



# WHAT'S INSIDE?

# Kia'i Moku

guarding the island

Volume 8 Issue 1

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*"A goal without a plan is just a wish"*

*-unknown*

## KISC EXPANSION

*Bill Lucey, KISC Manager*

For the first time since KISC's inception the team is fully staffed. In 2015 two new positions were added; a fully dedicated outreach coordinator and an early detection botanist. KISC now has eleven full-time employees addressing the complicated task of invasive species management. The next step is rewriting our organization's strategic plan to provide guidance for our actions over the next five years. With new invasions such as coffee borer and coconut rhinoceros beetles just off our shores on Oahu we must adapt to changing priorities and new management methods quickly. Having a full team of responders has created the capacity to do so.

With more people we can also push farther on our current targets. As an example, KISC is partnering with the US Fish and Wildlife Service to bring an international panel of experts to the island in August. This team will look at mongoose management efforts pacific-wide and offer recommendations for a population assessment and biosecurity plan for Kauai.

With a full staff, we can also bring some of

our targets to a successful conclusion. The little fire ant is known to occur only at one location in northern Kauai. Partnering with the Hawaii Ant Lab, MISC, the KISC crew and HDOA's Craig Kaneshige, we have brought this pest down to almost undetectable levels. In addition, KISC is partnering with PMRF, Tetra Tech and Pono Pacific, to eliminate all the adult Long Thorn Kiawe from the base; this coupled with a partnership with Garden Island Racing to remove LTK along the racetrack will eliminate 90% of this pests range on Kauai. It is crew strength and partnerships that lead to successful eradications. It took 15,000 working-hours to rid Kauai of naturalized coqui frogs.

Despite these successes, we must maintain vigilance to prevent reintroductions. Coqui frogs are constantly reintroduced to the island via plant shipments from the Big Island, fireweed can arrive in truck tires and little fire ant colonies can live inside something as small as a Kukui nut. The job is large, but Kauai has the advantage of small size, a deep channel separating us from the rest of the island chain and thousands of aware citizens helping to report and control these unwanted visitors.



Find the Strategic Planning Meeting Dates inside

# KISC funders and partners

A & B Properties  
County of Kaua'i  
Coordinating Group of Alien Pest Species  
DLNR - Division of Aquatic Resources  
DLNR - Division of Forestry and Wildlife  
DLNR - State Parks  
Garden Island Resource Conservation and Development  
Grove Farm  
Hawai'i Department of Agriculture  
Hawai'i Department of Transportation  
Hawai'i Invasive Species Council  
Hui o Laka/Kokee Museum  
Invasive Species Committees  
Kaua'i Albatross Network  
Kaua'i Conservation Alliance  
Kaua'i Coqui Frog Working Group  
Kaua'i Department of Water  
Kaua'i Farm Bureau  
Kaua'i Native Plant Society  
Kaua'i Westside Watershed Council  
Kokee Resource Conservation Program  
Kukuiula Development, Inc.  
National Tropical Botanical Garden  
Pacific Cooperative Studies Unit  
Pacific Missile Range Facility  
Private citizens  
Research Corporation of the University of Hawai'i  
UH Rural Development Project  
Sea Grant  
The Nature Conservancy Hawai'i  
University of Hawai'i College of Tropical Agriculture and Human Resources  
US Fish and Wildlife Service  
US Geological Survey PBIN  
USDA Forest Service  
USDA Natural Resource Conservation Service  
USDA-APHIS-PPQ  
USDA-APHIS-WS

## Ho'omanawanui (be patient and work with what you have)

**Bill Lucey**  
Project Manager



I would like to welcome our new employees to the KISC family. With these new folks our ability to help guard Kauai from new biological invasions has become more effective and diversified.



**Rachel Smith, Outreach Specialist**  
joined KISC January 2015



**Nathan Lagundino, Field Crew**  
joined KISC January 2015



**Vincent Vea, Field Crew**  
joined KISC July 2014



**Kelsey Brock, Early Detection Botanist**  
joined KISC April 2015

## KISC Strategic Planning Meetings

KISC will be hosting Strategic Planning meetings this summer to develop the first KISC Strategic Plan. Please contact Tiffani Keanini ([tkeanini@hawaii.edu](mailto:tkeanini@hawaii.edu)) if you would like join any strategic planning committee. The strategic planning committee meetings are scheduled as followed:

- **Terrestrial Plants Strategic Plan Meeting** - June 30th
- **Invertebrate & Vertebrate Strategic Plan Meeting** - September
- **Mongoose Strategic Plan Meeting** - August (See *Mongoose update for details*).
- **Aquatic Strategic Plan Meeting** - July

# Mongoose Update

A mongoose summit meeting is planned for this year with predator control experts from US Fish and Wildlife and Amami Oshima Island in Japan.



KISC received 11 mongoose sighting reports in the first 4 months of 2015. We have been currently working with the USFWS to refine our interview form and the credibility rating for each sighting.

The mongoose summit will be focused on developing a plan for detection and introduction prevention of mongooses on Kauai and our unique situation. Improving biosecurity at our ports of entry is a main focus of our strategic plan. "Trapper Pat" Gmelin attended a tour of the new Nihoku predator proof fence project at Kilauea Point National Wildlife Refuge, and we hope to use similar techniques to prevent future mongoose hitchhikers.

We have also been using game cameras along with trapping at sighting locations but have not yet gotten a picture of these elusive animals. We have documented many of Kauai's other animals raiding the mongoose bait including wild pigs (*top photo*), feral cats (*bottom photo*), wild chickens, rats, and loose dogs.



## ***Congratulations Michelle Clark!***

Michelle Clark, USFWS, was recognized at the 2015 **Hawai'i Invasive Species Awareness Week Award Ceremony** as the **Kaua'i County's MVP**. Michelle has been a strong local advocate in the mongoose detection and prevention efforts for Kauai. Michelle has initiated a review of mongoose prevention, detection and control issues for Kauai and networked with state, federal, and private organization staff to form a working group. Her efforts have led to an international summit on mongoose management bringing experts and knowledge from around the world to the benefit of both Kauai and statewide efforts. This meeting will generate a monitoring and prevention plan that will greatly increase the chances that Kauai remains mongoose free. Congratulations Michelle!



***2015 HISAW Kaua'i County's MVP***



# Earth Day for the Keiki

## Encouraging Conservation Stewardship through Outreach and Education

*Rachel Smith, KISC Outreach Specialist*

As the demand for conservation and invasive species work grows in Hawaii, the importance of outreach and awareness continues to be an influential component. The key to success in conservation is public participation. This is not just true for adults and voting members of the public, but also for the youth of Hawaii. I have heard many adult residents on Kauai explain the forest as they remember it when they were young. Most people do not have memories of invasive species occupying the natural areas they are so largely encompassing today. Things have changed relatively quickly. Therefore, if we are looking to the future, as so often the field of conservation does, then it is children that we need to focus outreach to.

Although Hawaii makes up less than 0.2% of United States Land mass, more than 25% of the nations endangered species reside in Hawaii (KRCP). There are over 1,400 native plants in Hawaii, and at least 200 are critically endangered, meaning there are less than 50 individuals left in the wild (DLNR). According to the American Bird Conservancy, 113 native bird species occupied Hawaii when Europeans first arrived, and 32 of the 42 remaining endemic bird

species, are federally listed. This is a critical time to educate Hawaii's youth about conservation and protection of the native forests. These natural areas need to be sustained for the future generations to enjoy and depend on. Similarly, it is important the forest is able to depend on us and future generations to help preserve its unique and delicate system.

Conservation outreach and education has been rapidly expanding on Kauai. There are numerous valuable initiatives on the State, Federal, and NGO levels that offer teachers and parents accessibility to environmental education for all ages. Conservation educators have become available for classroom and scout discussions, as well as for events on any day of the week. In just 2015 alone there have been many great opportunities for children across the island to learn about conservation, in and outside the classroom. Conservation education is a huge asset to Kauai children's' curriculum. It allows them to learn more about their home and why it is so special, but also teaches them about potential higher education and career opportunities.

All of the child based events that KISC has had

the privilege of attending this year, have been excellent opportunities for both KISC outreach staff, to reach varying groups of kids, but also for the children to learn about so many different organizations and their importance on island. One event this year was especially distinguishable, and should be noted as model for future outreach and education to children.

On Wednesday April 22<sup>nd</sup> NOAA staff partnered with PMRF to hold an Earth Day Event for middle school students on the west side of the island. Organized by Jean Souza, Kauai Programs Coordinator and Sanctuary Volunteer Coordinator for NOAA, and Roland Sagum, from PMRF, this event was stellar. Beginning around 8.30, more than 250 students from Waimea Canyon Middle School and Ke Kula Niihau o Kekaha were shuttled onto the PMRF base, on a highly organized schedule, to participate in beach clean ups, as well as a rotation of a dozen interactive and educational booths set up by various government and non-profit partner organizations. The students were also shuttled to the neighboring state managed wetland restoration site, Kawaiete Waterbird Sanctuary, to participate in service learning activities with project manager and Wildlife Biologist, Jason Vercelli. With an appearance and speech by Mayor Bernard Carvalho, highlighting environmental protection being



*Rachel describing Miconia*

everyone's kuleana, lunch donated by sailors from PMRF's Military Support Organization, and educational booths ranging from conservation to climate change to smoking prevention campaigns, this event really gave the middle school kids a well-rounded, informative, and impactful experience.

This exemplary event will hopefully become an annual occurrence, as well as become a template for future events. The students at this event were engaged on multiple levels. Some had even remembered learning about invasive species at a previous event from elementary school. As long as we continue to bring events like the afore mentioned, to all ages of children across the island, we can surmise that the future of Kauai and

its delicate ecosystem will be left to a new generation of well-educated and enthusiastic local environmental stewards.

KISC has recently expanded its outreach program. New and old ideas are finally being given the time to be explored, in order to reach more of the general public on Kauai. It has been made a new objective, to simplify, strengthen, and expand our message. We plan to take our outreach and education to new levels, new classrooms, and new audiences across Kauai. KISC plans to be a part of the initiative to educate Kauai's youth about the importance of conservation. If you are interested in partnering with KISC for any future events, booking outreach staff for your



*Keiki listening to Mayor Carvalho's speech*

classroom, or volunteering for KISC, our doors are open!

Please contact Rachel Smith, Outreach Specialist, at 821.1490 or [kisc@hawaii.edu](mailto:kisc@hawaii.edu)

## COQUI UPDATE



KISC is dedicated in our efforts to keep our island free from coqui frog populations. We work closely with Craig Kaneshige of the Hawaii Dept of Agriculture to investigate all reports of possible coqui frogs that may have accidentally arrived on Kauai through interisland shipping of plants and/or planting materials and supplies.

There was once a large population of coqui in Lawai Valley. In 2012, after years of treatment and monitoring, Kauai was deemed eradicated. One of the ideas that arose out of this project was a large scale outreach program that would inform the general public about coqui frogs and why they are harmful to our island. Since that time, KISC has received between 2 to 5 reports of possible coqui every month. The majority of the reports were confirmed to be a cousin of the coqui- the greenhouse frog.

Greenhouse frogs have been in Hawaii since the early 1990s and can be found on all of the major islands. Adults are smaller (< 1 inch) than coqui (slightly > 1 inch) and a lot quieter. An adult greenhouse frog emits a cricket-like chirping sound that has been measured at 35-45 decibels. Coqui frogs emit a distinct two-tone whistle that has been measured at 80-90 decibels. Physical features that can be used to distinguish between the greenhouse and coqui include the shape of the snout- greenhouse frogs have a pointed snout compared to coqui that have a rounded snout. Also, the toes on a greenhouse frog are long and thin with indistinct footpads, while the coqui frog has short stubby toes with very noticeable footpads that resemble suction cups.

If you see or catch a small frog, please use the following information to help determine whether it is a coqui or green house frog. Information on both frog species can be found on our website [www.kauaiisc.org](http://www.kauaiisc.org) or HDOA's website [hdoa.hawaii.gov/pi/ppc/cm/coqui-information/](http://hdoa.hawaii.gov/pi/ppc/cm/coqui-information/)

You can also contact KISC directly by calling (808) 821-1490 if you suspect you may have a coqui frog in your area or call HDOA at 643-PEST.





**Mule's Foot Fern - *Angiopteris evecta***

Two new locations were discovered this past year, with 115 plants controlled.



**False Kava - *Piper auritum***

Four new locations were discovered this past year, with 947 plants controlled at all locations.



**Turkey Berry - *Solanum torvum***

Controlled in partnership with HDOA, two known populations on-island.

# EARLY DETECTION

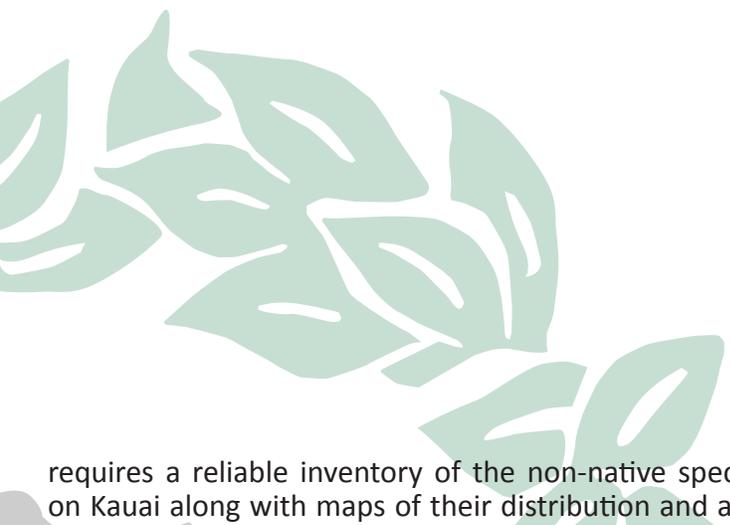
*Kelsey Brock, KISC Early Detection Botanist*

**2015** marks the first year that KISC has employed an Early Detection Botanist to help manage invasive plant species on Kauai and I am very excited and honored to fill this role. I am constantly marveling at the diversity and uniqueness of the native flora and fauna resulting from the geological youth and isolation of the Hawaiian Islands. However, invasive plants in the Hawaiian Islands are quite possibly one of the most complex and dire conservation problems I have ever, and possibly will ever, face in my lifetime. The isolation and uniqueness of Hawaii is precisely what makes plant invasions here so likely, and with more species being introduced each year, new invasions are an inevitable and persistent threat. Historically, attempts to manage invasive plants in Kauai and elsewhere in the world have followed one of two timelines:

- 1) Early Detection: where the species is identified and rapidly controlled before it is widely established.
- 2) Late Detection: where the species becomes widely established before it is recognized as a threat.

The environmental and economic benefits of using an Early Detection strategy are obvious. Attempts to control invasive plants after they are already widespread require exponentially more resources and control efforts are frequently insufficient or are abandoned. The ubiquitous presence of plants such as Strawberry guava (*Psidium cattleianum*), Lantana (*Lantana camara*) and Himalayan ginger (*Hedychium gardnerianum*) is testament to the irreparable ecosystem damage that can be caused by well-established invaders, undoubtedly contributing to the endangerment of many native species in Hawaii. Thus, it's important that we protect the beauty and remaining pockets of native biodiversity on Kauai by detecting and eradicating new invasive plants before they become widespread.

However, because lowland vegetation in Kauai is already comprised mostly of non-native species, we need to learn a lot more about the island's current flora before we can decide which plants are the most immediate threats to native habitats. Therefore, an effective Early Detection program



requires a reliable inventory of the non-native species that exist on Kauai along with maps of their distribution and an assessment of invasive behavior. This requires accurate plant identification and scientifically sound survey methods, which is why I was hired. Put simply, my job is to tackle three very important questions: What non-native plants are on Kauai? Where are they? Are they currently spreading or are likely to spread? With this information and other tools such as the Hawaiian Pacific Weed Risk Assessment (HPWRA) process, KISC can make better decisions about which plants to prioritize for control. Correct identification of each plant is crucial because assessment of a plant's invasive potential is primarily based on how the plant behaved in other locations outside of its native range. Therefore, if the name of the plant is wrong, the weed risk assessment will also be wrong. As plants are incredibly diverse and newcomers may arrive from anywhere in the world, this job will put all of my botanical education and experience to the test. Thankfully, this challenge is made less daunting with the help of the National Tropical Botanical Garden (NTBG), which houses an extensive botanical library, herbarium and live collection comprising plant specimens from across the Pacific and other areas of the world.

Amazingly, KISC as well as other conservation partners including Department of Land and Natural Resources (DLNR) programs, Hawaii Department of Agriculture (HDOA), the Nature Conservancy (TNC), Koke'e Resource Conservation Program (KRCP) and NTBG have already made fantastic achievements on Kauai despite the overwhelming nature of invasive species management. The rapid but lagging advancement of invasion science and awareness coupled with the growing complexity of invasive species management has taxed Kauai's conservationists with tough decision making and constant need to prioritize the allocation of limited resources. I wholeheartedly agree with a bumper sticker I occasionally see around Kauai that reads "a healthy forest is no accident" and regard it as especially applicable to Hawaii's native forests. It is my hope that I can help provide the information necessary to strengthen the foundation for Kauai conservation efforts in the future.



**Miconia - *Miconia calvescens***

308 plants controlled, 21 controlled with HBT.  
1 Mature tree found and controlled with HBT.



**Giant Reed - *Arundo donax***

One new location was discovered this past year, with 136 plants controlled at all locations.



**Ivy Gourd - *Coccinia grandis***

Two new locations were discovered this past year, with 115 plants controlled.

# GAINING GROUND

# LFA UPDATE



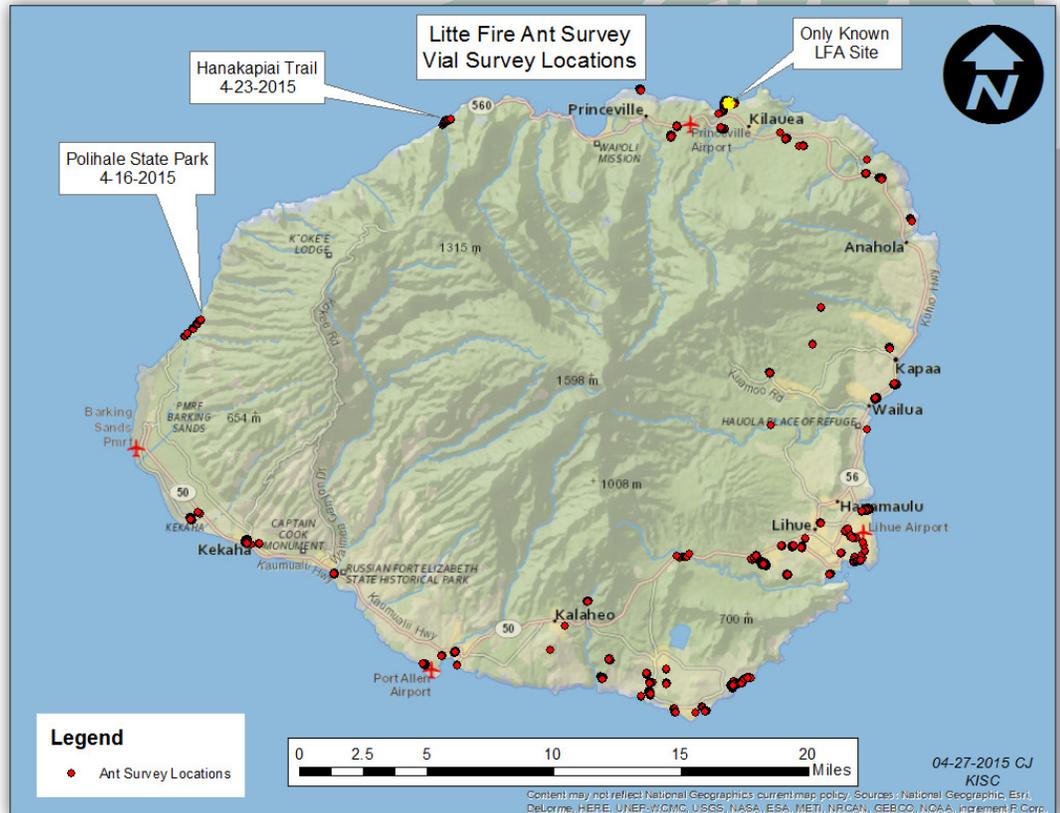
By Cleve Javier, KISC Data Tech

*"Nothing is impossible in this world. Firm determination, it is said, can move heaven and earth. Things appear far beyond one's power, because one cannot set his heart on any arduous project due to want of strong will."*  
-Yamamoto Tsunetomo -

With the completion of Phase I, The Little Fire Ant Partnership continues to move forward. Kauai Invasive Species Committee (KISC), Hawaii Ant Lab (HAL), and the Hawaii Department of Agriculture (HDOA) are determined to succeed in the Little Fire Ant (LFA) Suppression Project in Kalihiwai. In the second phase, the cliff side of the properties are currently being monitored and treated for LFA. This effort is shrinking the spread of the ants and most importantly, keeping LFA off of a popular beach and hiking trails.

In Phase II, we have new tools and new specialists to help in the suppression. The specialists are a great bunch of people from Climb Aloha. These specialists aided in teaching and training the LFA partnership crew members in the art of rappelling, tying various kinds of knots, and maintaining safety. Climb Aloha's crew also rappels and helps by surveying and treating for ants in the most extreme vertical areas, while the Hawaii Ant Lab crew, survey and treat other areas of the cliff side.

With the new tools and specialists aiding the project, we are having a high success rate. Less are being found in the Phase II area every time it is surveyed. The foothold for territory with the ants is an ongoing struggle, but we seem to be gaining



## 2015 LFA Survey locations

ground. Persistently revisiting the project site every 6 weeks, is helping the control of the ants.

While Phase II proceeds, the KISC crew, along with Craig Kaneshige, HDOA, are holding Phase I to isolated hot spots. KISC along with Craig continue to ensure that the ants are not spreading back to the origin of the infestation. To detect any LFA trying to escape the cliff side containment area, hundreds of survey samples are taken on the ground, as well as in the tree tops.

KISC along with Craig Kaneshige survey for little fire ants all around the island of Kauai. They survey nurseries, transfer stations, and also rapidly respond to calls about stinging or biting ants at various sites around the island. The latest rapid response calls took the crew to Polihale State Park, and also to Hanakapiai Trail where no LFA were found. Instead of LFA, the crew found Tropical Fire Ant (*Solenopsis geminate*), a well established species on island that also bites. A swarming ant called Yellow Crazy Ant (*Anoplolepis*

*gracilipes*) was found on Hanakapiai Trail. The Yellow Crazy Ant is also well established on island.

With crews conducting surveys all over the island and the Little Fire Ant Suppression Project currently in operation, KISC and HDOA have not found any other Little Fire Ant population on the island. The partnership appreciates when people call in with reports of stinging or biting ants, because it helps in surveying more than just nurseries and transfer stations. This gives us a broader picture and hopefully a head start to help stop the spread of a new LFA invasion.



**Rappel training for LFA survey and treatment**

**MOST VALUABLE PARTNER:**

**Michelle Montgomery**  
**Hawaii Ant Lab**

Michelle Montgomery has been a steady force in our efforts to control the only known Little Fire Ant infestation on the island of Kauai. Under the direction of Dr. Cas Vanderwoude, Michelle and her team from the Hawaii Ant Lab- Matt Kema, Ersel Hensley, and Trent Hanzawa, has been coming over to Kauai every six weeks to survey and treat for Little Fire Ants. Adam Radford and Aja Akuna from MISC and the crew from Climb Aloha have also assisted the Hawaii Ant Lab on this project, along with Craig Kaneshige of Dept of Ag. Hawaii Ant Lab has been handling infestations of LFA on each of the major islands and Michelle has been at the forefront in the planning, scheduling and execution of eradication efforts. KISC would like to send out a big thank you to Michelle and her awesome crew.

**MAHALO NUI !**

# *Pereskia aculeata*

Rachel Smith, KISC Outreach Specialist

## Species of Concern

*P. aculeata* otherwise known as Barbados Gooseberry, or Leaf Cactus, is a hot topic right now at KISC. This plant grows 2 inch long spines from every part of the plant, including the fruit, so we recently set out on a mission to intercept its path, to prevent it from invading natural areas.

Believed to be an ancestral plant of cacti, this ornamental semi-succulent species is a woody shrub that can climb in to the canopy over 30ft high, forming dense thickets, similar to Bougainvillea. It can potentially invade anywhere from riparian areas, to open woodlands, to rocky and coastal areas. *P. aculeata* can self propagate very easily from the fruit being easily dispersed by birds, or from cuttings. This weed can even sprout roots from a tiny trimming in a compost pile, making it a high priority target for KISC.

In recent months it was brought to our attention that *P. aculeata* was being sold at various nurseries around Kauai, displayed outside of store fronts, or being used as landscape material. KISC and Amanda Skelton with CGAPS/Plant Pono acted fast and sought out the source. We found that a number of nurseries were actively selling it, and even in the nursery setting, had spread from its original pot, and began invading its neighboring potted plants. Alarming, yes, but it was quickly controlled. KISC removed 26 plants total. With some informational flyers describing the damage this plant can cause in natural areas, every nursery manager we approached happily obliged to remove it from their stock and agreed to stop selling it.

It is situations like this that exemplify the importance of invasive species outreach. If left alone, or unidentified, this plant could have

easily spread around the island, increasing the potential for it to escape from a backyard garden.



*P. aculeata* fruit and leaves



*P. aculeata* thorns and leaves

KISC seeks to continue to have positive, working relationships with the nursery and landscaping industry, and greatly commends the industries' willingness to participate in conservation efforts.

If anyone sees this plant and would like it to be removed, please do not hesitate to call KISC, and we will gladly come remove it for free!

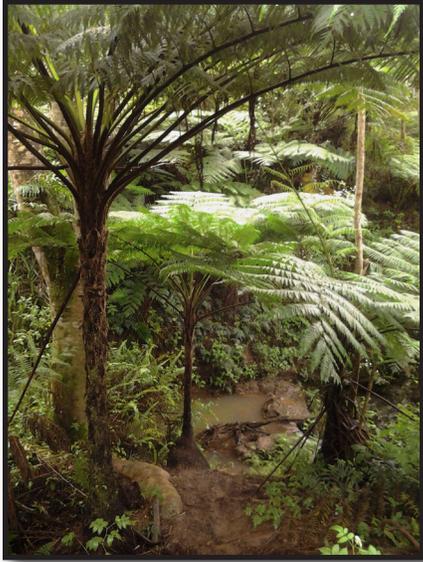


*P. aculeata* growth form



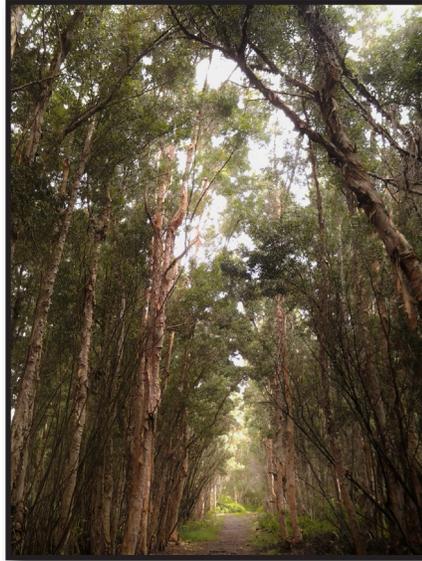
Largest known infestation removed

# NAME THAT INVASIVE



Can you name each of the invasive plants featured in the pictures below?

*Pictures by Mugs.*



Answers: Top Left - Australian Tree Fern  
 (Cyathea cooperi), Middle Left - Potatoe Vine  
 (Dioscorea bulbifera), Left Bottom - Bingbing  
 (Macaranga mappo), Paperbark Tree (Melaleuca  
 quinquenervia), Banyan tree (Ficus sp.)

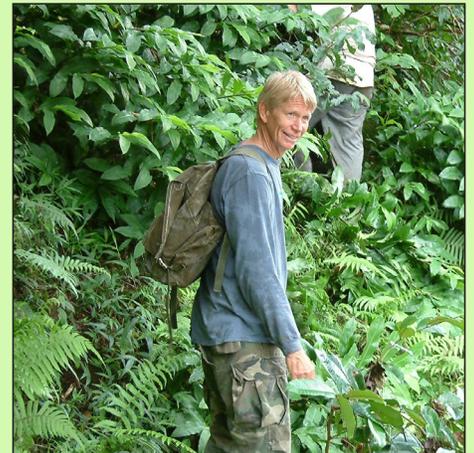
**Aloha kākou !**

## **KISC Executive Committee**

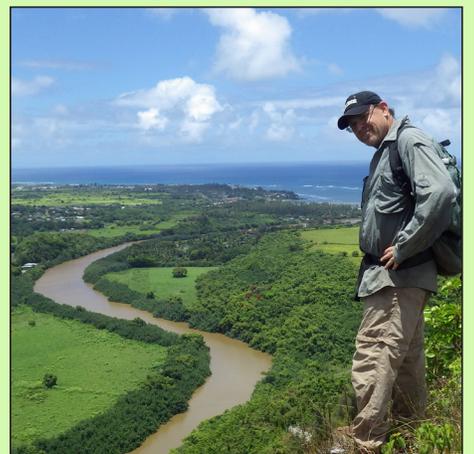
The KISC Executive committee was formed at the 2014 KISC annual meeting. Welcome to our team, we look forward to developing KISC's future together!



**KISC Committee Chair**  
 Adam Williams, DOFAW



**Past KISC Chair**  
 Allan Reitow, TNC



**KISC Chair Elect**  
 Tim Flynn, NTBG

# Kia'i Moku - Guarding the Island

is the official newsletter of the Kaua'i Invasive Species Committee.

**Design/Editor:** Tiffani Keanini

**Contributors:** Bill Lucey, Ray Kahaunaele, Kelsey Brock, Rachel Smith, Cleve Javier, Mugs Kaneholani

**Photos:** Mugs Kaneholani or KISC unless noted

## KISC Staff

Adam Williams, *Committee Chair*

Bill Lucey, *Project Manager*

Ray Kahaunaele, *Field Operations Supervisor*

Tiffani Keanini, *Outreach and Project Facilitator*

Mugs Kaneholani, *Field Crew Supervisor*

Kelsey Brock, *Early Detection Botanist*

Rachel Smith, *Outreach Specialist*

Joseph Aguon-Kona, *Field Crew*

Vincent Veal, *Field Crew*

Nathan Lagundino, *Field Crew*

Cleve Javier, *Data Tech*

Pat Gmelin, *Mongoose Response Tech*



# KISC

**KAUA'I INVASIVE SPECIES COMMITTEE**

Phone: 808-821-1490

Physical Address: 7370 Kuamoo Rd., #K

Kapa'a, HI 96746

Email: [kisc@hawaii.edu](mailto:kisc@hawaii.edu)

[www.kauaiisc.org](http://www.kauaiisc.org)

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The Kaua'i Invasive Species Committee (KISC) is a voluntary partnership of government, private and non-profit organizations, and concerned individuals working to prevent, control, or eliminate the most threatening invasive plant and animal species in order to preserve Kaua'i's native biodiversity and minimize adverse ecological, economic and social impacts. KISC is a project of the Pacific Cooperative Studies Unit and Garden Island Resource & Conservation Development, Inc.

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# KISC

**KAUA'I INVASIVE SPECIES COMMITTEE**

*Kia'i Moku: Guarding the Island*

7370 Kuamoo Rd., #K

Kapaa, HI 96746