



**A Proposal to the  
Hau'oli Mau Loa Foundation  
for  
2017 CGAPS Invasive Species Prevention Projects**

## Introduction

This past year has been a whirlwind of major projects, from beginning of the year fundraising and coordination of work on Rapid 'Ōhi'a Death (ROD), to springtime work with CGAPS Legal Fellow Andrew Porter to try to avert federal legislation that would preempt state ballast and biofouling rules. The main project of summer was advancing the *Interagency Biosecurity Plan* through a dual role of participating in the planning process and advising the coordinating team, which led into fall, with Gov. Ige announcing the Plan at the IUCN WCC. Now we are full circle back to ROD with a new *ROD Strategic Response Plan* and upcoming Summit on Nov. 30. All the while it has been a source of great comfort that for each of these projects and issues, we can draw on past work as vital building blocks, and rely on many partners, which adds strength and lightens the load.

Together with the entire ROD team we have successfully raised more than \$2,159,000 in funding from federal, state, and private sources in 2015-2016. The majority of these funds have gone to support research. Fifty thousand dollars from Hau'oli Mau Loa Foundation provided support for a molecular biologist (Dr. Wade Heller) to assist Dr. Lisa Keith and conduct research on the pathogen that cause ROD, resulting in the discovery that there are TWO pathogens, both *Ceratocystis*, and both are new to science and must be formally described and named. HMLF also supported a contract for Dr. Lloyd Loope to draft a response plan for ROD. This document is in final review, and it is now being referred to as the *Resource Document on Rapid 'Ōhi'a Death*. As with Dr. Loope's previous work, it is a compendium of information that has served as the foundation of the *ROD Strategic Response Plan*. The need for 2017 ROD work is estimated at \$3.6 million, and one of the breakout session in the afternoon of the Summit will focus on a funding strategy. Although there are now multiple agencies, researchers, and others that are willing and able to advance funding requests through multiple avenues, the one thing that has been elusive to-date has been a ready source of emergency funds for invasive species rapid responses. If the HMLF Board is amenable, a description and budget for this idea is included.

As you know, the CGAPS Legal Fellows program graduated another fellow at the end of March when Kevin Richardson took the position of Deputy Attorney General for the State's Education Division. Andrew Porter's transfer from HDOA to Division of Aquatic Resources was a seamless and timely transition, allowing Andrew to apply his dual expertise in law and maritime issues (Andrew holds a United States Coast Guard 100 Ton Master's License) to work on federal legislation mentioned above. Multiple hurdles have kept us from re-filling the position at HDOA, although that fellowship is currently being advertised.

It has been a year for planning, not just for issues, but also for CGAPS. The time has come to build some support and successional possibility into the core staff of CGAPS. With a rise in Invasive Species Committee capacity to work with nursery and landscape industries on invasive plants and pests, CGAPS has closed the Plant Pono/HPWRA Liaison position and with HMLF support will work on crafting a projects specialist position. The next step in the Restricted Plants List project (2014) is proposed as a two year project for a UH Graduate Assistant.

There are several projects that we have not been able to complete this year, and we appreciate HMLF's understanding of the challenges of this work. Please feel free to contact us with any questions or concerns about these or the projects proposed for 2017. We are truly grateful for your help and support. Mahalo nui loa.

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## **Project: CGAPS Invasive Species Law Fellowship Program** (Goal 1, Actions 1-6)

### **Executive Summary**

This project will provide continued salary and operational support for two full-time William S. Richardson School of Law Legal Fellows, and up to two summer interns to work in collaboration with CGAPS in reviewing invasive species prevention related statutes and rules, providing analyses, and drafting improved statutes and rules.

### **Background/Update on Fellowships**

The CGAPS Law Fellowships continue to be one of the most successful projects of our partnership with HMLF. Kevin Richardson, who worked with Division of Aquatic Resources on ballast and biofouling since January 2015, was hired and started as Deputy AG for Education in March 2016. Andrew Porter, who had been working on prevention rules with HDOA Plant Quarantine, transferred projects to continue progress on ballast and biofouling. Although we interviewed applicants for the vacant fellowship at HDOA in the summer, the recruitment was placed on hold due to logistical reasons. The process to re-advertise the position has begun and we are aiming to conduct interviews and fill the position by the end of 2016. This fellow would work directly with Acting Plant Quarantine manager Jonathan Ho, in collaboration with CGAPS, and will focus on proposed changes for streamlining and clarifying plant and animal importation and restriction rules, including rules to enable the formation of an invasive plant list for domestic import restriction, and other priority projects.

Existing funds are projected to last through mid-July 2017, assuming a second fellow is hired and starts Dec. 1, 2016. This request is for \$110,000, which would support two FTE from mid-July 2017 - January 2018 with salary and fringe travel, materials and supplies, plus up to University of Hawai'i William S. Richardson School of Law summer or semester interns. The legal fellows will be responsible for continuing work on the following issues:

- Gaps in quarantine action authority for federal agencies when human health vectors are found in international cargo or conveyances
- Continue supporting the ballast and hull-fouling work towards rulemaking to address these gaps, and as a participant in regional efforts to address hull-fouling
- Address DAR policy gaps regarding aquaculture, including permitting for culture, facilities inspection (for biosecurity purposes), and compliance
- Support HDOA Plant Quarantine in proposed rule changes for nursery industry compliance agreements



*CGAPS PIO Christy Martin, Legal Fellow Andrew Porter, and University of Hawai'i William S. Richardson School of Law Associate Dean Denise Antolini at the IUCN World Conservation Congress opening.*

- Support HDOA in exploring moving some of their invasive species violations to the Environmental Court
- Support CGAPS in its goals regarding the Interagency Biosecurity Plan
- Assist as necessary in local actions to support federal rule changes such as the Lacey Act update, the listing of Myrtaceae as restricted for import into Hawai'i and as federally actionable.

### **Deliverables**

The deliverables will consist of regular reports and a year-end final report on progress towards these and other priority issues.

### **Budget**

\$87,750	Salary & fringe for two FTE for 6.5 months
\$4,000	Two William S. Richardson School of Law interns
\$4,000	Materials, supplies, including meeting refreshments/food
\$4,000	Domestic or international travel
\$4,750	Conference registration, mileage, other
\$5,500	University of Hawai'i Foundation 5%
<b>\$110,000</b>	<b>Total</b>

## **Project: Capacity Support for CGAPS PIO and Project Specialist** (Multiple Goals and Action items; Goal 1, Action 5 & 6; Operational Goal 2)

### **Executive Summary**

Funds are requested for up to 4 months of salary and fringe, plus operating support for the CGAPS Statewide Invasive Species Public/Community Relations Coordinator (shortened to PIO). The goals of this position are to facilitate engagement and inter- and intra-agency communication; to coordinate and catalyze collaborative projects towards the goals outlined in the CGAPS Strategic Plan; to promote key outreach messages; to educate decision makers, special interest groups, and the public about invasive species in order to effect a change in perception, actions, rules, or funding for invasive species issues. Funds are also requested to support a new projects specialist position to assist the PIO. As a project of the University of Hawai'i's Pacific Cooperative Studies Unit, CGAPS staff also conducts and coordinates research, and functions as a connector between the University's knowledge base, resource management agencies, and the community.

### **Background**

The University of Hawai'i is a key resource in the effort to protect Hawai'i's natural resources, economy, and residents from the threats posed by invasive species. Under the direction of Dr. David Duffy and in partnership with the CGAPS Chairs, this project will benefit the University of Hawai'i by integrating faculty, researchers, and students in Hawai'i's biosecurity programs. Close collaboration between biosecurity agencies and the University also provides research and outreach capacity where there are currently gaps, and in turn, greater integration between the University and Hawai'i's biosecurity programs will enable faculty to identify job training and research pathways.

Funding for the CGAPS PIO will cover up to 4 months of salary and fringe to continue

work on CGAPS goals, manage HMLF prevention projects, contractors, and staff. Contributions from the Hawai'i Invasive Species Council, Hawai'i Department of Land and Natural Resources, National Park Service, U.S. Forest Service, and U.S. Fish and Wildlife Service also support the salary, fringe, and operating costs of position.

With the additional work load related to ROD and in support of setting up a leadership transitional plan for CGAPS as suggested in the CGAPS Strategic Plan, we are requesting funds to support a new projects specialist position that would provide more support for a wide variety of CGAPS projects including, but not limited to Plant Pono. This new position has yet to be established, although it will be an RCUH position through Pacific Cooperative Studies Unit based on O'ahu. The aim would be to begin crafting a position description in January and start someone in April, 2017. Current funds for Plant Pono would support this projects specialist position (assuming \$4,720/month salary & fringe) for 4.2 months. Therefore, funding is requested to support an additional 7 months of salary, fringe and operational funds, through the end of January 2018 for this position.



*CGAPS staff provides strategic communications assistance, such as preparing briefing documents on ROD for Governor Ige, and a Call to Action for Senator Schatz.*

### **Deliverables**

Progress reports are provided to the CGAPS Steering Committee and funders at quarterly meetings, and a final report will be produced and shared at the end of the year. Measures of effectiveness are included for projects where appropriate.

### **Budget**

\$31,256	1 FTE salary & fringe (partial funding) for CGAPS PIO
\$3,000	CGAPS PIO domestic or international travel
\$21,500	Media production and broadcast contracts, related costs
\$33,130	1 FTE salary & fringe (7 months) for projects specialist
\$1,500	Projects specialist domestic travel
\$9,500	Materials & supplies, small service contracts, web security
\$8,400	Conference registration, mileage, other costs associated with coordinating and implementing CGAPS projects, including, but not limited to food and refreshments, etc.
\$5,714	PCSU direct costs for admin, HR, fiscal support of CGAPS
\$6,000	University of Hawai'i Foundation 5%
<b>\$120,000</b>	<b>Total</b>



## Project: Biosecurity Graduate Assistant on Invasive Plants (Goal 1, Actions 5 & 6)

### Executive Summary

Funds are requested for 2 years support for a Natural Resources and Environmental Management Graduate Assistant (GA) at the University of Hawai'i at Mānoa College of Tropical Agriculture and Human Resources (CTAHR). The GA will work under the direction of Dr. James Leary, CTAHR Assistant Specialist on Invasive Plant Species Management and the CGAPS PIO on this project, with the final product being a well-vetted list of invasive plants that are recommended for import restriction.

### Background

Although seemingly straight-forward, the Hawai'i Department of Agriculture (HDOA) does not have rules in place for how a plant can be added to a list of invasive plants to restrict their import from other states. Over the past few years there have been several discussion between agencies, conservation groups, and plant industry groups (including nursery, landscape, forest production, biofuel, research, etc.), about this process, yet with no resolution. Further, the U.S. Department of Agriculture (USDA) can only consider adding plants to their list of plants restricted from importation from foreign sources if those plants are on a State restricted list.

This GA Masters B project will build on prior CGAPS work that used the Hawai'i-Pacific Weed Risk Assessment, an applied research tool developed and tested by UH Mānoa's Dr. Curt Daehler, to create a list of high risk plants that are not yet present in Hawai'i. The GA will work through the list of high-risk plants and identify the plants that will be recommended for import restriction, then will engage relevant stakeholders including industry and state and federal resource management agencies in a collaborative process to recommend a final list for restriction and document a proposed process for future additions to such a list. The Landscape Industry Council of Hawai'i Board of Directors was briefed on this project at their meeting in November 2016, and they are in support of the concept, and have agreed to participate and assist with engaging others. The GA will also work with the CGAPS Legal Fellows, HDOA, and CGAPS to craft draft rules to support a state restricted plant list and listing process. This project is in line with the expectations for Department of Natural Resources and Environmental Management (NREM) Masters student: Students are expected to acquire quantitative reasoning, critical thinking, and advanced skills that enable them to solve contemporary resource use and environmental problems and to assist in sound policy development and implementation.

Funding is requested as a one-time transfer to support salary and fringe for a 2-year GA at step 8, and funding for materials, supplies, and interisland travel for meetings and consensus building for this project. This project will be a close collaboration between the CGAPS



*GA funding would support Chelsea Arnott, formerly with the O'ahu Invasive Species Committee and the Ko'olau Mountains Watershed Partnership, and currently working on her Master's in NREM.*

PIO and Dr. James Leary, Associate Specialist for Invasive Plant Management Science at the UH Mānoa College of Tropical Agriculture and Human Resources.

### **Deliverables**

Progress reports will be provided to the CGAPS Steering Committee and funders at quarterly meetings, and a final report will be produced and shared at the end of the year. Measures of effectiveness will include progress toward consulting with and gaining consensus from individuals and agencies.

### **Budget**

\$49,550	2 years salary & fringe for 11-month Step 8 GA
\$4,350	Materials, supplies, mileage, conference registration, other costs including, but not limited to food and refreshments for stakeholder meetings
\$3,100	Domestic travel (interisland)
\$3,000	UHF indirect (5%)
<b>\$60,000</b>	<b>Total</b>

## **Project: Assessing Public Awareness and Support** *(Goals 3-5)*

### **Executive Summary**

Funds are requested for contracts to conduct public awareness and opinion research via focus groups and surveys of Hawai'i residents. Survey work is integral to understanding what is important to the public, the relative importance (or unimportance) of invasive species issues, what messages resonate, and some reasons why issues or messages do not resonate or result in change (barriers to change). There are a variety of issues in recent years that need to be explored, including public attitudes towards the use of biotechnology and pesticides in preventing or mitigating invasive species impacts. Survey work will also include benchmark questions to assess progress and support of existing messages.

### **Background**

CGAPS first conducted focus group research on invasive species in 2003 to explore the opinions and attitudes of residents on invasive species issues, messages, and barriers that deter public assistance (see <http://www.cgaps.org/wp-content/uploads/CGAPS-2003-Focus-Groups-on-Invasive-Species-Summary.pdf>). Results from this work has guided messaging for more than a decade, and occasional telephone surveys provided benchmark assessments on projects and messages (see links to omnibus survey results <http://www.cgaps.org/public-awareness-studies/>). The survey work to-date has not included questions or an exploration of more controversial concepts or novel techniques such as the use of biotechnology (including genetic modification, gene insertion, etc.), pesticides, biocontrol, and other important tools.

The importance and urgency of exploring these concepts is due in part to recent public opposition to pesticide use, even for eradicating Little Fire Ants, and the use of gene editing techniques particularly for genetically modified foods. The need is also driven by recent studies, including the Pacific Islands Climate Change Cooperative's projection of a 40-50 year window to address range expansion of mosquitoes which vector avian malaria, a key driver of native bird extinction (see <http://piccc.net/piccc/wp-content/uploads/2015/05/Synthesis->

Assessing-vulnerability-for-native-Hawaiian-forest-birds.pdf), and the projected loss of ‘ōhi‘a due to Rapid ‘Ōhi‘a Death (20% ‘ōhi‘a loss annually where the disease is present; near 100% mortality in areas where the disease is well-established). Agencies are trying to move ahead in planning for major work in the areas of biosecurity (the State Interagency Biosecurity Plan), and mitigation to prevent the spread of diseases and other types of invasive species, and CGAPS will be assisting in every way possible. Funding is requested to support contracts to conduct focus groups and survey work, which would be administered through the Hawai‘i Conservation Alliance Foundation.

### **Deliverables**

As with other survey work, the reports will be posted on the CGAPS website. Analyses and recommendations will be used during the planning and implementation processes for a wide variety of issues.

### **Budget**

\$24,000	Contract to conduct qualitative research via focus groups
\$7,818	Contract to conduct public opinion survey work via omnibus or other
\$3,182	Hawai‘i Conservation Alliance Foundation 10%
<b>\$35,000</b>	<b>Total</b>

## **Project: Support for the Hawai‘i Green Growth** *(Goals 3 & 5)*

### **Executive Summary**

Provide support for the leadership and coordination of Hawai‘i Green Growth (HGG) on 2017 partnership goals, including the development of dashboards for invasive species and natural resource protection, generating support for the implementation of the Statewide Interagency Biosecurity Plan, and collaborative advocacy around shared priorities.

### **Background**

Funds are requested to help support HGG, a public-private partnership that catalyzes action across government, private sector, and civil society to achieve Hawaii’s Aloha+ Challenge 2030 sustainability goals and serve as a model for integrated green growth. HGG serves as the backbone organization for the Aloha+ Challenge, a statewide commitment by the Governor, County Mayors, Office of Hawaiian Affairs, State Legislature, and public-private partners to achieve six integrated sustainability goals by 2030. The Aloha+ Challenge has been recognized internationally as a locally appropriate model that can be scaled to meet the United Nations 2030 Agenda for Sustainable Development and Paris Climate Agreement.

In 2016, HGG co-chaired the Legacy Committee and Working Group to leverage Hawaii’s investment in hosting the IUCN World Conservation Congress to catalyze new initiatives and build momentum toward achieving the Aloha+ Challenge 2030 sustainability goals. Public-private partners galvanized support to launch over 20 initiatives, including the Statewide Interagency Biosecurity Plan, initiatives which were announced by Governor Ige and other leadership in September. The group also framed Hawaii’s legacy beyond the Congress, building on the Mālama Honua Worldwide Voyage and the Aloha+ Challenge as the Sail Plan for a more sustainable and resilient future.



Through participation in HGG, CGAPS taps into a broader network for shared messaging and support. HGG leads an annual cross-sector legislation and policy process to identify and coordinate top shared priorities for each upcoming legislative session. HGG also focuses on engaging high-level leadership, integrating sustainability priorities into long-term policy, and uplifting partner priorities through the statewide framework.

HGG is working with partners to develop the online Aloha+ Challenge Dashboard to track progress and inform policy on Hawaii's 2030 sustainability goals, including progress towards addressing invasive species. The indicators will be based on progress made in implementing the *Interagency Biosecurity Plan* once it is finalized (see the draft here <https://hdoa.hawaii.gov/wp-content/uploads/2016/09/Draft-Hawaii-Interagency-Biosecurity-Plan.pdf>).

As a network-based partnership, HGG will be developing strategic 2017-19 priorities with members in early 2017. HGG is currently working on the following portfolios to advance the Aloha+ Challenge 2030 goals:

1. Aloha+ Challenge Dashboard: Statewide Accountability Mechanism
2. Legislation & Policy Agenda: Driving Implementation on Hawaii's 2030 Goals
3. Smart Sustainable Communities Roundtable: Private Sector Leadership & Action
4. Next Generation Leadership: Inspiring Youth & Community Action
5. Ala Wai Watershed: Pilot to increase Community Resilience
6. Scaling Island Models: Building the Global Alliance

Financial support for HGG is shared among 20 agencies and entities. Funding is requested to provide partial support to HGG for core operations and projects.

### **Deliverables**

With continued support, HGG will continue to make progress on all bullet points listed above, and progress reports will be provided.

### **Budget**

**\$25,000**

**Total to:** Oahu Economic Development Board (OEDB)

735 Bishop St # 424

Honolulu, HI 96813

Attention: Dori Baba

Please note that the check is for Hawaii Green Growth (HGG) Donations



*HGG' Exec. Director Celeste Connors, Gov. David Ige, Office of Hawaiian Affairs CEO Kamanaopono Crabbe, and UH President David Lassner discuss the Aloha + Challenge goals.*

## Supplemental Request: ROD Rapid Response Emergency Fund

### Executive Summary

This additional request is to provide funds to establish a rapid response fund at UH Foundation to enable the University of Hawai'i, including CTAHR and Extension Service staff, PCSU project staff such as the Invasive Species Committees and Watershed Partnerships, and others, to quickly engage in a rapid response to the detection of the *Ceratocystis* pathogen in 'ōhi'a on an island where it is not yet known to occur (islands in the State of Hawai'i, excluding Hawai'i Island).



*Aerial surveys have been conducted on each island, and crews are sent to take samples when dead trees are found, like this one on Kaua'i. To-date, none of the trees have tested positive for the ROD pathogen. Aerial surveys will continue twice per year on each island through DLNR's budget.*

### Background

The University of Hawai'i has played, and continues to play a major role in the research, response, and community outreach related to Rapid 'Ōhia Death (ROD). The discovery in mid-November of an 'ōhi'a killed by the ROD pathogen in the northern part of Hawai'i Island was heart-breaking, but somewhat expected. With the pathogen moving ever-closer to Maui, it is all but inevitable that early detection and monitoring work being conducted on each of the uninfected islands will result in a sample that tests positive for the pathogen.

Each island is developing their operational plan for rapid response, building on the lessons learned from the Plant Health Emergency Response Plan

and Tabletop (2013), and in line with the ROD Strategic Response Plan which was just released in advance of the November 30 ROD Summit. As we have learned from too many past invasive species rapid response efforts, one of the major obstacles for rapid response is quick access to funding for the initial pulse of work. A grant recently announced by Sen. Schatz and the Department of Interior will provide funds to be split between research and rapid response, primarily to support work on Hawai'i Island.

Therefore, the CGAPS Steering Committee feels that the most strategic course of action is to try to set up a rapid response fund that would be ready and accessible to enable University of Hawai'i researchers and staff to respond in an attempt to eradicate the disease from the island. If funds are not used for rapid response during the proposed two year grant period, CGAPS would approach Hau'oli Mau Loa Foundation with either a no-cost extension request or if more appropriate, a request to re-budget the funds for an alternate high-priority ROD project.

### Deliverables

As with the Tabletop exercise to test the Plant Health Emergency Response Plan, an evaluation of a rapid response would be conducted to better inform future emergency response

work. This evaluation and reports would be submitted to the Foundation and shared with partner agencies.

### Budget

\$121,500	Salary & fringe (partial funding) to support CTAHR, PCSU ISC, WP, other UH or RCUH staff for response
\$17,000	Contracts (helicopter time @ \$900/hr, other contracts)
\$94,000	On-island decontamination station/s for vehicles/heavy equipment, dedicated gear incl. chain saws, tarps, tyvek suits, decontamination supplies, fungicides & other treatment supplies; fuel, mileage, etc.
\$5,000	Domestic travel (interisland or national) for Science team, additional responders to site island
\$11,905	PCSU direct costs for admin, HR, purchasing/fiscal support
\$12,500	University of Hawai'i Foundation 5%
<b>\$250,000</b>	<b>Total</b>

## 2017 Budget

Item	2017 Projects	Term	Subtotal	Admin	Overhead	Total
1	Law Fellowship Program funding for 6 months for two legal fellows (RCUH), + up to 2 summer interns, materials & supplies, travel, conferences.	1/30/2018	\$104,500	UHF	\$ 5,500	\$ 110,000
2	CGAPS Core Support: 4 months sal/fringe for PIO; 7 months to Jan 2018 for CGAPS projects specialis; materials, supplies, operating costs; PCSU direct charge for admin, purchasing, contracting, and HR support for CGAPS projects	1/30/2018	\$114,000	UHF	\$ 6,000	\$ 120,000
3	Two years of support for a GA at UH Mānoa to take high-risk plant list (from Grant 13-1204-19-172) and work on consensus-building for restricted plant list (one-time transfer of funds)	12/31/2018	\$ 57,000	UHF	\$ 3,000	\$ 60,000
4	Contracts for qualitative research via professional survey work incl. focus groups and phone or other survey work	12/31/2017	\$ 31,818	HCAF	\$ 3,182	\$ 35,000
5	Support for Hawai'i Green Growth	12/31/2017	\$ 23,364	OEDB	\$ 1,636	\$ 25,000
<b>Total</b>						<b>\$ 350,000</b>

	2017 ROD Supplemental Project	Term	Subtotal	Admin	Overhead	Total
1	ROD Rapid Response Emergency Fund	12/31/2018	\$237,500	UHF	\$ 12,500	<b>\$ 250,000</b>