INVASIVE SPECIES

The Hawaii Invasive Species Council (HISC) fosters and organizes coordinated approaches among various local, state, federal and international agencies and organizations for the prevention and control of invasive species. Its mission is to stop the introduction and spread of invasive species in Hawaii.

A COSTLY CRISIS

Hawaii is in the midst of a growing invasive species crisis affecting the Islands' endangered plants and animals, overall environmental and human health, and the viability of its tourism and agriculture-based economy. Invasive pests already cost the state millions of dollars of crop losses, the extinction of native species, the destruction of native forests, and the spread of disease.

EARLY EFFORTS TAKE ROOT

Formal efforts to create a comprehensive invasive species program began with the Coordinating Group on Alien Pest Species (CGAPS), formed in 1995, consisting of senior staff in numerous federal, state, county, and private entities actively involved in invasive species prevention, control, research, and public outreach programs. Yet leadership and coordination at the highest levels of government were missing.

THE GREATEST THREAT

The 2003 State Legislature authorized the creation of the Council and stated "the silent invasion of Hawaii by alien invasive species is the single greatest threat to Hawaii's economy, natural environment, and the health and lifestyle of Hawaii's people and visitors."

Hawaii is one of the four states in the Nation that has recognized the need for coordination among all state agencies, at a cabinet level, that have responsibility to control invasive species on the ground, as well as regulate or promote the pathways in which invasive species can gain access into the state.

INSTITUTIONAL FRAMEWORK

The creation of the Council, whose members are the chairs or directors of the Departments of Land and Natural Resources (DLNR), Agriculture (DOA), Business, Economic Development, and Tourism (DBEDT), Health (DOH), Transportation (DOT) and University of Hawaii (UH) and other Department Directors, such as Hawaiian Home Lands (DHHL) Commerce and Consumer Affairs (DCCA) and Defense (DOD), now provide the institutional framework for leadership and coordination for a statewide invasive species prevention and control program.

INVASIVE SPECIES:

PREVENTION

BUDGET = $1,340,000, 33.5% of total funding

2004-2005 PROJECT GOALS

- Support for quarantine inspectors
- Contract specialists to identify new insects, plants and diseases
- Fund needed infrastructure to lead invasive species prevention efforts

PREVENTION PROJECTS:

Hawaii Department of Agriculture (HDOA)
$943,000

Accomplishments

- Evaluated private shipping databases to identify the routes that pose the highest risk of introducing invasive species, especially the Red Imported Fire Ant into Hawaii.
- Met with quarantine staff from Australia, Taiwan and New Zealand who are also dealing with Red Imported Fire Ant prevention programs.
- Preliminary results from research inspections March 20-June 4, 2005 (not all data included):
  Over 30,000 parcels were inspected
  - 266 Insect Interceptions; 38 species not known to occur in Hawaii (NKO); most from domestic origins
  - 124 Disease Interceptions, 43 NKO, most from foreign origins
  - 540 parcels Refused Entry, Treated/ Destroyed
  - Surveyed all certified nurseries on the Big Island, Maui and Oahu for coqui frogs

U.S. Department of Agriculture/Wildlife Services (WS)
$110,000

Accomplishments

- Time budgets for inspection were created identifying potential time saving changes in the inspection protocol to develop with shippers.
- Staffing has been identified as inadequate to carry

out a full cargo certification process for commercial cargo departing Guam for Hawaii.

Department of Land and Natural Resources/ Division Aquatic Resources
$86,000

Accomplishments

- Established working relationship with the National Ballast Water Information Clearinghouse.
- Developed four educational handouts for the shipping industry on ballast water and hull fouling, administrative rules for ballast water that are being proposed by DAR, snowflake coral and the Atlantic barnacle.
- Acquired limited information on vessel arrival from HDOT-HAR.

Department of Health (DOH)
$201,000

Accomplishments

- Both maintained and expanded the network of mosquito traps at ports to monitor for new mosquito species as well as emerging diseases.
- Developed the equipment to initiate a ground-based response to a disease outbreak of WNV.
  - Developed the equipment and training to map trapping and control operations and enter and share data across the state for rapid analysis.

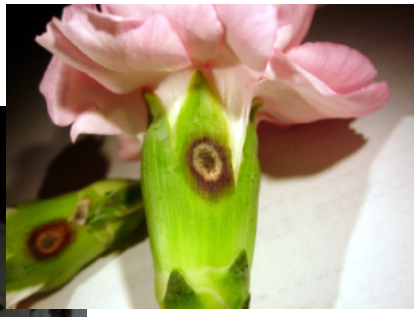
CURRENT BUDGET
Building up Prevention capabilities (38% of total funding)

$755,000 to the Hawaii Department of Agriculture
Continuation of the port risk assessments, expansion of the Invicta Database and other tracking tools, and the hiring of assistants to increase the efficiency of the inspection process during the port risk assessments.

$455,135 to the Hawaii Department of Health
Develop the capacity of the Department to prevent the establishment of West Nile Virus by providing supplies for the Vector Control branch and improving the capacity of the State Laboratory.

$186,000 to the U.S. Department of Agriculture
Wildlife Services to expand on the feasibility study for certifying all outbound civilian cargo departing Guam and arriving in Hawaii as having been inspected for Brown Treesnakes.

$120,400 to the Hawaii Department of Land and Natural Resources
To contract for a coordinator to reduce the risk invasive ant species such as the Red Imported Fire Ant establishing in Hawaii and to prevent the interisland spread of the Little Fire Ant, and to establish a contract to continue the screening of plants grown and used commercially in Hawaii via the locally developed Weed Risk Assessment.



Budget Request for the Hawaii Invasive Species Council (HISC)

The Administration's invasive species budget initiative calls for the expenditure of $4,000,000 in state funds for State Fiscal Year 2005 to provide support for both the operations of the Hawaii Invasive Species Council (HISC) and its cooperating partners to develop, and implement a partnership of Federal, State, County, and private entities for a comprehensive state-wide invasive species prevention, detection and control program.

State dollars will be matched (1:1) by non-state dollars or equivalent in-kind services making this an overall effort of at least $8 million. Redistributing the percentages allocated to each budget area as compared to the budget proposed in the Interim State of Hawaii Strategic Plan for Invasive Species Prevention, Control, Research and Public Outreach builds on the lessons learned in the first year of the HISC budget initiative.

Although this budget request is under the Department of Land and Natural Resources, it includes and involves programs and projects through nine different departments, the four counties and federal and private partners. The funding will not replace any of the existing state, private, or federal funding, but will complement and expand on existing programs.

The overall goals of the Administration's budget request for the Hawaii Invasive Species Council are to:

- 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;

- Increase inspection and other "prevention" capabilities to prevent high-risk invasive species and diseases (e.g., brown tree snake, West Nile Virus, etc.) from entry into the State, or to specific islands where they are not currently found;

- Accelerate the control of priority invasive species already present in the state (e.g. Miconia, coqui frogs, marine algae, etc.) by developing a more effective state-wide early detection and rapid response capability with the Island Invasive Species Committee and other response and control efforts;

- Leverage increased involvement and expertise from private and academic sectors to assure that Hawaii has access to the most up-to-date, effective and efficient research and technology tools to combat invasive species; and

- Implement a coordinated statewide invasive species public outreach program with shared resources and responsibilities among cooperating entities.

This budget request is aligned with the Hawaii Invasive Species Council Strategic Plan and the HISC working group structures to assure not only compatibility with existing efforts but also accountability with specific measures of effectiveness. Lead HISC members will administer specific program components and HISC working groups will assure funding specifications address priority statewide issues and fit into HISC members' and cooperating partners' operational programs.
***RECOMMENDATION:** Thtt the Hawaii Invasive Species Council support the Administrative budget request as part of the State of Hawaii's Strategic Plan for Invasive Species Prevention, Control, Research, and Public Outreach.*

Fiscal Year 2006 Budget			**Fiscal Year 2005 Budget**				**Interim Plan Budget**	
Proposed in FY06		In Mil	% of HISC	In Mil	%HISC	%Change	Wkg. Grp.	In Mil
Prevention	**1,516,535**	**1.52**	**38%**	**1.34**	**34%**	**13%**	**35%**	**1.40**
DO	755,000		19%					
DOH	455,135		11%					
USDA WS	186,000		5%					
DLNR	120,400		3%					
Response & Control Total	**1,560,000**	**1.56**	**39%**	**1.70**	**43%**	**-8%**	**30%**	**1.20**
DLNR A.I.S. Team	300,000		8%					
Island ISC's	1,260,000		32%					
Research & Technology	**675,000**	**0.68**	**17%**	**0.70**	**18%**	**-4%**	**30%**	**1.20**
Contracts (DLNR)	600,000		15%					
HISC Ad. Support	75,000		2%					
Outreach								
(DLNR)	248,465	0.25	6%	0.26	7%	-4%	5%	0.20
Staff and Admin.	135,465		3%					
Outreach Projects	113,000		3%					
TOTAL	**4,000,000**	**4.00**	**100%**	**4.00**	**100%**	**0%**	**100%**	**4.00**

INVASIVE SPECIES:

RESPONSE & CONTROL

BUDGET = $1,700,000, 42.5% of total funding

2004-2005 PROJECT GOALS

Expand **Response and Control** programs to conduct invasive species detection, response and control actions on the ground as well as developing a much needed aquatic response team.

- Support the work of the Island Invasive Species Committees.
- Develop an aquatic response team to survey, monitor and respond to marine and freshwater invasive species
- Improve capability to conduct invasive species early detection and rapid response actions.

Big Island Invasive Species Committee (**BIISC**) **$420,000**

Accomplishments

- Project funding was used to hire additional field crew workers, a Geographic Information System (GIS) Specialist, and an education/outreach specialist, and to provide necessary support for these positions and the expanded operations
- The supplemental funding released in January 2005 was used to purchase supplies and citric acid to increase coqui frog control in conjunction with federal and County partners.

Maui Invasive Species Committee (MISC) **$340,000**

Accomplishments

- Expanded key county efforts to control coqui frogs and miconia,
- Five field staff were hired and an additional four temporary staff were hired with the funds that were released in January 2005.

Oahu Invasive Species Committee (OISC) **$320,000**

Accomplishments

- This year alone over 3,500 acres surveyed and 4,809 individual plants of miconia were controlled,
- Core OISC staff were increased by three positions along with the associate support services to address other top priority species especially miconia.

Kauai Invasive Species Committee (KISC) **$320,000**

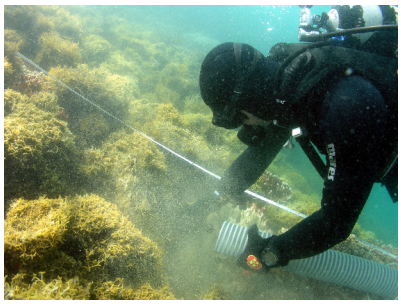
Accomplishments

- With miconia and coqui frogs are top priorities, HISC funding was used to purchase materials for all targeted work and a 200 gallon sprayer for spraying citric acid,
- Developed and began implementing a strategic plan for coqui frog eradication on Kauai.

Aquatic Invasive Species Team **$294,419**

Accomplishments

- Developed an unprecedented dedicated aquatic response team,
- Rapid survey and treatment of barges bound for the Northwest Hawaiian Islands to prevent the introduction of alien algae,
- Testing of the new algae control tool – the Super Sucker.



CURRENT BUDGET
Establishing Response and Control programs (39% of total funding)
Projects include:

Establishing Response and Control programs to conduct invasive species detection, response and control actions on the ground and in the water.
Projects include:

- $300,000 to the Department of Land and Natural Resources – Division of Aquatic Resources supervised Aquatic Invasive Species Response Team.

- $1,260,000 to the Invasive Species Committees control efforts to provide early detection and rapid response to invasive species that threaten the economy and environment of Hawaii.

  The County distribution will be as follows:

  Hawaii……...……...$403,200
  Maui…….$302,400
  City and County of Honolulu...……$277,200
  Kauai…….$277,200

INVASIVE SPECIES:

RESEARCH & TECHNOLOGY

BUDGET = $700,000, 17.5% of total funding

2004-2005 PROJECT GOALS

Establish **Research and Technology** funding for critical projects such as biological control, more effective increased survey and detection efforts, taxonomic identification, master geographical information system and associated database management as well as a matching grants program to the private and university sector for developing and applying technology for improved efficiencies in invasive species prevention and control efforts.

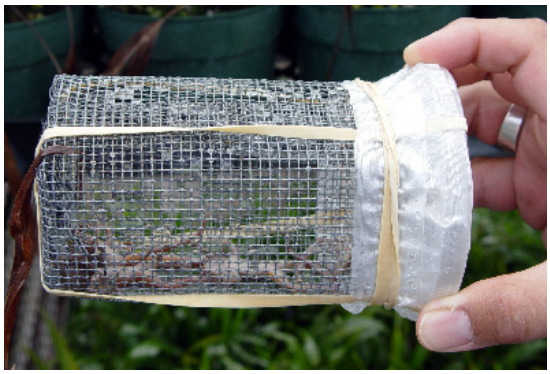
- Encourage researchers to address the problems created by alien invasive species.

- Encourage the implementation of new technology to prevent the establishment or the control of invasive species
- Develop effective, science-based management approaches to control alien invasive species.
- Effectively communicate the results of research to the field where it can be applied.
- Promote interagency collaboration and stimulate new partnerships.

Research and Technology projects budget:
Research and Technology services grants…….$599,788
HISC support……$100,212
Total…….. $700,000

CURRENT BUDGET
Enhance Research and Applied Technology Funding

Enhance Research and Applied Technology funding (17% of total funding) for HISC support functions, including the Plan Manager, and to contract for research and technology application services via a matching grant program for critical projects such as biological control, more effective increased survey and detection efforts, master geographical information system and associated database management as well as developing and applying technology for improved efficiencies in invasive species prevention and control efforts.



Project Title	Principal Investigator	Institution	Amount Awarded
Development of methods to control alien algae on Hawaii's reefs	Cynthia Hunter	University of Hawaii	$82,980
Accelerated evaluation of insects in Costa Rica and Brazil for biocontrol of *Miconia calvescens*	Tracy Johnson	USDA Forest Service (IPIF)	$78,747
Ecology of a specialized nudibranch predator (*Phyllodesmium poindimiei*) and implications for potential biocontrol of an invasive octocoral [snowflake coral], *Carijoa riisei* in Hawaii	Rob Toonen	Hawaii Institute of Marine Biology	$52,018
Identifying Sex Pheromone Components of the Nettle Caterpillar, *Darna pallivitta* (Moore), to Facilitate Detection and Pheromone Disruption Control	Eric Jang	USDA Agricultural Research Ctr., Hilo	$50,000
Community level impacts of invasive ants in Hawaiian coastal communities	Sheldon Plentovich	University of Hawaii	$47,359
Ecology and management implications of an invasive soft coral species [snowflake coral], *Carijoa riisei* in Hawaii	Rob Toonen	Hawaii Institute of Marine Biology	$40,534
Pilot Multi-Agency Early Detection Reporting System [for invasive species]	Kevin Hopkins	Pacific Aquaculture and Coastal Resources Center	$37,400
Quarantine testing for an insect for biocontrol of *Miconia calvescens*	Tracy Johnson	USDA Forest Service IPIF, Hilo	$37,275
Developing a database to provide risk analysis of reptile and amphibian introductions	Fred Kraus	Bishop Museum	$36,250
Quarantine testing for an insect for biocontrol of *Tibouchina herbacea*	Tracy Johnson	USDA Forest Service IPIF, Hilo	$28.075
Ecological consequences of the coqui frog invasion into Hawaii	Karen Beard	Utah State University	$26,800
Detecting the Veiled Chameleon (*Chamaeleo calyptratus*) on Maui: A Research Proposal to Enhance Control of an Injurious Species	David Duffy	MISC	$25,000
Thermal Treatment System [for coqui in nursery stock]	Bill Durston	Leilani Nursery, Oahu	$22,675
Identifying Chemical Attractants and Repellents to Monitor and Manage the Black Twig Borer (*Xylosandrus compactus*) in Coffee Orchards, Koa Reforestation Areas, and Threatened and Endangered Species Restoration Plantings	Nick Dudley	Hawaii Agriculture Research Ctr, Aiea	$21,500
Determination of foraging and movement patterns of Aratinga erythogenys [red-masked conure] (Aves: Psittacidae) using mist-net live capture and radio telemetry on Oahu Island, Hawaii	Kirsten Silvius	Environmental Center, UH	$10,111.95
Survey and Mapping of the New Invasive Mosquito: *Aedes japonicus japonicus* on the Island of Hawaii	Linda Larish	DOH	$2,243
Effects of fountain grass managment strategies on the demographics of a tropical dry forest plant community and on the promotion of a potential new invader	Danielle Frohlich	University of Hawaii	$820
		Total Awarded	**$599,788**

INVASIVE SPECIES:

PUBLIC OUTREACH

BUDGET = $260,000, 6.5% of total funding

2004-2005 PROJECT GOALS

- In cooperation with public and private entities, increase voluntary compliance with quarantine laws;
- Avoid accidental introductions of invasive species;
- Establish an effective pest hotline that delivers timely information to managers on the ground.

Public Outreach projects budget:

HISC Outreach Staff salary, benefits.....$102,495
Outreach supplies, projects.....$50,000
Small grant program.....$107,505

CURRENT BUDGET
Research & Applied Technology Funding
(17% of total funding)

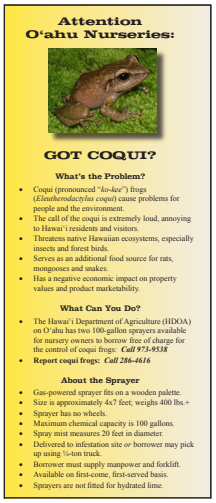
Public Outreach Program (6% of total funding) in cooperation with the public and private sector for visitors and residents to increase voluntary compliance of quarantine laws, avoid accidental introductions of invasive species, and establishing an effective pest hotline reporting system that delivers timely information to managers on the ground. Three new staff have been hired to carry out these tasks and a successful small grant program includes a broad array of organizations and community groups in addition to projects developed by staff.

Outreach staff, administrative support…….$135,465
Outreach projects……..……..$113,000

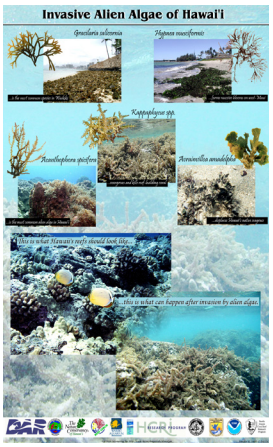
Accomplishments

- New outreach specialists hired
- Approximately 12 talks and events since March to the general public regarding invasive species
- Increased local, national and international media attention
- Immediate informational and media-related assistance provided for island-specific needs:
  - Snake sighting in Lihue: KISC outreach specialist created a flyer and posted them through the island
  - Coqui frogs in Oahu nurseries: 330 letters directly to nurseries to help with detection and eradication
  -Assist in press release distribution to local media (e.g., rust ohia, algae clean up, miconia aerial surveys)
- Updating outreach materials; purchased new display units for public events
- New website design and implementation near completion
- New statewide pest hotline and database under construciton
- Grant projects slated for completion by the end of 2005

EXAMPLES OF PUBLIC OUTREACH



Rack cards mailed to Oahu nurseries explaining coqui frog issues and announcing the availability of a mechanical sprayer to aid in eradication.

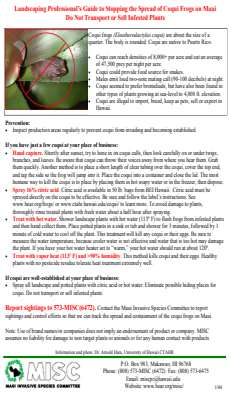


Instructional poster on invasive algae created by the AIS Team.

Miconia Display---Plant specimen from Miconia site, giving people a visual presentation of the species and the issue of seed tracking.

A new miconia rack card describes the most destructive invasive plant and where to find help in removing it.

Alien Algae Clean-up Events bring out community and student-service volunteers.



This guide helps landscape professionals to stop the spread of coqui frogs on Maui.

Display units tell the invasive species story and help educate the public at community events throughout the state.

Snake Kit---modeled after USGS, providing HISC partners with identical kits for accessible rapid response.

***Outreach event at Kawamura Farm Expo, targeting people in the landscaping, agriculture and nursery industries. KISC was interviewed on the radio and appeared in the* Garden Island News.**