REPORT TO THE THIRTY-FIRST LEGISLATURE
STATE OF HAWAII
2021 REGULAR SESSION

BUDGETARY AND OTHER ISSUES REGARDING INVASIVE SPECIES

Prepared by:

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

In response to Section 194-2, Hawaii Revised Statutes

Honolulu, Hawaii
December 2020

Table of Contents

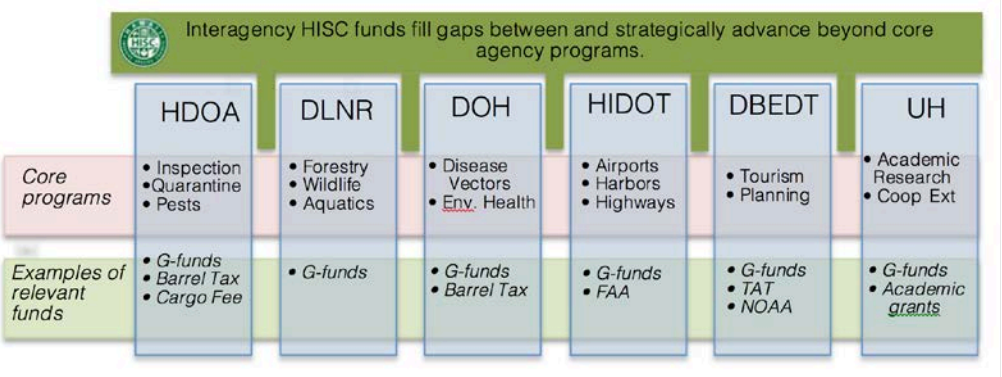
2021 Executive Summary

HAWAII INVASIVE SPECIES COUNCIL

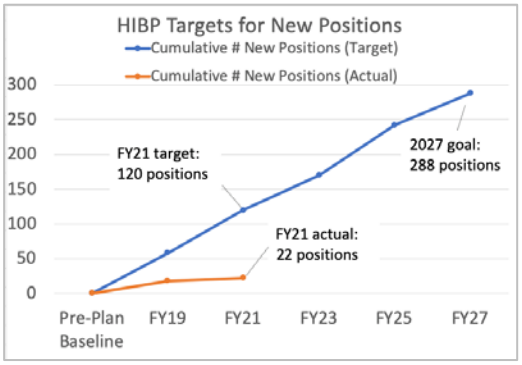
PROVIDING STATE POLICY DIRECTION, COORDINATION, AND PLANNING TO PROTECT HAWAII FROM THE IMPACTS OF INVASIVE SPECIES

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.
- HISC funds support interagency projects and new research that help fill the gaps between permanent programs. In 2020 the legislature maintained its $5.75M appropriation to the HISC.

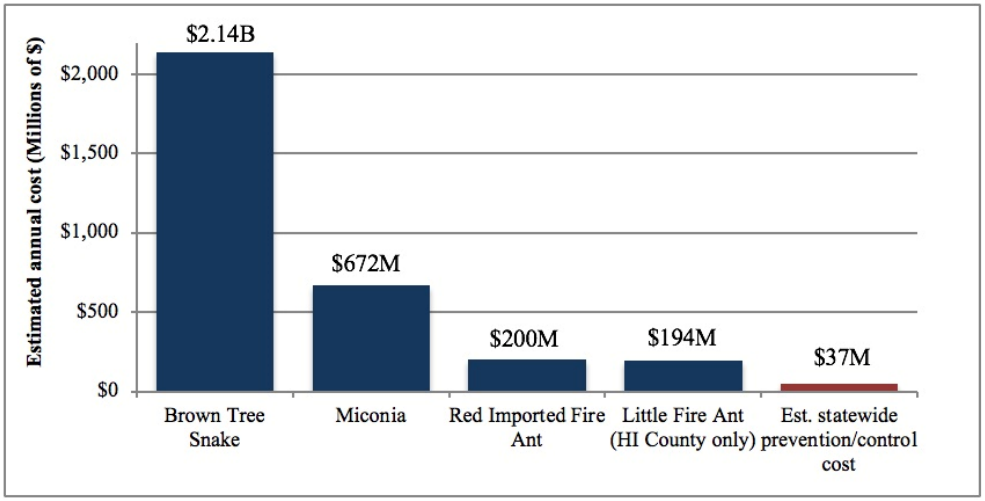


- In FY21 the HISC received 53 requests for research and interagency projects not covered by existing agency programs or funds, totaling $9.2M
- **The primary biosecurity need moving forward is civil service capacity**. Positions are needed at HDOA for commodity inspection and response, and at DLNR DAR for hull inspection. **With the economic downturn due to COVID-19,** we have an opportunity to grow, rather than shrink, our cost-saving biosecurity positions and other resources.



THE COST OF INACTION: ECONOMIC DAMAGES FROM INVASIVE SPECIES

Economic impacts 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, bird habitat); RIFA cost ($200M/yr in lost tourism, agriculture); LFA cost, HI County only ($194M/yr in costs to various sectors); estimated **additional** annual need for invasives programs (HIBP). References available in full 2020 legislative report at http://hisc.hawaii.gov.*

ADVICE REGARDING INVASIVE SPECIES IN THE 2021 LEGISLATURE

The primary recommendation of the HISC to the legislature in 2020 is to **continue to implement the Hawaii 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, 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 in 2013, and the spread of little fire ants to O‘ahu in 2013. **In the time of COVID-19, the HIBP provides a path to save Hawai‘i money in the long run and provides opportunities for job creation.**

Biosecurity Plan Legislative Goals: Past Successes (2017-19)	
• Fully restored the Vector Control Branch at Department of Health	• Appropriated planning funds for a new HDOA Biological Control facility
• Approved HDOA to use transitional facilities for commodity inspection	• Added two positions for UH Hawaii Ant Lab to expand services in Kona
• Provided stable funds to the HISC by adding annual appropriation to base budget	Provided funds for rapid ohia death, rat lungworm, parakeets, & coffee berry borer
• 4 specialist positions for HDOA imports	• CIP funds for dog kennels, coqui barrier, predator proof fencing
• Increased HISC funding by $1M	• Increased CIP funds for watershed fencing for invasive animals
Successes from the 2020 Legislative Session	
• HISC funding maintained, despite COVID-19	• BMPs required for little fire ant treatments
Examples of Remaining Biosecurity Plan Legislative Needs	
• Add additional positions for commodity inspections at HDOA Plant Quarantine	• Add positions and fee collection for DLNR DAR vessel hull inspection program
• Add additional positions at HDOA Plant Pest Control Branch	• Add DLNR DOFAW field technicians for invasives control in natural areas
• Construction funds for biological control facility	• Move enforcement of HDOA import laws under the new Environmental Court

1. Hawaii Invasive Species Council Actions in FY20

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 placed within the Department of Land and Natural Resources (DLNR) for administrative purposes.

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 FY20 the Council was composed of:

- Suzanne Case, DLNR
- Scott Enright and Phyllis Shimabukuro-Geiser, Hawaii Department of Agriculture (HDOA)
- Keith Kawaoka, Department of Health (DOH)
- 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, J. Kalani English, and Lorraine Inouye
- Representatives Nadine Nakamura, Chris Lee, 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 implementation progress of the Hawaii Interagency Biosecurity Plan (Section 1.5).
- 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 FY20

All HISC meeting agendas and notes are available at http://dlnr.hawaii.gov/hisc/meetings/.

- August 30, 2019: The HISC met to discuss the following agenda items:
    - Approval of the recommended FY20 budget for interagency projects

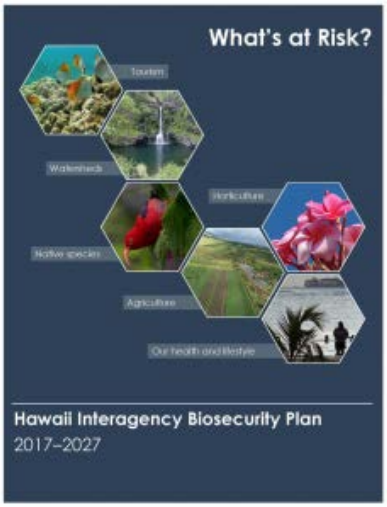
    - A progress update on implementation of the Hawai‘i Interagency Biosecurity Plan and remaining legislative needs
    - An update on the development of the 2025 Joint Strategy HISC & Coordinating Group on Alien Pest Species, in support of implementing the Hawai‘i Interagency Biosecurity Plan
- November 22, 2019: The HISC met to discuss the draft strategies of the 2025 Joint Strategy HISC & Coordinating Group on Alien Pest Species, in support of implementing the Hawai‘i Interagency Biosecurity Plan
- May 20, 2020: The HISC met virtually to discuss the following agenda items:
    - Reviewed and approved the final 2025 Joint Strategy HISC & Coordinating Group on Alien Pest Species, in support of implementing the Hawai‘i Interagency Biosecurity Plan
    - Discussed an updated structure for the informal working groups based on the the new 2025 Joint Strategy
    - Received an update on aquatic biosecurity needs relating to the Vessel Incidental Discharge Act from the DLNR Division of Aquatic Resources
    - Received an update on potential biosecurity video outreach projects to be undertaken by HISC staff and partners.

1.4 HISC Support Program Projects in FY20

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:

- Online Pest Reporting via 643pest.org: This service provides an online complement to the 643-PEST telephone hotline. Access is also provided via a 643PEST mobile app on iOS and Android platforms. These services are free to the public and allow the submission of invasive species observation reports. After receiving a report via the online system, trained facilitators help direct reports to appropriate agencies, where determination can be made as to whether a field response is required. This service is available at http://643pest.org
- Mamalu Poepoe: This interagency project supports invasive species monitoring at airports, utilizing resources across HISC's constituent agencies. The project was developed by the Hawaii Department of Health (HDOH), Hawaii Department of Agriculture (HDOA), Hawaii Department of Transportation (HIDOT), and the University of Hawaii (UH). The five-year pilot project began in 2016 and boosts monitoring efforts for four key invasive taxa at airports to learn about relative costs and benefits of airport biosecurity. Analyzed taxa include invasive ants, mosquitoes, Africanized honeybees, and coconut rhinoceros beetle. More details on the project are available at http://dlnr.hawaii.gov/hisc/mp/. **In 2021 funding from the initial five-year pilot project funded by HIDOT will end. HISC staff will recommend to the Council that this important project continue using general funds appropriated to the Council by the legislature.**
- Hawaii Invasive Species Awareness Month (HISAM) 2020: Governor Ige proclaimed February 2020 as the 8th annual HISAM and the HISC, in partnership with members of the legislature, distributed the 2020 "HISC Awards" for people or organizations that have made substantial contributions to addressing the invasive species problem. Volunteer events were held statewide. Details on 2020 awardees are available at http://dlnr.hawaii.gov/hisc/hisam2020/.

1.5 Hawaii Interagency Biosecurity Plan Implementation



The Hawaii 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 every six months. These reports compile qualitatitive status updates on action items that are provided by staff at implementing agencies, and are available at http://dlnr.hawaii.gov/hisc/plans/hibp/. As of June 2020, roughly 33% of the actions in the HIBP were completed or are ongoing tasks that are being addressed in perpetuity, with another 24% in progress toward an eventual completion state. The remaining 43% of actions have not yet been started. 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.

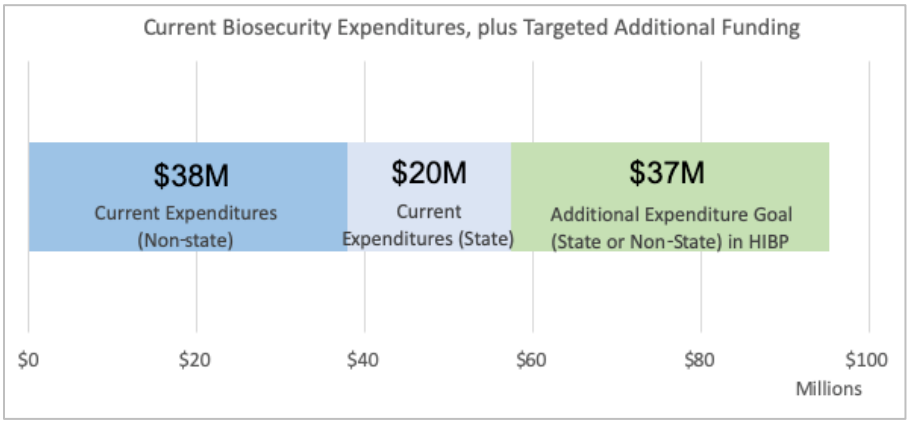


Figure 1: "Current" biosecurity annual expenditures per the 2015 Legislative Reference Bureau Report (FY14), with estimated additional annual expenditure target recommended by the Hawaii Interagency Biosecurity Plan. HIBP costs can be supported by State or non-State funding sources.

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 & FY20 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 FY20, 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 amount 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 Mauna Kea Watershed Alliance, the UH School of Life Sciences, and, the USDA Agricultural Research Station - Hilo.

Summaries of individual projects are available at https://dlnr.hawaii.gov/hisc/projects/fy20-funded-projects/ 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 FY20

County	Acres Surveyed	Acres Treated
Kauai	100,828	100,828
Oahu	507,166	46
Maui	59,324	88,400
Hawaii	125,051	560
Totals	**792,368**	**189,835**

Figure 2: Acres Surveyed and Treated for Invasive Species by Detection and Control Projects Supported by HISC Funding In FY20, Separated by House Districts

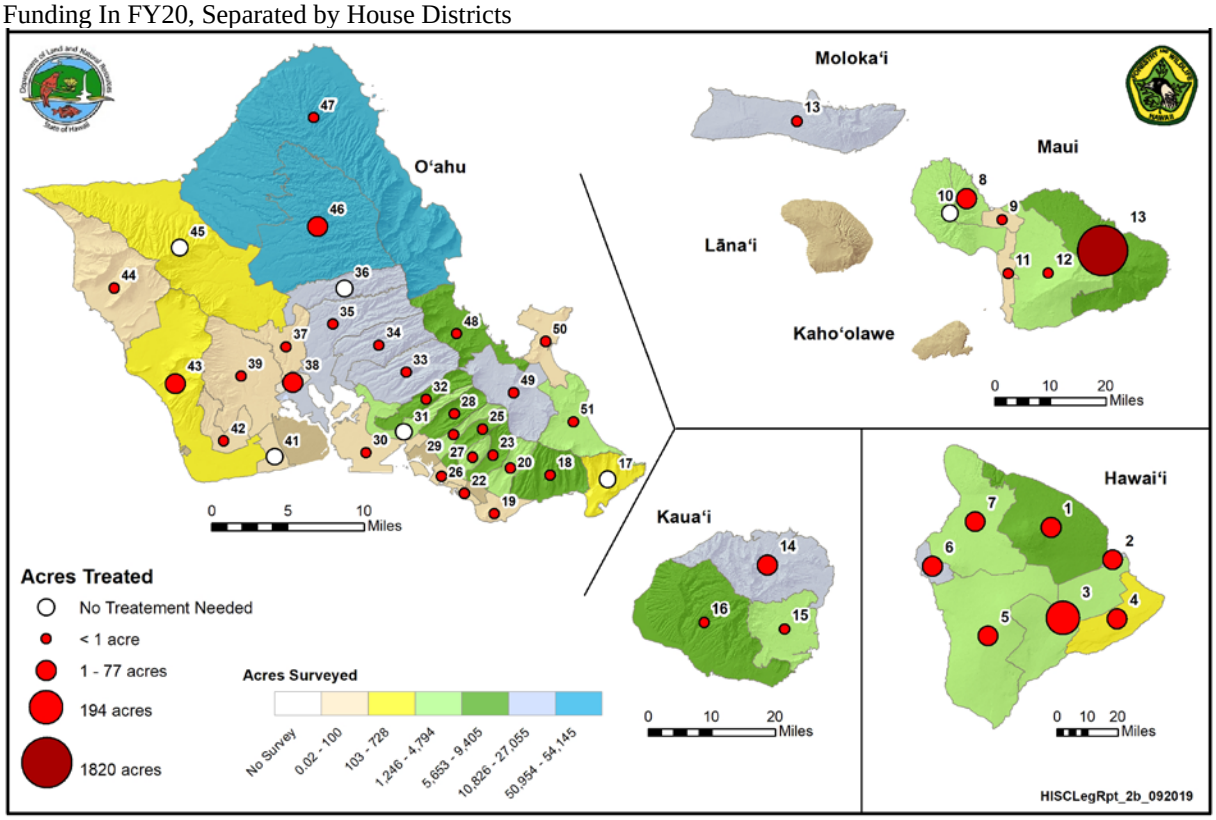


Figure 3: Acres Surveyed and Treated for Invasive Species by Detection and Control Projects Supported by HISC Funding In FY20, Separated by Senate Districts

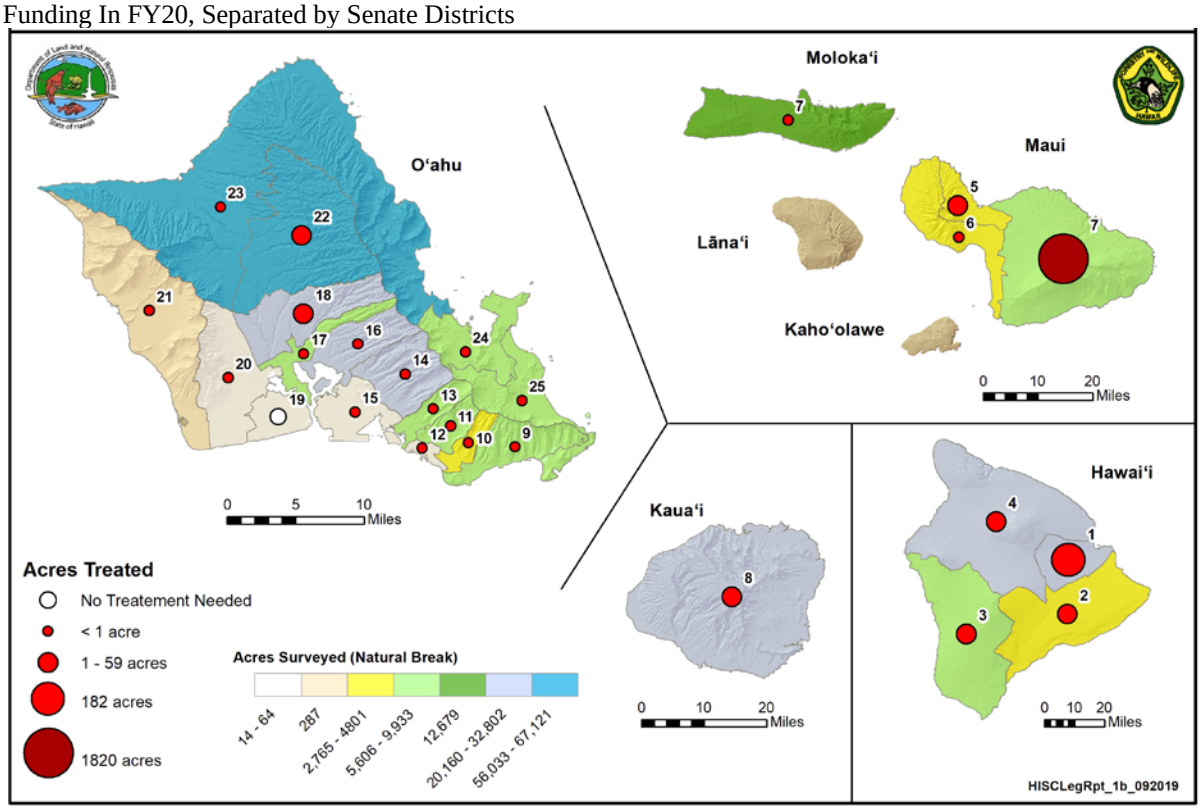


Table 3: Interagency Projects Funded by HISC in FY20

Lead Agency	Abbreviated Project Title	Final award
Budget & Finance	10% Restriction	$575,000
DLNR DOFAW	DOFAW Overhead (6%)	$310,500
DLNR DOFAW	Biocontrol Facility Planning	$50,000
DLNR DOFAW	Maui Mitred Conure	$3,500
HISC	HISC Support Program	$433,912
Bishop Museum	The Plants of Hawaii online information system	$66,025
DLNR DOFAW	Landscape-level mosquito suppression	$79,563
DLNR DOFAW	Cats are Heroes: Public Relations Campaign	$10,000
DLNR DOFAW	Landscape Scale Mosquito Control Project	$24,274
DLNR DOFAW	Mosquito Rearing Technician	$17,477
DLNR DOFAW	Mongoose control traps	$48,548
DOH	Wolbachia Research	$61,989
UH CTAHR	Leather mudweed control	$45,000
UH CTAHR	Africanized honeybees	$41,130
UH CTAHR	Detection and invasive potential of *Arcte coerula*	$15,535
UH PCSU	The Hawaii Alien Plant Informatics Project	$30,000
UH PCSU	Hawaii Ballast Water and Biofouling	$86,034
UH PCSU BIISC	BIISC Outreach	$190,970
UH PCSU BIISC	BIISC ROD Control	$73,356
UH PCSU BIISC	BIISC Control	$442,548
UH PCSU CGAPS	Coordinating Group on Alien Pest Species	$50,000
UH PCSU HAL	Hawaii Ant Lab core funds	$257,895
UH PCSU KISC	KISC Outreach	$113,285
UH PCSU KISC	KISC Control	$533,347
UH PCSU KMWP	Albizia Outreach	$23,000
UH PCSU KMWP	Waiawa Albizia Control	$19,000
UH PCSU KMWP	*Tibouchina herbacea* control on Oʻahu	$30,000
UH PCSU MISC	MISC Control	$657,253
UH PCSU MISC	MISC Outreach	$132,640
UH PCSU MISC	Little Fire Ant Control Program for Maui	$61,200
UH PCSU MISC	Coqui Frog Control and Monitoring Program	$83,000
UH PCSU MKWP	Waipahoehoe Feral Ungulate Removal	$72,822
UH PCSU OISC	OISC Control	$567,442
UH PCSU OISC	OISC Outreach	$107,279
UH PCSU OISC	OISC EDRR	$108,317
USDA ARS	Trap development of *Acalolepta aesthetica*	$32,527
USDA FS	Biological control of invasive *Rubus spp.*	$31,000
USDA FS	Biocontrol of *Hedychium gardnerianum*	$9,159
USDA FS	Evaluating natural enemies of albizia	$160,403
USDA FS	Biocontrol of invasive melastomes	$74,000
USDA NWRC	Mongoose toxicant bait station development	$21,070
Total		$5,750,000

* 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= Koʻolau

Mountain Watershed Partnership; NWRC= National Wildlife Research Center; MKWP = Mauna Kea 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. Notable examples include:

1. **Potential economic damages of Brown Tree Snake in Hawaii: estimated at roughly $2.14B annually**. A 2010 study by Schwiff et al. estimated that brown tree snake (*Boiga irregularis,* not yet found in Hawaii) impacts could cost $2.14 billion annually in infrastructure and health costs as well as decreased tourism. This figure does not include the cost of conservation programs to mitigate the loss of native bird species.
2. **Economic damages of Miconia in Hawaii: estimated at around $672M annually.** The invasive plant *Miconia* (*Miconia calvescens*) was introduced by a private resident on Hawaii Island in the late 1950s and has since spread to all counties in the state. This fast-growing plant forms monocultures (a forest stand consisting of only one species) by invading forests and shading out competitors. *Miconia* is a prolific producer of seeds, which are dispersed by birds and may lay dormant in soil for 15 years or more (studies are still ongoing) before germinating. A 2007 study by Burnett et al. estimated annual damages in lost groundwater recharge and valuation of endangered bird species with habitat threatened by *Miconia* at roughly $672,000,000.
3. **Economic impact of Little Fire Ant on Hawaii Island: estimated at roughly $200M annually.** A 2013 study by Motoki et al. on the economics of Little Fire Ants (*Wasmannia auropunctata*) at estimates that without management, the damages on Hawaii Island alone in costs to nurseries, agriculture, residents, lodging, parks, schools, and other sectors could reach $6.8B over the next 35 years, or $194,000,000 annually. Total eradication of ants from Hawaii Island is not possible. A study published by Lee et al. in 2015 found that an immediate investment of $8M over the next 2-3 years would avoid costs over the next 10 years totaling $1.2B in control and $129M in economic damages. The Hawaii Ant Lab, partially funded by the HISC, is currently the primary resource for research and response to Little Fire Ant incursions, with an annual budget between $200-250,000. This species has been on Hawaii Island since 1999 and has since spread to Kauai (1999), Maui (multiple occurrences, most recently in 2013), and Oahu (2013), likely through interisland shipment of commodities.
4. **Potential economic impact of Red Imported Fire Ant: estimated at $200M annually.** A 2007 study partially funded by the HISC estimated that the potential impact of red imported fire ant (*Solenopsis invicta,* not yet found in Hawaii) at roughly $200 million annually within 10 years of introduction because of its impact on tourism, infrastructure and quality of life. (Gutrich et al., 2007).
5. **Economic loss in property value in Hawaii County due to of coqui frogs: estimated at $7.6M annually.** A 2006 study of the economic impacts of *Eleutherodactylus coqui* in Hawaii by Dr. Brooks Kaiser (Gettysburg College) and Dr. Kimberly Burnett (University of Hawaii) highlights that, while coqui frogs present an ecological impact through the predation on native invertebrate communities, the primary economic impact is on property value. The frogs, which can reach densities of 55,000/acre, produce a call between 80-90 A-weighted decibels (dBA, a modified calculation of

decibels based on the response of the human ear). For comparison, the Hawaii Department of Health sets the threshold for minimizing impacts to human health and welfare at 70 dBA (HRS 324F-1). The estimated damages to property values in Hawaii County as of 2006 was $7,600,000 annually. This figure has likely increased as coqui frogs have continued to expand their distribution on Hawaii island since 2006. Should coqui frogs establish on Maui and Oahu, the annual loss in property value would drastically increase.

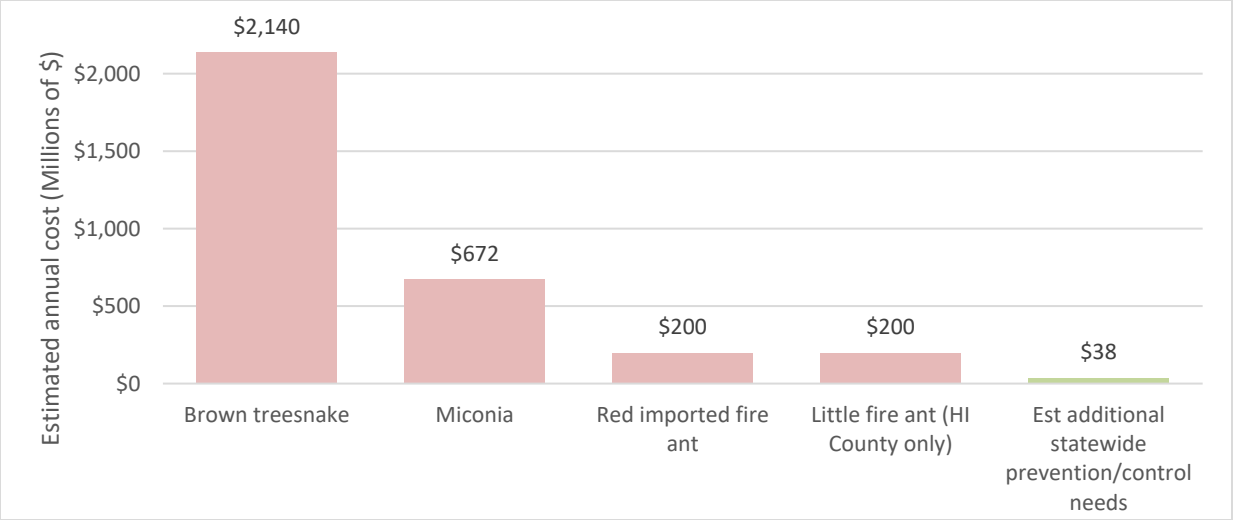


Fig 4: Examples of estimated economic damages from invasive species in Hawaii (numbers approximate).

The Hawaii 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/.

Literature cited

- Burnett, K; Kaiser, B; Roumasset, JA. 2007. Economic lessons from control efforts for an invasive species: *Miconia calvescens* in Hawaii. *Journal of Forest Economics* (2007), vol. 13, 151-167.
- Cristini, L; Cox, LJ; Konan, DE; Eversole, D. 2012. *Climate Change and the Visitor Industry: People, Place, Culture, and the Hawaii Experience*. University of Hawaii Sea Grant College Program, Center for Sustainabile Coastal Tourism, University of Hawaii.
- Gutrich, JJ et al. 2007. Potential economic impact of introduction and spread of the red imported fire ant, *Solenopsis invicta*, in Hawaii, *Environ. Sci. Policy*, doi:10.1016/j.envsci.2007.03.007
- Ikuma, EK.; Sugano, D; Mardfin, JK. 2002. *Filling the gaps in the fight against invasive species*. Legislative Reference Bureau, Honolulu HI.
- Lee, DJ; Motoki, M; Vanderwoude, C; Nakamoto, ST; Leung, PS. 2015. Taking the sting out of Little Fire Ant in Hawaii. *Ecological Economics* (111), p.100-110.
- Motoki, M; Lee, DJ; Vanderwoude, C; Nakamoto, ST; Leung, PS. 2013. A bioeconomic model of Little Fire Ant (*Wasmannia auropunctata*) in Hawaii. *Technical Report No. 186.* Pacific Cooperative Studies Unit, University of Hawai`i, Honolulu, Hawai`i. p.89 .
- Shwiff, SA; Gebhardt, K; Kirkpatrick, KN; Shwiff, SS. 2010. Potential Economic Damage From

Introduction of Brown Tree Snakes, Boiga Irregularis (Reptilia: Colubridae), to The Islands Of Hawaii. *Pacific Science* (64-1), p.1-10.

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 is 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 FY20. Previous HISC resolutions are available at http://dlnr.hawaii.gov/hisc/reports/resolutions/.

3. 2 Review of the 2020 Legislative Session

The 2020 legislative session included roughly 40 measures relating to invasive species. Two of these measures passed:

- HB1854, Relating to Little Fire Ants. Requires the use of best practices, as identified by DOA and Hawaii Ant Lab, for the treatment of little fire ants by pest control operators. Authorizes DOA and the pest control board to adopt rules to carry out the requirement. Requires DOA and the pest control board to post any rules and best practices on their respective websites.
- SR69, Urging the Department of Hawaiian Home Lands to convene a task force with the Department of Land and Natural Resources, Department of Agriculture, Invasive Species Council, and other interested parties to develop a comprehensive mitigation plan with short and long term solutions to address the spread of and eradicate gorse on Hawai‘i island.

The final FY21 budget bill maintained HISC funding as well as the recently vacated Invasive Species Coordinator position, as well as its supervisory Wildlife Program Manager position, at the DLNR Division of Forestry and Wildlife.

Measures that did not pass the 2020 session but are recommended for the 2021 session are described below.

3.3 Recommendations for the 2020 Legislative Session

The primary recommendation of the HISC to the legislature in 2021 is to continue to implement the goals of Hawaii 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 Hawaii, with recommendations to enhance its core biosecurity programs. The legislature has made good progress in implementing goals of the HIBP in 2017-2019. Legislative achievements to date include:

- Fully restored the Vector Control Branch at Department of Health
- Appropriated planning funds for a new HDOA biological control facility
- Approved HDOA to use transitional facilities for commodity inspection
- Provided stable funds to the HISC by adding annual appropriation to base budget
- Added ten extension agents to UH College of Tropical Agriculture and Humane Resources
- Added two positions in FY19 for UH Hawaii Ant Lab to expand services in Kona

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

- Aquatic biosecurity fees and positions at the DLNR Division of Aquatic Resources in order to prepare for the Vessel Incidental Discharge Act implementation (SB2533, HB1876)
- Aquaculture extension positions for the UH College of Tropical Agriculture and Human Resources (SB2729)
- Funds to control axis deer on Maui Island (SB2377)
- Funding for an economic analysis on the benefits of removing Albizia trees (HB2639)
- Nine invasive species technician positions and one forest pathologist for DLNR DOFAW (SB2758)
- 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 response (SB3042, HB2532)

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 base funding for the Invasive Species Committees and Hawaii Ant Lab to the UH budget
- Move enforcement of HDOA import laws under the new Environmental Court.

3.4 Review of Relevant Administrative Rules

During the reporting period, the Governor signed approval for amendments to Chapter 4-70, Hawaii Administrative Rules, "Plants and Non-Domestic Animal Quarantine, Plant Import Rules," to add a new subchapter to restrict the importation of Myrtaceae (myrtle family) plants and plant parts to prevent the introduction of new strains of ohia rust, *Puccinia psidii*, a plant pathogen.