

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
Honolulu, Hawaii 96813

January 11, 2008

Chairperson and Members
Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Land Board Members:

1. SUBJECT: REQUEST FOR APPROVAL TO ENTER INTO FIFTEEN CONTRACTS TO IMPLEMENT THE HAWAII INVASIVE SPECIES COUNCIL RESEARCH AND TECHNOLOGY GRANT PROGRAM PROJECTS

This board submittal requests approval to enter into contractual relationships for fifteen projects that address research and technology needs for invasive species priorities, and to authorize the Chairperson to negotiate and execute contracts for services, subject to the availability of funds and approval as to form by the Attorney General's Office.

BACKGROUND:

The 2003 State Legislature authorized the creation of the Hawaii Invasive Species Council (HISC) and stated "the silent invasion of Hawaii by alien invasive species is the single greatest threat to Hawaii's economy, natural environment, and the health and lifestyle of Hawaii's people and visitors." Hawaii is one of the few 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 the pathways in which invasive species can gain access into the state.

HISC, which is administered by DLNR, received a budget of \$4 million for the year FY 08 to provide support for the operations of the HISC and its cooperating partners, to develop a comprehensive state-wide invasive species prevention, control, research, and outreach program. These funds will be matched 1:1 (or better) with non-state dollars. Of that amount, including some redirected contingency funds \$780,000 was budgeted for the Research and Technology Program. HISC research and technology evaluation committees have completed a review of 48 research and technology proposals following Requests for Proposals that attracted twelve coqui frog and thirty-six general invasive species proposals. A total of 21 reviewers evaluated some or all of the proposals, including staff from DOA, DEBDT, DOH, DLNR, HISC, USDA, UH, Bishop Museum, USGS etc. A core group met at the University on November 29, 2007 to review the top

ranked projects. Fifteen projects were selected and funds requested come to a total of \$782,156 a little over the \$780,000 agreed for in the HISC budget. We plan to reprogram some HISC support funds to cover that shortfall.

These fifteen Research and Technology projects are matched with \$1,047,092 in non-state dollars (summaries attached). They will be funded to the level indicated here:

| | Amount | Title | Research Provider | Type of agreement |
|-----|-----------|---|----------------------------------|-------------------|
| 1. | \$16,444 | Survey for insect enemies of <i>Bocconia frutescens</i> in Costa Rica | USDA Forest Service | contract |
| 2. | \$42,955 | Biocontrol of <i>Rubus ellipticus</i> using insect agents in China | USDA Forest Service | contract |
| 3. | \$120,516 | Green and healthy Hawaii: identifying and introducing alternatives to invasive plants in response to invasive species issues. | University of Hawaii | contract |
| 4. | \$96,999 | Ecological, hydrological, ecological and economic impacts of <i>Miconia</i> in Hawaii | Entrix Environmental Consultants | contract |
| 5. | \$69,728 | An early detection system for invasive marine species: Development and proof-of-concept of a taxonomic microarray | University of Hawaii | contract |
| 6. | \$36,049 | Evaluating impact of <i>Puccinia psidii</i> rust strains on Ohia | DLNR, DOFAW | contract |
| 7. | \$82,500 | Chemical ecology of the little fire ant for detection delimitation and control in Hawaii | USDA-ARS-PWA | contract |
| 8. | \$34,810 | Determining the efficacy of fungicide to protect endangered species from the rust <i>Puccinia psidii</i> . | University of Hawaii | contract |
| 9. | \$31,050 | The effects of cooking on diphacinone residues in feral pig tissue. | USDA APHIS | contract |
| 10. | \$73,726 | Invasive ant control for native ecosystem preservation and restoration in Hawaii | Pacific Cooperative Studies Unit | contract |
| 11. | \$75,000 | Overcoming site limitations in the control of coqui frog populations | Pacific Cooperative Studies Unit | contract |
| 12. | \$22,397 | Dermal toxicity of aqueous solutes in coqui frog | University of Hawaii | contract |
| 13. | \$25,122 | Hawaii's invasive plant species: an interactive key for the identification and management of invasive species in | Bishop Museum | contract |

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|-----|----------|--|----------------------------------|----------|
| | | Hawaii. | | |
| 14. | \$38,860 | Barn Owl/Rat: invasive predators of endangered seabirds | Pacific Cooperative Studies Unit | contract |
| 15. | \$16,000 | Developing a database for the Hawaii Pacific Weed Risk Assessment System | University of Hawaii | contract |

CONTRACT PROVISIONS

On August 29, 2007, two requests for proposals were posted on the State Procurement Office's website for HISC Coqui Frog Research and Technology Projects (RFP No. DOFAW-HISC-CF-08) and HISC Research and Technology Projects (No. DOFAW-HISC-RT-08). The due date for proposal submissions was October 5, 2007.

Contracts or purchasing agreements will be negotiated with the principal investigators receiving funding to implement the projects according to their project descriptions. The standard state contract form or a contract agreement form developed specifically for the HISC projects will be used and approved by the Attorney General's Office.


Upon approval by the board, the division will submit the contracts for review and approval as to form by the Attorney General, and process the documents for signature by the chairperson.

RECOMMENDATION:

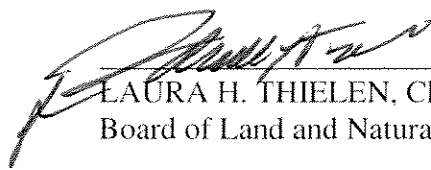
That the board: 1) approve implementation of the HISC Research and Technology Program for FY08; and 2) authorize the chairperson to negotiate and execute contracts subject to:

- a. Scope of services (contract deliverables) as summarized in the attachment,
- b. Availability of state funds; and
- c. Approval as to form by the Attorney General's Office.

Respectfully submitted,


 for PAUL J. CONRY, Administrator
 Division of Forestry and Wildlife

APPROVED FOR SUBMITTAL:

A handwritten signature in black ink, appearing to read 'Laura H. Thielen', is written over a horizontal line.

LAURA H. THIELEN, Chairperson
Board of Land and Natural Resources

Hawaii Invasive Species Council RFP Awardees 2008

HISC research and technology evaluation committees have completed a review of 48 research and technology proposals following RFPs that attracted twelve coqui frog and thirty-six general invasive species proposals. A total of 21 reviewers looked at some or all of the proposals, including staff and experts from DOA, DEBDT, DOH, DLNR, HISC, USDA, UH, Bishop Museum, USGS etc. A core group met at the University on November 29, 2007 to review the top ranked projects.

Fifteen projects were selected (below) for funding and we are doing the paper work for those. We expect the total amount of funded projects to come to \$782,156 a little over the \$780,000 agreed for in the HISC budget. We plan to reprogram some HISC support funds to cover that shortfall.

| AWARDED PROPOSALS – selected from a total of 36 general invasive species research and technology projects solicited via an RFP. | AWARDED AMOUNT |
|---|-----------------------|
| <p>Survey for insect enemies of <i>Bocconia frutescens</i> in Costa Rica – Johnson/USDA FS Summary: The Principal Investigator (PI) will work with colleagues in the University of Costa Rica to identify host specific natural enemies of <i>Bocconia frutescens</i>. <i>B. frutescens</i> is a shade tolerant bird dispersed tree invading East Maui and parts of the Big Island. It is spreading quickly into relatively pristine undisturbed native forest; is able to colonize fern filled gulches and is increasing in cover and frequency in these habitats.</p> | \$16,444 |
| <p>Biocontrol of <i>Rubus ellipticus</i> using insect agents in China – Johnson/USDA FS Summary: Specific natural enemies of yellow Himalayan raspberry will be the focus of search efforts in China. Originally only found on the Big Island it has spread to Maui through trade in hapuú trunks. It has invaded deeply into pristine forests at Volcanoes since its arrival in the 1960s. It forms dense impenetrable thickets.</p> | \$42,955 |
| <p>Green and healthy Hawaii: identifying and introducing alternative ornamental landscape plants in response to invasive species issues – Kaufman/University of Hawaii Summary: This project is focused on identifying and evaluating alternative non-invasive ornamental plants to use in place of known invasive species currently in use by industry. The work will involve consultation with landscape industry experts to identify alternatives, determination of their non-invasive status, field testing of plants, and production of outreach material.</p> | \$120,516 |
| <p>Ecological, hydrological, ecological and economic impacts of <i>Miconia</i> in Hawaii – Lee/Entrix Enviro Consultants Summary: To test assumptions about <i>Miconia's</i> impact on soils and hydrology. Initiate assessment of long term impacts of <i>Miconia</i> through comparison with Tahiti where the problem is more advanced, and damaging. Provide economic estimates of watershed damage from <i>Miconia</i> in Hawaii. Host a regional conference on the ecological impacts of <i>Miconia</i>.</p> | \$96,999 |

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|---|----------|
| <p>An early detection system for invasive marine species – development and proof-of-concept of a taxonomic microarray Toonen/University of Hawaii</p> <p>Summary: The goal is to design and fabricate a taxonomic microarray that can quickly and quantitatively be used to identify the presence of a set of species, from a mixed sample of plankton or boat hull scrapings. Species selected will include known and potential invaders not yet established in Hawaii.</p> | \$69,728 |
| <p>Evaluating impact of <i>Puccinia psidii</i> rust strains on Ohia – Hauff/DLNR-DOFAW</p> <p>Summary: This project aims to document the impacts of a variety of strains of ohia rust on Ohia through tests carried out on a variety of Ohia types from Hawaii, but carried out in Brazil where it is believed that Ohia rust originates from.</p> | \$36,049 |
| <p>Chemical ecology of the little fire ant for detection delimitation and control in Hawaii – Jang/APHIS</p> <p>Summary: This project aims to identify and isolate little fire ant pheromones that may be useful as attractants to be used to detect and or control the ant in new sites where it is currently unknown to occur, or where it is having negative impacts on valued resources and human health.</p> | \$82,500 |
| <p>Determining the efficacy of fungicide to protect endangered species from the rust <i>Puccinia psidii</i> – Uchida/University of Hawaii</p> <p>Summary: Trials to determine types and amount of fungicide needed to control Ohia rust on a small scale where it affects rare native species.</p> | \$34,810 |
| <p>The effects of cooking on diphacinone residues in feral pig tissue – Pitt/APHIS</p> <p>Summary: This project aims to address concerns about the use of diphacinone containing baits as a rodenticide to reduce the harmful impacts of rodents on Hawaii's threatened and much depleted native flora fauna. Although strict rules are to be adopted limiting the hunting of pigs in areas treated with diphacinone - and it is known that pigs that eat the baits do not accumulate levels of the chemical that would pose a risk to human health. Via laboratory tests this study will accurately document the risks related to incidental consumption of pigs by humans where the pigs have eaten baits.</p> | \$31,050 |
| <p>Invasive ant control for native ecosystem preservation and restoration in Hawaii – Krushelnycky/University of Hawaii</p> <p>Summary: Trials will be undertaken on potentially effective insecticides that may be used to control ants in Haleakala National Park on Maui where ants are negatively impact native vertebrate and invertebrate species.</p> | \$73,726 |
| <p>Hawaii's invasive plant species: an interactive key for the identification and management of invasive species in Hawaii. James/Bishop Museum</p> <p>Summary: An online interactive key will be developed for common invasive plant species. In addition management methods will be described for each species. This will allow anyone be they expert or member of the public to correctly identify these species using a simple set of characters presented in an appealing visual way.</p> | \$25,122 |
| <p>Barn Owl/Rat: invasive predators of endangered seabirds</p> | \$38,860 |

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|---|-----------------------|
| <p>Penniman/University of Hawaii Summary: Barn owl traps will be developed to facilitate control of this species which is contributing to the decline of seabirds nesting on Lanai. In addition their diet will be studied. Rats will be monitored and controlled – these are the other invasive species contributing to seabird decline at the site.</p> | |
| <p>Developing a database for the Hawaii Pacific Weed Risk Assessment System. Harrison/University of Hawaii Summary: A reorganization and systemization of the data gathered in the process of undertaking weed risk assessments. This is needed to facilitate more consistent data collection, and improve the management of the process. Currently each risk assessment is stored in a separate spreadsheet, more than a thousand species have been assessed and many more assessments are planned.</p> | \$16,000 |
| <p>AWARDED PROPOSALS – selected from a total of 12 coqui frog research and technology projects solicited via an RFP.</p> | AWARDED AMOUNT |
| <p>Overcoming site limitations in the control of coqui frog populations – Penniman/University of Hawaii/Maui Invasive Species Council Summary: This study aims to test the use of large agricultural sprinklers as a means to deliver standard control measures (dilute citric acid) to frogs in what is the only (as yet) uncontrolled population of frogs on Maui at Māliko gulch. The site’s difficult terrain and dense vegetation has hindered control efforts to date. Eradication may be feasible if this population can be controlled and future introductions from the Big Island can prevented.</p> | \$75,000 |
| <p>Dermal toxicity of aqueous solutes in coqui frog – Mautz/University of Hawaii Summary: This laboratory based study will test the effectiveness of a number of aqueous solutes for the control of coqui frogs and compare them to existing methods using citric acid and hydrated lime. Compounds to be tested for control effectiveness are citric acid, hydrated lime, sodium citrate, sodium chloride, potassium chloride, calcium chloride, sodium bicarbonate, potassium bicarbonate, potassium nitrate, ammonium nitrate, dextrose and dextrin.</p> | \$22,397 |


NOTICE TO BIDDERS

(Chapter 103D, HRS)

Internet Posting: August 29, 2007

SEALED Proposals for RFP No. DOFAW-HISC-RT-08, Hawaii Invasive Species Council Research And Technology Projects will be available and received at the Division of Forestry and Wildlife office located in the Kalanimoku Building, Room 325, 1151 Punchbowl Street, Honolulu. The Offeror shall be responsible for the delivering the proposal by mail or in person before 4:00 p.m. HST, October 5, 2007.

An awarded contract will ultimately be subject to the availability of funds.

Should there be any questions, please call  (808) 587-0166 .

Laura H. Thielen, Interim Chairperson
Department of Land and Natural Resources

PNS: August 29, 2007

NOTICE TO BIDDERS
(Chapter 103D, HRS)

Internet Posting: August 29, 2007

SEALED Proposals for RFP No. DOFAW-HISC-CF-08, Hawaii Invasive Species Council Coqui Frog Research And Technology Projects will be available and received at the Division of Forestry and Wildlife office located in the Kalanimoku Building, Room 325, 1151 Punchbowl Street, Honolulu. The offeror shall be responsible for the delivering the proposal by mail or in person before 4:00 p.m. HST, October 5, 2007.

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