



Gaps in Hawai`i's Biosecurity Against Invasive Pest Species

Every day invasive alien pests are introduced via legal and illegal means. Some are brought purposefully while others are unintentional introductions. Pathways of pest introduction include transport via aircraft and air cargo, ship hulls, ballast water and ship cargo, hand-carry/luggage, mail, forestry activities, horticulture trade, aquaculture, pet trade, botanical gardens and agriculture experiment stations.

Biosecurity: Lines of Defense

There are three major lines of defense to protect Hawai`i, with the most cost-effective measures being prevention of new pests.

Prevention

Pre-Entry: International trade agreements and other federal mechanisms that prohibit pests from leaving ports en route to Hawai`i.

Port-of-Entry: Inspection and quarantine to prevent pests from crossing Hawai`i's borders.

Early Detection and Rapid Response

Monitoring for new pests to aid in early detection, followed by rapid response to eradicate pests that slip through border defenses.

On-Going Control

Chemical, mechanical, and biological control efforts to limit spread and damage caused by established pests.

Statistics to Consider

Of 107 of the worst invasive plants threatening native species, 90% were purposeful introductions for crops, forestry, ornamental, or other uses, the remaining 10% were accidental introductions (Smith 1985).

When HDOA conducted inspection on 100% of incoming air cargo at Kahului Airport, they found an average of one new insect species every day, including a new species of mosquito (Kahului Pest Risk Assessment, 2002).

There were 236 credible snake sightings between 1990 and 2000. 63 were either captured roaming free or found dead, 74 were surrendered pets and 99 were never recovered. Only 22 were unintentional hitchhikers--137 were smuggled in (Kraus and Cravalho, 2001).

Gaps in Hawai`i's Biosecurity

Hawai`i's present biosecurity system lacks the proper funding to support both current efforts and an expanded system that adequately incorporates prevention, early detection, rapid response, and on-going control. Developing a comprehensive biosecurity system for Hawai`i needs to be the key goal of the HISC. Below is a list of items related to biosecurity in Hawai`i that need to be addressed in a short- and long-term timeframe.

Overarching Issues

Leadership and commitment are needed within all sectors of Hawai`i State Government to adequately address biosecurity issues related to invasive alien species. **Note:** need for the involvement of department chairs and directors lead to the establishment of the HISC; however, the level of commitment of certain departments remains inadequate.

There are no programs in the State budget devoted exclusively to invasive alien species. **Note:** true when this document was presented in 2003, this lead to the request for invasive species funding for the HISC, although \$2 million has been redirected from the NARS fund to invasives, which needs to be addressed in future—this effort needs new money.

Most costs of invasive alien species are borne by society at large. **Note:** the past two sessions we tried to pass a bill to enable HDOA to charge a fee-for-services on inspected items requiring quarantine measures (such as fumigation, destruction or storage due to pests). Also, plant industry continues to promote plants that are subjects of active eradication projects by NPS, TNC and others—there is no fiscal responsibility to ensure that the plants promoted by industry are believed to be non-invasive at time of sale.

Prevention Issues

International trade agreements and other federal programs do not protect Hawai`i from the full range of pests. Federal trade agreements pre-empt state laws, allowing import of known pests despite the State of Hawai`i's formal objections. **Note:** some trade agreements, such as the recent agreement allowing orchid importation direct from Taiwan specifically prohibits HDOA inspection/quarantine, despite known pests in the growing medium.

Much of the traffic and cargo entering Hawai`i currently goes uninspected—passenger, cargo, ballast water, military and postal, including materials known to be significant sources of new alien pests. The State of Hawai`i doesn't have adequate funds to do quarantine at ports of entry. **Note:** this is very true, but they also have little authority to inspect non-agricultural items and items that aren't specifically identified as a risk. Therefore, HDOA can inspect nursery and agricultural items, but little else unless it has been identified as a probable risk for importation of a known species (as is the case with Red Imported Fire Ants). That's why the bill to identify more specifically the contents of containers is so important in this session.

Inter-island spread of invasive alien species is a major, largely unregulated problem. **Note:** HDOA inspection has not stopped the spread of little fire ants, coqui, greenhouse frogs, miconia seeds traveling on hapuu, plant diseases and a host of other pests. There

needs to be other action besides visual inspection, such as hot-water treatment of all nursery materials.

Penalties are inadequately enforced for illegal introductions of invasive alien species. State and federal laws allow for significant fines and imprisonment, but stiff penalties are rarely imposed. **Note:** even when a snake is reported to be kept as a pet at a residence, HDOA PQ staff must arrange special permission to investigate. HDOA does not have or want an enforcement arm, which could help enforce illegal species rules, noxious weed rules and other laws. DOCARE is not tasked with invasive species issues.

There are opportunities to get federal law enforcement agencies to enforce Hawai`i State Law related to invasive alien species.

Jurisdictional and organizational problems delay responses to new alien pest species infestations, allowing pests to become established or to spread beyond control. **Note:** Agency jurisdictions and mandates are unclear to most—the responsibility for controlling coqui early-on provides a good example. Jurisdiction and action is mostly based on the location of the pest, not the type of pest (for coqui, HDOA is responsible for nurseries, DOFAW is responsible for natural areas. Early on, to stop the spread of coqui, HDOA would have had to shut down the movement of plants around the state, but didn't because that goes against their main mandate, which is to promote Hawaii agriculture.

The current prohibited species review process for plants is complex and cumbersome, allowing known invasive plants to be imported, sold, or spread to new areas. **Note:** Opposing mandates within HDOA seem to prevent the addition of some invasive ornamentals to the list. In addition, there is no set schedule for updating the list when new information on invasive plants are received—this might be a good project to tackle, but I doubt that HDOA will approve. It is a costly process to change the list, as it requires staff time and arranging meetings for public comment. Finally, some invasive plants that continue to be sold invade natural areas, which is DOFAW's responsibility, yet they have no authority to add plants to the list.

Early Detection & Rapid Response Issues

There are few programs to conduct monitoring for new pests around ports of entry. State and Federal management agencies in Hawai`i do not have the capability to conduct early detection in the field at the scale that is needed. **Note:** mosquitoes and red imported fire ants are the two exceptions. There is no monitoring to see what additional pests might be arriving.

Agencies do not have the capability to conduct rapid response to newly arrived pests. **Note:** few agencies even address the possibility for a rapid response to anything but a bioterrorism organism/health threat.

Efforts relating to monitoring and early eradication need to be formalized between agencies and adequately supported. **Note:** it appears that no agency is tasked with monitoring new arrivals and controlling them when they are deemed invasive. This is why Bishop Museum has the HBS and the ISCs have taken on this role—but the lines of communication and the level of support for these services needs to be formalized and supported.

Issues Regarding Ongoing Control of Established Pests

Funding for the control of broadly dispersed pests that impact natural resources, agriculture, and human health is grossly under-funded. There is a need to adequately assess and provide the proper resources to insure these efforts are effective. **Note:** this seems obvious to us, but most people don't know what is being done, what ISN'T being done, and what the consequences are. They think that "the government" is taking care of things, so it isn't surprising that they blame government when something new arrives, or when coqui ate the Big Island. They have no idea how underfunded agencies are, and they don't realize that our biosecurity laws are partly to blame.

There is a need to review and revise regulations related to techniques used for invasive alien species control, including biocontrol techniques.