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Technical Report 56  
VASCULAR PLANTS OF PU'UHONUA O HŌNAUNAU  
NATIONAL HISTORICAL PARK, HAWAI'I

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VEGETATION MAP OF PU'UHONUA O HŌNAUNAU  
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February 1986

UNIVERSITY OF HAWAII AT MANOA

NATIONAL PARK SERVICE  
Cooperative Agreement No. CA8008 2 0001

VASCULAR PLANTS OF  
PU'UHONUA O HŌNAUNAU NATIONAL HISTORICAL PARK

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ABSTRACT

Three ferns and 123 flowering plants are recorded from Pu'uhonua o Hōnaunau National Park. Ninety two (74%) are alien (introduced after 1778). Six species - common sandbur, fountaingrass, lantana, nutgrass, puncture vine, and sourgrass - have been declared noxious by the State of Hawaii. The following nine species could disrupt archaeological sites if left unchecked: Christmasberry, coal berry, kiawe, klū, koa haole, monkeypod, noni, 'opiuma and shrubby fleabane. Six grasses (buffelgrass, Californiagrass, fountaingrass, Guineagrass, Natal redtop and pili) provide a fine fuel that carries hot fires very rapidly when dry. Some management recommendations are made for alien plant control, fire control, and research on the impact of fire on archaeological resources.

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## INTRODUCTION

Pu'u honua o Hōnaunau National Historical Park is located on the western coast of the island of Hawai'i south of Kailua-Kona, the principal township on the west side of the island. The area was a favored residence of the early ruling chiefs of the island and part of the area was a place of sanctuary. The abundant archaeological remains attest to a large population in the area which would indicate that the vegetation was severely disturbed. Much of the surrounding vegetation was probably burned either deliberately or inadvertently. Since 1778, the area has been gradually abandoned.

The native coastal vegetation survived but inland areas were invaded by weedy species which arrived in Hawai'i after 1778. This study provides an exhaustive assessment of the vascular plants present in the 182 acres of the Park.

## METHODS

The park was surveyed during the dry and wet seasons during three successive years. Plants were identified in the field and voucher specimens were made of most species so that the Park could have a reference collection.

The abundance of the species, from casual observations, was recorded using the following abundance classification:

- |            |  |
|------------|--|
| Dominant   | The characteristic species of a widespread vegetation type, occurring in large numbers with greater than 75% cover.              |
| Abundant   | Occuring locally in large numbers with greater than 75% cover, but not a characteristic species of a widespread vegetation type. |
| Common     | Of widespread occurrence in the Park with up to 75% cover in some areas.   |
| Occasional | Occuring throughout the Park in many vegetation types but with less than 25% cover.  |
| Uncommon   | Occuring in low numbers in several areas or with several individuals in only one or two localities.                              |
| Rare       | Restricted in distribution within the Park to only one or two localities, and occurring there in low numbers.                    |

Introduced plants are separated into two types: Those introduced by the aboriginal Hawaiians prior to 1778

(Polynes. intro.) and those introduced subsequently  
(Historic intro.)

The ethnobotany of the plants is taken principally from Neal (1965).

## RESULTS

Three ferns in three families and 123 flowering plants in 48 families are recorded in the Park (Appendix). The flowering plant nomenclature follows St. John (1973). Three-quarters of the flora is alien, that is, introduced since 1778, twelve percent is indigenous, five endemic and eight of Polynesian introduction (Table 1). Six of these alien plants have been declared noxious by the State of Hawaii (Table 2). The State Department of Agriculture should be consulted for assistance in eradicating these pests from the Park. A further nine species grow in such a way that they may disturb archaeological sites if they are not controlled (Table 3). Six grasses provide a fine fuel which when dry will carry hot fires very rapidly (Table 4).

## MANAGEMENT RECOMMENDATIONS

The weed problem in the park is serious because some of these plants can disrupt the archaeological sites and/or present a fire hazard. The recent establishment of at least two species of psyllid insects has changed the ecology of most koa haole dominated ecosystems in Hawai'i. Even though a coccinellid and two syrphid insects are controlling the psyllids to a certain extent, the decreased vigor of the koa haole due to the sap-sucking of the psyllid allows more light to pass through the canopy. Consequently, the herbaceous layer is now invaded by dense stands of grasses and forbs further increasing the fire hazard in this ecosystem. Unfortunately, though the koa haole vigor has been decreased, these plants are still aggressive enough to disrupt archaeological sites and the seed bank will maintain the population for many years.

Ignoring this problem will result in a build-up of fuel loads. Thus fires will burn at greater intensities in future. Their rate of spread will also increase due to the continuum of fuel which is replacing the previous mosaic pattern.

There are two possible alternatives to this dilemma:

- (1) Prescribed burning.
- (2) Increased emphasis on manual weed control and removal of fuels.

Prescribed burning is a controversial issue in Hawaiian ecosystems because there are very few native species which can withstand burning on a regular basis. In the context of historical areas, there is the added complication that it is

suspected that fire will have a negative impact on rock archaeological structures, particularly the surface characteristics and appearance. Increasing the fire frequency in the area will probably result in the vegetation changing from a scrubland to a grassland, probably dominated by fountaingrass. Therefore, prescribed burning is not recommended as a management option.

Manual weed removal in PUHO is an effective, though expensive, alternative. Workers must be appropriately trained in the identification of native plants, made familiar with archaeological remains and taught how to avoid all unnecessary disturbance. Dead plant material must also be gathered to prevent the build-up of fuel.

While chemical control of weeds is an effective aid in manual weed control it is very controversial. Because any runoff could contaminate food resources along the coast which is heavily utilized by Local Hawaiians, it cannot be recommended as a management tool at PUHO. Alternatively, it is recommended that the use of seawater for weed control be investigated. Sea water is toxic to most land plants, it is readily available, and has no toxic effects though it may affect lichen growth on archaeological structures.

The following recommendations are made for the control of alien plants in the Park:

1. Test plots which are overrun by weeds should be established and soaked with saltwater on an experimental basis. The testing should evaluate the best time for treatment, the minimum number of treatments necessary, the sensitivity of the problem weeds, the effect on rock surface characteristics, and the buildup of salt in the environment. The effectiveness, manpower requirements and economics of this approach should be estimated prior to any consideration of parkwide implementation of this method of weed suppression.

2. Large trees, e.g., 'opiuma, should be removed manually but prior to their removal attempts should be made to establish young native trees and shrubs at the site. The following species should be considered for reintroduction into the Park:

- Hala (Pandanus odoratissimus)
- Lama (Diospyros ferrea)
- Maiapilo (Capparis sandwichiana)
- 'ohe (Reynoldsia sandwicensis)
- 'ūlei (Osteomeles anthyllidifolia)
- Wiliwili (Erythrina sandwicensis)

These plants may be able to get established in sites partially shaded by monkeypod, koa haole and 'opiuma prior to their removal.

3. Fountaingrass should be removed immediately and infested sites periodically monitored for recurrence. Pili grass, an alternative indigene, should be established in these sites. Lantana and shrubby fleabane should be treated similarly.

4. All wildfires should be suppressed to prevent the further spread of fountaingrass.

#### LITERATURE CITED

Neal, M. C. 1965. In Gardens of Hawaii. B. P. Bishop Museum Special Publication 50.

St. John, H. 1973. List and summary of the flowering plants in the Hawaiian Islands. Pacific Tropical Botanical Garden Memoir Number 1.

Table 1. Summary of the status of the flowering plants at Pu'uhonua o Hōnaunau National Historical Park, Hawai'i

Status	Number	Percent
Endemic	6	5
Indigenous	15	12
Historical introduction	91	74
Polynesian introduction	10	8
Historical or Polynesian introduction	2	2
Indigenous or Polynesian introduction	1	1
Indigenous or historical introduction	1	1

Table 2. Plants declared noxious by Hawai'i State Department of Agriculture which are present in Pu'uhonua o Hōnaunau National Historical Park, Hawai'i

Scientific name	Common name
<u>Cenchrus echinatus</u>	sandbur
<u>Cyperus rotundus</u>	purple nutsedge
<u>Lantana camara</u>	lantana
<u>Pennisetum setaceum</u>	fountaingrass
<u>Tribulus terrestris</u>	puncture vine
<u>Trichachne insularis</u>	sourgrass

Table 3. Plants found at Pu'uhonua o Hōnaunau National Historical Park, Hawai'i, which could disrupt archaeological sites

Scientific name	Common name
<u>Acacia farnesiana</u>	klū
<u>Leucaena leucocephala</u>	koa haole
<u>Morinda citrifolia</u>	noni
<u>Pithecelobium dulce</u>	'opiuma
<u>Pluchea odorata</u>	shrubby fleabane
<u>Prosopis pallida</u>	kiawe
<u>Rivina humilis</u>	coral berry
<u>Samanea saman</u>	monkeypod
<u>Schinus terebinthifolius</u>	Christmasberry

Table 4. Grasses found at Pu'uhonua o Hōnaunau National Historical Park, Hawai'i, that produce a fine fuel which, when dry, carries hot fires very rapidly.

<u>Cenchrus ciliaris</u>	buffelgrass
<u>Brachiara mutica</u>	Californiagrass
<u>Pennisetum setaceum</u>	fountaingrass
<u>Panicum maximum</u>	Guineagrass
<u>Rhynchelytrum repens</u>	Natal redtop
<u>Heteropogon contortus</u>	pili

APPENDIX

VASCULAR PLANTS OF PU'UHONUA O HŌNAUNAU NATIONAL HISTORICAL PARK

FERNS & FERN ALLIES

NEPHROLEPIDACEAE

Nephrolepis exaltata (L.) Schott. Indigenus  
sword fern, kupukupu, ni'ani'au

Occasional along steep inland cliffs. Used for leis, and as an  
ornamental

PKH & LS 10251

POLYPODIACEAE  
(Polypody Family)

Phymatosorus scolopendria (Burm.) Pic.-Ser. Historic intro.  
Syn. Microsorium scolopendrium (Burm.) Copel.  
laua'e

Plants in planters surrounding Park auditorium. Used for leis,  
and as an ornamental.

PKH & LS 10320

PSILOTACEAE  
(Whisk Fern Family)

Psilotum nudum (L.) Beauv. Indigenus  
moa, pipi

Uncommon along cliffs. Occasional in pahoehoe cracks near  
visitor center. Used for tea and leis; spores used for talcum.

PKH & LS 10271

FLOWERING PLANTS  
Monocotyledones

CANNACEAE  
(Canna family)

Canna indica L. Historic intro.  
Indian shot, poloke, ali'ipoe, li'ipoe

Rare, scattered in archaeological sites near Park's southern  
boundary. Seeds used in hula rattles, leis.

PKH & LS 10323



Cyperus rotundus L. Historic intro.  
nutgrass, kili'o'opu

Highway median strip. This weed has been declared noxious by  
Hawaii State Department of Agriculture (HDOA).

PKH & LS 10230

GRAMINEAE  
(Grass Family)

Brachiaria mutica (Forsk.) Stapf Historic intro.  
California grass, Paragrass

Used for cattle fodder. Heavy infestations of this grass may  
disturb archaeological sites.

Cenchrus echinatus L. var. echinatus Historic intro.  
common sandbur, 'ume'alu

Occasional throughout Park. Declared noxious by HDOA.

PKH & LS 10235

Chloris inflata Link. Historic intro.  
swollen fingergrass, mau'ulei

Common throughout park

PKH & LS 10252 and 10316

Cynodon dactylon (L.) Pers. Historic intro.  
Bermuda grass, mānienie, mahiki

Common along coastal areas. Used for lawns.

PKH & LS 10228

Cynodon sp. Historic intro.

One patch along coast

PKH & LS 10218

Dactyloctenium aegyptium (L.) Willd. Historic intro.  
beach wiregrass

Reported by Funk (1979) not seen on this survey.

Digitaria sp. Historic intro.  
crabgrass

Occasional throughout park

Eleusine indica (L.) Gaertn. Historic intro.  
goosegrass, wiregrass, mānienie-ali'i

Occasional in main lawn area by main cultural area and along road to picnic area.

PKH & LS 10250

Eragrostis tenella (L.) Beauv. ex R. & S. Historic intro.  
Japanese lovegrass

Small annual grass, common throughout the Park. This grass is very hard to find in dry season.

PKH & LS 10233

Heteropogon contortus (L.) Beauv. Indigenous or Polynesian intro.  
pili

Planted in median strip of parking lot. Used for thatch.

PKH & LS 10296

Panicum maximum Jacq. Historic intro.  
Guinea grass

Uncommon along service road to sewage treatment facility. Used for forage. Heavy infestations of this grass may disturb archaeological sites.

PKH & LS 10311

Pennisetum setaceum (Forsk.) Chiov. Historic intro.  
fountain grass

Currently this plant is in low numbers in the Park. Several individuals were seen and pulled. This plant spreads and its occurrence should be monitored and controlled in the park. Declared a noxious weed by HDOA. Originally imported as an ornamental.

Rhynchelytrum repens (Willd.) C. E. Hubb. Historic intro.  
Natal redbtop

Abundant throughout the Park. Used as forage, and as an ornamental.

PKH & LS 10241

Saccharum officinarum L. Historic or Polynesian intro.  
sugar cane, kō

Planted in main visitor display area. Used for sugar; also inside thatch for houses.

Sporobolus diander (Retz.) Beauv. Historic intro.  
Indian dropseed

Uncommon along service roads.

PKH & LS 10298

Stenotaphrum secundatum (Walt.) Ktze. Historic intro.  
buffalo grass, St. Augustine grass, manienie-mahiki, hikihiki,  
manienie-'aki-haole

Adjacent to visitor center. Common in lawn. Used for lawns.

PKH & LS 10286

Trichachne insularis (L.) Nees. Historic intro.  
sourgrass

Uncommon along service road to sewage treatment facility.  
Declared noxious by HDOA.

PKH & LS 10319

LILIACEAE  
(Lily Family)

Aloe vera L. Historic intro.  
Aloe, panini 'awa'awa, star cactus

Occasional on walls and near parking lot and near ruins at Parks  
S. boundary. Sap used to treat sunburn.

PKH & LS 10288

Cordyline terminalis (L.) Kunth Polynes. intro.  
ki, ti

Planted in main cultural area and visitor center area. Used for  
thatch, cordage, wrappings, capes, hula skirts, leis, hedges;  
the root may be used to make 'okolehao or when properly cooked,  
it may be eaten during times of famine.

PKH & LS 10291

Pleomele marginata (Lam.) N. E. Br. Historic intro.

Planted at superintendent's house.

PALMAE  
(Palm family)

Cocos nucifera L.  
coconut, coco palm, niu

Polynes. intro.

Common in main cultural area area and along coast in front of administrative buildings. Fruit used as a beverage and food, the husks for cordage (sennit), fronds used for thatch. Many other uses.

Pritchardia sp.  
lo'ulu

Endemic

Planted in the median strip of the parking lot. Fronds used for thatch, fans; unripe seeds may be eaten.

PANDANACEAE  
(Screw Pine Family)

Pandanus tectorius Warb.  
hala, pūhala, pandanus

Indigenous

Occasional around visitor center. Leaves used for plaiting, fruit for leis, & paint brushes for tapa; dyes, adventitious roots for paint.

PKH & LS 10268

Dicotyledones

AIZOACEAE  
(Carpetweed Family)

Sesuvium portulacastrum (L.) L.  
'ākulikuli, sea purslane

Indigenous

Common along brackish ponds.

PKH & LS 10280

AMARANTHACEAE  
(Amaranth Family)

Alternanthera repens (L.) Ktze.  
khaki weed

Historic intro.

Occasional along trails and service roads. Used for tea.

PKH & LS 10254

Amaranthus spinosus L. Historic intro.  
spiny amaranth, thorny amaranth, pakai-kukū

Occasional throughout Park, Edible flower heads and leaves.

PKH & LS 10229

Amaranthus viridis L. Historic intro.  
slender amaranth, pakai

Occasional throughout Park. Edible inflorescence.

PKH & LS 10265

ANACARDIACEAE  
(Mango Family)

Schinus terebinthifolius Raddi Historic intro.  
Christmas berry, nani-o-hilo, wileaiki

Uncommon throughout Park. This plant is in low numbers at the present. Plants should be eradicated before they spread throughout the Park. Red fruit clusters used in leis and wreaths. Heavy infestations of this species could disturb archaeological sites.

PKH & LS 10307, 10282

APOCYNACEAE  
(Periwinkle Family)

Catharanthus roseus (L.) G. Don Historic intro.  
red periwinkle, Madagascar periwinkle

Occasional throughout the Park. Used as an ornamental; poisonous.

PKH & LS 10224

Plumeria rubra L. Historic intro.  
red plumeria, frangipani

Planted in areas adjacent to parking lot and main entrance. Used as an ornamental, leis; poisonous.

BIGNONIACEAE  
(Bignonia Family)

Crescentia cujete L. Historic intro.  
calabash tree, la'amia

Planted behind visitors center. Fruit made into hula rattles.

PKH & LS 10274

BORAGINACEAE  
(Heliotrope Family)

Cordia subcordata Lam. Polynes. intro.  
kou

Several trees near visitor center and along coast. Used for fine dark wood, ornamental, leis.

PKH & LS215

Heliotropium curassavicum L. Indigenous  
Nena, kípūkai, hinahina

Rare, along strand. Used for tea.

PKH & LS 10328

Messerschmidia argentea (L.f.) Johnston Historic intro.  
Tree heliotrope

Only one plant in main cultural area. Used for shade, greens.

PKH & LS 10290

Myosotis azorica H. C. Wats. ex Hook Historic intro.  
forget-me-not

Reported by Funk (1979), not seen on this survey. Used as an ornamental.

CACTACEAE  
(Cactus Family)

Cereus undatus Haworth Historic intro.  
night blooming cereus, pāpipipua

Restricted to rock walls adjacent to park and residential area. Used for hedges, and as an ornamental.

CAPPARACEAE  
(Caper Family)

Capparis sandwichiana DC. var. zoharyi Deg. & Deg. Endemic  
maiapilo, pua-pilo

Rare, growing in a'a along main road. Plant pounded and applied to joints, broken bones.

PKH & LS 10264

Cleome spinosa L. Historic intro.  
spider flower

Reported by Funk (1979), not seen on this survey.

Gynandropsis gynandra (L.) Briq. Historic intro.  
African spider flower, wild spider flower, honohina

Common throughout Park.

PKH & LS 10257

CARICACEAE  
(Papaya Family)

Carica papaya L. Historic intro.  
Papaya, pawpaw, mikana, milikana, papaia, hē'i

Rare, a few plants along inland cliffs. Edible fruit, male flowers made into leis.

PKH & LS 10220

CHENOPODIACEAE  
(Goosefoot Family)

Atriplex semibaccata R. Br. Historic intro.  
Australian salt bush, semibaccate salt bush

Common throughout Park. Used for forage.

PKH & LS 10266

Chenopodium album L. Historic intro.  
pigweed, lamb's quarters, 'āheahea

Occasional, in transition zone between the strand and scrub.  
Used for greens.

PKH & LS 10235

COMBRETACEAE  
(Terminalia Family)

Terminalia catappa L. Historic intro.  
false kamani, tropical almond, kamani-haole, kamani'ula

Planted in areas adjacent to visitor center. Edible nut.

PKH & LS 10222

COMPOSITAE  
(Sunflower Family)

Ageratum conyzoides L. Historic intro.  
ageratum, maile honohono

Uncommon along inland cliffs, this plant may be more widely distributed during wetter periods. Used medicinally in some cultures.

PKH & LS 10245

Bidens cynapifolia HBK. Historic intro.  
West indian beggar's tick

Occasional throughout Park.

PKH & LS 10221

Bidens pilosa L. var. minor (Bl.) Sherff Historic intro.  
beggar's tick

Occasional throughout Park.

PKH & LS 10244

Bidens pilosa L. var. pilosa Historic intro.  
Spanish needle, beggar's tick, kī-nehe, kī, ko'oko'olau,  
pilipili

Occasional throughout Park.

PKH & LS 10278

Eclipta alba (L.) Hassk. Historic intro.  
false daisy

Occasional in lawn and adjacent to brackish ponds. Used medicinally - externally for skin diseases, internally as a purgative.

PKH & LS 10270

Emilia javanica (Burm. f.) C. B. Robins. Historic intro.  
red pua-lele

Uncommon throughout the Park. Leaves eaten in Malaysia.

PKH & LS 10231

Gnaphalium purpureum L. Historic intro.  
purple cudweed

Uncommon around Park storage facilities.

PKH & LS 10326

Pluchea odorata (L.) Cass. Historic intro.  
pluchea, shrubby fleabane, sour bush

Uncommon throughout Park. This weed should be monitored and controlled. Its spread to archaeological sites should be prevented. Dried, flower heads sometimes used for leis.

PKH & LS 10253

CONVOLVULACEAE  
(Morning-glory Family)

Ipomoea batatas (L.) Poir Polynes. intro.  
'uala, 'iwala, sweet potato, kamara

Planted in median strip along Park entrance. Storage root eaten.

PKH & LS 10302

Ipomoea brasiliensis (L.) Sweet Indigenous  
pōhuehue, beach morning glory

Occasional along strand; Some medicinal uses.

PKH & LS 10216

Ipomoea tuboides Deg. & van Ooststr Endemic  
Hawaiian moon flower

Hawaiians ate roots and stems in time of famine.

PKH & LS 10276

CRASSULACEAE  
(Orpine Family)

Kalanchoe pinnata (Lam.) Pers. Historic intro.  
airplant, life plant, 'oliwa-ku-kahakai

Occasional along road to sewage facilities and near southern boundary.

PKH & LS 10310

CRUCIFERAE  
(Mustard Family)

Lepidium virginicum L. Historic intro.  
wild peppergrass  
Occasional near visitor center

CUCURBITACEAE  
(Gourd, Squash Family)

Cucumis dipsaceus Ehrenb. ex Spach Historic intro.  
wild cucumber, teasel-gourd, hedgehog gourd  
Rare.

Momordica charantia L. var. pavel Crantz Historic intro.  
balsam apple, peria  
Occasional throughout the Park. Green fruit eaten along with  
young shoots and leaves.

PKH & LS 10217

EUPHORBIACEAE  
(Spurge Family)

Aleurites moluccana (L.) Willd. Polynes. intro.  
kukui, tutui, candlenut tree  
Kernels strung together on coconut midribs and used as candles;  
also eaten as a relish ('inamona) after baking. Raw kernal used  
as a purgative. All parts of plant used in medicine. Primary  
tapa dye from bark; primary black paint from burned fruit.

PKH & LS 10273, 10306

Euphorbia glomerifera (Millsp.) L. C. Wheeler Historic intro.  
Occasional throughout the Park.

PKH & LS 10237

Euphorbia hirta L. Historic intro.  
garden spurge, hairy spurge, golondina, koko-kahiki

Occasional throughout the Park.

PKH & LS 10236

Euphorbia prostrata Ait.  
prostrate spurge

Historic intro.

Uncommon along service roads.

PKH & LS 10295

GOODENIACEAE  
(Naupaka Family)

Scaevola taccada (Gaertn.) Roxb. var. sericea  
(Vahl) St. John  
naupaka-kahakai, huahekili, beach scaevola, half flower

Indigenous

Occasional in coastal areas. Leaves used to treat indigestion,  
and used for poultices. Leaves cooked for greens.

PKH & LS 10226

GUTTIFERAE  
(Mangosteen Family)

Calophyllum inophyllum L.  
kamani, Alexandrian laurel

Polynes. intro.

Planted in the Heiau area. Seeds yield medicinal oil, wood used  
for calabashes, boats, and cabinets.

PKH & LS 10292

LABIATAE  
(Mint Family)

Ocimum gratissimum L.

Historic intro.

Occasional, near South boundary, in old sites.

PKH & LS 10324

Plectranthus parviflorus Willd.  
spurflower, cocksparflower, 'ala'ala-wai-nui

Historic intro.

Occasional on inland cliffs.

PKH & LS 10260

LEGUMINOSAE  
(Pea Family)

- Acacia farnesiana (L.) Willd. Historic intro.  
klū, kolū, aroma, popinac  
Occasional. Flowers yield perfume, stems produce a glue. Heavy infestations could disturb archaeological sites.  
PKH & LS 10312
- Cassia bicapsularis L. Historic intro.  
Occasional. Leaves are a purgative, the wood used for paper-making.  
PKH & LS 10227
- Cassia leschenaultiana DC Historic intro.  
partridge pea, lauki  
Occasional throughout the Park. Roots used in India for stomach trouble.  
PKH & LS 10305
- Cassia occidentalis L. Historic intro.  
coffee senna, 'auko'i, miki palalo  
Occasional.  
PKH & LS
- Cassia sp. Historic intro.  
PKH & LS 10327
- Crotalaria sp. Historic intro.  
rattlebox  
Plants and seeds poisonous to livestock.  
PKH & LS 10258
- Indigofera suffruticosa Mill. Historic intro.  
indigo, 'inikō, 'inikoa, kolū  
Occasional. Dye derived from fermented plant.  
PKH & LS 10248



LOGANIACEAE  
(Strychnine Family)

Fagraea berteriana Gray ex Benth. Historic intro.  
pua-kenikeni

Planted in visitor center area. Used for leis.

MALVACEAE  
(Hibiscus Family)

Abutilon grandflorum (Willd.) Sweet Historic intro.  
hairy abutilon, ma'o

Occasional throughout the park.

PKH & LS 10219

Gossypium barbadense L. Historic intro.  
cotton, pulupulu-haole

Plant near canoe house. This plant should be removed. Cotton  
fiber, seeds yield an oil used for cooking.

PKH & LS 10284

Malvastrum coromandelianum (L.) Garcke Historic intro.  
false mallow, hauoi

Occasional throughout the park.

PKH & LS 10242

Sida fallax Walp. Indigenous  
'ilima

Uncommon. Used for leis, some forms used medicinally.

PKH & LS 10259

Thespesia populnea (L.) Soland. ex Correa Polynes. intro.  
milo, portia tree

Occasional in main cultural area and near Visitors Center.  
Beautifully grained wood used for calabashes.

PKH & LS 10275

MORACEAE  
(Mulberry Family)

- Broussonetia papyrifera (L.) Vent. Polynes. intro.  
wauke, paper mulberry  
Planted adjacent to visitor center. Used for tapa.  
PKH & LS 10321

NYCTAGINACEAE  
(Four o'clock Family)

- Boerhavia coccinea Historic intro.  
Occasional along coast.  
PKH & LS 10225
- Bougainvillea spectabilis Willd. Historic intro.  
bougainvillea  
Planted along main highway to entrance. Used as an ornamental.  
PKH & LS 10303

OLEACEAE  
(Olive Family)

- Jasminum sambac (L.) Ait. Historic intro.  
pikake, Arabian jasmine, Queen Emma's flower  
Plant adjacent to canoe house. Used for leis.  
PKH & LS 1010
- Noronhia emarginata (Lam.) Stadm. in Thouars Historic intro.  
Madagascar olive  
Planted near visitor center.  
PKH & LS 10277

OXALIDACEAE  
(Wood Sorrel Family)

- Oxalis corniculata L. Polynes. intro.  
lady's sorrel, yellow wood sorrel, 'ihi, 'ihi-ai, 'ihi-'awa  
Occasional throughout the park. Leaves used medicinally.  
PKH & LS 10297, 10314

PAPAVERACEAE  
(Poppy Family)

Argemone glauca Pope, var. decipiens G. B. Ownbey      Endemic  
pua-kala, kala, pokalakala, haule

Rare, only one plant seen growing adjacent to storage area. Sap used for toothache.

PASSIFLORACEAE  
(Passion Flower Family)

Passiflora foetida L.      Historic intro.  
scarlet-fruited passion flower, love-in-a-mist, running pop,  
pohāpohā

Uncommon.

PKH & LS 10267

Passiflora suberosa L.      Historic intro.  
huehue-haole

Uncommon near Visitor Center.

PKH & LS 10283

PHYTOLACCACEAE  
(Pokeweed Family)

Rivinia humilis L.      Historic intro.  
rouge plant, coral berry

Common, growing in ruins. Roots, fruits, and young growth said to be poisonous.

PKH & LS 10247

PIPERACEAE  
(Pepper Family)

Peperomia leptostachya H. & A.      Indigenous  
'ala'ala-wai-nui, kupali'i

Occasional, growing at base of cliffs.

PKH & LS 10239

PLUMBAGINACEAE  
(Leadwort Family)

Plumbago zeylanica L. Indigenus  
'ilie'e, hilie'e, kupukupu-'ula  
Uncommon. Poisonous, sap used for staining tattoo marks.  
PKH & LS

POLYGONACEAE  
(Buckwheat Family)

Coccoloba uvifera (L.) L. Historic intro.  
sea grape  
Planted near main heiau area and superintendent's house. Sour  
edible fruits.  
PKH & LS 10289

PORTULACACEAE  
(Purslane Family)

Portulaca cyanosperma Egler Endemic  
'ihi, blue-seeded portulaca  
Occasional throughout the Park.  
PKH & LS 10263

Portulaca oleracea L. Historic intro.  
Common purslane, wild portulaca, pigweed, 'ihi, 'ihi-'ai,  
'ākulikuli-'lau-li'i, ākulikuli-kula  
Occasional throughout the Park. Cooked and eaten as greens in  
many countries.  
PKH & LS 10299, 10256, 10269

Talinum paniculatum (Jacq.) Gaertn. Historic intro.  
Occasional in brushy areas.  
PKH & LS 10243

Talinum triangulare (Jacq.) Willd. Historic intro.  
Occasionally along trail going past lava tube.  
PKH & LS 10240

RUBIACEAE  
(Coffee Family)

Borreria laevis (Lam.) Griseb. Historic intro.  
buttonweed, spermacoce

Occasional near visitors center

PKH & LS 10294

Coffea arabica L. Historic intro.  
Arabian coffee

Cultivated in vicinity of Visitors Center. Fruit yields coffee beans which are dried roasted and ground for a beverage.

PKH & LS 10

Morinda citrifolia L. Polynes. intro.  
noni, Indian mulberry

Occasional throughout park. Roots yield a yellow dye, fruit a famine food; leaves, fruit, and bark a medicine. This plant could disturb archaeological sites.

PKH & LS 10262

SOLANACEAE  
(Nightshade Family)

Nicotiana glauca Grah. Historic intro.  
tree tobacco, wild tobacco, mākāhala paka

Reported by Funk (1979), not seen on this survey. Used for poison, medicinally used in Mexico.

Nicotiana tabaccum L. Historic intro.  
tobacco, paka

Uncommon, growing in storage area. Dried leaves smoked.

PKH & LS 10325

Solanum nigrum L. var. nigrum Indigenous  
black nightshade, pōpolo or Historic intro.

Uncommon. Used medicinally.

PKH & LS 10293

STERCULIACEAE  
(Cocoa Family)

Waltheria americana L. Indigenous  
hi'aloa, 'uhaloa, kanakaloa

Occasional throughout the park. Juice of root used medicinally as pain reliever - e.g. sore throats.

PKH & LS 10232

THYMELAEACEAE  
('Ākia Family)

Wikstroemia pulcherrima Skotts. Endemic  
'ākia

Rare near visitors center. Bark used for fiber, fish poison.

PKH & LS 10272

TILIACEAE  
(Linden Family)

Triumfetta semitriloba (L.) Jacq. Historic intro.  
burbush

Occasional

VERBENACEAE  
(Verbena Family)

Lantana camara L. Historic intro.  
lantana, lākana, mikinolia-hihiu

Occasional. Noxious weed should be eradicated.

PKH & LS 10261

Vitex ovata Thunb. Indigenous  
pōhinahina, pōlinalina, kolokolo-kahakai, beach vitex

Planted in median strip at park entrance.

PKH & LS 10301

ZYGOPHYLLACEAE  
(Tribulus Family)

Tribulus terrestris L.  
puncture vine

Historic intro.

Common along service road and trails. This plant should be removed because of its sharp fruits and its potential to spread. Declared noxious by HDOA.

PKH & LS 10249