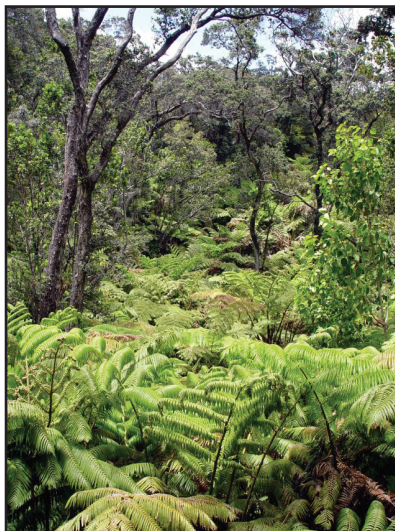


THE HAWAII INVASIVE SPECIES PROGRAM

Summary of the Report to the 24th Legislature January 2007

The 2003 State Legislature authorized the creation of the Hawaii Invasive Species Council (HISC) 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."

The HISC legislation and the statewide plan for invasive species management provide the institutional framework for leadership and coordination in acting on a statewide invasive species prevention and control program.



In March 2004, the Mayor of Hilo, Hawaii declared the coqui frog situation a state of emergency. A native to Puerto Rico, the coqui frog impacts Hawaiian ecosystems, especially native birds, and threatens the multi-million dollar floriculture and nursery industries. Its 90-decibel mating call is driving down property prices on the Big Island and it serves as a food source to unwanted rats, mongoose and, if they are introduced, snakes. Above (clockwise), a Big Island native forest; a coqui frog in the wild; and a nursery owner demonstrates his heat treatment unit, a "shower box," used to help eliminate frogs from plants.

Invasive species, such as the coqui frog, highlight the need for an integrated prevention, control, research and outreach program. Making resources available to develop effective new programs to prevent the introduction of new invasive species, detect and eradicate established species before they become widespread, and engage all agencies and committees in solutions is critical to protecting Hawaii's economy, environment and way of life.



Membership in the Hawaii Invasive Species Council is extended to the head of the following agencies or their designated representative:

Department of Agriculture
Department of Business, Economic Development, and Tourism
Department of Health
Department of Land and Natural Resources
Department of Transportation
University of Hawaii

Invited non-voting members include representatives of federal agencies, the legislature, and members of the private sector. They are asked to participate or consulted for advice and assistance.

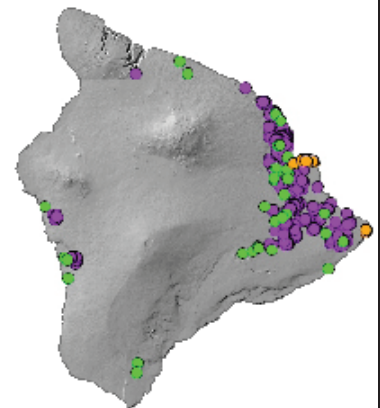
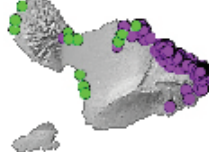
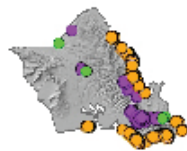
Representatives of the legislature include eight members, as follows:

- Four senators, one from each County, to be selected by the Senate President; and
- Four representatives, one from each County, to be selected by the Speaker of the House of Representatives.

THE ROLE OF THE HAWAII INVASIVE SPECIES COUNCIL

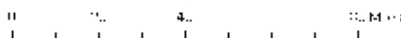
- Advises the Governor and legislature on issues regarding invasive species.
- Coordinates invasive species management and control programs.
- Increases capacity to control priority invasive species already present.
- Develops a more effective statewide early detection and rapid response capability.
- Leverages increased involvement and expertise from private and academic sectors.
- Creates capacity for research and outreach to support invasive species prevention and control.

Statewide Species Locations (Alien Algae, Coqui Frog, Miconia)



- Alien Algae
- Coqui Frog Populations
- Miconia

Aquatic Invasive Species Team
Big Island Invasive Species Committee
Kauai Invasive Species Committee
Maui Invasive Species Committee
Molokai Invasive Species Committee
Oahu Invasive Species Committee
Projection: NAD83 UTM Zone 4N meters
01/12/2007 JYF Statewide2006.mxd



HAWAII INVASIVE SPECIES PROGRAM

Key Accomplishments 2003-2005

2003 Actions

- Review of Hawaii's historical effectiveness at invasive species prevention, detection and response.
- Red Imported Fire Ant Briefing.
- Approval of a process for Council input to federal invasive species legislation.
- Approval of an initial list of invasive species based on existing departmental rules.
- Aquatic Invasive Species Management Plan.
- Working Groups established.



Snowflake coral (Carijoa riisei) is the most destructive species to infest the ocean waters of Hawaii.

2004 Actions

- The four HISC program areas established (and their corresponding HISC working groups) are:
 - **Prevention** (for pests not present in Hawaii)
 - **Response and Control** (for established pests)
 - **Research and Technology**
 - **Public Outreach**

- HISC program received initial funding of \$4 million. State dollars matched (1:1) by non-state dollars or equivalent in-kind services, an overall effort of at least \$8 million.
- HDOA staff met with quarantine experts from Australia, Taiwan and New Zealand who are also dealing with Red Imported Fire Ant prevention.



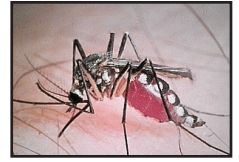
Invasive ants pose a great risk to native seabirds.

- Preliminary results from research inspections March 20-June 4, 2005:
 - Over 30,000 parcels inspected
 - 266 Insect Interceptions, 38 species not known to occur in Hawaii (NKO), most from domestic origins



OISC field crew member flies surveillance over Windward Oahu in search of miconia.

- 124 Disease Interceptions, 43 NKO, most from foreign origins
- 540 parcels Refused Entry or Treated/Destroyed



West Nile Virus is a mosquito-borne disease that can kill people and wildlife.

- Surveyed all certified nurseries on the Big Island, Maui and Oahu for coqui frogs.
- West Nile Virus added to priority species list.

2005 Actions

- Increased inspections to determine high risk pathways for invasive species entering our ports.
- Increased efforts to prevent the entry of West Nile Virus.
- Increased staff to control coqui frog, miconia, agricultural pests and other invasive species by various island Invasive Species Committees.
- Expanded the Aquatic Invasive Species Response Team.
- Educated the public about invasive species risks.
- Funded research and technology projects, including biocontrol evaluation (e.g., wiliwili-killing gall wasp), risk assessment of species likely to be introduced, and an integrated statewide reporting system to link agencies and partners working on invasive species issues.
- Brown treesnake attractant and baits developed.



Miconia is called "The plant that could destroy the Hawaiian forest."



HISC supports an increase in port inspection personnel.



Should a brown treesnake enter Hawaii and be allowed to establish a breeding colony, our island ecology, economy and lifestyle would be altered forever.

Hawaii Invasive Species Council

2006 Actions

- New legislative members were assigned and invited to join HISC:

	House	Senate
Kauai:	Hermina Morita	Gary Hooser
Oahu:	Tommy Waters	Carol Fukunaga
Maui:	Mele Carroll	Kalani English
Hawaii:	Clift Tsuji	Russell Kokubun
- Reviewed reports on spending related to the *Interim State of Hawaii Strategic Plan for Invasive Species Prevention, Control, Research and Public Outreach*.
- Approved a resolution to prevent the transport of coqui frogs to uninfested sites/islands.
- Supported the Governor's Economic Momentum Commission recommendations to fund invasive species prevention efforts via a service fee and create an approved importation list for plants.
- Supported the federal Hawaii Invasive Species Prevention Act that would provide increased federal quarantine resources to protect Hawaii from new pests.
- Approved a \$2,000,000 spending plan for Fiscal Year (FY) 2007. The new budget is half of HISC Program's budget in its first two years. It addresses the four interrelated plan components:
 - Prevention \$410,000
 - Response and Control \$1,115,000
 - **Research and Technology \$0**
 - Public Outreach \$230,000
 - HISC Support (includes Central Services fees) \$245,000

PROGRAM PROJECTS FISCAL YEARS 2006 and 2007

PREVENTION

The lead agency for the Prevention Working Group (PWG) is the Hawaii Department of Agriculture.

- DLNR led a Weed Risk Assessment (WRA) (screening) System for plants leading to the adoption of voluntary "Codes of Conduct" that limit the production and sale of invasive plants by the Kauai Landscape Industry Council and the Oahu Nursery Growers Association.
- DOH increased West Nile Virus (WNV) surveillance, analysis and response capabilities through the purchase of traps, test kits, insecticide sprayers, insecticides, staff training, and computer hardware and software.
- Advised Hawaii Superferry project on invasive species messages.
- Advised HDOTA on airport signage project regarding the risk of transporting invasive species between islands.

RESPONSE AND CONTROL

The Established Pests Working Group (EWG) oversees the Island Invasive Species Committees (ISCs) which carry out early detection surveys for invasive plants statewide. It also reviews the proposed EWG Task List. The lead agency for EWG is DLNR.

The work of ISCs on priority pests (economic, agricultural and environmental) in each county was supported along with a pilot marine response program developed by DLNR – Division of Aquatic Resources (DAR) in cooperation with federal, private and county resources.

- HISC funding was directed, according to Chapter 194, HRS, to ISCs and to DLNR's Aquatic Invasive Species Team.
- The Big Island Invasive Species Committee (BIISC) continued to coordinate efforts to suppress the State's largest infestations of miconia and coqui frogs, and purchased additional citric acid for frog control.

- The Maui Invasive Species Committee (MISC) increased its field staff in response to coqui, expanded surveys for incipient invasive species, and continued its involvement with multi-agency control of miconia. This effort surveyed over 54,000 acres for miconia and removed more than 220,000 plants.
- The Oahu Invasive Species Committee (OISC) hired a coqui frog control crew to control the Wahiawa population. It has been reduced to just a few frogs. The OISC crew also surveyed over 4,500 acres for miconia and removed almost 3,000 plants.
- The Kauai Invasive Species Committee (KISC) focused on miconia and coqui frogs. A critical issue for Kauai is support for mongoose-sighting response, as this species is not known to be established on Kauai.
- The Aquatic Invasive Species Team of divers inspected a wreck-response vessel bound for the Northwestern Hawaiian Islands. On AIS recommendation, the hull was cleaned of attached invasive species. The Team also developed a successful method to eliminate snowflake coral from the pier at Port Allen.

RESEARCH AND TECHNOLOGY

FY 2006:

- Invasive ant control methods
- Biocontrol of erythrina gall wasps
- Aquatic alien species control
- Rodenticide efficacy
- Nettle caterpillar lure
- Coqui-free certification
- Biocontrol of miconia and Himalayan blackberry
- West Nile Virus prevention
- Multi-pest exclusion fences
- Invasive species database
- Methods for implementing early detection of alien species, including a pest hotline at 643-PEST.



The beautiful nudibranch is at the center of one HISC-supported research project that aims to curb the invasive snowflake coral's destruction of Hawaii's coral reefs.



A red-tailed tropicbird chick shows the loss of one eye, likely caused by the invasive long-legged ant.

FY 2007:

No research projects were funded for FY 2007 due to budget reduction. The decision was made to retain as much on-the-ground staff as possible and reinstate the research grant program when funding is restored.

PUBLIC OUTREACH

Outreach grants and award recipients in FY 2006:

- “Habitattitude” Campaign: Do not release fish and aquatic plants – DLNR
- Invasive Species Control and Education for a Native Hawaiian Fishpond – Ao‘ao o na Loko I‘a o Maui
- Mālama i ka ‘Āina & Malama i ke Kai: Production of TV magazine vignettes for “Outside Hawaii” – UH
- Pu‘u Wa‘awa‘a Ahupua‘a Invasive Species Outreach Project – DLNR
- Weed Warriors: High-school volunteer service projects to remove weeds and frogs – Tri-Isle Resource Conservation & Development Council, Inc.
- Jumping the Fence Line: Public outreach to heighten awareness of escaped agricultural plants into the Hawaiian environment – UH
- Invasive Species Public Service Announcements (PSAs): 11 radio spots on various species and conservation topics – Imi Pono no ka ‘Āina
- Enhancing Community Capacity: Public outreach to a local community – The Pālolo Invasive Species Swat Team
- Island Invaders: Teacher/student resource material developed – Honolulu Zoo Society



Outreach Specialists educate the public through educational displays, presentations, publications, and print and broadcast media coverage.

HISC Outreach Specialists, CGAPS, and members of the Public Outreach Working Group provided in **FY 2007**:

- Educational displays for 80 community events/groups.
- Information for media coverage and logged more than 350 print and broadcast media mentions statewide.
- Production of printed flyers and other educational materials on invasive species topics, including miconia, aquatic invasive species, and coqui frogs.

NEXT STEPS FOR THE HAWAII INVASIVE SPECIES PROGRAM

As directed by the HRS 194, the HISC will change statutes, rules, and policies to bring about the effective management of invasive species statewide:

- Continue to develop new programs and adopt effective strategies to protect Hawaii from invasive species.
- Improve coordination and strategic funding to reduce the ongoing impact of coqui frogs.
- Clarify and strengthen departmental duties and functions within the legislated Invasive Species Council according to §194 of the Hawaii Revised Statutes (using policies, rules and statutes).
- Ensure that data collected by government agencies involved in invasive species management is freely available.
- Restore funding for research and applied technology.

HISC Budget Overview for FISCAL YEARS 2005-2007

	2005		2006		2007	
Working Groups	Allocated	% of funding	Allocated	% of funding	Allocated	% of funding
Prevention Subtotal	\$1,340,000	34%	\$1,516,535	38%	\$410,000	21%
DOA	\$943,000		\$755,000		\$0	
DOH	\$201,000		\$455,135		\$350,000	
USDA/APHIS/WS	\$110,000		\$186,000		\$0	
DLNR	\$86,000		\$120,400		\$60,000	
Established Pests Subtotal	\$1,700,000	43%	\$1,560,000	39%	\$1,115,000	56%
Aquatic Invasives (DLNR)	\$300,000		\$300,000		\$315,000	
Inv. Species Committees	\$1,400,000		\$1,260,000		\$800,000	
Research & Technology Subtotal	\$600,000	15%	\$600,000	15%	\$0	0%
Administration and Central Services						
Fee	\$100,000	3%	\$75,000	2%	\$245,000	12%
Public Outreach Subtotal	\$260,000	7%	\$248,465	6%	\$230,000	12%
Staff & Admin. (DLNR)	\$102,000		\$135,465		\$230,000	
Outreach Projects (DLNR)	\$158,000		\$113,000		\$0	
TOTAL	\$4,000,000	100%	\$4,000,000	100%	\$2,000,000	100%

HAWAII INVASIVE SPECIES COUNCIL PROJECT MATCH SUMMARY

Table is not comprehensive but represents direct project match for FY 2006.

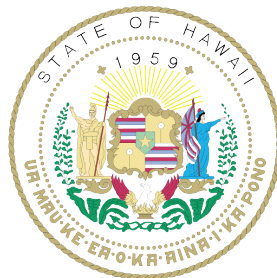
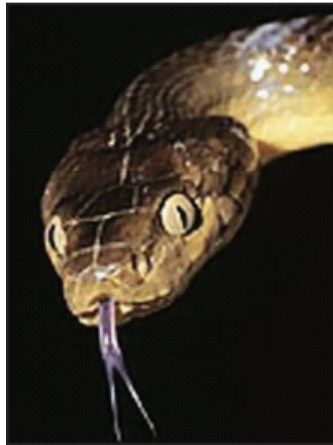
	Statewide	Hawaii	Maui	Oahu	Kauai	Total by Program
Prevention						\$2,025,542
USDA – Plant Pest Control Detection and species-specific funding to HDOA	\$260,542					
U.S. Dept. of Agriculture – Wildlife Services to HDOA for brown treesnake	\$240,000					
Department of the Interior – Office of Insular Affairs brown treesnake prevention grant	\$195,000					
Department of Defense brown treesnake interdiction	\$1,000,000					
Hawaii Coral Reef Initiative	\$330,000					

	Statewide	Hawaii	Maui	Oahu	Kauai	Total by Program
Response and Control						\$1,923,100
Department of the Interior – U.S. Geological Survey data project match	\$50,000					
USDA Forest Service funding for invasive plant management in forest lands	\$10,000	\$189,000	\$187,000	\$78,000	\$98,000	
County funds to the ISCs			\$680,000	\$50,000	\$111,000	
Department of the Interior grants to the ISCs		\$39,400	\$29,600	\$27,100	\$27,000	
National Park Service			\$200,000			
NOAA Coral Reef Management and Regional grants	\$75,000					
USDA – FWS Non-indigenous Aquatic Nuisance Prevention and Control Act	\$72,000					

	Statewide	Hawaii	Maui	Oahu	Kauai	Total by Program
Research and Technology						\$711,043
Research and Technology – Grantee Match	\$711,043					

	Statewide	Hawaii	Maui	Oahu	Kauai	Total by Program
Public Outreach						\$60,036
Public Outreach – Grantee Match	\$60,036					

Totals	\$3,003,621	\$228,400	\$1,096,600	\$155,100	\$236,000	\$4,719,721
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THE HAWAII INVASIVE SPECIES PROGRAM

Summary of the Report to the 24th Legislature

Prepared by

THE STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE

In response to Chapter 194, Hawaii Revised Statutes
and
Section 19 of Act 178, Session Laws of Hawaii 2005

Honolulu, Hawaii
January 2007