

Although you may have heard people say that it's possible to make fire by rubbing two sticks together, that's not exactly how it works. Fire making involves placing a small, flat, notched piece of wood, made from particular types of plants, on the ground. Locally, a straight shoot of seasoned elderberry no more than about two-feet long is held between the palms of the hands, with one end in the notch. The shoot, or spindle, is spun back and forth between the palms, which also, at the same time, push it down against the notched “heathboard.” A hot coal forms where the two woods meet. The coal is guided onto some tinder, then blown on to create fire. Today, we no longer know which wood the Ohlone used for their heathboard, but it was likely buckeye (see stop #7).



*blue elderberry*

Blue elderberry contains substances which can produce hydrocyanic acid under certain conditions. Some people may become nauseous when eating the uncooked berries. Some are allergic to the fresh wood.

### #4 Staple foods

Coast live oak is a drought and fire-resistant evergreen tree. Along with other oak species, and tanoak (in the beech family), it produces acorns. These carbohydrate-rich nuts provided one of two staple foods used by tribal peoples in the Bay Area. Small seeds served as the other.

Acorns taste bitter when raw. Local Indians removed this bitter flavor by leaching, a process which involved dripping water through acorn flour. They made the flour by pounding the dried, shelled nuts between mortar and pestle, then sifting what remained with a basket to separate the coarse from the finest particles. The soups, mushes and breads they made from the flour had a light, nutty flavor. Today, some Ohlone still make acorn soup, usually with modern implements, such as metal sifters and electric blenders.



*coast live oak*



Local tribal peoples sometimes retained the leaching water for use as a diarrhea remedy. They used oak burls for bowls and oak wood for mortars, and oak bark for tinder. They made a tea with oak bark to treat toothaches.

For their other staple, local tribal peoples toasted small seeds in a basket with hot coals, then pounded them to form a “cake,” called *pinole*. By 1787, land clearing by Spanish newcomers, and overgrazing by their cattle, had caused most of the seeds that local Indians used in *pinole* to be nearly eliminated. These seeds came from such wildflowers and grasses as red maids, chia, tidy-tips, narrowleaf mule ears, glaucous barley, blue wild rye, fescue, and curly dock, all of which grow today in small numbers in this park.

Curly dock originally grew in Eurasia, the only introduced plant among those known to be used locally for *pinole*. Studies of adobe bricks in Southern California show that this plant had already become established there prior to 1769, the same year that the first non-Indians traveled overland into the Bay Area. Curly dock is one of several introduced plants that local native peoples learned to use for food and other purposes as these spread throughout the region.



*curly dock*

## #5 From south to north

As you enjoy the view, it’s easy to forget how much urban development surrounds this open space “oasis.” Some of the rocks you see here are the result of marine sediments that formed during the Jurassic Period, the “Age of the Dinosaurs.” They formed atop rhyolite, an igneous, volcanic rock that is older than the sediments. Rhyolite can be seen on the tops and sides of the ridges. You’ll need to look closely to find it.

You’ll notice a distinct difference between the types of plants that grow on the left (south-facing) slopes of the canyon, and those that grow on the right (north-facing) slopes. Those that face south get more sunlight, and so are drier. They are covered with grass and scrub, including coastal sagebrush and monkey flower (see last stop). These plants have several features which allow them to grow in a hot, dry environment. These include having small, thick or hairy leaves that help prevent the sun’s heat from causing water to evaporate too quickly from them. Light-colored leaves reflect sunlight. Can you notice any other features that help plants grow here?

Now look at the more moist, north-facing slopes. Here tall trees can grow. You’ll notice one type of tree with a reddish-colored bark. This is madrone, whose berries were sometimes eaten.

This is a good place to consider how local native peoples used fire to shape the landscape. Several of the plants you have already seen would re-sprout from their stumps and roots after a fire burned their tops, including evergreen huckleberry, California blackberry, coyote brush, western poison oak, elderberry and coast live oak.

In addition to stump sprouting, local tribal peoples understood that fire, when used with care, could return nutrients to the soil and eliminate some disease organisms. In 1816, Adelbert von Chamisso noted their practice of burning meadows “from time to time to increase their fertility.” Tule elk, deer and pronghorn antelope, all hunted by the Jalquin/Irgin, fed on the new, tender shoots of grasses, shrubs and other plants. Because local Indians burned some areas annually, fuel from dead and decayed plant material did not build up on the ground, so the fires burned slow and cool.

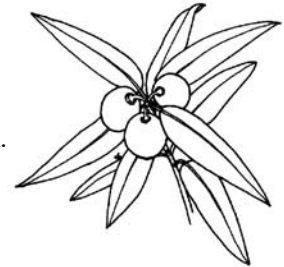


*madrone*

Today it is no longer possible to do such widespread burning, because of the danger of the fires escaping into areas where there are buildings. Please be fire safe and leave fire ecology to trained professionals.

## #6 A plant of many uses

Gently rub a single leaf of California bay, or pepperwood. Describe its smell. Local native peoples hung bunches of leaves in their homes to freshen the air. They used smoke from burning leaves to drive away fleas; stuck a dampened, fresh leaf on their forehead to cure headaches; and made a tea from the leaves to treat poison oak rashes. Pepperwood fruits, called drupes, look like miniature avocados before they ripen. Local Indians ate the ripened skin raw or boiled. They dried the kernels within, roasted these, then shelled and ate them. While the shelled kernels still were warm, they sometimes pounded them. This brought out the natural oils, and the remaining particles could be formed into balls or other shapes, similar to *pinole*.



*California bay*

## #7 A delicious food

California buckeye can thrive in dry places, even with its large leaves, because it loses leaves in the summer to conserve water, when it's hot. The leaves grow back following autumn rains.

This plant contains toxic compounds (aesculin) that cause the raw fruit to be poisonous. Despite this, local tribal peoples leached, then ate the seeds. Although the fruit required more processing than acorns, it contains 80% carbohydrates and is very nutritious. Local Indians made a tea from the bark to treat tooth ailments. They made a salve from the pounded fruit.

To catch fish, they put the mashed fruits in pools of water in a stream. The aesculin in the fruit killed the fish, but left them safe to eat.



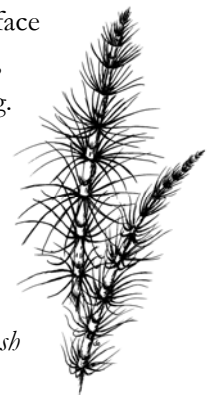
*California buckeye*

## #8 Basketry

Baskets remain some of the most cherished objects made by local tribal peoples. Their uses included plant food gathering, preparing, cooking, and serving. For the light-tan-colored sewing strands, weavers dug the underground stems (rhizomes) of sedge, the grass-like plant growing here. They dug the rhizomes in the relatively friable and loose “sandy-loam” soils found on floodplains. Digging mixed nutrients from the ground surface into the soil. It loosened the soil, thereby adding oxygen. As a result, new rhizomes grew longer and straighter than if they were never dug. Weavers split the rhizomes, then removed the bark. They dried, then stored the strands that resulted for several months or more. Next, they soaked the strands, before trimming them with a knife, so that every strand in the basket would be the same width and thickness.



*Sedge*



*smooth scouring rush*



Local Indians used smooth scouring rush as a kind of sandpaper. The ridges on the stems contain silica, a crystalline substance. Weavers dug the rhizomes of the closely-related common scouring rush and common horsetail to make black sewing strands for basket designs.

### #9 A dye

White alders grow near water. When moved by the force of flood waters, stones and other objects can hit and injure the bark. The bark gradually grows over such wounds. Local native peoples gathered chunks of white alder inner bark to make a lovely, reddish-orange dye. To gather the bark, they likely hit it with a rock, in much the same way as occurred in nature. Local basketmakers used white alder sprouts for the rims on some baskets. Such “rim sticks” strengthened the baskets.



*white alder*



*western sword fern*

Ferns also thrive here. Western sword fern provided good food for grizzly bears and elk. Local Indians ate the rhizomes boiled or baked in coals. They used the fronds to wrap acorn bread when baking it in a “pit oven,” surrounded by hot coals. They gathered the rhizomes of wood fern in the spring and ate these. They steeped the fronds of wood fern in hot water and used the liquid to wash their hair.

### #10 Thriving in shade

This part of the canyon has such steep walls that the sun never reaches its lower slopes, so shady woodlands grow all around. If you look through the trees on your left, you’ll notice that the higher, south-facing slopes have grass and shrubs. Beware! Creek stinging nettle thrives on the creek banks. It has needle-like hairs that, when touched, inject a substance into the skin that causes immediate pain. In spite of this, creek stinging nettle provides protective cover for small animals, and it was used by local native peoples to make a tea for treating sores and hives. They also tapped the leafy stems against aching joints “to reduce pain.” Some California Indians boiled the leaves to make a tasty spinach, high in protein and other nutrients. How do you think they were able to use this plant for these purposes without being “stung”?



*creek stinging nettle*

### #11 A pleasant retreat

California hazel grows behind this bench. It has a flavorful nut that seems to mature best on plants that get some sun. After autumn fires, hazel sends up straight shoots, which local Indians used for arrow shafts. Based on what is known about the burning of hazel for basketry in northwest California, locally they would have burned hazel every two years for arrow shafts.

Local tribal peoples knew the plants and animals as well as they knew their own human relatives. This is a wonderful place to watch and listen for birds and other wildlife, and get to know them a little better, before heading back uphill to the last four trail stops.



*California hazel*

## #12 From bulb to brush

The flowers of common soap plant only open for a few hours in the late afternoon and early evening of a single day. While flower and seed numbers increase after fires, new common soap plants usually grow from bulbs. Like sedge, the bulbs require proper digging to provide good growing conditions.



*common soap plant*

Local Indians used the bulbs to make a kind of small brush, akin to a whisk broom. They used the mashed bulbs, which contain saponins, for soap. They also used the bulbs to kill fish, using methods similar to buckeye fruit. The saponins absorbed into the fishes gills, causing respiratory failure, but leaving the fish safe to eat.

In 1786 Francisco Palóu noted the importance of common soap plant bulbs for food. “There is to be found in all the hills a great abundance of soap-root (*amole*) which is about the size of an onion, of a long, round head. These are baked in holes in the ground, where the fire is kept burning for two or three days until they know they are very well baked. Then they take them out and eat them, finding them sweet and juicy like preserved fruit.”

## #13 More about baskets

Local native peoples used the shoots of arroyo willow in some of their baskets. Arroyo and other basketry willows needed pruning or burning to grow straight and flexible shoots of the length needed to make a well-shaped basket. The new growth also had few larvae (worm-like baby insects) in the wood. These larvae weaken the shoots.

Other, more stout willow species, provided poles for the framework of old-time houses. These willow species also needed pruning or burning, or other disturbance, to grow straight and tall. Willow bark contains salicylic acid, a substance similar to the active ingredient in aspirin. All willow species have this substance, so it isn't surprising that a tea made from the bark, flowers or young leaves of arroyo willow served as a local cold remedy.



*arroyo willow*

## #14 Native grasses

Two native bunchgrass species grow here: California melic, which has the larger spikelets, or seed heads; and torrey melic, which has the smaller spikelets.

Bunchgrasses sprout year after year from the same base, set their seed, then only partly die back. These grasses were no match for introduced European annual grasses that grow for a few months, produce seeds, then die back completely. The European annual grasses grow quickly, using up soil moisture before bunchgrasses have had a chance to do much growing. Although nobody knows exactly what the East Bay's original native grasslands looked like, strong evidence exists to suggest that clumps of native bunchgrasses grew with forbs (small flowering plants with broad leaves) thriving in the spaces between the clumps. Jackrabbits, California ground squirrels, kangaroo rats, and pocket gophers thrived in such grasslands.



*bunchgrasses*

## #15 Coastal scrub community

Coastal sagebrush grows in this somewhat open, scrubby plant community. If you gently rub the leaves, you'll smell the oils that help prevent water loss.

Local tribal peoples made a tea from coastal sagebrush leaves with which they bathed patients with colds, coughs and rheumatism. They drank the tea for asthma, and poulticed it on the patient's back and chest.

Bush monkeyflower was brewed as a tea for the kidneys and bladder.



*coastal sagebrush*



*bush monkeyflower*

## Some final thoughts

We hope that you have enjoyed this glimpse of how local Indians were able to live so well here for so long. Today, they continue to find new and creative ways to maintain their cultural traditions, while living as modern Americans. As part of doing this, they still manage native plants with specialized techniques.

People have lived in this area for about 13,500 years. For most of that time, they saw themselves as part of nature, not apart from it. Within your own cultural tradition, and in your own personal way, we hope that you will help us protect nature, and reestablish a closeness to it.

## Find out more

For information about naturalist-led programs at Leona Canyon, please contact the Crab Cove Visitor Center at (510) 544-3187 or e-mail [ccove@ebparks.org](mailto:ccove@ebparks.org).

For information about naturalist-led programs that discuss edible and useful plants, or to sign up to take a workshop in cultural skills such as the making of soaproot brushes, string, fire, baskets and acorn soup, go to [www.ebparks.org](http://www.ebparks.org).

For information about programs through which local Ohlone and Bay Miwok share cultural knowledge and skills, please contact the Coyote Hills Visitor Center at (510) 544-3220 or e-mail [chvisit@ebparks.org](mailto:chvisit@ebparks.org).

An annual "Gathering of Ohlone Peoples" is hosted each year at Coyote Hills on the first Sunday of October. This event, a celebration of the history and cultures of Ohlone peoples, includes, among its many activities, an opportunity to taste acorn cooked with heated stones in a basket, and yerba buena tea.

More than 150 plants grow in Leona Canyon Regional Open Space, most native, but some introduced from other countries. For a list of the species that grow here, compiled by Wilde Legard of the East Bay Regional Park District Stewardship Department, go to [www.ebparks.org/stewardship/plants/checklist](http://www.ebparks.org/stewardship/plants/checklist).

For an article summarizing Rumsien and Mutsun plant uses see “Ethnobotany of Costanoan Indians, California, Based on Collections by John P. Harrington,” by Barbara Bocek in *Economic Botany*, 38(2)(1984).

For more information about California Indian pruning, digging, burning and other land management practices, with a Bay Area emphasis, see “Wild Gardens: How Native Americans Shaped Local Landscapes,” by Beverly Ortiz in *Bay Nature* (January–March 2006).

For a book about how Indians managed the land statewide, see *Tending the Wild: Native American Knowledge and the Management of California’s Natural Resources*, by Kat Anderson, published by the University of California Press in 2005.

For an article about how Alex Ramirez (Rumsien) was taught to eat western poison oak, see “A Poison Oak Story,” by Beverly Ortiz in “A Gathering of Voices, The Native Peoples of the Central California Coast,” *Santa Cruz History Journal*, Volume 5 (edited by Linda Yamane).

### Credits

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# Visitor Centers & Recreation Services

## ARDENWOOD HISTORIC FARM

Fremont (510) 544-3289 • [awvisit@ebparks.org](mailto:awvisit@ebparks.org)

## BLACK DIAMOND MINES

Antioch (510) 544-2750 • [bdvisit@ebparks.org](mailto:bdvisit@ebparks.org)

## COYOTE HILLS REGIONAL PARK

Fremont (510) 544-3220 • [chvisit@ebparks.org](mailto:chvisit@ebparks.org)

## CRAB COVE at CROWN BEACH

Alameda (510) 544-3187 • [ccove@ebparks.org](mailto:ccove@ebparks.org)

## MOBILE EDUCATION PROGRAMS

(Mobile Visitor Center & Mobile Fish Exhibit)

(510) 544-2527 • [jfrank@ebparks.org](mailto:jfrank@ebparks.org)

## SUNOL REGIONAL WILDERNESS

Sunol (510) 544-3249 • [svisit@ebparks.org](mailto:svisit@ebparks.org)

## TILDEN NATURE AREA/EEC

and LITTLE FARM

Berkeley (510) 544-2233 • [tnarea@ebparks.org](mailto:tnarea@ebparks.org)

## REGIONAL PARKS BOTANIC GARDEN

c/o Tilden Regional Park, Berkeley (510) 841-8732

[bgarden@ebparks.org](mailto:bgarden@ebparks.org) • [www.nativeplants.org](http://www.nativeplants.org)

## AQUATICS UNIT

(510) 544-2517 • [dmcormick@ebparks.org](mailto:dmcormick@ebparks.org)

## OUTDOOR RECREATION UNIT

District-wide programs (510) 544-2512

[recreation@ebparks.org](mailto:recreation@ebparks.org)

This brochure is provided as a public service of the Interpretive and Recreation Services Department of the East Bay Regional Park District and produced by a grant from the Vinapa Foundation for Cross-Cultural Studies, [www.vinapafoundation.org](http://www.vinapafoundation.org).



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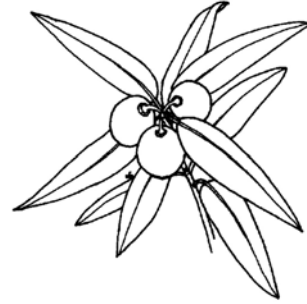
**Note to teachers:**

As you walk through Leona Canyon with your students you may be able to identify several of these plants.

Western poison oak and poison hemlock should be avoided. Please stay on the trail. . . . Enjoy!



soaproot



California bay



madrone



California live oak



hazelnut



evergreen huckleberry



smooth scouring rush



sedge



stinging nettle



coastal sagebrush



arroyo willow



blue elderberry



California blackberry



California buckeye



white alder



woodland strawberry



bunchgrasses



yerba buena

**POISON OAK!**  
Leaves of three?  
Let them be!

The poison oak leaf looks like a miniature oak leaf. It has 3 leaves and a shiny surface. The leaves change to various colors with the changing seasons. After the leaves fall off, the bare wood is also dangerous and so are the roots. It can grow in the form of vines, trailing shrubs, or upright woody shrubs. It may flourish in the deep woods where soil moisture is plentiful or it may be found in very dry soil on the most exposed hillsides.

**STAY AWAY!**

