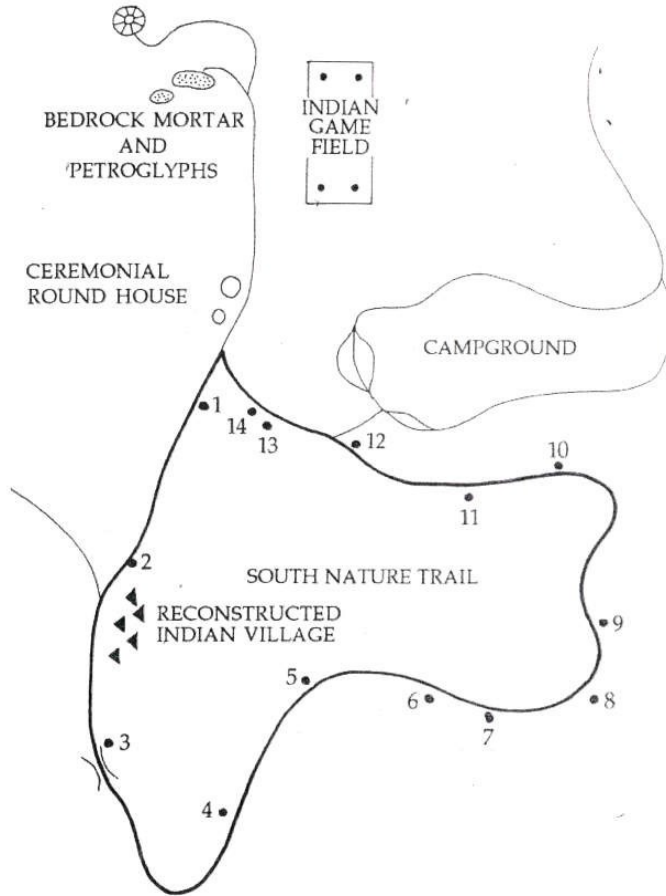


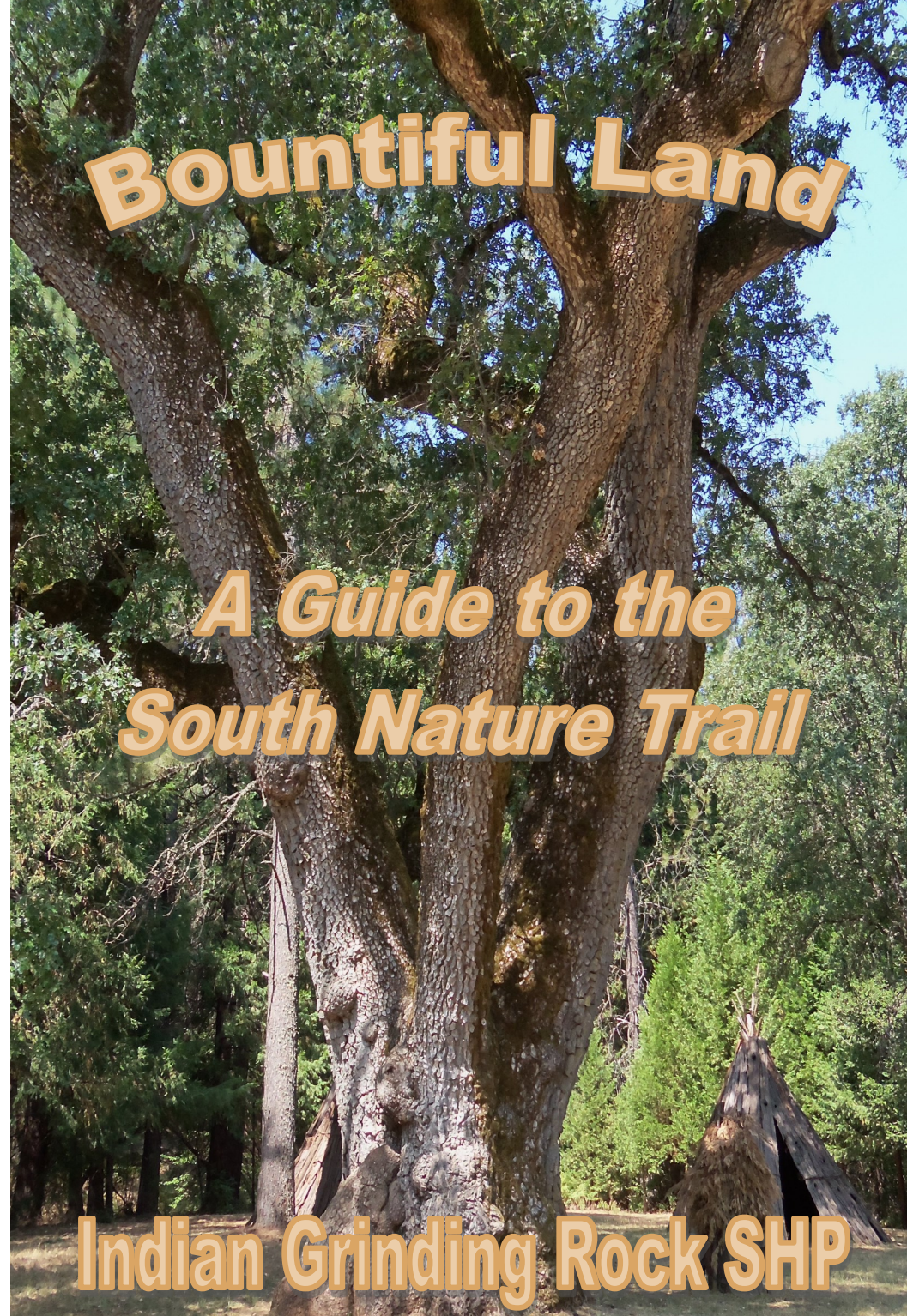
# Map of the South Nature Trail Area

CHAW'SE REGIONAL INDIAN MUSEUM



We hope you have enjoyed the trail. You may keep this pamphlet or return it to the box for reuse.

*Thanks for visiting!*



# Bountiful Land

## A Guide to the South Nature Trail

# Indian Grinding Rock SHP



## Welcome to the South Nature Trail

The South Nature Trail is a half-mile loop that will lead you through a diverse natural area of meadow, riparian, oak woodland, and coniferous habitats. This guide will help you become familiar with many of the plants along the trail and their traditional uses by Miwok peoples. Look for the numbered markers that correspond to the numbers in this guide. **The trail is not ADA accessible.**

### Please be aware

This guide details local *ethnobotany* - the ways plants have been used by Miwok for food, clothing, shelter, medicine, tools and fuel. **We do not recommend that you try any of these methods yourself, nor do we guarantee the safety or effectiveness of any plant described in this pamphlet.**

### Notice

**Visitors are prohibited from picking or gathering anything in the park** in order to preserve our cultural and natural resources.

***Thank you for respecting these rules.  
Enjoy the trail!***



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## Plant Index

English	N. Sierra Miwok	Marker
alder	<i>unknown</i>	3
black oak	tele' li	1
bracken fern	ta' tama	3
brodiaea	<i>unknown</i>	4
canyon live oak	saka' sa	6
common horsetail	<i>unknown</i>	3
deer brush	#s#nni	4
douglas fir	<i>unknown</i>	11
hazelnut	sol' ok' u	3
hartweg's Iris	<i>unknown</i>	4
incense cedar	mo' nok u	11
madrone	<i>unknown</i>	5
manzanita	e' je	7
milkweed	pop o	1
mountain misery	kit-kit-dizzy	7
mugwort (wormwood)	kici' n y	13
poison oak	nyky' s y	5
ponderosa Pine	was' a	8
soaproot	sop' a	12
sugar pine	san' ak y	8
toyon	ko' so	10
valley oak	wil' is y	2
white fir	<i>unknown</i>	9
wild sweet pea	lu'lumet	13

## Introduction

Though we may not think about it often, we depend on plants in all aspects of our lives — medicine, food, tools, shelter, clothing and fuel. Historically the Miwok have used native plants to fill these same needs we have today. Their knowledge of the properties of plants was both extensive and intimate — the result of experimentation and the passing on of information over many generations.

This knowledge included which plants to use for a specific purpose, when and where to gather them, and how to prepare and store them. Miwok people were managers of the land, using cultivation techniques such as burning, pruning, tillage and sowing of seed to encourage the growth and reproduction of desired plants. Plants were — and still are — harvested with care and respect, and in such a way as to ensure their regeneration.



*As you walk the trail imagine that you are stepping back to a time with no modern conveniences, but with the knowledge that everything you need is available right here.*

## Marker #1

### Valley Oak

Under this huge 300+ year Valley Oak are permanent bark houses called *u'machas* and storage granary for acorns called a *cha'ka*. The abundance of acorns provided by the many local oaks was one reason the Miwok, a hunter-gatherer society, made this their home. Acorns were the most important food crop for Miwok people. A productive valley oak can produce up to 500 pounds of acorns in a season!



### Valley Oak Acorn (September– November)

Water was repeatedly poured over acorn flour to remove its bitter tannins, a process called *leaching*. Acorn flour was then made into a soup (*nupa*), mush (*pinole*), bread, or biscuits, providing a staple food during the winter months. As such, acorns were also an important trade item. Fires were deliberately set in the oak groves to clear the ground for easier gathering, to decrease pests, and kill other plants that could eventually out compete the oaks.



## Marker #14

Although some Miwok people still use plants in traditional ways, it has become very difficult to do so due to environmental change and loss of traditional ecological knowledge. The botany of California has changed drastically since the arrival of the Spanish in the 1700's. The meadow area in front of you that is surrounded by 300+ year-old valley oaks is a good example of this environmental change — non-native plants introduced by Europeans such as star thistle and annual grasses have successfully outcompeted native vegetation. Additionally, pollution of soil, development, gathering restrictions limit native plant availability. Furthermore, the suppression of Miwok culture by Gold Rush era settlers and modern gathering restrictions contribute to a loss of knowledge of traditional plant uses. The combination of less plant availability and a loss of cultural knowledge make traditional lifeways extremely difficult today.

Still, many native people in California are actively involved in the traditional ways of their culture. Basketry material is collected by weavers, acorn meal and manzanita cider are prepared for celebrations, and mugwort is collected for ceremonies. Through such efforts, knowledge of traditional uses for plants is preserved for future generations.

## Marker #13

### Mugwort



In the same family as sage, the aromatic mugwort plant is used ceremonially, spiritually, and medicinally. Mugwort is burned to repel negative energy or spirits, in mourning, and to prevent injury. The leaves are used to treat a wide variety of ailments including rheumatism/arthritis, sinusitis, headaches, and psoriasis. Mugwort also repels insects and could be placed

inside cha'kas to keep acorns pest-free.

### Wild Sweet Pea

The greens of this common crawling plant could be eaten raw.



## Marker #2



### Milkweed (May-July)

Milkweed is a medicinal and edible plant. Cuttings of the fresh plant leak a milky substance which can be used to clean and heal wounds, ringworm, and warts. Milkweed leaves, flowers, and fruit were all eaten after being boiled to remove toxins. The inner fibers of dried milkweed is dampened then twisted into a strong cordage that had innumerable uses, such as bow strings and nets. The milky sap from this versatile plant was even used as a chewing gum!

### Mariposa Lily

Mariposa lilies can be found grasslands, slopes, chaparral in California.

Mariposa lilies have an edible bulb that can be eaten after roasting or cooking in an earth oven.



### U'macha and Cha'ka

Oak poles, incense cedar, and wild grape vine were critical building materials used in bark houses (*u'machas*), acorn granaries (*cha'kas*), and the roundhouse (*hun'ge*). Incense cedar bark coats the bark houses and its boughs acorns in *cha'kas*. Incense cedar naturally repels pests and water, making it a great choice for many structures.



**Also visible:** Madrone, Sweet Pea, Hartweg's Iris, Cedar



## Marker #3

In this riparian the habitat area look for plants that need shade and water to thrive.

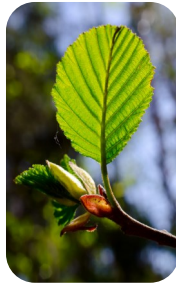
### Hazelnut

Hazelnut has a soft fuzzy leaf and produces a small edible nut covered by a hard and hairy shell. It was burned or pruned in the fall to cause the growth of long straight shoots in the spring, which were used for basketry and arrows.



### Alder

On the east side of the bridge are trees with whitish-grey bark. Tea made from the bark was used to treat stomach aches. Small alder and hazelnut often look similar — you can distinguish alder by its smooth leaves, whereas hazelnut leaves are fuzzy and usually more jagged.



### Common Horsetail

A round, jointed-stemmed plant growing on the bank near the bridge. The Miwok used horsetail stems to polish and smooth the shafts of arrows and to clean their teeth, taking advantage of the abrasive silica present in parts of the stem.

### Giant Chain Fern

Ferns were an important basketry material. The dried roots were dyed black by being buried in mud, rendering the material perfect for weaving black designs in baskets. The young curled shoots were eaten raw,



## Marker #12

### Soaproot

This incredibly versatile plant has long wavy-edged leaves and small white flowers that grow off a single, tall stalk in the spring. The underground bulbs are covered with coarse brown fibers and were harvested by using a digging stick.



### Soaproot Bulb

Soaproot bulb fibers were made into stiff brushes used for sweeping loose acorn meal back into a mortar cup (*chaw'se*), hair brushes, and general utility purposes. The fibers could also be used as a tinder or to fill hide-covered game balls. The inner bulb was made into a poultice for skin irritations, used as a soap and shampoo, and baked in underground ovens and eaten. Soaproot was even used for fishing in late summer and fall — juice from the mashed bulbs was put into streams to temporarily stun fish, causing them to float to the surface where they were easily collected by hand. This practice was so effective that it is now illegal!



## Marker #11

You may see evidence of small fires as you walk the trail. Just as Miwok people burned small areas to promote healthy growth, fires are lit throughout the park to keep our ecosystems healthy.



### Douglas Fir

The Douglas fir is not a true fir. You can identify it by the droopy foliage with single needles surrounding the branch, and by its unusual "mouse tail"-looking bracts growing out between the scales of its small cones. A tea rich in vitamin C was made from the light green new growth at the tips of the branches. Bows and arrows were also passed through the smoke produced by burning Douglas-fir wood to mask human scent before hunting.

### Incense Cedar

These aromatic needles are flat and segmented, overlapping each other as they extend down the twig. The bark is naturally resistant to insects, water, and decay, making it an excellent building material for *u'machas* and *hun'ge*. The soft bark was also shredded and used to insulate moccasins. Bows were made from cedar branches, and the foliage and twigs were used to direct water in the process of leaching acorn meal. The soft wood was also crafted into the "hearth" of the fire making tools.



## Marker #4

### Big Leaf Maple

Maple shoots were used for basketry, arrow straighteners, and building materials. Maple bark was also used as a basketry material. Maple roots could also be used to carve a tobacco pipe.



### Brodiaea (April-July)

The bulbs of these common soft purple clusters of flowers were dug up with a digging stick and then eaten after being cooked in an earth oven. The bulbs could also be dried after cooking and stored for winter consumption.

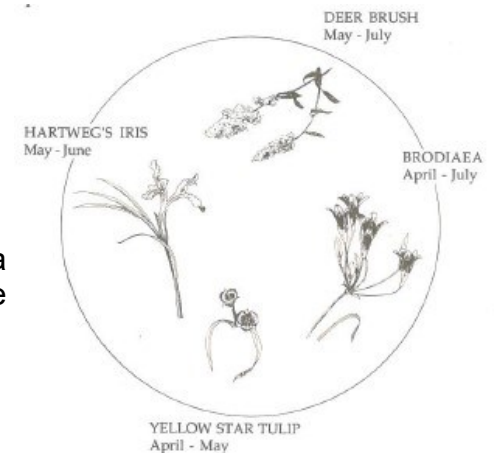


### Yellow Star Tulip (May-June)



accents also has a bulb that is edible after cooking.

This bright yellow bloom with red





## Marker #5



### Madrone

With its smooth, peeling reddish bark and thick, leathery oval leaves, Madrone is undeniably a distinctive tree. While a relative of shrubby manzanita, you will see further down the trail that madrone can grow very large. A tea was made from the bark, roots and leaves to treat colds. In late summer and fall its blossoms turn into small bright red berries that were eaten raw, cooked, or dried. The berries were made into cider or jewelry.

### Leopard Lily

While the bulb is poisonous, the beautiful blooms of the leopard lily were used for wreaths worn in women's hair.

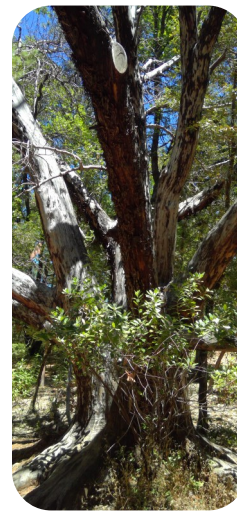


### Poison Oak

An infamous low shrub with oily lobed leaves arranged in sets of three. At some times of the year it is a very beautiful plant, with leaves varying from glossy green to reddish-purple. It is best known for its ability to cause severe skin irritations, but it does have some redeeming factors — poison oak's strong, reddish vines and shoots were sometimes used in basketry.



## Marker #10



### SNAGS

Standing dead trees, known as snags are home for a variety of plants and animals. This dead madrone tree provides protection and shelter for small mammal dens and bird nests. It is also used as a foraging site for birds such as woodpeckers, who dine on the thousands of tiny organisms, spiders, and insects that live in the dead tree.

### Toyon

This shrub has leathery, toothed leaves, white flowers in summer, and bright red berries in autumn. It is growing at the base of the old dead madrone. The berries were boiled, baked, and eaten, and a medicinal tea was made from the bark and leaves.







## Marker #9

### White Fir

This is an evergreen tree, keeping its foliage year-round. The white fir grows to a height of 30–50' and a spread of about 20' at maturity. White Fir needles grow singly, not in clusters or bundles the way they do in most pines."

The needles have a citrus-like smell when crushed. The inner bark was used to treat colds and fever.

### Hartweg's Iris

Hartweg Iris is a species of **iris** endemic to California, it can be found on low-elevation mountain slopes in the central counties. It is called by many names including; Foothill **iris**, Rainbow **iris**, Sierra **iris**, and Hartweg's **iris**. It bears one to three flowers on a slender stem, and the flowers may be shades of purple or yellow to almost white. While the bulbs of these flowers are poisonous, the shoots were used for fine basketry work.



## Marker #6

CANYON LIVE OAK



### Canyon Live Oak

This evergreen oak has small oval leaves with both smooth and toothed edges, depending on its environment. Because the acorns have a woolly yellow cap, it is sometimes called "golden-cup oak." The Miwok collected and ate acorns from all types of oaks, different species of acorns were prepared and stored separately. The bark from canyon live oak was pulverized and used to treat open sores and also made into a cough medicine.

### Black Oak

Black oak has a lobed leaf with a soft bristle at the end of the lobe. Round balls called *galls* often grow on the branches; they form in reaction to small wasps that lay their eggs under the bark of oak twigs. The galls were used by the Miwoks to make eye wash and dye used for tattooing.



### Black Oak Acorn

Black oak acorns were preferred to other local oak species because of their delicious taste, high fat and protein content, and superior storage capacity. These prized acorns were regularly used to trade for obsidian and coastal shellfish.



## Marker #7

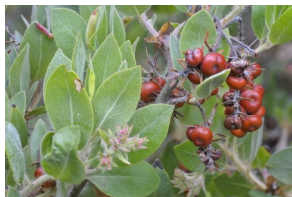
### Mountain Misery (May-July)

Also known as “Bear Clover,” mountain misery earned its name by disrupting wagon progress during the Gold Rush era with its sticky, resinous leaves. The Miwok name for this endemic shrub is *kit-kit-dizzy*. Mountain Misery is low growing shrub with dark green feathery leaves and small white flowers in Spring. If you’re unsure if you’ve found it, smell its leaves — the sticky resin emits a strong, crisp odor. The leaves were made into tea, used to treat rheumatism, chicken pox, measles and small pox.



### Manzanita

This fire-resistant shrub has distinctive smooth, reddish-brown bark that is cool to the touch. The red berries were dried and used to make a sweet, unfermented cider called *aye* that was used to treat stomach ailments. The small lower leaves of the manzanita were also chewed to relieve stomach aches.



## Marker #8

Incredibly destructive activities, evidence of gold mining and historic agriculture can be seen throughout the park. The ditch just past Marker #8 was constructed by Euro-American settlers in the latter part of the 1800s to divert water for gold mining operations. The rapid infusion of gold-seekers in this area led to environmental degradation and the almost total destruction of many Native groups and their way of life.



### Ponderosa Pine

Look up! ponderosa pine has three long needles in a bundle and medium-sized, prickly cones. The long needles were sometimes used to make pine needle baskets. The nuts from the Ponderosa pine cones are small and were not often collected.

### Sugar Pine

The tallest pine in the United States, sugar pine can grow up to 200 feet tall. It bears five short needles in a bundle and pine cones up to 26” long — the largest cone of any conifer! The pine seeds or nuts from these massive were sometimes collected and eaten. Dried sugar pine sap was used as a glue, for medicinal purposes, and was chewed as a gum.

