HAWAII INVASIVE SPECIES COUNCIL
1151 PUNCHBOWL ST, #325
HONOLULU, HAWAII 96813

PUBLIC MEETING NOTICE

Hawaii Department of Land and Natural Resources
Boardroom

Thursday, July 27, 2017
8:30a – 4p

Resources Working Group

AGENDA

1. **Call to order:**
2. **Announcements/Introductions:**
    1. **In person:**
    2. **On phone:**
3. **FY18 Budget Discussion*: (*Recommended figure for the purposes of this meeting only)**
4. **FY19 Process Improvement Discussion:5. Public comments: None**
6. **Next Meeting: time/location TBD**
7. **Adjournment: 4:30p**

WebEx Participation Instructions

HISC Resources Working Group

Thursday, July 27, 2017

8:30 am | Hawaii Time (Honolulu, GMT-10:00) | 7 hrs 30 mins

Meeting number: 749 501 860

Meeting password: jVwpsJ@3

Join the meeting:

and/or

Join by phone
Call-in number (Verizon): 1-877-787-0206 (US)
Attendee access code: 499 006 3

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Resources Working Group Action Items Tracking				
Date	Action Item	Personnel	Completed?	Strat Plan
8/12/2015	Add alternative funding options to next RWG meeting	Randy Bartlett		rg2a
8/12/2015	Add discussion of funding priorities for next legislative session to all WG agendas	Randy Bartlett		rg2d
8/12/2015	Send Doodle Poll for November meeting (not 11/9-11	Randy Bartlett		rg1a, rg1b
8/12/2015	Remind other HISC agencies to send representatives to next RWG meeting	Randy Bartlett		rg1a
8/12/2015	Focus on Strategies under RWG Goal 2.	Josh Atwood		
8/12/2015	Revisit RWG Goals and Strategies in relation to supporting a comprehensive biosecurity plan along with CGAPS, other stakeholders, etc.	Josh Atwood		
8/12/2015	Draft description of a pre-proposal process	Josh Atwood		

Resources Working Group Goals and Strategies		
Goal		**Strategy**
Resources Goal 1: Organizational and resource shortfalls with respect to invasive species are identified and prioritized for each HISC agency.	rg1a	Identify roles, responsibilities, and priorities related to invasive species for each HISC agency.
	rg1b	Identify roles, responsibilities, and priorities of other organizations working in the state on invasive species issues.
	rg1c	Work directly with designated staff within each agency to identify current capacity and shortfalls.
	rg1d	Use resources working group structure to provide a peer or external review process to assist agencies in identifying shortfalls.
	rg1e	Include information from this process in HISC annual reports and legislative packages.
Resources Goal 2: Dedicated and sustained funding mechanisms and sources for prevention, control, outreach, research, and technology.	rg2a	Identify all funds currently available for invasive species work, identify how they address core functions of invasive species management, and assist agencies and organizations in acquiring these funds.
	rg2b	Identify opportunities for and assist the development of public private partnerships.
	rg2c	Engage private funding organizations through the Hawaii Community Foundation and industry partners to be a part of the solution.
	rg2d	Advise the governor and legislature on budgetary issues.
Resources Goal 3: Cost benefit analysis is available for prevention, early detection, and control of invasive species in Hawaii.	rg3a	Request a new Legislative Reference Bureau study to estimate the total cost of implementing effective invasive species programs in Hawaii.
	rg3b	Create a prioritized list of economic questions and analyses needed.
	rg3c	Work with economists to determine data that are needed in models and create templates for data collection.
	rg3d	Facilitate data and information sharing among agencies and organizations to pull data together and provide for analysis.
	rg3e	Work with economists to do analyses.
	rg3f	Act as a clearinghouse for data, economic analysis, and other related information.

Specific objectives and implementation tasks related to policy, process, and infrastructure and funding resources needed to enhance preborder security in Hawaii are listed below.

1.1.1 Policy-Related Objectives and Implementation Tasks for Preborder

Objective—PrePol1. Enact or Reform Policies Governing Importation of Commodities or Introduction of Organisms to Provide Additional Protection for Hawaii						
PrePol1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2017–2019	ES/EF	HDOA	AG HDOT	1
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.	2017–2019	ES/EF	HDOA	AG	1
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.	2020–2021	ES/EF	HDOA	AG	2
PrePol1.4	Require **declaration of high-risk packaging materials** in shipments to Hawaii regardless of commodity.	2022–2023	ES/EF	HDOA	HDOT	3
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	2020–2021	ES/EF	HDOA	UH	3

	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.					
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.	2017–2021	ES/EF	DLNR	DOH HDOT USCG	1
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.	2020–2021	ES/EF	DLNR	DOD APHIS USCG	3
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**.	2022–2023	ES/EF	DLNR	AG HDOT	2

Objective—PrePol2. Develop Regulatory Framework for Offshore (Preborder) Screening and Certification of Commodities						
PrePol2.	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2020–2021	ES/EF	HDOA	AG HDOT	1
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	2020–2021	ES/EF	HDOA	AG APHIS	1

	materials from foreign sources (also see PrePol1.1).					

Objective—PrePol3. Address International, Federal, and State Policy Gaps in Prevention to Reflect Hawaii's Unique Biosecurity Challenges Relative to Geography and Climate						
PrePol3	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2018–2019	ES/EF	HDOA	AG DOH HISC DLNR (for aquatics) HDOT APHIS USFWS CBP DOD	2
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.	2017–2019	ES/EF	HDOA	AG CDFA FDACS	2
PrePol3.3	**Align the notifiable disease list** with internationally and nationally recognized lists of existing threats to domestic livestock (terrestrial and aquatic).	2017–2020	ES/EF	HDOA	USDA OIE	1

1.1.2 Process-Related Objectives and Implementation Tasks for Preborder

Objective—PrePro1. Improve Systems to Collect and Share Data and Conduct Regular Risk Assessments to Identify Pests, Diseases, Commodities, and Pathways of High Risk to Hawaii						
PrePro1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
PrePro1.1	**Implement a comprehensive emanifest system** that is effective no later than January 1, 2020. The system must be	2017–2020	ES/EF	HDOA	HDOT	1

	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)					
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.	2018–2027	ES/EF	HDOA	APHIS UH DLNR	1
PrePro1.3	Based on the results of the risk analyses, annually **write/update import requirements** for high-risk commodities imported to Hawaii.	2020–2027	ES/EF	HDOA	APHIS UH DLNR	1
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.	2017–2025	ES/EF	HDOA	DLNR	1
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.	2017–2018	ES/EF	HDOA	APHIS DLNR Industry	2
PrePro1.6	Conduct an **annual policy review of animal disease import regulations** to identify new threats and ensure that adequate biosecurity measures are taken.	2017–2027	ES/EF	HDOA	APHIS Industry	3
PrePro1.7	Conduct **risk assessments for hull fouling, ballast water, aquaculture, and**	2017–2027	ES/EF	DLNR	DOH HDOT	1

	aquarium issues to better inform regulation of AIS organisms being introduced via these pathways and affecting native habitats.				USCG HDOA APHIS USFWS Industry Pacific Regional States and Countries	

Objective—PrePro2. Support Agriculture, Aquaculture, and Landscape Industries in a Way That Protects Hawaii from Pests						
PrePro2	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2017–2027	ES/EF	HDOA DLNR	UH USFWS	3
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.	2017–2027	ES/EF	DLNR	HDOA USFWS Industry UH	3

Objective—PrePro3. Reduce the Accidental and Illegal Introduction of Invasive Species							
PrePro3	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking	
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.	2020–2021	ES/EF	HDOA	AG DLNR USFWS Industry	3	

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.	2018–2027	ES/EF	HDOA	DOD DLNR USDA	1	
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.	2017–2027	ES/EF	HDOA	AG DLNR APHIS CBP USFWS USCG	2	

Objective—PrePro4. Establish Processes and Protocols for Offshore (Preborder) Screening and Certification of Goods and Manifests							
PrePro4	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking	
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.	2020–2021	ES/EF	HDOA	APHIS Industry	1	
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.	2022–2027	$600,000	HDOA	AG APHIS Industry	1	

1.1.3 Technology, Infrastructure, Funding, and Staffing–Related Objectives and Implementation Tasks for Preborder

Objective—PreTifs1. Develop New and Improve Existing Infrastructure and Technology to Support Preborder Biosecurity for Hawaii							
PreTifs1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking	
PreTifs1.1	Fund equipment and licensing to support the **emanifest** system.	2019–2027	$490,000	HDOA	HDOT	1	

PreTifs1.2	Fund equipment and licensing to support HDOA's **biosecurity database** system.	2019–2027	$1,960,000	HDOA	DLNR	1	
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.	2019–2027	$260,000	HDOA	APHIS	2	

Objective—PreTifs2. Enhance Funding and Staffing Support for Preborder Biosecurity Operations							
PreTifs2	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking	
PreTifs2.1	Hire two **policy analysts** to conduct international, federal, and state policy analysis and write necessary rules and regulations listed in this plan.	2018–2027	$1,100,000	HDOA	DLNR DOH	1	
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.	2018–2027	$2,970,000	HDOA	DLNR UH	1	
PreTifs2.3	Hire four **data management specialists** to support HDOA's new biosecurity database system.	2018–2027	$1,800,000	HDOA	DLNR	1	
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.	2018–2027	$2,500,000	HDOA	UH Industry	2	
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.	2018–2027	$1,300,000	DLNR	HDOA DOH USCG	1	

Specific objectives and implementation tasks related to policy, process, and infrastructure and funding resources needed to enhance border security in Hawaii are listed below.

1.1.1 Policy Related Objectives and Implementation Tasks for Border

Objective—BorPol1. Address Gaps in Federal and State Policies and Enact Regulations to Improve Border Protection for Hawaii						
BorPol1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2017–2019	ES/EF	HDOA	AG	1
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**.	2017–2019	ES/EF	HDOA	AG	1
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).	2018–2019	ES/EF	HDOA	DOH HDOT DLNR	1
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.	2022–2023	ES/EF	HDOA	AG	1
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.	2018–2020	ES/EF	HDOA	AG	2

BorPol1.6	Propose for enactment the necessary legislation to **authorize DLNR** to inspect vessels and regulate **hull-fouling threats, with penalty provisions for noncompliance**.	2018–2019	ES/EF	DLNR	HDOT DOH USCG	1
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).	2017–2019	ES/EF	DOH	APHIS CBP CDC HDOA	2

Objective—BorPol2. Update State-Regulated-Pest Lists to Provide More Protection to Hawaii						
BorPol2	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2018–2019	ES/EF	HDOA	AG DLNR UH HISC	2
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.	2018–2020	ES/EF	HDOA	DLNR AG UH HISC	2
BorPol2.3	Update **HAR Chapter 13-124** to add aquatic species to the state's injurious wildlife list.	2020–2021	ES/EF	DLNR	HDOA AG USFWS NOAA DOFAW UH HISC	2

1.1.2 Process Related Objectives and Implementation Tasks for Border

Objective—BorPro1. Enhance Invasive Species Surveillance, Detection, and Treatment Processes at the Borders						
BorPro1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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).	2017–2027	ES/EF	HDOA	APHIS CBP DLNR	1
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.	2017–2019	ES/EF	HDOA	Industry APHIS AG UH	1
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).	2017–2027	ES/EF	HDOA	AG Industry	1
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.	2017–2027	ES/EF	HDOA	APHIS CBP DHS USFWS DOH HDOT	3

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.	2018–2027	$100,000	HDOA	APHIS CBP DHS DOH DLNR UH	3
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).	2018–2027	$9,600,000	HDOA	DLNR HDOT DOH USDA USFWS	2
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).	2018–2027	ES/EF	HDOA	APHIS	2

Objective—BorPro2. Improve Inspection and Treatment Processes for Ballast Water and Hull Biofouling Threats						
BorPro2	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2018–2019	ES/EF	DLNR	DOH EPA USCG	2
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).	2018–2019	ES/EF	DLNR	DOH HDOT EPA USCG	2
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	2018–2019	ES/EF	DLNR	HDOA HDOT USCG EPA	1

	that can be used to conduct risk analysis regarding ballast water and hull biofouling (see also PrePro1.3).					
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.	2022–2023	ES/EF	DLNR	HDOA HDOT DOH USCG EPA	2
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.	2018–2019	ES/EF	DLNR	DOH HDOT EPA USCG	2
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.	2017–2019	ES/EF	DLNR	DOH HDOT EPA USCG	2

Objective—BorPro3. Establish an Emergency Response System for New Pests or Disease Incursions at Ports of Entry						
BorPro3	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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).	2017–2027	ES/EF	HDOA DLNR	DOH HISC HDOT HI-EMA APHIS CBP USCG USFWS NPS DOD USCG NOAA EPA	2
BorPro3.2	Hold postincident meetings/workshops hosted by HDOA of the Biosecurity	2017–2027	ES/EF	HDOA	DLNR HISC	3

	Emergency Response Task Force to **coordinate/review/debrief rapid response actions,** and set up an incident command system.				DOH HDOT HI-EMA APHIS CBP USCG USFWS NPS DOD Industry	
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.	2020–2027	ES/EF	HDOA DLNR DOH	APHIS HISC UH USFWS NPS	1
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.	2020–2023	ES/EF	HDOA DLNR DOH	APHIS HISC UH USFWS NPS	2
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.	2017–2027	ES/EF	HDOA	APHIS Industry	2
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.	2018–2019	ES/EF	DLNR	DOH HDOT USCG EPA NOAA	2

1.1.3 Technology, Infrastructure, Funding, and Staffing—Related Objectives and Implementation Tasks for Border

Objective—BorTifs1. Build Staff and Funding Capacity to Enhance Biosecurity at Ports and Harbors

BorTifs1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2020–2027	$39,181,900	HDOA	DLNR DOH	1
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.	2018–2027	$7,500,000	HDOA	APHIS	1
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.	2020–2027	$1,300,000	HDOA	APHIS CBP OIA	2
BorTifs1.4	Allocate money on a yearly basis to the **biosecurity emergency response fund** (see also BorPol1.4 and BorPro3.1).	2018–2027	$30,000,000	HDOA	DLNR	1
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.	2019–2027	$5,790,980	DOH	HDOA DLNR	1

Objective—BorTifs2. Build Infrastructure to Enhance Biosecurity at Ports and Harbors						
BorTifs2	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking

BorTifs2.1	Use **state-of-the-art diagnostics technology** to test for disease in imported plants.	2021–2027	$350,000	HDOA	UH Industry	1
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).	2020–2027	$800,000	HDOA	HDOT	2

Objective—BorTifs3. Expand the Inspection Capacity to Address Ballast Water and Hull Biofouling Threats						
BorTifs3	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2018–2027	$2,500,000	DLNR	DOH HDOT EPA USCG	1
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.	2018–2027	$950,000	DLNR	DOH HDOT EPA USCG	1
BorTifs3.3	Contract or hire one **data management specialist** to support DLNR's new ballast water, biofouling, and aquatic invasive species database systems.	2018–2027	$500,000	DLNR	HDOA HDOT	1
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.	2018-2027	$60,000	DLNR	UH HDOT DOH Industry	1

Specific objectives and implementation tasks related to policy, process, and infrastructure and funding resources needed to enhance postborder security in Hawaii are listed below.

1.1.1 Policy-Related Objectives and Implementation Tasks for Postborder

Objective—PosPol1. Enact or Reform Policies Governing Interisland Transport of Commodities and Movement of Invasive Species							
PosPol1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Rating	
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).	2020–2022	ES/EF	HDOA	HDOT DLNR AG HISC	1	
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.	2020–2022	ES/EF	HDOA	HDOT DLNR AG HISC	1	
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).	2018–2020	ES/EF	HDOA	DLNR UH AG	1	
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).	2022–2023	ES/EF	HDOA DLNR	AG	3	

PosPol1.5	Update HAR Chapter 4-72 to further prevent the interisland **movement of pathogens and pests via soil**.	2020–2021	ES/EF	HDOA	AG	1	
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).	2020–2021	ES/EF	DLNR	HDOT USCG DOH HISC	1	

Objective—PosPol2. Improve State Statutes, Rules, and Policy to Manage Invasive Species Already Present in Hawaii							
PosPol2	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking	
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.	2017–2019	ES/EF	HDOA	DLNR DOH HISC	1	
PosPol2.2	Enter into MOUs with waste management facilities to accommodate disposal of **carcasses associated with disease outbreaks.**	2020–2021	ES/EF	HDOA	DOH	1	
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.	2020–2021	ES/EF	DLNR HDOA	AG HISC Industry	3	
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.**	2020–2021	ES/EF	DLNR	HDOA HISC USFWS NOAA	1	

	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.						

1.1.2 Process-Related Objectives and Implementation Tasks for Postborder

Objective—PosPro1. Enhance Protection of Human Health, Native Habitats and Species, Aquaculture, Agriculture, and Other Cultural and Economic Resources of High Value from the Impact of Invasive Species							
PosPro1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking	
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.	2020–2027	ES/EF	HDOA	DLNR DOH USFWS APHIS NPS UH ISCs County Industry	3	
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.	2020–2021	$50,000	HDOA HISC	DLNR AG USFWS	3	
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,	2020–2023	ES/EF	DLNR HDOA DOH	HISC ISCs APHIS CBP USFWS NPS HDOT	1	

	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.				UH HI-EMA County		
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.	2017–2027	ES/EF	DLNR	OEQC HDOA DOH HDOT USFWS NOAA	3	
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.	2017–2019	ES/EF	UH	HISC DLNR HDOA DOH County USFWS	2	
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.	2018–2027	ES/EF	UH HDOA DLNR DOH	APHIS USFWS USFS USGS NPS County Industry	1	

Objective—PosPro2. Enhance Processes to Minimize the Interisland Movement of Invasive Species							
PosPro2	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking	
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	2020–2027	ES/EF	HDOA	AG HDOT Industry	1	

	risk assessments. Design the interisland system to focus on preventing the known risks and be user friendly to the public and industry.						
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).	2020–2027	ES/EF	HDOA	Industry	3	

Objective—PosPro3. Improve Efforts Statewide to Control the Spread and Impact of Established Terrestrial Invasive Species							
PosPro3	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking	
PosPro3.1	Create standardized language for **best management practices** to incorporate into state contracts to minimize the spread of invasive species in the islands.	2017–2019	ES/EF	HDOA	AG DLNR and all other state agencies	3	
PosPro3.2	Create working group to develop effective solutions that address **carcass disposal**, including carcasses of marine animals.	2018–2027	ES/EF	HDOA	DOH UH County	1	
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.	2018–2027	$40,000,000	DLNR	HDOA DOH UH	1	

ctive—PosPro4. Enhance Efforts Statewide to Prevent the Spread and Impact of Aquatic Invasive ies						
04	mentation Tasks	ne	Needed	gency	rs	y Ranking
04.1	protocols and standard operating dures for statewide field response to t, isolate, and appropriately dispose of ected arrivals of high-risk AIS of distant such as **materials transported by a ni or floating debris from other sea ures or vessels,** and implement those dures by January 2019.	2018			S /	
04.2	se efforts statewide to **control ished AIS,** including development of new l techniques, such as the use of one to control introduced invasive fish. bute data gathered to HDOA's biosecurity se.	2027			S	
04.3	nent comprehensive approaches to e and **control the spread of algal AIS mechanical removal, native grazers (e.g., s), and other technologies** in at-risk alue native habitats identified based on and monitoring data.	2027	,000			
04.4	orate with DLNR, NOAA, USFWS, UH, ch entities, and others and **write uniform and monitoring methods for early ion and rapid response** efforts, and the roles and responsibilities of orating organizations.	2019			Museum S ry	
04.5	t with New Zealand, Australia, and the of Alaska, Washington, Oregon, nia, and Florida on how AIS vectors are ged elsewhere; **conduct in-state studies ument recreational and commercial IS issues**; and based on the results of ch and studies, implement appropriate s to reduce AIS impacts.	2020	0		ealand lia ngton n nia	
04.6	t petitions to HDOA to raise **minimum rds for aquaculture and other of-sale facilities** (e.g., pet stores and live d sellers) to minimize the chance that sk species are intentionally or rtently released into the wild.	2027			S	

4.7	e **training and logistical support** (e.g., personal protective equipment) to local unity organizations to effectively control adicate established aquatic pests**.**	2027	00			

1.1.3 Technology, Infrastructure, Funding, and Staffing–Related Objectives and Implementation Tasks for Postborder

Objective—PosTifs1. Increase Funding and Staffing to Control the Spread of Invasive Species Established in the Islands						
PosTifs1	**Implementation Tasks**	**Timeline**	**Funds Needed**	**Lead Agency**	**Partners**	**Priority Ranking**
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.	2018–2027	$77,000,000	HDOA	HISC DLNR DOH HDOT DBEDT UH	1
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.	2020–2027	$5,590,000	HDOA	USFS DLNR UH	1
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.	2020–2027	$9,381,240	HDOA	USFS DLNR UH	1
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.	2020–2027	$800,000	HDOA	USFS DLNR UH	1
PosTifs1.5	Hire two surveillance and monitoring coordinators—one an entomologist and one a botanist—to coordinate statewide **comprehensive and uniform**	2020–2027	$1,000,000	HDOA	DLNR DOH USFWS UH	3

	surveillance/ monitoring programs for high-risk taxa (e.g., mosquitoes, ants, plants, rat lungworm disease vectors) (see also PosPro1.1).					
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.	2020–2027	$720,000	HDOA	USFS ARS Australia New Zealand	1
PosTifs1.7	Increase **DLNR's AIS program** funding by $400,000 per year to address threats from established AIS (see also PosPro4.2).	2018–2027	$4,000,000	DLNR	UH NOAA USFWS HDOA HDOT	2
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*).	2018–2027	$2,300,000	DLNR	UH HDOA USFS	1
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.	2018–2027	$5,400,000	DLNR	HDOA USFS Industry	2
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.	2018–2027	$13,984,560	DLNR	UH HDOA USFS	1
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.	2024–2027	$8,397,600	UH	DLNR HDOA HISC	2
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	2018–2027	$5,400,000	UH	HDOA DLNR DOH County	1

	collaborative efforts to control those targeted pests on farms and in the surrounding areas.					
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.	2018–2027	$6,600,000	UH	HDOA DLNR	1
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.	2018–2027	$2,340,000	UH	HDOA DLNR	1
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.	2018–2027	$4,000,000	Kauai County Oahu County Maui County Hawaii County	UH	3

Objective—PosTifs2. Develop Infrastructure and Technology to Control the Spread of Established Invasive Species						
PostTifs2	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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).	2018–2027	$35,000,000	HDOA	USFS DLNR UH ARS APHIS	1

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.	2020–2021	$25,000,000	HDOA	APHIS	1
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.	2018–2027	$2,500,000	HDOA HISC	UH DLNR DOH USFWS	3
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.	2018–2027	$2,500,000	DLNR	HISC UH HDOA DOH USFWS	2

Specific objectives and implementation tasks related to policy, process, and infrastructure and funding resources needed to enhance public awareness and support in Hawaii are listed below.

1.1.1 Policy-Related Objective and Implementation Tasks for Public Awareness and Support

Objective—PwsPol1. Develop Relevant Policy and Rules to Enhance Public Awareness on Biosecurity and Invasive Species Issues in Hawaii						
PwsPol1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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.	2022–2023	ES/EF	DLNR	DOE UH HDOA HISC HEEA	2

1.1.2 Process-Related Objective and Implementation Tasks for Public Awareness and Support

Objective—PwsPro1. Inspire Hawaii Residents to Engage in Solutions to Biosecurity Threats						
PwsPro1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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).	2018–2027	$500,000	HDOA	CGAPS UH DLNR HISC	3
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.	2018–2027	$1,500,000	HDOA	UH DLNR CGAPS Industry	2
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.	2017–2027	ES/EF	HDOA	Industry UH DLNR CGAPS Nonprofits Community Groups	2
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.**	2018–2027	$100,000	HDOA	DLNR DOH NPS UH HEEA	3
PwsPro1.5	Publicize and promote the **certified nurseries program** by posting information on HDOA's website on what nurseries, farms, and shippers are	2017–2027	ES/EF	HDOA	Industry UH HISC CGAPS	2

	certified and information if participants lose certification.				HEEA	
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.	2017–2027	ES/EF	HDOA	Hawaii Veterinary Medical Association	3
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.	2017–2027	ES/EF	DOH	DOA UH DOE DLNR HEEA Industry Hawaii Medical Association	3

Objective—PwsPro2. Inform the State's Policymakers on Hawaii's Biosecurity Issues						
PwsPro2	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
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**.	2017–2027	ES/EF	HDOA	DLNR DOH UH	3
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.	2017–2027	ES/EF	HDOA HISC	DLNR DOH UH HDOT Industry	2

Objective—PwsPro3. Develop an Effective and Comprehensive Education and Outreach Campaign to Inform the Public of Harm from Invasive Species						
PwsPro3	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
PwsPro3.1	Biosecurity 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.	2018–2027	$1,000,000	HDOA HISC	HTA HDOT DLNR CGAPS USFWS HEEA	2
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.	2018–2027	ES/EF	HDOA	DLNR DOH CGAPS HEEA	3
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).	2018–2027	ES/EF	HDOA	DLNR DOH UH HTA CGAPS HEEA	2
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.	2018–2027	ES/EF	HDOA	DLNR DOH CGAPS HEEA	2
PwsPro3.5	Help implement HISC's state-of-the-art **pest notification and reporting system**, and integrate it with the biosecurity online portal.	2018–2027	ES/EF	HDOA DLNR	CGAPS DOH UH HEEA	3
PwsPro3.6	Agency staff to **provide technical assistance to community volunteer groups** working to control invasive species in terrestrial and aquatic systems.	2018–2027	ES/EF	DLNR	NOAA USFWS NPS UH CGAPS HEEA	3

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.	2018–2021	ES/EF	DLNR	NOAA USFWS CGAPS HEEA	2
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.	2018-2027	ES/EF	UH	HDOA DLNR DOH HEEA	3

1.1.3 Technology, Infrastructure, Funding, and Staffing–Related Tasks for Public Awareness and Support

Objective—PwsTifs1. Enhance Funding, Staffing, and Infrastructure to Build Public Awareness and Support for Hawaii Biosecurity						
PwsTifs1	Implementation Tasks	Timeline	Funds Needed	Lead Agency	Partners	Priority Ranking
PwsTifs1.1	**Hire a full-time biosecurity communications specialist** at HDOA to develop and coordinate public awareness programs for HDOA's biosecurity programs.	2018–2027	$650,000	HDOA	DLNR DOH	3
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.	2018–2019	$800,000	HDOA	UH DLNR DOH CGAPS	1
PwsTifs1.3	Collaborate with HTA to **obtain funds from the visitor industry** to pay for biosecurity media campaigns.	2018–2027	$1,000,000	HDOA	HTA DLNR	2
PwsTifs1.4	Collaborate with HTA to contract a professional public relations firm to create visually **appealing signs and displays regarding biosecurity at airports**.	2018–2027	$500,000	HDOA	HTA CGAPS HDOT DOH DLNR	2
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	2018–2027	$100,000	DLNR	HDOT DOH UH Industry	1

	similar to https://vesselcheck.fish.wa.gov.au/.					
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.	2018–2027	$3,000,000	UH	CGAPS DLNR HDOA HTA Industry HEEA	1
PwsTifs1.7	**Hire two university instructors/researchers** to teach and conduct research on biosecurity program and university field of study.	2018–2027	$2,400,000	UH	HDOA DLNR	3