

Detection & Control of Invasive Species on the Island of Hawai'i: BIISC Community Engagement Program

HISC Grant FY2024 (Mar 2024- Mar 2025) Final Report

Submitted by BIISC Manager Franny Brewer June 2025

Project Goal: *BIISC will work to create an engaged and educated community that understands the impacts of invasive species, implements personal strategies to prevent and mitigate IS, and is supportive of strong biosecurity.*

Summary of Activities:

Community Engagement is the backbone of our BIISC program, addressing a wide range of issues and projects across the spectrum of invasive species from prevention to widespread management. The staff on this team is highly educated, requiring the ability to understand complex ecological concepts about a range of plant and animal species while also developing an understanding of sociological phenomena, cultural competence, and technological know-how in order to ensure the most effective and high quality programs are delivered to our communities. CE works to build relationships and trust by responding to community-identified needs and providing timely and useful information. We offer education to the public on a range of invasive threats, and specialized training to key front-line organizations including road crews, gleaners, Master Gardeners, the Hawaii Community College Agriculture program, and school maintenance staff. We provide professional development classes for K12 teachers, and support classroom activities, summer programs, school science nights, and career days to reach our island keiki and their families. The CE team handles hundreds of requests per year to identify plants, insects, and diseases, and to provide assistance and advice on control of invasives. They produce high-quality online and print materials, and support partners throughout the state with expertise on graphic design and audience engagement strategies.



BIISC staff member Austin Menke helps a community member enter into a drawing to win a native plant at the first ever Hala Fest, a BIISC collaboration to raise awareness and appreciation of our native hala

As the Big Island poses unique challenges in the world of Hawaii's invasive species, BIISC has tailored programs to meet our island needs. For instance, for well over a decade, the Big Island has been the only island without a little fire ant (LFA) response, and LFA are now established and widespread across the island. Our community support program offers education and empowerment to communities to support them in fighting this notorious pest. On the east side of the island, farmers and residents battle with the Queensland longhorn beetle (QLB), an invasive Cerambycid with a huge appetite range. BIISC raises and distributes entomopathogenic parasitic nematodes to fight QLB - a method

developed by our partners at USDA-ARS PBARC. For more than five years now, BIISC has been the only entity on the Big Island offering education about the rat lungworm parasite and disease, sharing information developed by the Jarvi Lab at UH-Hilo to help inform the community in the area that is the most affected by severe RLW disease *in the world*. We have supported the CTAHR team that works on twolined spittlebug, helping design materials and provide outreach on this catastrophic ranch pest found only on Hawai'i Island.

In 2024, in response to rapid development of the Puna district (a district the size of Oahu that since Covid has been the fastest growing in the state) we launched a partnership with a local non-profit to bring attention to the destruction of our ancient hala groves and to the threats posed to hala by invasive hala scale and CRB. We held a large community event that celebrated the ecological and cultural importance of hala, aiming to increase community appreciation of this indigenous species and bring awareness to the invasive species issues threatening yet another native tree. More than 500 people attended this event, and helped us reach the underserved native Hawaiian community in Puna with support on invasive species issues.

Also in 2024, the CE team took on a massive new undertaking with the late 2023 appearance of CRB on the Big Island. Very quickly, BIISC launched a community hosted trap detection program in Waikoloa to expand early detection efforts for the beetle. We built relationships with groups and non-profits with significant interest in palms, including the Kohala Center and Pohaku Pelemaka (both nonprofits managing ancient palm groves), the Big Island Palm Society, the South Kohala Coastal Partnership, the Waimea Outdoor Circle, and many more to present and share information on CRB to their members. We worked with a contractor to train and deploy the Big Island's first CRB-focused scent detection dog, offering free backyard surveys to the Waikoloa community to search for CRB breeding sites and supporting our County with searches at greenwaste facilities.

As part of the larger CE team, the hybrid Invasive Plant Prevention team (IPP) leads the Plant Pono program for the island, which includes managing content for the statewide PlantPono.org website. In addition to early detection of new plant species, IPP staff work to reduce the importation and sale of invasive plant species, and encourage local production of non-invasive plants over imported varieties to reduce pest importation risk. To accomplish these goals, Plant Pono employs a two-pronged approach: incentives and relationship building with nurseries (supply), and education to the public (demand). One of our most popular IPP efforts has been the native planting classes, where we offer invasive plant education and hands-on native plant workshops (with free plants) to community members. We work with Plant Pono nurseries across the island to offer the classes inside the nurseries, promoting their businesses by bringing new customers in and demonstrating to the nursery owners the community interest in buying native plants. Over the years that BIISC has administered Plant Pono on the Big Island, we've seen a reduction in the number of nurseries selling invasive plants by over 50%.

In 2024, the IPP team, in collaboration with the HPWRA specialist at HISC, launched a new categorization of plants for [PlantPono.org](https://www.plantpono.org). The new category, Canoe Plants, removed the HPWRA score for those plants identified as having arrived in Hawai'i with Polynesian settlers more than a millennia ago. This allowed for Plant Pono to better recognize that these plants, which while not biologically native to the islands, have a special relationship with place and people that set them apart from other introduced plants. This new designation better reflects Hawaiian values and helps to eliminate concerns raised in the past by HPWRA scores categorizing some of these plants as invasive. A new graphic was created to replace the "invasivity dial" that appears on other plant pages and was accompanied by a thoughtful blog post explaining the rationale behind the change.



BIISC staff members Darcy Yogi, Molly Murphy, and Josefina Pacheco lead a native plant giveaway and planting class for the community at a Plant Pono-endorsed nursery in Hamakua

Community Support & Education Outputs & Outcomes

Green: fully completed/exceeded

Yellow: partially/mostly completed

Red: not completed or very little completed

Expected Outcome	Actual Outcome
<p>At least 1,500 residents will be engaged in training/education sessions delivered by BIISC staff. At least 8 will be offered in topics such as little fire ants, albizia, rat lungworm disease, common weeds, and invertebrate pests.</p>	<p>The BIISC CE team had a record year for outreach, offering 52 workshops and educational sessions reaching 1842 residents. Topics for these trainings included all of the species mentioned and more, with the addition of CRB as a much-requested topic in 2024.</p>
<p>BIISC will staff booths at public events and offer classroom visits for students of all ages in order to spread messages about invasive species. BIISC will participate in at least 6 public events.</p>	<p>With additional funding sources supporting our HISC grant, BIISC was able to add a new full time staff member to the CE team in 2024, helping us to far exceed our goal of 6 public events. The team actually offered tabling/booths at 30 events in the reporting year, with over 8500 attendees total.</p> <p>With the new staff, we were also able to begin re-establishing our K12 program, and offered booth tables at career and science fairs as well as in-classroom presentations and hands-on activities, reaching 3,917 keiki through these efforts.</p>
<p>CRB: A network of CRB traps will be established across the island, allowing for better potential early detection of CRB. Additionally, BIISC will create a minimum of 10 social media posts and one blog post with information about CRB. BIISC will develop a new beetle ID education presentation including substantial info about CRB detection.</p>	<p>More than 100 traps were distributed (note: this number began increasing after the Kona detection, which happened at the end of the reporting year). BIISC published 21 CRB-related social media posts—more than double the target—on both Facebook and Instagram. These posts reached a combined total of 85,493 users (Facebook: 53,718; Instagram: 31,775), with strong average engagement per post (FB: 615; IG: 278.8). We also developed a beetle ID presentation focused on field-ready identification skills, with an emphasis on CRB detection and lookalike species, which has been delivered to partner agencies and community groups, enhancing early detection efforts. The CRB pages on our website are constantly updated to reflect new information about the status on our island.</p>
<p>BIISC will create a minimum of 2 original posts per week on two social media channels (minimum total of 108) highlighting key invasive species issues and messages, a bimonthly newsletter (minimum total of 6), and at least 4 blog posts on biisc.org sharing relevant information regarding invasive species.</p>	<p>BIISC met and exceeded all outreach goals for digital content in 2024, publishing 135 original posts across Facebook and Instagram—well above the 108 minimum.</p> <p>We produced 6 editions of our bimonthly e-newsletter, which averaged 1,187 opens per issue. By the end of 2024, our mailing list had grown to 2,192 subscribers, reflecting increasing public interest in our work.</p> <p>Four blog posts were published and are available on the landing page of our website. These blogs are also shared</p>

	through our e-newsletter and linked via social media to maximize visibility and engagement.
<p>BIISC will create a minimum of 10 social media posts/online messages directly promoting the importance of reporting of pests.</p> <p>We will respond to 300+ direct requests from our community for pest/plant ID, resources for IS mitigation and control, and assistance with IS issues.</p>	<p>BIISC exceeded its goals for community engagement and pest reporting outreach in 2024. We created 11 social media posts and online messages directly encouraging the public to report invasive pests, with a particular focus on coconut rhinoceros beetle.</p> <p>Additionally, BIISC responded to 412 direct requests from the community—via calls, email, and social media—for pest and plant identification, resources for control, and general assistance with invasive species issues. This exceeds our goal of 300 requests.</p>
<p>We will participate in HISAM as a member of the planning committee and will create and/or host a minimum of 2 webinars/events for HISAM. We will also be contributing partners in statewide Stop the Ant month and Native Hawaiian Plant Month and develop and make available at least one original graphic for each event available for use by the entire partnership. BIISC will offer at least 1 public workshop on QLB, including entomopathogenic nematodes.</p>	<p>BIISC was an active participant in HISAM 2024, serving on the planning committee and exceeding our commitment by hosting 4 webinars and participating as presenters in 2 of those.</p> <p>We also contributed to statewide outreach campaigns for both Stop the Ant Month and Native Hawaiian Plant Month, assisting in campaign planning and developing multiple original graphics for each initiative. These materials were made available for use in shared outreach efforts.</p> <p>Due to the increased public interest and demand for CRB presentations during 2024, we did not host a public workshop on QLB as initially planned. However, we did promote the availability of entomopathogenic nematodes on social media, at public events, and in response to reports of QLB. A QLB-focused workshop is planned for 2025.</p>

Plant Pono/Invasive Plant Prevention Outputs & Outcomes

Expected Outcome	Actual Outcome
<p>Survey of at least 37 nursery businesses to document an absence of invasive plant inventory at participating nurseries and any invasive inventory in non-participating nurseries. New species found for sale will undergo the risk assessment process and, if warranted, be considered for the No-Grow list and/or Target Eradication lists.</p>	<p>With our additional capacity, the IPP staff was able to survey 84 nurseries this year, a record for us. Even better, only 8 of those 84 had one or more No Grow invasive plants for sale, equating to only approximately 10% of island nurseries. This is a huge decline when compared to the early years of Plant Pono, when more than half of the surveyed nurseries had one or more invasive plants for sale.</p>
<p>BIISC will manage and update the PlantPono.org website, including producing</p>	<p>With the addition of a new IPP tech to the team in 2023, we were able to far exceed our goals for this deliverable in</p>

<p>informational blogs and social media posts to promote the site. At least 10 new species profiles will be added to the website and at least 4 new blog posts will be created to promote the use of non-invasive plants.</p>	<p>2024. There were 18 brand-new profiles added to the Plant Pono website this year, along with an additional 11 plant pages receiving a refresh and updated profile. Four new blog posts were added, including a collaboration with the Pacific Fire Exchange entitled Top 10 Fire-Resistant Plants for Hawai'i. Another blog post focused on the new Canoe plant designation.</p>
<p>Under the PP brand, we will offer 4 native plant planting/use in landscaping workshops.</p>	<p>With additional support from another source, we were able to far exceed this outcome and offer 17 native planting workshops during the reporting year.</p>

HISC Funding Priorities

The *HISC & CGAPS 2025 Joint Strategy* provides a guideline for how to plan and prioritize efforts in invasive species work across the state. As the team with the most diverse variety of tasks related to all levels of invasive species prevention and mitigation, our Community Engagement program works to support all five of the priority areas: 1) Prevention & Early Detection/Rapid Response for New Invasions, 2) Management of the Inter/Intra-Island Movement of Invasive Species, 3) Implementation and Large-Scale Control of Widespread High-Impact Invasive Species, 4) Increase Pacific Regional Biocontrol Research & Capacity, and 5) Maintain an Engaged & Supportive Community.

The last listed priority - #5 - is the first priority of this team, as we believe that the success of all of the other goals flows from success in that area. Our Community Engagement team works incredibly hard to use all tools at our disposal to meet all audiences and sectors where they are. Our longstanding and popular albizia, little fire ant, and rat lungworm workshops were designed in direct response to expressed community needs, and new educational opportunities are added as needed. Programs like this help us not only with Priority #5, but with Priority #1 (Early Detection)& #2 (Prevent intra-island movement) as well: by increasing familiarity with common pests, we train the community to be on alert to unusual sightings. Through constant presence and contact with the community, we increase trust and credibility. By teaching proper control methods, we decrease the movement of pests around the island. Reporting of new species is always stressed and BIISC provides multiple avenues for reporting, from using 643pest.org to direct messaging via Facebook or Instagram.

We promote positive messaging and education about large-scale control efforts, like IIT for mosquitoes (Priority #3), and utilize our trusted networks to help get the word out to correct misinformation. This same approach is used for Priority #4 (increase biocontrol research & capacity). Efforts to support classical biocontrol range from writing supportive comments for EAs for new releases to painstakingly correcting Facebook posts in local gardening groups about supposed biocontrols run amok: no, mongoose are not a biocontrol!

Biosecurity is a running theme in all of our outreach efforts, which include periodic updates to our island State and County legislators. We will continue to support any and all efforts by partners to protect our community from invasive species.