



PONO

ENDORSEMENT PROGRAM

Plant Lists and Invasive Impacts



This booklet was developed by Kauai Invasive Species Committee to further describe the invasive impacts of the plants listed on the Pono Endorsement Program’s Black List and Phase Out List.



The Pono Endorsement Program is supported by the Kauai Landscape Industry Council. This program utilizes the best science available developed by the College of Tropical Agriculture and Human Resources (CTAHR), the Hawaii Department of Agriculture (HDOA), the Coordinating Group on Alien Pest Species (CGAPS), and the Department of Land and Natural Resources’s (DLNR), Hawaii Invasive Species Council (HISC).

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“Pono”

Ua Mau ke Ea o ka Āina i ka Pono

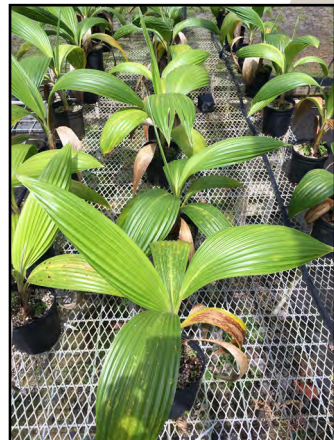
“The life of the land is perpetuated in righteousness”

What is the Pono Endorsement Program?

The Pono Endorsement Program is a voluntary partnership between Kauai Invasive Species Committee, Plant Pono, and the Kauai nursery and landscaping industry.










Nursery and landscaping businesses may choose to become a Pono Endorsement Program participant and then follow specific pono commitments and protocols to reduce the spread and introduction of invasive species.





Pono businesses make pono commitments and use Best Management Practices.

-  Use the Hawaii Pacific Weed Risk Assessment (HPWRA) to pre-screen any new incoming plants to *help prevent new invasive plant introductions*. Find the HPWRA at www.plantpono.org.
-  Follow specific Best Management Practices (BMP's) for Coqui Frog and Little Fire Ant (LFA) to *help keep Kauai Coqui and LFA free*.
-  Disinfect gear & equipment between sites or yards to *help reduce the spread of invasive weeds and unwanted plant diseases*.
-  Source from local or other Pono Endorsed businesses to *prevent new pest invasions*.
-  Attempt to first use native and non-invasive plants, or pono species, in new landscaping projects to *help prevent new invasions*.
-  Immediately discontinue the sale of any Black List plant species to *help KISC and partners eradicate target plants currently taking over Kauai's forests*.
-  Over the course of two years, stop the sale and propagation of any Phase Out List plant species to *help reduce their continued spread*.

The Black List

The Black List is comprised of 39 plant species that are actively being controlled by one or multiple agencies on island. These plants are managed or removed from federal, state, county, and/or private land. Some of the plants on the Black List are candidates for complete eradication from Kauai. The sale or use of any plants on the Black List will immediately discontinue at the commencement of a business's Endorsement. Any Kauai residents with Black List plants in their yard are encouraged to have them removed.



Black List plant - Ivy Gourd (*Coccinia grandis*) infestation.

Ailanthus altissima

Tree of Heaven

Origin: Native to China

Impact: Forms dense thickets of 80ft tall trees. Known to displace native vegetation and produce root sprouts with extensive root systems, making it difficult to control. Roots produce chemicals in soil that make habitat undesirable for other plants to grow. All populations that were detected by KISC are being eradicated by KRCP.



Agency Controlling: KRCP, KISC

Please report any sightings of this plant to KISC at 808-821-1490

Alstonia macrophylla

Indian Devil Tree

Origin: Native to Southern Asia

Impact: Indian Devil is a tall tree with wind-dispersed seeds, and a rapid maturity rate. It aggressively spreads through the forest and disturbed areas. If foliage is consumed by animals, it can be toxic.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Angiopteris evecta

Mules Foot Fern

Origin: Native to South Pacific Islands & Eastern Australia

Impact: This is a long lived tree fern that produces billions of spores in its lifetime. Spores can spread long distances by wind, and the plant also spreads by rhizomes. Mules Foot Fern is aggressive in growth habit, and easily displaces native species, while quickly taking over watersheds. Mules Foot Fern is beginning to colonize moist habitats across Kauai, especially on the north shore and east side.



Agency Controlling: KISC, TNC, DLNR

Please report any sightings of this plant to KISC at 808-821-1490

Arundo donax

Giant Reed

Origin: Native to the Mediterranean

Impact: Giant Reed is a clumping grass that thrives in stream beds and riparian areas. It aggressively spreads by rhizomes, growing up to 20' tall. It can form impenetrable thickets, reducing water flow, and native water bird habitat. This plant is also fire-adapted, making it able to easily spread fires. Giant Reed is currently found invading waterways on the west side of Kauai.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Buddleja asiatica

Dog Tail

Origin: Native to the East Indies

Impact: Dog Tail colonizes disturbed areas, riparian areas or open woodlands and has proven to be one of the worst weeds for forestry managers in New Zealand. In Hawaii, it has naturalized in mesic to wet areas from 300'-4,000'. On Kauai, this plant can be found in the central and northwest areas of the island.

Agency Controlling: KRCP



Buddleja davidii

Orange Eye Butterfly Bush

Origin: Native to China and Japan

Impact: This plant forms dense thickets on disturbed or compacted soil with numerous wind dispersed seeds that travel long distances. Orange Eye Butterfly Bush is sparingly naturalizing in higher elevations on Kauai, including Kokee State Park.

Agency Controlling: KRCP



Buddleja madagascariensis

Smoke Bush/Butterfly Bush

Origin: Madagascar

Impact: Smoke Bush is an aggressive sprawling shrub that is well suited to a wide variety of climates where it forms impenetrable thickets. It crowds out and smothers native vegetation. When dried, it can cause throat allergies and coughing, nose swelling and eyelid blisters. A large population of this plant can be found in Kokee and has been occasionally cultivated in yards.



Agency Controlling: KRCP

Cissus nodosa

Grape Ivy

Origin: Native to Indonesia & Malaysia

Impact: A large aggressive vine that grows quickly, strangling and smothering anything in its path. Grape Ivy could easily dominate a forest canopy. It spreads by bird dispersed seeds as well as vegetatively.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Cissus verticillata

Seasonvine/Princess Vine

Origin: Native to South & Central America

Impact: This is a woody vine with thick and tough stems, that quickly blankets forest canopies and restricts plant growth. Seasonvine is both an agricultural and environmental weed, that spreads vegetatively by cuttings, as well as by bird dispersed seeds. It grows aerial roots that will dangle until they reach the ground. Individual populations exist on the south shore of Kauai.

Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490



Clerodendrum macrostegium

Velvet Leaf

Origin: Native to Philippines

Impact: This is a large shrub, growing up to 20' tall with foliage growing up to 1' large. It forms dense, tall thickets, dominating both the under-story forest floor as well as the upper canopy. Seeds are bird dispersed, and Velvet Leaf also spreads by root, forming monocultures.

Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490



Coccinia grandis

Ivy Gourd

Origin: Native to Africa, India, and Asia

Impact: This is an aggressive vine that climbs and smothers forest canopies as well as power lines. It grows rapidly from seed and by roots. Seeds can be widely dispersed by both birds and rodents. Ivy Gourd roots descend deep into the ground and grow extremely thick in diameter, making it very difficult to control. Ivy Gourd infestations are found on some north shore properties, as well as in Nawiliwili.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Cortaderia spp.

Pampas Grass

Origin: Native to South America

Impact: Pampas Grass is a giant ornamental grass that grows up to 10' tall, and grows 3' long flowers that produce thousands of seeds. Seeds are wind-borne and the grass also spreads vegetatively in clumps, crowding out native plant species. It has a wide habitat range, invading areas from sea level to 4000' elevation. Pampas Grass was eradicated from a site in Kokee, as well as Lihue.



Agency Controlling: KISC - Eradicated from known locations

Please report any sightings of this plant to KISC at 808-821-1490

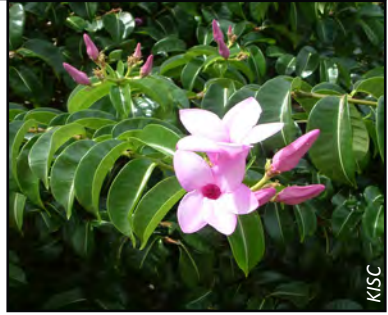
***Cryptostegia
madagascariensis***

Rubbervine

Origin: Native to Madagascar

Impact: This woody and aggressive vine is highly sought after because of its pretty flowers. However, it has the ability to smother anything in its path with its sprawling branches. Rubbervine also is extremely toxic. The white milky sap can cause contact

dermatitis, and when the sap dries into dust, inhalation of the dust can cause swelling of the eyes, nose, and throat. The leaves of the plant are toxic to livestock if consumed. Rubbervine is known to be growing on some private residences on Kauai, and owners are encouraged to contact KISC to have it removed.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Derris elliptica

Tubaroot/Poison Vine

Origin: Native to Southeast Asia and the Southwest Pacific islands

Impact: In Hawaii, this nitrogen fixing plant or scrambling shrub has been known to form a dense canopy that smothers vegetation, fences, forest canopies, pastures, and farm land.

Island wide eradication of this species on Kauai may still be possible and efforts are underway to understand the extent of its distribution on the island.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Falcataria moluccana

Albizia

Origin: Native to Papua New Guinea & Solomon Islands

Impact: Albizia is recognized as one of the world's fastest growing trees. It drastically changes ecosystems by increasing nitrogen in the soil, facilitating growth of other invasives, and displacing native species. The trees are prolific seeders, spreading by wind, and have an extremely high propagation rate. The trees retain a substantial amount of water in their branches making them extremely brittle and dangerous in wind and storms. Albizia is known island wide with high concentrations just west of Puhi and also on the north shore and in the Wailua Rise area.



Forest & Kim Starr

Agency Controlling: HDOT

Fuchsia boliviana

Bolivian Fuchsia

Origin: Native to South America

Impact: Bolivian Fuchsia is a small tree that develops rapidly into large monotypic stands. In tropical regions where it has been introduced (such as La Réunion or Hawaii), this plant tends to out-compete native plant species.

The dense foliage of Bolivian Fuchsia intercept the light, limiting the development of native under-story species. It is common in Kokee State Park.



Stan Shebs

Agency Controlling: KRCP

Hedera helix

English Ivy

Origin: Native to Europe and Western Asia

Impact: English Ivy is a vine species that naturalizes rapidly. Once established, it forms a dense ground cover that prevents the emergence of almost all herbs and dramatically reduces light levels. This reduction in light levels can weaken trees and cause collapse. English Ivy is rapidly invading forest ecosystems in the mainland United States, leading to a decrease in the diversity of native plant species. English Ivy is found in Kokee and Waimea Canyon State Parks.

Agency Controlling: KRCP



Impatiens sodenii

Shrub Balsam

Origin: Eastern Africa

Impact: Shrub Balsam is a large shrub that was introduced as an ornamental plant. It forms dense stands in the forest that out-compete native vegetation and prevent native plants from germinating. This plant is beginning to naturalize in mesic forests, especially along streams, in Kokee.

Agency Controlling: KRCP



Juncus effusus

Common rush

Origin: Native to Eurasia, and Southern areas of North America

Impact: A rush commonly used in water gardens, sometimes sold as a “spiralis” variety, where the stems form a cork screw shape. Common Rush is a high and low elevation invader of wetland and bog areas, but known to invade pasture land and well drained areas. It’s seeds are often spread by humans along trails, and can persist in the soil for up to 10 years.



Agency Controlling: KRCP, DLNR, KISC

Please report any sightings of this plant to KISC at 808-821-1490

Ligustrum sinense

Chinese Privet

Origin: Native to China

Impact: This rambling bush will dominate the under-story forest floor, crowding out native species, and forms dense thickets. The foliage is toxic if consumed by humans or livestock. Chinese privet has bird dispersed seeds and also spreads vegetatively. It is currently being controlled in Kokee.



Agency Controlling: KRCP

Lonicera japonica

Japanese Honeysuckle

Origin: Native to Eastern Asia

Impact: Japanese Honeysuckle is a shrubby vine that can smother small trees and shrubs. It can form a thick layer along the forest floor, rapidly climbing into the canopy. This plant is a dominant competitor in some native forest areas in Kokee and has also sporadically naturalized elsewhere on Kauai.



Agency Controlling: KRCP, DLNR

Macaranga mapp

Bingabing

Origin: Native to Philippines

Impact: This is a tall plant growing up to 30' tall, with 2' large leaves. It was cultivated in Hawaii for ornamental purposes. Bingabing spreads by birds, as well as vegetatively. It forms dense monotypic stands in forests, and disturbed areas. Its huge leaves shade out the forest under-story, inhibiting the growth of any native ground covers or shrubs.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Miconia calvescens

Miconia

Origin: Native to South & Central America

Impact: This fast growing 50' tall tree was introduced to Hawaii for ornamental purposes, and is one of the worst invasive species in Hawaii. One tree can produce over 8 million tiny seeds per year, that have a seed bank viability of over 20 years. Seeds are spread by wind, birds, and people. Miconia trees have extremely shallow tap roots, making them a major erosion threat. Miconia forms monocultures, and shades out the entire under-story of a forest. Miconia is only known to be in the Wailua Homesteads and Wailua State Park areas.



Agency Controlling: KISC, DLNR

Please report any sightings of this plant to KISC at 808-821-1490

Morella cerifera

Wax Myrtle

Origin: Native to Southeastern areas of North America

Impact: This is an evergreen shrub or small tree that spreads vegetatively by underground runners as well as by seed dispersal through birds. Wax Myrtle is a fire hazard and forms dense impenetrable thickets in the forest. It is also known to dominate agricultural lands and pastures.



Agency Controlling: KISC

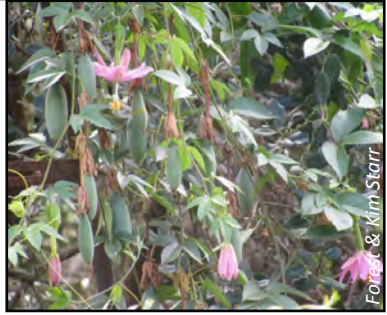
Please report any sightings of this plant to KISC at 808-821-1490

Passiflora tarminiana

Banana poka

Origin: Native to Central America

Impact: This is a vine that can rapidly reach and smother forest canopy. It suppresses native species regeneration and strangles and shades out under-story plants. Banana Poka has become extremely invasive in Kokee.



Agency Controlling: Kokee Community

Pennisetum setaceum
(*Cenchrus setaceus*)

Fountain Grass

Origin: Native to Africa

Impact: This grass is known to invade everywhere from grasslands to bare lava flows. It is highly aggressive and grows in clumps that produce airborne seed heads. Fountain Grass is fire adapted, making it capable of spreading fire quickly. Fountain Grass is known to be invading in the Hanapepe area and efforts are underway to determine where else it has become established.



Agency Controlling: KISC, DLNR

Please report any sightings of this plant to KISC at 808-821-1490

Pereskia aculeata

Barbados Gooseberry

Origin: Native to South America

Impact: This is a woody and climbing shrub that grows spines on both the stems and fruits. It forms large impenetrable clumps. Barbados Gooseberry seeds are bird dispersed, and it also spreads vegetatively. It is known to grow up into the forest canopy and completely smother trees.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Piper auritum

False Kava

Origin: Native to South & Central America

Impact: False Kava is a large shrub plant that grows into dense thickets. It can reproduce from every part of the plant, making it very difficult to control. Its seeds are spread by birds, but it also spreads from fragments, cuttings, and vegetatively. It was introduced to Hawaii because it was thought to be Awa, a plant important to Hawaiian culture. However, False Kava contains no medicinal properties. False Kava patches have been found growing in residential areas on the north shore, as well as the east side of Kauai.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Prosopis juliflora

Long Thorn Kiawe

Origin: Native to Africa

Impact: Long thorn Kiawe is a cousin to common Kiawe, however its thorns grow much longer than the common, reaching up to 4" long. The pointed tips of Long Thorn Kiawe can cause persistent and painful bruising and swelling. It thrives in coastal environments, therefore threatening beach access. Long Thorn Kiawe is currently found on the west side of Kauai near PMRF.



Agency Controlling: KISC

Please report any sightings of this plant to KISC at 808-821-1490

Psidium cattleianum

Strawberry Guava

Origin: Native to Atlantic coast of South America

Impact: This tree has highly viable seeds that are spread by feral pigs and fruit eating birds. It tolerates a wide range of habitats and environmental conditions. It is a fast growing tree and bears a substantial amount of fruit, with each fruit consisting of 25-70 seeds. It is a hardy plant that grows rapidly and crowds out native species. Forming monocultures and very difficult to control, this is one of the worst invaders in Hawaii. Strawberry Guava is currently one of the most dominant invasive species growing island-wide on Kauai.



Agency Controlling: KRCP, TNC, HDOA, DLNR

Pyracantha angustifolia

Narrow Leaf Firethorn

Origin: Native to Asia

Impact: Narrow Leaf Firethorn is a thorny shrub that is naturalizing in Hawaii. It is considered a significant invasive species in South Africa. It has sharp spines on its stems and branches and forms thickets in forests. This plant is currently naturalized in Kokee and Waimea State Park on Kauai.



Agency Controlling: KRCP

Rosa laevigata

Cherokee Rose

Origin: Native to Asia

Impact: Cherokee Rose is an aggressive climbing shrub with hooked prickles. It competes with native vegetation and makes walking through the forest difficult. This plant is currently found in Kokee on Kauai.



Agency Controlling: KRCP

Schefflera actinophylla

Octopus/Umbrella Tree

Origin: Native to Australia & New Guinea

Impact: This tree can grow up to 40' tall and tolerate a wide range of habitats. It grows extremely fast and spreads by birds dispersing seeds as well as vegetatively. Seeds of this plant can germinate in the crotches of other tree species, where it grows parasitically until the roots reach the ground, effectively strangling the host tree. This plant is a major invader in Hawaii, and has naturalized throughout Kauai.



Agency Controlling: DLNR

Senecio madagascariensis

Fireweed

Origin: Native to Madagascar & South Africa

Impact: This small, herbaceous plant grows only about 2' tall, but is extremely hard to control and is a highly damaging agricultural weed. Each plant produces up to 30,000 airborne seeds per year and rapidly invades disturbed areas as well as pastures. If flowers are ingested by livestock, it causes liver failure and death. Fireweed has been eradicated from the only known site near halfway bridge on the south side.



Agency Controlling: KISC, HDOA - Eradicated from known locations

Please report any sightings of this plant to KISC at 808-821-1490

Solanum torvum

Turkey Berry

Origin: Native to North, Central and South America

Impact: Turkey Berry invades a wide range of habitats, such as pastures, crop fields, roadsides, disturbed areas and forest clearings, where it competes with native plants for moisture, light and nutrients. This plant contains both agricultural and environmental impacts.

Agency Controlling: KISC , HDOA

Please report any sightings of this plant to KISC at 808-821-1490



Sphaeropteris cooperi

Australian Tree Fern

Origin: Native to Eastern Australia

Impact: This tree fern spreads by tiny wind-borne spores that can travel more than 7 miles from one plant. It rapidly colonizes and forms monotypic stands, displacing native under-story species. Australian Tree Fern was formerly widely cultivated, and now controlled in upper elevation forests on Kauai. It currently invades Wainiha Valley, Kokee State Park, and is widespread throughout Wailua Homesteads.

Agency Controlling: TNC



Syzygium cumini

Java plum

Origin: Native to Indonesia & Malaysia

Impact: This plant can grow up to 15'-30' tall and forms dense foliage cover, preventing the growth of native lowland forests. It is occasionally cultivated and has naturalized primarily in mesic valleys to disturbed

mesic forests from 130'-4000' elevation, where its berries are spread by birds and mammals. It is documented on all of the main islands except Niihau and Kahoolawe, and is common throughout Kauai.



Forest & Kim Starr

Agency Controlling: DLNR

Tibouchina spp.

Cane/Glory Bush

* *Exemption T. multiflora*

Origin: Native to South America

Impact: Tibouchina spreads by bird dispersed seeds, as well as vegetatively. It has also been widely spread by way of ornamental use. These plants are prolific seeders and form dense stands in pasture lands as well as disturbed areas.



Forest & Kim Starr

Agency Controlling: KISC, DLNR, TNC

Please report any sightings of this plant to KISC at 808-821-1490

Origin: Native to North America

Impact: Cattail is a wetland rush that invades waterways, taro patches, and native wetlands. It rapidly and aggressively crowds out native species and impedes water flow. One flower can produce over 250,000 airborne seeds. This plant also spreads vegetatively. Cattail is known to be invading stream beds and taro patches island wide.



Agency Controlling: KISC, USFWS

Please report any sightings of this plant to KISC at 808-821-1490

Agencies Defined

- DLNR - Department of Land and Natural Resources
- HDOA - Hawaii Department of Agriculture
- HDOT - Hawaii Department of Transportation
- KISC - Kauai Invasive Species Committee
- KRCP - Kokee Resource Conservation Program
- TNC - The Nature Conservancy
- USFWS - United States Fish and Wildlife Service



Forest & Kim Starr

Black List plant - Miconia (*Miconia calvescens*) infestation.



MISC.

Black List plant - False Kava (*Piper auritum*) infestation.

The Phase Out List

The Phase Out List is comprised of 15 plant species that are known to be widespread and invasive in various habitats in Hawaii. These plants are known to be both garden and environmental weeds. While some of these species are not agency controlled, they are very destructive to Kauai’s native ecosystem. Over the course of two years, plants on this list will be phased out of nursery stock and planned landscape designs. The sale or use of any plants on the Phase Out List will cease at the end of two years, and the current Phase Out List plants will be retired to the Black List. Residents with Phase Out List plants in their yard are encouraged to remove them and replace with “pono” alternatives.



Forest & Kim Starr

Phase Out List plant - Blue Sky Vine (*Thunbergia laurifolia*) infestation

Asclepias curassavica

Tropical Milkweed

Origin: Native to South America

Impact: This is a disturbance adapted weed that contains a milky sap that is poisonous if ingested and toxic to skin. It is a concern for agricultural and dry, low-mid elevation areas. Tropical Milkweed is currently known to be naturalizing in Waimea canyon on Kauai.



Pono Alternatives: *Hoya multiflora*, *Pseuderanthemum spp*, *Pipturus albidus*

Asparagus setaceus

Asparagus Fern

Origin: Native to South Africa

Impact: This plant is a vining herb with a woody base and spines. It is considered a serious environmental weed in Australia, where it threatens lowland and coastal ecosystems. Berries are dispersed by birds. It has been sold on the island as an ornamental plant and can be found escaping landscaped areas.



Pono Alternatives: *Microlepia strigosa*

Clusia rosea

Autograph Tree

Origin: Native to Southeast areas of North America

Impact: Autograph Tree is widely planted in Hawaii and is extremely hardy, growing in a wide range of habitats. Seeds are bird dispersed and can germinate in the notch of other trees, sending down aerial roots, and parasitically strangling the host tree. It is a large, densely-foliated tree that crowds out all other plants, shading out the under-story of a forest. It is known to be highly dominant in the upper Limahuli preserve and elsewhere on Kauai's north shore.

Pono Alternatives: *Guaiacum officinale*, *Ficus elastica*, *Coccoloba uvifera*



Forest & Kim Starr

Cyperus involucratus

Umbrella Sedge

Origin: Native to Eastern Africa

Impact: This is an aggressive and weedy semi-aquatic plant that spreads vegetatively as well as by seed. It is often seen on Kauai crowding out waterways or riparian environments. Umbrella Sedge seeds have a high germination rate, and disperse easily through waterways.

Agency Controlling: DLNR, FWS

Pono Alternatives: *Cyperus javanicus*, *Heteropogon contortus*, *Dianella sandwicensis*, *Carex wahuensis*



Forest & Kim Starr

Erigeron karvinskianus

Mexican Daisy

Origin: Native to Central America

Impact: Mexican Daisy grows vigorously and spreads by rhizomes. It tolerates a wide range of environmental conditions, and is a sprawling herbaceous weed to both conservation areas and gardens. It responds well to disturbed areas and will dominate the under-story of a forest floor. Is a serious invader of native forests in Kauai in Kokee State Park and adjacent forest preserves.

Agency Controlling: KRCP

Pono Alternatives: *Cuphea hyssopifolia*, *Plumbago zeylanica*, *Bacopa monnieri*



Ficus microcarpa

Chinese Banyan

Origin: Native to Indonesia and tropical Asia

Impact: This tree has been widely cultivated by the horticulture industry and is now found growing in disturbed forest areas as well as urban areas. Chinese Banyan seeds are easily dispersed by birds or pigs. The seeds germinate quickly and can grow almost anywhere, including on other trees. Seedlings on a host tree send aerial roots to the ground, eventually strangling the host tree. It is known to be parasitic island-wide.

Pono Alternatives: *Ficus elastica*, *Ficus cordata*



Hedychium gardnerianum

Kahili Ginger

Origin: Native to India

Impact: Kahili Ginger spreads vegetatively by rhizomes as well as by fruit and seed eating birds. Each flower produces roughly 250 seeds, and seeds have a highly successful germination rate. It is an escaped ornamental plant that rapidly forms dense monocultures in the forest. This plant is highly successful at overcrowding native forests especially in wet areas of the island. Kahili Ginger is widespread and dominant in Kokee as well as some areas in Wailua.



Agency Controlling: KRCP, DLNR, TNC

Pono Alternatives: *Dichorisanthra thyrsoiflora*, *Etilingera venusta*, *Capparis sandwichiana*, *Tapeinochilos ananassae*, *Polianthes tuberosa*

Hiptage benghalensis

Hiptage

Origin: Native to South China and tropical Asia

Impact: Hiptage spreads widely by wind-dispersed seeds. It will out-compete and smother native vegetation and form monotypic stands in forests as well as agricultural lands. It also forms impenetrable thickets, and greatly impacts the functions of native ecosystems. Populations of this plant are currently known on the south and east sides of Kauai.



Pono Alternatives: *Gardenia thunbergia*, *Mussaenda erythrophylla*, *Stemmadenia litoralis*

Kalanchoe pinnata
(*Bryophyllum pinnatum*)

**Air Plant,
Cathedral Bells**

Origin: Native to Southern Africa and Madagascar

Impact: A small succulent herb that reproduces by seed as well as producing plant-lets along the edges of leaves. Air plant is toxic to livestock if ingested and forms dense stands in disturbed, dry areas. It is abundant in dry areas (eg. Na Pali coast) and widely distributed throughout Kauai.



Pono Alternatives: *Crassula ovata*, *Kalanchoe gracilipes*, *Kalanchoe tomentosa*

Lantana camara

Lantana

Origin: Native to Central America

Impact: Lantana forms dense thorny and impenetrable thickets in pastures and forest under-story, where it quickly becomes the dominant species. Foliage and berries are toxic to livestock and pets. Seeds are spread by birds, and are highly viable. It is an escaped ornamental plant that rapidly displaces native species in the forest and decreases biodiversity. Known to be dominant in forests and drylands island-wide, with high concentrations in Kokee and Waimea.



Agency Controlling: KRCP, DLNR, TNC

Pono Alternatives: *Cuphea hyssopifolia*, *Caesalpinia pulcherrima*,

Melia azedarach

Pride of India, Chinaberry Tree

Origin: Native to Asia, Australia and the Solomon Islands

Impact: This is a small tree that thrives in disturbed areas, forests, as well as riparian areas. It holds many defense mechanisms against pests, diseases, and other plants and forms dense thickets and displaces native species. When Pride of India leaves fall on the ground, they can significantly alter the soil chemistry, making it undesirable for other plant species to grow.



Pono Alternatives: *Bixa orellana*, *Brownea coccinea*, *Bauhinia x blakeana*

Merremia tuberosa

Wood Rose

Origin: Native to Central America

Impact: Wood Rose is a climbing vine that overgrows and smothers forest canopies. It spreads vegetatively as well as by seed. It's seeds are toxic to humans and animals if ingested. It grows rapidly and is known to be invasive on the roadside as well as in forests island-wide.



Pono Alternatives: *Strongylodon macrobotrys*, *Ipomoea horsfalliae*, *Telosma cordata*

Setaria palmifolia

Palm Grass

Origin: Native to China and Southeast Asia

Impact: Palm Grass spreads by seed dispersal through birds and also vegetatively by rhizomes. It colonizes the forest floor and shades out other under-story growth. It tolerates a wide range of conditions and forms monocultures. It responds well to disturbance, making it difficult to remove. Populations of this plant are found on the north shore of Kauai.



Forest & Kim Starr

Agency Controlling: DLNR, KRCP

Pono Alternatives: *Spathiphyllum wallisii*, *Spathoglottis unguiculata*, *Zamia furfuracea*, *Calathea majestica*

Spathodea campanulata

African Tulip

Origin: Native to Western Africa

Impact: African Tulip is a highly sought after ornamental tree, growing up to 75' tall. It is both an environmental and garden weed. It is a highly prolific seeder, with wind dispersed seeds. It spreads rapidly, crowding out native forests, and forms monotypic stands. African Tulip has escaped many gardens and is naturalizing throughout Kauai.



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Agency Controlling: TNC

Pono Alternatives: *Cassia x nealiae*, *Cordia subcordata*

***Thunbergia grandiflora*,
*Thunbergia laurifolia***

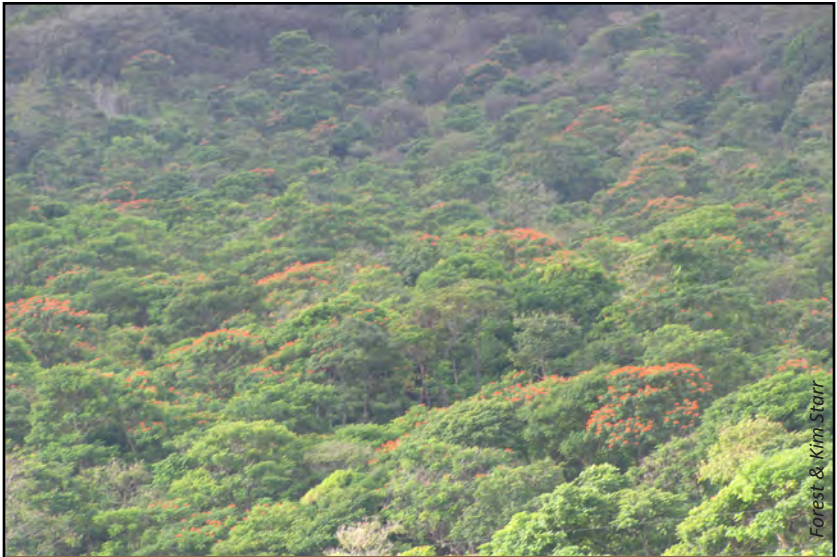
**Blue Sky Vine,
Bengal Clock Vine**

Origin: Native to China and Southeast Asia

Impact: This is a highly aggressive ornamental vine, that is both an environmental and garden weed. *Thunbergia* escapes gardens by seed, roots, cuttings, or by spreading. This plant is highly sought after for its flowers and ability to rapidly grow but, it will quickly blanket any other plants in its path, shading both the over and under story of a forest. It is known to be highly invasive on roadsides island-wide, and in forested areas adjacent to residential areas.



Pono Alternatives: *Thunbergia myorensis*, *Stephanotis floribunda*, *Strongylodon macrobotrys*



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Phase Out List plant - African Tulip (*Spathodea campanulata*) infestation



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Phase Out List plant - Kahili Ginger (*Hedychium gardnerianum*) infestation

Resources

College of Tropical Agriculture and Human Resources:

www.ctahr.hawaii.edu

Coordinating Group of Alien Pest Species: www.cgaps.org

Federal and State Noxious Weed Lists:

<http://plants.usda.gov/java/noxious?rptType=State&statefips=15>

Hawaii Department of Agriculture: <http://hdoa.hawaii.gov>

Hawaii Department of Agriculture, Plant Pest Control:

<http://hdoa.hawaii.gov/pi/ppc/new-pest-advisories/>

Hawaii Early Detection Network: www.reportapest.org

Hawaii Ecosystem at Risk Project: www.hear.org

Hawaii Invasive Species Council: <http://dlnr.hawaii.gov/hisc/>

Invasive Species Specialist Group: www.issg.org

Kauai Invasive Species Committee: www.kauaiisc.org

Plant Pono: www.plantpono.org

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*Together, we can protect the forest from our
backyards.*

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