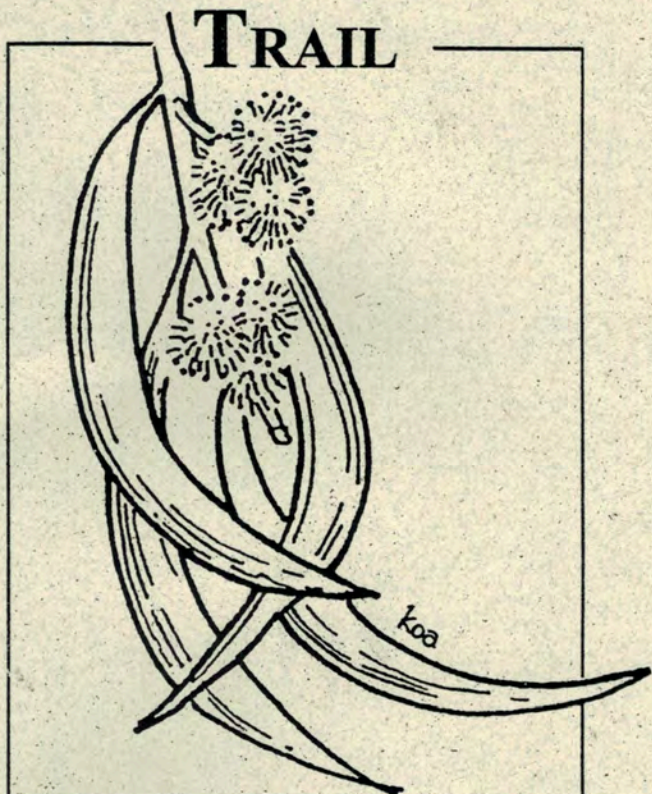


KALĀWAHINE TRAIL

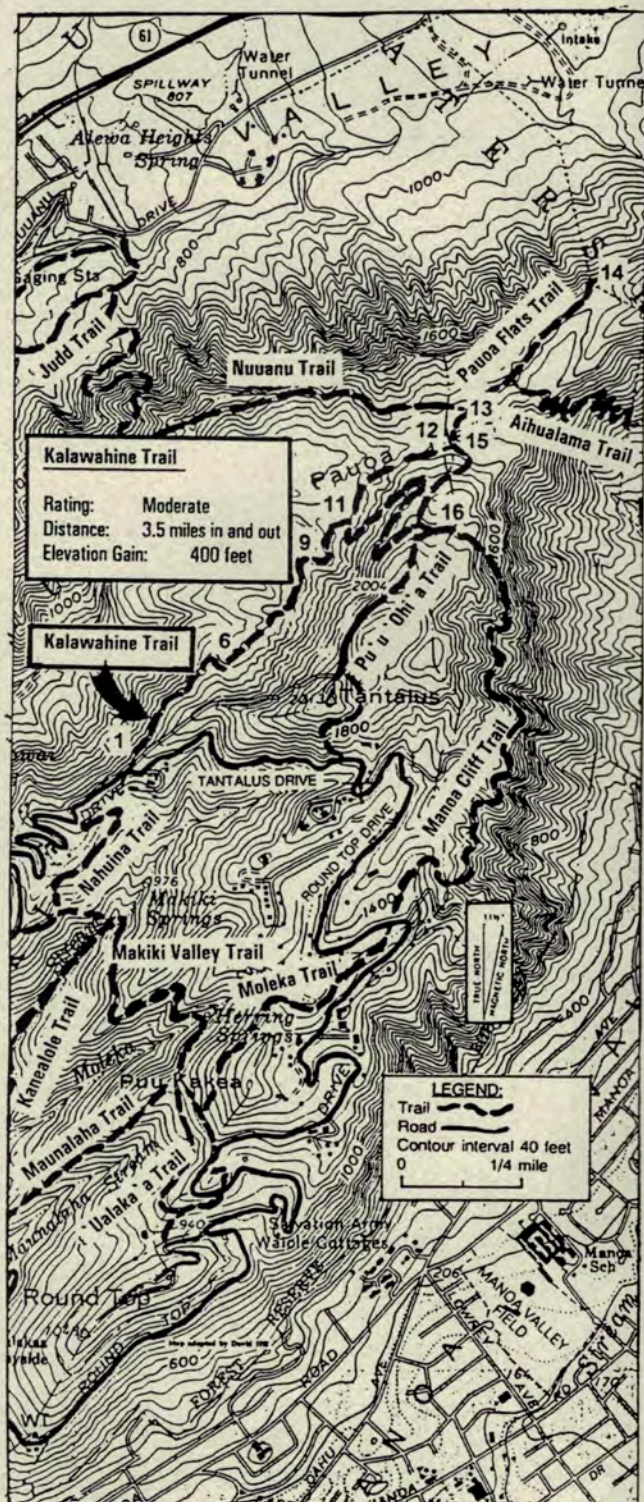


NATURE GUIDE

Prepared by

HAWAII
NATURE
CENTER

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in cooperation with the Department of
Land and Natural Resources.*



Legend defines "Kalāwahine" as the goddess who guards the water sources. Literally meaning "the day [off] women", Kalāwahine is the historic name of the ridge this trail contours along. We invite you to discover the unique beauty and wonder of Kalāwahine's special place.

OVERVIEW

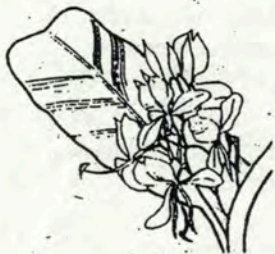
The Kalāwahine Trail winds its way into a lush forest, laced with mountain streams and sweeping views of valleys and ridges, revealing an ever-changing world. Generally level, the trail contours along the northwest side of Pu'u Ōhi'a (Mt. Tantalus), weaving in and out of gulches, leading to a spectacular view of Nu'uanu Valley and the Pali.

Part of the Makiki-Tantalus State Recreation Area, the Kalāwahine Trail is one of eleven trails in this 2,000 acre forest reserve. This brochure describes the natural features along the trail and a portion of the Pauoa Flats Trail, ending at the Nu'uanu overlook. Note: Kalāwahine Trail was formerly referred to as the western half of the Mānoa Cliff Trail.

The return is by the same route or by taking the Pauoa Flats Trail to the junction with Mānoa Cliff Trail where there are several return routes possible. Please check the map carefully before proceeding.

1

The trail begins at the junction of Tantalus Drive and the Hawaiian Telephone Co. Road. As you begin the hike, look around. Lovely as it is, this is not what early Polynesian explorers would have seen when they arrived nearly 2,000 years ago. The **native** forest they encountered was made up of plants whose ancestors arrived here by natural means, either by floating on the sea, being blown by the wind, or carried by birds. The plants they saw were mostly **endemic** (found nowhere else in the world). The few plants or seeds that survived the incredible journey to these islands found a new land with diverse habitats, little competition, and few grazing animals. They evolved in isolation and over time adapted to these new conditions in very individual ways. This extraordinary uniqueness also made them very vulnerable to more aggressive species later **introduced** by people, which replaced many of the native species. A remnant native forest still exists in the Ko'olau mountains, but most of the plants you'll see were brought here from distant lands.



As you walk along, notice the **yellow ginger** (*Hedychium flavescens*). Originally from India, this fragrant flower grows densely, often crowding out native plants.

2

At the wooden bench, about five minutes in, sit a moment and take in the view of Pearl Harbor. Pearl Harbor is actually the submerged mouths of several river valleys that were drowned when sea levels rose after the last ice age. You can also see the Honolulu International Airport with its reef runway. Beyond Pearl Harbor is the Wai'anae Range, the first of two **primary shield**

volcanoes that formed the island of O'ahu, about 3.5 million years ago. A million years later a second shield volcano, the Ko'olau, erupted. (You are in the Ko'olau Range now). Eventually, the Ko'olau volcano grew so large it joined with the Wai'anae to form one island.

The valley in front of you is Pauoa Valley, carved by rain and stream erosion over thousands of years.

3

The section of trail past the bench is a forager's delight. Depending on the time of year, several kinds of fruits may be available. The bushes and small trees with shiny, small, dark-green leaves and reddish stems are **rose apples** (*Syzygium jambos*). Their small, light yellow fruits have the delicate taste and aroma of roses.

The trees with the smooth brownish-orange bark and large, yellow fruits are **guava** (*Psidium guajava*), possibly introduced from tropical America in 1810 by an early advisor to King Kamehameha I, the Spaniard Don Francisco Marín. Guava's sweet-sour taste is a popular snack with hikers.

If you find an **avocado** (*Persea americana*) on the trail don't be surprised. This delicious fruit, also introduced by Don Marín, now grows abundantly in the wild, often attracting pigs and rats who relish its buttery taste.

4

Beyond the next gulch you will approach a curve in the trail.

Look to the right to find a tree-climbing plant with long slender leaves growing at the ends of thin ringed stems. This is the native 'ie'ie (*Freycinetia*



arborea). It provides a home for endemic insects. Rainwater that collects at the base of the leaves shelters damselfly and leafhopper nymphs as well as forest shrimps. Sacred to Kū the forest god, 'ie'ie's aerial roots were used by Hawaiians for cordage, fish traps, baskets, and helmets.

- ◆ Continue on, crossing a small stream, past a section of bright green **maidenhair fern** (*Adiantum raddianum*) growing on the bank.

5 **Stop at the bridge** and breathe in the heady, fragrant scent of the **night cestrum** (*Cestrum nocturnum*). Native to Central America and introduced to Hawai'i before 1871 as an ornamental, it is now a real pest. Look for tiny tubular white flowers and white berries and long, oval, pointed leaves.

The forest opens up with a view to the left of the ridge running parallel to Pauoa Valley.

6 **Just before the windfall** (a huge tree blown across the trail), is another native plant. The **māmaki** (*Pipturus albidus*) has light green serrated leaves with three prominent veins and reddish stems. Flowers grow along the stems in fuzzy greenish clusters. This endemic plant is a host plant to the caterpillar of the native Kamehameha butterfly. Hawaiians once made kapa (bark cloth) from the inner bark. The leaves are still used in a popular tea.



The huge fallen tree you'll walk under is **albizia** (*Paraserianthes falcataria*). Notice it is still living. Introduced for reforestation, these Indonesian trees

are fast growing, and are the largest trees along the trail - up to 100 feet tall.

- ◆ Continue on across another small stream.

7 **Look closely** at the fern-covered bank next to the trail. It's made of volcanic cinder from Pu'u 'Ōhi'a (Mt. Tantalus). Pu'u 'Ōhi'a is a cinder cone formed as a **secondary eruption**. Secondary eruptions are much smaller than primary shield volcanos. Other well-known secondary eruptions include Diamond Head and Punchbowl.

As you continue past a deep ravine look for **bananas** (*Musa* hybrid). Also notice the tall **albizias** growing out of the ravine. Cross another stream with white-fleshed guavas.

8 **At the next stream crossing** (with the large boulders), notice how dark and dense the forest has become. The plant responsible for this is **coffee** (*Coffea arabica*), a small tree with light bark, shiny dark leaves, and red berries. Coffee was first planted in Hawai'i in the early 1800's by Don Marin.

As you continue along in the coffee grove you'll find a **koa/banyan** "bridge", an example of the destruction introduced plants can have on Hawai'i's native trees. The endemic **koa** (*Acacia koa*) is possibly the most ancient tree species in Hawai'i. Dominant in the native forest, koa was abundant in this area before being harvested for its fine wood and before the introduction of exotic plants. The **banyan** (*Ficus microcarpa*) is originally from Asia. Planted in the early 1900's in reforestation efforts, it has had an adverse effect on native koa, often using them as host plants and killing them in the process.



About 50 feet further along, a large boulder marks a patch of ti (*Cordyline fruticosa*) on its left. A **Polynesian introduction**, ti has large, smooth, glossy leaves that grow at the tip of a long stem. A sacred

plant to ancient Hawaiians, it was also widely used for fans, sandals, rain-capes, and house thatching, among other things. Today ti is still a part of the culture and is used for leis, offerings, cooking, and for summoning good luck and protection.

- ◆ Cross another streambed, and pass an enchanted area of large boulders, draped in a cover of ferns and mosses.

9

At the curve in the trail,

there's a wide view of the ridge to the left. To the right, the top of Pu'u 'Ōhi'a is visible. Toward the left you'll see clusters of light-green trees, **kukui** (*Aleurites moluccana*), growing in the gulches. Kukui was also brought here by the early Polynesians, who had a multitude of uses for it. Primarily, it was used for lighting: the oily nuts were strung on coconut midribs to make candles and torches. Now designated our State Tree, legend tells of kukui being planted by the forest god Kū.

On the left, 'ie'ie is growing so densely it looks like a hedge. Look for the pinkish-orange flower spikes. The fruits are palatable, and were once used for food in times of famine.

This is an exciting section of trail as many more native plants start to appear. Look on either side of the trail for **koa** trees with their sickle-shaped "leaves". These are not true leaves, but rather, modified stems, called phyllodes. In ancient

Hawai'i, trunks of large koa were used to make bowls, canoes, and surfboards.

10

Along this same stretch, you will notice distinctive trees with light

colored bark and red pompom-like flowers. The leaves of the endemic 'ōhi'a lehua (*Metrosideros polymorpha*) can vary greatly in appearance. The most common of the forest trees, Hawaiians used 'ōhi'a wood for temple



images. The blossoms are sacred to Pele, the volcano goddess and legend warns that picking them is likely to result in rain-showers. The nectar is a favorite of native birds such as 'amakihi and 'apapane.

Pause under the magnificent old 'ōhi'a on the right, a venerable survivor in this ever-changing world. Growing on the 'ōhi'a is a peculiar plant with primitive origins. The **moa** (*Psilotum nudum*) is **indigenous** (a native plant that is also found in other places). This spore-bearing plant was used in early Hawai'i for medicine and talcum powder, and Hawaiian children played a game with it.



- ◆ Pass another stream crossing. A little further on there are log steps to assist the hiker up the slope.

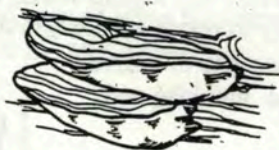
11

At the trail junction, the Mānoa

Cliff Trail begins on the right. The Kalāwahine Trail continues straight ahead to Pauoa Flats. As you descend you'll enter an area full of exotic fruit trees - guava,

avocado, rose apple and coffee. Keep your eyes open for pig damage. The churned up areas are evidence of pigs rooting in the soil for food. The pigs disturb the soil allowing erosion to occur and weeds to take hold. Also, mosquito larvae find a perfect nursery in rain-filled wallows. Introduced pigs are one of the major threats to Hawaii's native forest. They transport seeds of pest species in their droppings and destroy native plants by trampling and uprooting them.

In damp sections of the trail look for **bract or shelf fungus**, an important decomposer in the forest. The thread-like roots work their way into dead wood and break it up helping it to become soil.



12 You'll know you've reached Pauoa Flats when the understory thins a bit and the canopy is high overhead.

The trail becomes a mass of roots, so watch your footing.

This area reveals efforts to restore the forest in the early 1900s. The demand for native hardwoods for firewood and the impact of grazing horses left Pauoa Flats and Pu'u 'Ōhi'a denuded, with only grass cover by the turn of the century. Realizing the importance of restoring the watershed to supply water for sugar production, foresters chose fast-growing introduced timber trees for replanting. At that time, the specialness of Hawaii's unique species was not fully understood. Also, native plants were more difficult to grow. Some of the trees you'll find here include eucalyptus, banyan, paperbark, and blue marble.

13

At the trail marker the trail converges with the Pauoa Flats Trail. The Nu'uanu Trail begins on the left.

There are rows of banyans lining it. Continue straight ahead.

◆ Soon the 'Aihualama Trail begins to the right. It leads downhill 1.3 miles to the Mānoa Falls Trail.

In a short distance you'll be in the **bamboo** (*Phyllostachys nigra*) grove. Polynesians brought bamboo with them, and later immigrants introduced many other species of this giant grass. Notice how thick and exclusionary the thicket is. Other plants have little chance of growing here. One of the most useful plants worldwide, Hawaiians used bamboo for containers, musical instruments, knives, and fishing poles. For a memorable experience, sit amidst the bamboo on a really windy day!

As you continue on, several aggressive pest species dominate the area. The tree with the shiny, pointed leaves with three veins is **padang cassia** (*Cinnamomum burmannii*), a close relative of cinnamon. As the area gets brighter, you'll see **fiddlewood** (*Citharexylum caudatum*) from Jamaica. It has light thin trunks and orange berries. **Strawberry guava** (*Psidium cattleianum*) is another aggressive exotic, with red fruits that many find delicious. The bush with the black berries and fuzzy leaves is **clidemia** (*Clidemia hirta*). Be sure to clean your boots after hiking to prevent spreading these very serious pests!

14

As you climb to the lookout there's a thick patch of native **uluhe** (*Dicranopteris linearis*) on the left.

Uluhe (staghorn fern) is a common native plant that is quick to grow over exposed soil created by landslides.

What a view! Before you lies Nu'uaniu Valley and the reservoir, to the left are the Wai'anae mountains, to the right the Nu'uaniu Pali, and in the distance the town of Kailua. The sheer cliffs on the right lead up to Kōnāhuanui, the highest point in the Ko'olau range at 3,150 feet. At one time, the Ko'olau volcano was at least 5,000 feet tall. It is estimated that it lost about 1,000 feet to erosion and about 1,000 feet as its immense weight caused it to sink back into the crust. Nearly half of the original Ko'olau caldera has fallen off into the sea in a giant slump or landslide. The sheer cliffs of the Pali are testament to this extraordinary event.

Sit a moment and absorb the silence. Let the cool breezes refresh you and the beauty of this special place bring you inspiration.

Before you leave the summit look for small, white "half" flowers on the large bush near the cliff edge. This is the native mountain naupaka, **naupaka kuahiwi** (*Scaevola spp.*) Hawaiian legend tells of separated lovers, as a related plant with "half" flowers grows near the sea.

One other notable plant is abundant on the ridge to the left. The wind-sheared low bush with the red-stemmed narrow leaves is **lehua 'āhihi** (*Metrosideros tremuloides*). Found only on O'ahu, the flower is noted in chants of Nu'uaniu and in the song "Aloha 'Oe".

- ◆ On your return to the flats note the marker to the Mānoa Cliff Trail. To the right is the trail you came in on. If you choose a different return route, the left fork will take you on the Pauoa Flats Trail to the junction where you will have three choices of return.

15 If you continue on the Pauoa Flats Trail, there are two outstanding flowers. The first one you'll encounter is the beautiful **kahili ginger** (*Hedychium*

gardnerianum). It has erect clusters of yellow flowers, and as birds readily spread the seeds, has also become an invasive weed.

Further up the trail look for the fragrant white hibiscus, **koki'o ke'oke'o** (*Hibiscus arnottianus*). Endemic to O'ahu, old Hawaiian chants and stories tell of this lovely flower.



16

At the trail junction is a display with a map of the area. Choose your return carefully. The right fork will take you back where you started, while the left is the long route via Mānoa Cliff Trail. You will have to walk the mile and a half on Round Top and Tantulus Drives to return to the trail head.

The shortest return route is via Pu'u 'Ōhi'a Trail and then down The Telephone Road. Keep to the right on the road and you'll end up back where you started.

MĀLAMA O KA 'ĀINA **(TAKE CARE OF THE LAND)**

- Treat the forest plants and animals kindly.
- Leave nothing behind but footprints.
- Lend a hand in removing any litter.
- Scrub your boots before and after hiking to prevent spreading seeds.
- Share with others the threat to our native forests from introduced plants and animals.
- Support organizations that work to protect native forests.
- Please return unwanted guides to the box for others to use.

Other trail and plant guides
for the Tantalus area are available
at the Hawai'i Nature Center.

**Mahalo to the Yoshinaga Foundation for
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