

## Big Island Invasive Species Committee

### Report on HISC Grant 2022 for Detection & Control of Invasive Species on the Island of Hawai'i

#### Invasive Species Control Program

Submitted by Franny Brewer, July 2023

One of BIISC's key biosecurity roles is to ensure that there is effective response capacity to new threats found on the island of Hawaii. BIISC often receives the first reports of new plants and pests, can launch rapid response actions in as little as 72 hours, and offers backup support when agencies require more manpower to respond to new outbreaks of invasives. We conduct formal risk analyses of terrestrial plants, pests, diseases, commodities and pathways to ensure we are addressing urgent, important, and resolvable issues. We utilize interagency and community partnerships to maximize efficiency in control efforts and broaden the knowledge base and investment in our operations. And when an invasive species has become too widespread to eradicate, we shift our strategy to protect the key resources, including forests, farms, residences, and infrastructure. We are expected to be ready to act when new threats slip through our state's pre-border biosecurity programs, and when agencies need expanded capacity and partnership to respond.

#### **Goal #1: Systems will be in place to intercept, prioritize, and stop the proliferation of new and established invasive species on Hawaii Island.**

**Expected Outcome #1:** *BIISC will respond to new detections and reports of eradication target species within 3 days. Rapid response to new wildlife and arthropod outbreaks will be negotiated with the appropriate lead agency.*

**Actual Outcome:** MET. In 2022, BIISC received more than 75 reports of "suspicious" plants from the public, most of which were widespread or known naturalized pests. All of these were promptly identified and the reporter provided information on the status of the plant. All suspected targets were followed up upon within 3 business days of the receipt of report (usually less than 24 hours). In five instances, the reports were confirmed to be target species, and arrangements were made to allow BIISC crews access to the area for control work.

- Fifty-two (52) reports were made of injurious wildlife (mammals, birds, reptiles), including pleas for assistance or guidance on dealing with widespread pests like coqui and pigs.
- More than 125 reports of arthropods and gastropods were also received, and again all species were identified and information shared with the reporter. Reports of species with projects active at partners (eg ramie moth, hala scale) were passed on to the appropriate agency.
- Disturbingly, 15 reports of loose rabbits were made. Rabbit reports were shared with the Wildlife Team at DOFAW and with Animal Industry Control at HDOA. In late 2022, BIISC launched an informal working group with representatives of these partners, to discuss loose animal issues and identify public communication messages.

BIISC staff contributed 196 hours of nighttime surveys to the reported snake sighting near Hilo airport in April 2022.

**Expected Outcome #2:** *Approximately 2,000 eradication target plants will be controlled on 1,500 acres of survey transects.*

**Actual Outcome:** MET. BIISC controlled a total of 33,655 eradication target plants across 4052 acres of survey area during a total of 4479 crew hours. Due to the discovery of several new locations of the noxious weed *Chromolaena odorata* at the end of 2021 and into 2022, we found ourselves with many more acres and plants to tackle than had been estimated in 2021. More than 1800 surveyed acres and 16,000 controlled plants were devil weed alone. Work on this species was extensive, including sending hundreds of postcards to residents in the buffer zones and working with Conservation Dogs Hawaii to test scent-detection for better prioritization of survey efforts.

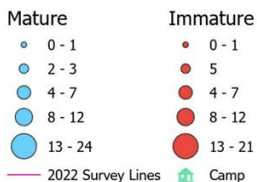
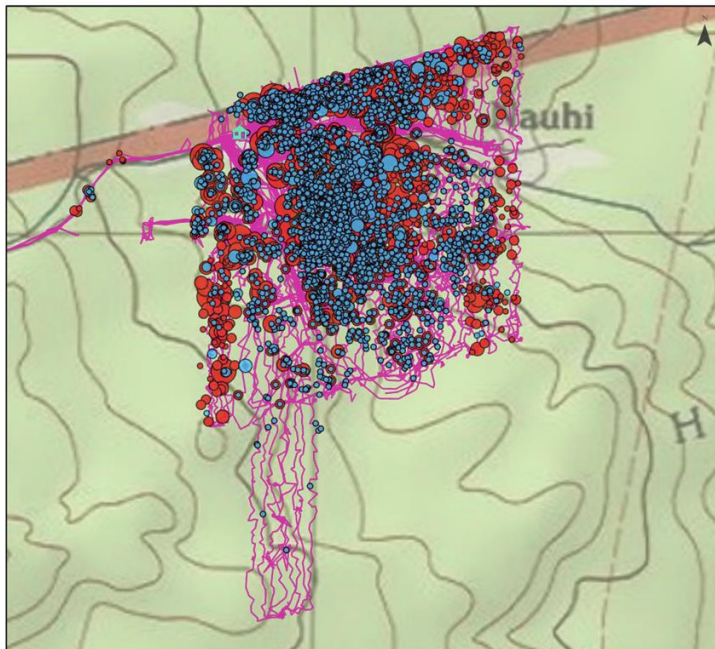
**Expected Outcome #3:** Six of our fourteen target species will be advanced toward eradication according to timelines laid out in the BIISC Target Species Action Plan. Eight of the fourteen species will be managed to a lesser degree if funding and resources allow.

**Actual Outcome: MET.** In 2022, our crews were able to work on eight of our ten eradication target species (metrics reported above). We were also able to work on all five of our target containment species with an additional 1404 acres surveyed and 8998 plants controlled over a total of 1653 crew hours for containment effort. Additionally BIISC contributed weeks of exclusion work, covering 2245 acres and controlling 11,000 individuals of widespread weeds for our partners at NARS (Rubus spp, gorse, himalayan ginger, silk oak, formosan koa, etc).

Six of our eradication targets advanced:

- More than ¾ of the known sites for Rubbervine (*Cryptostegia madagascariensis*) are in Stage 4, the last stage of eradication (no new keiki have been found), and only at two sites were any adult plants found in 2022.
- Annual surveys for smokebush (*Buddleja madagascariensis*) confirmed that more than half of the sites are in Stage 4, and only 3 sites had any new growth in 2022.
- One previously unknown population of Barbados gooseberry (*Pereskia aculeata*) was reported in late 2022, and BIISC crews worked with a very grateful resident to remove the thorny plant from his yard - no new adults were found in 2022 elsewhere.
- Dahoon holly (*Ilex cassine*) was only ever detected in a couple of locations, but proved to be a challenging plant to control. Extensive effort on these populations over the last few years is now paying off; a very large adult plant found in 2021 was completely controlled by 2022, and quarterly sweeps have been instituted at all 3 sites to catch any keiki before they can become entrenched.

Photinia davidiana control 2022



0 0.2 0.4 Kilometer



There is a much longer way to go with other targets, but much progress was made in 2022. For several summers, BIISC crews have spent weeks camping on Mauna Kea to attack *Photinia davidiana*, and in 2022 did extensive work on the dense core of the population, controlling hundreds of mature individuals. *Cotoneaster* control has been working in areas where BIISC has access, but in some sites there has been difficulty obtaining ROE that has interfered with progress. Most of these sites are not single resident landowners, but large entities such as corporations or trusts which do not respond to inquiries. Efforts to contact these landowners are ongoing. One of our eradication targets, *Rubus sieboldii*, was moved into containment status rather than eradication in 2022 based on results of attacking the core population. We continue to control outliers, but extensive effort has not resulted in significant control gains of the main population. We are in discussions with the UH-Hilo SDAV lab and their federal partners, who are interested in testing drone applications of herbicide on this parcel once permits are finalized. The owner has also shared that they are considering bulldozing the property at

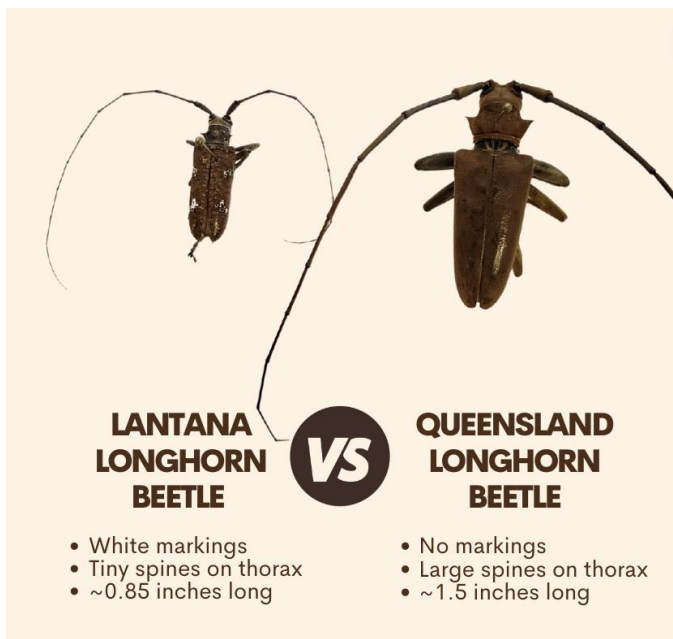
some point, so there may be hope for eradicating this species through other means, which we will assist with however we can.

**Expected outcome #4:** *Approximately 800 albizia trees will be controlled along routes prioritized in the Albizia Emergency Hazard Mitigation Plan (2015).*

**Actual Outcome:** MET. Although we were not able to secure funding to continue into the next phase of the Kahakai Boulevard mitigation, we were able to work in neighborhoods and some roadsides to control non-hazardous trees before they became hazards. BIISC controlled 6281 albizia during roadside work, with a total of 14,178 albizia controlled overall throughout the island.

**Goal #2: Hawaii island partners will produce cutting-edge research and develop new management tools to address emerging pests on the island.**

**Expected Outcome #1:** *Working group meetings will be convened quarterly to coordinate and communicate research on the Queensland Longhorn Beetle.*



**Actual outcome:** Shift to other approaches.

Unfortunately, 2022 proved to be a challenging year for QLB researchers. The lead ARS-PBARC researcher we had been working with, Sheina Sim, did not receive funding for her proposed project, and the USGS project wrapped up after two years of survey and mapping work. The working group members no longer felt that the meetings were useful and so those were discontinued. BIISC proposed a community webinar, but the researchers felt they did not have sufficient new information to make it worthwhile. Our outreach staff continues to be the [go-to resource](#) for the community for QLB information. We received a request in late 2022 for a talk at the Hawai'i Cacao Growers Annual Meeting about QLB, and secured a speaker and assisted in preparing the presentation. We published extensive information online about

the beetle during spring emergence, and we continue to help procure adult beetles from the community so that PBARC can maintain their colony (they have an ongoing project looking at using nematode worms to attack the larvae in channels in infested trees). We also found a lot of value in photographing other longhorns found on Hawai'i Island that are commonly mistaken as QLB, and sharing that information regularly via website and social media to cut down on misidentifications.

**Expected Outcome #2:** *BIISC will contribute up to 80 hours of outreach program time and 80 hours of planning in support of expanded management of the Two-Lined Spittlebug.*

**Actual Outcome:** Mixed, effort shifted. BIISC provided the promised hours of outreach program time, plus more. Although BIISC had submitted a proposal to CTAHR for assisting with expanded management, in the end the CTAHR team decided not to pursue expanding the management efforts in the ways that we had originally discussed, so BIISC's assistance in that space was not needed. The extra hours instead were put toward the outreach work. BIISC staff actively participated in bimonthly TLSB subcommittee meetings held by the Hawaii Cattlemen's Association, and submitted comments about the grave impacts of TLSB on island agriculture in support of the bills introduced at the state legislature. We helped the CTAHR team promote their crew position when hiring. BIISC Outreach also created multiple opportunities to showcase TLSB and the work being done. During Hawaii Invasive Species Awareness month 2022, we coordinated a



story with Catherine Cruz of Hawaii Public Radio and arranged for an interview with NRCS rangeland specialist Carolyn Wong Auwelo. BIISC staff created a [video for the airport biosecurity display](#) which highlighted the impacts of TLSB on ranching and Carolyn’s work. We also worked with a local reporter to do an extensive story on TLSB for the *Hamakua Times*, and presented at a neighborhood board annual meeting with an update on the insect (Hamakua is considered a high-risk area for TLSB, with extensive pastures and ranching operations). At the end of 2022, BIISC created an informational rack card at the request of lead CTAHR researcher Mark Thorne, to promote and explain his newly developed TLSB app. Throughout the summer, we shared social media posts identifying TLSB and promoting caution to prevent spread.



## H

*BIISC field crew Kai’a Andaya and Murphy Bierman in Volcano Village displaying the massive vines of *Lonicera hildebrandiana*, a new BIISC eradication target*

### **HISC Funding Priorities**

The *HISC & CGAPS 2025 Joint Strategy: In Support of the Hawai’i Interagency Biosecurity Plan* provides a guideline for how to plan and prioritize efforts in invasive species work across the state. While overall

BIISC approaches these priorities from many angles, our direct work in the invasive species control project focused on the priorities 1) Prevention & Early Detection/Rapid Response for New Invasions, and 2) Management of the Inter/Intra-Island Movement of Invasive Species.

As part of the Hawai'i Island team implementing the Mamalu Poepoe (Ports of Entry/Exit Monitoring) program, we regularly monitored our island's two airports for a number of high-profile pests. We offer training to nursery staff and other front-line workers on additional high-profile APHIS pests not yet known to be on island. We launched an online slug reporting form that can help identify new species of slugs appearing on our island (or moving to other islands). Our Plant Crew worked extensively on controlling plant species at multiple levels of status: eradication, containment, and exclusion. We provide extensive training to communities in identifying and reporting unusual species, as an alert to new and incipient invasions.