



Kia'i Moku

guarding the island

Volume 4 Issue 1

2011

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Partnering for a Common Cause

By John Chapman

There are a number of factors that contribute to successfully achieving annual goals; careful scheduling, astute resource management, being able to fill vacant positions, increased helicopter operations, good weather, and opportunities to increase capacity by collaborating with partners. The most evident result of KISC's increased productivity can be seen in control efforts for *Miconia calvescens* (miconia).

During the last twelve months KISC was able to complete over 2 years-worth of miconia work in terms of

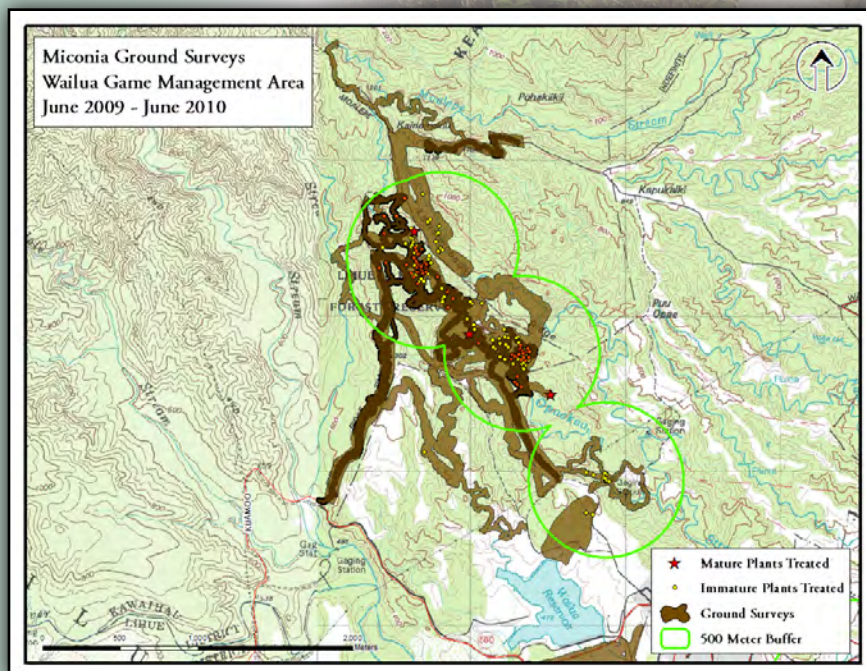
person-hours compared to the yearly average. A big part of our increased efforts on miconia can be attributed to partnership projects with crew members from Big Island Invasive Species Committee (BIISC) and Maui Invasive Species Committee (MISC). During March, 2010, we had a crew of six field staff from BIISC join us for three days of miconia surveys. At the end of

April, 2010, MISC staff joined us for two consecutive three-day work-weeks supplying a total of 10 employees each week. Survey work was focused in the Wailua River State Park (WRSP) and the Wailua Game Management Area which are both steep and treacherous sites.

These partnerships proved to be extremely beneficial for not only increasing ground acre coverage, but by also providing unique skills and

See Common Cause pg 7

The dark brown areas reflect areas worked with MISC crew



KISC funders and partners

A & B Properties
 County of Kaua'i
 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 Invasive Species Council
 Hui o Laka/Kokee Museum
 Invasive Species Committees
 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
 Kuku'iula Development
 National Tropical Botanical Garden
 Pacific Cooperative Studies Unit
 Pacific Missile Range Facility
 Private citizens
 Regenerations Botanical Garden
 Research Corporation of the University of Hawai'i
 UH Rural Development Project
 Sea Grant
 The Kaua'i Group
 Sierra Club
 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

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

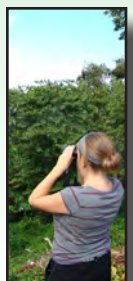
Keren Gundersen
Project Manager



KISC would not exist if we did not have partners. They guide and support our efforts, they work diligently on complementary objectives, and when we work collaboratively, they serve to increase capacity on projects that may not otherwise have been possible.

Just when I think that obstacles are too great to overcome for a specific project, in steps a partner to help with the task. Over the past year, we have partnered with all of the other ISCs utilizing manpower, strengthened partnerships with on-island cooperators, and developed new partnerships with property owners and the community as a whole.

This issue highlights some of the special projects that were achieved with the help of these partners. They helped to make KISC a more efficient and effective enterprise. Mahalo nui loa to all of our "MVPs" (most valuable partners)!





Coqui News Update

By Tiffani Keanini

2011

Priorities at the coqui infestation site in Lawai continue to focus on habitat modification and rapid response to calling frogs. By using spot-spraying with selective herbicides, the KISC Field Crew can maintain an unfriendly environment for the coqui by keeping it dry with minimal foliage.

This hard work has paid off and KISC was excited to report silent nights for over 4 months last year, during what normally would be the peak calling season. One calling frog broke the silence in September and the crew quickly tracked it down and hand-captured it. Progress is being made and the count of silent nights continues.

KISC also continues to work cooperatively with the Hawai'i Department of Agriculture as first-responders to all new reports of coqui to Kaua'i. Over the past year, 13 frogs were reported and captured by the KISC crew outside of the

Lawa'i site. This startling figure only underscores the need for tighter inter-island restrictions, inspections, and public education.

In an effort to raise public awareness regarding the threats that coqui pose to Kaua'i, KISC constructed a giant coqui frog that was initially

displayed at the 2010 Kaua'i County Farm Bureau Fair. The public was invited to sign their names on the frog as a tangible way of showing that this important issue is reaching the community. On October 21st, the giant coqui frog made his appearance on the Mayor's television show "Together we can." Mayor Carvalho signed the frog to show his support for continuing public awareness.

The KISC crew is appreciative of all the community support to keep Kaua'i "Coqui-free." Removal of newly introduced coqui could not be possible without the community's early detection and rapid reporting.

13
*newly introduced frogs
were captured by the KISC
crew in 2010*



Featured Invasive Pest: Fiddlewood - *Citharexylum caudatum*

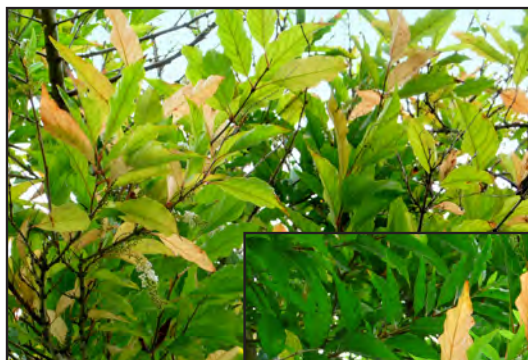
By Natalia Tangalin, NTBC

Citharexylum, (fiddlewood or Juniperberry) is in the Verbenaceae family which also contains the noxious weed *Lantana camara*. The *Citharexylum* genus has 70 species, from the Caribbean, the southern United States, Mexico and northern South America. In the West Indies *Citharexylum* is economically important for rough construction. Two species of *Citharexylum* naturalized in Hawai'i. The two species can be differentiated by their leaves: *C. spinosum* has pointed leaf tips and visible net-venation, while *C. caudatum* has a rounded leaf tips and obscure venation. *C. spinosum* was planted as a street tree.

C. caudatum was observed during the first KISC Early Detection Roadside Survey. It was introduced into Manoa Valley on O'ahu in the early 1930's as a food source for non-native birds. Usually a small tree, *C. caudatum* leaves are somewhat leathery and most noticeable in the spring when they turn tawny yellow to orange. Flowers are sweetly

fragrant, white and hang in narrow racemes and are a nectar source for bees. The fruit are round, pea-sized, bright orange, turning shiny black. It forms dense thickets in wet lowland sites, and has naturalized on Hawai'i, Maui, O'ahu and Kaua'i. It can be easily observed on Kaua'i in Anahola and Moloa'a along roadsides and more sporadically in Wailua, Lihu'e, and O'mao, popping up in hedgerows and fence lines.

C. caudatum propagates itself from seeds and cuttings and roots at the nodes when on the ground. Though there are no known biological controls for *C. caudatum*, the coffee twig borer has infested trees on O'ahu.



Photos by Natalia Tangalin

References:

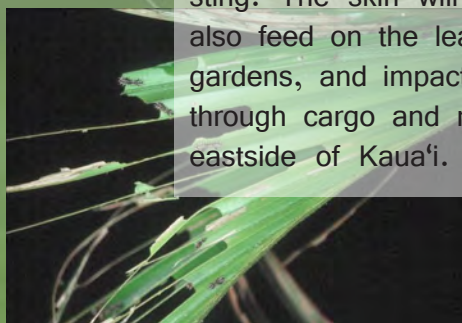
Forest Starr, Kim Starr, and Lloyd Loope (January 2003). "Citharexylum caudatum" United States Geological Survey: Biological Resources Division. Hawaiian Ecosystems at Risk project. http://www.hear.org/Pier/pdf/pohreports/citharexylum_caudatum.pdf

George W. Staples and Derral R. Herbst "A Tropical Garden Flora" Bishop Museum Press: Honolulu (2005)

Warren L. Wagner, Derral R. Herbst, and Sy H. Sohmer. Manual of the Flowering Plants of Hawaii, Revised Edition, 1999. Bishop Museum Press: Honolulu

Stinging Nettle Caterpillar

The stinging nettle caterpillar is the 1st larval form of an Asian moth. It is covered with rows of poisonous spines. This caterpillar produces a painful burning sting. The skin will swell and create a welt followed by a rash. These pests also feed on the leaves of over 30 plant species. They damage crops, destroy gardens, and impact local nurseries. These caterpillars can be brought to Kaua'i through cargo and nursery shipments. There have been a few sightings on the eastside of Kaua'i. It is important to report this pest immediately!



Species of Concern



Most Valuable Partner:

Roy Yamakawa, CTAHR

By Keren Gundersen



This issue's MVP award goes to CTAHR's Island Administrator, Roy Yamakawa. Roy was instrumental in helping KISC find a home by providing office and baseyard space for KISC staff and crew at the Kaua'i Agricultural Research Center (KARC) in upper Wailua.

Roy oversees many interesting projects on Kaua'i, so we asked him about them and his role at the College of Tropical Agriculture and Human Resources, Manoa.

How many acres are there at the Kaua'i Ag Center in upper Wailua? What have been/are the areas of study there?

We have 240 acre at KARC, minus about 11 acres to The Discovery Center for the pending Educational Center, adjacent and adjoining the Wailua reservoir. Currently, we have plot allocations (or studies) for: UH corn seed production, Forage Demonstration Project, Research, Training, Disease Survey & Control, Hawaiian Taro Collection (greenhouse), Taro germplasm/repository (field), Vegetable Industry Commodities (taro), Ornamental Commodities (tropical flowers & foliage), Darwin Ginger Assessment & Distribution, Tropical Seed Production (papaya), Sustainable Soil Management Strategy, Coffee (aphids), Biological Control Pest Management Systems, Utilization & Protection of Wood Products, Evaluation of Termite Baits, Conventional Papaya/Citrus Breeding, USFWS Polynesian Rat DNA Survey (KISC), Native Plant Garden (Kaua'i Native Plant Society), and the Kaua'i Conservation Partnership Program.

How many CTAHR Staff do you have at the Ag Station?

We currently have 13 employees located at KARC, four of which are faculty (research) whose locus is at Manoa.

Are there any other CTAHR facilities on Kaua'i? What have they been used for?

Yes, our CTAHR Extension Office in Lihue has 6 personnel. Our primary responsibility is to disseminate science-based information and technology to agricultural stakeholders on Kaua'i and throughout the state.

How long have you been with CTAHR and what is your background and areas of study?

I have been with CTAHR since 1976. I have a M. S. in horticulture. Besides administrative duties (which take about 80% of my time), my areas of responsibility include vegetable crops, ornamental crops, and landscape and nursery commodities. My current focus is on conventional taro breeding to develop new taro cultivars for the commercial poi market.

How would you describe CTAHR's relationship with KISC?

Our relationship with KISC (as well as with Hawaii Stream Research, US Fish and Wildlife, and The Nature Conservancy) is mutual and symbiotic. Collectively, our individual resources strengthen each others' missions, and by working together, we are able to cooperatively accomplish more things, more efficiently. Especially in our tough economic times, we realize and

appreciate that we help ourselves by helping each other.

What do you see in the future for CTAHR on Kaua'i?

My objective is to do applied research and development to meet stakeholders needs directly and practically. I want to make available science-based information, technology and products to agricultural stakeholders, commercial and urban, conventional and organic, on Kaua'i. A large portion of this is to build up our CTAHR generated germplasm for public availability.



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Thank you, Roy, and congratulations on becoming our Most Valuable Partner! We look forward to many more years to come of successful collaboration.

Kaua'i Early Detection

Hawai'i Early Detection Network hits Kaua'i

By Tiffani Keanini



Workshop Activity



Pick a Pest: Miconia vs. Clidemia



Pick a Pest: False Kava vs. 'ava



"Eyes and Ears" Workshop

"A Field Guide to the Early Detection of Invasive Plants and Animals on Kaua'i, Hawai'i" has now been published by KISC. This informative booklet was a collaborated effort between KISC and the USGS National Biological Information Infrastructure's Pacific Basin Information Node (PBIN). The field guide, detailing Kaua'i's early detection list of invasive pests, is given to all who participate in an Early Detection workshop.

This component of the state-wide Early Detection Network will help to increase public awareness and engage communities in monitoring their own neighborhoods. Workshop participants are encouraged to help protect the environment of Kaua'i by participating in the "Eyes and Ears" Team by joining the Invasive Pest Posse.

Community workshops highlight priority invasive plants, animals, and insects; detailing the threats that they pose, the habitats they might be found in, and the look-alike species that

could be confused with them. Other Early Detection workshops have been geared toward conservation groups and environmental professionals to inform them about what early detection species they should be on the lookout for while working in the field.

Another goal of the workshops is to provide a means to report sightings of invasive pests; report forms, web reporting, and calling in to the Pest Hotline (643-PEST).

The website www.reportapest.org is not only a tool for reporting pests, but also contains additional information

about early detection species. The public can report a known pest or a plant/animal that they suspect may be acting invasively. Reported pests will be forwarded to the correct agency for identification, control, or recording. Also available on this website is a full-color e-version of the KISC Field Guide to the Early Detection of Invasive Plants and Animals on Kaua'i.



O'ahu Early Detection Team on Kaua'i

By Alex Lau and Danielle Frohlich



In 2010, KISC contracted the O'ahu Invasive Species Committee Early Detection Team to conduct a second Kaua'i-wide roadside plant survey. The team arrived on Kaua'i in February, and completed the survey in June, which involved driving slowly along the side of the road, observing and mapping locations of species from a survey list, as well as making collections of new records of naturalization. The list included nearly 100 species (including KISC's current target species) and was comprised of weedy species that were thought to be uncommon on Kaua'i, and therefore making them good candidates for possible removal from the island.

Interesting species from this list included:

- ***Cissus verticillata*, or Princess vine.** This invasive bird-dispersed species forms a thick, blanketing layer over tree canopies. This species was noted in Eleele, Koloa, and Lawai.
- ***Bischofia javanica*, or Koka.** This tree was planted for forestry on O'ahu and has since become extensively naturalized in several valleys, spread by bird dispersed fruit. This species was detected growing in Princeville.

• ***Ailanthus altissima*, or Tree of Heaven.** This fast-growing wind dispersed tree has established itself on all continents (besides Antarctica) where it has become a major invasive species in urban, agricultural, and native forest settings. One planting of this species was detected in Koke'e.

• ***Dillenia suffruticosa*, or Shrubby simpoh.** *D. suffruticosa* is a bird-dispersed species that has established itself as a serious weed in localized areas of O'ahu. KISC has discovered one population of this in Wailua Homesteads.

• ***Alstonia macrophylla*, or Devil tree.** This fast-growing tree, which produces an abundance of wind-dispersed seeds, is naturalized on O'ahu in native and non-native forest in Mānoa Valley. It has become a prominent feature of secondary forests of other tropical areas. One planting of this species was detected in Kapaa.

Survey data is being analyzed to determine which species will make the best targets. We hope we can help catch these species on Kaua'i before they become as problematic as they are elsewhere.



Princess vine



Koka



Tree of Heaven



Shrubby simpoh



Photos: © Forest and Kim Starr



Photos: © Forest and Kim Starr



© Georges Jansoone

© H. Zell



© Otterman

© J.M. Garg



Ele'ele 4th graders GO NATIVE

By Tiffani Keanini



In 2010, KISC formed a new partnership with Ele'ele Elementary School with a Service Learning Project for 4th grade students. Collaboration and planning has involved the 4th grade teachers, Dr. Nitta (School Principal), the KISC crew and staff, the Kaua'i Native Plant Society (KNPS), the National Tropical Botanical Garden (NTBG), Kaua'i Nursery & Landscape (KNL), Crop Production Services (CPS), and Heart and Soul Organics. The now annual project revolves around the clearing and restoration of a garden area at the top of the well-used stairs leading down to Hanapepe town.

The first year's project focused on invasive species; educating the students through hands-on experience. The students learned how to identify and tag invasive species, how to collect and record data, and how to remove the invasive plants. KISC created a 15 page field guide to help the students identify all of the invasive plants at this trailhead. The kids were armed with flagging and data sheets and, with the help of the KISC crew, worked to identify the pests. After the pests were tagged and recorded, it was time for "eradication." The KISC Crew was also there to assist the kids in invasive plant removal. 748 plants were identified and tagged, consisting of 10 different invasive species. After the students removed the small plants, the KISC crew stayed behind to clear larger trees and to treat the area. This great effort of the students and crew made the front page of the Garden Island newspaper!

The "eradication project" was such a success, that the following school year, in January 2011, KISC and the new 4th grade class teamed up again to start the "Plant Native Project." After the students surveyed the garden for regrowth of invasive plants, the KISC crew cleared the area of all weeds. With assistance from KNPS, a landscape plan was drawn up with NTBG's generous donation of 45 native plant species. The students researched the history and cultural uses of each species: naio, maiapilo, 'a'ali'i, 'ilie'e, naupaka, lonomea, loulou and nehe. On planting day the students worked hard to dig, fertilize, plant, and water their plants. The students have continued to maintain the garden and record plant growth. "We go to water the plants every other day and we go out to do observations on our plants with metersticks" explained Harly, a 4th grade student, in a thank-you note to KISC. Unfortunately, KISC is sad to report that 9 plants have been stolen/vandalized since the planting. "I was sad because my plant Maiapilo was gone and it was growing big," Jahnaya, another student, wrote.

To assist with this project, KNL donated organic compost, CPS donated fertilizer, and Heart and Soul Organics donated mulch. We look forward to more collaborative projects in the years to come; helping to educate students in conservation and stewardship.

"I learned to share work with other people." - Kyle



"I am happy when we did this project because it's my first time getting dirty on purpose" - Rizza



A hui hou, Jeri Ooka!

By Keren Gundersen



Dr. Jeri Ooka

The end of 2010 marked the retirement of Dr. Jeri Ooka, Plant Pathologist, with the University of Hawai'i at Mānoa College of Tropical Agriculture and Human Resources, working out of the Kaua'i Agricultural Center in upper Wailua. Jeri has been a KISC committee member since it

formed in 2001 and has been a tremendous resource for KISC staff and crew. His stories and historical memories of life in Hawai'i will be missed by all.

Dr. Ooka began his association with the College back in 1961 and became a faculty member in 1975. He was hired to do corn pathology, which has remained his base through the years, traveling to all of the islands and working with various industries. He also has worked on canoe plant diseases (niu, kalo, 'awa, milo, kou), disease-suppressive composts, and remote sensing and biocontrol of weeds with plant pathogens.

In his 35+ year career, Jeri has seen the plant pathology field change. The focus has shifted toward studying applied cellular and sub cellular techniques. In the past, field pathologists focused more on ecosystem, population and whole-plant approaches to controlling and managing plant diseases.

Few people really understand the impacts that plant pathogens can have on an industry, a government, and the health and well being of the community. The introduction of a certain pathogen could prevent exportation which would doom the seed industry and have a "trickle-down" effect on Hawai'i's economy.

So what is in store for Dr. Jeri Ooka? Unfortunately for us, it involves a move to the hinter-lands of Minnesota, where his lovely wife is patiently awaiting his arrival. When asked what he will miss most about Hawai'i, Jeri simply states, "Ka'aina".

A hui ho aku, Jeri. Until we meet again.



KISC 'Awa class taught by Dr. Ooka

Poison Devil's Pepper



As a new invader threatening the integrity of the Hawaiian wet forest ecosystems, this tree exhibits characteristics that rank it one of the most invasive plants in Hawai'i. It can grow a foot per month, reaching reproductive maturity within a year. Fleshy fruits are eaten by most non-native birds that then spread the seeds across their range. The seeds germinate quickly, creating a solid carpet of seedlings. This plant is not

known to be on Kaua'i but it can tolerate all growing conditions across this island. If sighted, please report it immediately.

Species of Concern



Surveying for Little Fire Ants on the island of Kaua'i

By Pat Gmelin



Little Fire Ant (LFA) (*Wasmannia auropunctata*) was first detected on the north shore of Kaua'i in 1999 having been discovered in Kalihiwai and believed to have been transported on landscape plants from an infested Big Island nursery. Initial response and treatment was conducted by the Hawai'i Department of Agriculture (HDOA) and the population was thought at that time to be eradicated after comprehensive surveys did not detect any LFA.

In 2003, the Kaua'i Invasive Species Committee (KISC) partnered with HDOA to discover a resurgence of the Kalihiwai population and has been working in collaboration with HDOA ever since; conducting island-wide surveys as well as treatments at the infestation site.

The KISC island-wide LFA survey has resulted in forming a variety of partnerships; nurseries and landscapers, the county of Kaua'i at green-waste areas, property managers at hotels and resorts, and private residents and concerned citizens. This connection with the owners and operators of businesses and private properties also strengthens KISC's opportunities for public outreach and education.

Since October 2010, the KISC Invertebrate Survey Team (Pat Gmelin and Ray Kahaunaele)

have placed a total of 4,338 vials in and around plants and trees and has shipped 1,684 vials containing ants to HDOA for identification. Cheryl Young, HDOA Invertebrate Specialist on Oahu, has identified thousands of these ants and considers this task to be a "fun" part of her job. Specimens are also sent for identification to Cas

Vanderwoude, HDOA Statewide Ant Coordinator in Hilo. To date, 23 different varieties of ants have been found on Kaua'i including a possible new record of *Pheidole fervens*. No Little Fire Ants have been detected outside of the Kalihiwai infestation site.



Collecting ants at a nursery

For more information about LFA check these sites

Hawai'i Department of Agriculture - www.hawaiiag.org

Hawai'i Ant Group - <http://www.hear.org/hawaiiantgroup/>

Kaua'i Invasive Species Committee - www.kauaiisc.org

LFA is considered one of the world's worst invasive species

Originally from South America, LFA have spread through tropical regions worldwide.

They have many queens in each colony and interconnect to form huge "supercolonies".

They produce a fire-like burning sting followed by large welts and itching sensations. This painful sting even causes blindness in pets.

LFA also farm scale insects and other Homoptera insects that damage agricultural crops.

Common Cause *continued from page 1*

experience. During the nine work days with additional crews, we were able to work 480 person-hours, ground survey 266 acres, and control 225 miconia plants. Comparatively, it would have taken KISC (due to crew size) almost four months of consecutive workdays to cover that much ground!

Another valuable benefit of these partnerships was the specialized expertise that our partners brought with them. One such skill was the use of rappelling to control miconia. Adam Radford, MISC Rappel Master, lead a MISC “rappelling swat team” in a steep and almost inaccessible area of WRSP. During their time with us, they treated 30 plants while suspended from ropes and surveyed areas that would have been impossible to survey otherwise.

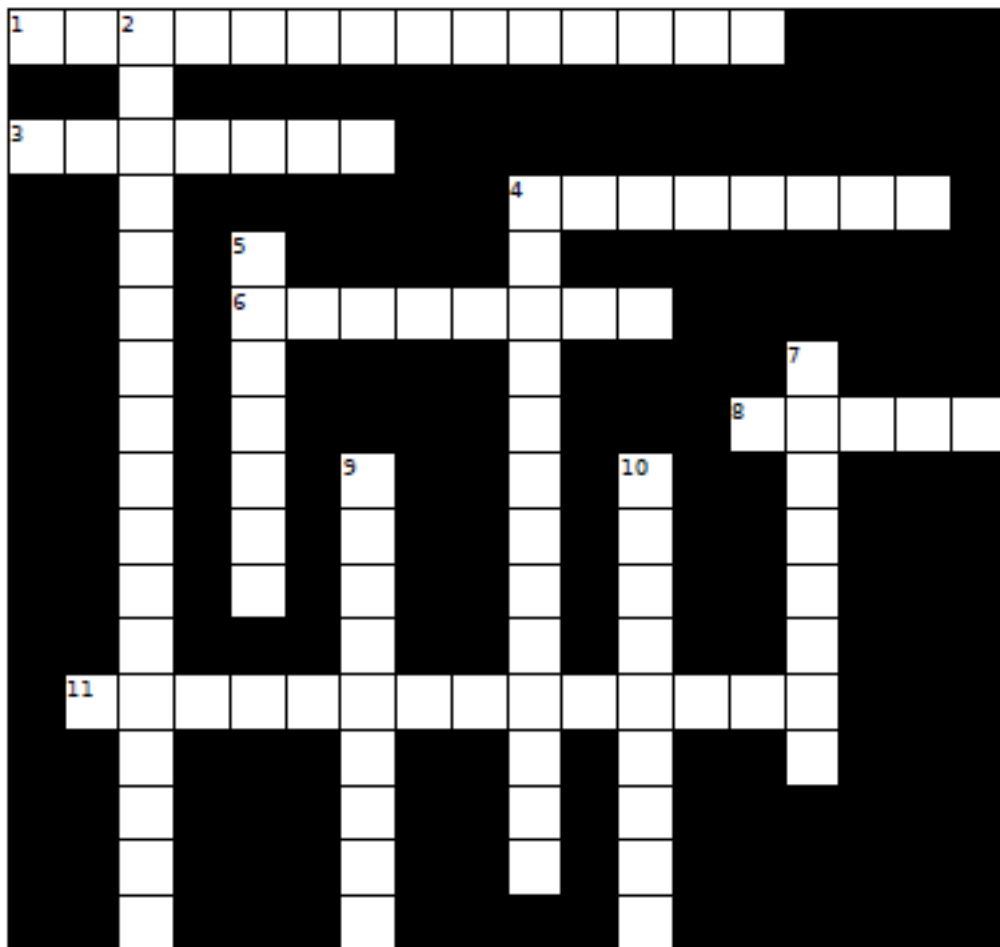
The results of these partnerships speak for themselves. We had a great time working with our partners and look forward to future opportunities to work together. Mahalo nui loa MISC and BIISC!



KISC and BIISC crew miconia days

Invasive Crossword

Use the hints to solve the invasive puzzle with KISC top priority pest. Make sure to read the Newsletter or visit www.kauiisc.org to help find the answers.



Across

- 1. Will flatten your car tire
- 3. Wetland rush
- 4. Harms livestock
- 6. Strangling vine
- 8. LOUD
- 11. They have painful bites

Down

- 2. It has stinging spines
 - 4. FIRE hazard
 - 5. Purple cancer
 - 7. Preys on native bird nests
 - 9. No medicinal attributes
 - 10. Macaranga look-alike
- See www.reportapest.org for hint

Across: 1. Long thorn kiawe 3. Cattail 4. Fireweed
Miconia 7. Mongoose 9. False kava 10. Bingabing
6. Stinging nettle caterpillar 4. Fountain grass 5.
6. Ivygourd 8. Coqui 11. Little fire ants Down:

Save the Date

Next KISC Meeting

April 7, 2011

10am - 12pm

Wailua CTAHR

KARC Conference Room

Meeting will be available via WebEx
Contact KISC for more information

*Joseph Kona
attacked by the
Giant Little Fire Ant*



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Email: kisc@hawaii.edu

www.kauaiisc.org

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.

** All Photos by KISC unless noted*



KAUAI INVASIVE SPECIES COMMITTEE

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