REPORT TO THE THIRTY-SECOND LEGISLATURE
STATE OF HAWAII
2023 REGULAR SESSION

BUDGETARY AND OTHER ISSUES REGARDING INVASIVE SPECIES

Prepared by:

THE STATE OF HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE

In response to Section 194-2, Hawaiʻi Revised Statutes

Honolulu, Hawaiʻi

October 2022

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2023 Executive Summary

HAWAIʻI INVASIVE SPECIES COUNCIL

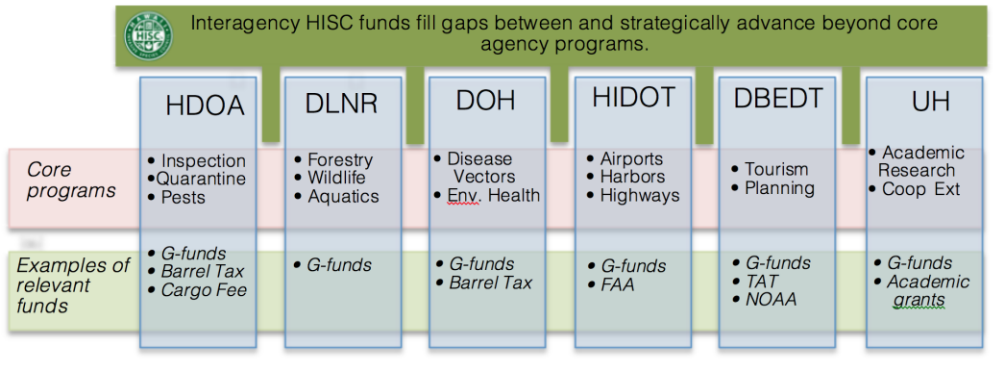
PROVIDING STATE POLICY DIRECTION, COORDINATION, AND PLANNING TO PROTECT HAWAIʻI FROM THE IMPACTS OF INVASIVE SPECIES

SUZANNE CASE DLNR | PHYLLIS SHIMABUKURO-GEISER HDOA | KEATHLEEN HO DOH | NICHOLAS COMERFORD, UH | MARY ALICE EVANS, DBEDT | DAVID RODRIGUEZ DOT

SEN. RON KOUCHI | SEN. MIKE GABBARD | REP. LISA MARTEN | SEN. LORRAINE INOUYE | REP. NADINE NAKAMURA | SEN. CHRIS LEE | REP. TINA WILDBERGER | REP. NICOLE LOWEN

BUDGETARY ISSUES RELATING TO INVASIVE SPECIES

- State agencies largely address invasive species through existing programs funded by departmental budgets. A 2015 report by the Legislative Reference Bureau found that in FY14, $19.6M (0.15% of a total $13B state budget) in state funding was provided for invasive species programs at state agencies.
- Hawaii Invasive Species Council (HISC) funds support interagency projects and new research that help fill the gaps between permanent programs. For FY22 the legislature maintained its $5.75M recurring appropriation to the HISC.

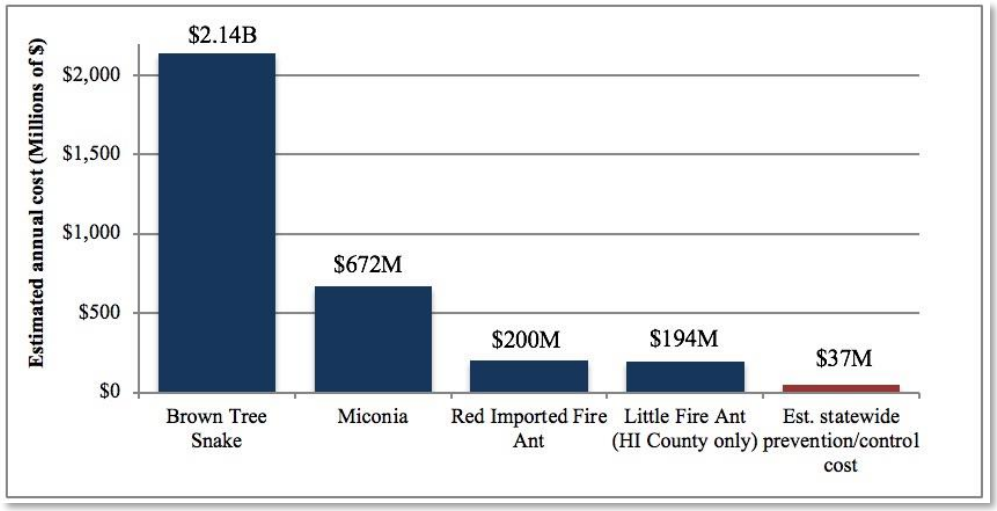


- In FY22, the HISC received 51 requests for research and interagency projects not covered by existing agency programs or funds, totaling $9,127,749.
- The **HISC and Coordinating Group on Alien Pest Species (CGAPS) 2025 Joint Strategy** was developed in support of the Hawai‘i Interagency Biosecurity Plan to focus efforts on those actions that are the most critical to improving biosecurity in the next five years.
- **The primary biosecurity need moving forward continues to be increasing civil service capacity to support the early detection and rapid response mandate**. Positions are needed

at the Hawaii Department of Agriculture (HDOA) for commodity inspection and response, and at the Department of Land and Natural Resouces (DLNR) Division of Aquatic Resources (DAR) for hull inspection.

THE COST OF INACTION: ECONOMIC DAMAGES FROM INVASIVE SPECIES

Economic impacts shown below include estimated damages from species that are already in Hawai‘i (*Miconia* and little fire ant) and potential damages from species that have so far been kept from establishing (brown tree snake and red imported fire ant).



*L to R: brown tree snake impact ($2.14B/yr in infrastructure, health costs, tourism), Miconia impacts ($672M/yr in lost water recharge, lost bird habitat); RIFA cost ($200M/yr in lost tourism, agriculture); LFA cost, HI County only ($194M/yr in costs to various sectors); the estimated **additional** annual need for invasives programs (HIBP).*

ADVICE REGARDING INVASIVE SPECIES IN THE 2023 LEGISLATURE

The primary recommendation of the HISC to the legislature in 2023 is to **continue to support the implementation of the Hawai‘i Interagency Biosecurity Plan (HIBP)**, the State's 10-year vision roadmap to enhance biosecurity and invasive species mitigation (http://dlnr.hawaii.gov/hisc/plans/hibp/). After the 2008 economic downturn HDOA Plant Quarantine, Department of Health (DOH) Vector Control Branch positions, and HISC funds were cut. The result was increased invasive species establishment and increased control costs, including substantial events such as the dengue fever outbreak of 2015, the coconut rhinoceros beetle detection and subsequent establishment in 2013, and the spread of little fire ants to O‘ahu in 2013. Investing in t**he HIBP will save Hawai‘i money by avoiding invasive species-incurred economic impacts. The cost of deterrence is a small fraction of the cost of long-term economic damage from invasive species (severe coconut palm die-offs, biting sand flies, noisy frogs, stinging ants, and native species extinctions).**

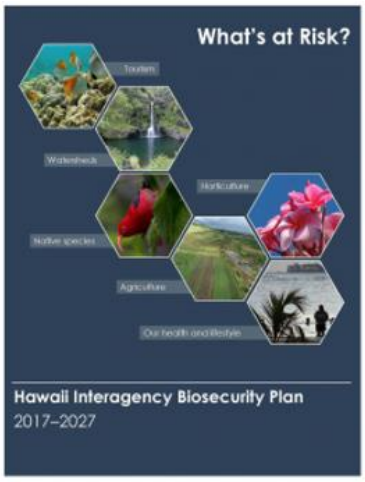
BIOSECURITY PLAN LEGISLATIVE GOALS

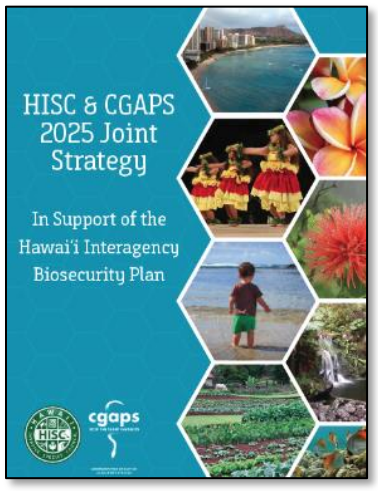
- **PAST SUCCESSES:**
  - Fully restored Vector Control Branch at Department of Health
  - Added 2 University of Hawaii positions for invasive ant work
  - Provided funding for Rapid ‘Ōhi‘a Death, parakeets, and coffee berry borer
- **SUCCESSES FROM THE 2022 LEGISLATIVE SESSION:**
  - An additional $1.5M to HISC in non-recurring funds to support interagency invasive species projects and programs and invasive ant work

- Support for Ports of Entry Biosecurity with $525k to HDOA

- **RESOURCES NEEDED TO ACHIEVE HIBP GOALS**
  - Restoring and increasing capacity at key agencies; Additional positions for HDOA Plant Pest Control Branch and Plant Quarantine, DLNR DOFAW field technicians for invasives control in natural areas, DLNR DAR biologists for early detection and rapid response to aquatic in
  - New containment facilities to support biocontrol research and programs for Hawaii & the Pacific Region
  - Restoration to HISC funding that received a 20% reduction to (LNR402) in 2022 Legislative Session

<u>REFOCUSING ON THE VISION OF A MORE BIOSECURE HAWAI'I</u>





The Hawai'i Interagency Biosecurity Plan (HIBP) provides a 10-yearr roadmap (2017-2027) for the State of Hawaiii to enhance its core biosecurity programs across multiple agencies and direct future research and development to protect our agriculture, natural resources, human health, tourism, and way of life in the islands.

The Coordinating Group on Alien Pest Species (CGAPS) is comprised of management-level participants from agencies and NGOs, with decades of experience and a deep understanding of the issues and gaps. In 2002, the legislature established the Hawai'i Invasive Species Council which provided the framework for engaging the appointed executives of the state agencies.

In 2019, HISC and CGAPS joined their two networks together to assess the greatest needs from the Hawai'i Interagency Biosecurity Plan to create the five-year HISC & CGAPS 2025 Joint Strategy. Implementation and tracking for the Hawai'i Interagency Biosecurity is now being acheived by reporting under the strategies and key actions outlined in the HISC/CGAPS 2025 Strategy.

1. Hawai‘i Invasive Species Council Actions in FY22

1.1 Purpose of this Report

Invasive species are non-native species whose introduction does, or is likely to, cause economic or environmental harm or harm to human health. Invasive species do not fall exclusively under the mandate of any single state agency. Recognizing this, the State Legislature in 2003 authorized the creation of the interagency Hawaii Invasive Species Council (HISC, Act 85, Session Laws of Hawaii 2003), and stated, “the silent invasion of Hawaii by alien invasive species is the single greatest threat to Hawaii’s economy, natural environment, and the health and lifestyle of Hawaii’s people and visitors.”

This document meets the reporting requirements of Section 194-2, HRS, to annually report to the Legislature on budgetary and other issues regarding invasive species. Per Chapter 194, HRS, the HISC is an interagency board administered by the Department of Land and Natural Resources.

1.2 Composition and Function of the HISC

Chapter 194, HRS, requires that the HISC be composed of the chairs, directors, or designees of the agencies below. In FY22 the Council was composed of:

- Suzanne Case, Department of Land and Natural Resources
- Phyllis Shimabukuro-Geiser, Hawaii Department of Agriculture
- Kathleen Ho, Department of Health
- Mary Alice Evans, Department of Business, Economic Development, and Tourism (DBEDT)
- Nicholas Comerford, University of Hawaii (UH)
- David Rodriguez, Department of Transportation (DOT)

Additionally, legislators and federal agency partners are invited as non-voting participants to provide advice and guidance to the HISC. FY20 legislative appointees included:

- Senators Ronald Kouchi, Mike Gabbard, and Lorraine Inouye
- Representatives Nadine Nakamura, Chris Lee, Lisa Marten, Tina Wildberger, and Nicole Lowen.

The HISC’s function is to coordinate and promote invasive species prevention, control, outreach, and research. Chapter 194, Hawaii Revised Statutes (HRS), establishes the interagency HISC and determines its composition and responsibilities. Several key responsibilities of the HISC include:

- Advise, consult, and coordinate invasive species-related efforts with and between departments. This is achieved through the actions of the Council (Section 1.3 of this report), the staff support program (Section 1.4), and interagency projects funded by the HISC (Section 2.2).
- Identify agency resource shortfalls with respect to invasive species. This is achieved by tracking the implementation progress of the Hawai‘i Interagency Biosecurity Plan (Section 1.5) and HISC/CGAPS 2025 Joint Strategy.
- Coordinate and promote the State’s position with respect to invasive species issues. This is achieved by adopting Council resolutions (Section 3.1) and testimony (Section 3.2)

- Advise the governor and legislature on budgetary and other issues regarding invasive species. This is achieved by this report, particularly Section 3.

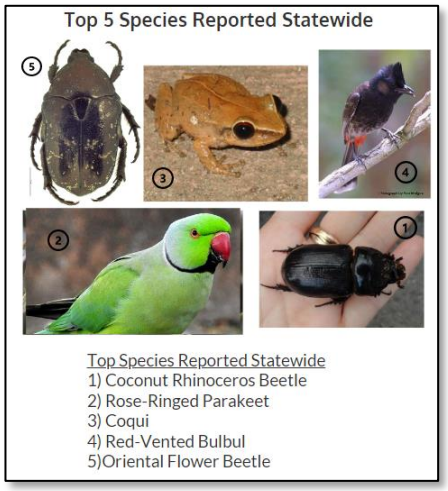
1.3 Council Meetings in FY22

All HISC meeting agendas and notes are available at http://dlnr.hawaii.gov/hisc/meetings/. Due to COVID-19 and staffing shortages with the HISC Support Program, only one Council meeting was held during FY22 to approve the FY22 HISC Budget in August 30, 2021.

1.4 HISC Support Program Projects in FY22

The directions of the HISC are carried out by staff of the HISC Support Program, which is administered by the DLNR Division of Forestry and Wildlife (DOFAW). Non-civil service HISC Support staff are provided by the UH Pacific Cooperative Studies Unit and are supported on a year-to-year basis utilizing funds appropriated to HISC by the legislature. HISC funds are administered by DLNR DOFAW under the Native Resources and Fire Protection Program (Program ID LNR402).. The HISC Support Program provides a number of core coordination services across agencies in addition to managing the process of disbursing funds to interagency projects:

- **Public Pest Reports and 643PEST.org:** The pest hotlines (643-PEST and 643pest.org) are the centralized clearing houses for Hawai‘i pest reports since 2005. The online hotline (643pest.org) is a collaborative effort of DLNR, HDOA, and UH and is managed via the HISC. In FY22, **775 pest reports** were submitted, an increase with 523 pest reports in FY21. **One third of these reports** were forwarded to state agencies and invasive species management groups for on-the-ground actions. Approximately 50% of the reports were for widespread invasive species that are beyond the early detection and rapid response window, in which case location-specific, science-based management strategies were shared with the reporter. There have been **356 unique species** reported and identified via the online pest hotline. More details on usage of this tool can be found at: www.643pest.org/Dashboard.aspx



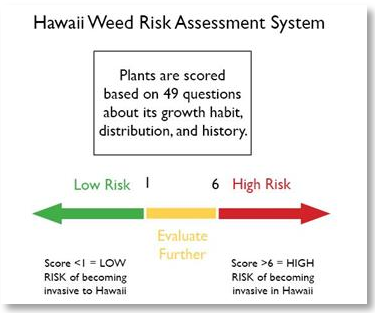
- **Ports-of-Entry Pest Monitoring Program:** The Ports-of-Entry Pest Monitoring Program (formerly known as Mamalu Poepoe) is an interagency collaboration coordinated by the HISC. In March 2021, the program ended a five-year pilot period that was funded by the Department of Transportation and supported monitoring activities at six main airports statewide for the following invasive targets: Africanized bees, invasive ants (including little fire ant - LFA), mosquitoes and coconut rhinoceros beetle (CRB). The program continues operations at airports using FY22 HISC funds. **Between June 30, 2021, and July 1st, 2022, the program had the following interceptions: 15 swarms at different airports (all tested negative for Africanized genes), 1 CRB at HNL, and LFA detections at ITO and KOA airports**. In FY22 DLNR secured Congressional

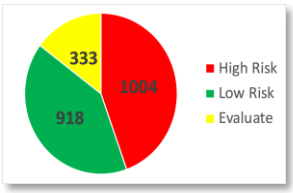
Direct Spending (CDS) to support the continuation of monitoring activities at airports as well as an expansion to seaports (Honolulu, Nawiliwili, Hilo and Kawaihae harbors) and the addition of a new invasive target: Japanese beetle. In 2022, DLNR/HISC aided the introduction of a bill to support monitroing activities through Hawai‘i the Department of Agriculture (HDOA). HDOA and DLNR are coordinating the use of funds federal and state funds for the program.

- **Hawaii Invasive Species Awareness Month (HISAM) 2022:** Hawai‘i Invasive Species Awareness Month 2022 (HISAM22) was the third year running featuring a month-long outreach effort focusing on Hawaii's invasive species issues. HISAM22 **featured 21 virtual talks with over 600 live attendees, and over 2,000 YouTube view since.** Talks featured a wide range of invasive species topics from experts across the state. Awards were given to business leaders, community heroes, and island MVP's.

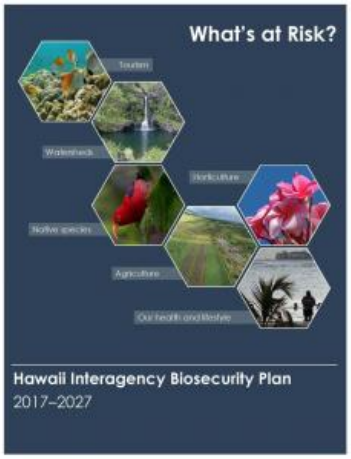
Visit the HISAM 22 web page (https://dlnr.hawaii.gov/hisc/2022hisam/) to see the recipients of the HISAM 22 awards, view the presentation playlist, and see view the full calendar of events.

- **The Hawaii-Pacific Weed Risk Assessment (HPWRA)** system is an internationally recognized screening tool that rates the potential of plants to become invasive by answering questions about their biology, ecology, and history of invasiveness elsewhere. This voluntary screening system, implemented by one HPWRA specialist, provides a science-based method of assessing plants being imported into and/or planted within the Hawaiian Islands. The HPWRA system is an integral component of state-wide prevention measures and is currently used by both public and private entities and individuals to assist in making more informed planting and importation choices. During FY22, **101 assessments (84 new and 17 revised)** were completed, bringing the total of plants screened to date to 2255 (See figure to the Right). Assessments are posted on the Plant Pono website (plantpono.org), the public portal for accessing weed risk assessments and other information on native and non-invasive planting choices.





1.5 Hawai‘i Interagency Biosecurity Plan Implementation

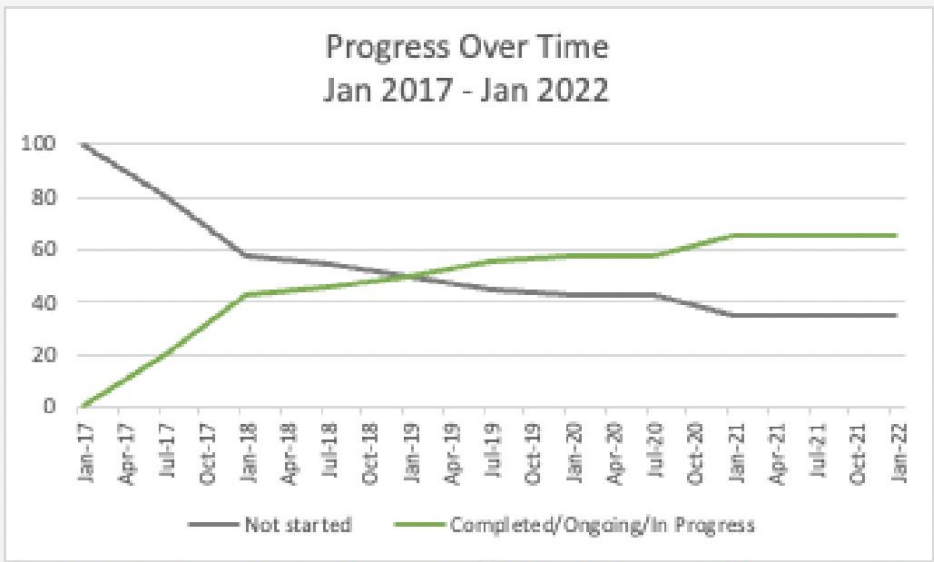


The Hawai‘i Interagency Biosecurity Plan (HIBP) provides a 10-yr roadmap (2017-2027) for the State of Hawaii to enhance its core biosecurity programs across multiple agencies and direct future research and development to protect our agriculture, natural resources, human health, tourism, and way of life in the islands. Achievements in the HIBP are made by agency staff and by the legislature, with HISC providing tracking and reporting of implementation progress.

The HIBP is comprehensive in scope, defining "biosecurity" as the full set of policies and actions taken to mitigate the impacts from invasive species. This includes pre-border biosecurity (e.g., offshore compliance), border biosecurity (e.g., inspection and interception), and post-border biosecurity (e.g., early detection, rapid response, and biocontrol). The final result is a matrix of 147 action items, each assigned to a lead agency and associated with an estimated cost and implementation timeframe.

The HISC produces progress reports on implementation annually. These reports compile qualitatitive status updates on action items that are provided by staff at implementing agencies, and are available at https://dlnr.hawaii.gov/hisc/plans/hibp/. As of January 2022, implementation has initiated for 65% of the 147 actions. Of the 65%, only 41% of actions are completed or ongoing with a small percent considered completed, 24% of actions are in progress, and 34% of actions have not initiated or are in need of re-evaluation by the lead agency.

While many actions were initiated in the first few years of the HIBP, what remains are more complex actions that require funding or policy-level changes and the coordinated efforts and willingness of our entire partner network, policymakers, and community.



65%

of actions completed, approved, ongoing, or in progress

26%

of actions are not started, or are no longer being pursued or need re-evaluation

Photo: Coconut Rhinoceros Beetle, only present on O'ahu. Severely damages and kills coconut palms and other palm species. (HDOA).

Additional information on remaining legislative goals can be found in Section 3 of this report.

2. Budgetary Issues Relating to Invasive Species

2.1 Agency Resources & Shortfalls Relating to Invasive Species

The Legislative Reference Bureau released a 2015 report, titled *Can't see the Forest for the (Albizia) Trees: An Invasive Species Update,* that was commissioned as an update to the 2002 report *Filling the Gaps in the Fight Against Invasive Species.* The report details the roles, resources, and shortfalls of government agencies in great detail.

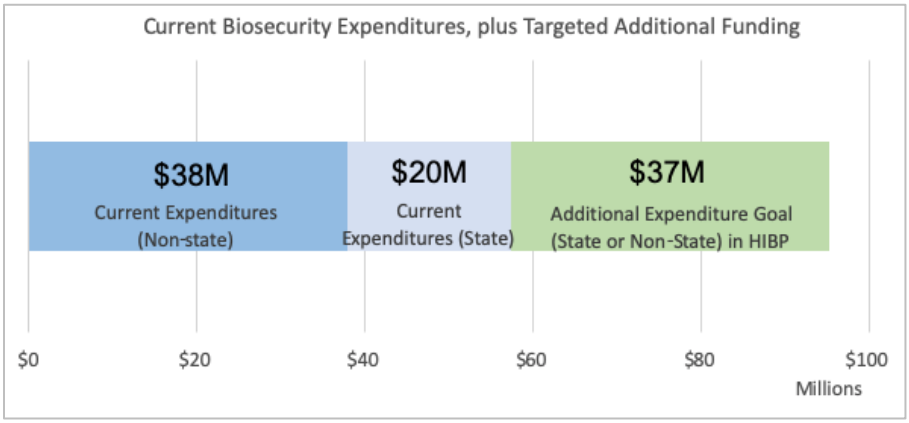


Figure 1: "Current" biosecurity annual expenditures per the 2015 Legislative Reference Bureau Report (FY14), with estimated additional annual expenditure target recommended by the Hawaii Interagency Biosecurity Plan. HIBP costs can be supported by State or non-State funding sources.

Most biosecurity or invasive species efforts are addressed by permanent departmental programs, rather than reliant on the interagency "gap filling" project funds provided by HISC. Continued support for, and enhancement of, departmental programs is critical to making sure that basic infrastructure exists for invasive species prevention and control in Hawaii. A brief summary of permanent biosecurity or invasive species programs at individual State departments is available at https://dlnr.hawaii.gov/hisc/info/policy/.

2.2 HISC Funding & FY22 Funded Projects

The HISC administers an interagency budget that supplements existing departmental programs by strategically filling gaps between mandates, and by funding research to address new threats or develop new tools. State agencies, including the UH system, apply for HISC funds on a competitive basis annually. Counties, local offices of federal agencies, and universities in other states are also eligible.

In FY22, the legislature included the amount of $5.75M per year in the base operating budget. Requests for funds from interagency projects are typically around $9M annually. HISC tends to accommodate a larger number of projects at partial funding rather than providing the full amount of requested funds to a small number of projects. This strategy encourages the use of matching funds and provides the broadest impact possible for HISC funds.

Summary statistics for acres surveyed and treated for invasive species are presented below. It should be noted that the acres treated figure is intentionally much less than the number of acres surveyed: the strategy pursued by many of funded projects is to survey broadly in order to provide sufficient detection effort, but treat strategically. This allows for effective protection of a

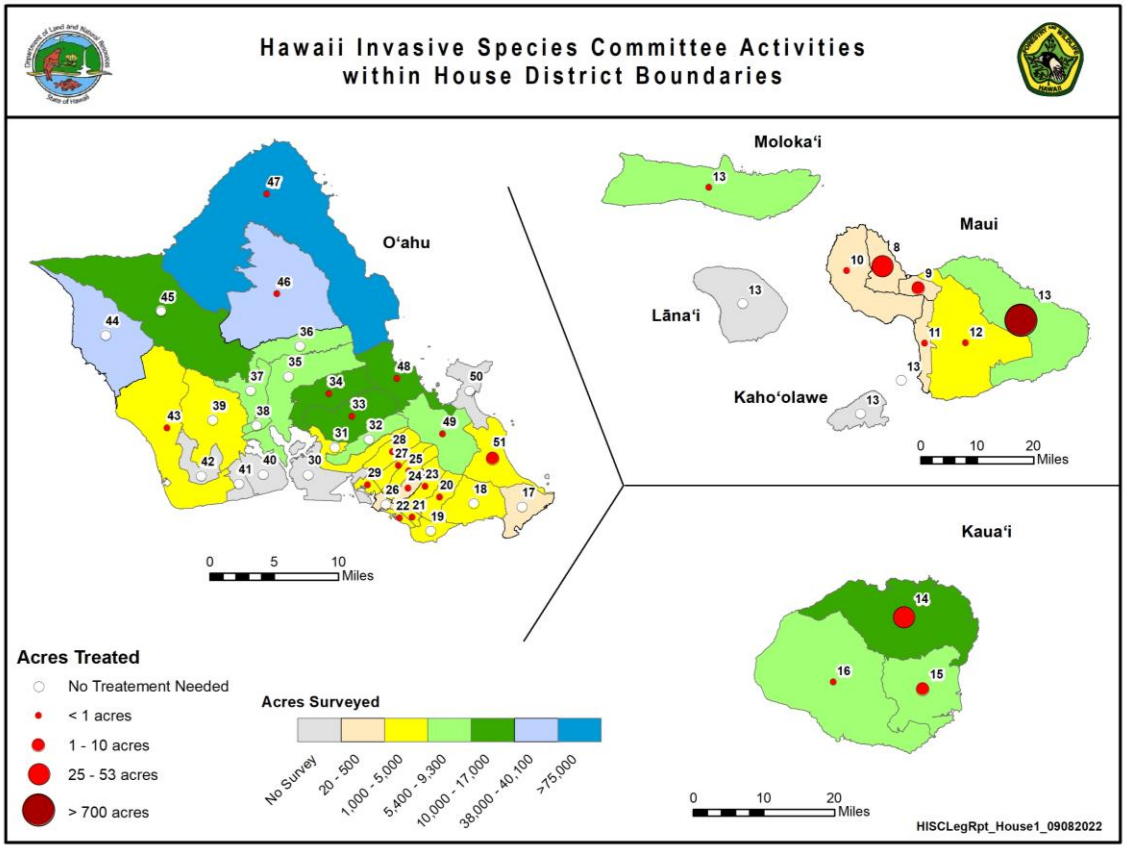
large area by using small-scale treatments (e.g., herbicides or manual removal) applied directly to invasive species targets. Additionally, these figures should be viewed as only a subset of the achievements of HISC-funded projects: many of the projects HISC funds are research or outreach efforts that do not result in a standard deliverable that can be displayed on a map. The detection and control projects providing data for Table 2 and Figures 2 and 3 include the Invasive Species Committees, the Koʻolau Mountain Watershed Partnership, the, the UH School of Life Sciences, and UH College of Tropical Agriculture and Human Resources.

A list of the individual projects are available at https://dlnr.hawaii.gov/hisc/applicationguidelines/ and final project reports will be posted to this page as they become available.

Table 2: Summary Statistics for HISC-funded Detection and Control Projects in FY22

County	Acres Surveyed	Acres Treated
Kauai	31,156	55
Oahu	277,670	6
Maui	20,519	791
Hawaii	252,415	4,510
Totals	**581,761**	**5,362**

Figure 2: Acres Surveyed and Treated for Invasive Species by Detection and Control Projects Supported by HISC Funding in FY22, Separated by House Districts



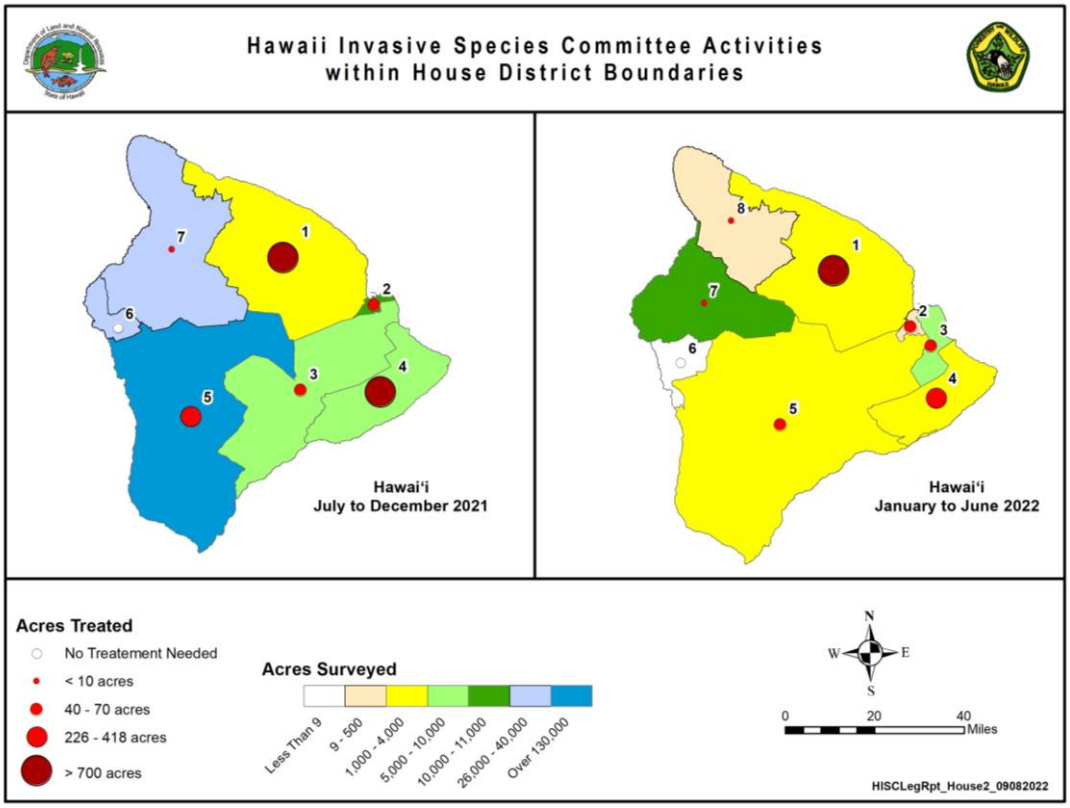
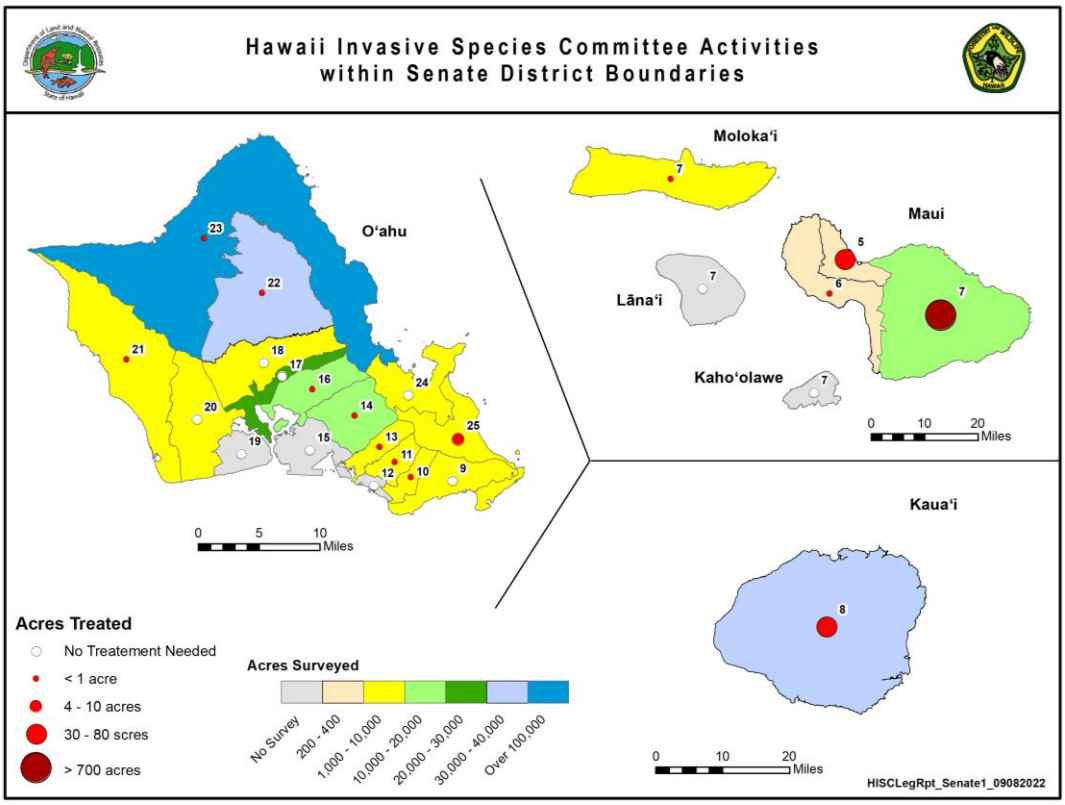


Figure 3: Acres Surveyed and Treated for Invasive Species by Detection and Control Projects Supported by HISC Funding in FY22, Separated by Senate Districts



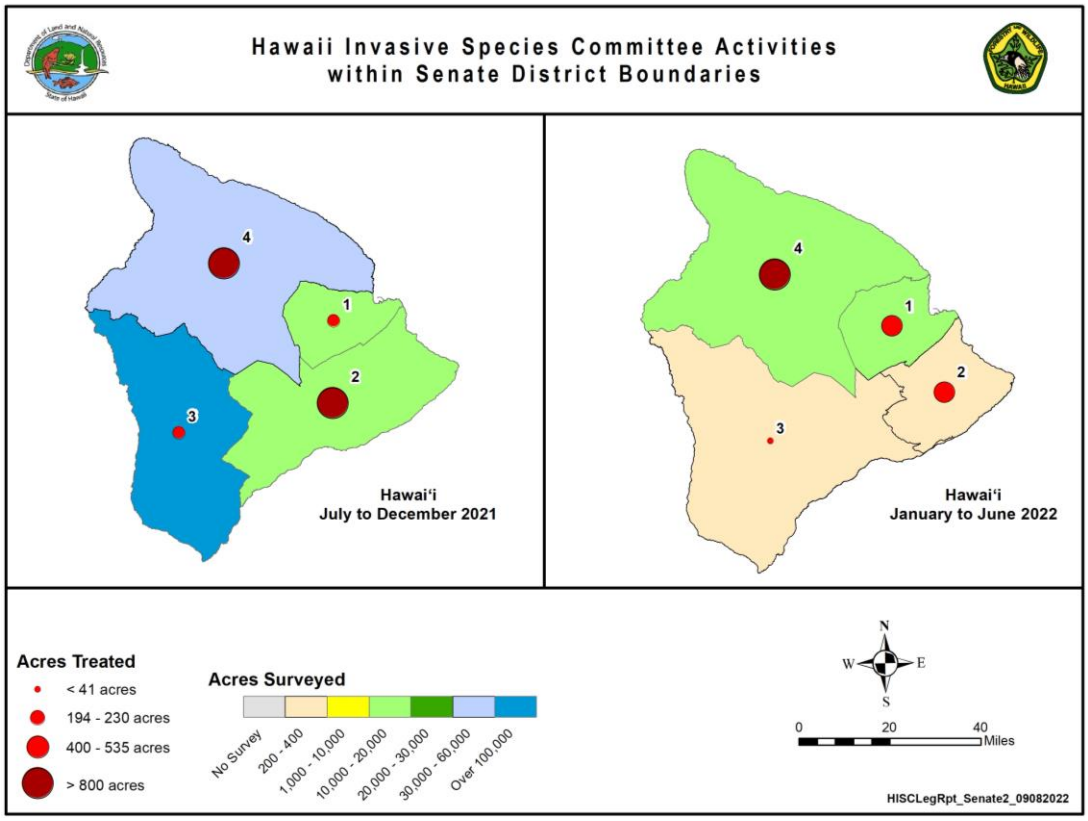


Table 3: Interagency Projects Funded by HISC in FY22

Agency	Proposal Title	Total Requested	Total Awarded
UH CTAHR	1. Detection and Management Strategies for the Control of *Prosapia bicincta* (Twolined Spittlebug) in Hawaii	$421,322	$184,789.80
KMWP	Albizia Community Control Teams and Regional Eradication Efforts in the Ko'olau	$170,899	$66,300.00
UH	An economic analysis of LFA eradication on Maui	$64,845	$28,275.00
UH CTAHR	Animal Disease Diagnostic Laboratory Support for Shrimp Pathogens	$119,026	$11,186.18
UH CTAHR	Beekeeper organization and cooperation: Our "best shot" against Africanized Honeybees	$91,000	$24,375.00
USFS	Biocontrol of invasive Rubus	$112,000	$25,000.00
USFS	Biocontrol of melastomes and other high priority weeds	$185,680	$60,000.00
DOFAW	Birds, Not Mosquitoes: Landscape-Scale Mosquito Control	$117,618.47	$29,737.50
CGAPS	Coordinating Group on Alien Pest Species	$62,000	$37,050.00
UH CTAHR	Detection & Invasive Potential and population dynamics of *Arcte coerula (Lepidoptera, Noctuidae*), a New Pest of Māmaki in Hawaii.	$41,135	$13,745.55
BIISC	Detection and Control of Invasive Species on Hawai`i Island	$479,903	$342,621.15
BIISC	Detection and Control of Rapid 'Ōhi'a Death on Hawai'i Island	$205,616	$57,259.00
KMWP	East Oahu Feral Goat Control and Surveys	$15,383	$5,461.95
DOH	Environmental Assessment for the Suppression of *Aedes aegypti*, *Aedes albopictus*, and *Culex quinquefasciatus* Mosquitoes in Hawaii using Wolbachia-based Incompatible Insect Technique	$160,000	$78,000.00

BIISC	Eradication Of Devil Weed to Protect Agriculture On Hawai`i Island	$55,862	$25,000.00
USDA NWRC	Field Trials of Mongoose Toxicant Efficacy Under EPA Experimental Use Permit	$65,960	$31,684.58
UH Life Sciences	Generating needed data to build a risk assessement framework for invasive algae in Hawai‘i.	$234,598	$26,948.03
HAL	Hawaii Ant Lab core funds	$296,581	$289,166.48
DLNR DAR	Hawaii Ballast Water and Biofouling	$90,560	$78,000.00
BIISC	Hawaii Island Albizia Hazard Mitigation Plan Project Thirteen: Kahakai Boulevard	$281,448	$84,405.00
USDA NWRC	Investigating infection levels and population dynamics of wild rats (*Rattus spp.*) to inform management and surveillance of rat lungworm in Hawai‘i	$89,749	$17,550.00
UH Life Sciences	Investigating management and competitive interactions between distinct yet related invasive algal species *Avrainvillea erecta* and *Avrainvillea lacerata* at different depth levels.	$65,379	$17,750.85
KISC	Kauai Invasive Species Committee Early Detection, Rapid Response, and Control	$823,843	$493,534.28
KISC	Kauai Rapid Ohia Death Response	$106,303	$43,293.90
HISC	Mamalu Poepoe: Invasive Species Surveillance at ports of entry	$299,000	$143,629.20
MISC-MoMISC	Maui Invasive Species Committee (MISC) - Outreach and Education in Maui County	$197,421	$86,953.43
MISC-MoMISC	Maui/Molokai Invasive Species Committees - Detection and Control of Invasive Species in Maui County	$1,418,516	$751,162.43
DLNR-DOFAW	Mosquito surveys and larval control on Kauai to further landscape-level mosquito control and protect endangered honeycreepers	$102,182	$29,877.90
USFS	Natural enemies for biocontrol of albizia	$191,800	$65,737.00
OISC	OISC's Early Detection & Rapid Response on O‘ahu	$242,361	$134,138.55
OISC	OISC's Invasive Species Outreach & Education on Oahu	$174,983	$91,365.30
OISC	OISC's Landscape Level Control of High-Impact Invasive Species on O‘ahu	$841,797	$448,324.50
UH CTAHR	Outreach and extension for management of Rapid Ohia Death on Hawaii Island	$75,955.97	$29,250.00
DOH	Project Support for DLNR and DOH Implementation of Incompatible Insect Technique using Wolbachia for control of three mosquito species	$90,794	$48,312.23
BIISC	Public Engagement in Invasive Species Control on the Island of Hawaii	$293,262	$196,472.00
KISC	Public Outreach and Education on Kauai	$156,359	$76,742.25
KMWP	Tibouchina Control and *T. Ovatus* Disbursal in the Ko’olau	$91,676	$39,000.00
	Total	$8,532,817	$4,212,099.00

* Abbreviations

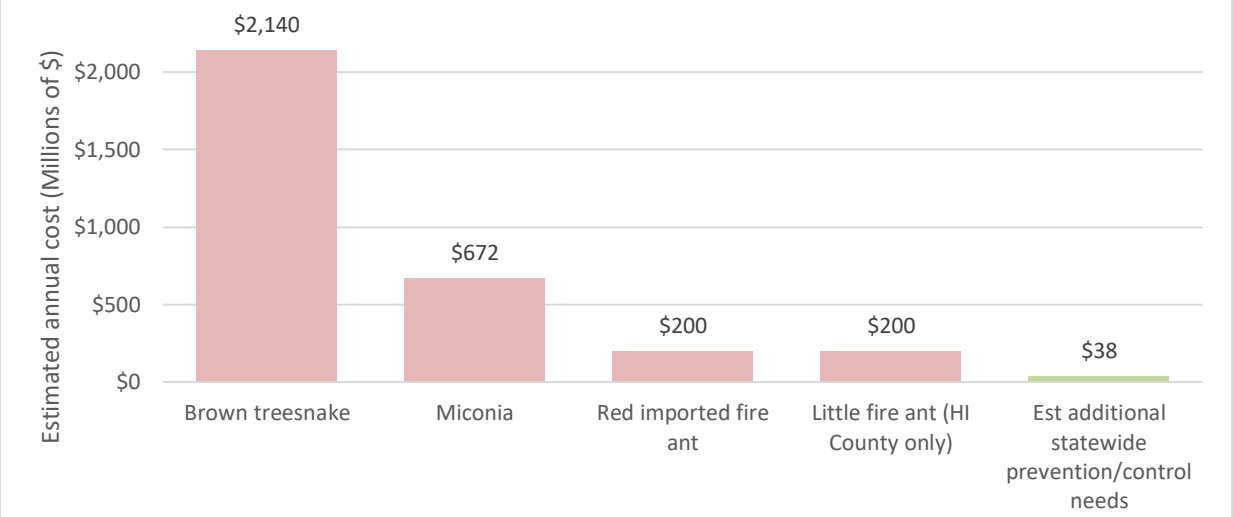
DLNR= Department of Land and Natural Resources; UH= University of Hawaii; USDA= US Department of Agriculture; USFS= US Forest Service; PCSU= Pacific Cooperative Studies Unit; MISC= Maui Invasive Species Committee; BIISC= Big Island Invasive Species Committee; OISC= Oahu Invasive Species Committee; KISC= Kauai Invasive Species Committee; DOH = Department of Health; HAL= Hawaii Ant Lab; CGAPS= Coordinating Group on Alien Pest Species; CTAHR= College of Tropical Agriculture and Human Resources; KMWP= Ko‘olau Mountain Watershed Partnership; NWRC= National Wildlife Research Center

2.3 The Cost of Inaction: Examples of Invasive Species Costs in Hawaii

Due to a lack of consistent funding for invasive species programs, many invasive species problems in Hawaii have become worse over the past decade. Coqui frogs have spread across Hawaii Island, exist in a handful of populations on Maui, and are intercepted regularly on Oahu in small numbers. In December 2013, Little Fire Ants, which had been found throughout the greater Hilo area and on Kauai for 10 years, were detected on Maui and Oahu. A new pest, Coconut Rhinoceros Beetle, was detected on Oahu in December 2013 and threatens to decimate Hawaii's coconut palms. The invasive plant *Miconia* is beyond control on Hawaii Island and is at a critical point-of-no-return on Maui and Oahu. *Aedes aegypti*, a species of mosquito, has been detected at an increased frequency at Honolulu International Airport, and is a potential carrier of Zika, yellow fever, dengue fever, and chikungunya disease.

> The relatively minimal cost of supporting invasive species prevention and control should be weighed against the potentially devastating economic impact that widespread invasive species can have in Hawaii'.

Fig 4: Examples of estimated economic damages from invasive species in Hawaii (numbers approximate).



The Hawai'i Interagency Biosecurity Plan (HIBP) estimates that an additional $37M should be spent annually on invasive species programs in Hawaii in order to adequately mitigate invasive species impacts. The damages associated with invasive species far exceed the estimated cost for prevention and control programs. Investing in departmental programs (such as agricultural inspections and watershed management) and interagency projects under the HISC is an extremely cost-effective strategy for Hawaii. Full details of program needs and associated costs can be found in the HIBP at http://dlnr.hawaii.gov/hisc/plans/hibp/.

3. Advice to the Governor and Legislature Regarding Invasive Species

Chapter 194, HRS, requires the HISC to advise the Governor and the legislature on issues regarding invasive species. The HISC fulfills this mandate by adopting resolutions, suggesting legislation, submitting testimony, and by providing other relevant advice in this annual report.

3.1 Recent HISC Resolutions

No HISC resolutions were adopted in FY22, but State and Federal agencies continue monthly meetings to strategize on the planning and construstion of Pacific Regional Biocontrol Facilities in Hawai‘i. HISC Resolution 21-1 was adopted by the Coucil for the continued coordination and commitment of the State on this effort and Governor Ige as well as the HISC Co-Chairs participated in the Executive Briefing in January 2022 to engage external partners in this effort. To view the full Executive Briefing click HERE. Previous HISC resolutions are available at http://dlnr.hawaii.gov/hisc/reports/resolutions/.

3. 2 Review of the 2022 Legislative Session

The 2022 legislative session included roughly 20 measures relating to invasive species. Two of these measures passed and one to support invasive ant work was incorporated into the State Budget Bill:

- HB1600 Relating to the State Budget appropriated $5.75M recurring funds to HISC through LNR402 which was subject to a 20% cut that carried over from FY22 reducing the amount of available HISC funding to support interagency projects.
- An additional $1.5M non-recurring was appropriated to HISC with $500k is dedicated to support invasive ant work through the Hawai‘i Ant Lab which experienced a signifcant budget shortfall in January 2022.
- SB3379 Relating to Biosecurity appropriated $525,000 to the Hawai‘i Department of Agriculture to support ports-of-entry biosecurity activities.
- SB2059 passed designating ‘Ōhi‘a lehua as the State’s endemic tree.

3.3 Recommendations for the 2023 Legislative Session

The primary recommendation of the HISC to the legislature in 2023 is to continue to implement the goals of Hawai’i Interagency Biosecurity Plan (HIBP), the State's 10-year vision roadmap to enhance biosecurity and invasive species mitigation (http://dlnr.hawaii.gov/hisc/plans/hibp/). The HIBP is an analysis of programmatic gaps and shortfalls within the State of Hawai’i, with recommendations to enhance its core biosecurity programs. The legislature has made good progress in implementing goals of the HIBP in 2017-2022.

The legislature may wish to revisit the following items that were introduced in previous years but did not pass:

- Aquatic biosecurity positions at the DLNR Division of Aquatic Resources to implement a vessel biofouling and ballast water program (SB2533, HB1876)
- Aquaculture extension positions for the UH College of Tropical Agriculture and Human Resources (SB2729)
- Funds to control *Albizia* trees (SB3135)
- Creation of an invasive species emergency response fund (HB2265, SB2713)
- Increasing the portion of the Barrel Tax going to biosecurity programs at HDOA
- Funding for two-lined spittlebug and coffee leaf rust response (SB3042, HB2532,SB2907)
- Establishing a visitor green fee (SB3192)

Additional remaining legislative needs described by the HIBP include:

- Add additional positions for commodity inspections at HDOA Plant Quarantine
- Add additional positions at HDOA Plant Pest Control Branch
- Add additional positions for invasive species work in natural areas at DLNR DOFAWRestore LNR402 funding that supports interagency projects and programs through the HISC including pest monitoring at airports and seaports, the Invasive Species Committees, and Hawai'i Ant Lab.
  An additional $2.25M recurring funds for HISC that would increase the amount of available funding to support invasive species work that is critical to food security, protecting natural and cultural resources, and building climate resiliency.

3.4 Review of Relevant Administrative Rules

During the reporting period, the HISC began work on drafting their administrative rules for HRS 194 with the assistance of the CGAPS legal fellow and summer intern. Currently, a memo and draft of the rules is waiting for review at the DLNR AG's office. In June 2022, the Board of Agriculture approved the Interim Rule 22-1 that prohibits the intra and inter island movement of coconut rhinoceros beetle host materials. The rule will need to be made permanent but July 2023.

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