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DEPT. COMM. NO. 62

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LAND
STATE PARKS

**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 5, 2018

The Honorable Ronald D. Kouchi,
President
and Members of the Senate
Thirtieth State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki, Speaker
and Members of the House of
Representatives
Thirtieth State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the Budgetary and Other Issues Regarding Invasive Species report, as required by Section 194-2, Hawaii Revised Statutes (HRS). In accordance with Section 93-16, HRS, a copy of this report has been transmitted to the Legislative Reference Bureau and the report may be viewed electronically at <http://dlnr.hawaii.gov/reports/>.

Sincerely,

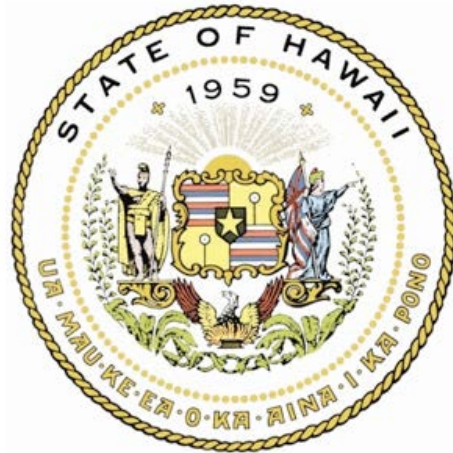
A handwritten signature in black ink, appearing to read "Suzanne D. Case".

SUZANNE D. CASE
Chairperson

Enclosure

**REPORT TO THE THIRTIETH LEGISLATURE
STATE OF HAWAII
2019 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 2018

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2019 Executive Summary

HAWAII INVASIVE SPECIES COUNCIL

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



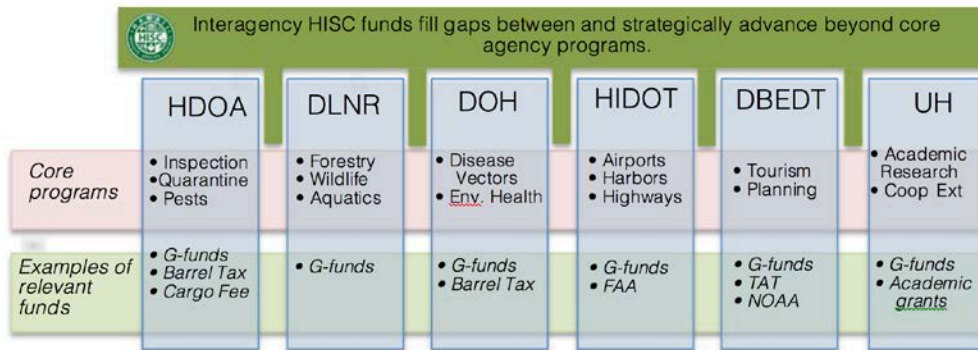
SUZANNE D. CASE DLNR SCOTT ENRIGHT HDOA KEITH KAWAOKA DOH LEO ASUNSCION DBEDT NICHOLAS COMERFORD, UH DAVID RODRIGUEZ DOT



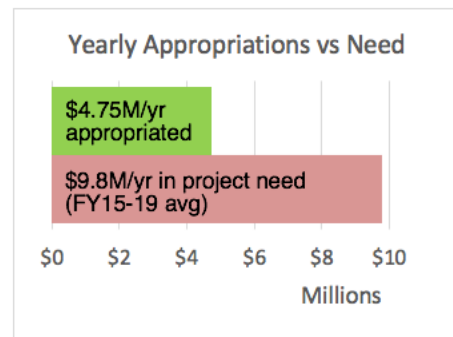
SEN. RON KOUCHI SEN. MIKE GABBARD SEN. J. KALANI ENGLISH SEN. LORRAINE INOUE REP. NADINE NAKAMURA REP. CHRIS LEE REP. KANIELA ING REP. NICOLE LOWEN

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 across all state agencies.
- HISC funds support interagency projects and new research that help fill the gaps between permanent programs. In 2018 the legislature provided \$4.75M to the HISC for research and interagency projects, as well as several species-specific appropriations to various agencies.

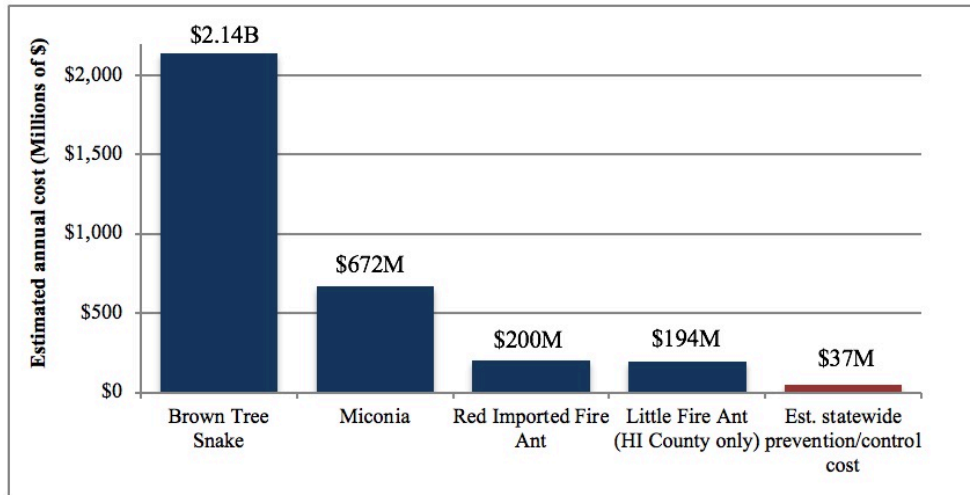


- In FY19 the HISC received 43 requests for research and interagency projects not covered by existing agency programs or funds, totaling \$7.5M
- Additional funding will be needed in FY20 to adequately support research and interagency projects
- The HISC also supports creating permanent civil service capacity where appropriate instead of funding critical projects on a year-to-year basis.



THE COST OF INACTION: ECONOMIC DAMAGES FROM INVASIVE SPECIES

Economic impacts from a sample of invasive species below, including estimated damages from species that are already in Hawaii (*Miconia* and little fire ant), as well as 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 2019 legislative report at <http://hisc.hawaii.gov>.*

ADVICE REGARDING INVASIVE SPECIES IN THE 2019 LEGISLATURE

The primary recommendation of the HISC to the legislature in 2019 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/>).

HIBP legislative goals achieved to date:	
<ul style="list-style-type: none"> Fully restored the Vector Control Branch at Department of Health 	<ul style="list-style-type: none"> Appropriated planning funds for a new HDOA Biological Control facility
<ul style="list-style-type: none"> Approved HDOA to use transitional facilities for commodity inspection 	<ul style="list-style-type: none"> Added positions at DLNR DAR for aquatic biosecurity
<ul style="list-style-type: none"> Provided stable funds to the HISC by adding annual appropriation to base budget 	<ul style="list-style-type: none"> Provided \$6.5M in CIP funding to DLNR for watershed fencing to exclude invasive ungulates
<ul style="list-style-type: none"> Provided FY19 appropriations for rapid ohia death (\$1.55M), rat lungworm (\$300K), & rose-ringed parakeet (\$284K) 	<ul style="list-style-type: none"> Added two positions for UH Hawaii Ant Lab to expand services in Kona
Examples of key remaining legislative needs described in the HIBP:	
<ul style="list-style-type: none"> Add positions at DLNR DOFAW for biosecurity in state protected areas 	<ul style="list-style-type: none"> Increase funding for critical biosecurity projects via HISC (LNR 402)
<ul style="list-style-type: none"> Create a Biosecurity Emergency Response Fund 	<ul style="list-style-type: none"> Add additional positions for commodity inspections at HDOA Plant Quarantine
<ul style="list-style-type: none"> Add additional positions at HDOA Plant Pest Control Branch 	<ul style="list-style-type: none"> Add base funding for the Invasive Species Committees and Hawaii Ant Lab to the UH budget
<ul style="list-style-type: none"> Add research and extension positions relating to biosecurity at UH CTAHR 	<ul style="list-style-type: none"> Move enforcement of HDOA import laws under the new Environmental Court

The 2019 legislative report *Budgetary and Other Issues Regarding Invasive Species* includes further details on the Hawaii Interagency Biosecurity Plan, the use of HISC funds in FY18-19, and provides a list of invasive species bills from the previous legislative session and their fate. For more information, visit <http://hisc.hawaii.gov>.

1. Hawaii Invasive Species Council Actions in FY18



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 listed below. In FY18 the Council was composed of:

- Suzanne D. Case, DLNR
- Scott Enright, Hawaii Department of Agriculture (HDOA)
- Keith Kawaoka, Department of Health (DOH)
- Leo Asuncion, 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. FY18 legislative appointees included:

- Senators Ronald Kouchi, Mike Gabbard, J. Kalani English, and Lorraine Inouye
- Representatives Nadine Nakamura, Chris Lee, Kaniela Ing, 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 (Appendix 1). Several key responsibilities of the HISC include:

- Advise, consult, and coordinate invasive species-related efforts with and between departments
- Identify agency resource shortfalls with respect to invasive species
- Coordinate and promote the State’s position with respect to invasive species issues
- Advise the governor and legislature on budgetary and other issues regarding invasive species
- Suggest appropriate legislation to improve the State's administration of invasive species programs and policies.

One of the ways in which HISC coordinates efforts with and between departments is through the management of an annual interagency project budget that exists in complement to the recurring base costs of departmental invasive species programs. In each fiscal year, the legislature appropriates funding to the HISC to solicit proposals from government agencies, including the UH system, to identify and address resource, capacity, and knowledge gaps with regard to invasive species. Funded projects in FY18-19 are described in Section 2.2.

1.3 HISC Meetings in FY18

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

- August 24, 2017: The HISC addressed the following agenda items:
 - Reviewed and approved a FY18 budget for research and interagency projects. Approved projects are summarized in Section 2.2 of this report.
 - Reviewed an implementation and reporting strategy for the Hawaii Interagency Biosecurity Plan
 - Reviewed a draft of the Strategic Plan for the Control and Management of Albizia
 - Received a demonstration of the new 643pest.org pest reporting website and mobile app
- January 18, 2018: The HISC met to discuss the following agenda items:
 - Final approval and adoption of the Strategic Plan for the Control and Management of Albizia (<http://dlnr.hawaii.gov/hisc/plans/albizia/>)
 - Adopted a resolution supporting evaluation and implementation of best management practices and technologies for vessel biofouling management and collaboration by HISC agencies in the development of biofouling management regulations for Hawaii harbors
 - Received a progress update on implementation of the Hawaii Interagency Biosecurity Plan (progress report available at <http://dlnr.hawaii.gov/hisc/plans/hibp/>)
 - Invasive species requests pending introduction in the 2018 legislative session.

1.4 HISC Support Program Projects in FY18

The directions of the HISC are carried out by staff of the HISC Support Program, which is administered by the Invasive Species Coordinator at the DLNR Division of Forestry and Wildlife (DOFAW). Other 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. In FY18, core coordination areas of the HISC Support Program included the projects described below.

1.4.1 Online Pest Reporting via 643pest.org

Over the past several years HISC has worked to develop an online complement to the current 643-PEST telephone hotline. The online service is now live and can be accessed via the 643pest.org website and the 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 make initial contact with the reporter and refer actionable reports to the appropriate responding agency or agencies. Users can also upload photos as well as use the interactive map to pinpoint the location of the sighting. HISC staff are now working with contractors to launch an internal Sharing & Collaboration feature to allow staff at multiple State agencies to cooperate on response actions.



1.4.2 Mamalu Poepoe: Airport Biosecurity Pilot Project

Mamalu Poepoe is an interagency airport monitoring project administered by the HISC, utilizing resources across HISC’s constituent agencies. “Mamalu Poepoe” connotes a circle of protection, and this project is meant to enhance monitoring on airport facilities around the state in order to protect our natural resources, agriculture, human health, and tourism resources. 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/>.

1.4.3 Albizia Strategic Plan

In 2018 HISC adopted the Strategic Plan for the Control and Management of Albizia, which provides a strategic framework for a statewide, coordinated approach to dealing with albizia. The purpose of this strategic plan is not to describe site-specific management actions but to provide large-scale policy and management objectives and a template for landowners or community groups to use in developing site-specific plans. The HISC's albizia plan is available online at <http://dlnr.hawaii.gov/hisc/plans/albizia/>.

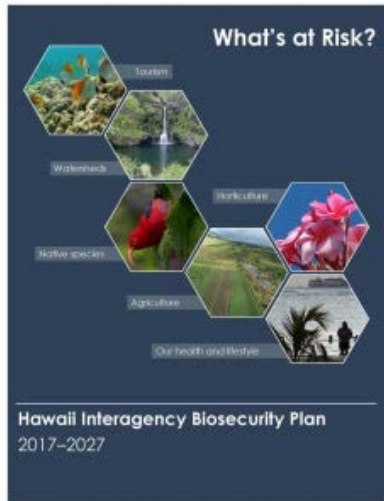
1.4.4 Hawaii Invasive Species Awareness Month 2018

The State of Hawaii hosted the 6th annual [Hawaii Invasive Species Awareness Month](#) (HISAM) in February 2018. HISAM is organized in coordination with the U.S. National Invasive Species Awareness Week and regional Pacific invasive species awareness efforts. HISAM seeks to promote information sharing and public engagement. Partners across the state hosted volunteer and educational opportunities for the public to engage in invasive species control. Governor Ige proclaimed February 2018 as HISAM on February 9, 2018. The HISC, in partnership with members of the legislature, distributed the 2018 “HISC Awards” for people or organizations that have made substantial contributions to addressing the invasive species problem. HISC Award recipients in 2018 included:

- **Community Heroes: Bob and Pam Warren** for their ongoing efforts related to the planning and removal of the invasive algae in Kilauea stream on Kauai.
- **Business Leader: Pūlama Lāna‘i Natural Resource Program** for their efforts to minimize the introduction of invasive species to Lana‘i.
- **Greatest Hit: Tyler Bogardus** for his efforts to protect endangered species from invasive rodents on the island of O‘ahu.
- **Hottest Pest Hotline Report: Shawn Baliaris** for his efforts relating to reporting and stopping the spread of mongoose on Kauai.
- **Hawaii Island MVP: Franny Kinslow Brewer** for her dedication to educating the public about invasive species issues on the island of Hawaii.
- **Maui County MVP: William “Butch” Haase** of the Molokai Land Trust for his excellent work on Molokai removing invasive species and restoring habitat.
- **Oahu MVP: Honolulu Board of Water Supply** for their efforts to include watershed protection as key component of their Water Master Plan and Watershed Management Plans.
- **Kauai MVP: Kelsey Brock** for her efforts to develop a comprehensive Prioritization and Feasibility of Control assessment tool for new and current KISC eradication targets.



1.5 Hawaii Interagency Biosecurity Plan Implementation



The HISC provides interagency support for implementation and tracking of the Hawaii Interagency Biosecurity Plan (HIBP). The plan provides a 10-yr roadmap (2017-2027) for the State of Hawaii to enhance its core biosecurity programs and direct future research and development to protect our agriculture, natural resources, human health, tourism, and way of life in the islands.

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 Support Program tracks implementation on a semi-annual basis using a network of contacts at the State agencies assigned tasks in the HIBP, and through tracking of HIBP legislative goals. HISC released the first [annual report on implementation](#) in January 2018, available on the HISC website. HISC staff also provided an 18-month update as a poster presentation at the 2018 Hawaii Conservation Conference. As of July 2018, the State is 15% through the 10-year implementation period of the HIBP. The status of action item implementation shows early progress in achieving the goals of the HIBP.

Table 1: Status of Agency Internal Actions Described in HIBP as of July 2018

Implementation Status	Pre-border actions (n=26)	Border actions (n=25)	Post-border actions (n=26)	Outreach actions (n=23)
In progress: ongoing	27%	20%	23%	39%
In progress: toward completion	31%	52%	12%	17%
Not yet started	42%	28%	58%	43%
Needs re-evaluation	0%	0%	8%	0%

Table 2: Status of Legislative Actions Described in HIBP as of July 2018

Implementation Status	Pre-border policies (n=9)	Border policies (n=15)	Post-border policies (n=21)	Outreach policies (n=2)
Approved	33%	13%	10%	0%
Introduced but not passed	11%	13%	14%	0%
Not yet introduced	56%	73%	76%	100%

Additional information on remaining legislative goals of the HIBP can be found in Section 3. Specific action items can be reviewed in the HIBP, available at <http://dlnr.hawaii.gov/hisc/plans/hibp/>.

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. The report demonstrates expenditures across state, county, federal, and other funding sources in Fiscal Year 2014, detailed in the table below.

Table 3: FY14 expenditures on invasive species programs, per the Legislative Reference Bureau (2015)

Expenditure Level	State Funds	County Funds	Federal Funds	Other Funds	Total
State	\$19,574,521	X	\$12,436,258	\$10,059,994	\$42,070,773
Counties	X	\$70,147	X	\$0	\$70,147
Federal	X	X	\$15,276,419	\$71,571	\$15,347,990
Total	\$19,574,521	\$70,147	\$27,712,677	\$10,131,565	\$57,488,910

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 provided below.

2.3.1 Department of Land and Natural Resources

- Division of Forestry and Wildlife: DLNR DOFAW has a broad mandate to protect Hawaii’s natural resources and addresses invasive species through multiple programs, including:
 - Forestry Program (LNR 172): Manages and develops forest resources statewide
 - Native Resources and Fire Protection Program (LNR 402): Manages wildlife resources and game opportunities statewide and administers the interagency HISC program
 - Native Ecosystems Protection & Management (LNR 407): Manages Natural Area Reserves, watershed protection programs, and other statewide efforts.
- Division of Aquatic Resources: Mitigates threats from aquatic invasive species to Hawaii’s natural aquatic resources. The Aquatic Invasive Species (AIS) implements projects including the removal of invasive algae from Kaneohe Bay, response to marine for detection of aquatic invasive species, and the development of policies relating to ballast water and hull fouling.

2.3.2 Hawaii Department of Agriculture (Plant Industry Division)

- Plant Quarantine Branch: prevents the introduction and spread of harmful pests and diseases into the state, as well as certifying plants for export out of the state. Plant Quarantine Branch employs Inspectors with enforcement authority for violations of importation and possession of regulated species. State funds for staff and operations of this branch come partially from the general fund, partially from the Pest Inspection, Quarantine, and Eradication Fund (HRS 150A-4.5, which receives revenue from the Inspection, Quarantine, and Eradication Service Fee, HRS 150A-5.3) and from the Agricultural Development and Food Security Special Fund (HRS 141-10, which receives revenue from the Environmental Response, Energy, and Food Security tax, HRS 243-3.5). The Department also actively seeks and receives federal funding for these programs.
- Plant Pest Control Branch: Eradicates, contains, or controls pests of plants which could cause significant economic damage to agriculture, environment, and quality of life. Includes the Biological Control (or Biocontrol) Section, which provides research and regulation of biocontrol agents in the State. The Plant Pest Control Branch also includes the Apiary Program. State funding for Plant Pest Control Branch staff and operations comes from the general fund, the Agricultural Development and

Food Security Special Fund (HRS 141-10, which receives revenue from the Environmental Response, Energy, and Food Security tax, HRS 243-3.5), the Pest Inspection, Quarantine, and Eradication Fund and with additional operating funds provided by federal grants from the U.S. Department of Agriculture.

- Pesticides Branch: Regulates the manufacture, sale, and use of pesticides in the State of Hawaii. This is a critical function for implementing pest control projects that utilize approved pesticides, and for research on new pest control methodologies and tools. State funding for staff and operations comes from the general fund and the Pesticides Use Revolving Fund (HRS 149A-13.5).

2.3.3 Department of Health

- Vector Control: Manages vectors of human diseases, including invasive species such as mosquitoes and rodents. The Department is in the process of rebuilding this branch with positions restored in 2016 and 2017.
- Clean Water Branch: Reviews permits relating to the use of pesticides near water, a necessary component of many invasive species control projects.

2.3.4 Department of Business, Economic Development, and Tourism

- Office of Planning, Coastal Zone Management Program (CZM): Coordinates the Ocean Resources Management Plan - an interagency effort to effectively manage and protect marine resources. CZM hosts eight Planners who assist with planning and implementation of marine projects, including aquatic invasive species prevention and control.
- Hawaii Tourism Authority (HTA): DBEDT is the administrative host of the HTA. A report to the HTA from the University of Hawaii Center for Sustainable Coastal Tourism estimates that the 2010 market valuation for Hawaii's natural resources, tourism infrastructure and facilities, and tourism-related businesses was approximately \$8.24B. The report identifies invasive species as a primary threat to natural resources that support Hawaii's tourism industry (Cristini et al., 2012).

2.3.5 Hawaii Department of Transportation

- Highways Division: Manages the Statewide Noxious Invasive Pest Program (SNIPP) to prevent and mitigate invasive species movement associated with Highways operations. The SNIPP is currently managed under a 10 year strategic plan covering 2012-2022 (http://hidot.hawaii.gov/highways/files/2013/02/Landscape-SNIPP_Strategic_Plan.pdf). The HIDOT has procured a consultant under a multi-year contract to provide services for the implementation of the goals and objectives that are outlined in the 10-year strategic plan.
- Airports Division: In addition to working with Hawaii Department of Agriculture on hosting facilities for agricultural pest inspection, the Airports Division is supporting the Mamalu Poepoe project via HISC, which increases monitoring for biosecurity threats at airports in order to collect data on costs and benefits of monitoring.

2.3.6 University of Hawaii

- College of Tropical Agriculture and Human Resources (CTAHR): Employs a number of faculty and specialists dealing with invasive species, and currently serves as the designated representative for UH on the HISC. Relevant CTAHR departments include:
 - The Plant and Environmental Protection Sciences department, which employs researchers in invasive insect biology, biological control, and plant pathogens.
 - Natural Resources and Environmental Management, which employs researchers in wildlife management and invasive weed management.
 - The Cooperative Extension Service, including researchers specializing in pests, diseases, and weeds.
- College of Natural Sciences:

- The Department of Botany: In addition to hosting researchers in invasion biology and species conservation, the Department of Botany hosts the Pacific Cooperative Studies Unit (PCSU). PCSU employs approximately 300 positions working on conservation research, including the Invasive Species Committees (ISCs), the Watershed Partnerships, and the Hawaii Ant Lab. These positions are not part of the University’s budget request to the legislature and rely on year-to-year funding awards for support.

2.2 HISC Funding & FY18-19 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.

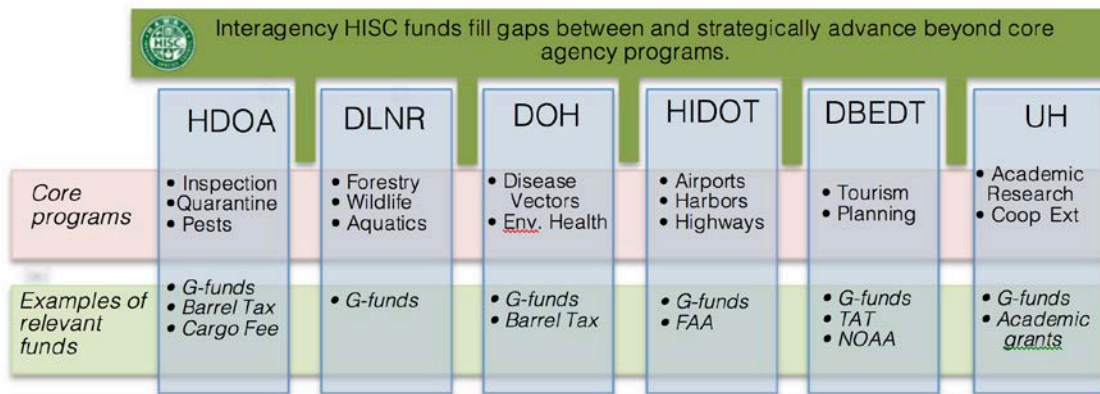


Fig 1: Relationship between core department programs and HISC funding

The HISC began disbursing funds to interagency projects in FY05. The legislature has appropriated general funds to the HISC in most fiscal years, with the exception of FY07 (when funds were instead directed to Hawaii County to deal with coqui frogs) and during the economic downturn from FY10-13. In 2017, the legislature included the amount of \$4.75M per year in the base operating budget

While the amount of funding appropriated to HISC decreased from \$5,750,000 in FY15 to \$4,750,000 in subsequent years, the amount of requests for project funding remained at roughly \$10,000,000 each year. In FY18 about half of all applicants received project funding, though the amount provided for each project was typically 50-70% of the stated need. A list of projects receiving funding in FY18 is provided below. Summaries of individual projects are available at

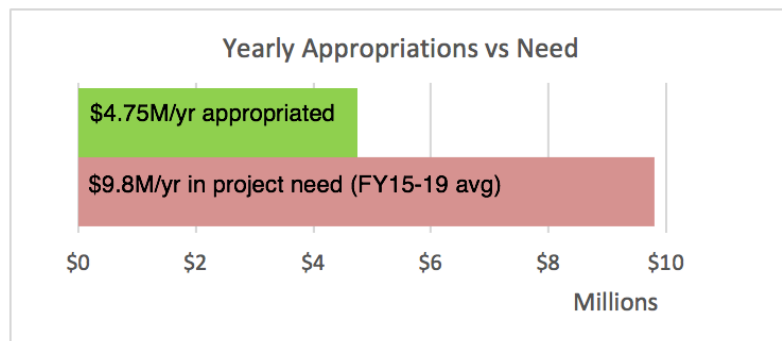


Fig 2: Amount of project requests received by HISC in FY15-19 vs the amount of available funding

at <http://dlnr.hawaii.gov/hisc/projects/fy18/>, and final project reports will be posted to this page as available. In August 2018 the HISC approved a spending plan for FY19, provided below.

Table 4: Interagency Projects Funded by HISC in FY18*

Lead Agency	Abbreviated Project Title	Final Award
Budget & Finance	10% Expenditure Restriction	\$475,000
DLNR DOFAW	DOFAW Overhead (6%)	\$256,500
HISC	HISC Support Program	\$272,447
Bishop Museum	Statewide Early Detection Botany Capacity	\$24,339
Bishop Museum	Distribution of Snails and Rat Lungworm Disease	\$58,415
UH CTAHR	Herbicide Ballistic Technology developments	\$87,622
UH CTAHR	Spittlebug Detection and Control	\$50,000
UH CTAHR	CRB Control Method Research	\$100,000
UH CTAHR	Hydrogel Ant Bait Research	\$45,305
UH CTAHR	CRB Biocontrol and Chemical Control Research	\$17,771
UH Geography	Unmanned Aerial System Program Development	\$43,811
UH PCSU	Statewide Plant Prioritization Tool	\$31,961
UH PCSU	West Maui HBT for <i>Albizia</i> and Mules Foot Fern	\$3,894
UH PCSU - DAR	Ballast Water and Biofouling	\$88,596
UH PCSU BIISC	BIISC Early Detection	\$243,395
UH PCSU BIISC	BIISC Outreach	\$116,830
UH PCSU BIISC	BIISC Plant Control	\$195,945
UH PCSU BIISC	BIISC ROD Team	\$73,018
UH PCSU CGAPS	Coordinating Group on Alien Pest Species	\$27,000
UH PCSU HAL	Hawaii And Lab Development of Organic Treatments	\$14,845
UH PCSU HAL	Hawaii Ant Lab Core Program	\$260,000
UH PCSU KISC	KISC Outreach Program	\$48,679
UH PCSU KISC	KISC Core Program	\$530,601
UH PCSU MISC	MISC Core Program	\$569,544
UH PCSU MISC	MISC Expansion of Little Fire Ant Response	\$48,679
UH PCSU MISC	MISC Outreach Program	\$87,622
UH PCSU OISC	OISC Core Program	\$550,072
UH PCSU OISC	OISC Outreach Program	\$73,018
UH PCSU WRA	Weed Risk Assessment	\$100,000
USDA NWRC	Research on Alternative Hosts of Rat Lungworm Disease	\$38,943
USDA NWRC	Development of a Mongoose Control Method	\$32,204
USFS Biocontrol	<i>Albizia</i> Biocontrol	\$115,000
USFS Biocontrol	Melastome Biocontrol (<i>Miconia</i> , <i>Clidemia</i> , <i>Tibouchina</i>)	\$30,000
USFS IPIF	Rapid Ohia Death Monitoring	\$38,943
	Total	\$4,750,000

Table 5: Interagency Projects Funded by HISC in FY19*

Lead Agency	Abbreviated Project Title	Final award
Budget & Finance	5% Expenditure Restriction	\$237,500
DLNR DOFAW	DOFAW Overhead (6%)	\$270,750
HISC	HISC Support Program	\$303,591
Bishop Museum	Hawaii Early Detection Program	\$41,073
DLNR DAR	Ballast Water and Hull Fouling	\$85,000
DLNR DAR	Jellyfish Biosecurity	\$1,907
DLNR DOFAW	Landscape-scale Mosquito Birth Control	\$58,502
UH CTAHR	Coconut Rhino Beetle Research and Response	\$100,000
UH CTAHR	Development of New Ant Baiting Tools, Year 2	\$55,000
UH Botany	Plant Informatics and Information Portal Development, Year 2	\$33,753
UH CTAHR	Invasive Plant Research & Technology Capacity	\$134,000
UH HIMB	Invasive Sponge Detection and Monitoring	\$49,145
UH PCSU BIISC	BIISC Outreach	\$166,536
UH PCSU BIISC	BIISC ROD Response	\$77,191
UH PCSU BIISC	BIISC Core Targets	\$433,808
UH PCSU CGAPS	Coordinating Group on Alien Pest Species	\$62,000
UH PCSU HAL	Hawaii Ant Lab	\$226,544
UH PCSU KISC	KISC Core Targets	\$568,394
UH PCSU KISC	KISC Outreach	\$84,042
UH PCSU KMWP	KMWP <i>Albizia</i> Control	\$19,384
UH PCSU MISC	MISC Core Targets	\$665,172
UH PCSU MISC	MISC Expansion of Little Fire Ant Mitigation in Nahiku	\$125,322
UH PCSU MISC	MISC Outreach	\$81,699
UH PCSU OISC	OISC Outreach	\$80,974
UH PCSU OISC	OISC Plants	\$433,808
UH PCSU OISC	OISC Pests	\$125,322
UH PCSU WRA	Weed Risk Assessment	\$112,838
USDA USFS	Biocontrol of Himalayan Ginger	\$21,208
USDA USFS	Biocontrol of High Priority Plants	\$77,121
USDA NWRC	Mongoose Toxicant Development, Year 2	\$18,414
	Total	\$4,750,000

* Abbreviations

DLNR= Department of Land and Natural Resources; HDOA= Hawaii Department of Agriculture; 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; WRA= Weed Risk Assessment; HAL= Hawaii Ant Lab; CGAPS= Coordinating Group on Alien Pest Species; CTAHR= College of Tropical Agriculture

and Human Resources; KMWP= Koolau 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. Notable examples include:

1. **Potential economic damages of Brown Tree Snake in Hawaii: estimated at \$2,140,000,000 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 \$672,000,000 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 \$672,000,000.
3. **Economic impact of Little Fire Ant on Hawaii Island: estimated at \$194,000,000 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 \$200,000,000 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 \$7,600,000 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.

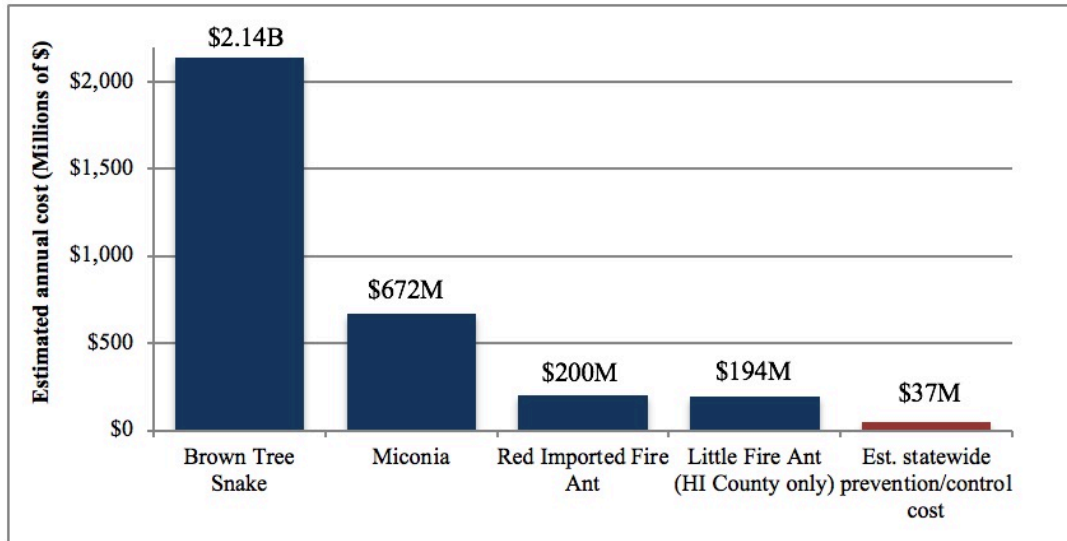


Fig 3: Examples of estimated economic damages from invasive species in Hawaii.

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 Sustainable 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 FY18 HISC Resolutions

The HISC adopted one resolution in FY18:

- Resolution 18-1: Supporting Evaluation and Implementation of Best Management Practices and Technologies for Vessel Biofouling Management and Collaboration by HISC Agencies in the Development of Biofouling Management Regulations for Hawaii Harbors. This resolution encourages agency staff at several relevant departments to work together on identifying solutions for in-water cleaning of vessels in a way that protects water quality and minimizes release of aquatic invasive species.

All HISC resolutions are available at <http://dlnr.hawaii.gov/hisc/reports/resolutions/>.

3. 2 Advice Regarding Invasive Species in the 2019 Legislative Session

The primary recommendation of the HISC to the legislature in 2019 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.

Of the 147 action items in the HIBP matrix, 47 pertain to policies and resources that can be achieved via legislative action (the remaining 100 actions are process suggestions or other actions that agencies can take internally to increase efficacy). Each HIBP action item is assigned to a lead agency and associated with an estimated cost and implementation timeframe.

The legislature has made good progress in implementing goals of the HIBP in 2017 and 2018. 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
- Added positions at DLNR DAR for aquatic biosecurity
- Approved HDOA to use transitional facilities for commodity inspection
- Provided stable funds to the HISC by adding annual appropriation to base budget
- Provided \$6.5M in CIP funding to DLNR in FY19 for watershed fencing to exclude invasive ungulates
- Added two positions in FY19 for UH Hawaii Ant Lab to expand services in Kona
- Provided FY19 appropriations for Rapid Ohia Death (\$1.55M), rat lungworm (\$300K), & rose-ringed parakeet (\$284K)

Of the remaining legislative needs identified in the HIBP, there are a number of key areas described below. The most critical of these remaining needs is increasing the number of positions available for biosecurity work, particularly within HDOA Plant Quarantine. Other entities with key responsibilities for post-border response also need additional capacity, including DLNR DOFAW, HDOA Plant Pest Control Branch, and UH CTAHR. Another important goal of the HIBP is to establish stable funding and administrative structure for the UH Invasive Species Committees and Hawaii Ant Lab, which are currently funded on a year-to-year basis using a mixture of competitive funding from HISC and other sources. Lack of stable funding prohibits long-term planning and project development, and ultimately

increases costs, including economic damages from persistence of invasive species, costs associated with longer-term invasive species control, and overhead and other administrative costs.

Key remaining legislative needs described by the HIBP include:

- Add positions at DLNR DOFAW for biosecurity (post-border control) in State protected areas
- Increase funding for critical biosecurity projects via HISC (LNR 402)
- Create a Biosecurity Emergency Response Fund
- 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
- Add research and extension positions relating to biosecurity at UH CTAHR
- Move enforcement of HDOA import laws under the new Environmental Court.

There are a number of additional legislative goals described in the HIBP, but the plan places these on a 10-year timeline ending in 2027 and recognizes that not all actions are ready to be implemented at present. For example, there are several legislative actions in the HIBP pertaining to the use of electronic manifesting for inspections or pertaining to the use of an aquatic database for biofouling and ballast water threats. These systems should be fully developed prior to proposing any statutory changes regarding their usage, and as such are currently being explored as pilot projects with the intent to institutionalize later if proven effective.

3.3 Review of the 2018 Legislative Session with Regard to Invasive Species

The 2018 legislative session included 60 measures relating to invasive species. Most of these bills provided appropriations for existing management programs or policy changes intended to improve the efficacy of invasive species management. Of these 60 measures, one bill and three resolutions passed. Of the 56 measures that failed to pass the 2018 session, two were explicitly deferred in committee hearings, with the remaining 54 measures expiring due to lack of hearings prior to various deadlines. It should be noted that while several measures that would have provided species-specific appropriations technically expired, the contents of those measures were addressed through amendments to the budget bill as described below.

The three measures that passed included:

- HB2081, appropriating \$284,011 for the study and control of rose-ringed parakeets on Kauai
- HCR75/HR60, requesting HDOA to establish a Kauai invasive species task force to study the issue of invasive animals in Kauai
- HCR130, urging state agencies to evaluate, collaborate, and implement best management practices, technologies, and regulations to address vessel biofouling in Hawaii harbors
- HR195, requesting the Hawaii veterinary medical association to conduct a survey of its membership on the frequency of cases of rat lungworm disease in animal companions.

The final budget bill included the following items relating to invasive species:

- \$180,000 in planning funds for HDOA to initiate development of a new biological control research facility
- \$300,000 for rat lungworm disease research at UH Hilo
- \$1,550,000 for rapid ohia death research and response
- \$200,000 for positions and expenses required for the UH Hawaii Ant Lab to expand its services in west Hawaii Island
- A recurring \$4,750,000 to the HISC at DLNR to support research and interagency projects
- \$2,200,000 to DLNR to support the Watershed Partnership Program Grants

- \$6,500,000 in capital improvement funds to DLNR for watershed fencing to exclude invasive animals, as well as additional appropriations for:
 - \$500,000 for a fence in the Waiawa Forest Reserve
 - \$1,300,000 for infrastructure in the Honualua Forest Reserve

The measures that did not pass in the 2018 session encompassed a wide variety of efforts relating to invasive species. This includes a number of recommendations that are either described in the HIBP or in the new Strategic Plan for the Control and Management of *Albizia*:

- Tax credits for the removal of dangerous *Albizia* trees (HB20, HB29)
- Requiring disclosure of *Albizia* trees during real estate transactions (SB815)
- Restructuring the HISC as the Hawaii Invasive Species Authority, an attached agency with dedicated staff and additional board seats to engage industry and other nongovernmental experts (SB2728, HB2301, SB879, HB1013, SB2399)
- Creation of an invasive species emergency response fund (HB904, SB2116)
- Adding positions to the Maui branch of DLNR DOFAW for invasive species control (SB558)

The legislature also avoided passage of several bills that would have potentially exposed the State to legal liability through support for feral cat colony maintenance under a tool known as "Trap, Neuter, Release," wherein feral cats are neutered and then re-released onto the landscape. This tool has been demonstrated in a number of scientific analyses as being ineffective at reducing the number of feral cats on the landscape and, in some cases, counterproductive, with the potential for re-released cats to prey on native wildlife and release the parasite *Toxoplasmosis gondii* into the environment. The toxoplasmosis parasite has been shown to cause or contribute to death in native species that are federally listed as threatened or endangered, including the Hawaiian monk seal, alala, nene, and others. The parasite also presents a human health risk to pregnant women and immunocompromised individuals. During the 2018 legislative session, DLNR and other State agencies submitted testimony describing the need for alternative tools, including increased adoption efforts or enclosed sanctuaries, and humane euthanasia where necessary, rather than use of tools that result in the re-release of feral cats onto the landscape.

3.4 Review of Relevant Administrative Rules

During the reporting period, administrative rules were proposed by DLNR to prohibit the feeding of feral cats at small boat harbors. Feral cats (distinct from indoor, pet cats) are considered an invasive species due to their impacts on natural resources and human health. At the time of reporting, these rules had not yet been signed by the Governor.

HDOA is currently considering proposed changes to the Administrative Rules regarding Chapter 4-70, Hawaii Administrative Rules, Entitled, "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.

Appendix 1: Chapter 194, Hawaii Revised Statutes: INVASIVE SPECIES COUNCIL

Section

- 194-1 Definitions
- 194-2 Establishment of council; duties
- 194-3 Lead agencies; accountability
- 194-4 Relation of chapter to other laws
- 194-5 Entry; private property
- 194-6 Entry; public property
- 194-7 Rules

Cross References

- Coqui frog; designation as pest, see §141-3.
- Landowners liability for access to control invasive species, see chapter 520A.
- Noxious weed control, see chapter 152.
- Plant, animal and microorganism, etc., imports (see chapter 150A).

[§194-1 Definitions.] As used in this [chapter], unless the context requires otherwise:

“Council” means the [invasive species council].

“Department” means any entity that is a member of the [invasive species council] established under section [194-2(a)]. [L 2003, c 85, §2; am L 2004, c 10, §16; am L 2006, c 109, §2].

[§194-2 Establishment of council; duties.] (a) There is established the invasive species council for the special purpose of providing policy level direction, coordination, and planning among state departments, federal agencies, and international and local initiatives for the control and eradication of harmful invasive species infestations throughout the State and for preventing the introduction of other invasive species that may be potentially harmful. The council shall:

- (1) Maintain a broad overview of the invasive species problem in the State;
- (2) Advise, consult, and coordinate invasive species-related efforts with and between the departments of agriculture, land and natural resources, health, and transportation, as well as state, federal, international, and privately organized programs and policies;
- (3) Identify and prioritize each lead agency's organizational and resource shortfalls with respect to invasive species;
- (4) After consulting with appropriate state agencies, create and implement a plan that includes the prevention, early detection, rapid response, control, enforcement, and education of the public with respect to invasive species, as well as fashion a mission statement articulating the State's position against invasive species; provided that the appropriate state agencies shall collaborate with the counties and communities to develop and implement a systematic approach to reduce and control coqui frog infestations on public lands that are near or adjacent to communities, and shall provide annual reports on the progress made in achieving this objective;
- (5) Coordinate and promote the State's position with respect to federal issues, including:
 - (A) Quarantine preemption;
 - (B) International trade agreements that ignore the problem of invasive species in Hawaii;
 - (C) First class mail inspection prohibition;
 - (D) Whether quarantine of domestic pests arriving from the mainland should be provided by the federal government;
 - (E) Coordinating efforts with federal agencies to maximize resources and reduce or eliminate system gaps and leaks, including deputizing the United States Department of Agriculture's plant protection and quarantine inspectors to enforce Hawaii's laws;

(F) Promoting the amendment of federal laws as necessary, including the Lacey Act Amendments of 1981, Title 16 United States Code sections 3371-3378; Public Law 97-79, and laws related to inspection of domestic airline passengers, baggage, and cargo; and

(G) Coordinating efforts and issues with the federal Invasive Species Council and its National Invasive Species Management Plan;

(6) Identify and record all invasive species present in the State;

(7) Designate the department of agriculture, health, or land and natural resources as the lead agency for each function of invasive species control, including prevention, rapid response, eradication, enforcement, and education;

(8) Identify all state, federal, and other moneys expended for the purposes of the invasive species problem in the State;

(9) Identify all federal and private funds available to the State to fight invasive species and advise and assist state departments to acquire these funds;

(10) Advise the governor and legislature on budgetary and other issues regarding invasive species;

(11) Provide annual reports on budgetary and other related issues to the legislature twenty days prior to each regular session;

(12) Include and coordinate with the counties in the fight against invasive species to increase resources and funding and to address county-sponsored activities that involve invasive species;

(13) Review state agency mandates and commercial interests that sometimes call for the maintenance of potentially destructive alien species as resources for sport hunting, aesthetic resources, or other values;

(14) Review the structure of fines and penalties to ensure maximum deterrence for invasive species-related crimes;

(15) Suggest appropriate legislation to improve the State's administration of invasive species programs and policies;

(16) Incorporate and expand upon the department of agriculture's weed risk assessment protocol to the extent appropriate for the council's invasive species control and eradication efforts; and

(17) Perform any other function necessary to effectuate the purposes of this chapter.

(b) The council shall be placed within the department of land and natural resources for administrative purposes only and shall be composed of:

(1) The president of the University of Hawaii, or the president's designated representative;

(2) The director, or the director's designated representative, of each of the following departments:

(A) Business, economic development, and tourism;

(B) Health; and

(C) Transportation; and

(3) The chairperson, or the chairperson's designated representative, of each of the following departments:

(A) Agriculture; and

(B) Land and natural resources.

(c) Representatives of federal agencies, the legislature, and members of the private sector shall be asked to participate or consulted for advice and assistance. Representatives of the legislature shall consist of eight members, as follows:

(1) Four senators, one from each county, to be selected by the senate president; and

(2) Four representatives, one from each county, to be selected by the speaker of the house of representatives.

(d) The council shall meet no less than twice annually to discuss and assess progress and recommend changes to the invasive species programs based on results of current risk assessments, performance standards, and other relevant data. Notwithstanding any law to the contrary:

(1) A simple majority of voting members of the council shall constitute a quorum to do business; and

(2) Any action taken by the council shall be by a simple majority of the voting members.

(e) The council shall submit a report of its activities to the governor and legislature annually. [L 2003, c 85, §3; am L 2004, c 10, §16; am L 2006, c 109, §§1, 2; am L 2008, c 160, §1]

[§194-3 Lead agencies; accountability.] A state department that is designated as a lead agency under section [194-2(a) (7)], with respect to a particular function of invasive species control, shall have sole administrative responsibility and accountability for that designated function of invasive species control. The lead agency shall:

(1) Coordinate all efforts between other departments and federal and private agencies to control or eradicate the designated invasive species;

(2) Prepare a biennial multi-departmental budget proposal for the legislature forty days before the convening of the regular session of the legislature in each odd-numbered year, showing the budget requirements of each of the lead agency's assigned invasive species function that includes the budget requirements of all departments that it leads for that species, as well as other federal and private funding for that invasive species;

(3) Prepare and distribute an annual progress report forty days prior to the convening of each regular session of the legislature to the governor and the legislature that includes the status of each assigned function; and

(4) Any other function of a lead agency necessary to effectuate the purposes of this [chapter]. [L 2003, c 85, §4; am L 2004, c 10, §16; am L 2006, c 109, §2]

(C) Transportation; and

(3) The chairperson, or the chairperson's designated representative, of each of the following departments:

(A) Agriculture; and

(B) Land and Natural Resources.

(c) Representatives of federal agencies, the legislature, and members of the private sector shall be asked to participate or consulted for advice and assistance. Representatives of the legislature shall consist of eight members, as follows:

(1) Four senators, one from each county, to be selected by the Senate president; and

(2) Four representatives, one from each county, to be selected by the speaker of the House of Representatives.

(d) The Council shall meet no less than twice annually to discuss and assess progress and recommend changes to the invasive species programs based on results of current risk assessments, performance standards, and other relevant data. Notwithstanding any law to the contrary:

(1) A simple majority of voting members of the council shall constitute a quorum to do business; and

(2) Any action taken by the council shall be by a simple majority of the voting members.

(e) The Council shall submit a report of its activities to the governor and legislature annually. [L 2003, c 85, §3; am L 2004, c 10, §16; am L 2006, c 109, §§1, 2]

[§194-4 Relation of chapter to other laws.] Notwithstanding any other law to the contrary, and in addition to any other authority provided by law that is not inconsistent with the purposes of this [chapter], a department is authorized to examine, control, and eradicate all instances of invasive species identified by the Council for control or eradication and found on any public or private premises or in any aircraft or vessel landed or docked in waters of the State. [L 2003, c 85, §5; am L 2004, c 10, §16; am L 2006, c 109, §2]

[§194-5 Entry; private property.] (a) Whenever any invasive species identified by the Council for control or eradication is found on private property, a department may enter such premises to control or eradicate the invasive species after reasonable notice is given to the owner of the property and, if entry is refused, pursuant to the court order in subsection (d).

(b) If applicable, a duplicate of the notice so given shall be left with one or more of the tenants or occupants of the premises. If the premises are unoccupied, notice shall be mailed to the last known place

of residence of the owner, if residing in the state. If the owner resides out of the state or cannot be expeditiously provided with notice, notice left at the house or posted on the premises shall be sufficient.

(c) The department may instead cause notice to be given, and order the owner to control or eradicate the invasive species, if such species was intentionally and knowingly established by the owner on the owner's property and not naturally dispersed from neighboring properties, at the owner's expense within such reasonable time as the department may deem proper, pursuant to the notice requirements of this section.

(d) If the owner thus notified fails to comply with the order of the department, or its agent, within the time specified by the department, or if entry is refused after notice is given pursuant to subsection (a) and, if applicable subsection (b), the department or its agent may apply to the district court of the circuit in which the property is situated for a warrant, directed to any police officer of the circuit, commanding the police officer to take sufficient aid and to assist the department member or its agent in gaining entry onto the premises, and executing measures to control or eradicate the invasive species.

(e) The department may recover by appropriate proceedings the expenses incurred by its order from any owner who, after proper notice, has failed to comply with the department's order.

(f) In no case shall the department or any officer or agent thereof be liable for costs in any action or proceeding that may be commenced pursuant to this [chapter]. [L 2003, c 85, §6; am L 2004, c 10, §16; am L 2006, c 109, §2].

[§194-6 Entry; public property.] (a) Whenever any invasive species is found on state or county property or on a public highway, street, lane, alley, or other public place controlled by the state or county, notice shall be given by the department or its agent, as the case may be, to the person officially in charge thereof, and the person shall be reasonably notified and ordered by the department to control or eradicate the invasive species.

(b) In case of a failure to comply with the order, the mode of procedure shall be the same as provided in case of private persons in section [194-5]. [L 2003, c 85, §7; am L 2004, c 10, §16; am L 2006, c 109, §2]

[§194-7 Rules.] The invasive species council may adopt rules pursuant to chapter 91, to effectuate this [chapter]. [L 2003, c 85, §8; am L 2004, c 10, §16; am L 2006, c 109, §2].