



COORDINATING GROUP ON
ALIEN PEST SPECIES

CGAPS Vision and Action Plan

December, 2009

The Coordinating Group on Alien Pest Species (CGAPS) is a voluntary public-private partnership working to protect Hawai'i from invasive species. The CGAPS Steering Committee is comprised of participants from the Hawai'i Department of Agriculture (Plant Pest Control Branch and Plant Quarantine Branch), Department of Land and Natural Resources (Division of Aquatic Resources and Division of Forestry and Wildlife), U.S. Department of Agriculture/Animal and Plant Health Inspection Service, U.S. Department of Homeland Security/Customs and Border Protection, U.S. Department of Agriculture/Institute of Pacific Islands Forestry, U.S. Geological Survey/Pacific Island Ecosystem Research Center, U.S. Fish and Wildlife Service, The Nature Conservancy of Hawai'i, Bishop Museum and the Invasive Species Committees of Hawai'i. This document is a collaborative effort.

In 1995, 14 State, Federal, and private organizations joined together to form the Coordinating Group on Alien Pest Species (CGAPS), with the goal of closing gaps in Hawai'i's invasive-species prevention and response systems by fostering greater coordination of planning and management activities among these interested parties. At that time, no state had a multi-agency executive-level council tasked with improving invasive-species policy and management. Today, the CGAPS model has become the norm across the United States, with state-level Invasive Species Councils and regional Exotic Pest Management Councils.

Institutional barriers have made invasive-species prevention and management historically difficult, and many gaps remain in providing Hawai'i comprehensive protection from alien-pest invasions. Over the past 15 years CGAPS has provided a forum for participants to progress toward rectifying this problem in Hawai'i. Working together, CGAPS participants have:

- Formed new rapid-response teams in each county comprised of paid staff of the Invasive Species Committees and staff from partner agencies. These island-based partnerships have successfully eradicated, contained, or reduced to monitored seed-banks more than 20 occurrences of invasive pest species since 1999. ISCs continue to fill a gap in Hawai'i's rapid response capabilities by actively searching for incipient pests that may not be on official agency pest lists.
- Formed the first permanent aquatic rapid-response team in the world. Marine eradications are extremely difficult, but Hawai'i's team has eradicated an illegally released marine aquarium coralimorph.
- Obtained legislation establishing the Hawai'i Invasive Species Council (HISC), which provides cabinet-level action and coordination on invasive-species management goals for the State.
- Created a program through HISC that funds research into invasive-species impacts and develops new management tools.
- Obtained from the 2007 and 2008 legislatures a new funding mechanism to pay for cargo inspection and associated infrastructure.

- Reduced the risk of the brown treesnake becoming established in Hawai‘i by training statewide rapid-response search teams and supporting interdiction measures.
- Developed a rapid-response plan to eradicate incursions by the Red Imported Fire Ant, *Solenopsis invicta*.
- Developed EPA-approved control techniques for coqui frogs, successfully preventing establishment on one island, eradicating wild populations from another, and severely reducing populations on two more.
- Greatly improved cooperation and planning among State and Federal agencies responsible for invasive-species prevention and management.
- Provided a successful model for other partnerships and working groups to emulate in addressing invasive-species issues. For example, there are now nine watershed partnerships that arose because landowners understand the need to protect watershed forests from invasive species.
- Significantly raised public awareness of and concern for alien-pest invasions. In 1996, only 29% of Hawai‘i’s residents had ever heard of alien invasive species, compared with over 70% in 2007. Today, 78% of residents view invasive species as a serious problem.

Despite these achievements, much remains to be done to provide Hawai‘i with consistent and effective protection from alien-pest species, and it is timely for CGAPS to revisit and re-evaluate Hawai‘i’s remaining biosecurity needs. Further delay in meeting these needs leaves our islands unacceptably exposed to new invasive species and increases the costs associated with containment and damage, including harm to Hawai‘i’s economy, natural resources, and the health and lifestyle of its residents. Several damaging invasions since 1995, such as coqui frogs, ohia rust, giant salvinia, nettle caterpillars, and *Erythrina* gall wasps, make this need abundantly clear.

This document identifies ten general features that together would create a comprehensive biosecurity system to protect Hawai‘i’ from invasive pests. For each of these features, we provide CGAPS members’ vision of what is required for successful protection, identify those gaps that remain in providing that protection, itemize key actions needed to fill the identified gaps, and identify lead agencies to work on these key actions. Removing these gaps will continue to be challenging and it will require sustained political, industrial, and community support. CGAPS presents this document as a vision of where we – in cooperation with Hawai‘i’s political leaders, managers, and citizens – need to focus our energies in the next several years so as to meet the state’s remaining biosecurity needs. Given current economic troubles, not all of these goals may be achievable in the short term, but several will be. CGAPS members have identified the following actions as their target goals for the next three years (2010-2013).*

1. BORDER PROTECTION

Vision: Hawai‘i has an effective biosecurity system that is adequately funded and staffed to prevent alien-pest species from entering the state, regardless of origin or import pathway.

Problem statement

Four agencies are responsible for inspection of goods arriving in Hawai‘i. The Hawai‘i Department of Agriculture (HDOA) inspects domestic cargo and vessels and has a focus on pests

of concern to Hawai‘i, especially insects or plant diseases not yet known to be present in the state. The federal Department of Homeland Security/Customs and Border Protection (CBP) is responsible for inspecting commercial, private, and military vessels and aircraft and related cargo and passengers arriving from foreign locations. CBP focuses on a wide range of quarantine issues involving non-propagative plant materials (whether processed and unprocessed); wooden packing materials, timber, and products; internationally regulated commercial species under the Convention in International Trade in Endangered Species (CITES); federally listed noxious seeds and plants; soil; and pests of concern to the greater U.S., such as pests of mainland forests and agriculture. U.S. Department of Agriculture/Animal and Plant Health Inspection Service (APHIS) inspects propagative plant material, provides identification services for arriving plants and pests, conducts pest risk assessments, trains CBP personnel, conducts permitting and pre-clearance inspections for products originating in foreign countries, and maintains a pest database that, again, has a focus on pests of wide concern across the U.S. The United States Fish and Wildlife Service (USFWS) inspects arriving wildlife products, enforces the injurious wildlife provisions of the Lacey Act, and prosecutes CITES violations.

Pests of quarantine concern for Hawai‘i may be intercepted at Hawaiian ports by federal agents but not always acted on by them because they are not regulated under federal mandates, which are generally focused on pests that threaten the U.S. as a whole. Hence, federal protection against species of concern to Hawai‘i has historically been limited. Hawai‘i needs better coordination between Federal and State inspection programs to ensure that species of concern to Hawai‘i are detected and intercepted regardless of cargo origin or which agency discovers a pest.

In addition, mail is an avenue of smuggling of invasive species into Hawai‘i. Although Federal agents inspect Hawai‘i’s mail bound for the U.S. mainland under a special program to protect the U.S. mainland, a reciprocal program to protect Hawai‘i from pests in mail originating on the mainland is lacking. Because mail remains uninspected, the full extent of the threat posed by this pathway is unknown. Because changing or getting special Federal inspection rules for Hawai‘i requires Congressional assistance, this issue is further detailed in Point 7 below.

Lastly, pests can be smuggled into the state on arriving passengers and baggage. This pathway is sufficiently unique that it is treated separately under Point 2 below.

Needs

- *Joint federal/state inspection and quarantine facilities for ports on each island.* This is an absolute need for the main ports of entry, and future port improvements should not be made without providing such facilities. Joint inspection facilities provide workspaces that are conducive to finding and containing discovered pests; that share costs of facilities, technology, and information among participating agencies; and that promote the inter-agency quarantine collaboration necessary to protect Hawai‘i. The 2008 passage of the Hawai‘i Department of Agriculture’s new Biosecurity Program (HRS 150) provides the framework (although not the funding) for such joint facilities and related needs.
- *A reliable funding system for cargo inspection and quarantine.* In 2008, the Legislature passed the Inspection, Quarantine, and Eradication Service Fee and Charge (HRS 150A-5.3). This charges the importer \$0.50/1000 lbs of incoming cargo to fund HDOA’s quarantine inspection program. These funds are expected to attract federal matching dollars that can be used to provide new joint inspection facilities, improved inspection technology, and additional inspection staff. Although this law has good support from legislators, it is in jeopardy of being weakened, changed, or repealed.

- *A program to inspect First Class mail and parcels.* Federal statutory authority and funding are needed for such a program.
- *Treatment and destruction facilities for intercepted pest at every port.*
- *A more stringent system for inspecting arriving passengers and baggage.* (See Point 2).
- *Reinstatement of the State canine inspection program.* This program provides a final line of defense in keeping brown treesnakes from arriving in Hawai‘i.
- *Implementation of HDOA’s Biosecurity Plan.*

Immediate Actions:

- Expedite planning and construction of joint-agency inspection facilities at ports of entry and ensure that inspection facilities are included in HDOT’s master plans and phasing documents for airports and seaports. (HDOA, USFWS, USDA APHIS, CBP, CGAPS, ISCs)
- Improve pest-detection and identification skills for personnel inspecting foreign passengers and cargo. (CBP, USDA APHIS)
- Secure appropriate State statutory authorities providing enforcement abilities and penalties for failure to pay required inspection fees. (TNC, CGAPS)
- Ensure HDOA gains access to cargo manifests. (HDOA PQ)
- Support reinstatement of State canine inspection program in Legislature. (TNC)
- Formalize pest-risk committees. (CBP)
- Implement a cooperative agreement between USDA/APHIS, HDOA, DHS/CBP, and USFWS to design an overarching pest-prevention strategy for Hawai‘i. (CGAPS)

2. SMUGGLING OF PESTS

Vision: Smuggling of invasive pest species will be treated as a serious offense by State and Federal agencies, and the risk of new species arriving illegally will be greatly reduced.

Problem statement

The illegal entry of plants and animals into Hawai‘i represents a major source of new alien species that have high potential to be invasive. Smuggling remains relatively simple and safe to effect because enforcement tools that would deter these illegal introductions are limited. For example, effective barriers to prevent smuggling at ports of entry are lacking. And articles that arrive via priority mail (as well as in sea and air cargo) may not be subject to inspection due to inadequate enforcement authorities. State and Federal laws sometimes allow for the imposition of significant fines or imprisonment, but prosecution is typically lacking, primarily because of inadequate authorities for enforcement personnel. Stiff penalties that might serve a deterrent function are rarely sought by prosecutors or imposed by judges in those rare instances when cases are brought to court.

Needs:

- *An educational program informing legal professionals about the societal harm caused by smuggled invasive pest species.* This is needed to ensure that smuggling of alien biota is prosecuted as a serious crime, which has rarely been done in the past.

- *Ensuring that maximum penalties for smuggling are imposed.* The publicity gained from such cases may help to serve as a deterrent to others thinking of engaging in the same activity.
- *Improved enforcement tools to detect smugglers at ports.* Providing a single point of exit at airports where all arriving baggage and hand-carried items are subject to inspection will provide a credible deterrent to smuggling.
- *A program to inspect First Class mail and parcels.* (See Point 1).

Immediate Actions:

- Establish a program to educate legal professionals within the judiciary system about the dangers posed by illegal entry of plants, animals, and microorganisms to the agriculture, public safety, environment, and natural resources of Hawai‘i. (CGAPS, HDOA, USFWS)
- Publicize prosecuted cases to increase the perception and awareness of the general public that invasive species affect everyone in the State. (CGAPS, HDOA, USFWS)

3. IMPORTATION OF INVASIVE PLANTS

Vision: Hawai‘i will be protected from importation of new invasive plants.

Problem statement

Hawai‘i’s laws prohibit the importation of all animals unless they are specifically placed on a list of allowable species. This same precautionary measure is not used for plants, any of which are instead allowed importation if shipped from domestic ports. The exception being plants on the Restricted Plants List, which may not be imported or which require a special permit if allowed for research. If not specifically prohibited, current Federal regulations allow plants to be imported from international ports with some restrictions. The Federal Noxious Weed list includes few of the many known invasive plants, and plants in general do not require a weed-risk assessment prior to importation from international ports; however, the USDA is in the process of drafting new rules to include a Weed Risk Assessment for newly imported plants. There are more than 250,000 species of plants in the world, and an estimated 10% of those will become invasive if planted in Hawai‘i. Hawai‘i is already overwhelmed trying to manage 100–200 invasive plant species and cannot bear the burden of thousands more. Hawai‘i must institute a proactive, comprehensive risk-management procedure for reviewing plant imports before they are allowed into the state.

With the passage of Act 40 in 2008, Hawai‘i now has the legal authority to restrict the entry of invasive plants when shipped from domestic ports. However, those same plants would not be restricted if shipped from a foreign port unless they were also federally restricted (see Point 7 below). Importation of amounts of seeds and plants purchased through websites appears to be an important new pathway for the introduction of invasive plants, and this pathway remains unregulated and of uncertain magnitude.

Needs

- *A proactive, comprehensive risk-management procedure for reviewing proposed plant imports before they are allowed into the state.* A weed-risk-assessment system has been

shown to be functional within Hawai‘i and easily applied. It has been successfully used in other jurisdictions.

- *HDOA in-house botanical expertise to identify plant species and propagative parts.* This is needed for State regulation to be meaningful and effective.
- *Commercial and public adoption of risk-assessment recommendations.*

Immediate Actions

- Obtain funding to provide interim botanical expertise for HDOA. (TNC)
- Ensure continued funding for weed-risk-assessment technicians. (DLNR, USFWS, USFS)
- Create a user-friendly mechanism to publicly share weed-risk-assessment findings. (CGAPS)
- Work with plant industries and relevant agencies to produce a list of additions to the Restricted Plants List. (CGAPS, ISCs, USFWS, USFS, HDOA)
- Explore the utility of using a web crawler to monitor listed noxious weeds for sale via the internet. (DLNR, USDA APHIS)

4. BROWN TREESNAKE

Vision: The risk of brown treesnakes arriving and becoming established in Hawai‘i is eliminated.

Problem statement

The brown treesnake was introduced to Guam as a stowaway in military cargo after World War II, and its population exploded when it encountered abundant food and an absence of predators and diseases. The brown treesnake caused the extinction of 9 of Guam’s 13 native forest birds. Snakebites cause hundreds of emergency-room visits on Guam, with infants constituting a large proportion of these cases. The brown treesnake causes power outages, and costs to Guam’s power grid have exceeded \$4.5 million per year. Establishment of the brown treesnake in Hawai‘i could cost the state’s economy from \$28–405 million annually. In Hawai‘i, eight brown treesnakes have been found, all associated with the movement of civilian and military arrivals from Guam. Many more snakes would have stowed away in cargo from Guam without the interdiction program on Guam operated by USDA/Wildlife Services since 1994. Currently, this program employs more than 60 individuals.

Department of Defense facilities on Guam are undergoing significant expansion, which will create a substantial increase in air and sea traffic to other sites in the Pacific and to the U.S. mainland. Recent estimates are that the Marine Corps realignment on Guam alone will exceed \$15 billion. Population densities of brown treesnakes on Guam remain very high, and accidental shipment of snakes off-island correspondingly remains a high risk. This risk will increase with the added commercial and military transportation leaving Guam due to the planned military buildup, yet inspection of outbound conveyance remains merely voluntary. It is of critical importance that brown-treesnake interdiction programs have the capacity and tools to effectively eliminate snakes from shipments leaving Guam and that inspection of outbound cargo and conveyances be mandatory. Furthermore, reduction of brown-treesnake populations on Guam is necessary to reduce the risk of accidental transport to other jurisdictions via shipping activities.

Lastly, the ability to interdict any brown treesnakes that might arrive in Hawai‘i remains hampered by the loss of HDOA’s canine inspection program.

Needs

- *Federal law that requires inspection of all cargo and conveyances leaving Guam for brown treesnakes.*
- *Dedicated, sufficient funding for brown-treesnake-interdiction efforts by USDA/Wildlife Services from both the military and civilian sectors.*
- *Development of techniques to severely suppress snake populations on Guam island-wide. This will require dedicated, long-term funding and will reduce the risk of snakes entering transportation networks.*
- *Adequately funded port-of-entry inspection and quarantine measures in Hawai‘i, including reinstatement of the canine inspection program.*
- *Development of more effective tools for snake interdiction and detection of low-density snake populations. These are essential to prevent introduction of snakes to new localities and to eradicate transported snakes before they can establish additional populations.*
- *Continued Guam-based training for brown-treesnake rapid-response teams. This will provide training for new personnel and refresher courses for those previously trained.*

Immediate Actions

- Support implementation of HDOA Biosecurity program and funding. (CGAPS)
- Support reauthorization of the Brown Treesnake Control and Eradication Act of 2004 to require dedicated funding for, and inspection of, all cargo and conveyances leaving Guam. (USFWS, CGAPS, TNC)
- Support Congressional appropriations for the reauthorized Act. (TNC, CGAPS)
- Work to achieve, through the NEPA and regulatory processes, improved brown-treesnake interdiction programs that adequately cover the Guam military expansion. (USFWS, CGAPS, TNC)

5. AQUATIC INVASIVES

Vision: Hawai‘i will have an effective biosecurity system that prevents aquatic invasive species from entering the state and spreading.

Problem statement

Recent surveys by the Bishop Museum’s Hawai‘i Biological Survey have documented nearly 350 new marine and brackish-water species in Hawai‘i. Most of these were accidental introductions via ballast water, ballast sediments, or hull fouling. Hawai‘i’s first administrative rules to help reduce the risk of species introduction via ballast water went into effect in 2007, although they do not apply to all vessels that carry ballast nor is technology available to ensure optimal protection from all ballast-water species. All military vessels are exempt from State ballast-water rules, although there are military protocols for reducing risk via ballast. On a national level, the Environmental Protection Agency is advancing the National Pollutant Discharge Elimination System that could help regulate ballast procedures for a wider array of exempt vessels, but rules are not yet in place. There are no rules or procedures regulating hull

fouling for commercial vessels or private craft. Hawai'i is currently working with stakeholders to voluntarily implement best-management practices and to address high-risk vessels and other structures on a case-by-case basis, but protection from vectors of marine invasives remains spotty.

Hawai'i's limited freshwater ecosystems suffer greatly from invasive species, most of which stem from the aquarium trade, aquaculture, and fish-stocking programs. Scientific studies suggest significant ecological impacts from some of these species, but their management has been limited.

Needs

- *State authority and capacity to protect against hull fouling.* A successful program will require effective technology, sufficient staff, reporting requirements, compliance verification, and enforcement procedures for all incoming vessels. These would include limiting inwater the cleaning of vessels within Hawai'i's waters.
- *Development of a State system to verify ballast-water exchange or sterilization for all incoming vessels.*
- *Reduced risk of aquaculture species as potential invasive species.*
- *Reduced release and spread of aquarium species.*
- *A Weed Risk Assessment system for macroalgae.*
- *Application of standard tools used for the control of aquatic invasive species in freshwater ecosystems in Hawai'i.*
- *Development and registration of new control methods for aquatic invasive species.*

Immediate Actions

- Ask DLNR to create a permanent position to coordinate ballast-water and hull-fouling work. (CGAPS)
- Adopt best-management strategies for ballast water and hull fouling using a policy of zero tolerance for aquatic invasive species and 100 % inspection of vessels, similar to the model program implemented in the Papahānaumokuākea Marine National Monument. In the main Hawaiian islands, identify and address incoming and interisland vessels that are a high risk for aquatic invasive-species introductions. (DAR)
- Draft and adopt regulations to prevent hull fouling on arriving vessels. (DAR)
- Help implement in Hawai'i Habitatitude's education campaign to reduce aquatic releases. (DAR, CGAPS, ISCs)
- Implement priorities from the State Aquatic Invasive Species Management Plan. (DAR, USFWS, HDOA)

6. INTERISLAND SPREAD OF PESTS

Vision: Each island will be protected from alien pests present on other islands.

Problem statement

Inter-island spread of invasive species remains virtually unregulated. The Hawai'i Department of Agriculture conducts visual inspection of potted plants and propagative plant parts, but does not inspect all fruits, cut flowers, foliage, seeds, or animals. Other invasive pests

move in non-agricultural commodities or are deliberately transported by travelers; both of these go uninspected. Some pests may be vectored via the movement of heavy equipment, which is unregulated. Even under the best inspection regime, some pests are extremely difficult to detect. Some pests, such as the little fire ant, nettle caterpillar, and coqui frog are the focus of active, expensive control programs on some islands while they continue to be spread between islands. There are no regulatory sanctions for the negligent transport of invasive species.

Needs

- *An efficient and comprehensive inter-island inspection system.* The 2008 passage of the Biosecurity Program provides HDOA the ability to require detailed manifests of inter-island cargo. Protecting the funding for this action (see Point 1 above) will allow HDOA to better identify which inter-island shipments require inspection.
- *Routine risk assessments for inter-island movement of pests present on one or a few islands.* Part of these assessments should include development of risk-mitigation procedures and rapid-response measures in the event of spread.
- *Screening of materials carried by passengers or shipped on vessels or aircraft.*
- *A regulatory mechanism to impose economic sanctions for negligent transport of targeted pest species.*
- *Development and implementation of treatment facilities at each port.* These are needed to destroy intercepted pests.
- *Federal assistance to enforce state interisland quarantine regulations.*

Immediate Actions

- Develop risk-assessment and risk-management strategies for inter-island introduction pathways. (HDOA, ISCs, USFS)
- Support planning and construction of quarantine treatment facilities to reduce risk of interisland pest movement. (TNC)
- Implement actions to reduce pests at points of production in Hawai'i that complements the existing program at certified nurseries. (HDOA)
- Create a working group to explore regulatory options for negligent transport of pests. (MISC)

7. ADDRESS FEDERAL LAWS THAT EXPOSE HAWAI'I TO UNNECESSARY RISK

Vision: Hawai'i will reduce the risk posed by federal laws or agreements that do not protect Hawai'i.

Problem statement

Hawai'i's unique biosecurity needs are not recognized by federal import regulations, which do not address many species that could be pests in Hawai'i. In particular, Hawai'i's pest concerns are minimized when evaluated on a nationwide basis under USDA's commodity risk assessments. The narrow range of pests covered by federal risk assessments and laws does not adequately cover the breadth of pests of concern to Hawai'i. Although federal inspectors at Hawaiian ports may flag for State attention pest species that are not on federal pest lists, they are not mandated to do so, and State inspectors are not always immediately available for referral.

Interstate commerce provides the pathway for invasive species and commodities infested with non-federal quarantine pests to enter Hawai‘i.

Furthermore, Hawai‘i can make good, restrictive laws that can then be pre-empted by federal regulations covering foreign and inter-state commerce. It is possible for USDA to grant Hawai‘i protective exemptions under the Special Local Needs Rule, when clear and comprehensive arguments for both agricultural and conservation issues are provided; however, this exemption procedure operates on a case-by-case basis and is extremely time-consuming to satisfy. Hence, that avenue provides minimal protection against the large diversity of foreign pests that threaten Hawai‘i.

Pest vertebrates are regulated by USFWS under the Lacey Act as injurious wildlife. However, a limited number of species (~40) is listed under this provision, the listing process is extremely cumbersome, and the law has been shown to be ineffective at preventing invasive-vertebrate introductions even within its limited purview.

Appeals have been made to federal agencies and to Hawai‘i’s Congressional delegates to recognize and respond to Hawai‘i’s unique biogeographic position and vulnerability, but action to meet these biosecurity needs has been limited.

Needs

- *A comprehensive national policy to protect Hawai‘i from pests arriving via domestic pathways. This protection needs to cover both intentional importation and accidental introduction through commodities and conveyances.*
- *A joint federal-state inspection program for cargo, conveyances, and passengers with the mandate to search for both federally listed and state-listed pests. This should be as robust as the pre-departure and foreign-import inspection programs currently in operation.*
- *The burden of proof must be placed on the importer to show that a proposed importation is not a biosecurity risk.*
- *Trade agreements that provide special biosecurity protections for Hawai‘i.*
- *Policy from the Federal Government that Hawai‘i needs special biosecurity protection at the federal level.*
- *Revision of Federal regulations related to foreign importation and interstate movement of pest vertebrates to provide a proactive, precautionary approach to excluding invasive vertebrates from the U.S.*

Immediate Actions

- Harmonize State and Federal quarantine pest lists. (HDOA, USDA APHIS, CGAPS)
- Request from the United States Forest Service (USFS) a forest-pest risk assessment to complement the HDOA pathway risk analysis. (DOFAW)
- Write a white paper that summarizes environmental values most urgently in need of protection and the key gaps in authorities and implementation that limit that protection. (CGAPS, USGS BRD, USFWS)
- Provide comments on Federal quarantine rules for importation of propagative materials (Q37), emphasizing the need to protect Hawai‘i’s ecologically dominant plant species. (CGAPS, ISCs, TNC)

- Utilize USDA's Special Local Needs and Official Control procedure to apply for special Federal protection from a pest of particular concern to Hawai'i. This will test the effectiveness of the system with a demonstration project. (OISC, HDOA)
- Develop the scientific case and risk assessment for a permanent rule restricting *Myrtaceae* imports to prevent introduction of additional strains of *Puccinia psidii* (ohia rust) so as to establish a precedent for adding to the State Restricted Plants List. (HDOA, TNC, CGAPS, USFS)
- Support efforts to revise the Lacey Act Injurious Wildlife section. (CGAPS, USFWS, ISCs, HISC)
- Request separate consideration for Hawai'i in risk assessments from USDA/APHIS. (CGAPS, ISCs, HISC, USFWS)

8. EARLY WARNING FOR PESTS NOT PRESENT IN HAWAII

Vision: Hawai'i's early-warning system will identify threatening pests in nearby jurisdictions and effectively prevent their entry.

Problem statement

Modern information technology allows for proactive identification of a variety of invasive pests that are not yet present in Hawai'i but may be actively invading similar habitats nearby. Identifying likely invaders and their potential modes of introduction can help inspectors prioritize high-risk commodities or high-risk ports for pre-entry treatment or priority screening, improving our chances of excluding new pests.

The USDA/APHIS Offshore Pest Information System (OPIS) sends to USDA/PPQ, CBP, USFS and HDOA subscribers confidential alerts about plant pests (invertebrates and pathogens) and animal diseases in foreign countries that may affect the United States. The North American Plant Protection Organization's (NAPPO) Phytosanitary Alert System provides (at <http://www.pestalert.org>) public pest information from official pest reports and from unofficial alerts. However, the OPIS reporting system lacks dedicated staffing in the Pacific. In response to the number of invasive species entering Florida via Caribbean islands, USDA/APHIS, CBP, and other interested parties formed the Caribbean Initiative to support robust information sharing among partners and to detect, control, and eradicate pest incursions in the Caribbean prior to their arrival in the U.S. A similar cohesive, collaborative program for the Pacific would be desirable, but does not yet exist. A coordinator to implement such a plan would be needed.

Monitoring of changing fads in the ornamental plant and pet industries could help alert early detection specialists to new, potentially invasive species that may enter Hawai'i's market. In addition, internet sales of seeds and insect species are rising in popularity. Even for regulated species it is difficult for agencies to monitor internet sales and to inspect mail or freight-forwarded packages (see Point 1 above). However, reviewing plant and pet websites and alerting early detection specialists to new species or popular trends could improve our ability to prevent their arrival in Hawai'i or to detect them here sooner.

Needs

- *A Pacific Initiative, similar in scope to the successful Caribbean Initiative, is needed for Hawai'i.* This program would focus on reciprocal pathways to protect Hawai'i, other

Pacific islands, and the U. S. mainland from pests present in one or more of those regions. This initiative would establish communications between existing pest networks worldwide and allow Hawai‘i-based inspection agencies to apply appropriate prevention, port-inspection, and early detection measures to prevent additional invasions.

- *An early warning specialist position to identify potential new invaders and their probable mode of arrival.*
- *An improved communication protocol for sharing early warning alerts among relevant agencies.* Decisions on the risks or benefits of action or inaction to prevent pests need to be shared across a wider array of agencies and decision makers.
- *A coordinated, periodic effort to update pests of concern on the OPIS watch list.* At a minimum this would involve personnel from USDA/APHIS, USFS, HDOA, and DLNR.

Immediate Actions

- Develop a plan for creating the above-described specialist position. (USDA APHIS, HDOA, USFS, DOFAW)
- Advocate for creation of a Pacific Initiative patterned after the Caribbean Initiative. (CGAPS, TNC, USFS, USDA APHIS)
- Use PestNet, PILN and similar networks to communicate pests of concern, and include in this effort vertebrate and aquatic pests that are not covered by OPIS or NAPPO alerts.
- Convene a multi-agency meeting to establish a list of pests of concern that should be communicated to OPIS. (USDA APHIS, DLNR, HDOA, UH/CTAHR)

9. EARLY DETECTION AND RAPID RESPONSE

Vision: Hawai‘i will effectively detect new incursions of pest species and launch rapid-response measures while these species are still controllable or eradicable.

Problem statement

No pest-prevention system is perfect, so not all pests can be kept out of Hawai‘i. When prevention fails, the next most cost-effective means of protecting Hawai‘i is to implement a rigorous early detection program for new incursions and rapidly eradicate pests detected. Although HDOA and USDA/APHIS conduct surveillance activities around ports and some other high-risk locations such as nurseries, landscape projects, and botanical gardens for insects, weeds, and plant disease pests. Hawai‘i’s Invasive Species Committees conduct early detection for invasive plants and control a variety of incipient pests, but their operations are fairly small, and the number of targeted species is correspondingly limited. Current early detection and response efforts are largely species-specific, could be better coordinated between agencies, and funding for these efforts is primarily via soft money. When new pests arrive, they often spread widely before control actions can be taken because targeted funding for early detection and rapid response is limited. Hawai‘i has little readily available funds for rapid response to new pests, even for pests known to be spreading elsewhere that are expected to arrive soon in Hawai‘i.

Needs

- *A dedicated invasive-species emergency rapid-response fund similar to the Hurricane Relief Fund.* Availability of such funds will allow for immediate response to new pests

as detected, thereby avoiding delays in gaining legislative authorization of new appropriations for each new pest.

- *Expanded surveillance to detect a wider variety of pests.* Surveillance areas should include harbor waters, zoos, aquariums, aquaculture operations, non-traditional nurseries and botanical gardens, and other facilities that import high-risk cargo or species.
- *Creation and regular updating of rapid-response plans for different types of pests.* This will clarify agency roles and response requirements and ensure readiness for newly arriving pests.
- *A statewide resource document for emergency response to new pests.*
- *State authority to implement and enforce quarantine for newly discovered pests.*
- *Updated State Plant Health Emergency Plan to address non-agriculture pests.*

Immediate Actions

- Hold a workshop with all key players to clarify agency and non-agency roles for emergency responses to new pests, and to identify current pest-detection programs, limitations, reporting needs, communication channels (from new pest detection to appropriate responders), and coordination needs. (MISC, OISC)
- Develop and implement an early warning and surveillance system in urban areas. (DOFAW, USFS)
- Update State Plant Health Emergency Plan. (USDA APHIS, USFS, HDOA, OISC)
- Develop a means to share the USDA plant-import database with early detection and rapid-response specialists. (USDA APHIS, OISC)

10. CAPACITY TO CONTROL WIDESPREAD PESTS

Vision: Hawai‘i will have the capacity to control the widespread pests that cause unacceptable harm to its economy and ecosystems.

Problem statement

Capacity to mitigate the effects of widespread pests is limited because of the large number already causing damage in Hawai‘i, the larger number established but still expanding their ranges, and the limited resources available to respond to these species. Control is largely limited to a few species that cause the greatest economic or environmental damages to landowners, whether public or private. Comprehensive control of an array of invasive pests, or management to reduce disturbance regimes that favor certain invasive species, remains of limited scope.

We expect existing programs will continue to exclude or control invasive species in limited, high-priority areas. However, some invasive species require additional control methods to limit harm across vast landscapes and aquatic areas, and other species require the development of new control techniques.

Needs

- *Improved State and Federal capacity for biocontrol research and testing.* Current facilities accommodate research to control just a handful of invasive pests (such as *Miconia* and wiliwili gall wasp), and each of these projects may last four to ten years. In

addition, the Hawai'i Department of Agriculture facility is in need of upgrading and understaffed.

- *Apply in Hawai'i methods and technologies successfully developed for similar work elsewhere.* This will improve cost-effectiveness, implement a wider array of measures, and help control a broader array of pest species.
- *Develop new control techniques for non-traditional invasive species.* A wide variety of invasive species in Hawai'i – such as sessile marine organisms, reptiles, and soil invertebrates – lack effective control techniques and require their development.
- *Greater institutional and public support for control programs.* Proactive educational efforts are needed to avert unnecessary public opposition to needed control programs.
- *Public acceptance of biocontrol as a valid and useful control technique.*

Immediate Actions

- Review public information on biocontrol in Hawai'i, and design and produce additional outreach materials. (HDOA PPC, HISC)
- Reinvigorate the biocontrol working group to produce a statewide strategic plan. (USFS, HDOA PPC, TNC)
- Support capacity-building for rodent control in conservation areas in Hawai'i. (USFWS, US Army, DLNR)
- Develop and test new control techniques for aquatic invasive species so as to improve control options for aquatic infestations. (DAR, USFWS)

** CGAPS Steering Committee and members participate in CGAPS inasmuch as the actions and views presented are allowable and do not include prohibited practices for government employees or the appearance of such practices.*

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