E nihi ka helena i uka, mai $p\bar{u}$ lale i ka 'ike a ka maka.

Watch your step and don't let the things you see lead you into trouble.

Certain practices can be applied to the gathering of most types of plants that are used for lei or hula. Many of these are commonsensical and easily adopted or learned.

- Gather in the early morning as the sun comes up.
- Take the time when walking in to look at plants you might want to gather from.
- Always gather while walking out of the forest or down the mountain.
- Don't take any plants or soil into the forest so as not to introduce foreign plant diseases or bugs.

To reduce gathering pressure on our native forests, you are encouraged to cultivate these plants in your garden and gather them there.



'Ohi'a lehua branches that were torn or pulled off the tree. This is not good gathering.

- Gather a little from here and there; don't take all that you need from one tree or plant.
- Be aware that others might gather in the same areas you do so always leave some for the next person.
- Return lei to the forest floor so nutrients can be re-absorbed.
- Weed alien plants at the same time you gather.
- Try to gather in your own ahupua'a

Today, Hawaii's forests are much different than they were in the past. They have been altered through habitat loss and invasion of alien species. In today's forests the effects of harvest are changing as gatherers whose practices are primarily based on knowledge of the past have to adapt to changing environmental conditions, including the invasion of alien plants. To conserve our plants we need to draw on the knowledge of kupuna and apply it to today's environment in combination with ecological studies. The knowledge presented here has been shared with us from the following individuals.

Mahalo nui i ke kōkua nui mai:

Kupuna Kahalekomo

Uncle Bill Char

Aunty Vicky Holt-Takamine

Aunty Mapuana De Silva

Mehanaokalā Hind

Uncle Kepa Maly

Kumu John Lake

Kapua Kawelo

Dr. Tamara Ticktin

Kāwika Winter

A mahalo nō hoʻi e nā poʻe ʻē aʻe a pau loa e kōkua mai.

This pamphlet is a result of a study conducted by Amber Nāmaka Whitehead, Hōʻala Fraiola, and Tamara Ticktin.

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E Mālama, O Lilo 'Auane'i

Proper Gathering is Good, Not Gathering Properly is Harmful.

All native plants are becoming scarce, in part because they are losing habitat and in part because they are being taken over by invasive species. Among the native plants that are declining are the hula, lei and other culturally significant plants.

The maintenance of many Hawaiian cultural traditions is dependent on the use of, access to and conservation of native species, local landscapes and their biological resources. There is concern both to Hawaiian cultural practitioners, as well as to environmentalists, as how we can best protect and preserve these plants that are becoming increasingly rare. This pamphlet is the result of bringing together the knowledge of kupuna and ecological studies.

Some mana'o specifically intended for Palapalai and Pala'ā ferns include

- Never walk inside a patch so as not to hurt any keiki that are hard to see or trample any leaves.
- Only gather around the edges, as afar as your hand can reach.
- Fronds are ready to harvest when tips are pointy, completely unfurled.
- If fronds are gathered too young they will wilt and turn black.

A pala'ā patch invaded by strawberry guava (*Psidium cattleianum*) tree. Pala'ā and other lei plants are declining due to alien plant invasions.



Results of our ecological study showed:

- Fronds grow when there is rain and die-back when conditions become dry.
 Or gather a few weeks after a rainy period.
- If it is dry do not gather.
- Most palapalai and pala'a patches can not withstand being gathered more than once or twice
- Gathering in alien invaded patches can be harmful unless you weed.
- Make sure you weed alien plants when you gather and throughout the years when not gathering.
- Palapalai and pala'a patches that are properly gathered and weeded are as healthy or more than those left to grow among aliens plants.
- Proper gathering can help maintain lei plants. Improper gathering or gathering too much can damage them.
- Over harvesting and other stress lead to small leaf (frond) sizes. If you notice fronds getting smaller don't pick.

I ulu nō ka pua i ke kumu.

The flower grows because of the tree.

If the tree is not cared for, the flower will be lost.



The liko or young leaf bud of the 'ohi'a lehua.

When gathering 'Ōhi'a Lehua

- Trees have shallow root systems, walk around the tree only once while picking to avoid disturbing them.
- Just gather the liko (tip, new leaf growth) or flowers, not entire branches.
- Gather only what you can reach.



The ripe fruit of the 'a'ali'i tree.

When gathering the 'A'ali'i plant it is important to remember the following practices

- Only gather clusters of fruit, don't take whole branches.
- Don't take high fruit clusters, gather only what you can reach.

When gathering Maile

- Don't leave inner wood on plant after stripping maile.
- Don't gather when seeding or during long dry periods as long shoots will usually grow after seeding or heavy rains.
- Scatter maile seeds to help them disperse like the kupuna used to, "ua lu ka hua o ka maile..."

When gathering Mokihana

- Gather only what you can reach, don't pull down high branches.
- Only gather the ripe fruit, don't strip branches of all the fruit.

A branch with flower buds of the moki-

hana tree



 Don't step on keiki mokihana/ seedlings.

Our results show that mokihana keiki are not coming back as they used to. We need to plant them and encourage them. In the past Hawaiian gatherers used to encourage mokihana by planting cuttings in the forest.