JOSH GREEN, M.D.
Governor

SYLVIA LUKE
Lt. Governor

SHARON HURD
Chairperson, Board of Agriculture

DEXTER KISHIDA
Deputy to the Chairperson

State of Hawai'i
DEPARTMENT OF AGRICULTURE
KA 'OIHANA MAHI'AI
1428 South King Street
Honolulu, Hawai'i 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

December 23, 2024

The Honorable Ronald D. Kouchi,
President and Members of the Senate
Thirty-Third State Legislature
State Capitol, Room 409
Honolulu, Hawai'i 96813

The Honorable Nadine K. Nakamura,
Speaker, and Members of the House
of Representatives
Thirty-Third State Legislature
State Capitol, Room 431
Honolulu, Hawai'i 96813

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

For your information and consideration, I am transmitting a copy of the Annual Report on the Biosecurity Program as required by Act 236, SLH 2008. In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at https://hdoa.hawaii.gov/meetings-reports/legislative-reports/.

Sincerely,

Sharon Hurd
Chairperson, Board of Agriculture

Attachments

REPORT TO THE THIRTY-THIRD LEGISLATURE
2025 REGULAR SESSION
STATE OF HAWAII

ANNUAL REPORT ON THE BIOSECURITY PROGRAM IN RESPONSE TO ACT 236, SLH 2008

Prepared by:

THE STATE OF HAWAII
DEPARTMENT OF AGRICULTURE

DECEMBER 2024

REPORT TO THE THIRTY-THIRD LEGISLATURE

TABLE OF CONTENTS

SECTION I

Background

A. Act 236, 2008 Session Laws of Hawaii

Act 236 of the 2008 Session Laws of Hawaii recognized that the unchecked spread of invasive species is a threat to Hawai‘i’s unique natural resources, agricultural economy, and the health and lifestyle of Hawai‘i’s people. Act 236 created a Biosecurity Program within the Department of Agriculture to support the Department’s efforts in combatting invasive species. In particular, Act 236 recognized that the Department was undertaking several activities to fight invasive species by:

1. Administering pre-entry measures to minimize the risk of invasive pests entering the State;
2. Conducting port-of-entry inspections to detect and quarantine or destroy pests upon arrival; and
3. Administering post-entry measures to mitigate the establishment of pests in the State.

Additionally, Act 236 acknowledged the Department’s efforts to reduce the State’s dependency on imported agricultural products by increasing the capacity of Hawai‘i’s agricultural industry that would in turn reduce the risk of accidentally introducing invasive pests on agricultural commodities. The Biosecurity Program was created to support the Department’s ongoing efforts to combat invasive pests. The Legislature also established the Pest Inspection, Quarantine, and Eradication (PIQE) fund to finance part of these activities.

B. Role of the Hawai‘i Department of Agriculture

Efforts to prevent the introduction of new invasive species, to eradicate, if feasible, invasive species incursions, and control and mitigate already established invasive species, are covered by multiple divisions and branches within the Department of Agriculture. There are also multiple funding sources used to fund these activities including general funds, PIQE, and federal funds.

The Plant Industry Division is composed of the Plant Quarantine Branch (PQB), Plant Pest Control Branch (PPC), and the Pesticides Branch. All three branches play a role in biosecurity with the Hawai‘i Department of Agriculture (HDOA) and work closely together to accomplish the objectives. PQB is largely tasked with the inspections and permitting of agricultural commodities (live plants; non-propagative plant parts such as fresh produce, cut flowers, animal feed; non-domestic animals; microorganisms; and soil) at ports of entry to prevent the

introduction and interisland spread of new or existing invasive species. This branch works closely with its federal partners (the Department of Homeland Security, Custom Border Protection (CBP), the United States Department of Agriculture, Animal and Plant Inspection Service (USDA-APHIS) and USDA APHIS Plant Protection and Quarantine (USDA-PPQ) to prevent the introduction of pests into the State. PPC's focus is primarily on the detection, response, eradication, containment, and control of pests that have managed to bypass inspections at the ports of entry and to establish base-line surveys around the ports of entry. PPC staff work with farmers, homeowners, and businesses to help treat, prevent, and where possible, eradicate invasive species threats when discovered. The Pesticides Branch ensures that pesticide technologies are available for these efforts and are being properly used. Specific activities of the Plant Industry Division relating to biosecurity are as follows:

Prevention – activities to prevent the introduction of pests or invasive species

- Inspection at ports-of-entry of agricultural commodities entering the State and moving between islands.
- Issuance of permits for the importation and possession of restricted commodities such as restricted plants, non-domestic animals, and microorganisms.
- Origin certification programs for high risk commodities (compliance agreements between origin state, commodity handlers/shippers, and destination state) designed to minimize or eliminate pest risk levels.

Diagnostics – ability to correctly identify agricultural pests and invasive species: Insects, Slugs, Snails, Plant Pathogens, Non-domestic Animals, Microorganisms, and Noxious Weed identification.

Early Detection – proactive surveillance to early detect presence and location of invasive species that may be introduced. Most monitoring activities are subcontracted to CTAHR of UH with federal or state funds.

Rapid Response – Immediate survey, control, and eradication measures to detect, capture, or eliminate a single threat or incipient population of pests or invasive species before they can become established.

Monitoring – ongoing surveys to track the presence or absence and status of introduced invasive species over time and to evaluate effectiveness of prevention, control and restoration activities. Most survey activities are subcontracted to CTAHR of UH with federal or state funds at high-risk areas, including within the airport and harbor environs, surrounding the ports-of-entry, agricultural lands, and selected protected areas within the State.

Biological Sampling – ongoing surveys to track the presence and status of existing species over time and to evaluate effectiveness of prevention, control and restoration activities.

Research and Development – the development of scientific knowledge, methods, and technologies to prevent, detect, control and/or monitor invasive species and assist in implementing technologies to control invasive species' effects on agricultural production.

Education Outreach – actions taken to increase public awareness on importance of invasive species control.

Partnerships and Cooperative Activities – cooperative efforts with stakeholders (agricultural industries); federal, state, county, and private partners; including domestic and international partnerships and agreements.

Information Management – activities to facilitate access to and exchange of information concerning invasive species. Includes storage and sharing of data and databases.

Quality Control Programs – activities to measure levels of effectiveness, including on-going risk assessments to determine pest-risk pathways, evaluation of mitigation activities, and re-prioritization of inspection activities for invasive species.

Quarantine Treatment Facilities – "shared" government certified treatment facility(ies) approved to conduct disinfestation treatments to recondition and/or destroy shipments infested with quarantine pests, or to subject shipments to treatments that will exterminate the quarantine pest.

Permitting – issuing permits based on statutes, administrative rules, and prior Board of Agriculture decisions to ensure the introduction of regulated commodities can be appropriately imported into the State and not introduce invasive species or become one itself in accordance with pest risk analysis.

Compliance and Enforcement – strengthening the enforcement components to compel compliance with quarantine laws and regulations.

Export Programs – providing services to facilitate the export of agricultural goods to domestic and foreign markets.

SECTION II

Description of Projects and Activities Funded by the Pest Inspection, Quarantine, and Eradication Fund

Inspections

PQB has offices statewide, primarily located at or near the ports of entry (airports/seaports), with 85 inspectors/aides/technicians responsible for day-to-day operational activities. Regulated commodities include the following: propagative plant material; cut-flower or foliage; fresh produce; other agricultural products in the natural or raw state; forage such as moss, hay, straw or dry-grass; unmanufactured logs, timber, or plant-product, unprocessed or in the raw state; soil; microorganisms; non-domestic animals such as live birds, reptiles, nematodes, insects in any stage of development; and associated containers/vehicles used to transport regulated commodities.

Import Inspections of regulated commodities are primarily conducted at the ports of entry with inspectors inspecting imported goods at airports, seaports, importer/freight forwarder facilities, express mail carriers such as FedEx/UPS/DHX, the and the U.S. Postal Service. Highly perishable commodities arriving via surface vessel are inspected at importer's facilities. In FY 24, 9,046,021 lots of regulated commodities were inspected, with 3,129 lots requiring treatment, destruction, confiscation, or shipment out of state.

Data Management

The PQB continues to utilize its Kupono system for data management statewide. Additional enhancements continue to be made including upgrading online pest reporting; incorporation and implementation of phytosanitary certificate generation and maintenance; export certification; and interisland certifications. Reporting has been refined and more customized reporting is now enabled. The E-manifest system continues to be utilized.

Permit Processing and Issuance

The PQB issues permits to import and/or possess restricted plants, non-domestic animals, microorganisms, and soil into the state. Microbial product registrations are also issued for the importation of microbial products into the state. Under certain circumstances, permits for intrastate movement are also issued. Permits can be issued for single shipments or unlimited shipments within one year from date of issuance. This system balances the needs for the private individual and the commercial business against the need for regulation of regulated commodities and associated fees.

In FY 24, PQB issued 816 permits for the importation of restricted plants, non-domestic animals, microorganisms, and soil. 251 Letters of Authorization for the importation of Nonrestricted Microorganisms were issued. 334 Microbial Product Registrations were issued. 78 intrastate permits were issued.

Snake Handling Program / Brown Tree Snake interdiction

PQB places a high priority on preventing the introduction of any snake species into the State. As Hawai‘i has no native snake species, should one become established, it could lead to a similar situation to Guam, where the introduction of a single species, the Brown Tree Snake, *Boiga irregularis*, significantly altered the ecosystem on a landscape scale and affected people's way of life due to risks to infrastructure.

To mitigate this risk, the PQB created a Snake Handling Program, which is held annually, and trains 5-8 staff at a time. There is a portion done in Honolulu using classwork and snakes already in our possession, with the final one-week training done in Guam. Guam was selected for this program as it provides the staff with the safest opportunity to deal with wild snakes with minimal risks of personal injury as the BTS are only mildly venomous and there are no known cases of a person dying or becoming seriously ill as a result of being bitten. Searching for and handling a wild snake is the closest representation to what could actually happen in Hawai‘i during a rapid response event. The training is done in conjunction with USGS, but encompasses Hawai‘i specific issues, such as determining if a snake is venomous or not, before capturing, whereas in Guam, only BTS are found, so this issue does not arise.

Since the inception of the program, HDOA has trained approximately 70% of its staff statewide. A typical training session involves 3 trainers and two to three trainees per trainer. Trainers are on Guam before the trainees to set up facilities, capture snakes for initial use, and ensure that search areas are safe. This program ensures that the PQB has the capacity to deploy staff statewide for any credible report of a snake. The most recent training occurred from September 23-27, 2024, certifying another five inspectors (3-O‘ahu, 1-Maui, 1-Kailua-Kona).

PQB also applies for a federal grant through the U.S. Department of the interior for BTS interdiction activities and was awarded $375,000 on July 30, 2024 for continuation of these activities. The has PQB applied for and received this same grant each calendar year since 2020. This grant provides funding for inspections of aircraft or ships from Guam or other areas where BTS is known to be established; equipment, care, and supplies for three trained detector dog teams; and trapping/surveillance activities at Joint Base Pearl Harbor Hickam three times per week. In FY 2024, 97.9% (1,451 of 1,482) flights were inspected and cleared. It should be noted that these flights can arrive 24 hours a day, 365 days of the year, often with very little notice to dispatch an inspector.

Pest Referrals / Rapid Response

The PQB responds to all credible reports of actionable pests or prohibited animals across the State. In FY 24, there were 293 reports received statewide for a variety of organisms including Coqui frogs, snakes, skunks, iguanas, opossums, and bearded dragons.

Some notable responses:

In October 2024, a skunk was captured at Honolulu Harbor after initially being seen by stevedores. PQB inspectors had deployed traps for several days prior to the capture. The animal was captured after being seen by U.S. Immigration Office security personnel, who notified PBQ inspectors who were able to capture the animal. The skunk was tested for rabies and found to be negative.

In January 2024, a gopher snake was captured in a shipping container on Molokaʻi. Maui County Police on Molokaʻi euthanized the animal. PQB inspectors from Maui arrived approximately at noon of the same day and checked the rest of the container. No other snakes were found.

In August 2023, a racoon was captured in the Kalaeloa area. Trapping and monitoring activities were a multi-week joint effort, with the HDOA, PQB, the Naval Facilities Engineering systems Command, and the U.S. Department of Agriculture, Wildlife Services. The racoon was tested for rabies and found to be negative.

In July 2023, a live juvenile *Boa constrictor* was captured abroad a cargo ship in Honolulu Harbor. Notification to the HDOA, PQB was through the U.S. Customs and Border Protection agency. No other snakes were found.

PQB staff conducted 171 coqui responses on Oahu and captured 1,158 coqui in FY ‘24. PQB continues to work with partners (DLNR, OISC, community) for a population in Waimanalo.

In CY 2024, PQB conducted 88 Little Fire Ant (LFA), *Wasmannia auropunctata*, surveys across Oahu. 17,618 samples were taken, with 818 being positive for LFA at 18 sites. PQB is also confirmed a site at Honolulu Harbor for a new species of ant, *Trichomyrmex sp. nr. mayeri,* which was referred to the PQB by the Hawaiʻi Ant Lab. Treatments are ongoing in the area.

From December 2023 to current, PQB conducted 13 surveys for Coconut Rhinoceros Beetle (CRB), *Oryctes rhinoceros*, on Oʻahu. The most recent surveys are in preparation for contracts to remove dead coconut trees and to remove greenwaste on public lands using funds appropriated by ACT 231. A limited number of CRB treatments have been conducted. Two treatments were conducted at the Wailua Municipal Golf Course on Kauaʻi in conjunction with the HDOA Plant Pest Control Branch (PPC) and the CRB Response Program. Three treatments have been conducted on Oahu municipal courses (2- West Loch, 1 – Ewas Villages). The start of

treatments was delayed because there were issues with acquiring the necessary equipment for application and obtaining training on the proper use of injectable systemic pesticides. Improper application is not only potentially dangerous to staff, but can also result in death of the tree if treated incorrectly.

Nursery Certification and Compliance

PQB continues to maintain a compliance project with selected nurseries who ship nursery stock in soil for Rapid Ohia Death (ROD). It includes best management practices as well as periodic testing of soil in the nursery for the fungus that causes ROD.

PQB continues to maintain compliance with the QC650 Master Permit with the California Department of Food and Agriculture. The permit was renewed on September 16, 2024. The permit enables compliant nurseries to self-certify shipments of clean nursery stock to the U.S. Mainland. Statewide, there are currently 113 nurseries certified under this program.

Christmas Tree Inspection Project

PQB continues to work collaboratively with Oregon Department of Agriculture (ODA) and the Washington State Department of Agriculture (WSDA) to maintain implementation of best management practices (BMPs) and inspection protocols with Oregon Christmas tree shippers to ensure that the shipments are free of pests. The BMPs continue to be successful, with Figure 1 below showing the non-compliance rate for shipments found to be infested with pests at time of inspection, with an average 97% compliance rate over the last five calendar years. The trend of high compliance appears to be continuing for this year's shipments.

Figure 1. Inspection totals

Calendar Year	Total	Non-compliant	Passed	Compliance %
2019	168	4	164	98%
2020	154	12	142	92%
2021	148	3	145	98%
2022	146	2	144	99%
2023	120	0	120	100%

Investigations

The penalties for violating HRS 150A are criminal. The Department maintains an MOU with the Hawai'i Department of the Attorney General (HDAG) to investigate violations. PQB inspectors conduct inspections (administrative searches) at ports of entry statewide to ensure that shipments of regulated commodities are compliant with statutes, administrative rules, permit

conditions, and other regulations prior to entering the state. PQB inspectors may take administrative action on shipments of regulated commodities that are non-compliant, e.g., refuse entry into the state, require treatment or destruction, etc. The PQB maintains a policy to warn violators in writing for first-time violations. This policy has seen great success with only a single repeat violator for FY 2024. The repeat violator had simultaneously violated multiple federal regulations, some of which were felonies. The alleged state violations were misdemeanors, so the PQB turned over its evidence to federal investigators and that case is still ongoing. For FY 2024, there were a total of 81 investigations, with the majority for the importation of regulated commodities without a valid permit prior to importation.

Education/Outreach Activities

With limited manpower and financial resources focused on preventing the entry and spread of pests into and within the State, the PQB puts a strong emphasis on public education/outreach events to empower everyone to be the PQB's eyes and ears in their communities. Education and outreach events are varied and tailored to audiences as needed, however a major focus is on the general public and with stakeholders. In FY 2024, PBQ conducted 68 education/outreach events, with 22,116 interactions held at those events.

Control and Eradication Programs

• Coconut Rhinoceros Beetle: HDOA continues to lead a multi-agency effort to control Coconut Rhinoceros Beetle (CRB) populations on Oʻahu. Detections on Maui, Kauaʻi, and Hawaiʻi in 2023 indicate our ability to eradiate CRB from the island of Oʻahu is no longer feasible. This decision was reached due to multiple-breeding populations being detected spread through green waste and nursery products. Funding allocated by all sources has increased and incipient populations, such as Waikoloa, and Maui are being targeted for eradication. The Department did enact an Interim Rule to HAR 4-72 to limit the movement of compost, green waste, and other host material and create a compliance program, but it appears this program was launched too late to contain the spread of CRB on the island of Oʻahu. The interim rule as extended and the full rules were approved by the Board in late November, 2024. New detections on Maui have caused alarm due to its large breeding population. A small population of CRB was found on Hawaii Island in the Waikoloa Village subdivision. There is work in progress to contain and eradicate these smaller populations. The Department is now focusing efforts to contain the infestations to Oʻahu, Maui, Hawaiʻi, and Kauaʻi while working with partner agencies to develop additional tools to manage and mitigate CRB populations.

• Coqui Frogs: HDOA has been working with the invasive species councils (ISCs) on the control of coqui frogs on the islands of Maui, Oʻahu, and Kauaʻi. Citric acid is being supplied to the ISCs through HDOA. Costs for citric acid application are approximately $2,000 per application event.

• Little Fire Ants: Since 2008, HDOA has been working with the Hawai‘i Ant Lab (HAL) to coordinate monitoring and control efforts of little fire ants (LFA) on Oahu and the Big Island. HAL has expanded its operations to include two full-time and two part-time employees who are responsible for monitoring nurseries, past infested locations, and conducting detection surveys and treatments of LFA infested commercial and residential sites. In 2022, the Ant Lab identified thirty-five sites on O‘ahu, where the Program is managing LFA populations with private and public landowners. In 2024, the Ant Lab had identified over 60 sites on O‘ahu. Maui HDOA staff assists the Maui Invasive Species Committee with LFA monitoring and treatment as needed. The LFA population is increasing at a time when funding for HDOA and HAL have seen increases due to the enactment of Act 231, SLH2024. Resources similarly are limited to Kaua‘i where HDOA is leading joint control efforts with the Kaua‘i Invasive Species Committee (KISC) and the University of Hawai‘i to control two large populations of LFA. One position, specific to ant species has been identified by Act 231 for development and hiring. Specialists will focus on mitigation and control efforts and continual development of research. On Kaua‘i, currently there are 15 sites total with 8 sites detected in 2024. There are 47 residential (residents that are adjacent to each other are considered as one site) properties, 9 Ag properties, and 6 nurseries with LFA. HDOA staff and KISC have been actively treating and monitoring four areas on Kaua‘i totaling over 100 acres. HDOA continues collaborating with international invasive ant specialists to support research in new innovative invasive ant management techniques.

• Coffee Leaf Rust: Coffee leaf rust (CLR) is the most devastating disease of coffee globally. This disease was first detected in Hawai‘i in October 2020. HDOA has launched a statewide multiagency program including the University of Hawai‘i and US Department of Agriculture, to respond. Since the first detection of the coffee leaf rust, the disease has very quickly spread to all coffee producing areas of Hawai‘i. Information was immediately sent to the Coffee Industry and stakeholders. Outreach materials have been developed and distributed to the public and the industry. A rapid response group organized by the Plant Industry Division has been meeting regularly with university researchers and regulatory officials from USDA-APHIS-PPQ and ARS (Agricultural Research Stations of APHIS). University of Hawai‘i (UH) Extension has developed management options for farmers. HDOA has enacted an interim rule to restrict the interisland movement of coffee plants, plant parts including green beans, and used coffee packing, harvesting or transportation equipment from areas with CLR except by pe1mit. The interim rule ended on 11/20/2021. The Department continued its subsidy program to financially assist impacted coffee growers with the purchase of approved pesticides as part of the additional production costs due to the impact of coffee berry borer and the coffee leaf rust. In addition, the Department has prepared APHIS-PPQ, UH and the National Plant Diagnostic Network (NPDN) of the National Plant Board (NPB) options for our coffee industry to safely import rust resistant coffee varieties to Hawai‘i through accredited micro-propagation laboratories in the

continental US under compliance agreements. Direct import of coffee plants from foreign sources to Hawai‘i is not allowed by federal regulations.

• Devil Weed on Hawai‘i Island: Chromolaena odorata was detected on Hawai‘i Island by the Big Island Invasive Species Committee in February 2021. HDOA launched a campaign to control devil weed on Hawai‘i Island with BIISC as a partner. BIISC is partially funded by HDOA. HDOA has focused its efforts on response and control to known infestations on agricultural lands while BIISC is targeting the broader infested area. The department has lost half its staff on Hawaii island dedicated to management of noxious weeds and other pests.

• Cogon grass on Hawai‘i Island: Plant Pest Control staff on Hawai‘i Island identified a small population of cogon grass and is working to eradicate it. Permission is being sought to work in the area to allow more effective pesticide treatment as other options evaluated have proven to be unfeasible.

• Pest Detection and Response: The staff of the Plant Pest Control Branch conducts selected invasive pest surveys but mostly subcontracted with researchers from UH to conduct invasive pest detection programs for a variety of insects, plant diseases and noxious weeds. Most of the invasive pest surveys are funded through federal cooperative agreements from the APHIS-PPQ CAPS (Cooperative Agricultural Pest Survey) Program and APHIS-PPQ Pest Detection PPA (Plant Protection Act) Section 7721. The objective is to early detect priority pests of federal and state concern before they can establish. While detections are being made, the current limited staffing of the Branch has not allowed to properly follow up on new pest detections including adequate delimitation surveys of infested areas, host range and impacts of new pests unless the department has made an official determination that a high priority pest has been detected. These pests include coconut pests and other palms, our major agricultural crops in Hawaii, citrus greening, new powdery mildews, invasive ants, and exotic plant rusts. Some of the new pests detected in Hawai‘i include:

o Plwma sp. on Wili‘wili: A new fungal disease was found on the native Erythrina tree known as Wili‘wili. The disease could not be identified to species by United States Department of Agriculture (USDA) Agriculture Research Service (ARS) or Animal Plant Health Inspection Service (APHIS) experts. Statewide surveys found the infestations were present only on the windward side of O‘ahu. It is believed a contributing factor in the expression of disease is weather/climate conditions found in the location which is beneficial for disease expression and not ideal/desired habitat for Wili‘wili. HDOA has been working with the affected landowners to address the issue.

o Bacterial leaf galls on oleander: While conducting collections of disease specimens on oleander reported by staff of the University of Hawai‘i, Plant Pest Control staff found samples of a leaf gall. This was identified by USDA APHIS as a new state record. This bacterial leaf gall is

spread by mechanical means which indicates either infected material was imported into the state or contaminated equipment/tools.

Statewide surveys found infestations only on Maui. Scientific literature indicates the disease can affect olives in the laboratory. Surveys have been conducted of commercial olive growers. No signs of bacterial galling have been found on olives.

o Winter rust on Parthenium: PPC staff found one of the principal biological control agents released in some parts of the world against the noxious weed, Parthenium. The rust Puccinia abrupta var. partheniicola was found infesting the weed Parthenium hysterophorus. The identification of the rust was confirmed by USDA APHIS National Identification Services. The disease is present in parts of the US and likely came through the domestic movement of material. Winter rust has been lmown to be opportunistic in its movement. Due to a lack of staffing, HDOA was not able to isolate cultures and potentially evaluate its usage more broadly for control of P. hysterophorus.

o Psyllid on Banyan: A public report resulted in the detection of a new psyllid on Ficus microcarpa or Chinese banyan. We are still waiting for identification confirmation from USDA APHIS. Surveys by staff show infestations extend from the Pearl Harbor area to downtown. The psyllid has only been detected on Oahu.

o Avocado lace bug Pseudacysta perseae: Statewide surveys were conducted for the avocado lace bug, Pseudacysta perseae, a new State record in 2021. The avocado lace bug is now distributed statewide. The Department is exploring with international partners the potential for biological control of this pest.

<u>Foreign Exploration and Biocontrol:</u>

Foreign Exploration is restarting with exploration to Thailand and Indonesia in December 2022 and May 2024. The focus will be the collection of potential biocontrol agents for the control of Hala Scale and Maile Pilau.

• The Plant Pathologist and Technicians have been cut in previous legislative sessions but were re-funded and filled in 2023. Due to staffing shortages and current budgetary limitations, the department is focusing on maintaining projects versus active testing and evaluation of biological control agents. In addition to staffing issues, the department cannot meet containment standards for the containment of pathogens as potential biocontrol agents. There is no agency within Hawaii with this capacity. Now, HDOA is focusing on increasing partnerships at a regional and global basis to enhance our capabilities. A pathogen containment facility is needed now not just for weed biocontrol but for the importation of viral and fungal pathogens

capable of controlling CRB. The Department is looking at modular, prefabricated containment facilities to meet the immediate needs for pathogen containment.

• Devil Weed: Plant Pest Control Branch is coordinating a project with Department of Natural Resources Staff, Army, US Forest Service, and Queensland, Australia to test a gall fly widely used to control devil weed, Chromolaena odorata, in the Pacific. Shipments of insects have been received by our partners with the USDA Forest Service (FS) from Australia and Guam. A large hand-carried shipment of infested material was delivered to the FS containment facility in Volcano by visiting Australian scientists.

• Christmas Berry: The Plant Pest Control Branch received information from partners in Australia which showed testing and evaluation of a thrips species released in Florida was having non-target impacts. Pursuit of this species for release in Hawaii was suspended until more information was obtained. After discussions with partners in Florida, the project has been restarted and we are working with the US Forest Service and Department of Land and Natural Resources to revise planned permit requests and environmental compliance documentation and to re-evaluate our release and monitoring programs to reflect experience seen in ongoing biocontrol programs in Florida.

• Macadamia Felted Coccid: Macadamia in 2018-2019 was valued at $42.0 million. Production in this period decreased 28%. The pest, Macadamia felted coccid, is a contributing factor in production losses and higher costs for the macadamia industry. Working with the Hawai‘i Macadamia Nut Association, PPC has obtained a scientific name for a parasitic wasp shown to successfully parasite the Macadamia felted coccid with a high degree of specificity. PPC has begun the process petitioning for the release of this wasp, Metaphycus macadamiae. PPC and University of Hawaii at Manoa are working on finalizing an EA and the permit application for release.

• Fireweed: Fireweed biocontrol programs have been paused due to lack of funding and staffing. One agent, a stem boring weevil, Gastroclisus is being maintained but the colony is week due to the long-life cycle and difficulty in maintaining the species in our current adequate facilities. CSIRO in Australia has informed us they have a backup colony for us.

• With the restart of global travel, HDOA has assisted our international partners for biological control.

o Citrus black fly: Plant Pest Control staff assisted experts from Greece to collect parasitoids.of the citrus black fly which has been negatively impacting both citrus and grapes in Greece. Collections were successful and Greece is screening and will hopefully soon be establishing populations in the wild. The Department has initiated communication with the Republic of the

Marshall Islands for citrus blackfly. We are waiting to get additional information on the hosts affected and positive confirmation of the species before launching a support program.

o Yellow sugarcane aphid: Plant Pest Control Staff received a request to assist with the collection of yellow sugarcane aphid parasitoids, specifically the wasp Adialytys ambiguous, for use in the Reunion Islands. Staff assisted with the collection and shipment of material with an entomologist from Reunion Island. Over 230 individuals were collected and used to establish a colony in Reunion for testing and evaluation prior to release.

o Lantana: Plant Pest Control Staff assisted entomologists from Queensland, Australia with the collection of natural enemies established in Hawaii for the control of Lantana. Based upon their assessment, there are insects which have been released in Australia that have not been released in Hawaii which may be impactful here. HDOA will work with entomologists from Queensland to assess and prioritize future lantana work.

o Clidemia: Plant Pest Control staff assisted entomologists from Queensland, Australia with the collection of natural enemies established in Hawaii for the control of Clidemia. Preliminary discussions have begun on perhaps jointly examining future biocontrol agents with Queensland, HDOA and FS.

The species targeted during exploration and their native regions are:

o Hala Scale:

o The Hala tree, Pandanus tectorius (Pandanaceae) is a large indigenous shrub or small tree with long, spiny-toothed leaves that is naturally spreads into coastal plant communities in the Pacific Islands of Southeast Asia and the eastern coasts of Queensland, Australia. The plant is prominent in Hawaiian culture and tradition, including local medicine throughout the tropical and subtropical Pacific. It has a significant cultural resource on the east side of all the Hawaiian Islands. The Hala tree is recognized for its leaves, or lauhala, which are woven into mats, hats, thatching, fans, and baskets. Old Hawaiians also used the lauhala for roof linings. Individual mats may be worth more than $500.00 in Hawaii.

o The Hala Scale, Thysanococcus pandani, (Hemiptera: Coccoidea: Halimococcidae) is native to Southern Asia and the Pacific islands. It was accidentally introduced to Hana, Maui, probably on material imported to botanical gardens in the area. The scale was first observed in Maui at the National Tropical Botanical Gardens at Hana, in November 1995. As of October 1996, the infestation was still confined to the coastal strip of Hana and slowly reached Keanae by November 2002. Recent surveys showed that the scale has spread to all areas of Maui Island and on the offshore islets of Keopuka, Moku Huki, and Puu Ku. Limited infestations were discovered on Oahu Island in 2013 and Molokai Island in 2014. Between 2003 and 2006, Hala

Scale was intercepted by agricultural inspectors in Los Angeles County, California. Five interceptions were found on tropical flower shipments originating from Maui.

o Hala Scale is a minute black bug with a scale of white spots that cover the leaves and fruit of Pandanus and sucking sap from the plant causes the leaves to turn from a vibrant green to a pale yellow and branches to snap off. Infestation weakens or sometimes kills young plants. Infested leaves are rendered useless to Hala weavers. The scale spreads by blowing through the air from plant to plant and may also be dispersed by transporting infested leaves or fruit. It has a restricted host range, known only from Pandanus species. It was described from Pandanus tectorius and Pandanus spp. in Java, Indonesia, and P. utilis and P. penangensis from Singapore.

o There are no known effective measures to combat or control the Hala scale on Maui. Pesticides and other control options have proven unsuccessful. Surveys to locate extant biocontrol agents were not successful and specialized new candidates are needed. During this expedition, natural habitats in the native range of Pandanus (coastal areas in Indonesia, and Thailand) will be surveyed to study natural enemies of the Hala scale. Potential biocontrol agents may include parasitoids or predators which exclusively parasitize or feed upon Thysanococcus pandani or related scales on Pandanus trees.

o Lobate Lac Scale:

o The Lobate Lac Scale, Paratachardina pseudolobata (Hemiptera: Coccoidea: Kerriidae), native to Southeast Asia, infests more than 300 species of economically important and native plants in southern Florida and the Bahamas. This pest continues to spread in different countries and has been discovered in Hawaii in October 2012. The scale also infests agriculturally important crops in Hawaii such as macadamia and coffee. To date, the Oahu infestations appear to be the highest on popular weeping banyan tree, Ficus benjamina, and Hibiscus trees causing stem dieback and defoliation. Severely infested trees and plants have been known to die. The young crawlers of this scale are mobile and can spread quickly to other trees and plants by air which makes it widespread on O‘ahu Island in less than a year. It has been found on native Acacia koa and can be a threat to native rainforests if left without control.

Not much research has been done on this species, its exact origin is still unknown and there is no effective biocontrol agent been discovered yet. Chemical control can successfully manage this pest but is too expensive and inappropriate for large scale usage in natural areas. Biological control is probably the most viable long term control method and has a high success rate against scale insects. Extant natural enemies of this pest are absent or ineffective in Florida and Hawaii and surveys for new agents in the native habitats are essential. Recent surveys on related species in India and Sri Lanka showed that a species of Paratachardina does not cause problems in its area of origin presumably due to activities of various natural enemies

Apiary Program

The Hawai‘i Department of Agriculture (HDOA) Apiary Program is dedicated to protecting the beekeeping industry in Hawai‘i by implementing science-based regulations, conducting regular monitoring, preventing the spread of invasive honey bee pests, offering interactive educational opportunities, and maintaining open communication with beekeepers across the state. The beekeeping industries in Hawai’i include queen bee rearing for domestic and international export, honey production, pollination, and producing an array of value-added products from the hive. North American pollination services greatly depend on queen bees Hawai‘i provides, contributing to the Value of crop production: US domestic is valued at $15 to $20 billion in 2022 (American Beekeeping Federation); and Canada is valued at $7 billion in 2022 (Canadian government). The local economic value of Hawai‘i’s honey industry in 2021 was 4,129,000 (USDA National Agricultural Statistics Service). The queen rearing industry in Hawai‘i is valued close to $18 to $20 million.

Biosecurity: The Apiary Program maintains a network of traps for the detection of exotic races of bees that may affect native pollinators, and for the detection of exotic new pests and diseases and to prevent the unwanted movement of pests and diseases between islands. No new exotic bee races, pests or diseases were detected in 2024.

Certifications: A key function of the Apiary Program is the certification of queen breeders. Hawaii's queen breeders produce honeybee queens for export to the continental United States, Canada, and other foreign countries. Our queens are vital in ensuring pollination services for much of the world's food crops. Hawai‘i's queen bees are projected to provide 40% of US mainland demand and 60% of Canadian demand. This year, the Apiary Program certified 7 queen breeders. A total of 28 certification inspections were conducted for domestic and international use. It is estimated that 500,000 queens are exported annually. Canada is our primary export market for queens; 86 certificates for nearly 250,000 queens were issued by the Apiary technician for two companies. There were no reports of failed inspections due to pests and/or diseases of the hive.

Apiary Program currently functions with one technician located in Hilo, Hawai‘i, and a branch manager, located in O‘ahu, limiting the ability and growth of this program, with islands O‘ahu, Maui,

Kauai, Moloka‘i and Lana‘i being affected the most. This results in difficulties when effectively protecting and monitoring ALL our ports of entry for honeybee pests and diseases into Hawai‘i, especially O‘ahu, as they are the first port of entry for most of our cargo and goods being imported. There are not enough staff to effectively respond in the event that a new pest or

exotic bee race, such as Tropilaelaps and Africanized honey bees, is discovered. This deficiency poses a significant threat to the viability of our honey bee industry.

Funded Projects.

Coffee Berry Borer Subsidy. The coffee berry borer (CBB), *Hypothenemus hampei*, has caused severe impacts to coffee growers since its discovery in Hawaii in 2010. A subsidy program was begun in 2015 that reimburses coffee growers up to 50% of the costs of purchasing an organic microbial pesticide to help reduce CBB damage. The County of Hawai‘i received $260,000 in FY2019 to fund this ongoing program. Funding for this program was provided by the legislature in 2023.

Plant Quarantine/Invasive Species Awareness at the Daniel K. Inouye International Airport and neighboring islands airports. In 2018, an initiative by PQB personnel was launched to promote awareness of the impact of invasive species on our environment and the promotion of the PQB as the first line of defense in combatting invasive species in Hawai‘i. The effort includes 10-second videos on a 1-minute loop with other products or organizations. The videos appear on all the television monitor screens above the escalators going down to the baggage claims for all domestic arrivals, including the escalator going down to baggage claim at the interisland terminal for a total of 4 video monitors. The videos are also be displayed on both sides of the new arrival and departure board at the Hawaiian Airlines/interisland ticket lobby. It also includes a static, back-lit, tension fabric display in the Hawaiian terminal near the food court. This is a 7-year project, ending in January 2027, funded with up to $585,233.

Hawai‘i Administrative Rule amendments.

PQB administers Hawaii Administrative Rules (HAR) that directly apply to biosecurity. These rules are continually being reviewed and updated as needed. This is a multi-tiered process which involves staff, various Advisory Subcommittees, the Advisory Committee on Plants and Animals, and Board of Agriculture review followed by the public hearing process. The process was initiated for the following changes:

PQB implemented Interim Rule 23-1 to prevent the further spread of CRB and related CRB host materials from Oahu to other areas in the State. PQB also implemented Interim Rule 24-1 to prevent the spread of LFA throughout Oahu from LFA quarantined areas on Oahu.

Finalized proposed changes to Hawaii Administrative Rules Chapter 4-72, Plant and Non-Domestic Animal Quarantine, Plant Intrastate Rules, to among other things:

1. Implement PQB Interim Rule 23-1, regarding quarantine restrictions on the CRB and CRB host materials;
2. Implement fees for inspections and the processing and issuance of permits;
3. Establish authority to prohibit the movement of infested materials within the State;

4. Include penalties for non-compliance; and
5. Make other changes for clarity or simplification and other non-substantive changes correcting grammar, punctuation, or typeface.

The public hearing for 4-72, HAR was conducted on January 30, 2024, and brought back before the Board on October 22, 2023, for final approval with minor changes, to which the Board approved. The changes were then presented to the Small Business Regulatory Review Board, which recommend approval. The PQB is finalizing the rules for submittal to the Governor's office for his review and approval.

Pesticides Branch also initiated updates to HAR Chapter 4-66. Changes were required due to the approval of the State Certification Plan and authorization through Act 220, SLH 2023 to increase civil and criminal penalties related to the violation of Hawai'i Pesticides Laws.

Pesticides Branch received recommendation of approval to the Board of Agriculture in a meeting held in October of 2024. The Pesticides Branch expects to move the rules forward to the Board of Agriculture in early 2025.

Activities Requiring Hawai'i Board of Agriculture Approval

The PQB processed 8 submissions that required Board of Agriculture (Board) actions which included initiation of rulemaking or issuance of permits for importation.

Some notable requests processed were for future list placement and introduction of the Wasp, *Aprostocetus nitens*, for Biocontrol of *Quadrastichus erythrinae* (Erythrina gall wasp) by the Plant Pest Control Branch; and the processing of a petition by a private individual Tiffany Nerveza-Clark, to change the list placement of hybrid cats from the List of Prohibited Animals, to the List of Conditionally Approved Animals.

Travel

Listed below is all travel conducted by PQB staff and the purpose for the travel.

Start Date	End Date	Purpose for Travel
1/8/2024	1/9/2024	Snake response Molokai
1/8/2024	1/9/2024	Snake response Molokai
1/17/2024	1/17/2024	Biosecurity Inspection Kauai
1/22/2024	1/26/2024	Rapid Response CRB Kauai
1/23/2024	1/24/2024	CRB response at Wailua Golf Kauai
1/23/2024	1/24/2024	CRB response at Wailua Golf Kauai
1/23/2024	1/25/2024	CRB response at Wailua Golf Kauai
1/24/2024	1/24/2024	Biosecurity Inspection Oahu
2/14/2024	2/14/2024	Biosecurity Inspection Oahu
2/21/2024	2/21/2024	Biosecurity Inspection Oahu

2/28/2024	2/29/2024	AGOL/ArcPro Rapid Respose
3/4/2024	3/9/2024	Inspection, outreach Molokai
3/4/2024	3/8/2024	Inspection, outreach Molokai
3/12/2024	3/12/2024	Biosecurity Inspection Kauai
3/20/2024	3/20/2024	Biosecurity Inspection Oahu
4/7/2024	4/7/2024	ROD Inspections - Merrie Monarch
4/7/2024	4/7/2024	ROD Inspections - Merrie Monarch
4/10/2024	4/12/2024	PQ Snake Training at Oahu
4/10/2024	4/13/2024	PQ Snake Training at Oahu
4/10/2024	4/11/2024	PQ Snake Training at Oahu
4/10/2024	4/13/2024	PQ Snake Training at Oahu
4/10/2024	4/13/2024	PQ Snake Training at Guam
4/20/2024	5/12/2024	PQ Snake Training at Guam
4/20/2024	5/11/2024	PQ Snake Training at Guam
4/22/2024	5/11/2024	PQ Snake Training at Guam
4/23/2024	4/23/2024	CRB response - Waikoloa
4/23/2024	4/23/2024	CRB response - Waikoloa
4/23/2024	4/23/2024	CRB response - Waikoloa
4/27/2024	5/3/2024	PQ Snake Training at Guam
4/27/2024	5/3/2024	PQ Snake Training at Guam
4/27/2024	5/3/2024	PQ Snake Training at Guam
4/29/2024	5/3/2024	PQ Snake Training at Guam
5/3/2024	5/11/2024	PQ Snake Training at Guam
5/3/2024	5/11/2024	PQ Snake Training at Guam
5/4/2024	5/10/2024	PQ Snake Training at Guam
5/4/2024	5/10/2024	PQ Snake Training at Guam
5/4/2024	5/10/2024	PQ Snake Training at Guam
5/5/2024	5/11/2024	PQ Snake Training at Guam
5/6/2024	5/10/2024	PQ Snake Training at Guam
5/8/2024	5/8/2024	Biosecurity Inspection Kauai
5/11/2024	5/17/2024	Japanese beetle surveys Portland, OR
5/11/2024	5/17/2024	Japanese beetle surveys Portland, OR
5/14/2024	5/14/2024	Biosecurity Inspection Hawaii
5/31/2024	5/31/2024	Nursery inspections Molokai
6/4/2024	6/4/2024	HDOA Incentive & Service Awards Ceremony
6/4/2024	6/4/2024	HDOA Incentive & Service Awards Ceremony
6/12/2024	6/12/2024	Review Kauai's operations
6/12/2024	6/12/2024	Assist operation Kauai
6/12/2024	6/12/2024	Assist operation Kauai
6/12/2024	6/12/2024	Assist operation Kauai
6/12/2024	6/12/2024	Acquire AOA & operations assistance
9/13/2024	9/19/2024	Firming PQ Snake Training at Guam
6/13/2024	6/13/2024	Biosecurity Inspection Kauai

6/19/2024	6/19/2024	Biosecurity Inspection Oahu
6/25/2024	6/25/2024	Biosecurity Inspection Oahu
7/2/2024	7/2/2024	Kauai operations training
7/2/2024	7/2/2024	Assist operations Kauai
7/2/2024	7/2/2024	Assist operations Kauai
7/2/2024	7/2/2024	Assist operations Kauai
7/6/2024	7/14/2024	PQ Snake Training at Guam
7/8/2024	7/14/2024	PQ Snake Training at Guam
7/17/2024	7/17/2024	Biosecurity Inspection Kauai
7/23/2024	7/23/2024	Biosecurity Inspection Oahu
7/30/2024	7/30/2024	Site Inspection Permit Kona
8/10/2024	8/24/2024	Brown Tree Snake Training Guam
8/10/2024	8/23/2024	PQ Snake Training at Guam
8/14/2024	8/14/2024	Biosecurity Inspection Kauai
8/17/2024	8/17/2024	Outreach Kauai Ag Fair
8/17/2024	8/17/2024	Outreach Kauai Ag Fair
8/20/2024	8/20/2024	Biosecurity Inspection Oahu
8/27/2024	8/27/2024	Cover Kauai operations
9/4/2024	9/6/2024	PQ Snake Training at Oahu
9/4/2024	9/7/2024	PQ Snake Training at Oahu
9/13/2024	9/29/2024	PQ Snake Training at Guam
9/13/2024	9/29/2024	PQ Snake Training at Guam
9/13/2024	9/29/2024	PQ Snake Training at Guam
9/18/2024	9/18/2024	Cover Kauai operations
9/21/2024	9/27/2024	PQ Snake Training at Guam
9/21/2024	9/27/2024	PQ Snake Training at Guam
9/23/2024	9/27/2024	PQ Snake Training at Guam
9/23/2024	9/27/2024	PQ Snake Training at Guam
9/24/2024	9/24/2024	Governor's Award Ceremony
9/24/2024	9/24/2024	Biosecurity Inspection Oahu
9/24/2024	9/24/2024	Governor's Award Ceremony
10/1/2024	10/1/2024	Assist operation Kauai
10/4/2024	10/10/2024	2024 Communication Officers of State Department of Agriculture annual meeting
10/4/2024	10/10/2024	2024 Communication Officers of State Department of Agriculture annual meeting
10/8/2024	10/8/2024	Assist operation Kauai
10/8/2024	10/8/2024	Biosecurity Inspect Kauai
10/9/2024	10/9/2024	CRB Rapid Response
10/9/2024	10/9/2024	CRB Rapid Response
10/15/2024	10/15/2024	Biosecurity Inspections Oahu
11/6/2024	11/7/2024	Criminal Investigation
11/12/2024	11/14/2024	Assist operation Kauai
11/13/2024	11/15/2024	PQ Statewide staff meeting
11/13/2024	11/15/2024	PQ Statewide staff meeting

11/15/2024	11/21/2024	BTS Technical Working Group Meeting
11/16/2024	11/22/2024	BTS Technical Working Group Meeting

SECTION III

Description of Proposed Projects and Activities to be funded by the PIQE Fund

All Activities listed in Section II above will continue to be funded by the PIQE.

SECTION IV

Act 243, Session Laws of Hawaii 2016 Report

The Department of Agriculture provided a report to the 2018 Legislative Session regarding Act 243, SLH 2016. The Act calls for annual reporting based on expenditures from general funds appropriated for FY2016-2017. General funds were not provided for additional years and as such there are no expenditures to report on regarding Act 243, SLH 2016.

SECTION V

Financial Plan

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beginning Fund Balance	4,643,716	4,825,486	4,477,464	3,600,692	6,045,520	6,310,010	-773,588	-2,670,282	-3,135,282	-3,520,282
REVENUE										
Fees	6,644,219	6,074,598	5,809,187	6,202,817	5,438,781	5,000,000	5,000,000	6,000,000	6,000,000	6,000,000
Investment Pool Interest	76,287	43,205	88,984	29,592	29,592	45,000	45,000	45,000	45,000	45,000
Other	562	6,255	-	175	4,282	1,402	8,950	-	-	-
TOTAL REVENUE	6,721,068	6,124,058	5,898,171	6,232,584	5,472,655	5,046,402	5,053,950	6,045,000	6,045,000	6,045,000
EXPENDITURES										
Personnel Costs	3,272,574	3,273,310	3,413,983	3,272,574	3,224,422	9,500,000	4,279,830	6,100,000	6,100,000	6,100,000
Other Current Expenses	3,176,525	2,993,157	2,983,992	461,151	1,667,907	2,400,000	2,670,814	100,000	100,000	100,000
Equipment	33,520	205,613	205,382	54,031	315,836	230,000	296,402	230,000	230,000	230,000
Motor Vehicles	56,679		171,586					80,000		80,000
TOTAL EXPENDITURES	6,539,298	6,472,080	6,774,943	3,787,756	5,208,165	12,130,000	6,950,644	6,510,000	6,430,000	6,510,000
BALANCE	4,825,486	4,477,464	3,600,692	6,045,520	6,310,010	-773,588	-2,670,282	-3,135,282	-3,520,282	-3,985,282