January 2020 Progress Report

Hawaii Interagency Biosecurity Plan 2017-2027

Prepared by the
Hawaii Invasive Species Council
January 2020

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Hawaii Interagency Biosecurity Plan 2017-2027

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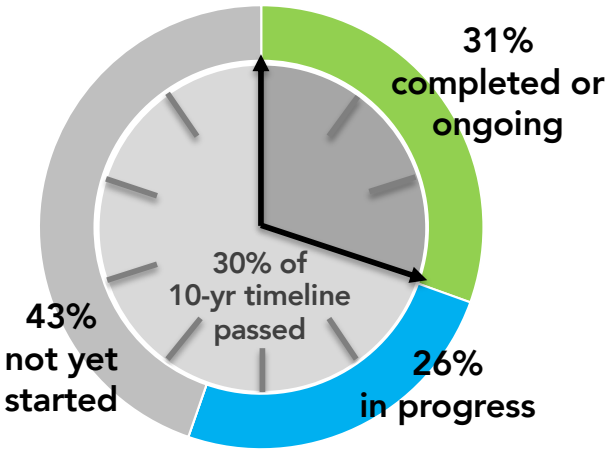
Hawaii Interagency Biosecurity Plan
January 2020 Snapshot

147 actions in the Hawaii Interagency Biosecurity Plan (HIBP) provide a roadmap to a safer, more sustainable Hawaii. Implementation is underway and ahead of schedule.



57% of HIBP actions have been initiated, are ongoing in perpetuity, or have been completed. This is an increase of 7% over the past year.

Completed

- Data manager & specialists for HDOA inspections
- Increased FY20 funds for HISC and watershed fencing
- HDOA e-manifest system developed
- 643pest.org online pest reporting tool & app
- Extension agent positions for UH CTAHR
- Rapid ʻōhiʻa death emergency response plans for each county
- Vector Control Branch restored

In Progress

- Biocontrol facility planning discussions ongoing
- Restrictions on imported myrtles that threaten ohia
- Restricted Plant Rules
- Draft rules for ballast water management
- New tools for ant & mosquito control
- Addition of invasive species BMP's to EAs
- Biocontrols for miconia, ginger, albizia, tibouchina

Needed

- Capacity to co-manage vessel biofouling & ballast water discharge
- CTAHR aquaculture extension agents
- Biosecurity emergency response fund
- DOFAW biosecurity techs for protected lands
- Inspector positions at HDOA Plant Quarantine
- Biocontrol facility construction funds

Hawai'i Interagency Biosecurity Plan
2020 Legislative Package

The Hawai'i Interagency Biosecurity Plan (HIBP) identifies gaps in Hawaii's network of biosecurity programs across various agencies. From **2017-2027 the HIBP includes 147 actions** to create a safer, more sustainable Hawai'i. As of July 2019, **55% were initiated or completed.**

Past legislative wins (2017-19)

- 4 specialist positions for import risk assessment & electronic manifesting
- $1M for new tools for coqui, mosquitoes, biocontrol, fire ants
- Funds for watershed fencing
- Rapid ohi'a death response funds
- Property access for suspected invasives
- Property access for albizia control
- Assessment of mosquito control tools
- New CTAHR extension agents
- Rat lungworm research funds
- HISC funds moved to base budget
- Funds for biocontrol facility planning
- Vector Control Branch restored

2020 Legislature Potential Items

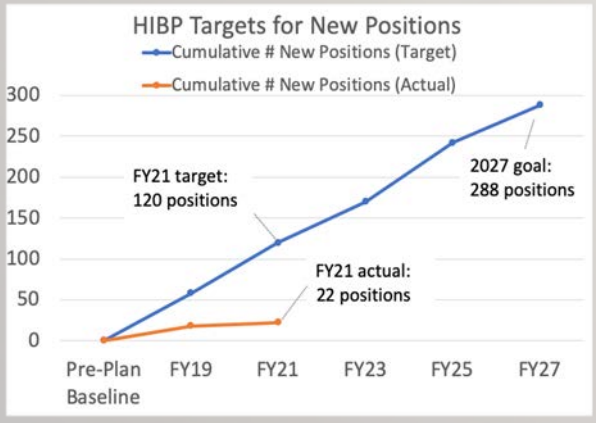
Potential 2020 topics: timely items listed in the HIBP or bills not passed in 2019

- Five positions at DLNR Division of Aquatic Resources needed to co-regulate maritime vessels for invasive species, partnering with US Coast Guard ahead of upcoming federal regulation changes
- Aquaculture extension agents and aquaculture research capacity to safely grow local seafood production
- Emergency response funding for new invasive species incursions, ideally $1M in revolving funds
- New positions at the DLNR Division of Forestry and Wildlife to respond to invasive species in Hawaii's protected forests and wildlife sanctuaries

Future needs (2021-27)

Where are we falling behind?

A key area of future need is increasing position counts. The HIBP recommends new agricultural inspectors, new Plant Pest Control Branch staff, and techs at DLNR DOFAW. Full plan details and progress reports at http://dlnr.hawaii.gov/hisc/plans/hibp

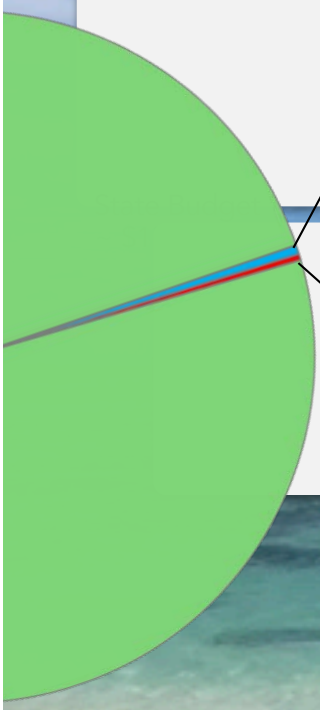


Hawai'i Interagency Biosecurity Plan
An investment in Hawaii's Future

What is biosecurity?
Biosecurity is the full set of measures taken to manage the risk from invasive species. This includes risks to agriculture, environment, economy, and the health of Hawaii's people.

The Hawaii Interagency Biosecurity Plan (HIBP)
The HIBP looks for gaps in our biosecurity system, which consists of a network of State agencies and partners mitigating impacts of invasive species. The HIBP includes 147 actions to increase our capacity to protect Hawai'i.

What Do We Spend?



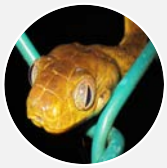
$57M/yr in current biosecurity expenditures across all agencies (0.4% of the state budget)

What More Do We Need?

$37.8M/yr in additional funding would support every action item in the HIBP (0.3% of the budget)

What Do We Save?

There are thousands of species that have invaded (and thousands more that could invade) Hawai'i. Here are just a few.



By funding inspectors at HDOA, we save **$2B every year in damages from brown treesnake**

By funding the UH Invasive Species Committees, we can reduce **the $672M that we lose to miconia every year**

By funding the Hawai'i Ant Lab, we reduce the **$174M yearly damages from little fire ant** on Hawaii Island alone

Biosecurity protects our economy…

Ag production: $680M

Tourism: $15B

Floriculture: $69M

…and our way of life in the islands

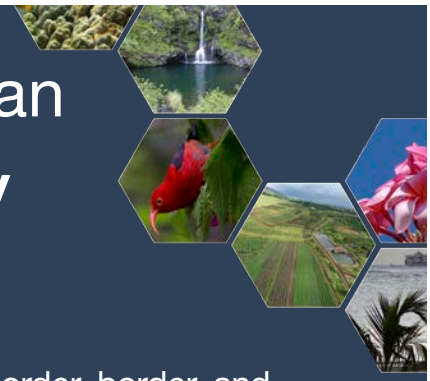
Healthy keiki

Vibrant reefs

Healthy watersheds

Native species

Hawaii Interagency Biosecurity Plan
Implementation Strategy

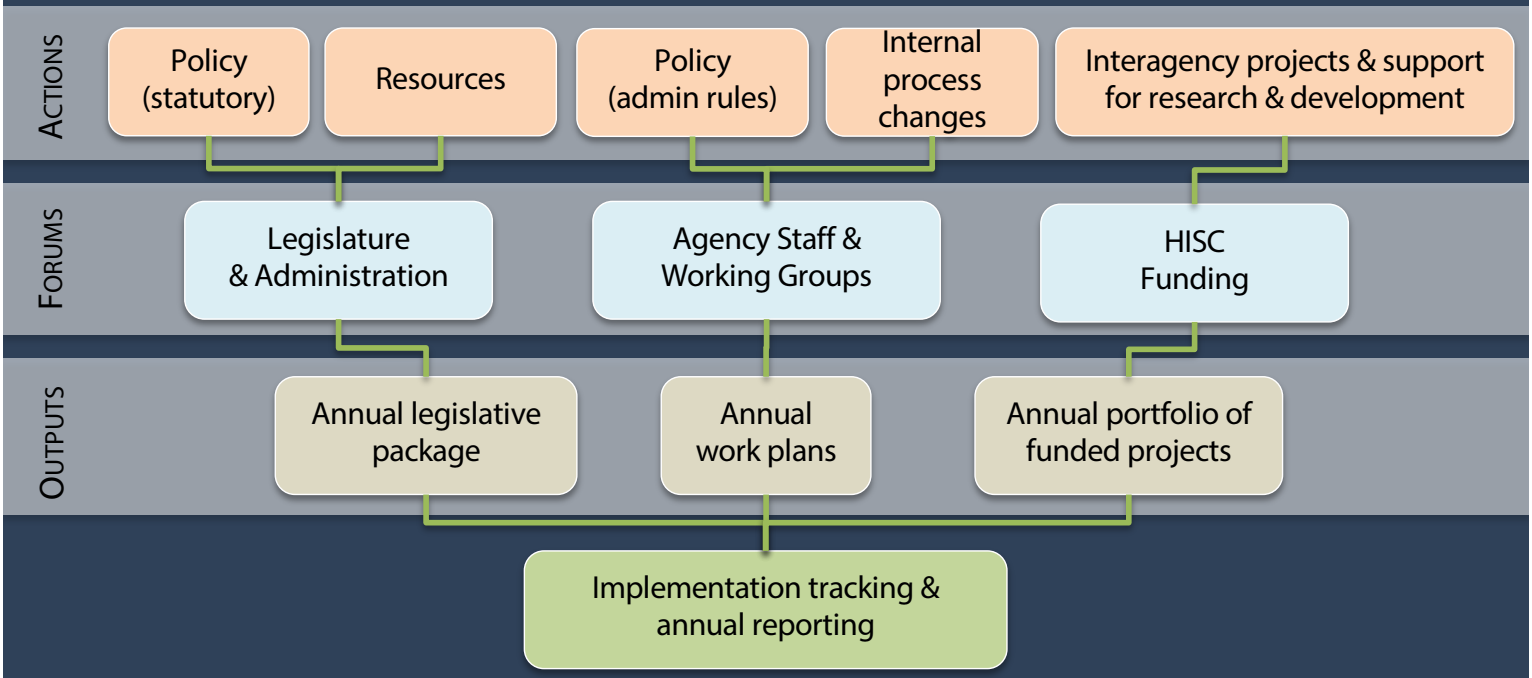


Different paths for different actions

HIBP recommendations span a variety of focal areas including preborder, border, and postborder biosecurity concerns, as well as public awareness. Within each area, the Plan recommends different types of actions, including:

- **Policy actions**, including both legislative needs and administrative rule changes
- **Process actions**, which change the way existing resources work together to increase effectiveness
- **Resource actions**, including developments in technology, infrastructure, funding, and staffing.

Because implementation of the Plan will require the assistance of different types of collaborators, the implementation strategy for the HIBP reorganizes the 147 action items according to the forums needed for success:

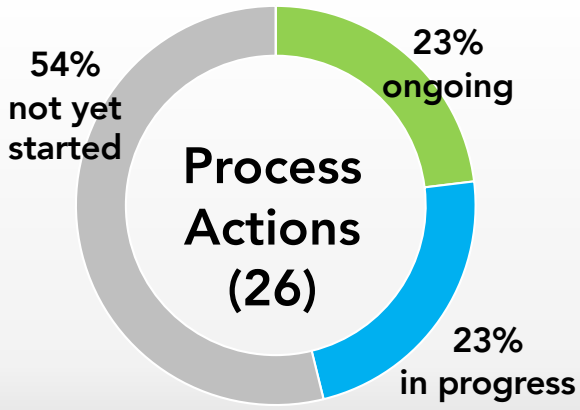


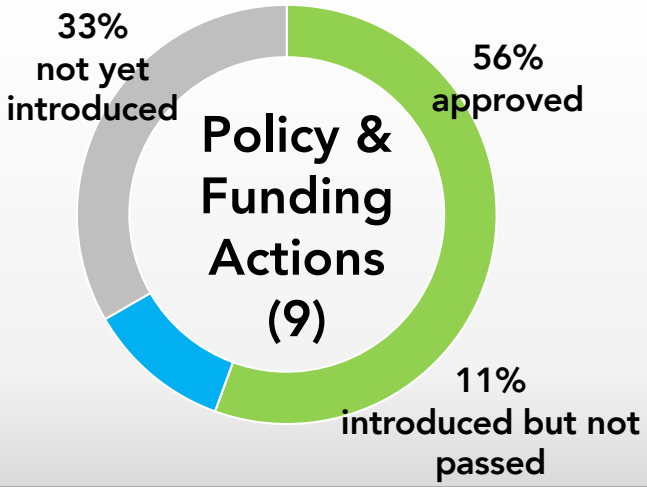
While the HISC tracks progress toward implementation, actual progress is made by collaborators within and between agencies, and by the Hawaii State Legislature. Points of contact within individual agencies provide status updates to the HISC Support Program on a semiannual basis. Agency points of contact are listed inside the cover of this report. The following pages present a summary of progress made within the areas of preborder, border, and postboder biosecurity, as well as public awareness.

HIBP January 2020 Progress Report

Preborder Biosecurity

The policies, processes, and protocols to prevent entry of invasive species into Hawaii





Bright Spots

- The new HDOA import database has completed development. Additional functionality is being added for permitting and interisland data. (PrePro1.1)

HDOA staff with a wasp found on a Christmas tree. PC: HISC

- HDOA Plant Quarantine Branch has dramatically reduced the number of rejected Christmas tree shipments using preborder treatments

Paper manifests will soon be replaced with digital records. Photo: HDOA

- DLNR DAR is using an aquatic invasive species risk assessment to develop a list of species that they will request to prohibit from import (PrePol1.8)

Remaining Needs

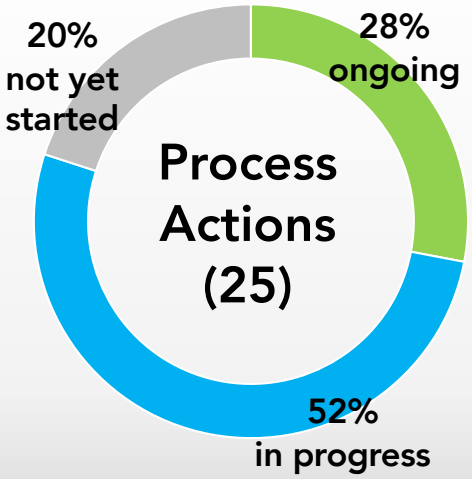
Over the next 7 years, key HIBP recommendations regarding preborder biosecurity include:

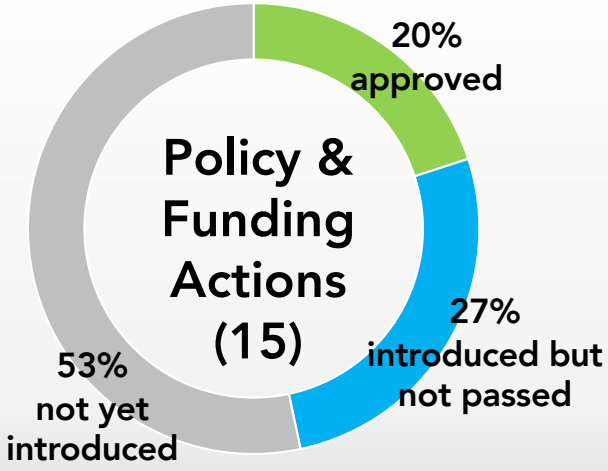
- At DLNR Division of Aquatic Resources, hiring biologists to conduct ballast & biofouling risk assessments (PreTifs2.5)
- New administrative rules are being developed to restrict myrtle imports (which carry disease risks for ohia) and to restrict other plants that may be invasive in Hawaii are not currently restricted by federal agencies (BorPol2.2)
- Amending admin rules to require phytosanitary certificates for high-risk plant imports (PrePol2.2)

HIBP January 2020 Progress Report

Border Biosecurity

Border biosecurity encompasses all the policies, protocols, and processes put in place to detect and respond to the arrival of an invasive species at ports of entry into the state.





Bright Spots

- In 2019 the legislature provided four positions to enhance HDOA Plant Quarantine inspections, including a botanist, entomologist, pathologist, and data manager

- DLNR DAR is evaluating in-water vessel cleaning tools to reduce invasive species release (BorPro2.4) and looking to add capacity to co-regulate vessel discharges alongside the US Coast Guard

- There are now six transitional cargo inspection facilities being operated in collaboration with importers to enhance secure inspections. (BorPro1.2)

- HDOA, UH, and HISC staff traveled to Arizona to receive hands-on training with Africanized honeybees.

Placing a trap for Africanzed bee detection

Remaining Needs

Over the next 7 years, key HIBP recommendations regarding border biosecurity include:

- Establish a biosecurity emergency fund (BorPol1.3, introduced in 2018 but not passed)
- Double the staff at HDOA Plant Quarantine Branch to meet current inspection volume, roughly 90 new positions (BorTifs1.1)
- Add additional detector dogs and handlers at HDOA (BorTifs1.3)

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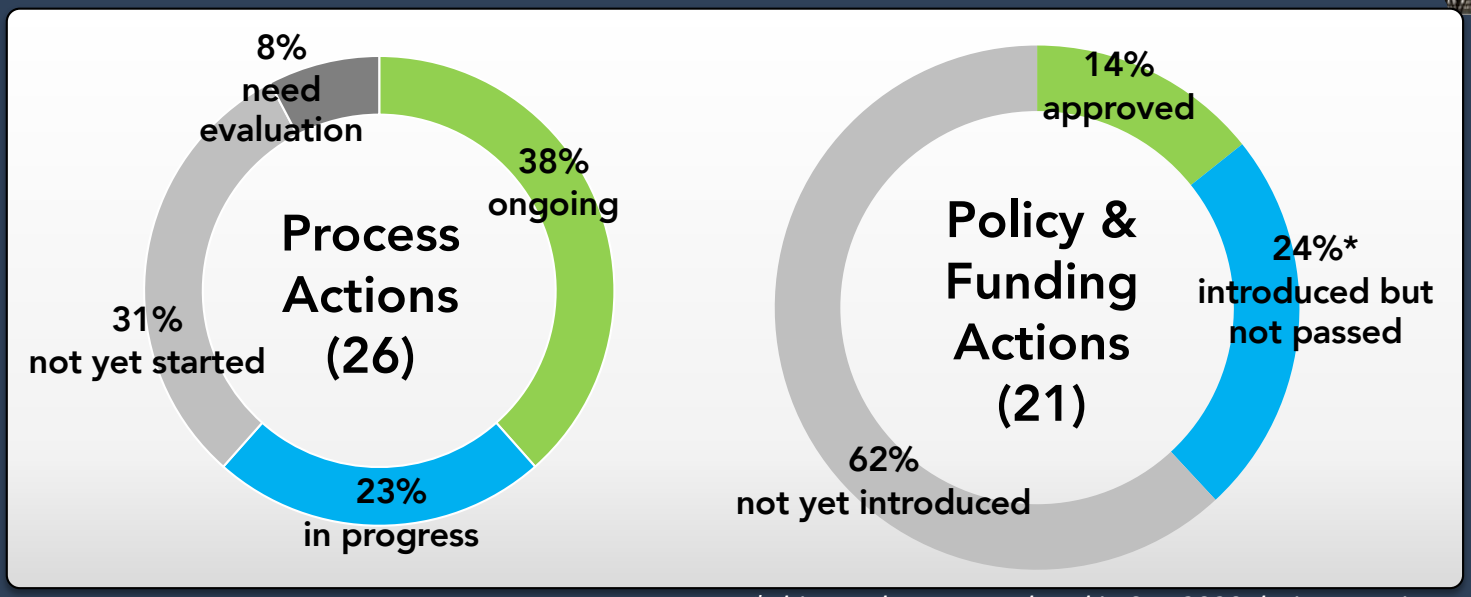
Postborder Biosecurity

Postborder biosecurity encompasses all the policies, protocols, and processes put in place to eradicate or control invasive species beyond the ports of entry and inspection process. Interisland biosecurity and intraisland transport are covered in this section.



**This number was updated in Sep 2020 during a review.*

Bright Spots

- The Incident Command System used to respond and eradicate little fire ants (LFA) from central Oahu in 2014 was revived in order to respond to a growing number of isolated outbreaks on Oahu. As of Jan 2020 there are 9 infestations on Oahu under treatment.
- The UH Pacific Cooperative Studies Unit, which administers important gap-filling projects such as the Invasive Species Committees and Hawaii Ant Lab, took steps toward being established as a permanent Organized Research Unit. (PosPro1.5)
- Governor Ige announced at the 2018 Western Governors' Association meeting in Waikoloa that the State and partners would be looking to expand the concept for a new biocontrol facility to include federal input in creating a Pacific Regional Biocontrol Center
- The legislature approved 10 positions for the College of Tropical Agriculture and Human Resources, several of which will focus on issues relating to invasive species (PosTifs1.12)

Biocontrol success: A Secusio moth reared by HDOA eating invasive fireweed. Fireweed is toxic to livestock. Photo: HISC

Remaining Needs

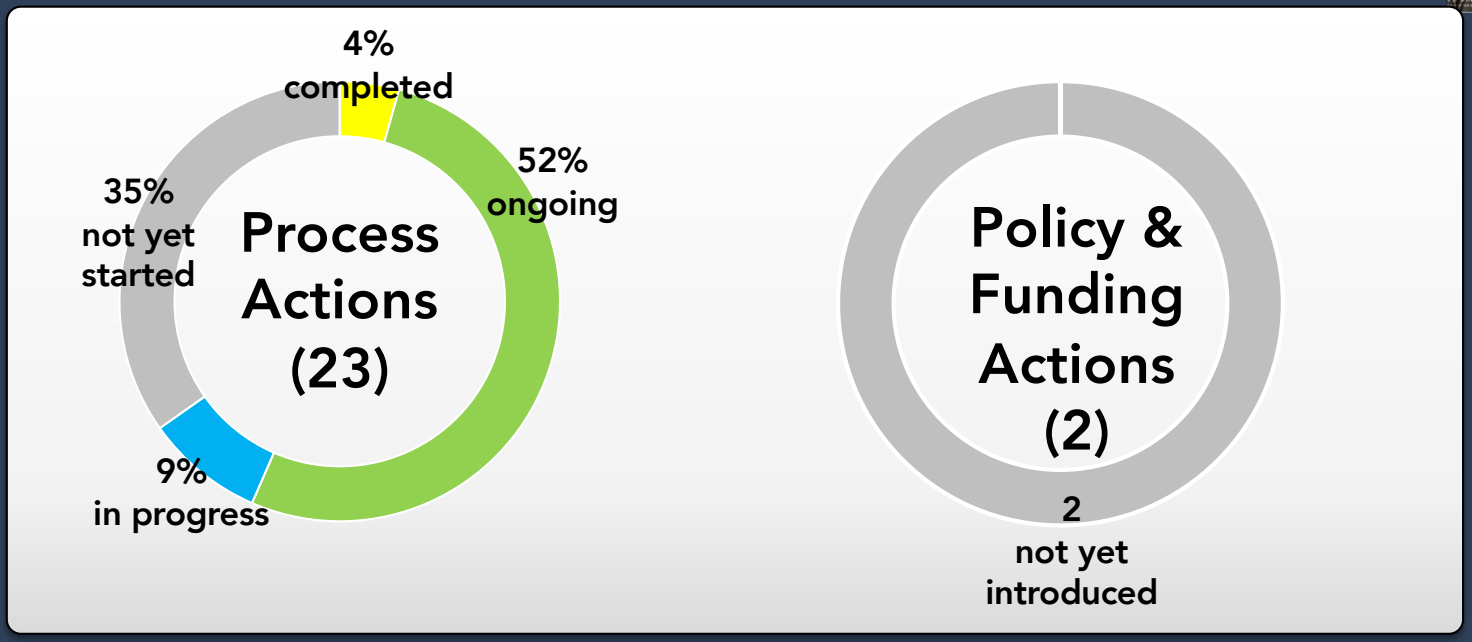
Over the next 7 years, key HIBP recommendations regarding postborder biosecurity include:

- Add extension agents and researchers for UH CTAHR to support safe growth of Hawaii's aquaculture industry
- Construct new biocontrol research facilities to meet the needs of HDOA and other state and federal partners working in the Pacific region (PosTifs2.1)
- At HDOA Plant Pest Control Branch, hire 20 positions to meet current control needs (PosTifs1.2)
- At DLNR DOFAW, hire 45 invasive species techs statewide by 2027 to protect natural areas (PosTifs1.10)

HIBP January 2020 Progress Report

Public Awareness

An engaged, supportive community is critical to Hawaii's biosecurity efforts. From incoming visitors passing the airport amnesty bin, to residents who report invasive species sightings, the most important biosecurity collaborator is you.



- HDOA Plant Industry Division has new signs and videos at Honolulu Airport relating to biosecurity, focusing on proper use of amnesty bins on entry to Hawaii (PwsTifs1.4)

New signage at HNL by HDOA

- HISC and HDOA launched a new pest reporting tool for public use in 2017. Joining the existing 643-PEST telephone hotline are the new 643pest.org website and 643-PEST mobile app, available on iOS and Android. (PwsPro3.5)

- A 2017 public awareness survey by the Coordinating Group on Alien Pest Species found that over 80% of Hawaii residents consider invasive species a serious problem, and 75% support doubling the portion of the state budget that goes toward biosecurity agencies. (PwsPro3.3)

Remaining Needs

Over the next 9 years, key HIBP recommendations regarding public awareness include:

- Promote a certified nurseries program to help consumers find certified growers (PwsPro1.5)
- Expand the "Buy Local" campaign at HDOA to include messaging about biosecurity and the reduced invasive species risk associated with supporting local agriculture.

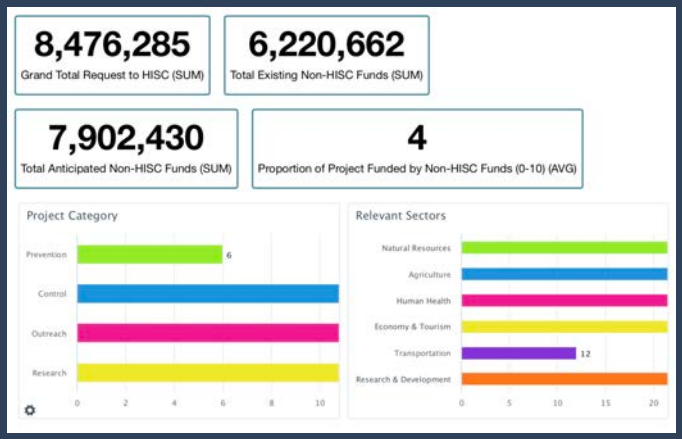
HISC Funded Projects, FY20

The Hawaii Invasive Species Council receives funding from the legislature to operate a program that coordinates invasive species issues across agencies and, through a competitive awards process, support interagency projects that:

- fill gaps between agency mandates or existing agency programs, and/or
- advance our collective knowledge through research and development of new tools.

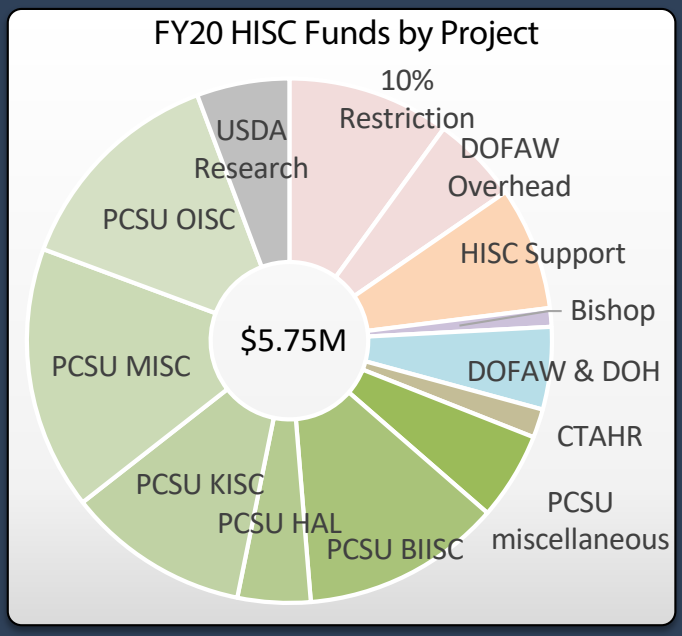
Beginning in FY18, the HISC revamped its funding process to focus on implementation of the HIBP. The Call for Proposals identified 10 key areas of the HIBP (e.g., harbor security, biocontrol research) and provided examples of priority action items within those areas. Applicants for HISC funds were required to select which HIBP priorities were addressed by their proposal, with an interagency evaluation team scoring proposals on how critical proposed projects were to achieving goals of the HIBP.

In FY20 the HISC received X applications, totaling $8.5M in project requests. After expenditure restrictions & overhead, the HISC was able to award $4.6M to 40 projects.



Summary statistics for FY20 applications to the HISC

HISC funds are highly leveraged. To match the $8.5M requested in FY20, applicants brought to the table $6.2M in leveraged non-HISC funds and were in the process of applying for an additional $7.9M outside of HISC. Additional funds to HISC provide opportunities to leverage more non-HISC funding.



The majority of funds were awarded to the UH Invasive Species Committees and Hawaii Ant Lab, as these gap-filling projects do not have permanent funding. Increasing stability of these projects is a HIBP goal (PosPro1.5) Other HISC funds were used for invasive species research, including:

- Research developing landscape-scale control of mosquitoes via “birth control”
- Development of mongoose toxicant, traps for longhorn beetles
- Ballast water & biofouling capacity
- Research on africanized bees, mamaki pests, and database structures
- Large increase in biocontrol research funds

Hawaii Interagency Biosecurity Plan

Why Plan?

The benefits of long-term planning

The HIBP took a little over a year to produce, from scoping in fall 2015 to release of the final plan in January 2017. The process engaged state, county, and federal agencies, industry stakeholders from agriculture, floriculture, tourism, and transportation sectors, and interested members of the public. One might ask: when new threats are coming to Hawaii every day, why use time and effort in planning?

Partners participate in a HIBP planning workshop on policy needs, April 2016

A few of the most fundamental benefits to long-term biosecurity planning include:

- ***A shared path forward***: Rather than each agency staking its own path for biosecurity, agencies have a shared vision that facilitates interagency collaboration.
- ***A comprehensive strategy***: Showing the broader context demonstrates how individual agency goals or requests contribute to an overarching, comprehensive effort.
- ***A long-term, stable vision*:** Staff changes, retirements, elections, and appointments sometimes bring changes in program direction. The 10-year timeframe of the HIBP provides stability in the overarching biosecurity vision,
- ***Policy packages, ready to go:*** Knowing what agencies plan to ask for well in advance helps policy makers formulate strategies and prioritize legislation.

Integrating with other initiatives, and inspiring a few new ones

Developing the HIBP has elevated the issue of biosecurity as one of the critical needs for Hawaii's future. By forming a plan with an articulated vision, the HIBP has been able to integrate into other forward-looking initiatives:

- The HIBP is aligned with the goals of the **Regional Biosecurity Plan for Micronesia and Hawaii**, a planning effort by the US Department of Defense.
- Implementation of the HIBP is the metric used by the **Aloha+ Challenge** to measure progress in mitigating invasive species impacts.
- Implementing the HIBP is part of Governor Ige's **Sustainable Hawaii Initiative**.
- The HIBP was used as the basis for the **Western Governors' Association Biosecurity and Invasive Species Initiative** under Governor Ige.
- The HIBP was used as the foundation for a new 2020-2025 Joint Strategy for HISC and CGAPS. Over 70 stakeholders contributed to this strategy prioritizing actions the HISC and CGAPS networks can take in the next five years to better support the HIBP.

Stakeholders prioritize HIBP actions for CGAPS and HISC joint strategy in August 2019

HIBP January 2020 Progress Report

Appendix: Action Matrix

The following tables describe all 147 action items recommended by the HIBP, with current status as of January 2020. Action items are coded with two components, the first three letters signifying a focal area and the remaining letters signifying the type of action:

- Focal areas: Pre=preborder, Bor=border, Pos=postborder, Pws=public awareness
- Action types: Pol=policy, Pro=process, Tifs=technology, infrastructure, funding, & staffing.

Cells highlighted in green indicate that an action progressed during the past year (e.g., status changed from “not yet started” to “in progress”)

Preborder: Process Actions

HIBP Task #	HIBP Implementation Task	Status (Jan 2020)
PrePol1.3	Amend HAR Chapter 4-70 to enable HDOA to require importers to treat/fumigate commodities identified by HDOA as a high biosecurity risk. Use fumigation of coffee imports as a successful model system.	Not yet started
PrePol1.4	Require declaration of high-risk packaging materials in shipments to Hawaii regardless of commodity.	Not yet started
PrePol1.5	Amend HAR Chapter 4-70 to update quarantine requirements for tissue-cultured plants. Certified tissue-cultured plants indexed for targeted pests and pathogens by a qualified lab independent of the exporter and imported in sealed vials and in sterile media should not be quarantined as long as these plants are of species, subspecies, variety, or type that can otherwise be permitted for importation.	Not yet started
PrePol1.6	Amend HAR Chapter 13-76 to make it consistent with USCG ballast water regulations. For example, develop and implement minimum ballast water discharge standards for organisms and certain indicator microorganisms.	Working toward completion
PrePol1.7	Obtain an MOA between the Office of the Governor of Hawaii, DOD, and other federal quarantine and regulatory agencies to require that military vessels (including those participating in Rim of the Pacific Exercise) entering Hawaii meet state standards regarding ballast water treatment and hull cleaning.	Not yet started
PrePol1.8	Submit petitions to HDOA to either add unlisted high-risk AIS organisms to the list of prohibited species or change list placement (e.g., from conditionally approved to restricted or prohibited list to allow for more stringent regulation.	Ongoing in perpetuity
PrePol2.1	Enter into cooperative agreements with other state departments of agriculture or with private industries to establish offshore screening programs (similar to HDOA’s current Christmas tree screening program in Oregon) for high-risk commodities being shipped to Hawaii.	Ongoing in perpetuity
PrePol2.2	Amend HRS Chapter 4-70 to require phytosanitary certificates for high-risk plant materials imported from domestic sources, and identify needed federal actions or enter into cooperative agreements to obtain phytosanitary certificates for imports of high-risk plant materials from foreign sources (also see PrePol1.1).	Not yet started

HIBP January 2020 Progress Report

Appendix: Action Matrix

Preborder: Process Actions (continued)

PrePol3.1	Complete an analysis of international and federal laws and regulations that currently preclude the state from taking effective action to prevent the introduction of invasive species to Hawaii, and list amendments and recommendations to better protect Hawaii (also see PreTifs2.1). Key Issues include working with APHIS on solutions to state quarantine needs relative to the Plant Protection Act, determining whether insular areas can get special recognition in the United States from a biosecurity perspective, and strengthening federal quarantine laws dealing with nonagricultural products.	Not yet started
PrePol3.2	Consult with the California and Florida Departments of Agriculture regarding what state and federal laws, regulations, and policies have been enacted to give them special protection at the state level, and produce recommendations to enact comparable protection for Hawaii.	Not yet started
PrePol3.3	Align the notifiable disease list with internationally and nationally recognized lists of existing threats to domestic livestock (terrestrial and aquatic).	Ongoing in perpetuity
PrePro1.1	Implement a comprehensive emanifest system that is effective no later than January 1, 2020. The system must be able to collect relevant nonproprietary information, authorize HDOA to prescreen and release commodities electronically, require manifests to indicate whether the goods are of foreign or domestic origin, identify port of origin, and be implementable on a trial basis between 2017 and 2019 to identify the need for any improvements. (Also see PrePol1.2)	Working toward completion
PrePro1.2	Conduct risk analyses of terrestrial plants, pests, diseases, commodities, and pathways to prioritize screening and inspections. When warranted by science and risk assessments, take the next policy, process, and staffing steps in collaboration with federal partners to approve and implement more restrictive state policies and rules—and seek complementary federal policies and rules—to protect Hawaii from the introduction of new pest threats.	Working toward completion
PrePro1.3	Based on the results of the risk analyses, annually write/update import requirements for high-risk commodities imported to Hawaii.	Working toward completion
PrePro1.4	Implement a state-of-the-art biosecurity database system within HDOA to meet important functions, such as emanifest, efficient input from risk assessments, capability to house survey and taxonomic data, ability to communicate among different databases, and ability to produce query-specific reports.	Working toward completion
PrePro1.5	Obtain MOUs for sharing data between state and federal agencies and the industry that facilitate sharing relevant biosecurity information and also ensure proper handling of proprietary or confidential information.	Working toward completion
PrePro1.6	Conduct an annual policy review of animal disease import regulations to identify new threats and ensure that adequate biosecurity measures are taken.	Ongoing in perpetuity
PrePro1.7	Conduct risk assessments for hull fouling, ballast water, aquaculture, and aquarium issues to better inform regulation of AIS organisms being introduced via these pathways and affecting native habitats.	Ongoing in perpetuity

HIBP January 2020 Progress Report

Appendix: Action Matrix

Preborder: Process Actions (continued)

PrePro2.1	Create working groups with representatives of the food, forestry, livestock, biofuel, and landscape industries to work with HDOA's import substitution program (also see PreTifs2.4), DLNR, and UH staff to substitute importation of plants (already in Hawaii) that pose a high-risk pathway for the introduction of pests and pathogens with plants that can be grown locally. Reduce importation with local production by 2027.	Not yet started
PrePro2.2	Create working groups with representatives and end users of the aquaculture, wetland agriculture, and aquarium industries to work directly with agency staff to identify high-risk pathways and standards for facilities and institute self-policing practices to minimize AIS threats.	Not yet started
PrePro3.1	Enter cooperative agreements with ecommerce industries (e.g., online plant nurseries, pet stores) to include language on their websites about what is not allowed to be imported or shipped to Hawaii and compel them to follow existing import regulations.	Not yet started
PrePro3.2	Enter MOAs with DOD to allow for the inspection and clearance by HDOA of any military vessel and related cargo and equipment entering Hawaii and to identify and close gaps in policy, process, and procedures to prevent inadvertent introduction of invasive species via household goods, equipment and other materials transported by DOD's units and contractors.	Ongoing in perpetuity
PrePro3.3	In collaboration with other state and federal regulatory agencies, establish an intelligence unit with the purpose of identifying and preventing illegal introductions (including ecommerce) to Hawaii.	Not yet started
PrePro4.1	Write Hawaii-specific standards and protocols for use in compliance agreements for offshore prescreening of agricultural and nonagricultural commodities en route to Hawaii.	Not yet started
PrePro4.2	Enter into cooperative agreements or contracts with private industry to conduct inspections at transitional facilities at offshore sites for high-risk import commodities.	Not yet started
PreTifs2.1	Hire two policy analysts to conduct international, federal, and state policy analysis and write necessary rules and regulations listed in this plan.	Not yet started

HIBP January 2019 Progress Report

Appendix: Action Matrix

Preborder: Policy & Funding Actions

HIBP Task #	HIBP Implementation Task	Status (Jan 2019)
PrePol1.1	Propose for enactment the necessary legislative amendments to HRS §150A-5 (and other related sections) to enable HDOA to screen and inspect nonagricultural commodities and amend or promulgate corresponding administrative rules, as needed.	Leg items: not yet introduced
PrePol1.2	Propose for enactment the necessary legislative amendments (e.g., an amendment to the list of commodities regulated by statute, as proposed in Prepol2.1), and promulgate administrative rules in accordance with HRS §§ 150A-9 and -53 to implement a comprehensive emanifest system. Examples include redefine "inspect" to include electronic release, authorize HDOA to prescreen and release commodities electronically, and require manifests to indicate whether the goods are of foreign or domestic origin and the port of origin.	Leg items: not yet introduced
PreTifs1.1	Fund equipment and licensing to support the emanifest system.	Introduced, approved
PreTifs1.2	Fund equipment and licensing to support HDOA's biosecurity database system.	Introduced, approved
PreTifs1.3	Fund equipment, licensing, and employee training on data systems that will record the movement of livestock animals and hold prearrival testing results. The data are aligned with existing federal databases to track movement and animal identification for disease trace-back.	Leg items: not yet introduced
PreTifs2.2	Hire three entomologists, two plant pathologists, and two botanists at HDOA to conduct risk analysis on pathways and on organisms and commodities entering Hawaii.	Introduced, partially approved
PreTifs2.3	Hire four data management specialists to support HDOA's new biosecurity database system.	Introduced, partially approved
PreTifs2.4	Fund an annual import substitution program to encourage Hawaii growers to identify and grow food and nonfood alternative products to phase out imports of high-risk pathway food/commodities by 2027.	Introduced, denied
PreTifs2.5	Contract or hire two biologists at DLNR to conduct risk analysis on vessels, pathways and organisms entering Hawaii via ballast water, biofouling, and aquaculture and pet industry pathways.	Introduced, approved

HIBP January 2020 Progress Report

Appendix: Action Matrix

Border: Process Actions

HIBP Task #	HIBP Implementation Task	Status (Jan 2020)
BorPol1.7	Collaborate with CBP, APHIS, CDC, and HDOA to review agency authorities, policies, and procedures and write a plan to take preventive action when disease-carrying vectors not on the APHIS actionable list (e.g., mosquitoes) are found in foreign cargo or conveyances (unintentional import).	Not yet started
BorPol2.2	Promulgate administrative rules, as required under HRS § 150A-6.1, to add species to the restricted plant list, and regulate or prohibit the introduction, sale, distribution, and propagation of specific plants put on the restricted plant list.	Working toward completion
BorPol2.3	Update HAR Chapter 13-124 to add aquatic species to the state's injurious wildlife list.	Not yet started
BorPro1.1	Implement inspections by state detector dogs to intercept high-risk species difficult to detect by other methods of inspection or at ports of entry difficult to inspect with other methods (see also BorTifs1.3).	Ongoing in perpetuity
BorPro1.2	Write a set of minimum standards, specifications, and operational protocols that would constitute HDOA's certification program for operating transitional facilities in Hawaii. For example, secure facilities with appropriate mechanisms, such as fences, double doors, and negative pressure, to contain any pests encountered; appropriate processes executed when pests are found; and appropriate equipment based on the type of goods being inspected, such as air conditioning and refrigerators for perishable goods. Work with industry on specifications and operational protocols.	Working toward completion
BorPro1.3	Enter into public-private partnership (e.g., contracts, cooperative agreements) to operate transitional facilities for freight and commodity inspections in Hawaii under HDOA's transitional facility certification program (see also BorPro1.2).	Working toward completion
BorPro1.4	Hold quarterly coordinating meetings/ workshops with APHIS, CBP, DHS, USFWS, and DOH to facilitate communication relative to border processes, such as inspection and detection. In collaboration with federal partners, take the next policy, process, and staffing steps to implement more protective state policies and rules and seek complementary federal policies and rules to protect Hawaii from the introduction of new pest threats.	Working toward completion
BorPro1.5	Provide annual training for state and federal inspectors on identification of emerging pests and diseases, as well as on new detection and screening methods for pests and disease.	Working toward completion
BorPro1.6	Based on the results of pathway and species risk assessments, run monitoring programs at major ports, harbors (ports and harbors that receive both domestic and foreign cargo), and post offices for high-risk pests not known to occur in Hawaii (e.g., brown tree snake) (see also BorTifs2.8).	Ongoing in perpetuity
BorPro1.7	Administer the livestock disease detection monitoring program focused on contagious animal diseases of high consequence and exotic parasites (and increase staffing and operations to include new port locations; see BorTifs1.3).	Working toward completion
BorPro2.1	Create standard operating procedures and protocols and ballast water reporting forms to regulate ballast water management and treatment specific for Hawaii. Develop compliance assessments and protocols to quarantine noncompliant vessels.	Working toward completion

Appendix: Action Matrix

Border: Process Actions (continued)

BorPro2.2	Create standard operating procedures for vessel biofouling inspections and a form to report hull inspection applicable to Hawaii. Develop compliance assessments and protocols to quarantine noncompliant vessels (see also BorPol1.4).	Working toward completion
BorPro2.3	Create a database to house data collected for ballast water reporting and management and hull inspections and hull biofouling treatment. The database should also be able to generate reports that can be used to conduct risk analysis regarding ballast water and hull biofouling (see also PrePro1.3).	Working toward completion
BorPro2.4	Test and apply new methods and technologies for ballast water and hull biofouling monitoring, treatment, and compliance monitoring and assessment, including in-water cleaning and treatment methods relative to their application in Hawaii.	Ongoing in perpetuity
BorPro2.5	Write best ballast water and hull husbandry practices and proactive ballast water and hull cleaning standards for all nonmilitary vessels to minimize movement of AIS into Hawaii's ports, harbors, and marinas. Include incentives to encourage vessel ballast water discharge and biofouling compliance.	Working toward completion
BorPro2.6	Before regulations for ballast and hull biofouling inspection and treatment are enacted, enter into MOUs or cooperative agreements with partner agencies and port authorities to implement effective AIS prevention, inspection, and response best management practices.	Working toward completion
BorPro3.1	Create a multiagency biosecurity Emergency Response Task Force to coordinate and respond to new aquatic and terrestrial pests or disease incursions both at and beyond (postborder) ports of entry. This task force should comprise representatives from relevant government agencies and consult with private industries working at the borders (e.g., airlines, shippers, freight forwarders).	Not yet started
BorPro3.2	Hold postincident meetings/workshops hosted by HDOA of the biosecurity Emergency Response Task Force to coordinate/review/debrief rapid response actions, and set up an incident command system.	Ongoing in perpetuity
BorPro3.3	Write species-specific response plans for high-risk/priority pests that detail the roles of relevant agencies and stakeholders. Review plans annually to ensure alignment with existing policies and USDA response plans.	Not yet started
BorPro3.4	Write general and taxa-specific (e.g., insects, plants, fish), rapid-response strategies that can be implemented immediately in response to an emergency involving multiple agencies and private industries.	Working toward completion
BorPro3.5	Write plans to respond to livestock diseases or exotic parasites. Review plans annually to ensure alignment with existing policies and USDA response plans.	Ongoing in perpetuity
BorPro3.6	Write contingency plans for treating and disposing of dirty ballast water and for cleaning biofouling vessels. Also include plan to dispose of harmful paint removed during the treatment.	Working toward completion
BorTifs2.1	Use state-of-the-art diagnostics technology to test for disease in imported plants.	Not yet started
BorTifs2.2	Install effective containment features (e.g., fences), attractants, and traps in the vicinity of ports of entry to help monitor for pests (see also BorPro1.6).	Ongoing in perpetuity
BorTifs3.4	Contract a public institution or private company to use molecular techniques to identify organisms recruited onto the settlement plates, and build an eDNA database of nonindigenous and invasive species established in Hawaii.	Ongoing in perpetuity

HIBP January 2020 Progress Report

Appendix: Action Matrix

Border: Policy & Funding Actions

HIBP Task #	HIBP Implementation Task	Status (Jan 2020)
BorPol1.1	Propose for enactment appropriate legislation (through HRS Chapter 150A) to enable HDOA oversight and establishment of transitional facilities in Hawaii for freight inspection and quarantine.	Introduced, approved
BorPol1.2	Propose for enactment appropriate legislation (through HRS Chapter 150A) to enable HDOA to require the importer to transport shipped commodities that HDOA determines to be of high risk to state-designated inspection facilities.	Leg items: not yet introduced
BorPol1.3	Propose for enactment necessary legislation (through HRS Chapter 141 or 150A) to create a biosecurity emergency response fund to support multiagency terrestrial and aquatic emergency responses at or beyond (postborder) ports by emergency task forces (see also BorPro3.1).	Introduced, denied
BorPol1.4	Propose for enactment legislation to move enforcement of HDOA's importation statutes and regulations under the Hawaii Environmental Court by amending HRS § 604A-2 to include civil fines for violations of HRS Chapter 150A within the Environmental Court's jurisdiction.	Leg items: not yet introduced
BorPol1.5	Amend the current penalty section in HRS §142-12, relating to violations of AI Division Quarantine Rules, to authorize issuance of administrative citations for minor violations such as failure to file written or verbal reports in prescribed time, or failure to provide nonconsequential information on shipping and import forms.	Leg items: not yet introduced
BorPol1.6	Propose for enactment the necessary legislation to authorize DLNR to inspect vessels and regulate hull-fouling threats, with penalty provisions for noncompliance.	Introduced, denied
BorPol2.1	Amend HRS 141-3 to provide HDOA the flexibility to not have to cover the costs associated with the control of noxious weeds and update the state's noxious weed list and noxious weed seed list as outlined and/or required in HAR Chapter 4-68 and HAR Chapter 4-67, respectively, to include invasive plant species harmful to Hawaii's agriculture and natural systems.	Leg items: not yet introduced
BorTifs1.1	Double HDOA's current PQ staff from 91 to 182 over the 10-year period of the plan to meet current and future needs for inspection services at all ports of entry. Adjust pay scales commensurate with positions, increasing responsibilities, and duties.	Leg items: not yet introduced
BorTIfs1.2	Increase AI staff and resources by adding 15 new positions and operating funds to implement an expanded livestock disease detection monitoring program focused on contagious animal diseases of high consequence and exotic parasites at five ports.	Leg items: not yet introduced
BorTifs1.3	Add four new state detector dog units (handler + dog) to intercept high-risk species difficult to detect by other methods of inspection or at ports of entry difficult to inspect with other methods.	Leg items: not yet introduced

Appendix: Action Matrix

Border: Policy & Funding Actions (continued)

BorTifs1.4	Allocate money on a yearly basis to the biosecurity emergency response fund (see also BorPol1.4 and BorPro3.1).	Introduced, denied
BorTIfs1.5	Increase staffing and operating funds for the DOH Vector Control Branch by adding 13 new staff members (total 33: current 20 in FY2017 plus 13 new positions) to be able to detect and respond to threats from disease vectors such as mosquitoes and diseases such as dengue, Zika, and rat lungworm.	Introduced, approved
BorTifs3.1	Contract or hire five full-time positions at DLNR's DAR to manage ballast water and biofouling threats and inspections: two biologists stationed on Oahu, two biologists stationed on the Big Island, and one technician position to collect water quality samples and assess releases of harmful antifouling paints.	Introduced, denied
BorTifs3.2	Fund equipment and licensing to support DLNR's ballast water and hull fouling reporting, tracking, and compliance monitoring data management system, and aquatic invasive organism reporting, tracking and compliance database system.	Leg items: not yet introduced
BorTifs3.3	Contract or hire one data management specialist to support DLNR's new ballast water, biofouling, and aquatic invasive species database systems.	Introduced, approved

HIBP January 2020 Progress Report

Appendix: Action Matrix

Postborder: Process Actions

HIBP Task #	HIBP Implementation Task	Status (Jan 2020)
PosPol1.3	Develop a comprehensive approach to minimize the interisland movement of plant pathogen and pests via the interisland transport of agricultural products. This could include one or more mechanisms, such as amend and update HAR Chapter 4-72 for stricter regulation of interisland movement of pests and pathogens, enter into compliance agreements, or develop an interisland nursery certification program (see also PosPro2.2).	Working toward completion
PosPol1.4	Revise HDOA or DLNR rules, HAR Chapter 4-71 and HAR Chapter 13-124, and corresponding lists pertaining to nondomestic animals and injurious wildlife, to regulate movement of injurious wildlife and set up a permit process to allow legal interisland transport of pets classified as injurious (e.g., parrots).	Working toward completion
PosPol1.5	Update HAR Chapter 4-72 to further prevent the interisland movement of pathogens and pests via soil.	Not yet started
PosPol2.2	Enter into MOUs with waste management facilities to accommodate disposal of carcasses associated with disease outbreaks.	Dept no longer planning to pursue this option (request to remove)
PosPol2.4	Submit petitions to HDOA to place additional high-risk AIS on the lists of prohibited and restricted animals to regulate their sale, distribution, culture, husbandry, and spread in the state. Key issues to address: prevent release of pet aquarium species into natural areas, and include adequate administrative and criminal penalties that provide effective deterrence and require restoration and mitigation of harm caused related to the intentional introduction or release of AIS.	Ongoing in perpetuity
PosPro1.1	Surveillance and monitoring coordinator (see also PosTifs1.6) to collaborate with state, federal, county, and private entities to design, build, and coordinate islandwide comprehensive and uniform surveillance/ monitoring programs for high-risk taxa (e.g., mosquitoes, plant pathogens, ants, plants, rat lungworm disease and vectors). Surveillance and monitoring to be conducted by other staff from HDOA and partnering organizations such as ISCs and DOH. Role of these positions would be to facilitate uniform data gathering methods and data entry into HDOA's biosecurity database.	Ongoing in perpetuity
PosPro1.2	Contract an independent analysis of effectiveness of current enforcement and prosecution of biosecurity laws, and prepare a report of recommendations on what administrative and criminal penalties should be revised to be more effective deterrents.	Not yet started

Appendix: Action Matrix

Postborder: Process Actions (continued)

PosPro1.3	In coordination with the overarching biosecurity Emergency Response Task Force, write species-specific and generic postborder aquatic and terrestrial emergency response plans (see also BorPro3.1). Encourage federal, state, and county agencies to develop their own emergency response plans. Key Issues to address: clarification of what constitutes a postborder biosecurity emergency, determination of roles and responsibilities of participating organizations, decision-making processes, commitment of resources for emergency response, a realistic assessment of feasibility of eradication, and determination of when different cease-action triggers are pulled. These triggers relate to when to stop a rapid response, when to engage in long-term control, and when to engage in biocontrol.	Not yet started
PosPro1.4	Integrate invasive species control and mitigation actions into project requirements during environmental review and approval processes (e.g., HEPA/NEPA and ESA consultation) to protect native resources.	Working toward completion
PosPro1.5	Institutionalize the funding in the UH system, and create the organizational structure in the Research Corporation of the University of Hawaii (RCUH)/PCSU to fund and implement the critical services provided by ISCs and HAL for invasive species control.	Working toward completion
PosPro1.6	Write and adopt best management practices to control invasive species that state government agencies, counties, industry, and private individuals can follow or require for actions on their lands.	Working toward completion
PosPro2.1	Implement an emanifest data management system (see also PosPol1.2 and PrePro1.1) for interisland transport of commodities to improve record keeping and inform interisland risk assessments. Design the interisland system to focus on preventing the known risks and be user friendly to the public and industry.	Not yet started
PosPro2.2	Improve data utilization from livestock movement documents by collecting and entering data into the HDOA biosecurity database to support animal disease traceability. The existing movement documents that provide the data are the DC-44 (Certificate of Livestock Movement/ Ownership) and DC-8 (Permit to Ship).	Ongoing in perpetuity
PosPro3.1	Create standardized language for best management practices to incorporate into state contracts to minimize the spread of invasive species in the islands.	Not yet started
PosPro3.2	Create working group to develop effective solutions that address carcass disposal, including carcasses of marine animals.	Needs evaluation
PosPro4.1	Write protocols and standard operating procedures for statewide field response to inspect, isolate, and appropriately dispose of unexpected arrivals of high-risk AIS of distant origin, such as materials transported by a tsunami or floating debris from other sea structures or vessels, and implement those procedures by January 2019.	Working toward completion
PosPro4.2	Increase efforts statewide to control established AIS, including development of new control techniques, such as the use of Rotenone to control introduced invasive fish. Contribute data gathered to HDOA's biosecurity database.	Ongoing in perpetuity
PosPro4.3	Implement comprehensive approaches to remove and control the spread of algal AIS using mechanical removal, native grazers (e.g., urchins), and other technologies in at-risk high-value native habitats identified based on survey and monitoring data.	Ongoing in perpetuity

Appendix: Action Matrix

Postborder: Process Actions (continued)

PosPro4.4	Collaborate with DLNR, NOAA, USFWS, UH, research entities, and others and write uniform survey and monitoring methods for early detection and rapid response efforts, and clarify the roles and responsibilities of collaborating organizations.	Not yet started
PosPro4.5	Consult with New Zealand, Australia, and the states of Alaska, Washington, Oregon, California, and Florida on how AIS vectors are managed elsewhere; conduct in-state studies to document recreational and commercial fleet AIS issues; and based on the results of research and studies, implement appropriate actions to reduce AIS impacts.	Ongoing in perpetuity
PosPro4.6	Submit petitions to HDOA to raise minimum standards for aquaculture and other point-of-sale facilities (e.g., pet stores and live seafood sellers) to minimize the chance that high-risk species are intentionally or inadvertently released into the wild.	Not yet started
PosPro4.7	Provide training and logistical support (e.g., boats, personal protective equipment) to local community organizations to effectively control and eradicate established aquatic pests.	Ongoing in perpetuity
PosTifs1.9	Develop grant programs to assist private landowners with invasive species removal and control. Hire one grant program technical staff member to oversee the program and annual grant funding.	Ongoing in perpetuity
PosTifs1.11	Allocate funds in the UH budget to provide stable funding of core positions for the ISCs and HAL in RCUH/PCSU in order to carry out invasive species control operations statewide.	Not yet started
PosTifs1.12	Hire four agricultural extension agents, and provide operating funds to facilitate areawide control (and prevent the reintroduction) of pests on farms, nurseries, and ranches. Support collaborative efforts to control those targeted pests on farms and in the surrounding areas.	Ongoing in perpetuity
PosTifs1.13	Hire two aquaculture extension agents, one extension specialist, and one researcher to conduct research, develop screening and quarantine protocols, develop pest management strategies, and conduct outreach specific to Hawaii.	Ongoing in perpetuity
PosTifs1.14	Hire four agricultural diagnosticians to provide for rapid screening, diagnostic testing, and identification of insects and diseases to support extension agents, farmers and ranchers, the general public, and other government agencies in monitoring, detection, and pest management efforts.	Not yet started
PosTifs1.15	Enter into cooperative agreements between county governments and UH to support county farmers and ranchers with invasive species early detection, control, and research needs provided by UH extension agents, researchers, or specialists.	Ongoing in perpetuity
PosTifs2.3	Annually fund the development of techniques to control established invasive species, including chemical and mechanical means and new technologies, such as gene drive and other biotechnology, and support for maintaining or replacing the staff necessary to conduct research.	Not yet started
PosTifs2.4	Annually fund research and development of detection techniques (e.g., use of drones, remote sensing, environmental DNA) for new and established invasive species.	Ongoing in perpetuity

HIBP January 2020 Progress Report

Appendix: Action Matrix

Postborder: Policy & Funding Actions

HIBP Task #	HIBP Implementation Task	Status (Jan 2020)
PosPol1.1	Propose for enactment necessary legislative amendments to HRS § 150A-5 (and other related sections) to authorize HDOA to screen, inspect, and regulate nonagricultural commodities in interisland transport and amend corresponding administrative rules (HAR Chapter 4-72).	Leg items: not yet introduced
PosPol1.2	Propose for enactment the necessary legislation (see also PrePol2.1 and PrePol2.2) and regulations (HAR Chapter 4-72) to authorize HDOA to require the use of the emanifest reporting and data management system for interisland shipments.	Leg items: not yet introduced
PosPol1.6	Propose for enactment the necessary legislation and regulations (HAR Chapter 13-76) to require vessels and waterborne equipment >5 feet long to conduct and document proper hull husbandry management before being moved or shipped between islands (see also BorPol1.3).	Introduced, denied
PosPol2.1	Propose for enactment the necessary legislation and regulation to restructure the HISC as the Hawaii Invasive Species Authority, an autonomous interagency body to manage and administer biosecurity programs.	Introduced, denied
PosPol2.3	Propose for enactment the necessary legislative amendments (e.g., through HRS Chapters 150A, 183, 126, 195, and 183C), and promulgate new administrative rules to prevent the introduction of invasive species to natural areas, sensitive ecosystems, and protected areas and the spread of these species in these areas via commercial activities such as ecotourism, agrotourism, and construction activities.	Leg items: not yet introduced
PosPro3.3	Effectively control and eradicate established harmful pests on private and public lands by increasing base funding of competitive grants for Watershed Partnerships from the current $2 million per year to $6 million per year. The competitive grant program supports Watershed Partnerships and agency projects and is implemented by agency, Watershed Partnerships, and ISC staff to specifically engage in weed control, ungulate control, and public outreach for watershed protection. This measure is needed for the control of detrimental established invasive species in Watershed Partnerships lands.	Introduced, approved
PosTifs1.1	Fund the Hawaii Invasive Species Authority to coordinate and implement interagency invasive species efforts, including an annual grant program for interagency projects for control, prevention, outreach, research, and administrative costs.	Introduced, denied
PosTifs1.2	Triple HDOA's current PPC staff from 10 to 30 positions over the 10-year term of the plan, to increase effective plant and pest control using chemical and mechanical methods. Triple the current operating budget to support staff fieldwork.	Leg items: not yet introduced
PosTifs1.3	Double HDOA's Biocontrol Section's staff from 24 to 48 positions over the 10-year term of the plan to conduct statewide surveys; provide diagnostic and scientific support to PQ and PPC; and research, screen, and test new biocontrol agents for biocontrol of widespread established pests. Double the current operating budget to support staff fieldwork.	Leg items: not yet introduced
PosTifs1.4	Increase operating funds for HDOA's biocontrol program by $100,000 per year to support exploration of foreign natural enemies of established invasive species.	Leg items: not yet introduced

HIBP January 2020 Progress Report

Appendix: Action Matrix

Postborder: Policy & Funding Actions (continued)

PosTifs1.5	Hire two surveillance and monitoring coordinators—one an entomologist and one a botanist—to coordinate statewide comprehensive and uniform surveillance/ monitoring programs for high-risk taxa (e.g., mosquitoes, ants, plants, rat lungworm disease vectors) (see also PosPro1.1).	Leg items: not yet introduced
PosTifs1.6	Hire a biological control program coordinator plus operational support to help increase public support for biocontrol, assist with the regulatory process for biocontrol agents, and coordinate international activities that may be of benefit and impact Hawaii.	Leg items: not yet introduced
PosTifs1.7	Increase DLNR's AIS program funding by $400,000 per year to address threats from established AIS (see also PosPro4.2).	Leg items: not yet introduced
PosTifs1.8	Hire four forest health specialists and one forestry pathologist to conduct monitoring, detection, and control for high-risk pests and pathogens in forest habitats (e.g., Rapid Ohia Death, ohia rust, myoporum (naio) thrips [Klambothrips myopori], lobate lac scale [Paratachardina pseudolobata], hala scale (Thysanococcuspandani).	Introduced, denied
PosTifs1.10	Hire 45 invasive species technicians plus operational support and purchase vehicles to be used to detect, monitor, remove, and control invasive species in DOFAW's protected areas.	Introduced, denied
PosTifs1.11	Allocate funds in the UH budget to provide stable funding of core positions for the ISCs and HAL in RCUH/PCSU in order to carry out invasive species control operations statewide.	Leg items: not yet introduced
PosTifs1.12	Hire four agricultural extension agents, and provide operating funds to facilitate areawide control (and prevent the reintroduction) of pests on farms, nurseries, and ranches. Support collaborative efforts to control those targeted pests on farms and in the surrounding areas.	Introduced, approved
PosTifs1.13	Hire two aquaculture extension agents, one extension specialist, and one researcher to conduct research, develop screening and quarantine protocols, develop pest management strategies, and conduct outreach specific to Hawaii.	Leg items: not yet introduced
PosTifs1.14	Hire four agricultural diagnosticians to provide for rapid screening, diagnostic testing, and identification of insects and diseases to support extension agents, farmers and ranchers, the general public, and other government agencies in monitoring, detection, and pest management efforts.	Leg items: not yet introduced
PosTifs2.1	Build new office complex to house the PPC Branch, which will include new biocontrol program facilities and chemical/mechanical pest control facilities. The new campus will include containment facilities sufficient to run 10 parallel biocontrol projects at one time, diagnostic laboratories, molecular diagnostic laboratories, insectaries, pathogen-rearing facilities, greenhouses, office space, chemical and pesticide storage, meeting spaces, and reference collections (insect, disease, plant and literature).	Introduced, approved
PosTifs2.2	Upgrade and update Animal Industry Division office and laboratory facilities for the investigation of animal diseases that affect food security and human health. Facilities will house a laboratory, training center, and administration and operation services and will be located at the Animals Industry office complex in Halawa Valley, Oahu.	Leg items: not yet introduced

HIBP January 2020 Progress Report

Appendix: Action Matrix

Public Awareness: Process Actions

HIBP Task #	HIBP Implementation Task	Status (Jan 2020)
PwsPro1.1	Collect pertinent examples and publish stories highlighting biosecurity successes (e.g., notable pest interceptions, capture of illegal animals, biocontrol releases, animal disease control programs, weed control programs) to distribute through social media and outreach products (e.g., shareable videos, fliers, newsletter, posters).	Ongoing in perpetuity
PwsPro1.2	Contract a professional public relations firm to produce outreach materials to encourage residents to buy local products, and foster a sense of pride and self-responsibility in protecting Hawaii's agriculture, environment, and lifestyle. Have HDOA inspectors and agricultural producers share firsthand experience on protecting Hawaii from pests.	Ongoing in perpetuity
PwsPro1.3	Coordinate with partners in the industry, nonprofits, and community groups to use their existing media avenues, such as internal newsletters, cooperative association meetings, social media, websites, and newspapers, to share biosecurity information, send pest and disease notifications, and muster support.	Ongoing in perpetuity
PwsPro1.4	Recruit a network of citizen scientists and other important and competent contributors, and provide logistics and administrative support to develop a citizen science–based comprehensive surveillance system for pests and pathogens.	Not yet started
PwsPro1.5	Publicize and promote the certified nurseries program by posting information on HDOA's website on what nurseries, farms, and shippers are certified and information if participants lose certification.	Not yet started
PwsPro1.6	Engage the veterinary medical community to enhance its role in detection of diseases and parasites of high concern, including ectoparasites, which can transmit wildlife and human diseases.	Ongoing in perpetuity
PwsPro1.7	Engage the education, medical, and public health community to increase education and public awareness about the dangers from human health diseases, such as dengue, Zika, and rat lungworm disease, and increase outreach efforts regarding control of vectors, including mosquitoes, rats, slugs, and snails, and, in the case of rat lungworm disease, mitigation in gardens and safe food preparation.	Ongoing in perpetuity
PwsPro2.1	Solicit support from the native Hawaiian community, including the Office of Hawaiian Affairs and the Aha Moku Council, and from cultural practitioners to advocate for culturally based biosecurity programs to ensure that natural and cultural resources are sustained for traditional and cultural practices. Encourage native Hawaiian communities to organize and advocate with their legislators for stronger and more effective biosecurity programs.	Not yet started
PwsPro2.2	Highlight program successes in briefings to lawmakers, county officials, and members of boards and commissions. Key successes to include: implementation of departmental programs and projects, pest interceptions, capture of illegal animals, biocontrol releases, and weed eradication.	Ongoing in perpetuity
PwsPro3.1	communications specialist at HDOA to develop outreach materials to launch a visitor awareness campaign. Key campaign issues: importance of biosecurity to Hawaii via outreach materials to visitors before their arrival, during flights, and during their stay in Hawaii.	Ongoing in perpetuity

Appendix: Action Matrix

Public Awareness: Process Actions (continued)

PwsPro3.2	Create and disseminate through various media outlets (e.g., little fire ant video produced by the Maui Invasive Species Committee) accurate and current information to help the public understand the circumstances under which species in the state are regulated and why.	Ongoing in perpetuity
PwsPro3.3	Biosecurity communications specialist to develop tools to measure success of public awareness campaigns (that can be used to leverage future funding for biosecurity needs).	Not yet started
PwsPro3.4	Biosecurity communications specialist to develop and maintain an interagency biosecurity website and portal. Key information to include: Hawaii's unique position relative to biosecurity; interagency biosecurity plan; clear guidance on regulated species at interisland, interstate, and international levels; pest reporting; and import/export restrictions.	Not yet started
PwsPro3.5	Help implement HISC's state-of-the-art pest notification and reporting system, and integrate it with the biosecurity online portal.	Working toward completion
PwsPro3.6	Agency staff to provide technical assistance to community volunteer groups working to control invasive species in terrestrial and aquatic systems.	Ongoing in perpetuity
PwsPro3.7	Aquatic education specialist (existing position) to conduct a comprehensive campaign to prevent the introduction and spread of AIS. Key campaign issues: preventing the discard of live AIS into the environment, development of outreach materials for harbor workers and transportation industry.	Ongoing in perpetuity
PwsPro3.8	Expand University level teaching, both classroom and research, on biosecurity problems and solutions to provide an educated and trained workforce for biosecurity programs in the future.	Ongoing in perpetuity
PwsTifs1.2	Hire a full-time natural resource economist to analyze the costs of inaction on high-profile biosecurity threats and to publicize the true effects of inaction when requesting funds for biosecurity projects.	Not yet started
PwsTifs1.3	Collaborate with HTA to obtain funds from the visitor industry to pay for biosecurity media campaigns.	Not yet started
PwsTifs1.4	Collaborate with HTA to contract a professional public relations firm to create visually appealing signs and displays regarding biosecurity at airports.	Ongoing in perpetuity
PwsTifs1.5	Contract the creation and maintenance of a user-friendly risk assessment tool for vessel operators as it relates to ballast water and vessel biofouling regulation and management. The risk assessment tool should be available to the public and similar to https://vesselcheck.fish.wa.gov.au/.	Working toward completion
PwsTifs1.6	Hire a communications specialist, videographer, and web developer from CTAHR Office of Communications Services to write, develop and disseminate new statewide comprehensive education and outreach materials targeted at specific audiences, such as the native Hawaiian community, tourists, boaters, nursery growers, livestock producers, and farmers, with specific invasive species messages. The CTAHR communications team would work in close coordination with the HDOA biosecurity communications specialist.	Completed
PwsTifs1.7	Hire two university instructors/researchers to teach and conduct research on biosecurity program and university field of study.	Not yet started

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Appendix: Action Matrix

Public Awareness: Policy & Funding Actions

HIBP Task #	HIBP Implementation Task	Status (Jan 2020)
PwsPol1.1	Propose for enactment the necessary legislative amendment or clarification (e.g., clarification of existing authority under HRS §150A-53), and obtain the approval of the Board of Education for policy to require biosecurity and invasive species issues to be included in the environmental science K–12 curriculum in Hawaii. Build on existing efforts of integrating invasive species into curriculum, such as the Hoike o Haleakala curriculum.	Leg items: not yet introduced
PwsTifs1.1	Hire a full-time biosecurity communications specialist at HDOA to develop and coordinate public awareness programs for HDOA's biosecurity programs.	Leg items: not yet introduced

The full Hawaii Interagency Biosecurity Plan and all semiannual progress reports are online at http://dlnr.hawaii.gov/hisc/plans/hibp/