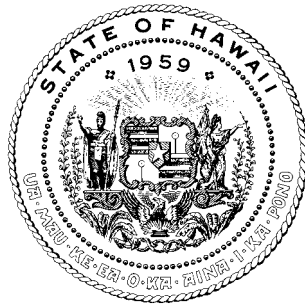


REPORT TO THE TWENTY-FOURTH LEGISLATURE

2007 REGULAR SESSION

THE HAWAII INVASIVE SPECIES PROGRAM



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  
November 2006

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## **THE HAWAII INVASIVE SPECIES PROGRAM**

### **Chapter 194, Hawaii Revised Statutes**

This report complies with Chapter 194, Hawaii Revised Statutes (HRS), and covers the actions of the Hawaii Invasive Species Council (HISC), originally established as a temporary entity by Act 85, Session Laws of Hawaii 2003, to provide statutory authority to continue its special purpose to foster and organize coordinated approaches among various executive departments, federal agencies, and international and local initiatives for the prevention and control of invasive species; and to affirm the objective of the State to stop the introduction and spread of invasive species in Hawaii.

### **BACKGROUND**

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.

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 was missing.

The 2003 State Legislature authorized the creation of 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." 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.

HISC members include 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 the President of the University of Hawaii (UH). Additionally Directors from the Departments of Hawaiian Home Lands (DHHL) Commerce and Consumer Affairs (DCCA) and Defense (DOD) have been invited to participate. HISC provides the institutional framework for leadership and coordination for a statewide invasive species prevention and control program.

In 2006, the inclusion of eight members from the Legislature, to serve in an ex officio and non-voting advisory capacity provided a stronger link to the Counties. One member from each body, four senators and four representatives will represent their respective county and help guide the decisions of HISC.

## Summary of HISC Actions

Over the past calendar year, HISC has met twice to review and approve actions related to fulfilling the tasks identified by Chapter 194, HRS, and now detailed in the *Interim State of Hawaii Strategic Plan for Invasive Species Prevention, Control, Research and Public Outreach*. Eight new members representing the Legislature have been authorized and appointed by the Senate President and the Speaker of the House of Representatives. Following this summary and background section, the minutes from all meetings held are included, which detail the actions and discussion by HISC.

### Key actions by HISC:

- New legislative members have been assigned and invited to join HISC;

	<u>House</u>	<u>Senate</u>
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* by all new and participating projects and approved working group summaries.
- Approved a resolution to prevent the transport of coqui frogs.
- 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 spending plan for Fiscal Year (FY) 2007 for a budget of \$2,000,000, half that provided for the first two years of the HISC Program, that addresses the four interrelated plan components:
  - Prevention \$410,000;
  - Response and Control \$1,115,000;
  - Research and Technology \$0;
  - Public Outreach \$230,000; and
  - HISC Support (includes Central Services fees) \$245,000and incorporates the lessons learned from the two years of the HISC Program (see following Legislative Report for Act 178 – 2006 and 2007 budgets).

## Summary of Key Program Activities

Accomplishments of the four HISC Program areas--Prevention, Response and Control, Research and Technology, and Public Outreach as accomplished by the working groups established by the HISC Plan—are summarized below.

### Prevention

The lead agency for the Prevention Working Group (PWG) is DOA.

- Funded Projects: Managed by DOA, DOH, United States Department of Agriculture Fish and Wildlife Services (USDA-FWS), and DLNR.
- DOA continued their risk assessments with intensive inspections of incoming cargo at the Honolulu International Airport and maritime ports.
- PWG reviewed results from the first year of the USDA-FWS' Brown Treesnake Certification Feasibility Study on Guam. The certification process focuses on Hawaii-bound surface cargo only. Any certification program will require a substantial amount of staffing.
- The availability of Weed Risk assessment (WRA) (screening) System for plants led 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.

### Response and Control

The Established Pests Working Group (EWG) met on March 29, 2006 to discuss proposals by the Island Invasive Species Committees (ISC) to carry out early detection surveys for invasive plants statewide and review the proposed EWG Task List. The lead agency for EWG is DLNR.

The work of ISC on priority pests (economic, agricultural, and environmental) in each county was supported along with a pilot marine response program being 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 ISC 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 both miconia and coqui frogs, including the purchase of additional citric acid.
- 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. They also surveyed over 4,500 acres for miconia and removed almost 3,000 plants.
- The Kauai Invasive Species Committee (KISC) also focused on miconia and coqui frogs. A critical issue for Kauai is the support via USDA-FWS for mongoose sighting response, as this destructive species is not known to be established on Kauai.
- The Aquatic Invasive Species Team of divers inspected a vessel bound for the Northwestern Hawaiian Islands. On their recommendation, the hull was successfully 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

DLNR issued the request for proposals to fund research and applied technology contracts, summarized below. A small sample of the 18 projects funded include:

- Immediate initiation of a search for biocontrol for the Erythrina Gall Wasp that threatens to cause the extinction of the iconic wiliwili trees,
- Early Detection and a risk analysis for species likely to be introduced,
- Improved data management system, which will allow agencies to share reports of new invasive species and track follow-up action.

There was a total of \$2.6 million dollars requested. With UH agreeing to chair the newly-formed Research and Technology Working Group, the Program will continue to develop critical resources to address Hawaii’s invasive species issues.

<b>HISC Research &amp; Technology Contracts, FY 05 Summary</b>		
<b>Proposals</b>	Received	50
	Reviewed	50
	Awarded	18
<b>Amounts</b>	Awarded	\$600,000
	Match	\$711,043
<b>Contractors</b>	University	5
	Private	3
	Federal	8
	State	2
<b>Threats Addressed</b> (may address more than one)	Terrestrial	16
	Aquatic	2
	Commerce	5
	Agriculture	10
	Public Health	3

## Public Outreach

The HISC Outreach Specialists, CGAPS, and other members of the Research and Technology Working Group provided information displays at 75 separate events; made presentations to five community groups; provided information for media coverage and tracked the publication of over 350 newspaper, television, and radio segments; and printed flyers and other materials including miconia, aquatic invasive species, and coqui frogs.

The grant program also funded nine public outreach projects, summarized below:

<b>HISC Public Outreach Grants, FY 06 Summary</b>		
<b>Proposals</b>	Received	18
	Requested funds	\$171,319
	Awarded	9
<b>Amounts</b>	Awarded	\$65,279
	Match	\$60,036
<b>Contractors</b>	Private	5
	University	2
	State	2
<b>Threats Addressed</b> (may address more than one)	Terrestrial	7
	Aquatic	4
	Commerce	2
	Agriculture	2

LINDA LINGLE  
Governor

JAMES R. AIONA  
Lieutenant Governor



# Hawai'i Invasive Species Council

Co-Chairs:  
PETER T. YOUNG  
SANDRA LEE KUNIMOTO

MEMBERS:

Theodore E. Liu  
Chiyome L. Fukino M. D.  
Rodney Haraga  
David McClain, Ph. D.

PARTICIPANTS:

Micah A. Kane  
Major General Robert G.F. Lee  
Mark E. Recktenwald

COUNTIES:

Mayor Alan Arakawa  
Mayor Bryan J. Baptiste  
Mayor Mufi Hannemann  
Mayor Harry Kim

FEDERAL:

U.S. Department of Agriculture  
U.S. Department of the Interior  
U.S. Department of Defense

## Addendum 1: Council Minutes for January 19, 2006

### PUBLIC MEETING NOTICE

Thursday, January 19, 2006  
9:30 a.m. to 11:30 a.m.

Hawai'i Department of Transportation  
Airport Conference Center, Room #3, Seventh Floor  
Honolulu International Airport, Interisland Terminal  
Honolulu, Hawai'i

### HAWAI'I INVASIVE SPECIES COUNCIL

#### A G E N D A

1. Call to order & introductions.
2. Approval of minutes from August 18, 2005.
3. Approval of a resolution in support of the Hawai'i Invasive Species Prevention Act, H.R. 3468. (Item A)
4. Approval of a resolution to prevent the transport of coqui frogs. (Item B)
5. Working group updates:
  - Pests Not Present (Prevention), including West Nile virus update (Larry Lau, DOH)
  - Research & Technology
  - Public Outreach
6. Approval of a resolution in support of the invasive species recommendations of the Governor's Economic Momentum Commission. (Item C)
7. Additional public comments.\*
8. Adjournment.

The next meeting is tentatively scheduled for Thursday, April 27, 2006.

\*Public comments will also be solicited at the time of each agenda item.

Persons requiring special assistance or services such as sign language interpreter should call (808) 587-4154 at least three business days before the meeting.

1151 Punchbowl St. #325, Honolulu, HI 96813 Phone: (808) 587-4154 Fax: (808) 587-0160



Hawaii Invasive Species Council Meeting  
Thursday, January 19, 2006  
9:30 – 11:30 a.m.

Hawaii Department of Transportation  
Airport Conference Center, Room #3, Seventh Floor  
Honolulu International Airport, Interisland Terminal  
Honolulu, Hawaii

**Call to Order**

Peter Young called to order at 9:42 am

**Approval of Minutes from August 18, 2005**

Motion and Carried – Minutes Approved

Amend name from Bob Parsons to Rob Parsons – Executive Assistant for Environmental Concerns- Maui County Council

Approval of a resolution in support of the Hawaii Invasive Species Prevention Act, H.R. 3468. (Item A)

Ed Case letter of bill H.R. 3468 read aloud to county council.

Recommendation of the council to support the Hawaii Invasive Species Prevention Act sponsored by Congressman Ed Case.

Larry Lau suggest to support bill. Move to support general intent of the bill but would want something implemented to avoid federal preemption of state authorities.

Mark Fox of nature conservancy- allow Hawaii to work on an expedited process with the Secretary of Agriculture which is normally preempted regarding alien species, pests, or diseases. He states that it will not impact the strength of any of the federal protection the state has regarding invasive species. He also states that there is nothing in the bill that impairs state authority. Willing to seek legal analysis for statements.

On record- in decision for support that's what the council is supporting.

Question of airlines stating there is preemption of disease or pests

Page 9 involving prevention agencies.

Maui County Council has passed a resolution of support.

Motion Carried 9:50 am

Approval of a resolution to prevent the transport of coqui frogs. (Item B)

The resolution comes from the meetings of the Big Island delegation with the constituents last year. They've had two meetings per district involving coqui frog concerns.

Big Island – frustration of land owners refusal of removal of coqui frogs

- green waste transported to other sites which lead to the spread of the coqui frogs to other locations
- request to improve actions and authority of removal of coqui frogs. Make sure we use all existing authority and areas where the council does not have authority such as warrant processes to enter private lands to control vertebrates that the council uses any existing authority they have such as Act 85 of 2003. This will enable an even more successful control.
- recommendation to adopt new policies to prevent the spread of coqui frogs of all agencies. All agencies will work together to stop the spread of coqui.

No comments

Moved and seconded – motion carried 10:02 am

Working Group

Lyle Wong of the Department of Agriculture

Carol Okada is the new plant quarantine branch manager

Neal – 20 projects of pests including gull wasp.

Working with U.H. to suppress gull wasp population with various pesticides and chemical treatment as well as biological control methods. Possible introduction of natural control species. Exploratory research in Africa with shipments of control species currently in quarantine. Suggest the project will take several years to accomplish their goal.

Update on prevention projects- presented by Carol Okada

HISC Prevention plan – identify possible vectors and pathways of invasive species introduction spread

Data from assessments will allow for more effective utilization of limited funds by prioritizing inspection activity.

A risk assessment was implemented to identify movement of pests between islands.

First assessment at HNL –

-first efforts focused on cut flowers, foliage, and propagated plant material which went further to produce

The assessment was to identify high risk commodities and to find more ways to improve movement other than the use of inspectors.

The department utilized inspectors at night on overtime to do very thorough inspections to understand what was coming into HNL. Assessment on OGG continued from November 2003 to December 2005. The funding for the project was funded by the Department of Transportation and totaled \$275,000.

During the risk assessment for HNL over 31,000 parcels inspected which normally would be over 400,000 inspections during the same time period for cut flowers, some produce items, and propagated plants. A total of 1.6 million parcels of total goods came to Oahu in that period. For the 31,000 parcels inspected approximately 1,000 interceptions occurred.

Highest Risk involves transportation of agriculture goods.

The state of the art Kahului ASAP building is to be built to treat alien species at Kahului airport with adjoining cargo facility. Groundbreaking occurred on January 13, 2006 with the building expected to be operational by August of 2007. Costs for the inspection facility is estimated at 2.3 million dollars.

HNL needs to have an alien species control and inspection facility since it is the first point of entry for most goods coming into the state. Domestic movement alone on Oahu is estimated to be at least 6 times the amount of Maui. An inspection facility on Oahu will be able to help prevent invasive species from entering the state from Asia and the continental U.S.

Need to take action on High risk commodities; or commodities that present the most risk of introducing alien species. The first action was to change statutory manifest of the department to utilize limited resources for the highest risk commodities.

Compliance agreements are use to facilitate movement between states while mitigating high risk commodities. The Department of Agriculture on the origin side is to monitor the growing and handling of high risk commodities which has been found to be very effective but does need to be updated to keep things in compliance.

Pre and post entry treatments – Mandatory high risk treatments to prevent movements of pests.

The department is moving to have a joint treatment facility for state inspections.

Goal is to identify the pathway of pests between islands and the state. And to implement a mitigation movement to stop the movement and establishment of pests in the state. The movement of nursery stock is a high risk pathway for the species such as the coqui frog.

HISC Funding of \$67,000 to prevent spread of coqui frog with USDA funding of \$103,000. The funding allowed for the conducting of surveys with each of the nurseries which enabled drafting of ways to control the movement of the coqui frog. It also allowed for the implementation of protocol letters to be sent to transportation companies. The funding also was used to purchase equipment to suppress coqui frog population, such as hot water treatment containers.

Plan to initiate rule 18 for Chapter 4-72, intrastate rules, creating a new section on restrictions on Coqui Frogs and revising Chapter 4-73 which is the export rules, restructuring the whole chapter to encompass not only exports but also movements of products from nurseries. This will expand and strengthen the nursery program.

Australia and New Zealand trip to analyze pest prevention methods.

Actions taken from the trip is to implement HDOA's strategic plan by creating our own bio security system. The department has already broadened qualifications for inspector positions to any persons with a bachelors degree in any biological science.

HISC prevention project to determine facilities needed, staffing, risk assessment at airports and harbors.

Incorporate teams of dogs to screen unlabeled commodities.

Mike- question on certified nursery. What is a certified nursery? Inspected by AG and allowed to export goods without inspection. Annual inspections of the nursery facilities determine pest levels and given certification if nursery meets recommended pest levels. A revision of the rules is being done to expand and strengthen the program. A problem that is occurring is the inability to effectively enforce people to move plants safely. The idea of a rule change is to place heavy restrictions on non-compliant or poor shippers to prevent further pest invasion or terminate them.

Larry- participate in strategies? Meant to develop strategies or to implement strategies? Strategies vary from location to location.

Domingo – both research and implementation of strategies is being done. Thermal treatment system is the next strategy for pest treatment.

Sandra - huge amount of activity going on involving invasive species and the control of alien species. Thank you for support

Rob- any risk assessment of state harbors? Kahului harbor is tentative site for evaluation. Will require HISC funding.

No comments

### Pests Not Present including West Nile Virus

Larry – 7 days analysis time. Steady pace for testing and outer islands are doing more tests at own facilities.

Lab purchase of 148,000 plus of equipment

Vector control prepared 392 bird tests, 2662 pools of mosquitoes.

Results – Maui had lowest mosquito counts per trap. Kauai has been fluctuating. Hilo, Hickam, and Honolulu have been reporting high counts of mosquito population

Larry's team has been working to find out where the mosquitoes are coming from but has not determined a point of origin.

CDC money used to buy more supplies

Vector staff using pda's and more technological equipment in the field. Which enables faster tracking of data and future plans are to link the islands together for fast sharing of gathered data.

The branch has also started a field citation system so that if any problems are found, quick action can be done to correct such problems in the field.

Shifted CDC money to cover funds that were supposed to be covered by HISC funds due to the governor's decision to withhold HISC funds till December.

Legal issues involving data collection involving invasive species. Working with the EPA on a data exchange system.

Military a big issue of transport of goods and land control – suggestion of a high level military official to join the council.

Use CDC funds to maintain staffing

Mike- regarding high counts of mosquito, where are there movements? Seems to be centralized around airport but may vary due to mosquito ability to travel miles. Future plan is to put up more tracking stations as funds allow for it.

No further comments

### Research & Technology

Mark- 30 combined projects with research and technology and public outreach.

Approved by Peter and the Board, list is official and approved. 18 projects totaling \$600,000 dollars.

No idea is turned down.

Mark- referring to the HISC Research & Technology Projects FY2006 Summary Chart, explains the sections and data contained within.

Coqui- Karen has estimated population of 15,000 to 24,000 frogs. Coqui does reduce aerial insects but unfortunately do not eat mosquitoes. Studies of the Coqui are ongoing.

Snowflake coral- Believed to be from the western pacific

Ongoing study of invasive ants on Mokulua. Big-headed ant was successfully eradicated on a particular island with the use of Androne and is still eradicated after 2 years.

Black twig borer- a pest to coffee, avocado, citrus, and koa. Japanese beetle traps with ethynol have been successful on the eradication.

Red-Masked Parakeet- found in the Diamond Head Area  
- ranges from Punahou area to Niu Valley

Would irradiation be allowed? HISC will need to discuss and investigate in the future.

Nettle Caterpillar- threat to native palms  
- There is a successful pheromone lure that takes minimal amounts to work.

No comment

### Public Outreach

Mark is standing in for Maile Sakamoto

\$65,279 in project funding for 9 projects in FY 2006

Discussion by Mark of the HISC Public Outreach Grants, FY2006 Summary Chart

Silent Invasion PSA's by CGAPS possibly aired with HISC funds.

There are five 30 second spots to possibly be aired on local television.

**643-PEST hotline number to report pests**

FY2005 Highlights for Outreach Grants-

Coqui Radio PSA's have been aired on Kauai and Oahu  
Aired in the summer of last June to August on KSSK during the warmer months.

Mike- Work with radio station management? Contributions and donations by radio stations

Christy Martin- CGAPS – writer of PSA's. Maui aired PSA's numerous times with strong support. Oahu support is minimal, but aired via KSSK for a short period of approximately 3-4 times a week.

HISC funds to be used for PSA's in the future.

Invasive Species organizations and advertisements

Landscape Council of Hawaii 2005 Annual Conference and Trade Show.

Included in that conference was a round table discussion for the formulation of a code of conduct for the industry.

18 of 25 species in Kohala area eradicated by the Kohala coalition.

Oahu- Palolo Invasive Species Swat Team

To bring awareness of centralized invasive species with over 400 residents and students in the area

West Nile bus poster along with PSA on Oahu

[www.hear.org](http://www.hear.org) support site for fire ants as well as other invasive species

Approval of a resolution in support of the invasive species recommendations of the Governor's Economic Momentum Commission. (Item C)

Susan Case- Executive Director of the Nature Conservancy.

Analyze implemental projects within 6 year period that can make a difference in our economical stability. There's 17 working groups.

The organization went through 100 recommendations of which 36 were selected  
One of the recommendations involved invasive species. Cost to control was hugely less.  
Cost to control invasive species already established in Hawaii costs hundreds of millions while cost to prevent invasive species from entering the state is far less.

Sandra- Modified to say an investigation to provide rules on conduct. Should be inclusive. Suggest a working group to do this type of plan.

Christy Martin- code of conduct used by certain nurseries that provide to retailers such as Home Depot.

Landscape Architects should be included and educated about compliance issues

Mike- if fees are raised, nurseries may try to get around regulations?

Lyle- user fee: DOA. Plant pest control branch- \$6 million budget  
Plant quarantine- \$3.1 million budget for a staff of 62 statewide  
\$3 million to protect Hawaii  
\$15 million to protect the United States  
55 inspectors statewide protecting Hawaii from the U.S./ World

The White List for plants with risk assessment has been in development for over the past 9 years. Resources are available to support not just on a static white list but to carry out assessments on any species in a timely fashion. Estimate to do a dozen assessments per week.

Sandra- Move to adopt resolution with amendment. With analysis within one years time of adoption

No comments

Moved and Seconded

Motion Carried.

Rep. Dwight Takamine would like to have a meeting. Friday January 27<sup>th</sup> 9:00 a.m.  
Would like background of HISC.  
Would also like update on what is going on with coqui frogs.  
Needs? What does the HISC need? Funding? Legislation?  
Wants participation from AG, the AG groups, and along with invasive species committees.

Next Meeting to be held Thurs. April 27, 2006

#### Public Comment

No comments

#### Adjournment

Peter Young Adjourns at 11:33 am

**Addendum 2: Council Minutes for July 18, 2006**



**PUBLIC MEETING NOTICE**

Tuesday, July 18, 2006  
8:30 a.m. to 10:30 a.m.  
Hawai'i Department of Health  
919 Ala Moana Blvd.  
Conference Room, 5<sup>th</sup> Floor  
Honolulu, Hawai'i

**HAWAII INVASIVE SPECIES COUNCIL**

A G E N D A

1. Call to order & introductions.
2. Approval of minutes from January 19, 2006.
3. Presentation of the draft Statewide Plan for Coqui Frog Management.
4. Update and overview of the Hawaii Department of Agriculture's Biosecurity Initiative.
5. Working group updates:
  - Pests Not Present (Prevention), including West Nile virus update
  - Established Pests
  - Research and Technology
  - Public Outreach
6. Approval of the fiscal year 2006-2007 Hawaii Invasive Species Council budget. (Item A)
7. Additional public comments.\*
8. Adjournment.

\*Public comments will also be solicited at the time of each agenda item.

Persons requiring special assistance or services such as sign language interpreter should call (808) 587-4154 at least three business days before the meeting.

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LINDA LINGLE  
Governor

JAMES R. AIONA  
Lieutenant Governor



# Hawai'i Invasive Species Council

Co-Chairs:  
PETER T. YOUNG  
SANDRA LEE KUNIMOTO

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Theodore E. Liu  
Chiyome L. Fukino M. D.  
Rodney Haraga  
David McClain, Ph. D.

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Major General Robert G.F. Lee  
Mark E. Recktenwald

**COUNTIES:**

Mayor Alan Arakawa  
Mayor Bryan J. Baptiste  
Mayor Mufi Hannemann  
Mayor Harry Kim

**FEDERAL:**

U.S. Department of Agriculture  
U.S. Department of the Interior  
U.S. Department of Defense

DRAFT MINTUES FOR THE  
MEETING OF THE  
HAWAII INVASIVE SPECIES COUNCIL

DATE: TUESDAY, JULY 18, 2006  
TIME: 8:30 A.M.  
PLACE: HAWAII DEPARTEMNT OF HEALTH  
5<sup>TH</sup> FLOOR CONFERENCE ROOM  
919 ALA MOANA BOULEVARD  
HONOLULU, HI 96813

Chairperson Peter Young called the meeting of the Hawaii Invasive Species Council to order at 8:50 a.m. The following were in attendance:

MEMBERS:

Mr. Peter Young, DLNR	Ms. Sandra Kunimoto, DOA
Mr. Sam Callejo, UH	Mr. Rodney Haraga, DOT
Mr. Jerry Haruno, DOH	

AGENCY AND LEGISLATIVE REPRESENTATIVES:

Mr. Bill Spitz, County of Kauai	Senator J. Kalani English
Senator Russel Kokubun	Representative Cliff Tsuji
Mr. Garrett Kashimoto, DCCA	Mr. Earl Cambell, USFWS
Mr. Mike Robinson DHHL	B. G. Gary Ishikawa, DOD

OTHERS:

Ms. Linda Chow, Deputy Attorney General's Office	
Ms. Nancy Cook Lauer, Stephens Media Group	
Mr. Paul J. Conry, DLNR	Dr. Mindy Wilkinson, DLNR
Mr. Mark Defley, DLNR	Dr. Lyle Wong, DOA
Mr. Domingo Cravalho, DOA	Ms. Carol Okada, DOA
Ms. Teya Penniman, MISC	Ms. Julie Leialoha, BISC
Ms. Rachel Neville, OISC	Mr. Mike Robinson
Ms. Liz Corbin, DBEDT	Mr. Erick Cremer, DOH
Ms. Vanessa Falke, University of Bern	NJ. Liquido, USDA
Mr. Bill Durston, Leilani Nursery Inc.	Mr. Carl Miura
Mr. Paul Singleton, UH-Manoa	Mr. Jeff Burgett, USFWS
Mr. Alan Takemoto, Hawaii Farm Bureau	Mr. Kelvin Sunada, DOH
Mr. Mark Fox, The Nature Conservancy	Ms. Priscilla Billig, HISC

Mr. Chris Dacus, DOT

Mr. Kelvin Sunata, DOH

{Note: language for deletion is [bracketed], new/added is underlined}

**Item 2: Approval of Minutes of January 19, 2006**

The following amendments were made to the minutes

**1. Page 1 to include those present at the January 19, 2006 meeting**

**“Members**

**Mr. Peter Young, DLNR**  
**Mr. Laurence Lau DOH**

**Ms. Sandra Kunimoto, DOA**  
**Ms. Liz Corbin, DBEDT**

**Staff**

**Dr. Mindy Wilkinson, DLNR**  
**Dr. Lyle Wong, DOA**

**Mr. Ken Teramoto, DOA**  
**Ms. Carol Okada, DOA**

**Others**

**Mr. Rob Parsons, County of Maui**  
**Ms. Lisa Naputi, USDA WS**  
**Mr. Keevin Minami, DOA**  
**Ms. Amy Takahashi, HDOA**  
**Mr. Mark Defley, DLNR**

**Mr. Mike Robinson, DHHL**  
**Mr. Billy Kenoi, County of Hawaii**  
**Ms. Linda Chow, Deptuy AG**  
**Mr. Morris Tamanaha, Airports**  
**Mr. Jeff Burgett, USFWS”**

**2. Page 3 under the heading “Working Group”**

“Neal – 20 projects of pests including [~~gall~~] gall wasps. Working with U.H. to suppress [~~gall~~] gall wasp population with various pesticides and chemical treatment as well as biological control methods.”

**3. Page 9**

“Sandra – Modified to say an investigation to provide [~~rules~~] recommendations on conduct. Should be inclusive. Suggest a working group to do this type of plan”

Unanimously approved as amended (Kunimoto/Haraga).

**Item 3: Presentation of the Draft Statewide Plan for Coqui Frog Management**

Mindy Wilkinson, Invasive Species Coordinator for the Department of Land and Natural Resources (DLNR) indicated over the last several years significant time and resources have been spent addressing coqui frogs. County representatives have asked the legislature for more funding to help deal with this issue on their respective islands. Dr. Wilkinson spoke of the efforts of the Department of Agriculture (DOA) quarantine branch in trying to stop coqui frogs from being transported interisland as well as impacting our export markets. DLNR-Division of Forestry and Wildlife (DOFAW) is addressing the issue by supporting the development of the Invasive Species Committees.

The plan presented stemmed from an initial meeting June 2005 when a group of agency representatives gathered in Hilo to conduct a statewide summary meeting which addressed what their goals were in terms of what research needed to be done regarding coqui frogs and what the control priorities were. Based on that meeting and other discussions the committee created a document, which summarized what the agency's roles were in terms of control, prevention and outreach. Using that document the committee looked at what the alternatives were if we did nothing and the outcome if we implemented a plan and how much it would cost. Dr. Wilkinson provided the members with the executive summary in its draft form and went through the document. She invited those present to review the document and to provide feedback as to reflect what each agency is doing. It is Dr. Wilkinson's hope that next year after the \$2 million dollars appropriated by the legislature for the purpose of controlling coqui frogs has been spent we will be able to show what we've done with those monies. Dr. Wilkinson went on to discuss the coqui frog population on each of the islands specifying the areas the frogs are in existence and what each county is doing to control and eradicate the coqui frog population.

Senator Kokubun asked for clarification as to the procedure of what will happen after comments are received on the Draft Statewide Plan. Dr. Wilkinson pointed out this document is not a required planning document and is not tied to any funding so there will be no formal adoption of a plan but this document will provide information as to what other agencies are doing with regards to the Management, Research and Education Plan in Hawaii's Coqui Frog and provide both a vehicle for coordination and a benchmark for the impact and effects of control actions. Dr. Wilkinson plans to release the final version of the plan by September. Should the public want to receive the Statewide Plan for Coqui Frogs or provide comments they could do so by contacting Dr. Wilkinson.

Dr. Earl Campbell testified that there have already been a large number of people that have reviewed the plans and have provided comments. He spoke of his efforts in dealing with invasive species control, specifically vertebrates, disclosing that there are very limited broad scale success and people need to have this in mind and be realistic. He suggested that others worldwide who have worked on this type of plan be able to comment on the draft executive summary.

Representative Cliff Tsuji spoke of a group of individuals on the Big Island who are advocating for the coqui frog. He asked Dr. Wilkinson if there is a plan to address this issue. She pointed out not everyone will agree with the plan but hopes that by providing

an objective account of the actions taking place and the resources needed to achieve specific outcomes that the plan would provide the basis for clear decision making. He asked Ms. Wilkinson if she was aware of a voluntary policing and certification of coqui free nursery business. Dr. Wilkinson indicated knowledge of two such groups doing voluntary coqui free certification, one the Big Island the other on Maui. She introduced those present to Domingo Cravalho who works with individuals who are a part of this group.

Domingo Cravalho of the Department of Agriculture (DOA), Plant Quarantine Branch let it be known the Kohala Coalition started a program called “Coqui Free Hawaii.” In the beginning the group had problems as it was a voluntary, non-regulatory group of nursery growers. Since that time the group has evolved into “Stop Coqui Hawaii.” After several meetings the group came up with a working document on an application for nursery growers and distributors to use, which attest that they would provide plants that are coqui frog free. The document also detailed the various levels of violations. At this time the program is being finalized.

#### **No Action.**

Item 4: Update and Overview of the Hawaii Department of Agriculture’s Biosecurity Initiative.

Carol Okada of the DOA announced that the first year’s money was used to look at the programs available at DOA, Plant Quarantine. The monies allowed the department to take a new look at how to things (i.e. applying for federal aid) was being handled. This past year they’ve looked at staffing at the various islands and what more was needed. Ms. Okada communicated that five percent (5%) of invasive species arrived in Hawaii through Kahalui Airport while ninety-five percent (95) enter through Honolulu Airport. On Maui, DOA focused their efforts on identifying invasive species and plants at Kahului Harbor but due to the limited resources DOA was not able to address if insects were coming to Hawaii on maritime cargo. At present there are on going inspections looking at cargo coming in through Young Brothers. Another issue they would need to assess would be the arrival of the super ferry. In order to deal with these problems DOA has employed inspectors and dogs at the various airports. Kauai has only 2 inspectors as it was determined that their biggest risk was the produce brought in by Young Brothers. Kona has 3 inspectors even though they rate third in terms of cargo volume. The concern in Kona is the private flights arriving on the island. There are little imports into Hilo so those inspectors are looking at the pest moving in between the islands.

Ms. Okada communicated to everyone that prior to the existence of the Hawaii Invasive Species Council (HISC) the DOA knew coqui frogs were a problem but they did not have the funds to deal with that problem. Since HISC came into existence in the first year they’ve conducted surveys and brought sprayers to deal with the coqui issue. On the second year with the funding received from HISC (\$755,000) the DOA was able to design a larger type of unit, which will be placed at Honolulu Airport. The funding has also allowed the DOA to purchase the same units for Maui and Kona. The funding has

allowed the DOA to set up an incident command that will work with HISC and the counties. Ms. Okada made those at the meeting aware that USDA provided \$135,000, which allowed DOA to construct the unit, 1 steam sterilizer, 3 sprayers and the ability to complete the survey. This year's money will buy more sprayers. With biosecurity funds from the legislature 8 technicians will be placed in Hilo to monitor the treatment center while 2.9 million in airport funds will be used to hire 56 additional inspectors, half of them being technicians and the other half inspectors. Of these technicians and inspectors, one third will be stationed on the Big Island, 2 on Kauai, 2 on Maui and the rest will be stationed on Oahu. The monies received this year will allow the DOA to start a state/federal inspection pilot program next month, to continue the planning of a joint use cargo and inspection consolidation facility at Honolulu airport and the expansion of their information system. At present, the DOA is implementing the coqui incident command on Kauai and will be meeting with the landowner next week while at the same time provide training for their inspectors.

An unidentified speaker questioned the allocation of inspectors on each island. Ms. Okada pointed out the survey's conducted is an important tool in determining the placement of inspectors. She feels there is a lot of the risk coming from the Big Island (frogs, fire ants) so that's were they're sending the manpower.

#### **Item 5: Working Group Updates**

##### **Prevention**

Eric Cremer, Coordinator of Vector for Borne Disease with the Department of Health appeared before the Council. He noted diseases can arrive in Hawaii through the air, water or on animals. He believes once a disease is introduced into Hawaii it will be hard to control unless we catch it immediately. He believes if West Nile Virus reaches Hawaii it could extinguish our bird population. As a way of stopping West Nile they plan to use the containers mentioned by Ms. Okada to quarantine birds and plants. Mr. Cremer let it be known that part of DOH's function is to observe live and dead birds, conduct mosquito control and examine larvae in ponds. He disclosed in order to prevent West Nile from arriving into Hawaii vector control has over 113 traps set up around the islands concentrated in the ports of entry to capture mosquitoes. These mosquitoes are then tested for West Nile Virus. As for dead birds the DOA previously ran test on all dead birds including birds doves, pigeons, chickens which are species that would not die from the West Nile Virus. Instead small birds and sparrows, finches and native birds will be tested for West Nile as the disease can prove fatal to their specie. Their goal is to test approximately four hundred birds within the next year. A new procedure is to test live birds that are caught at the airports to see if they carry disease. This procedure is only conducted in Oahu and Mr. Cremer hopes to include Maui, Kauai and Hawaii within the year.

##### **No Action.**

Tabled the remainder of the working group updates until after budget approval.

**Item 6: Approval of the Fiscal Year 2006-2007 Hawaii Invasive Species Council Budget.**

Dr. Wilkinson announced the HISC budget has been reduced from four million dollars to two million dollars. One new program receiving funding is the DOA Biosecurity Initiative program as explained by Ms. Okada. The focus of the program is to increase the number of inspectors at the ports and to improve prevention. Coqui Frogs received a funding of \$2,000,000 - \$1,000,000 being a grant in aid to the County of Hawaii, \$500,000 to the DOA and \$500,000 to DLNR (\$300,000 to Hawaii, \$100,000 to Maui, and \$50,000 each to Kauai and Oahu for invasive species control). Dr. Wilkinson stated that they all work with the funding available to protect Hawaii from the coqui frog problem.

**Prevention:** One of the changes from previous years is that prevention has been identified as one of the highest priority but at the same times their funding has been reduced. Dr. Wilkinson noted the DOA has taken on the responsibility of Biosecurity and they've stated that they'd try to maintain the West Nile Virus Prevention Project.

**Research and Technology:** The program has been dropped therefore grants will not be given this year but the groundwork can be started and if the funding is restored the monies will be made available next year. If funding is not restored, funding to the counties will be cut.

**Response and Control:** (four objectives) 1) Focus on early detection. If we know it is a threat we'll go out and investigate (i.e. coqui frog, fire ants and stinging caterpillars). 2) Support rapid response; 3) Planning for prevention and 4) Create shared data structures.

**Invasive Species Committees:** Due to reduction in state and federal funding the committees on Kauai and Oahu will be strongly effected which will result in laying off staff.

**Public Outreach:** Three staff members hired for the program and they'll be trying to maintain staff over the next year.

**Public Comments:**

Rachel Neville representing the Oahu Invasive Species Committee (OISC) and the Kauai Invasive Species Committee (KISC) provided the council with a hand out. She pointed out Oahu and Kauai will have their budget cut and wanted to make the council aware of how it would affect their programs. Ms. Neville communicated that their mission is to eradicate invasive species, prevent new species from establish itself and stop the spread of established species. In the area of eradication, miconia and coqui frog are great example of what they've been doing. Since 2001, OISC has stopped the spread of miconia. On Kauai all flowering and mature trees have been eradicated. On Oahu, due to budget cuts they will have only 2 field staff and the support staff will be cut to a part-time position. On Kauai they'll be laying off 3 field staff. For Kauai this will mean that they will not be able to conduct surveys as quick, which will result in a tree maturing

before they find it resulting in eradication efforts being set back. In the area of naturalized coqui frog population on Oahu, they're close to eradicating the population in Wahiawa but budget cuts will result in the hiring of only two temporary individuals for the coqui crew. This in turn will mean the crew won't be able to spray as much resulting in total eradication being just out of their reach. On Kauai they are working on the lauau population, but a cut in funding will impede eradication goals for 2007. Along with their partners, OISC has been able to eradicate fireweed and smoke bush on Oahu and staff cuts will only put eradication efforts in jeopardy. In the area of preventing new species from establishing itself, OISC has removed 2 plants. Ms. Neville announced that early detection and rapid response funding is good for this year but if cuts continue next year it will make it difficult for them to find and eradicate these plants while the cost associated with this task is cheap and easy. Addressing the issue of stopping species before they've established themselves, OISC have stopped fireweed from spreading to the Koolau's and fountain grass from spreading to the leeward coast. If funding is cut they'll need to drop fountain grass as a targeted species. Ms. Weville asked those present if there were monies or grants available that her group could qualify to receive to keep their group in mind. Her hope is next year that the funding will be restored.

An unidentified speaker commented on the long-term investment. He questions if we have a good control over a species and funding is cut and we can not keep on top of the species it could end up costing us more money in the future.

Sam Callejo from the council made a motion to recommend the council ask for an emergency appropriation of two million dollars (knowing that there is a surplus). He suggested HISC work with governor on this request.

An unidentified speaker stressed the importance of sticking with eradication efforts instead of putting it on the back burner and coming back several years later and seeing that the area effected has greatly increased.

Senator Kokubun stated that members of Legislature were present to be liaisons to their community in terms of the councils work and to also provide them with info as they go back to their job. He understands and appreciates what was said today.

**Unanimously approved as submitted (Callejo/ Young).**

## **Item 5 Working Group Updates, continued**

### **Established Pests**

Teya Penniman, representing the Maui Invasive Species Committee (MISC) provided the council with a map of Maui that indicated the different areas they've worked on with regards to dealing with invasive plants and animals. She let it be known the invasive species committee arose as a result of a gap between agencies when they both had jurisdiction. She spoke of the local expertise that helps them deal with eradication issues. In terms of the eradication efforts, Ms. Penniman emphasized that the process and objectives are similar across the islands the only thing that differs in the targeted plant or



animal. She noted that whatever level of support the state can provide in terms of money is very important. Ms. Penniman indicated the key elements to their success are that the crew is very flexible in terms of the job they do and the location they are at. At present, they are focused on early detection - on Maui they've driven across Maui to look for invasive species and prioritized their list for removal as well as the associated cost. Approximately 8 detrimental species have had all of their known population controlled. They are also working to involve the public by doing workshop targeted at specific groups and providing them with some resources as to what they can do to control the plant or animal. In closing, Ms. Penniman spoke of their previous eradication efforts of coqui frog and banana bunchy tops population on Maui. Their future priorities are to enhance early detection, sharing their success stories and doing better job of getting out to decision makers to show they are making efforts in eradication.

**No Action.**

### **Research and Technology**

Bill Durston of Leilani Nursery and Paul Singleton of the University of Hawaii presented the results of their improvements to a thermal treatment system for coqui frogs in nursery stock.

**No Action.**

### **Public Outreach**

Maile Sakamoto of the Department of Health presented an update and summary of public outreach activities to date.

Senator English commented that the Public Outreach Working Group met many times, whereas other working groups have met many fewer times—especially the Interagency Working Group, which has never met.

Rodney Haraga affirmed that the Department of Transportation would be convening that working group in the future.

**No Action.**

**Meeting Adjourned by Peter Young at 11:50 a.m.**

## **Section 19 of Act 178, SLH 2005 - Budget and Projects for FY 2005-2006**

Section 19 of Act 178, SLH 2005, provided that DLNR submit detailed reports each year that shall include but not be limited to the amount of expenditures, the amount of revenues, and the effectiveness of the Hawaii Invasive Species Program and shall include the complete report from the previous fiscal year; provided further that the reports shall be submitted to the Legislature no later than twenty days prior to the convening of the 2006 and 2007 Regular Sessions; provided further that DLNR shall be assessed a fee of \$10,000 for each business day beyond the date that the report is due; and provided further that the Director of DLNR shall deposit all assessments to the General Fund. This report, in part, is intended to satisfy the 2007-reporting requirement.

The Administration's invasive species budget initiative calls for the expenditure of \$4,000,000 in state funds per year over five years to provide support for both the operations of HISC and its partnerships with federal, state, county, and private entities to develop and implement a comprehensive, state-wide invasive species program. The four HISC program areas (and their corresponding HISC working groups) are: 1) Prevention, 2) Response and Control (for established pests), 3) Research and Technology, and 4) Public Outreach. 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 for FY 2006. On August 18, 2005, HISC voted to approve the working groups' project budgets below. This report describes the results of the projects for each working group.

HISC Budget for FY 2005-2006:

The state funding is broken into four integrated components:

- 1) Building up **Prevention** capabilities (**\$1,516,535, 38% of total funding**) such as;  
1) Support for quarantine inspectors; 2) Development of planning and science based risk assessments and 3) Needed infrastructure to lead invasive species prevention efforts;
- 2) Expand **Response and Control** programs (**\$1,560,000, 39% of total funding**) to conduct invasive species detection, response and control actions on the ground as well as developing a much needed aquatic response team;
- 3) Establish **Research and Technology** funding (**\$675,000, 17% of total 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; and
- 4) Developing a **Public Outreach Program** (**\$248,465, 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 that delivers timely information to managers on the ground.

Act 178, SLH 2005, provided funding support for HISC totaling \$2,000,000 in general funds and \$2,000,000 in special funds from the Natural Area Reserve Fund. HISC working groups are implementing the tasks in Act 85, SLH 2003, and the goals in the *Interim State of Hawaii Strategic Plan for Invasive Species Prevention, Control, Research and Public Outreach*.

<b>HISC Budget Summary and Spending for Fiscal Years 2005 and 2006</b>								
<b>Working Groups</b>	<b>FY 2006 Budget</b>			<b>FY 2005 Budget</b>			<b>Interim Plan Budget</b>	
	<b>Approved</b>	<b>In Millions</b>	<b>% of HISC</b>	<b>In Millions</b>	<b>% of HISC</b>	<b>% Change in FY06</b>	<b>Working Group %</b>	<b>In Millions</b>
<b>Prevention Subtotal</b>	<b>1,516,535</b>	<b>1.52</b>	<b>38%</b>	<b>1.34</b>	<b>34%</b>	<b>13%</b>	<b>35%</b>	<b>1.40</b>
DOA	755,000		19%					
DOH	455,135		11%					
USDA/APHIS/WS	186,000		5%					
DLNR	120,400		3%					
<b>Established Pests Subtot.</b>	<b>1,560,000</b>	<b>1.56</b>	<b>39%</b>	<b>1.70</b>	<b>43%</b>	<b>-8%</b>	<b>30%</b>	<b>1.20</b>
Aquatic Invasives (DLNR)	300,000		7%					
Inv. Species Committees	1,260,000		32%					
<b>Res'ch &amp; Tech. Subtot.</b>	<b>675,000</b>	<b>0.68</b>	<b>17%</b>	<b>0.70</b>	<b>17%</b>	<b>-4%</b>	<b>30%</b>	<b>1.20</b>
Contracts (DLNR)	600,000		15%					
Administration (DLNR)	75,000		2%					
<b>Public Outreach Subtotal</b>	<b>248,465</b>	<b>0.25</b>	<b>6%</b>	<b>0.26</b>	<b>6%</b>	<b>-4%</b>	<b>5%</b>	<b>0.20</b>
Staff & Admin. (DLNR)	135,465		3%					
Outreach Projects (DLNR)	113,000		3%					
<b>TOTAL</b>	<b>4,000,000</b>	<b>4.00</b>	<b>100%</b>	<b>4.00</b>	<b>100%</b>	<b>0%</b>	<b>100%</b>	<b>4.00</b>

**HISC  
Prevention Projects**

Project Goals for FY 2005-2006

- Support for maritime port risk assessments;
- Development of planning and science based risk assessments and
- Fund needed infrastructure to lead invasive species prevention efforts.

<b>Prevention Working Group Budget Summary</b>		
	Total	\$1,516,535
Source	General Fund 042	616,535
	Special Fund 314	900,000
<b>Partner Agency</b>	<b>Project</b>	<b>Cost</b>
DOA	1. Expand Risk Assessments	350,000
	2. Eight Research Technicians	105,000
	3. Expand INVICTA Database	300,000
	DOA Subtotal	755,000
DOH	4. WNV Prevention	455,135
USDA/APHIS/WS	5. Brown Treesnake Certification	
	Four Inspectors	154,000
	Vehicle Use	16,000
	Equipment & Supplies	16,000
	USDA Subtotal	186,000
DLNR	6. Invasive Species Strategy Specialist	75,200
	7. Weed Risk Assessment Technician	45,200
	DLNR Subtotal	120,400

Funding for prevention projects was accomplished through a transfer of \$650,000 from DLNR to DOA and \$455,135 to DOH. The remaining funds were encumbered via a cooperative service agreement between DLNR and USDA-FWS and encumbered by DLNR for the purpose of creating the Weed Risk Assessment System Technician Research Corporation of the University of Hawaii (RCUH) position at Lyon Arboretum and an Invasive Species Strategy Specialist RCUH position in Hilo supervised by DOA staff focused on ant control and interdiction projects.

**DOA Prevention Projects**

Goals:

- Continue and expand port risk assessments throughout the State,
- Contract research technicians to increase the efficiency of the inspection process during the port risk assessments, and
- Expand the INVICTA database and other tracking tools for use state-wide

DOA collected data in statewide risk assessments to determine the modes of entry of invasive species into the state and the relative risks of these different modes. These data will allow their Plant Quarantine Branch to more effectively utilize its limited resources by prioritizing inspection activities. In addition, the information will be essential for the state to assess where it needs to address gaps in its prevention efforts by focusing additional resources to fill these gaps. This will form the basis for developing the statewide Biosecurity program.

Kahului Airport Risk Assessments average \$50,000 per run. Expenditures include air transportation, per diem, mileage, parking, hotel excess lodging, night differential, and overtime/travel time costs. Research technicians were hired to assist the inspectors but they cannot replace the inspectors in the inspection and disposition of agricultural commodities. Senior inspectors traveled to various ports in order for the risk assessments to be conducted consistently. Risk assessments will focus on inspection of areas not performed during the Kahului Airport Risk Assessments and FY 05 Oahu Risk Assessment.

**Key Accomplishments:**

- 25% increase in identification rate for intercepted pests allowing faster, appropriate action on inspected commodities.
- Development of an identification keys to aid inspectors.
- Better understanding of invasive species risks associated with maritime commerce.

**DOH Prevention Project**

**Goal:**

- Improve surveillance and rapid response capabilities to address the threat of WNV importation.

DOH – Vector Control (VC) Branch maintains a system of gravid traps at major ports of entry statewide for detection of WNV. New Jersey light traps are also maintained statewide for detection of new, immigrant mosquito species. These New Jersey light traps also help monitor population levels and efficacy of control efforts.

Mosquitoes were collected using gravid traps, some purchased with HISC funds, and then sorted and pooled by VC staff statewide. Because the Neighbor Island VC programs are running their gravid traps seven (7) days a week, twenty-four (24) hours per day, many of the gravid trap parts, especially fan motors and batteries, have had to be replaced. In many cases, the HISC funds have paid for replacement parts and new traps. Matching funds for WNV projects has been sought from the Center for Disease Control and the Department of the Interior.

**Key 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 on all islands to map trapping and control operations and enter and share data across the state for rapid analysis.
- Initiated Live Bird Surveillance on Maui at Kahului Airport and Kauai's Lihue Airport (Kauai contract completed and work to start early November 2006)
- Developing contracts with Invasive Species Committees on Oahu and Kauai to assist in collection of dead birds reported by public.

### **USDA – Wildlife Service (WS) Prevention Project**

#### Goals:

- Conduct inspections of cargo containers leaving Guam destined for Hawaii
- Determine the feasibility of a cargo certification program for Guam shipments.

For the second year of this project, USDA/Animal and Plant Health Inspection Service (APHIS)/FWS will continue with the feasibility and logistic requirements for implementing a brown treesnake inspection certification program aimed at military and commercial cargo exports from Guam. The current project is focused primarily on the cargo processes themselves, not the destination of outbound cargo.

To accomplish this work, USDA-FWS committed four full-time canine handlers to providing inspection services and certification paperwork in support of surface cargo transportation, focusing upon cargo destined for Hawaii. In addition, USDA-FWS S provided the administrative and biological oversight necessary to continue this project.

USDA-FWS S identified commercial cargo consolidators and military organizations that regularly containerize cargo destined for Hawaii. Container contents were inspected prior to consolidation, and upon application of a customs seal, USDA-FWS provided a stamp on the container manifest documenting the inspection process. Manifest records (inspections) were provided to DOA representatives for verification upon cargo arrival in Hawaii.

The four USDA-FWS inspectors worked to identify the point in the consolidation process where maximum inspection activity can be achieved, while still verifying contents of each container have been entirely inspected. Work focused on daytime activity, but future work could include transition to night-time inspections if cargo operations require such activity.

#### Key Accomplishments:

- Time budgets for inspection were created identifying potential time saving changes in the inspection protocol to develop with shippers.

- Recommendation that a cargo certification project is not feasible for all commercial goods leaving Guam at this time.

### **DLNR Prevention Projects**

#### Goal:

- Create an Invasive Species Strategy Specialist to focus on the problems caused by invasive ants in Hawaii and help DOA prioritize actions to reduce the incidence of additional species of invasive ants such as the Red Imported Fire Ant establishing in Hawaii.
- Continue the WRA (screenings) System to encourage nurseries, arboreta, and other horticultural businesses to adopt codes of conduct that voluntarily result in stopping the sale and planting of invasive plants.

The Invasive Species Strategy Specialist will facilitate more effective protection of Hawaii's environment from harmful alien species by gathering background information and facilitating coordination, organization, prioritization, and implementation of measures to prevent the introduction of alien pests into Hawaii, with special emphasis on prevention of establishment and interisland spread of the little fire ant (*Wasmannia auropunctata*) and the red imported fire ant (*Solenopsis invicta*). The Specialist accomplishes this by assisting federal and state agencies to implement more effective protection measures from non-native pest organisms, including identification of alien species pathways of entry into Hawaii, developing management plans and educational material, technical writing, organizing meetings, and other support work as necessary to fulfill program objectives. The Specialist will supervise and train field personnel in collection of entomological field data, conduct data analyses, and prepares research papers and reports for publication in professional journals and dissemination to interested parties. This is a one-year position, subject to renewal based on performance and available funding.

This position was recruited via RCUH multiple times without a qualified candidate accepting the job. The tasks proposed will be accomplished via a short term contract with the position being continued into FY 07 by BIISC funding and supervised by DOA staff in Hilo. The contract for this project has been written and is currently being advertised.

DOA chose not to continue this project with FY 07 funds and has not committed to dedicating one of the new staff positions created by the Biosecurity initiative to this particular high priority group of pests. Because the need still exists to focus preventing and detection efforts on ants as a group, BIISC has agreed to continue the position for at least one year with DOA staff in Hilo providing supervision and project oversight.

The WRA System is a tool that uses published scientific information to gauge the potential of a plant to be invasive if planted in Hawaii. The System is designed to identify plants that are invasive in natural areas such as forests, cultivated lands including forestry and agricultural areas, and invasive plants in other managed areas, e.g. parks and lawns. The WRA System provides biological information only. Funding would be to

continue screening plants to allow the development of the WRA System as a systematic tool that will be used to prevent the importation of potentially invasive plants and provide information about plants present in Hawaii that could become weeds over time. A WRA technician has been hired to screen new plant introductions.

The WRA System has three important goals:

- 1) Screen new plant introductions to identify species that pose a high risk of causing ecological or economic harm if they are imported.
- 2) Identify high-risk species among plants that have already been imported, allowing for informed planting decisions.
- 3) Assist with prioritizing species for active control programs among more than one thousand plant species that have become naturalized in Hawaii.

The WRA System consists of 49 questions about a plant's biological characteristics and whether it has become invasive in other locations with similar conditions to Hawaii. The technician will use published information from credible scientific sources to answer these questions, which gives the plant a total numerical score. At this time there is a backlog of plants for which screening has been requested by nursery or landscape industry representatives.

Key accomplishments since the WRA technician hired in April, 2006:

- The Kauai Landscape Industry Council and the Oahu Nursery Growers Association industry groups have both adopted voluntary codes of conduct and lists of priority invasive plants that they will no longer grow, sell or recommend in planting projects.
- More than 80 plant species have been screened so far 19 of which are species being considered for import into Hawaii.
- Individuals or agencies submitting requests for screening include:
  - Garrett Webb, Kaloa Farms, Big Island.
  - UH-Department of Tropical Plant and Soil Sciences
  - Maui County Planting Plan
  - OISC
  - MISC
  - UH-College of Tropical Agriculture and Human Resources (UH-CTAHR)
  - Bishop Museum (Rapid Identification System of Invasive Species)
- Revised criteria for screening plants and documented search protocol for screening species making this process easy to adopt by regulatory agencies.
- Set up guidelines for prioritizing the species submitted for screening. In general, screening of species that are being considered for import into Hawaii receive priority over species that are already here. And species submitted by the landscape and nursery industry groups that have signed the 'Voluntary Code of Conduct' (agreed to use the Hawaii/Pacific Weed Risk Assessment (HPWRA) before making decisions on importing plants into Hawaii) are given priority over other agencies.
- Presentations on the HPWRA:



- A series of one-day workshops titled ‘Jumping the fence line: Escaped Agricultural Plants in Hawaii’ was organized by UH-CTAHR with the goal of creating an awareness of the widespread impacts of escaped agricultural plants. The HPWRA screening process was presented during this workshop as a tool that agriculturalists and rangeland managers could use for minimizing impact of invasive plants.
- Three presentations to the docents at the Lyon Arboretum.
- An update on the status of HPWRA to the council members of the Kaulunani Community and Urban Forestry program.

At present there are about a 100 species on the ‘to be screened’ list. The interest in this process as a science-based decision making tool for preventing the spread of invasive plants has made this one of the most successful HISC projects.

**HISC  
Response and Control Projects**

Project Goals for FY 2005-2006

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

Response and Control projects budget:

Statewide - Aquatic Invasive Species Team	\$ 300,000
Hawaii County	\$ 403,200
Maui County	\$ 302,400
City and County of Honolulu - Oahu	\$ 277,200
Kauai County	\$ 277,200
 Total	 \$1,560,000

EWG met on July 1, 2005 and March 29, 2006 to review efforts in Hawaii to control established pests by the ISCs in cooperation with DOA, DLNR and DOH, review the proposed EWG Task List, review the list of invasive species generated by HISC and discuss invasive species control programs.

The main focus of the funding for FY 06 and continuing into FY 07 is to improve statewide efforts to detect new invasive species before they become widespread. The work of ISC on priority pests (economic, agricultural, and environmental) in each county will be supported along with a pilot marine response program being developed by the DLNR-DAR in cooperation with federal, private and county resources.

## **BIISC**

### Key Accomplishments:

- Completed a six-month survey project to assess the efficacy of previous miconia control efforts
- Worked with partner agencies to control coqui infestations in priority areas
- Worked with partner agencies to conduct port monitoring for red imported fire ant (*Solenopsis invicta*) and a rapid assessment of the erythrina gall wasp invasion

BIISC provides support and coordination for efforts to control the largest infestations of both coqui frogs and miconia in the State. The principal goals for the additional HISC funds were to; develop and expand the capacity of BIISC staff and other individuals on the Island of Hawaii to detect new, potentially invasive species and new locations of known priority target species; continue on-going efforts to contain the infestations of priority invasive species such as miconia, plume poppy and coqui frogs; and continue outreach and education efforts to target groups and build partnerships with neighborhood groups and others to prevent and control invasive species on Hawaii.

## **MISC**

### Key Accomplishments:

- Completely controlled all known populations for twelve plant species island-wide and controlled four plant species in defined geographic areas
- Conducted a rapid assessment of the erythrina gall wasp invasion
- Eradicated one coqui frog population and made substantial progress at most other sites
- Reached record numbers of the public through outreach events, and
- Involved local students in conducting surveys for fire ants

MISC identified three key objectives to address with HISC funding; increase the number of trained observers surveying Maui County for known or potentially invasive plant species, expand surveys for existing and potential species to target for eradication (including miconia, pampas grass, fountain grass, ivy gourd, giant reed, rubber vine, and veiled chameleon), and determine the coqui frog distribution on Maui and control or eradicate local populations where possible. The additional funds were matched by the County of Maui, the Maui Board of Water Supply and federal grants.

## **OISC**

### Key Accomplishments:

- Treated entire infestation area of the only coqui population in a wild land area on Oahu with a dramatic reduction in population.

- Controlled all known populations of Himalayan blackberry (*Rubus discolor*) and smoke bush (*Buddleia madagascariensis*) island-wide and controlled one plant species in defined geographic area.
- Applied scientifically established search areas and control frequencies for all target species
- Held monthly volunteer field trips to control OISC target species.

OISC hired a temporary crew of five to control coqui frogs during key summer months. HISC funding was also used for a complementary public service announcement campaign to alert residents to the presence of coqui frogs and encourage new reports. Work on other species that are declared state noxious weeds but still incipient on Oahu was expanded for Himalayan blackberry, bush beardgrass, smoke bush, fountain grass, fire tree, pampas grass and fireweed.

## **KISC**

Key Accomplishments:

- All known ivy gourd (*Coccinia grandis*) and giant reed (*Arundo donax*) populations have been treated and are being monitored and maintained for re-growth.
- KISC assisted DOA staff in controlling the two known fireweed infestations. One population has been controlled and is in the monitoring stage. The other is close to being controlled--only 12 plants were found in 2005.
- Community awareness campaign on miconia resulted in new reported sightings. Follow-up surveys by KISC proved the sightings to be negative.

Besides focusing efforts on aerial surveys of miconia and intensifying work on coqui frogs, KISC participated in several partnership projects that included: mechanical clearing of long thorn kiawe at Pacific Missile Range Facility (PMRF) as well as clearing a shearwater nesting site of these invasive trees, conducting weed control work with Waipa Foundation, assisting DOA with arundo and fireweed control, and helping to plan helicopter operations to control Australian Tree Fern with the Nature Conservancy (TNC). Ongoing control work on KISC's other target species include work on ivy gourd, fountain grass, cattails, mongoose, and pampas grass. Beginning development of an early detection program started with a field guide outlining potential threats arriving from other islands. Work continues on a island-wide roadside survey to be conducted spring of 2007.

## **Aquatic Invasive Species Team**

Key Accomplishments:

- Partnered with UH and TNC in developing and operating the "supersucker" undersea algae vacuum.

- Eliminated majority of population of mushroom anemone (*Actinodiscus nummiformis*).
- Started local eradication of snowflake coral (*Carijoa riisei*) from the Island of Kauai.
- Mapped distribution of gorilla ogo (*Gracilaria salicornia*) in Maunalua Bay, Oahu and developed a management plan.

DLNR - DAR developed an innovative Aquatic Invasive Species Management project to include an experimental aquatic invasive species response team. This project focused on alien and invasive species issues in Hawaii's freshwater and marine environments. The project funded five field staff to respond to alien species issues across the State. Key species and projects for the first year operations for this team included: 1) Eradication of snowflake coral at Port Allen, Kauai; 2) Developing control methods for alien algae using the "supersucker," a unique vacuum developed to collect invasive algae off the reefs; 3) Survey for invasive marine algae in South Oahu; and 4) Control of incipient species including a recently introduced *Discosoma* sp. or disk anemone. The State of Hawaii Aquatic Invasive Species (AIS) Management Plan and the Aquatic Invasive Species Advisory Group will guide future activities and objectives of this project.

## **HISC**

### **Research and Technology Projects**

#### Project Goals for FY 2005-2006

- 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.

Timely information about invasive species is a necessary component of successfully improving invasive species prevention and control in Hawaii. A request for research and technology proposals focusing on invasive species was sent out using the State Procurement website. Applicants were asked to identify new matching funds for their proposed projects and grantees will report on their results for HISC. The request for proposals and proposal review was developed and overseen by HISC agency staff assigned by the council members, county representatives, and representatives of key federal and private agencies.

Fifty proposals were received and reviewed. The Review Committee consisted of nine representatives from DBEDT, DOH, DLNR (both Division of Forestry and Wildlife

(DOFAW) and DAR), USDA-FWS, USDA-Forest Service (USDA-FS), and Bishop Museum. Eighteen contracts (36% percent of those reviewed) were awarded at a total of \$600,000 (15% of the HISC's \$4 million budget). The total non-state match of HISC funds provided by these projects is \$711,043.

The HISC Interim Strategic Plan recommends that 30% of the HISC budget goes towards this program. However, the Review Committee believes that the number of high-quality proposals received is commensurate with the current level of funding. Therefore, for the next year, or until the number of high-quality proposals increases, the review committee recommends that the balance of this program's budget be shifted to the other working groups.

<b>HISC Research &amp; Technology Contracts, FY05 Summary</b>		
<b>Proposals</b>	Received	50
	Reviewed	50
	Awarded	18
<b>Amounts</b>	Awarded	\$600,000
	Of Match	\$711,043
<b>Contractors</b>	University	5
	Private	3
	Federal	8
	State	2
<b>Threats Addressed</b> (may address more than one)	Terrestrial	16
	Aquatic	2
	Commerce	5
	Agriculture	10
	Public Health	3

<b>HISC Research &amp; Technology Program</b>			
<b>Grants Awarded</b>			
<b>FY 2006 Projects</b>			
<u>#</u>	<u>Title</u>	<u>Organization</u>	<u>Award</u>
1	Implementing Early Detection in Hawaii	Bishop Museum	\$80,000
2	Are toxic dinoflagellates found in ballast water of ships visiting Hawaii	UH	\$71,000
3	Developing new techniques for invasive ant control in Hawaii	USGS	\$70,000
4	Efficacy and palatability of commercially available rodenticides	USDA	\$69,700
5	Development of a pheromonal attractant for detecting small, incipient populations of brown treesnakes on Hawaii	USDA	\$60,835
6	Exploration, genetic characterization, and host range testing of parasitoids of the Erythrina Gall Wasp, <i>Quadrastichus erythrinae</i> Kim.	UH	\$45,000
7	Development of cost-effective baits/attractant-lures for incipient brown tree snake populations in Hawaii	USDA	\$30,725
8	Building the Technical Capacity of the Hawaii Island Invasive Species Committees: Database Enhancements and Standard Reporting	UH	\$29,288
9	Exploration in Tropical Africa for Natural Enemies to Suppress Infestations of the Erythrina Gall Wasp (EGW) in Hawaii	HDOA	\$23,899
10	Management of the invasive Erythrina Gall Wasp, <i>Quadrastichus erythrinae</i> Kim, (Hymenoptera: Eulophidae) on Native and landscape Erythrina spp.	UH	\$22,000
11	Detection, Control and Phenology of the Nettle Caterpillar, <i>Darna pallivitta</i> (Moore): Applications of a Pheromone Lure	USDA	\$20,000
12	Taxonomic Expertise for Aquatic Invasive Species Research in Honolulu Harbor as a Component of Collaborative Tropical Surveys	Bishop Museum	\$15,000
13	A "Coqui-free" Certification Program on the Island of Maui: Using Market Incentives to Prevent Inadvertent Vectoring	MISC	\$15,000
14	Survey for potential biological control agents for <i>Miconia calvescens</i> in southern Mexico	McClay Ecoscience	\$14,625
15	Preliminary exploration for arthropod natural enemies of <i>Rubus ellipticus</i> in China	USDA-FS	\$12,000
16	Evaluation of pathogens in Costa Rica for biocontrol of <i>Miconia calvescens</i>	USDA-FS	\$7,700
17	Magnitude and duration of West Nile viremia in budgerigars (parakeets)	Colorado State U.	\$6,864
18	Modification of a multi-pest exclusion fence to be effective against all feral mammals in Hawaii	USDA-FWS	\$6,364
		<b>Total:</b>	<b>\$600,000</b>

## **HISC support**

Funds to hire a HISC Plan Manager and support program administration.

The HISC Manager:

- Provides primary staff support for HISC projects
- Gathers information to identify emerging issues and opportunities relevant to HISC's mission
- Tracks funding, issues, regulations and legislation relevant to HISC's mission
- Reviews and tracks grant proposals for HISC funding and collect and review reports on funding.

Total \$75,000

## **HISC**

### **Public Outreach Projects**

Project Goals for FY 2005-2006

- 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.

Key accomplishments by HISC plan task:

#### **1. Identify high priority messages to focus education efforts and develop outreach plans with the Department of Education (2 years).**

To accomplish the goals of education and outreach, the HISC Public Outreach Working Group and CGAPS provide grants that support statewide educational efforts and extend outreach activities to target groups which would benefit from detailed information on invasive species.

HISC and CGAPS identified the Hawai'i plant industry as one of the most important target audiences for an invasive species message. The plant industry is responsible for importing, growing, promoting and selling plants, many times without regard to a plant's potential or realized invasive impacts.

In October 2005, CGAPS and HISC outreach specialists initiated the "Code of Conduct Project," a self-regulatory process for the industry to participate in invasive species prevention and education.

#### **The Project's three main objectives:**

1. To have plant industry participants agree to submit names of each plant species new to Hawai'i so the plant can be evaluated for its potential to be invasive if planted here;

2. To have plant industry participants agree to not grow or sell a short list of invasive plants that are the subject of control or eradication work in Hawai‘i;
  3. To have plant industry members agree to promote the use of non-invasive or native plants.
- To date, the O‘ahu Nursery Growers Association, the Kaua‘i Landscape Industry Council, Wal-Mart Garden Marts, and the Landscape Industry Council of Hawai‘i have agreed to support the voluntary “Code of Conduct Project.” More groups are considering joining the Project.
  - An early outreach initiative that encourages participation of the plant industry is the [Malama i ka ‘Āina Award](#) begun four years ago by MISC. The award recognizes efforts to keep invasive species out of Maui County and is presented annually to a landscaper, plant provider (retail and wholesale nurseries and garden shops), or commercial/agricultural property.

**Additional educational/outreach efforts to target audiences:**

- In an effort to expand this spirit of cooperation within the local business community, outreach specialists are mounting an education campaign with the Hawai‘i pet industry. “Habitattitude” is a project that encourages responsible consumer behavior by warning against dumping aquarium plants and animals into oceans, streams, lakes, rivers and wetlands.
- KISC produced and published *Kia ‘i Moku*, invasive species newsletter highlighting ISCs, partner projects and current topics of concern.
- OISC produced and published *OISC Weed Wise*, a quarterly update on O‘ahu’s terrestrial invasive species.
- MISC produced a quarterly activities report and published and distributed *Kia’i Na Maku O Mau Nui*, a newsletter designed to inform the public about invasive species issues.
- KISC initiated the 1<sup>st</sup> Kaua‘i Conservation Conference, designed to strengthen partnerships, exchange information, and develop a vision for better public outreach.

**2. Develop a business round table of private sector transportation entities (e.g., airlines, shipping) to identify invasive species outreach opportunities (2 years).**

- The HISC Public Outreach Working Group and the HISC Resources Working Group have partnered to identify DBEDT’s Business Roundtable as a good opportunity to conduct outreach and ask for assistance in multiplying our network.
- A short powerpoint presentation and script have been developed and provided to DBEDT Director Ted Liu, who has agreed to present this information to the Roundtable.
- HISC, CGAPS and TNC have made concerted efforts to engage DOT-Airports Division in discussion about a proposed airport signage project at Honolulu and Kahului terminals. HISC continues to press its suggestions and comments regarding display contents and locations within Kahului Airport and also plan



continued involvement in future signage projects at Honolulu International Airport.

**3. Develop or utilize an existing website for in-reach to HISC members and partners as well as outreach for the general public for pertinent invasive species issues (1 year).**

- DLNR continues to host and update the HISC website.
- A new, user-friendly website is in the final stages of development. This new site is being incorporated into the design for the ISC, CGAPS, and the Aquatic Invasive Species Team.
- MISC and KISC outreach specialists have created a database to measure the effectiveness of outreach methods with an ability to query based on species target, medium and demographics, which will be standardized for all islands.

**4. Develop a series of invasive species Public Service Announcements (PSAs) in cooperation with a variety of media outlets to encourage travelers and residents to not introduce or transport invasive species into and between islands (1 year and ongoing).**

- CGAPS worked in cooperation with the HISC Public Outreach Working Group to develop a series of five PSAs. These messages were listed in last year's report to the Legislature.
- HISC funds were used (in addition to funds received from USFS, the National Oceanic and Atmospheric Administration OAA, U.S. Department of the Interior, and the Hawai'i Tourism Authority-Natural Resources Program) to produce the five 30-second PSAs and to buy broadcast time on all the major local TV network affiliates.
- The PSAs aired between January 23 and June 30, 2006, and may be aired again pending funds.

**5. Develop a Pest Hotline available to the public that is integrated into a statewide geographical information system and interagency database that is accessible to field crews actively controlling terrestrial and aquatic invasive species.**

- HISC funded the creation of a new statewide seven-digit Pest Hotline number, 643-PEST. This phone number may be dialed toll-free from any island, and calls are routed to the nearest HDOA office during normal work hours, and forwarded to the DOA office at the Honolulu International Airport, which is staffed after hours and on weekends.
- DOA has developed a database for logging and tracking these reports.
- An average of 12 calls reporting invasive species are logged statewide per week.

**Public Events/Informational Presentations and Displays:** Throughout the State, HISC, CGAPS, and ISC specialists conduct *at least* one outreach/educational activity per week informing a specific audience about invasive species. In FY 2005-2006, these activities totaled more than 75 separate events statewide. Target audiences and events include the following:

- Agricultural and Environmental Awareness Day
- Agriculture and Natural Resources Awareness Day
- Aka‘ula Alternative School Introduction to Ho‘ike o Haleakala
- Alien Algae Clean-up Events
- Ant ID Workshop
- Arbor Day on Kaua‘i
- Arbor Day on Maui
- ‘Ava Festival at UH Mānoa
- Banana Poka Festival
- Big Island Legislator-Community Meetings (All Districts)
- Bishop Museum “Mad About Science” Fair
- Earth Day 2006 Molokai
- Earth Day at Maui Nui Botanical Gardens
- East Maui Taro Festival
- East Maui Watershed Partnership Art Show
- Friends of Haleakala Early Detection Workshop
- Ha‘ikū Community Health Fair
- Ha‘ikū Ho‘olaule‘a & Flower Festival 2006
- Hana High School Introduction to Ho‘ike o Haleakala
- Hana Library Display
- Hawai‘i County Fair
- Hawai‘i Invasive Species Council
- Hilo Invasive Species Workshops
- Ho‘ike o Haleakala Teacher Training Workshop
- Honolulu City Council
- Ho‘okahua
- Introduction to Ho‘ike o Haleakala
- Kahului Airport Displays (2)
- Kamehameha Preschool
- Kaua‘i Children’s Heath Fair
- Kaua‘i County Fair
- Kaua‘i Farm Bureau Expo
- Kaua‘i Garden Fair
- Kihei Community Association
- King Kekaulike High School
- Kokua Festival 2006
- Kona Farm Fair
- Kula Elementary
- Lahainaluna High School Career Day
- Landowner Assistance Workshop
- Lawn & Garden Fair
- Lyon Arboretum Plant Sale
- Ma‘ema‘e Elementary School
- Mālama O Mānoa 1,000 Tree Giveaway
- MALP Meeting
- Maui Community College Students Hike
- Maui County Fair
- Maui Farm Bureau Fair
- Maui Realtors Association
- Moloka‘i High School Natural Resource Academy Intro to Ho‘ike o Haleakala
- Natural Resources Communication Workshop
- Navy Exchange Earth Day
- Oahu Nursery Growers Association
- Ocean Festival
- Palolo Pride Festival
- Punahou Lutheran Church Earth Day
- Rotary Clubs (O‘ahu & Kaua‘i)
- Seabury Hall
- Seabury Winterim
- Student Fire Ant Surveys
- UH Earth Day
- UH Hamilton Library Invasive Species Display
- Wahiawā Pineapple Festival
- Waimanalo Agricultural Association Meeting
- Waimea Invasive Species Workshops
- Weed Warriors Controlling Pines in Haleakala NP
- Weed Warriors Coqui Frogs
- Weed Warriors Frog Hunt
- Weed Warriors Ivy Gourd Trip
- Windward Community College Geography Class
- Word of Life Career Day

**Media (Print):** Coverage totaled approximately 30 articles in FY 2005-2006.

“The costly coqui”		<i>Honolulu Star-Bulletin</i>
“Pesky little coqui posing economic threat to islands”		<i>Honolulu Advertiser</i>
“Invasive Grass Spreads on Oahu”		<i>Honolulu Advertiser</i>
“Residents must help fight invasive species”		<i>Honolulu Advertiser</i>
“4.9M approved for coqui fight”		<i>Honolulu Star-Bulletin</i>
“Sound of summer: ‘Coqui!’”		<i>Honolulu Advertiser</i>
“Report Coqui Frogs” ad		<i>Honolulu Weekly</i>
“Malama i ka ‘Aina Award Applications Being Accepted”		<i>The Maui News</i>
“Invasive Species Crews Eliminating Pockets of Coqui Frogs”		<i>The Maui News</i>
“Nominations for Invasive Species Fighters Due”		<i>Haleakala Times</i>
“The Kumu La‘au - Foundation for the Hawai‘i’s Rainforest”		<i>Maui Nui Botanical Gardens Newsletter</i>
“Two Honored for Efforts to Preserve Isle’s Native Species”		<i>The Maui News</i>
“Nursery Manager Honored for Keeping Frogs Out”		<i>Haleakala Times</i>
“Going Native”		<i>Maui No Ka ‘Oi</i>
“Enlightened Management”		<i>Maui No Ka ‘Oi</i>
“Students Declare War – ‘There’s lots of species’ invading the islands”		<i>The Maui News</i>
“Weed Warriors”		<i>Maui Weekly</i>
“Forum will take up issue of Superferry”		<i>The Maui News</i>
“Invasive species group does invaluable work for all”		<i>The Maui News</i>
“Superferry names five members of advisory panel”		<i>The Maui News</i>
“Volunteers Sought to Fight Invasive Species”		<i>The Maui News</i>
“Fighting Aliens”		<i>Kaunana</i>
“Detection of invasive plants to be taught”		<i>The Maui News</i>
“Kauai Mobilizes for Snake Hunt”		<i>Honolulu Star-Bulletin</i>
“Snake Hunt Underway at Lihue Airport”		<i>The Garden Island</i>
“Mongoose Sighting Could Pay Off”		<i>The Garden Island</i>
“Grower of the Month”		<i>Kauai Weekly</i>
“Stopping Invasive Species Before They Start”		<i>The Garden Island</i>
“Kauai Joins Fight against Invasive Species”	(Front Page)	<i>Hawaii Landscape</i>
“Taking the Isles Back from Invasive Species”	(Front Page)	<i>Honolulu Advertiser</i>
“The War on Weeds”		<i>Honolulu Weekly</i>
“Solution to coqui: a hot shower”		<i>Honolulu Advertiser</i>

**Media (Broadcast):** HISC contracted Dateline Media, Inc., a media monitoring network, to list broadcast coverage of invasive species for FY 2005-2006 on local TV network affiliates. **TV mentions of invasive species totaled 271 statewide; radio broadcast mentions totaled 65 statewide.** In addition, broadcast media activities on non-network stations are listed below.

- Hawai‘i Public Radio interviews (2): terrestrial and aquatic invasive species.
- “Outside Hawai‘i” weekly TV magazine show aired vignettes on miconia.

- “Outside Hawai‘i” weekly TV magazine show aired vignettes on long-thorned kiawe.
- “Connecting the Dots” Presentation on MCC Today.
- Leeward Community College Educational Media Center Invasive Species Information Series to air on ‘Ōlelo Community Television (in development).
- German TV DocuVista documentary filmed on Kaua‘i highlighting Miconia and the topic of “seed tracking” by hiking tourists; aired “Kaua‘i the Garden Island” on Arte TV throughout Europe.
- “Miconia on Maui” aired on Ho‘ike, Kaua‘i public access television.
- “The Coqui Frog Invasion in Hawai‘i” aired on Ho‘ike, Kaua‘i public access television.
- “Crucial Media Contacts” database distributed to outreach specialists.

**Print and Broadcast Press Releases:** Press releases are often distributed in collaboration with partner agencies. Some examples are listed below.

Coqui Calling Season/Pest Hotline	Coqui Frog PSAs (2005, 2006)
Alien Algae Clean-up Events	Extinguishing the Little Fire Ant through Education
Ohia Rust	Weed Warriors
Malama i ka ‘Āina Award Application (2005, 2006)	West Nile Virus
Malama i ka ‘Āina Award Recipient (2005, 2006)	Reporting Mongoose Sightings

**Print Material & Miscellaneous Outreach Products:**

“1-2-3 It’s a Miconia Tree!” rack cards	“Report a Pest” rack card
Alien Seaweeds rack card	“Report Coqui Frogs” magnet
Aquatics one-pager	“Stop the Silent Invasion” T-shirts
BBTV Posters	“Stop Alien Algae” T-shirts
Door Hangers (Packets w/SASE, alerting homeowner of invasive species on property and asking permission to control.)	Updated Displays w/ Games (all ISCs)
Fire Ant flyer	“Weed Warrior” Miconia temporary tattoos
HISC one-pagers	<i>Carijoa riseii</i> invasive coral rack cards (DAR partnership)
Honolulu City Council informational packets	Coqui frog informational flyers
<a href="#">Invasive Plants flyers</a>	“Wanted” poster for mongoose reporting award
<a href="#">Landscaping Professional’s Guide to Stopping the Spread of Coqui</a>	<i>Sierra Club Hiking Field Guide</i>
Local Publications list	Apple Snail Pest Alert poster
Miconia rack card	
OISC brochure	
<i>OISC Newsletter</i>	
Pampas Grass brochure	
Pest Alert Flyers	

## **Measures of Effectiveness**

### **1. Number of callers on Pest Hotline**

- An anecdotal assessment from DOA estimates an average of 12 calls per week
- Although Hawaiian Telcom's 643-PEST number is supposed to be accompanied by monthly reports on number of calls, this has not yet been provided to DOA or DLNR. Hawaiian Telcom representatives are aware of the problem, but have thus far been unable to address the issue.

### **2. Number of educational materials produced and distributed to target audiences**

- Direct public outreach has risen statewide, thanks to HISC funding for additional outreach personnel and materials.
- Outreach specialists take advantage of opportunities to educate in public events/informational presentations and displays.
- Production of print material and miscellaneous outreach products target the public with species-specific topics.

### **3. Media relations, mentions in print and broadcast, contribute to public perception of invasive species issues.**

- Outreach specialists actively engage the media by seeking out opportunities for publicity or by providing information in the form of detailed data, images, interviews and additional sources.

### **4. Number of volunteers who assist with invasive species management stewardship; this effort is done in cooperation with agency partners.**

- OISC volunteers contributed approximately 800 hours to field work in FY 2005-2006.
- MISC volunteers contributed approximately 625 hours

### **5. Number of hits on invasive species web page**

- This was not available at the time of reporting.

### **6. Public Survey**

- As part of the Silent Invasion Media Campaign, CGAPS hired Ward Research to conduct two statewide telephone public awareness surveys, the first in 2004, before the PSAs aired, and the second in 2006, near the end of the television portion of the campaign. The following tables are from this report.

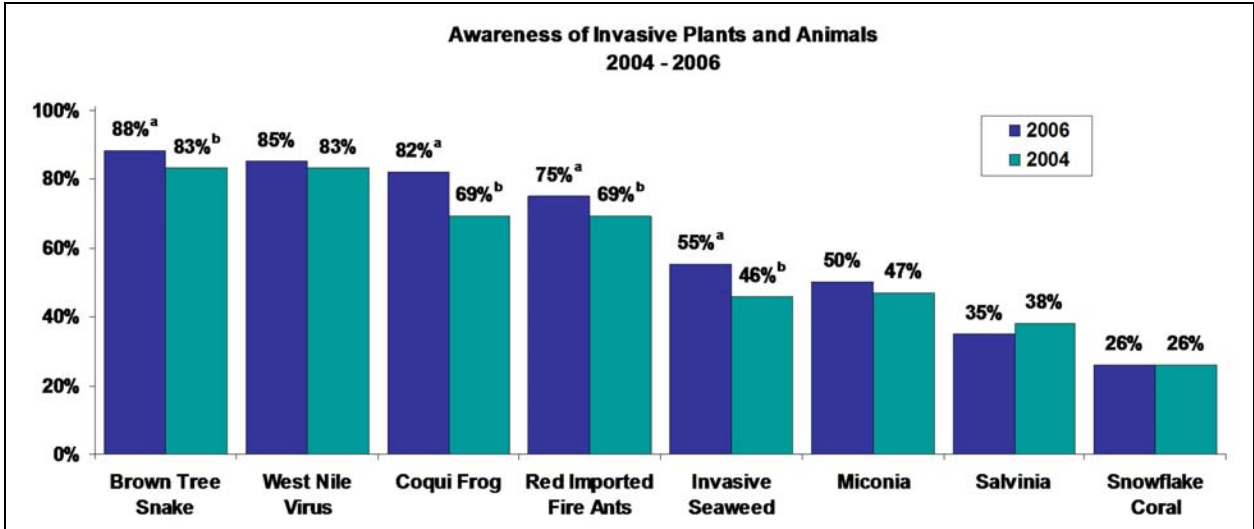


Figure 1: Awareness of Invasive Plants and Animals 2004-2006. The graph shows some key invasive species that are highlighted either in the PSAs or have received significant media attention over this period. The letters “a” and “b” denote statistically significant changes between 2004 and 2006. Note: salvinia is not mentioned in the PSAs, nor is it regularly mentioned by CGAPS or HISC outreach specialists. In almost all cases (except salvinia and snowflake coral) public awareness is rising.

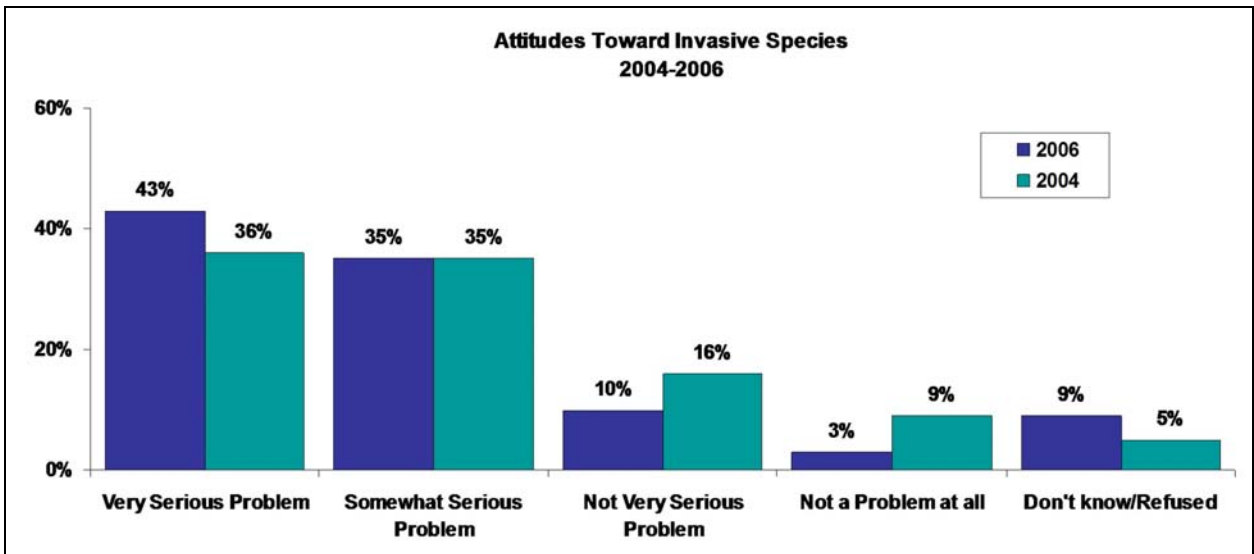


Figure 2: Attitudes Toward Invasive Species 2004-2006. This graph shows that the number of people that view invasive species as a “very serious problem” is rising, and that the number of people that think invasive species are not a problem are dropping.

Two additional questions asked in the 2006 survey revealed support for future initiatives:

- A large majority of residents (91%) said they would support a law to ensure that plants are reviewed for their invasive potential before introduction to the state.
- Table 3: Support for Cargo Fee. There is public support (88%) for a law that allows HDOA to charge a fee for cargo with invasive pests, based on responses to the following:

“Currently, the Hawai‘i Department of Agriculture lacks adequate funding to inspect all cargo and goods entering Hawai‘i for invasive species. Would you support a law that allows the Department to charge those sending cargo here an appropriate service fee if their items are found infested with pests? This fee would ensure that funds for inspection keep pace with the amount of infested cargo entering the State. Would you support such a law or not?”

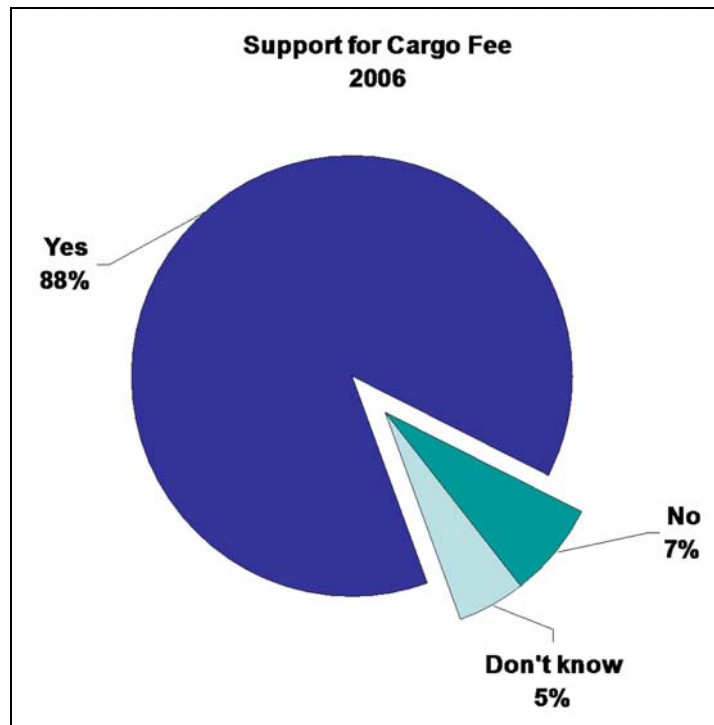


Figure 3: There is strong support for user fees to fund invasive species interdiction and quarantine. On January 19, 2006 the HISC approved a resolution in support of the invasive species recommendations of the Governor’s Economic Momentum Commission. The Commission recommends a review of user fees from importers/shippers to ensure these fees are adequate to properly fund the needed prevention and quarantine programs.

Public Outreach Grants for FY 2005-2006

<u>Title</u>	<u>Organization</u>	<u>Award</u>	<u>Comments</u>
Habitatitude Campaign	HI DLNR/DAR, Aquatic Invasive Species Team	\$9,000	Working with aquarium trade to post invasive information and offer unwanted fish turn-in.
Invasive Species Control and Education for a Native Hawaiian Fishpond	Ao'ao o na Loko I'a o Maui	\$8,500	In Kihei, Maui.
Malama i ka 'Aina, Malama i ke Kai	University of Hawaii	\$8,000	Continued funding to expand high school teacher invasive training to neighbor islands.
Pu'u Wa'awa'a Ahupua'a Invasive Species Outreach Project	DLNR, Division of Forestry & Wildlife	\$8,000	Community outreach to stakeholders.
Weed Warriors	Tri-Isle Resource Conservation & Development Council, Inc/MISC	\$7,245	High school program (Maui) of class visits and volunteer invasive removal field trips.
Jumping the Fence Line: Escaped Agricultural Plants in Hawai'i	University of Hawaii	\$7,000	Free awareness training for ag, landscape, and land management professionals.
Invasive Species Public Service Announcements	Imi Pono no ka Aina	\$6,827	Forty-eight radio PSAs with contests and prizes (for the Big Island).
Kohala Coqui Coalition	North Kohala Community Resource Center	\$6,000	Continued community outreach to eradicate and prevent coqui reinfestation.
Island Invaders	Honolulu Zoo Society	\$4,707	Curriculum for "Zoo-to-You" school visits, including scholarships for underserved schools.
		\$65,279	



## Hawaii Invasive Species Council Project Match Summary

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

	State Wide	Hawaii	Maui	Oahu	Kauai	Total by Program
<b>Prevention</b>						\$2,025,542
USDA PPC Detection and species specific funding to HDOA	\$260,542					
USDAFWS to DOA 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					

	State Wide	Hawaii	Maui	Oahu	Kauai	Total by Program
<b>Response and Control</b>						\$1,923,100
Department of the Interior - USGS 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 – UDA-SFWS grants to the ISCs		\$39,400	\$29,600	\$27,100	\$27,000	
Nation Park Service			\$200,000			
NOAA Coral Reef Management and Regional grants	\$75,000					
USDA-FWS Nonindigenous Aquatic Nuisance Prevention and Control Act	\$72,000					

	State Wide	Hawaii	Maui	Oahu	Kauai	Total by Program
<b>Research and Technology</b>						\$711,043
Research and Technology - Grantee Match	\$711,043					

	State Wide	Hawaii	Maui	Oahu	Kauai	Total by Program
<b>Public Outreach</b>						\$60,036
Public Outreach - Grantee Match	\$60,036					

<b>Totals</b>	\$3,003,621	\$228,400	\$1,096,600	\$155,100	\$236,000	\$4,719,721
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## **Section 19 of Act 178, SLH 2005 - Budget and Projects for FY 2006-2007**

On July 18, 2006, HISC voted to approve the working group project budgets below. This report describes the projects of each working group, including cost details.

The invasive species budget initiative calls for the expenditure of \$2,000,000 in state special funds for State FY 2007 to provide support for both the operations of 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 voluntarily be matched (1:1) by non-state dollars or equivalent in-kind services making this an overall effort of at least \$4 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 two year of the HISC budget initiative as well as acknowledging the successful DOA Biosecurity initiative.

Although this budget request is under DLNR, it includes and involves programs and projects through multiple departments, the four counties and federal and private partners. The funding will not replace existing state, private, or federal funding, but will support the development of innovative approaches and build on existing cooperative programs. The goal of this funding is to build successful new programs which better protect Hawaii from invasive species and encourage the incorporation of these programs into agency operations.

A detailed budget request is attached. The overall goals of the Administration's budget request for HISC 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, WNV, 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.

The state funding is broken into four integrated components as well as a separate administrative budget:

- 1) Building up **Prevention** capabilities **\$410,000 (20.5% of total funding)**. Projects include:
  - a. \$350,000 to DOH– Develop the capacity to prevent the establishment of WNV by providing supplies and support for the State Laboratory, VC Branch and environmental education to promote awareness and public participation.
  - b. \$60,000 to the DLNR –To sustain a technician to continue the screening of plants grown and used commercially in Hawaii via the locally developed WRA System.
  
- 2) Establishing **Response and Control** programs **\$1,115,000 (55.75% of total funding)** to conduct invasive species detection, response and control actions on the ground and in the water. Projects include:
  - a. \$315,000 to DLNR– DAR supervised Aquatic Invasive Species Response Team.
  - b. \$800,000 to the ISC’s 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.....	\$200,000
Maui.....	\$300,000
City and County of Honolulu.....	\$150,000
Kauai.....	\$150,000
  
- 3) Enhance **Research and Applied Technology** funding **(0.00% of total funding)** due to the budget reduction this year. There will be an opportunity to take a year off and allow the grant program to develop priorities and support to request increased funding next year while minimizing the loss of trained staff who work on education, early detection and rapid response projects. This suspension will be temporary and a priority will be to restore funding for the next year;
  
- 4) **Public Outreach** Program **\$230,000 (11.50% 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. This has been accomplished by establishing three public outreach specialist positions to carry out these tasks and, in the past, a successful small grant program that included a broad array of organizations and community groups in addition to projects developed by staff.
 

Outreach staff and project support.....	\$230,000
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- 5) **HISC Support** functions **\$245,000 (12.25% of total funding)** includes two HISC support positions and a fee assessment. DLNR staff is proposing that Central Service fees (7%) be included in the budget this year to fairly allocate the cost of these fees to the programs receiving funding from the Natural Area Reserve Fund. Central Service fees are estimated to total up to \$900,000 for the Natural Area Reserve Fund in total and \$140,000 is the proportionate amount that should be assessed on the \$2,000,000 being allocated to the HISC Program. The HISC support positions include a Grant and Budget Manager to contract for research and technology application services and other projects such as community outreach grants. The second HISC support position will be a HISC Coordinator who will provide opportunities for more effective communication between members and meeting support.

Central Services Fee.....	\$140,000
Staff and Support.....	\$105,000

This budget request has been aligned with both the HISC 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.

<b>HISC Budget Summary</b>	2006-2007		
	\$1000's	Proposed	
<b>Prevention</b>		<b>20.50%</b>	<b>\$410</b>
	HDOH - WNV		\$350
	DLNR - Weed Risk Assessment		\$60
<b>Response and Control</b>		<b>55.75%</b>	<b>\$1,115</b>
	BISC		\$200
	MISC		\$300
	OISC		\$150
	KISC		\$150
	AIS		\$315
<b>Research and Technology</b>		<b>0.00%</b>	<b>\$0</b>
<b>Outreach</b>		<b>11.50%</b>	<b>\$230</b>
	Staff and Support		\$230
<b>HISC Support</b>		<b>12.25%</b>	<b>\$245</b>
	Central Services Fee	fixed 7%	\$140
	Staff and Support		\$105
		<b>Total</b>	<b>100%</b>
			<b>\$2,000</b>

**Prevention Budget                                   \$410,000**

PWG did not meet to set their budget but after multiple requests, representatives from DOA Plant Industries, Plant Quarantine and DLNR met to review project requests and discuss how to go about funding the requests and discuss how to go about funding the requests (\$410,000) for FY 2006. These projects will be accomplished through a transfer of \$350,000 from the Hawaii Department of Land and Natural Resources (DLNR) to the Hawaii Department of Health (DOH). The remaining funds will be encumbered directly by DLNR-DOFAW.

**DOH Prevention Project**

**WNV Prevention   \$350,000**

DOH will maintain and improve its current surveillance and prevention efforts, and establish greater capacity for responding if WNV is detected, in order to prevent the establishment of the Virus in the State. As WNV activity intensifies in California and

across the Mainland, it is increasing likely that an infected mosquito or bird will make its way onto an airplane or ship, and thus introducing the Virus to Hawaii.

DOH will continue to invest heavily in WNV fight through staff time. Based on staff time, statewide, DOH spends about \$832,000 on mosquito control generally, plus about \$1,000,000 on port of entry work specifically targeting WNV. DOH also spends about money for staff time in its laboratories statewide.

DOH needs HISC funds because the Centers for Disease Control (CDC) only will provide level grant funding and rejected DOH's request for increased grant funds. CDC is even phasing out personnel allocations. Furthermore, DOH will have fewer vacancy savings to support WNV efforts and so actually faces reduced financing in FY06. DOH ran short of lab funds at the end of FY05 and had to obtain help from USDA-FWS and HISC.

WNV poses a serious threat to Hawaii for several reasons. Given the tropical climate of the State, mosquito populations are present throughout the seasons, suggesting the potential for year-round transmission and prolonged human disease outbreak. Direct medical costs will be significant. With regards to wildlife, WNV will probably extinguish several endangered and endemic bird species in Hawaii, and may cause irreversible damage to the ecosystem. Additionally, Hawaii's economy is dependent on tourism, and its beautiful and safe environment is attractive to many visitors. Establishment of a mosquito-borne disease with no cure or prophylaxis currently available would have a negative impact on the state's economy.

DOH has and will continue to focus its efforts on the following areas:

1. Prevention activities continue to focus on source reduction, and source treatment with larvicides. Hawaii's mosquito species are container breeders, so reducing the number of water-collecting items from property reduces the breeding sites for the mosquitoes. Public outreach is critical for source reduction, and is discussed below. In addition, treatment of standing water with larvicides greatly enhances the reduction of the adult mosquito population, especially because standing water cannot be eliminated in many areas. Mosquito suppression is targeted so that if the Virus is introduced, there will not be a sufficient mosquito population to establish the disease cycle.
2. Educating the public is another significant activity for prevention of WNV. DOH shared WNV information through various venues, including health fairs, pet shows, neighborhood boards, association and group meetings, and the main public library. Other outreach activities included radio public service announcements, production and dissemination of informational brochures. Outreach efforts will continue with the emphasis on informing the public of the need for mosquito control and next, on help with reporting and collecting dead birds.
3. Source reduction for prevention. DOH - VC Program adopted a goal of reducing mosquito populations to a level of no more than five mosquitoes per trap per night, with

surveying for breeding sites triggered by higher counts. Maintaining low mosquito counts has proven more difficult in some areas than others. In April and May 2004, staff surveyed a radius of approximately two miles of all major ports of entry, to detect and reduce breeding sites. Ports of entry, both air and sea, will continue to be the primary focus of DOH mosquito surveillance and reduction.

4. Bird surveillance greatly improved this past year. A contract was established with Aloha United Way to operate a public hotline, accessible statewide, to report dead birds. The number of dead bird collection sites also increased. Birds collected were tested by RAMP (Rapid Analyte Measurement Platform) WNV Test, which is a rapid antigen detection assay. This is treated as a screening test, providing more rapid results. DOH also has developed the capability to conduct live bird testing.

5. Lab testing. The ability to detect WNV in a timely manner is critical in preventing the establishment of WNV or, if it is established, minimizing the public health impact in humans and animal species. Due to our relative remoteness, efforts have been made to ensure that a full menu of WNV testing is available within the state. Protocols for performing enzyme-linked immunosorbent assays (ELISA) for WNV antibody in humans were established at the State Laboratory Division (SLD), and will continue to be used for the diagnosis of WNV human infections. SLD will continue to perform Real Time -PCR (RT-PCR) tests for the detection of WNV nucleic acid in human cerebral spinal fluid specimens, dead bird organs, and mosquito pools. SLD is asking for \$64,870 for Real Time RT-PCR kits and ancillary supplies to maintain testing of dead bird tissue and mosquito pools for WNV nucleic acid at the 2005 level.

6. Data management, including geographic information systems (GIS), is critical to prevention, surveillance, and response. Significant improvements in this area will also allow for quicker recognition of trends and better ability to respond to field conditions and will continue to ensure integrity of the data being entered. Such surveillance data will guide prevention and suppression efforts. Currently, most of the information technology equipment is on Oahu and HISC will seek to provide neighbor island staff with equipment. Furthermore, equipment and software must be maintained after purchase, and training will be needed so staff can use the full capability of the GIS software.

7. Response. In order for Hawaii to remain WNV-free, it is critical that DOH be able to respond immediately and intensely to surveillance indicators that WNV has entered the state. If WNV were to be detected, current larviciding procedures would not be adequate for halting the disease transmission cycle. Subject to further review and approval, adulticide, applied by backpack and truck sprayers, would be employed to prevent the establishment of the virus. Equipment and adulticide needs to be in state, so that application can take place before further transmission and amplification.

## DOH- WNV Program

<b>State Laboratory Division</b>	
RT-PCR supplies	
Mosquito pools (Oahu)	\$59,000
Dead bird tissues (all Islands)	
ELISA supplies ~6240 tests (max 120/wk)	
Live birds (all islands) sera	\$17,200
PPE and Lab Safety	\$10,704
Consumables, lab supplies	\$13,100
Preventative maintenance	\$2,000
FedEx	\$500
misc, shipping taxes	\$1,496
Personnel	\$78,000
Subtotal HISC requests from SLD	<b>\$182,000</b>
<b>Vector Control Branch</b>	
<b>Oahu</b>	
ArcView classes	\$5,000
GPS controls for truck mnted sprayers	\$10,000
Gravid trap replacement parts	\$4,000
VCMS update subscription	\$6,000
Computer hardware and software for Outer Islands	\$25,000
Lab Supplies (entomology and microbiology)	\$2,000
Larvicides for Oahu	\$10,000
<b>Oahu subtotal</b>	<b>\$62,000</b>
<b>Maui</b>	
Supplies, larvicides, trap parts, RAMP kits	\$8,500
<b>Kauai</b>	
Supplies, larvicides, trap parts, RAMP kits	\$9,100
<b>Hawaii</b>	
Supplies, larvicides, trap parts, RAMP kits	\$26,500
Sub total HISC requests from Vector Branch	<b>\$106,100</b>
<b>Public Outreach / Live Bird Surveillance / Personnel</b>	
TV, Radio PSA, website public outreach	\$20,000
Pick up of dead birds from public (contract with private courier)	\$22,940
Live Bird Surveillance	
bleeding and spinning supplies for outer islands	\$11,000
boxes for shipping specimens to SLD	\$2,500
Training CD for packaging and shipping of diagnostic materials	\$260
Shipping and courier costs of specimens to SLD	\$5,200
Sub total HISC request from Public outreach and Live bird surveillance	<b>\$61,900</b>
<b>Total HISC Requests</b>	<b>\$350,000</b>



## DLNR Prevention Projects

### WRA Technician

**\$60,000**

WRA System is a tool that uses published scientific information to gauge the potential of a plant to be invasive if planted in Hawaii. The System is designed to identify plants that are invasive in natural areas such as forests, cultivated lands including forestry and agricultural areas, and invasive plants in other managed areas, e.g. parks and lawns. The WRA System provides biological information only. Funding would be to continue screening plants to allow the development of the WRA System as a systematic tool that will be used to prevent the importation of potentially invasive plants and provide information about plants present in Hawaii that could become weeds over time.

The WRA System has three important goals:

- 1) Screen new plant introductions to identify species that pose a high risk of causing ecological or economic harm if they are imported.
- 2) Identify high-risk species among plants that have already been imported, allowing for informed planting decisions.
- 3) Assist with prioritizing species for active control programs among more than one thousand plant species that have become naturalized in Hawaii.

The WRA System consists of 49 questions about a plant's biological characteristics and whether it has become invasive in other locations with similar conditions to Hawaii. The WRA Technician will use published information from credible scientific sources to answer these questions, which gives the plant a total numerical score. At this time there is a backlog of plants for which screening has been requested by nursery or landscape industry representatives.

DLNR with UH Botany - Lyon Arboretum  
WRA Technician

	WRA Technician
Salary	\$43,000
Benefits	\$9,800
UH Overhead	\$6,600
Supplies and training	\$600
<b>Total</b>	<b>\$60,000</b>

### Response and Control

#### Budget

**\$1,115,000**

The funds of this working group are used for conducting invasive species detection, response, and control actions at a local level.

EWG met on March 26, 2006 to review projects funded in FY 2006, to set priorities for FY 2007, to review efforts to control established pests by the DOA, DOH, and DLNR, to review the proposed EWG task list, to review the list of invasive species generated by HISC, and to discuss invasive species control programs.

The work of the ISC on priority pests (economic, agricultural, and environmental) in each county will be supported along with the continuation of a pilot marine response program being developed by DLNR in cooperation with federal, private and county resources.

While the existing invasive species committee partnerships and the new marine invasive species response team are priorities, there was discussion on how to make sure the work done by the partnerships was evaluated by including long term monitoring for efficacy, that new species were being detected effectively and that participation by all agencies concerned was encouraged. EWG will continue to address these issues as well as evaluate additional species for inclusion on the HISC list of invasive species and coordinate response and policy efforts for priority species.

<b>Total by Project</b>	<b>BIISC</b>	<b>MISC</b>	<b>OISC</b>	<b>KISC</b>	<b>AIS</b>
Salary	\$142,300	\$206,389	\$98,302	\$73,887	\$214,000
Fringe	\$35,575	\$51,597	\$24,576	\$18,472	\$53,500
Travel and Helicopter	\$1,000	\$11,500	\$5,061	\$12,639	\$20,200
Equipment	\$0	\$0	\$11,061	\$0	\$0
Supplies	\$5,125	\$9,514	\$0	\$30,161	\$9,350
Training	\$0	\$0	\$2,000	\$2,850	\$8,500
Utilities	\$0	\$3,000	\$0	\$0	\$0
Contractual	\$4,000	\$0	\$0	\$2,991	\$0
Construction	\$0	\$0	\$0	\$0	\$0
<b>Total Direct Charges</b>	<b>\$188,000</b>	<b>\$282,000</b>	<b>\$141,000</b>	<b>\$141,000</b>	<b>\$305,550</b>
Indirect Charges (UH Overhead)	\$12,000	\$18,000	\$9,000	\$9,000	\$9,450
<b>Total</b>	<b>\$200,000</b>	<b>\$300,000</b>	<b>\$150,000</b>	<b>\$150,000</b>	<b>\$315,000</b>

## Research and Technology

.....Budget  
.....  
..... \$0

This working group advertises a request for proposals for critical projects such as biological control, more effective increased survey and detection efforts, taxonomic identification, master GIS and associated database management, and applied technology for improved efficiencies in invasive species prevention and control efforts. Due to the budget reduction this year there will be an opportunity take a year off and allow the grant program to develop priorities and support to request increased funding next year while minimizing the loss of trained staff who work on education, early detection and rapid response projects. This suspension will be temporary and a priority will be to restore funding for the next year.

## Public Outreach

**Budget** **\$230,000**

This working group cooperates with the public and private sectors to increase voluntary compliance of quarantine laws, avoid accidental introductions of invasive species. It is also establishing an effective pest hotline that delivers timely information to managers on the ground.

The working group identified priority messages for key species and outreach needs to be addressed in the coming year including: WNV, coqui frogs, aquatic issues, weed risk assessment, port of entry worker outreach, transport of pests (into the state, between islands, around islands), and the red imported fire ant.

Three outreach specialists are stationed throughout the State (Big Island, Oahu, and Kauai). They are supervised by the ISCs or other sponsoring agency and are responsible for carrying out a quarterly work plan determined by the participants in the Public Outreach Working Group. The Public Outreach Grant Program will not be run in FY 2007 as the working group identified retaining the three HISC funded staff as the top priority.

The Outreach Specialists will use the funds to support outreach on priority species and messages including WNV and CGAPS “Don’t pack a pest, Don’t plant a pest, and Report a Pest” public service announcements. The group also decided to support the development of a website for HISC that would be integrated with existing online resources.

### FY 2007 Outreach Budget

Salary	\$144,300
Fringe	\$36,075

Travel	\$2,500
Equipment	\$0
Supplies	\$28,200
Training	\$0
Utilities	\$0
Contractual	\$5,125
Construction	\$0
Total Direct Charges	\$216,200
Indirect Charges (UH Overhead)	\$13,800
<b>Total</b>	<b>\$230,000</b>

**HISC Support**

**Budget** **\$245,000**

HISC support functions \$245,000 (12.25% of total funding) includes two HISC support positions and a fee assessment. DLNR staff is proposing that Central Service fees (7%) be included in the budget this year to fairly allocate the cost of these fees to the programs receiving funding from the Natural Area Reserve Fund. Central Service fees are estimated to total up to \$900,000 for the Natural Area Reserve Fund in total and \$140,000 is the proportionate amount that should be assessed on the \$2,000,000 being allocated to the HISC Program. The HISC support positions include a Grant and Budget Manager to contract for research and technology application services and other projects such as community outreach grants. The second HISC support position will be a HISC Coordinator who will provide opportunities for more effective communication between members and meeting support.

Central Services Fee.....\$140,000  
Staff and Support.....\$105,000

**HISC Staff and Support**

Salary	\$77,000
Fringe	\$19,250
Travel	\$1,250
Equipment	\$0
Supplies	\$1,200
Training	\$0
Utilities	\$0
Contractual	\$0
Construction	\$0
Total Direct Charges	\$98,700
Indirect Charges (UH Overhead)	\$6,300
<b>Total</b>	<b>\$105,000</b>