

## **HAWAI'I INVASIVE SPECIES COUNCIL**

### **Strategy 2008-2013**

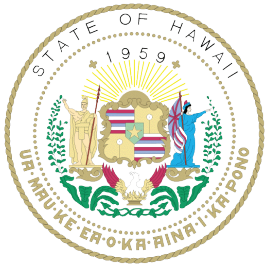


*The stinging nettle caterpillar, Darna pallivitta, packs a painful sting when it comes in contact with the skin. More serious symptoms may occur in some cases. Infestations impact local nurseries as this invasive species defoliates ornamental nursery stock and has been found feeding on more than 45 species of plants, including palm and coffee. HISC and the Dept. of Agriculture ask the public and nurseries to report sightings of this invasive species to the state's Pest Hotline at 643-PEST (643-7378).*

*—photo courtesy HDOA*

**Prepared by the Hawai'i Invasive Species Council**

**June 2008**



# HAWAI'I INVASIVE SPECIES COUNCIL

## Strategy 2008-2013

*The Hawai'i Invasive Species Council (the Council or HISC) was established for the special purpose of providing policy level direction, coordination, and planning among state departments, federal agencies, and international and local initiatives for the control and eradication of harmful invasive species infestations throughout the State [of Hawaii] and for preventing the introduction of other invasive species that may be potentially harmful HRS 194-2 (a).*

For administrative purposes the Council, or HISC, was placed within the State of Hawai'i Department of Land and Natural Resources. The HISC's purpose and other duties are outlined in statute and are to be achieved via an interagency Council whose voting members include the chairpersons of the Department of Agriculture (HDOA), and the Department of Land and Natural Resources (DLNR). Voting members include the directors of the Departments of Health (DOH); Business, Economic Development and Tourism (DBEDT); Transportation (DOT); and the president of the University of Hawai'i (UH).

Ex-officio members include four state senators and four representatives. Invited participants include non-profits, mayors from each county, and members of federal agencies, including USDA, DOI and DOD. HISC meetings are to take place no less than twice a year HRS 194-2 (d).

The Council oversees and supports the implementation of this strategic plan. It preferentially supports new and innovative projects, and those that target gaps in capacity, rather than the simple augmentation of existing invasive species management capacity. The Council may choose to make recommendations about organizational and resource shortfalls and the need to augment existing capacity.

Following its legal mandate an interim strategic plan was approved by the Council in 2003. It was to guide the HISC toward meeting its responsibilities.

This document updates the previously approved interim plan (2003), emphasizes legal mandates in HRS 194, and draws on changes made by the working groups.

It reprioritizes work areas based on work already accomplished and seeks to address current issues, highlighting the connection among priorities for Prevention, Response and Control, Research and Technology, and Outreach.

For each of these priorities a working group has been formed and has been more or less active since 2004. Working groups are guided by the Council and inform it of current issues and concerns, set budgets, plan projects and make recommendations with the aim of improving invasive species management. The HISC accomplishes this via

public meetings that meet Sunshine Law requirements. Working groups also follow a similar format.

The implementation of projects funded by the Council are carried out by member agencies that may, via agreement, work with collaborators in the public and private sectors.



*The red imported fire ant, *Solenopsis invicta*, sets siege on any creature in its path with a powerful burning sting that gives this invasive species its name. Omnivorous, it also attacks plants, feeding on young saplings, seeds, buds and fruit. This invasive species will probably find its way to Hawai'i via shipped cargo from California, according to a study by Hawai'i researchers.*

—artwork courtesy of Hawaiian Ecosystems at Risk

## **How to get an issue considered by the Council or its Working Groups**

Working group chairs and other members may make recommendations to the Council via submittals, but the inclusion of these items in the Council's agenda requires approval of the co-chairs.

The submittal should be in the form of a concise letter addressed to the HISC, and contain a subject, background, justification and recommendations.

Anyone attending a working group meeting, be they member agency staff, collaborators or the public, may suggest issues for consideration by the Council. Whether the working group chair presents this to the Council via a submittal will depend on the working group reaching agreement and approval of the submittal by the HISC co-chairs.

Anyone may present their ideas, express their concerns or give their support to the Council under the public comment section of the HISC agenda.

### **Investing to protect Hawai'i from invasive species: budget planning process guidelines**

*Increasing capacity and innovation in all project areas in accordance with the strategy*

The Council and its working groups will oversee and support the implementation of this strategic plan. It will preferentially support innovative projects and those that target gaps in capacity, rather than the simple augmentation of existing invasive species management capacity.

The breakdown of the budget between the Council's four program areas, including Prevention, Response and Control, Research and Technology, and Outreach, is flexible in so far as it allows the goals of the strategic plan to be met in the most effective manner. Unless circumstances demand an exception it is expected that some funds will be directed toward priority projects in each of the main program areas. Exceptions might include outbreaks of new invasive species, or large changes in the budget allocated by the legislature for HISC invasive species efforts.

#### *The transition from HISC funds*

The longterm goal is that successful innovative projects will eventually be adopted by lead agencies within their budgets. This was demonstrated by the Department of Agriculture's biosecurity initiative which was initially supported via HISC funds and later was adopted and directly funded by the legislature.

### **The budget setting process**

1. The HISC will meet and working group chairs will present current issues and past successes for consideration. The Council will give guidance to the working groups in regards to operational priorities for the year. (Late in second quarter of state fiscal year)
2. All working group chairs work with members to solicit project proposals, and to schedule a meeting to consider the proposals of agencies, collaborators and the public. (Third quarter of state fiscal year)
3. Working group chairs make prioritized budget recommendations with alternatives to the Resources Working Group and the chairs of all the working groups attend the meeting to work out overall priorities and balance the budget. In this context the Resources Working Group will carefully consider the impact of funding one area of work or project over another, especially if redirecting funds will cause capacity losses or previously supported work to become untenable. (Fourth quarter of state fiscal year)
4. The chair of the Resources Working Group presents the budget recommendation to the HISC and the Council reviews and approves the budget. (First month of fiscal year or first month after budget is set)

## Conventions used in this document

The use of italics for bulleted points under goals means that the particular goal is mandated in HRS 194, the law that describes HISC duties.

Boxes that surround text indicate areas that are of particular high priority, though changing circumstances could make other goals more important.

### Hawai'i Invasive Species Council

Voting members: DLNR, HDOA, DOH, DBEDT, DOH, UH

Non-voting members: One Representative and one Senator from each County

Invited: Federal agencies, Non-government organizations, Counties

Hawai'i Invasive Species Council Goals: Coordinate invasive species management and control programs for County, State, Federal and private sector entities by developing a structure for cooperators to work together to share resources and responsibilities to address specific invasive species issues.

- *Maintain a broad overview of the invasive species problem in the State* HRS 194-2 (a) (1).
- Provide support and direction to HISC working groups.
- *Advise the governor and legislature on budgetary and other issues regarding invasive species* HRS 194-2 (a) (10).
- *Review state agency mandates and commercial interests that sometimes call for the maintenance of potentially destructive alien species as resources for sport hunting, aesthetic resources or other values* HRS 194-2 (a) (13).
- Provide annual reports on budgetary and other related issues to the legislature twenty days prior to each regular session.
- *Identify and prioritize each lead agency's organizational and resource shortfalls with respect to invasive species* HRS 194-2 (a) (3).

- *After consulting with appropriate state agencies, create and implement a plan that includes the prevention, early detection, rapid response, control, enforcement, and education of the public with respect to invasive species, as well as fashion a mission statement articulating the State's position against invasive species* HRS 194-2 (a) (4).
- *Designate the Department of Agriculture, Health, or Land and Natural Resources as the lead agency for each function of invasive species control, including prevention, rapid response, eradication, enforcement, and education* HRS 194-2 (a) (7).
- Develop a comprehensive and timely invasive species listing process for use by all state agencies.
- *May adopt rules pursuant to chapter 194-7.*

### HISC Measures of Effectiveness

- Advice and recommendations to governor or legislature.
- Reports to the legislature regarding invasive species.
- Approval of annual budget.
- Meeting reports (including working groups).
- Attendance at meetings of member and collaborating agencies.
- Agency adoption of innovative projects, rules and policies against invasive species.
- Number of new invasive species detected at ports of entry.
- Names and numbers of priority pests threatening Hawai'i.
- Working group goals achieved.
- Results from a public awareness survey.



## Resources

**(Chair of working group: DBEDT)**

**(Participating HISC members: DLNR, DOA, DOT, DOH, UH, Counties)**

**Resources Goals:** (1) Determine levels of resources spent on invasive species (2) Determine resource needs statewide (3) Seek public and private sector funding for invasive species management and control programs to support priority programs; and (4) Share knowledge and expertise.

### HISC Resources Working Group Tasks

- Annually *identify all state, federal and other monies expended for the purposes of managing the invasive species problem in the State* HRS 194-2 (a) 8.
- Promote the transition of projects from HISC to agency funds.
- Identify all county, state, federal and private funds *available to fight invasive species and advise and assist state departments to acquire these funds* HRS 194-2 (a) 9.
- Develop dedicated funding sources for invasive species prevention and control programs (e.g., Island Invasive Species Committees, biocontrol).
- Every five years, or prior to a revision of this plan, *identify and prioritize each lead agency's organizational and resource shortfalls with respect to invasive species* HRS 194-2 (a) (3).
- Together with the chairs of the other working groups, review their budget proposals and recommend a balanced budget to the Council.
- *Support county-sponsored activities to address invasive species* HRS 194-2 (a) (12).

### Resources Measures of Effectiveness

- Reports to the legislature regarding invasive species spending and resource shortfalls.
- Approval of annual budget for recommendation to the Council.
- Attendance at meetings of member and collaborating agencies.
- Agency adoption of innovative projects initiated through HISC.



*The coqui frog (Eleutherodactylus coqui) infests residential communities, resorts, nurseries, parks and lowland forest habitats throughout Hawai'i. —photo by Hans Sin*

## Prevention

**Chair of working group: DOA**

**(Participating HISC members: DLNR, DOT, DOH, UH, DCCA, DOD, Counties)**

**Goals:** (1) Review risks of pest/invasive species entry into the State; and (2) implement measures and improve Hawai'i's capacity to prevent the entry of new pests/invasive species with shared resources and shared responsibilities of all agencies.

*Preventing the introduction of alien invasive species is the cheapest, most effective and most preferred option and is a high priority.*

## Prevention Objectives

- Identify and seek to manage possible vectors and pathways of terrestrial and aquatic invasive species into and throughout Hawai‘i. Important pathways for introductions include: legal and illegal national and international trade, tourism, shipping, ballast water, fisheries, agriculture, construction projects, ground and air transport, forestry, horticulture, landscaping, pet trade and aquaculture.
- Prevent the movement of known invasive species between islands.
- Identify terrestrial and aquatic species that are at high risk of being introduced to the State or being spread within the State.
- Minimize aquatic invasive species introductions focusing on the highest risk pathways, e.g., hull fouling.
- Put in place legal controls and a risk assessment system for intentional introductions. These should only take place with authorization from the relevant agency or authority. Authorization should require comprehensive evaluations based on economic, human health, standard of living and biodiversity considerations (ecosystem, species, genome).
- *Review the structure of fines and penalties to ensure maximum deterrence for invasive species-related crimes HRS 194-2 (a) (14).*
- *Support county-sponsored activities to address invasive species HRS 194-2 (a) (12).*
- *Incorporate and expand upon the Department of Agriculture’s Weed Risk Assessment protocol to the extent appropriate for the Council’s invasive species prevention, control and eradication efforts HRS 194-2 (a) (16).*
- Develop collaborative industry guidelines and codes of conduct, which minimize or eliminate unintentional introductions.
- Develop a comprehensive “approved planting list” to ensure that invasive species are not being planted in State projects or by any state contractors, e.g., screened by the Weed Risk Assessment protocol.
- *Coordinate and promote the State’s position with respect to federal issues, including:*
  - *Quarantine preemption;*
  - *International trade agreements that ignore the problem of invasive species in Hawai‘i;*
  - *First class mail inspection prohibition;*
  - *Whether quarantine of domestic pests arriving from the mainland should be provided by the federal government;*
  - *Coordinating efforts with federal agencies to maximize resources and reduce or eliminate system gaps and leaks, including deputizing the United States Department of Agriculture’s plant protection and quarantine inspectors to enforce Hawai‘i laws;*
  - *Promoting the amendment of federal laws as necessary, including the Lacey Act Amendments of 1981, Title 16 United States Code sections 3371-3378; Public Law 97-79, and laws related to inspection of domestic airline passengers, baggage, and cargo.*

## Prevention Measures of Effectiveness

- Number of new invasive species detected at ports of entry.
- Current measures in place to prevent invasive species arrival and establishment.
- Names and numbers of priority pests threatening Hawai‘i.
- Current status of priority pests for which there is an established prevention program.

## Response and Control Established Pests

**Chair of working group: DLNR**

**(Participating HISC members: DOA, DOT, DOH, DHHL, DOD, Counties)**

**Goals:** (1) Review priorities for the control of pests already present or recently arrived in the state; (2) implement cost effective eradication and control programs against incipient and established pests with shared resources and shared responsibilities of all agencies.

*Where it is achievable, eradication is the best management option for dealing with alien invasive species when prevention has failed. It is much more cost effective financially than ongoing control, and better for the environment. Technological improvements are increasing the number of situations where eradication is possible, especially on islands. One of the most important improvements has been in “Early Detection.” This means that we consistently and systematically survey for newly establishing species, identify these species correctly and use mapping and data management to identify where all known individuals are located. Successful eradication is only possible with support from early detection that includes taxonomic experts, agency and public awareness and documentation to ensure accountability.*

### **Response & Control Established Pests Objectives:**

- Implement improvements to capacity for detection, eradication and control, e.g., increased staffing, training and infrastructure to respond to both terrestrial and aquatic invasive species.
- Detect and immediately target high priority invasive species that are candidates for eradication in all or part of their range, e.g., coqui frogs on O‘ahu and Kaua‘i.
- *Include and coordinate with the counties to increase resources and funding and to address county-sponsored activities that involve invasive species HRS 194-2 (12), e.g., the county-based invasive species committees, mayors’ offices.*
- Eliminate known invasive plant species from public projects and contracts.
- *For those species that do arrive in Hawai‘i, identify and record all introduced and invasive species present in the State HRS 194-2 (a) (6).*
- Develop and implement a decision-making protocol for targeting species for eradication and or control efforts.
- Review and update DLNR’s injurious wildlife list and DOA’s Noxious Weed List as needed in a timely manner.
- *Identify and prioritize each lead agency’s organizational and resource shortfalls with respect to invasive species HRS 194-2 (a) (3).*
- Determine what species are invasive to trigger access provisions onto private lands.
- Review and revise regulations governing the introduction of biological control agents.
- Support development of management plans for widespread vertebrate pests.
- Develop capacity on each island to conduct effective coordinated rapid response to all snake sightings.
- Establish clear agency responsibilities and criteria for rapid response activities to ensure coordinated efforts.
- *The appropriate state agencies shall collaborate with the counties and communities to develop and implement a systematic approach to reduce and control coqui frog infestations on public lands that are near or adjacent to communities, and shall provide annual reports on the progress made in achieving this objective HRS 194-2 (a) (4).*

### **Response and Control Measures of Effectiveness**

- Number of species detected and evaluated for feasibility of eradication.
- Number and area of priority invasive species eradicated and/or controlled.
- Prioritization processes identified and in place.
- Implementation of the priority response and control actions of the Aquatic Invasive Species, West Nile Virus, coqui frog, and red imported fire ant plans.
- Number and names of species, habitats, ecosystems, agricultural, and managed areas protected because of control efforts.

## Research and Technology

### Chair of working group: UH

(Participating HISC members: DOA, DOT, DOH, DLNR, DBEDT)

If funds are available the working group will oversee a request for proposals (RFP) process to achieve the goals outlined in this document. This strategic plan indicates the types of research that are likely to be supported. The working group may make recommendations about specific projects that may be implemented by member agencies or outside providers, as well as provide scientific advice to the Council to address current issues.

**Research and Technology Goals:** 1) Encourage researchers to address the problems created by invasive species. 2) Encourage the development and implementation of new technology to prevent or control the establishment of invasive species. 3) Develop effective, science-based management approaches to control invasive species. 4) Effectively communicate and apply the results of research to the field. 5) Promote interagency collaboration and stimulate new partnerships.

The Research and Applied Technology Working Group will work with HISC support staff to oversee the RFP process and ensure that research and technology development will contribute to the effective management of invasive species in Hawai'i. Support will be given to:

- The development and implementation of new and transferable technology (chemical, mechanical, biological) for large-scale treatment of priority invasive species (e.g., marine invasive algae, coqui frogs, ants, etc).
- Expanding off-site exploration and screening for high impact biocontrol agents targeting established invasive species (e.g. Miconia) already present in the State.
- Projects containing plans to effectively share with stakeholders any useful information, methods and practical tools that would assist in the management of invasive species in Hawai'i.
- Increasing the knowledge base of target organisms and gaining an understanding of the economic impacts of invasive species, as well as the effectiveness of geographical information system tools and associated database management.
- Developing new tools for effective early detection and monitoring of terrestrial and aquatic invasive species.
- Providing taxonomic services for identification of terrestrial and aquatic invasive species in a timely manner.
- The implementation of assessment protocols not only for determining risks of introduction via various pathways but also for determining the invasiveness of taxa (screening) in conjunction with supporting and encouraging efforts to enforce or obtain voluntary compliance from local industry groups, government agencies and the public where necessary.
- Developing technology with the shipping industry for on-board treatment of ballast water and surface treatment to minimize hull fouling.
- Determination of the ecosystem impacts of invaders and restoration following removal of invaders.
- Addressing emerging and current issues (e.g., biofuels, outbreaks of new species, coqui frog management).
- Innovative projects unlikely to get funds from other sources.
- Projects that emphasize open interaction and communication with stakeholders throughout implementation.
- Projects that effectively leverage other non-HISC resources.

### Research and Applied Technology Measures of Effectiveness

It is important that proposals include measures of effectiveness so that the reviewers can judge the likelihood of project success. Outcomes or anticipated impacts of the research must be addressed. Some examples of measures of effectiveness are suggested:

- Number of new technologies developed and adopted for invasive species management.
- Number of biological control agents tested and introduced, as well as the effectiveness of control they provide.
- New technology developed for prevention and control of invasive marine species.
- Number of taxa screened using standardized science-based risk assessment systems.



## Public Outreach

**Chair of working group: DOT**

**(Participating HISC members: DLNR, DOH, DOA, UH, DCCA, DHHL, Counties)**

**Public Outreach Goal:** Educate the public and private sector about invasive species to positively affect perception, action and funding for control and prevention.

### Outreach Objectives:

- Foster awareness and concern in the general public about invasive species.
- Increase public and private support.
- Seek measurable changes in behavior.

Promote the following one sentence messages to the public:

- ☐ Protect Hawai'i.
- ☐ Report a Pest to 643-PEST (7378).
- ☐ Don't Dump Aquarium Pets or Plants.
- ☐ Don't Plant a Pest.
- ☐ Don't Pack a Pest.
- ☐ Report Dead Birds to 211.
- ☐ Don't Sell or Buy a Pest.
- ☐ Keep Pets Contained.
- ☐ Buy Local.
- ☐ Plant Native Species (promote the value of biodiversity).

Priority Audiences include:

- Decision makers with the authority and means to offer support and/or enact regulations.
- Special Interest Groups that play an important role in introducing, promoting, or observing invasive species, e.g., transportation agencies and companies, plant and landscape trades.
- Students, who are the next generation of decision makers.
- The General Public, in order to raise awareness of, and concern for, invasive species issues.



*Rats, Hawai'i's first invasive species, spread human diseases and ravage native plants and animals on even the most remote ecosystems in Hawai'i. Offshore islands, many of them Hawai'i State Seabird Sanctuaries, host thousands of magnificent seabirds. Rats attack nesting seabirds, their eggs and their fledglings, and feed on young plants and on seeds of rare and vulnerable native plants. Outreach efforts attempt to educate the public concerning eradication efforts. —photo by Jack Jeffrey*

### Outreach Measures of Effectiveness

- ☐ Agency adoption of rules and policies against invasive species.
- ☐ Adoption of Codes of Conduct by businesses.
- ☐ Track number of print and broadcast media mentions.
- ☐ Number of "hits" on invasive species web page.
- ☐ Number of callers on pest hotline.
- ☐ Number of education materials produced.
- ☐ Number of people reached through talks and displays.
- ☐ Results from a public awareness survey.
- ☐ Number of invasive species educational programs and community events implemented by staff.
- ☐ Number of volunteers recruited and/or referred to invasive species projects.



## Hawai'i Invasive Species Council Support

DLNR may assign staff to administer the council's budget, its programmed activities and coordinate interagency meetings. The administering agency has to play an important role in the implementation of this strategy and the coordination of activities.

**Hawai'i Invasive Species Council Support Goal:** Provide administrative and technical support for the Hawai'i Invasive Species Council and its working groups.

### HISC Support Objectives and Timeframe:

- *Advise, consult and coordinate invasive species-related efforts with and among the departments of agriculture, land and natural resources, health, transportation, University of Hawai'i, and other state, federal and private entities HRS 194-2 (a) (2).*
- *Coordinate efforts and issues with the Federal Invasive Species Council, the National Invasive Species Management Plan, the Hawai'i Aquatic Invasive Species Advisory Council, Alien Aquatic Organism Task Force and any new proposed federal legislation.*
- *Coordinate with the Counties in the fight against invasive species and support county-sponsored activities that involve invasive species HRS 194-2 (a) (12).*
- *Develop a web-based mapping and communication system for partnership programs and agencies that will provide information on the distribution, on-going control work, and status of key invasive species.*
- *Support the Resources Working Group in its efforts to identify all federal and private funds available to the State to fight invasive species and advise and assist state departments to acquire these funds.*
- *Designate invasive vertebrate pests.*
- *Review state agency mandates and commercial interests that sometimes call for the maintenance of potentially destructive alien species as resources for sport hunting, aesthetic resources, or other values HRS 194-2 (a) (13).*
- *Review the structure of fines and penalties to ensure maximum deterrence for invasive species-related crimes HRS 194-2 (a) (14) and suggest appropriate legislation to improve the State's administration of invasive species programs and policies HRS 194-2 (a) (15).*
- *Provide annual reports on budgetary and other related issues to the legislature twenty days prior to each regular session HRS 194 (a) (11).*



*The multimillion dollar honey, queen bee and pollination industry in Hawai'i is threatened by the varroa mite. Approximately 99.5% of all monies generated by Hawai'i bees takes place on the Big Island and its approximately 8,000 hives. In early April 2007, an O'ahu beekeeper reported the first infestation in the state. On August 22, 2008, trapping surveillance detected varroa mites near Hilo Bay.*  
—photo courtesy HDOA

### HISC Support Measures of Effectiveness

- Active involvement of state agencies with the HISC.
- Reports in support of HISC objectives.
- Numbers of entities participating in HISC working groups.
- Successful administration of all HISC monies.
- Increased non-state funds for invasive species programs in Hawai'i.