



**Coordinating Group on Alien Pest Species
(CGAPS)**

Annual Report
January 1 — December 31, 2017

Submitted to:
Hau'oli Mau Loa Foundation
Hawai'i Department of Agriculture
Hawai'i Invasive Species Council
Hawai'i Department of Land and Natural Resources-Division of Forestry and Wildlife
National Park Service-Pacific West Region
U.S. Fish and Wildlife Service-Pacific Islands Office
University of Hawai'i-Pacific Cooperative Studies Unit

Introduction

Acronym Index

BIISC: Big Island Invasive Species Committee

CGAPS: Coordinating Group on Alien Pest Species

DLNR DAR: Department of Land and Natural Resources-Division of Aquatic Resources

DLNR DOFAW: Department of Land and Natural Resources-Division of Forestry and Wildlife

DLNR: Department of Land and Natural Resources

HCAF: Hawai'i Conservation Alliance Foundation

RCUH: Research Corporation of the University of Hawai'i

HDOA: Hawai'i Department of Agriculture

HDOA PQ: Hawai'i Department of Agriculture Plant Quarantine

HMLF: Hau'oli Mau Loa Foundation

KISC: Kaua'i Invasive Species Committee

LFA: Little Fire Ant

MISC: Maui Invasive Species Committee

MoMISC: Maui-Moloka'i Invasive Species Committee

NPS: National Park Service

OISC: O'ahu Invasive Species Committee

PIO: Public Information Officer

ROD: Rapid 'Ōhi'a Death

TNCH: The Nature Conservancy of Hawai'i

UH CTAHR: University of Hawai'i-College of Tropical Agriculture and Human Resources

UH PCSU: University of Hawai'i-Pacific Cooperative Studies Unit

UH: University of Hawai'i

UHF: University of Hawai'i Foundation

USDA APHIS: U.S. Department of Agriculture-Animal and Plant Health Inspection Service

USDA FS: U.S. Department of Agriculture-Forest Service

USFWS: U.S. Fish and Wildlife Service

The Coordinating Group on Alien Pest Species (CGAPS) is a partnership of agencies and non-governmental organizations working together to close the gaps in Hawai'i's invasive species programs in the areas of prevention, early detection/rapid response, and long-term control of terrestrial and aquatic invasive species.

CGAPS hosts quarterly public meetings which are a venue for participants to network and communicate issues, challenges, and progress. CGAPS also has a Steering Committee that is responsible for strategy and for shepherding their agencies or NGOs' progress toward our shared vision, "To achieve effective protection of Hawai'i's unique natural environment, economy, agriculture, and the health and lifestyle of its people."

CGAPS currently has three staff to facilitate the partnership, implement projects prioritized by the Steering Committee, and to make progress on the 2015-2019 CGAPS Strategic Plan. The CGAPS staff consists of Andrew Porter, CGAPS Legal Fellow working on ballast water and biofouling issues in partnership with DAR; and Christy Martin, Statewide Invasive Species Public/Community Outreach Coordinator (shortened to PIO for Public Information Officer) who also serves as the CGAPS program manager. CGAPS also has a fourth position, which is currently vacant, a Legal Fellow working on invasive species prevention in partnership with HDOA PQ,

For more information on CGAPS, its projects, or to see the 2015-2019 CGAPS Strategic Plan, visit www.cgaps.org.



The CGAPS mission is to coordinate and catalyze action among government and non-government partners to prevent and manage invasive species in Hawai'i, as well as communicate key issues to the public.

Acknowledgement of CGAPS Support

CGAPS is a voluntary partnership, first and foremost. Without the leadership and participation of our colleagues from agencies and non-governmental organizations, none of the achievements listed in this or previous reports would have been possible. Thank you to all CGAPS participants for sharing your expertise, time, and energy. Mahalo to the 2017 CGAPS Chair Emeritus Michael Melzer, and 2018 Chair Joshua Atwood, for overall coordination of the partnership and supervision of the PIO. Thanks also to the incoming Deputy Chair Angela Kieran-Vast who will begin as Chair in July 2018 for fiscal year 2019. Mahalo to the CGAPS Steering Committee for providing a framework and direction for our projects.

The CGAPS staff and projects are supported through grants, and we are deeply grateful for this support. Mahalo to Hau'oli Mau Loa Foundation, Hawai'i Invasive Species Council, U.S. Fish and Wildlife Service, the National Park Service (via HPI CESU agreement #P17AC01216), and the U.S. Forest Service (DOFAW pass through) for financial support of CGAPS and its projects this past year. Most funds were administered by the University of Hawai'i at Mānoa or the University of Hawai'i Foundation (for private foundation grants) through the Pacific Cooperative Studies Unit. Funding for the Legal Fellows program is administered by the University of Hawai'i Foundation through the William S. Richardson School of Law. The Hawai'i Conservation Alliance Foundation and the O'ahu Economic Development Board also serve as fiscal sponsors for some of the CGAPS projects, and we are grateful for this help. Mahalo to the Research Corporation of the University of Hawai'i, employer of CGAPS staff.

Mahalo to Denise Antolini and Pamela Taura at the UH William S. Richardson School of Law for partnering with CGAPS on the Legal Fellows program, to Dr. James Leary of UH CTAHR for helping to guide the CGAPS Graduate Assistant, and to Drs. Mike Melzer and J.B. Friday for leadership on grants related to Rapid 'Ōhi'a Death.

In-kind support is also appreciated and integral to our work. Mahalo to HDOA, DLNR, and TNCH for providing meeting spaces, and to DLNR and HDOA for providing office space for the legal fellows.

Finally, thank you to Dr. David Duffy and the staff of the Pacific Cooperative Studies Unit. CGAPS is able to run "lean and mean" because we have the support and help of PCSU, one of the most important (and often unrecognized) conservation entities in Hawai'i.

CGAPS Steering Committee

- Hawai'i Department of Agriculture
- Hawai'i Department of Land and Natural Resources (Division of Aquatic Resources and Division of Forestry and Wildlife)
- Hawai'i Invasive Species Council
- Hawai'i Conservation Alliance Foundation
- The Invasive Species Committees of Hawai'i
- The Nature Conservancy of Hawai'i
- U.S. Department of Agriculture (Animal and Plant Health Inspection Service and U.S. Forest Service)
- U.S. Department of Defense -Naval Facilities Engineering Command Pacific
- U.S. Department of Homeland Security/Customs and Border Protection
- U.S. Fish and Wildlife Service
- University of Hawai'i



CGAPS Strategic Plan Progress

CGAPS staff work plans and projects are aligned to advance our collective progress towards the five goals outlined in the 2015-2019 CGAPS Strategic Plan. Each year in this report, we provide details on the progress made on the action items under each goal.

Goal 1: Minimize the inter- and intra-state movement of pests

Action 1: Support development of effective quarantine and inspection

The Hawai'i Interagency Biosecurity Plan was completed at the end of 2016, which gave agencies little time to coordinate legislative requests by January 2017. However, progress was made on actions that do not require legislation or funds. The 2018 legislative requests include elevating the Hawai'i Invasive Species Council to an attached agency that would help drive and track progress on the Plan.

Action 2: Find solutions to federal preemption

Based on advice from CGAPS participants, we are focusing on using existing federal mechanisms to try to gain additional protections for Hawai'i.

Action 3. Support reinstatement of HDOA Detector Dog program

Two HDOA dog handlers were hired and now work with their canines at Daniel K. Inouye International Airport. CGAPS will continue to do what it can to increase detector dog teams based on import risk and need.

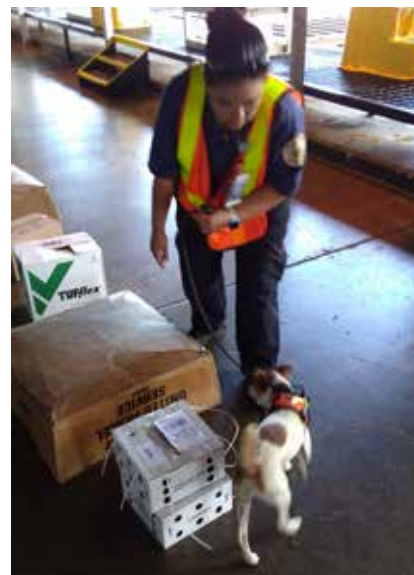
Through a grant to CGAPS from Hau'oli Mau Loa Foundation, our partners at the Maui Invasive Species Committee are continuing to work on contracting detector dogs specially trained to detect Little Fire Ants.

Action 4: Support the development of an effective hull-fouling and ballast water management program

CGAPS continued to support Jules Kuo, the DAR Ballast and Hull-fouling

Coordinator through full-time help of Andrew Porter, and advising by Christy Martin. Jules established a lab at DAR's Anuenue Fisheries Research Center that will allow the program to determine the amount and viability of organisms in ballast water as well as identify organisms taken from hull fouling samples. The program was also able to procure a mobile ballast water testing kit which can be used to quickly determine whether ballast water has been effectively treated or exchanged to meet current state and USCG regulations.

The program has also built capacity by welcoming marine biologist Dr. Scott Godwin and developing a new position for a fishery technician. The program is in its second year of housing a Kupu intern that assists in analyzing data received from the ballast water reporting program, aids



HDOA detector dog and handler working at FedEx

in vessel inspections, and helps develop outreach materials. Jules has also worked closely with CGAPS Aquatic Legal Fellow, Andrew Porter, in developing regulations for ballast water and vessel biofouling as well as tracking federal legislation.

Action 5: Support voluntary and regulatory mechanisms that prevent inter-and intra-state movement of pests

CGAPS staff each worked on different aspects of this action, from outreach on the Hawai'i Pacific Weed Risk Assessment and Plant Pono, to work on Rapid 'Ōhi'a Death messaging, and the work of the Legal Fellows on aquatic and terrestrial prevention mechanisms.

The update to the ballast water rules will be first, and a meeting was held with representatives of shipping agencies to introduce the plan and gain input before entering the formal rulemaking process in 2018. One of the main topics of the meeting was whether the shipping industry could technically and effectively comply with regulations that would require ballast water (sea water, not fresh) to be treated or exchanged during inter-island voyages. Based on this discussion, Andrew has revised the draft amendments and the inter-island movement of ballast water will now be included in the proposed amendments to the ballast water regulations (HAR § 13-76) as they move into the formal rulemaking process. Additional information on this Action is in the Legal Fellows' section.



Meeting with stakeholders to discuss possible changes to state ballast water rules

Action 6: Address lists regulating plants

Through HMLF support, CGAPS is continuing to work a list of high risk invasive plants with the goal of preventing their introduction. This also entails making new rules for how plants may be added to a prevention list. Like the work with vessel operators on the upcoming rulemaking to update the ballast water rules, CGAPS strives to engage stakeholders early in the discussion, long before rulemaking. In 2017 CGAPS worked with Dr. James Leary of UH CTAHR to set up and manage a Graduate Assistantship for CTAHR NREM student Chelsea Arnott to engage plant industry representatives in the process. More information on this project is provided in the HMLF Prevention Projects section of this report.

Goal 2: Expand Hawaii's Biocontrol Program

Action 1: Assist in developing messaging regarding the importance of biocontrol; Action 2: Support the development of expanded capacity for biocontrol in Hawai'i

One of HDOA's legislative priorities for 2018 includes requesting funds for planning a new biocontrol facility. The CGAPS public awareness survey work in 2012 found that three out of four residents somewhat or strongly support the use of biocontrol, but also that there is low awareness of successful biocontrol projects. CGAPS will continue to support this priority in a variety of ways, including through letters of support.

Goal 3: Educate the public and decision-makers on importance of prevention*

Action 1: CGAPS will work with a professional contractor to develop a coordinated strategy

CGAPS requested but did not receive HISC funds for this action, and it was not a high enough priority for inclusion

in the HMLF 2018 request. CGAPS will continue to look for ways to address this action.

Action 2: CGAPS will provide information support to decision-makers regarding prevention-based* policies and programs

CGAPS continued to provide information to decision-makers by engaging legislators, Hawaii's congressional delegates, and their staff. Information is provided in briefings, discussions, and with written and verbal testimony.

Although preventing a species is less costly than controlling its impacts once it is here, prioritizing the **message of prevention over control is counterproductive because many invasive species are here and causing impacts that must be addressed.*



CGAPS works with partners to engage decision-makers on invasive species issues

Goal 4: Identify key invasive species threats and coordinate response plans

Action 1: Coordinate and develop strategies to detect, respond to, and control new invasive species

CGAPS views the Hawai'i Interagency Biosecurity Plan as the best mechanism to raise capacity in this area. In particular, we are focusing on the following: 1) raise the capacity of HDOA to institute risk assessments on commodities and by provenance, which will inform and enable a number of other priorities in the Plan; 2)

the need to enact a holistic program with rules to address biofouling, as requiring cleaning offshore is not feasible or realistic; 3) support the agencies, Watershed Partnerships and Invasive Species Committees' rapid response and control functions; and 4) address the increasing challenge of negative public opinion of control measures.

Action 2: Facilitate research on key threats and pathways using risk-based assessments

CGAPS continues to engage researchers and agencies to increase capacity for assessing risk, and to normalize the use of existing risk assessment tools such as the Hawai'i Pacific Weed Risk Assessment and the Hawai'i Marine Invasive Species Risk Assessment.

Action 3: CGAPS will evaluate the effectiveness of control responses

As in 2016, CGAPS did not have the financial or human resource capacity to contract or conduct any formal evaluations of the effectiveness of invasive species rapid responses in 2017.

Action 4: Support the redevelopment of capacity for mosquito vector monitoring and response

The overall coordination of monitoring and control of mosquitoes continues to move forward. HDOH Vector Control hired a new manager and key staff, and the DLNR DOFAW entomologist, Cynthia King, organized a Statewide Mosquito Working Group comprised of federal, state, and county staff that participate in mosquito monitoring or control responsibilities. The next steps for this group should include a statewide assessment of mosquito vector monitoring and gaps, and an assessment of response capacity and needs. Department of Defense personnel recently presented their work to assess and raise local capacity for mosquito control in Fiji, and the model would work

well for Hawai'i. CGAPS will work with the Statewide Mosquito Working Group on these two tasks in 2018.

Action 5: Continue to help with effective pest reporting mechanisms

CGAPS continues to promote the State Pest Hotline, and once final details are worked out for online reporting through 643PEST.com, we will assist in promoting online pest reporting as an option.

Goal 5: Identify, synthesize, and share information about prevention and control measures

Action: Work with HISC and other partners to identify available data, develop indicators, and share to gain support for current and future work

CGAPS and HISC staff met with Hawai'i Green Growth (HGG) staff to review planned indicators on invasive species for the Aloha + Challenge Dashboard (see <https://dashboard.hawaii.gov/aloha-challenge>), which can now move forward as the majority of indicators are based on progress towards implementing the Interagency Biosecurity Plan.

CGAPS also contracted Ward Research to assess public awareness and support for invasive species issues and programs (more on this on page 15).

CGAPS Operational Goals

The Strategic Plan also identified two Operational Goals: 1) to explore potential changes to the CGAPS organizational structure as part of, or a first step to, securing stable funding for at

least one CGAPS staff position; and 2) to grant-fund CGAPS priority projects through additional staff capacity, including a project manager.

CGAPS staff are PCSU employees of RCUH and are considered a "project" of PCSU. Since 2015, the impending retirement of PCSU Director Dr. David Duffy has resulted in a lack of clarity and certainty about the future of PCSU and its more than 30 projects. In light of these impending changes, the PIO has assisted PCSU and Dr. Duffy with transitional planning and implementation.

In 2017, the PIO participated in meetings with UH and UHF leaders to communicate needs and agree on next steps, and assisted in crafting and reviewing the position description. In the fall, a faculty position was posted for an Assistant, Associate, or Full Professor of Botany and Director of PCSU. Review of the candidates began on December 1st. The goal is to start the selected candidate in August of 2018, and for there to be one and a half years of overlap before Dr. Duffy officially retires. Once PCSU is in a stable position, it may be more feasible to search for secure funding for one CGAPS position with the help of the new PCSU Director.

Also, CGAPS closed the HPWRA/ Plant Pono Liaison position in November, 2016, and created CGAPS Planner position in spring 2017 to add some capacity and as a possible succession in the future. After interviewing several candidates in the fall, the committee selected Chelsea Arnott, even knowing that her existing GA project and classes would continue through spring of 2018.

2017 HMLF Projects

In 2011 Hau'oli Mau Loa Foundation selected CGAPS as their partner to help achieve their mission to protect Hawaii's environment through preventing the arrival and establishment of new invasive species. Each year, the CGAPS Steering Committee prioritizes and submits a short list of projects for funding consideration, and 2017 was the sixth year of collaborative

projects. HMLF supports pilot projects or programs that are not typically funded by agencies, that provide or result in the information, strategic capacity, impetus, or synergy to significantly improve the programs and policies for preventing the arrival and establishment of new invasive species in Hawai'i. Summaries are provided as updates on progress for some multi-year projects, and as final reports for others.

CGAPS Legal Fellows (annual)

The CGAPS Legal Fellows are a collaborative project between the UH William S. Richardson School of Law and CGAPS. The goals of this program are to provide law school graduates with experience working in resource management agencies that they can draw from as their career advances, and to provide CGAPS and its partner agencies with legal research and policy assistance.

Andrew Porter has remained on board as the CGAPS Aquatic Legal Fellow and has continued to focus on the issues of ballast water and biofouling within the shipping industry. Andrew works closely with the DAR Ballast Water and Biofouling Coordinator, Jules Kuo, to help bridge the gap between the legal and scientific realms required for effective regulation.

The Vessel Incidental Discharge Act, commonly known as VIDA, has remained a hot topic during the 2017 Congressional Session. VIDA is federal legislation that seeks to preempt states' right to regulate vessel incidental discharge, including ballast water and hull biofouling, and has seen several iterations since first introduced in 2005. This session, VIDA was first introduced in January as S. 168. Andrew worked with the Hawai'i Attorney General's office to express serious concerns about VIDA and its inclusion in larger omnibus legislation this session, which tends to reduce attention and debate on its parts. However, in May VIDA was amended into S. 1129, the Coast Guard Authorization Act of 2017, where it remains as of December 2017. While VIDA is now a small section of a large bill, Jules and Andrew successfully worked with staffers of Hawaii's Congressional delegation to include many of our requested changes, making the current version of VIDA much more amenable to Hawaii's needs. Andrew will continue to track this legislation and work with our partners in 2018.

In August, Andrew and Jules co-hosted a very successful meeting of the Alien Aquatic Organism Task Force (AAOTF), comprised primarily of representatives of shipping industry and other stakeholders. They presented the need for amending the ballast water regulations found in Hawai'i Administrative Rules (HAR) section 13-76. The meeting was facilitated by Dawn Chang of Ku'iwalu, a small consulting firm that worked with the Department of Agriculture in developing the Hawai'i Interagency Biosecurity Plan, and was attended by 32 people who represented many of Hawaii's commercial shipping companies as well as representatives from both state and federal agencies with a stake in vessel discharge regulation. Andrew presented the

proposed changes to each section of the rules, followed by constructive feedback from participants. Following the meeting, Andrew compiled the notes and comments and revised the proposed draft ballast water amendments to reflect items discussed during the meeting. The proposed draft amendments have been sent to members of the AAOTF for additional review and comment before DAR enters the formal rulemaking process in the Spring of



CGAPS Legal Fellow Andrew Porter leading the discussion with stakeholders on proposed ballast water rule amendments

2018. Andrew will assist DAR on this issue throughout the rulemaking process.

Following from the [2014 Vessel Biofouling in Hawai'i](#) and [2016 In-Water Cleaning](#) reports, most of Andrew's time and energy in 2017 centered around the development of a pilot project for vessel biofouling management in Hawaii's harbors. This pilot project evaluates best the management practices (BMPs) and technologies for biofouling management that allow for vessel in-water cleaning while protecting Hawaii's waters from the release of aquatic invasive species and the discharge of harmful pollutants. A major aspect of this project will be to evaluate the efficacy of full-capture in-water cleaning technologies that are developed to filter and treat biological and chemical elements removed and suctioned during hull cleaning. There are technologies that have been tested and approved in New Zealand and Western Australia, but not in the U.S. When CGAPS and DAR staff learned that these technologies were planned for testing in Maryland and California and that these tests would provide the information for informing an international biofouling and in-water cleaning standard, CGAPS approached the project leaders to consider adding Hawai'i as a testing ground for evaluating the performance of these technologies in warmer waters.

To garner support for the pilot project, Andrew drafted a resolution for the Hawai'i Invasive Species Council (HISC) which will be reviewed and discussed at HISC's next meeting in January 2018. The end goal is to develop a scientific basis on which to build effective biofouling and in-water cleaning regulations for the future.

Andrew attended a variety of conferences and meetings in 2017. In April, Andrew participated in a meeting of the Pacific Ballast Water Group in Portland, Oregon which included discussions on invasive species issues in the EPA's Vessel General Permit, state ballast water reporting programs, in-water cleaning issues, and alternatives to VIDA. In July, Andrew attended the Hawai'i Conservation Conference where he presented on obstacles and solutions found in biofouling regulations at the international, federal, and state levels. In September and November Andrew presented on Hawaii's aquatic invasive species issues and regulations at meetings of the U.S. Department of State's International Visiting Leaders Program. Andrew has also been working with the Illinois-Indiana Sea Grant and the Illinois Natural History Survey to update the invasive species regulations database on the TakeAIM.org website which is a compilation of regulations from all 50 states looking at aquatic invaders in the marketplace



Andrew presented challenges and opportunities of legal framework at the Hawai'i Conservation Conference

Andrew also took the lead monitoring and submitting CGAPS testimony on aquaculture issues, including opposing the movement of Nile tilapia from Part A of the restricted list to Part B of the restricted list, which would allow more types of entities to import and rear them. Despite efforts, the Board of Agriculture voted to approve the measure. Andrew is also monitoring the release of a programmatic environmental impact statement (PEIS) for NOAA's Proposed Aquaculture Management Program in Federal Waters of the Pacific Islands Region. The PEIS is slated to be released in the Spring of 2018 and Andrew will provide NOAA with comments on any aquatic invasive species threats to Hawaii's waters under the proposed program.

The second Legal Fellow position based at HDOA Plant Quarantine was filled in January, 2017 by Timothy Sutton, who departed for his dream job in mid-June, just six months later. Although brief, Timothy's work was described as excellent and valuable by his direct supervisor, Acting Plant Quarantine Branch Manager, Jonathan Ho. Some of Timothy's projects

included assisting Invasive Plant Graduate Assistant Chelsea Arnott understand the legal framework for regulating plants and possible ways to draft rules for restricting new invasive plants. He also assisted HDOA PQ in identifying and proposing solutions to their system of notification for import violations. Timothy also assisted Jonathan with research and briefs on compliance programs to strengthen interisland prevention issues.

It is always our aim to quickly fill vacancies. However, there were several complications that delayed the posting and selection of a new Fellow, and after a review of email communications it is clear that only part of the delay was due to busy work and travel schedules for CGAPS and UH Law School staff. The request to RCUH for posting the position was initiated on July 1, but was slowed by a cumbersome online request portal, which has delayed other recruitments in the past. This recruitment posting had to be closed due to errors in the advertising dates. Moving forward, RCUH then required new information based on new policies, which required Denise Antolini's responses as the supervisor of the position. In August, RCUH notified our Law School partners that they needed to get approval to hire for this position from the UH Office of Human Services, and that they may take three to four weeks to approve the request, which is exactly what occurred. Once the documents were submitted and the revised recruitment uploaded, the position was posted on Oct 6, and closed Oct 25. Interviews were conducted in early November, although the final delay was that our selected candidate did not yet have a law degree (Juris Doctor), which the new position description requires before we can offer the job. Now that our candidate has passed all of the required classes as of December, 2017, we expect clear sailing, and we hope that we can work with our partners to streamline hiring in the future.

Biosecurity Graduate Assistant on Invasive Plants (2017-2018)

HMLF funding supported the creation of a two-year Graduate Assistantship (GA) through UH CTAHR in the Natural Resources and Environmental Management department. The position was filled in April 2017 by Chelsea Arnott, a former employee of O'ahu Invasive Species Committee and the Ko'olau Mountains Watershed Partnership, and current graduate student under the advisement of CTAHR Extension Agent Dr. James Leary and in consultation with the CGAPS PIO. The goal of the GA is to work with representatives from Hawaii's plant industries in a rule-making process for proposing plants to be listed for import restrictions into the state.

To gain a better understanding of the importance of plant importations to businesses and individuals, along with measuring general knowledge and attitudes on invasive plant issues and regulation, Chelsea sent out a survey in September 2017 to plant industries throughout the state. The results from the survey are being used to develop an outreach strategy that informs and engages stakeholders in a decision-making process for listing invasive plants species for import restriction and ultimately placed on a Restricted Plant list.

Outreach began in October when Chelsea presented at the LICH conference and has since presented to the O'ahu Nursery Growers Association, and the board and members of the Hawai'i Floriculture and Nursery Association on Hawai'i Island. Presentations are focused on informing members of the ornamental plant trade on the need for import restrictions for invasive plants, the Restricted Plant list as a tool to accomplish this, and their role in the rule-making for proposing plants



Molly Murphy (BIISC), Chelsea Arnott, and Ambyr Mokiao-Lee conduct outreach at the 2017 LICH Conference and Tradeshow

to be listed. Response from members has been positive at meetings and there is a general recognition of the need to prevent further invasive plant introductions into Hawai'i.

Future presentations are scheduled on Kaua'i at the monthly Kaua'i Landscape Industry Council meeting in January 2018 along with scheduling to present at Maui Association of Landscape Professionals meetings on Maui. Workshops on each of the islands are the next steps to start discussions on rule-making for proposing plants to be listed and developing an initial list of plants that can be taken to HDOA Board of Directors for final approval and policy implementation.

Little Fire Ant Detector Dog (2015-2016, extended to December 2018)

HMLF funding for this pilot project has again been extended. The project remains very much alive and a very high priority. As with many projects, the reason for the delay has been partly due to heavy workloads, combined with the growing challenge of procuring unusual goods and services. In this case, the process for soliciting bids, selecting, and awarding the contract has faced even greater scrutiny than before, because it is an international Request for Proposals for companies to select, train and supply one or more little fire ant (LFA) detector dogs. The lead for this project continues to be Teya Penniman, who reports that the issues have been resolved and that she expects to be able to solicit bids for a contract to select, train, and provide an LFA detector dog in the first quarter of 2018.

Support for Hawai'i Green Growth (annual)

Each year with funding from HMLF, CGAPS contributes to support the operating costs of Hawai'i Green Growth (HGG). HGG Executive Director Celeste Connors and staff convene a more diverse group of business, agency, and NGO representatives with the core value of mālama 'āina, which was re-affirmed at the 2017 HGG Retreat. HGG also worked with HISC and CGAPS staff to re-assess and finalize measures for the Invasive Species portion of the Aloha + Challenge dashboard, which will directly use progress indicators on the implementation of the Interagency Biosecurity Plan. HGG also continues to work with Gov. Ige on the Sustainable Hawai'i Initiative, which incorporates the Aloha + Challenge goals including the Interagency Biosecurity Plan, Watershed and reef protection goals.



Audrey Newman, 'Aulani Wilhelm, and Celeste Connors at the HGG retreat

ROD Emergency Special Funding Projects (2016, extended to December 2018)

The unprecedented emergency of ROD prompted HMLF to provide urgently needed support for the response. Four projects were proposed totaling \$225,000, the two highest need projects were completed in 2016 (support for both the microbiology post-doc Wade Heller, and support for entomology post-doc Curtis Ewing), and the other two have just a couple thousand dollars remaining by the end of December. The third project was funding to support a pathology technician to work with Dr. Lisa Keith.

The fourth project provided funding to support a ROD Statewide Outreach Coordinator. The goal for this position is to help coordinate messaging and public outreach across the state to supplement efforts of outreach specialists and UH Extension staff on Hawai'i Island. As reported in the 2016 CGAPS Annual Report, this was the final new RCUH position created from this 4-part grant, and interviews were conducted in Dec. 2016. Ambyr Mokiao-Lee, Education

Specialist for DOFAW Kaua'i was selected and started on O'ahu on February 1, 2017. Ambyr hit the ground running, as she had participated in the ROD Outreach calls and ROD Summit in November 2016, and has a solid understanding of outreach planning and logistics. Ambyr worked with the ROD Outreach team to plan and conduct a variety of public outreach events, including symposia in Hilo and Kona, presentations at schools, meetings, and conferences on O'ahu, outreach tables on O'ahu and Hawai'i Island, and media interviews. Ambyr also helped revise the outreach materials including the ROD brochure, PowerPoint presentations, outreach displays, and she takes turns organizing social media posts and responses. Second year funding for this position is being provided by DOFAW passthrough from the U.S. Forest Service.

ROD Emergency Rapid Response Fund (2017)

This two-year grant provides funds in the event that ROD is found on a neighbor island where ROD is not yet known to occur. The funds would support a variety of rapid response needs such as equipment, supplies, travel for response crews and advisors, helicopter time, and related items. The ROD Strategic Response Plan (<https://www.ctahr.hawaii.edu/dl/rod/strategicresponseplanfinal.pdf>) details the general needs for addressing ROD, yet working groups on each island need to draft their own island-specific response plans. The Maui plan is the furthest along, thus CGAPS may seek to use some of these funds to pre-purchase some of the immediate response items.

Capacity Support for CGAPS (annual)

Funding for the new CGAPS Planner position and operating costs were provided by HMLF as part of its annual grant supporting CGAPS Capacity. As Chelsea will not start in the Planner position until January 2018, this section of the report will reflect the work of the PIO. Funding for the CGAPS PIO salary, operating and some project costs are shared between agencies and HMLF. In 2017, the majority of time was spent managing CGAPS operations and staff, planning major projects, and working behind the scenes to support partners. The PIO position description lists public and policy maker outreach and media-related duties at 50%; staff direction and supervision, partnership coordination, and partner project support services at 25%; grants, planning, and project management at 20%; with 5% other duties as assigned.

ROD Documentary

With funding from a 2016 HISC grant, the CGAPS PIO drafted and worked with PCSU to post an RFP for the production of a half-hour ROD documentary. The RFP was posted in February and resulted in seven proposals. Selection of a contractor was fast, although submittal of all the documents and the actual RCUH contracting process delayed the award until early June. That month, the PIO and members of the ROD outreach and research teams met with the contractor, Annie Sullivan (dba Club Sullivan TV), followed by several weeks of planning for locations, setting up interviews, and other logistics. In August, the Club Sullivan team conducted a week of filming on Hawai'i Island and a half week on O'ahu, and captured other footage when they could. Since the filming was pushed back from June to August, a no-cost extension was requested and granted,



Filming for the ROD documentary at Papahana Kualoa

which will provide three additional months to complete the work. The final product is expected to be delivered by March 31, 2018.

The timeline moving forward includes Club Sullivan addressing CGAPS PIO comments on the rough cut (January, 2018), CGAPS and ROD partner comments on the fine cut in early February, and the production of the final video. Funds from HMLF will support the showing of the movie in local venues statewide, and the purchase of broadcast time on each of the three major network affiliates, Hawai'i News Now, KITV, and KHON in the spring of 2018.

Spot the Ant, Stop the Ant

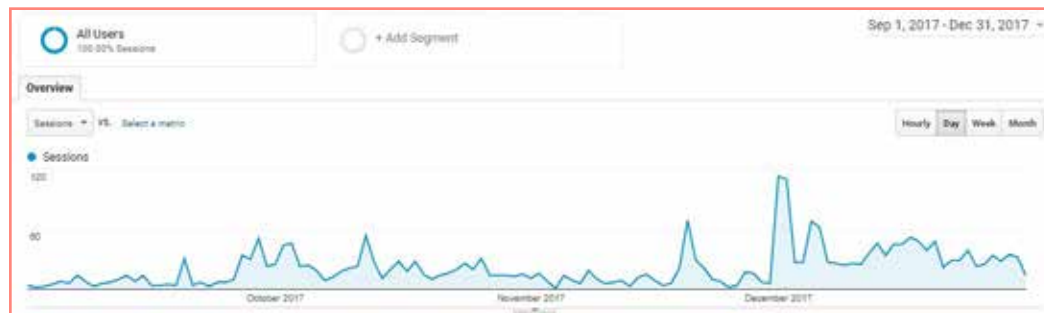
HISC and HMLF funds also supported the 3rd annual “Stop the Ant Month” campaign in October. Christy continued as the lead for the LFA Response outreach working group, and coordinated the HISC funding request for radio ads, and some of the resources and supplies for ISC outreach in each of the counties. This past year, we had the added help of Carolyn Dillon of the Little Fire Ant Hui, who joined us for planning calls and assisted in the preparation, implementation, and garnering of media attention for this issue. Planning for this year’s campaign began with a meeting in August, with an assessment of the messaging to ensure consistency and address barriers. OISC’s new design and production of a more professional LFA “test kit” was adopted for early detection islands, and funds supported the production and postage for return envelopes for ant sample submittal. As in past years, there were official proclamations for “Stop the Ant Month” (see BIISC/LFA Hui/HAL press at <http://www.westhawaii.com/2017/09/29/hawaii-news/kim-to-kick-off-stop-the-ant-month/>; , and several O’ahu libraries (see <https://www.librarieshawaii.org/event/spot-the-ant-stop-the-ant-manoa/>) and all libraries on Maui and Kaua’i were distribution sites for test kits. Radio ads were placed on multiple stations statewide, including on Hawai’i Island,



Erin Biship (OISC) asks a family to take an LFA test kit. CGAPS, OISC, and HISC staff partnered on an LFA booth at Children & Youth Day

Metrics from the StopTheAnt.org site show a rise in website visitors during October, which also coincides with a bump in the submittal of samples. An overall review of web visits shows that media stories generate more visits. For example, website visits went from 21 on Nov. 19 to 69 on Nov. 20, then down to 29 on Nov. 21, and back to 21 the following day, which appears to be attributed to a single news story in Civil Beat (<http://www.civilbeat.org/2017/11/jason-armstrong-little-fire-ants-are-on-the-march-in-hawaii/>) that was also shared on Facebook 546 times. Stories published by electronic or print news media are also picked up and repeated on local radio news, which may add to the reach. This particular story was not generated by CGAPS actions or press, but it illustrates the power of the news media in motivating the public.

OISC and CGAPS also partnered to conduct a pilot project to test digital media methods,



StopTheAnt.org analytics show increases in visitors during campaign months and as the result of news stories

which was conducted with Hawai'i News Now during the month of December. The project featured a 15-second LFA ad that ran as pre-roll before online news stories, and digital LFA ads that appeared when mobile devices crossed geofenced locations, including many large home and garden shops across the state. The pilot project also caught the attention of HNN news staff who produced a story that ran on the evening, night, and morning news (see <http://www.hawaiinewsnow.com/story/36975919/to-fight-a-tiny-ant-with-a-big-bite-state-turns-to-tv>), and resulted in 220 visitors to the website.

Although the return of samples from O'ahu residents remains somewhat small with 83 samples submitted this year compared to 63 last year, we believe that our efforts also send the message that the issue is still important and that LFA continue to be a threat.

Policymaker Outreach

The CGAPS PIO continued to focus on outreach to policymakers, including submitting more than 30 letters of testimony, participating in hearings and meetings, and engaging the staff of Hawaii's congressional delegates in calls and in-person meetings in Hawai'i and D.C.

Staff assisted TNC, DLNR, and ROD partners in hosting a ROD project field trip for the Finance Committee and Big Island legislators, and worked with TNC, HDOA, and DOFAW partners to plan and host a day of site visits for staff of the U.S. Senate Agriculture Appropriations Subcommittee. The field trip included visits to several import businesses to view agricultural air cargo and parcel inspection, federal and state detector dog work, the Coconut Rhinoceros Beetle response. The day ended with a native forest watershed hike.



James Chang (right), Policy Advisor for Senator Brian Schatz, talks about biosecurity with HDOA Airport Supervisor Ronnie Harada (left) and members of the U.S. Senate Agriculture Appropriations Subcommittee

Addressing Biofouling

Staff also worked behind the scenes with DAR staff to assess the policy and procedural needs for implementing in-water cleaning as a critical step to addressing biofouling. Over the past decade there have been technological advances in hull-coatings (thereby reducing the number of vessels with toxic metals and biocides in paints that leech into waterways), and an increased need for hull husbandry measures between drydocking. However, there are currently no rules or framework for permitting in-water cleaning, and regulatory officials remain cautious. In October the CGAPS PIO reached out to counterparts in New Zealand and Western Australia who have developed and tested in-water cleaning technologies and created biofouling and in-water cleaning rules. These partners put CGAPS staff in contact with Dr. Mario Tamburri, Executive Director for the Alliance for Coastal Technologies, to learn about their project to conduct a national test of in-water cleaning technologies, in collaboration with the Maritime Environmental Resource Center, U.S. Naval Research Laboratory, Smithsonian Environmental Research Center, California State Land Commission, U.S. Maritime Administration, and the Maryland Port Administration. After several discussions, Dr. Tamburri invited our participation in the planning for and testing of these technologies in Baltimore, Maryland in the summer of 2018, followed by a second phase of testing in Long Beach, California in the fall of 2018. We also agreed to seek support for adding Hawai'i as a test site in 2019. At the close of 2017, CGAPS, DAR, and HISC staff worked together to plan for a HISC Resolution in support of Hawaii's participation, with the HISC meeting scheduled for January 2018.

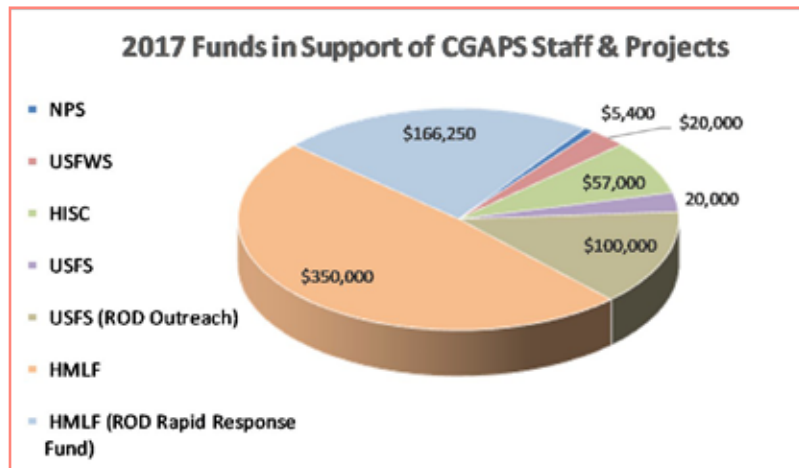
Staff & Partnership Coordination

The CGAPS PIO serves as a supervisor or mentor for staff, and 2017 was a busy year. with Tim Sutton who started in January, Ambyr Mokiao-Lee in February, Chelsea Arnott in April, and Chelsea's additional duties and transition to CGAPS Planner in December.

In 2017 CGAPS general meetings focused on the Interagency Biosecurity Plan and re-engaging the Department of Defense partners. In addition, staff offered remote participation in CGAPS general meetings for the first time. The use of wifi has been the limiting factor.

Grantwriting

Funding for CGAPS staff and projects totaled \$718,650. This includes funding for ROD projects such as the 2nd year funding for Ambyr to continue as the Statewide ROD Communications Coordinator, and funds that would be used as an emergency rapid response fund in the event that ROD is discovered elsewhere in the state, outside of Hawai'i Island.



Partner Support

The CGAPS PIO continued to provide support to agencies by participating in the Rapid 'Ōhi'a Death Outreach Working Group and Strategy Working Group, and as Chair of the HISC Public Outreach Working Group and LFA Outreach Working Group. CGAPS also assisted state and federal agencies by assessing outreach and communication needs for a variety of issues such as mosquito/avian disease control, and other projects.

Attendance at conferences in 2017 also resulted in collaborative projects. Attending the World Social Marketing Conference in Arlington led to work with Liz Foote and others on a Social Marketing workshop at the Hawai'i Conservation Conference (HCC), and the planning of a second workshop at the 2018 HCC, followed by a training for outreach specialists by Nancy Lee. The PIO assisted HISC and Hawai'i Ant Lab staff in planning and hosting a meeting of the Pacific Invasives Partnership (PIP) on O'ahu and Hawai'i Island, which aims to continue to work on the Honolulu Challenge and other efforts to raise concern and capacity to address invasives. Dr. Duffy and Christy co-authored a paper on the need for partnerships in addressing invasive species which is being considered for inclusion in an IUCN publication of proceedings from the Island Invasives Conference in Scotland. Although the presentation wasn't made in Scotland, it was accepted and presented at the Island Arks Symposium in Fiji. The majority of PIP members were present at that October conference, so a PIP meeting was also held at that time.

The CGAPS PIO has been a board member of the Landscape Industry Council of Hawai'i since 2011, and has assisted with their annual conference planning and logistics at varying levels each year. In 2017, the PIO chaired the planning process for the October conference and tradeshow, with a focus on environmental and sustainability practices in the landscape and nursery industry.

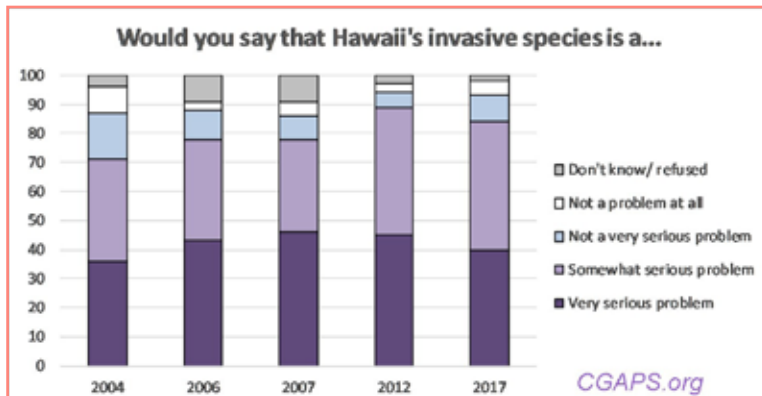
Support was also provided to the Environmental Funders Group, who contracted Sheila Sarhangi to draft the 2017 He Lono Moku State of the Environment Report. CGAPS and HISC staff helped frame the issues and fact-check the invasive species section of the report (see <http://hawaii-environment.com/report>).

PIO Media, Outreach, Presentations, Workshops & Events

- 2/23 Outreach booth: ROD outreach at Ag Day at the legislature
- 3/8 CGAPS first quarter meeting
- 3/13 Presentation: Tri-State Agriculture & Biosecurity meeting
- 4/10 Radio interview: Discussion about ROD on The Conversation <http://hawaiipublicradio.org/post/conversation-monday-april-10th-2017>
- 4/19-21 Outreach booth: ROD outreach at Merrie Monarch
- 5/2 Newspaper interview: Status of miconia. <http://www.staradvertiser.com/2017/05/02/breaking-news/invasive-plant-green-cancer-covers-big-island/>
- 5/26 Field trip: Congressional budget staffers field trip to HDOA inspection, CRB, and watershed
- 6/5 Presentation: Hawai'i's collaborative conservation programs for Pacific Invasives Partnership
- 6/18-20 Outreach booth: Hawai'i Interagency Biosecurity Plan at Mālama Honua fair
- 7/15 Outreach booth: Invasive species & "Be an Ag Inspector" activity at HI State Library
- 7/18 Presentation: Using focus groups to test messaging. Hawai'i Conservation Conference workshop on social marketing
- 7/19 Presentation: Community engagement to help stop the ant. Hawai'i Conservation Conference
- 7/23 Presentation: ROD, tree of life. Presentation at the East West Center Gallery.
- 7/26 CGAPS second quarter meeting
- 8/11 TV interview: Endangered and invasive species panel discussion on PBS Insights. <https://www.pbshawaii.org/insights-on-pbs-hawaii-balancing-the-endangered-and-invasive-among-us/>
- 9/14 Presentation: Stop the ant. Training Kupu P2P resource teachers on running the LFA classroom activity
- 9/21 Presentation: ROD. Presentation for Botany 350 class
- 9/27 CGAPS third quarter meeting
- 10/1 Outreach booth: Stop the ant. LFA outreach booth with OISC at Children & Youth Day
- 10/5 Presentation: ROD. Presentation at the Landscape Industry Council of Hawai'i Conference and Tradeshow
- 10/9 Radio interview: Stop the ant month. Hawai'i Matters radio interview about LFA
- 10/25 Presentation: Hawai'i's collaborative conservation programs. Island Arks Symposium
- 10/26 Presentation: ROD. Island Arks Symposium.
- 11/6 CGAPS fourth quarter meeting
- 11/8 Field trip: House Finance Committee and Hawai'i Island legislator field trip to ROD project
- 12/1 Report interview: He Lono Moku: Hawai'i's state of the environment report for 2017. <http://hawaii-environment.com/report>
- 12/1 TV news interview: Public's help needed for LFA. <http://www.hawaii.newsnow.com/story/36975919/to-fight-a-tiny-ant-with-a-big-bite-state-turns-to-tv>

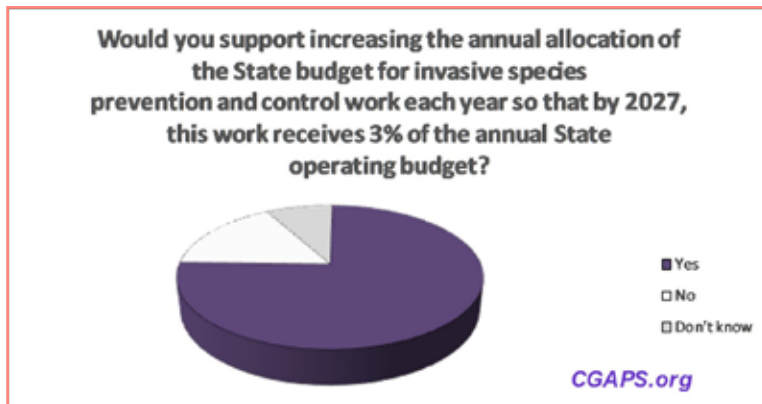


CGAPS helped producers of PBS Hawai'i by working with partners to create a storyline and provided images for PBS Insights. Panelists included (left to right) Mark Fox, Christy Martin, Lara Yamada (host), Stacie Robinson, and Joshua Fisher

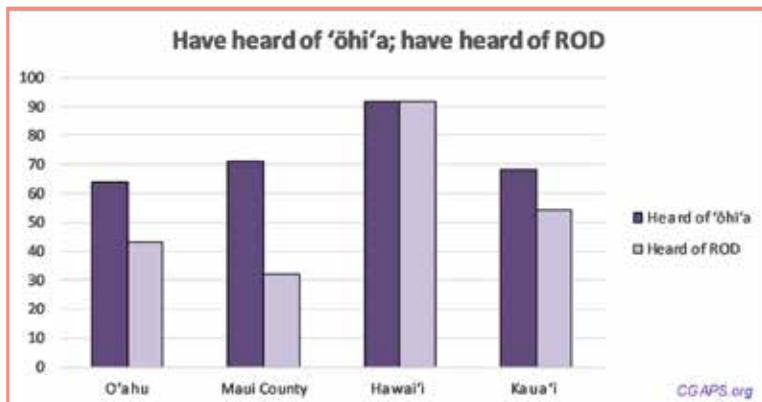


Public Awareness and Opinion Surveys (2017, extended to December 2018)

This project is half complete. Christy worked with partners to draft and compile eleven questions, some as benchmarks and some new, to gauge public awareness and support on invasive species issues.



Ward Research conducted telephone surveys of Hawai'i residents in August and September of 2017, and the final report uses data from some of the previous four surveys to compare and contrast changes and differences. The second half of the project is to again work with Ward Research to conduct focus groups of O'ahu and neighbor island residents to explore topics related to the use of new tools and technologies to control invasive species. This project has been delayed in the hopes that additional staff will be available to participate.



2018 HMLF Projects

Item	2018 Projects	Term	Subtotal	Admin	Overhead	Total
1	Legal Fellowship Support. Partial salary & operating support for two legal fellows + 2 intern/externs	12/31/2019	\$ 114,000	UHF	\$ 6,000	\$ 120,000
2	CGAPS Core Support. Partial salary & operating support for PIO and Graduate Assist. Planner, PCSU project support	12/31/2019	\$ 130,150	UHF	\$ 6,850	\$ 137,000
3	Support for Hawai'i Green Growth. Annual support for multi-sector approach to sustainability, incl. invasive species priorities	12/31/2018	\$ 23,364	OEDB	\$ 1,636	\$ 25,000
4	Pilot Project Testing the CABI Invasive Species Compendium. Support to CABI to produce and post full datasheets for 6 invasive species	12/31/2018	\$ 9,000	HCAF	\$ 1,000	\$ 10,000
5	Pilot Project Testing In-Water Cleaning Technologies. Support to plan and conduct an in-water cleaning technology efficacy assessment	12/31/2019	\$ 52,200	HCAF	\$ 5,800	\$ 58,000
Total						\$ 350,000

Item	2018 ROD Supplemental Project	Term	Subtotal	Admin	Overhead	Total
1	ROD Rapid Response planning and coordination for non-ROD islands. Limited-term hire, travel, general supplies, refreshments for workshops	12/31/2019	\$ 71,250	UHF	\$ 3,750	\$ 75,000

About This Report

This report was compiled and submitted to funding agencies to provide a summary of the major initiatives and activities during the 2017 calendar year. Questions and comments are welcome, contact Christy Martin at christym@rocketmail.com; (808) 722-0995; P.O. Box 61441 Honolulu, HI 96839.