



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

Annual Report

January 1 — December 31, 2020

Submitted to:
Hau'oli Mau Loa Foundation
Hawai'i Department of Land and Natural Resources
Hawai'i Invasive Species Council
National Park Service-Pacific West Region
USDA Forest Service
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
DAR: DLNR Division of Aquatic Resources
DLNR: Department of Land and Natural Resources
DOFAW: DLNR Division of Forestry and Wildlife
HCAF: Hawai'i Conservation Alliance Foundation
HDOA: Hawai'i Department of Agriculture
HIBP: Hawai'i Interagency Biosecurity Plan
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
RCUH: Research Corporation of the University of Hawai'i
ROD: Rapid 'Ōhi'a Death
TNCH: The Nature Conservancy of Hawai'i
CTAHR: University of Hawai'i-College of Tropical Agriculture and Human Resources
ORS: University of Hawai'i-Office of Research Services
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
VIDA: Vessel Incidental Discharge Act

Overview of CGAPS

Two significant reports (NRDC TNCH 1992; OTA 1993) found that Hawai'i had the nation's worst invasive species problem due to gaps in prevention, detection, and control programs. These reports concluded that increased communication, cooperation, and public participation could help close these gaps. In 1997 the Coordinating Group on Alien Pest Species, "CGAPS", (pronounced "C-GAPS") formed as a partnership of agencies and non-governmental organizations working together to close the gaps in Hawai'i's biosecurity programs.

CGAPS staff organizes quarterly meetings to facilitate communications and networking between the agencies and non-governmental organizations that work on invasive species, while the Steering Committee focuses on strategy toward the vision, "*Hawaii's natural environment, agriculture, economy, and the health, lifestyle, and culture of its people are protected from the impacts of invasive species.*"

CGAPS has five grant-funded staff employed through the Research Corporation of the University of Hawai'i (RCUH): Andrew Porter, Aquatic Legal Fellow; Stephanie Easley, Terrestrial Legal Fellow; Ambyr Mokiao-Lee, Statewide ROD Outreach Coordinator; Kailee Lefebvre CGAPS Planner; and Christy Martin, Program Manager/Public Information Officer. Visit www.cgaps.org for more information, including contact information for staff.



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

With brand new strategic plans for CGAPS, the Hawai'i Invasive Species Council (HISC), and Rapid 'Ōhi'a Death (ROD), we thought we had 2020 well-planned. Instead, we found ourselves thankful that we could work safely from home, mostly thankful for the wonders of videoconferencing, and longing for the luxury of working face-to-face.

The cover image of a wiliwili tree overlooking Niu Valley on O'ahu is a sign of hope and a celebration of careful science. Fifteen years ago, wiliwili were under siege by an invasive gall wasp that had hitchhiked to Hawai'i and imperiled this native tree. It was science that saved the wiliwili, and it is a fitting symbol for our times. For excellent leadership during this difficult year, mahalo to the CGAPS Steering Committee and Chair Kevin Hoffman, Chair Emeritus Mark Fox, and Deputy Chair Benton Pang. Mahalo also to the HISC staff for collaboration in moving the HISC & CGAPS 2025 Strategies forward.

The CGAPS staff and projects are supported through grants, and we are deeply grateful for this support. Mahalo to Hau'oli Mau Loa Foundation, HISC, National Park Service (via HPI CESU agreement #P17AC01216 Mod2), USDA Forest Service (Department of Land and Natural Resources-DOFAW pass-through), and the U.S. Fish and Wildlife Service for financial support of CGAPS and its projects this past year.

CGAPS core funds were administered by the University of Hawai'i at Mānoa (UH) and the University of Hawai'i Foundation (UHF) through the Pacific Cooperative Studies Unit (PCSU). The Hawai'i Conservation Alliance Foundation and the O'ahu Economic Development Board also served as fiscal sponsors for some CGAPS projects, and we are grateful to each for this help.

Funding for the Legal Fellows program was administered by UHF with the help of Professor of Law Denise Antolini and Pamela Taura, a treasured partnership. Funding for some ROD Strategic Response projects were administered by UHF through the UH College of Tropical Agriculture and Human Resources (UH CTAHR), and thank you to Drs. Mike Melzer and J.B. Friday for their leadership.

In-kind support is also appreciated and integral to our work. Mahalo to the UH Department of Botany for office space for the Program Manager, Planner, and ROD Statewide Outreach Coordinator. We look forward to a time when we can return to the office, meet in person, and have those "water cooler moments".

Finally, thank you to PCSU Director Emeritus Dr. David Duffy, Director Dr. Shaya Honarvar, and the PCSU staff, to Jung Song and Sylvia Flores of UHF, and the Research Corporation of the University of Hawai'i. Mahalo nui loa!

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 Conservation Alliance Foundation
Hawai'i Invasive Species Council
The Invasive Species Committees of Hawai'i
U.S. Department of Agriculture (Animal and Plant Health Inspection Service and U.S. Forest Service)
U.S. Department of Commerce-National Oceanic and Atmospheric Administration
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-College of Tropical Agriculture and Human Resources

HISC & CGAPS 2025 Strategy Progress

This was the first year implementing the new [2025 Strategy](#). Working groups were formed for seven of the ten Strategies, and each of the working groups are chaired by a lead agency participant, and organized by staff from HISC and CGAPS. Highlighted bullets are primarily CGAPS-oriented progress on Key Actions.

Strategy 1: Prevention & early detection/raid response for new terrestrial invasions

Objective: Keep Hawaii's top invasive species threats from arriving and establishing in the state, by identifying and addressing high-risk pathways and major modes of introduction, and by improving early detection/rapid response.

Lead/Chair: HDOA. Organizational and communications support by Stephanie Easley for CGAPS and Leyla Kaufman for HISC. Three working meetings were held.

Key Actions

- HDOA, HISC, and other partners collaborate on generating a non-regulatory Hawai'i Prevention Priority List to guide prevention and rapid response.
 - Led by HDOA, [a list of prevention species](#) was produced. The Prevention and ED/RR working group is considering how or whether that list can be effectively used to guide pathway risk and gap assessments, or if this initial list should be treated as a living document that is revised to efficiently measure the prevention efforts in Hawai'i.
- Assess capacity to detect, mitigate and/or treat each species on the Hawai'i Prevention Priority List, including procedures, training, and technology.
 - The working group is assessing if the initial Hawai'i Prevention Priority List described above captures the species which would be effective for conducting the type or pathway risk and gap analysis that is needed to begin assessing capacity and needs. Efforts in 2021 will focus on addressing the use of the list as a tool, or if an alternate method would be more efficient and effective (such as identifying the top commodity types and/or source regions to assess detection and response capacity needs).
- Conduct risk analyses and risk assessments along known and high potential pathways for invasive species introductions.
 - CGAPS contracted CABI to research and post to the Invasive Species Compendium peer-reviewed documentation of six high-risk species that are not yet present in Hawai'i. For details, see the HMLF Projects section.
- Address regulatory gaps for terrestrial invasive species in Hawai'i to address high-risk pathways and other modes of introduction.
 - CGAPS staff assisted HDOA in working to revise and update the Noxious Weed Seed Administrative Rules and Species List (Chapter 4-67 HAR) and the Noxious Weed Administrative Rules and Species List (Chapter 4-68 HAR). The working group established a task group to utilize members' expertise and identify other appropriate experts to create accurate species lists and effective regulations to prevent the introduction and spread of the high-risk invasive species.
- Continue to support adoption and implementation of Myrtaceae import restriction (domestic and foreign) and apply this approach for the protection of additional key native and economically important plant species.

- CGAPS staff continued to support the enactment of domestic and foreign import restrictions of myrtle family plants and cut flowers into Hawai'i by drafting and coordinating outreach and communication pieces urging Governor Ige to sign the domestic import restriction, which he did in May, 2020.
- Staff also participated with DLNR DOFAW and HDOA in calls with USDA APHIS on the petition to restrict the foreign importation of myrtle family plants (for planting), which is still in rulemaking. The final piece, restricting the importation of myrtle family cut flowers, has not yet been published for public comment.
- CGAPS continued to work towards state and federal import restrictions on a list of plants that are high-risk of being invasive and are not known to occur in Hawai'i. Through a contractor, risk data has been collected for more than 20 plant species, and NAPPRA (Not Approved Pending Pest Risk Analysis) petitions have been drafted. More information on the Invasive Plant Prevention/NAPPRA is in the HMLF Projects section.
- Fund and fill key positions listed in the HIBP to enforce existing and new Administrative Rules and Hawai'i Revised Statutes. [link to Obj 6]
- Support HDOT to make the Mamalu Poepoe airports pilot project permanent to enhance monitoring and detection of the Federal Aviation Administration approved list of invasive species (disease spreading mosquitoes, fire ants, coconut rhinoceros beetle, and Africanized bees). [link to Obj 2]
- Identify and provide Best Management Practices (BMPs) for reducing pest risk at critical control points in systems, such as airports, harbors, and procurement contracts.
- Strengthen early detection and rapid response (ED/RR) capacity on each island for regulatory agencies and partnership projects, including mobilizing species-specific teams for high-risk terrestrial incursions.
 - Continued to support pest reporting via the State Pest Hotline and online reporting, and public outreach/engagement to report new pests, collect and submit ants for ID, and other ED/RR priorities.
- Support HDOA in implementing transitional inspection facilities and opportunities to inspect other high-risk commodities.
- Support HDOA to promote and achieve clean nursery operations (e.g., treatment requirements, incentives). [link to Obj 2 & 7]
 - Through PCSU, CGAPS coordinated and drafted a grant submitted for USDA PPA 7721 funds for an outreach and pest BMPs program for nurseries statewide in partnership with ISC outreach specialists and Plant Pono program
- Maintain and strengthen the Pest Risk Committee and other mechanisms for federal and state agencies to share data, effective practices, lessons learned and informal observations.
 - The Hawai'i Risk Assessment Committee (HIRAC) continues to meet and be a valuable way for regulatory agencies to share sensitive information across jurisdictions.
- Track and report annually on status of



The reorganization of the HISC Working Groups in 2020 resulted in a much larger Prevention working group to advance the 2025 HISC & CGAPS Strategy on Prevention and ED/RR.

Hawai'i Priority Prevention List species (e.g. not established, prevented at source; detected & intercepted, established). [link to Obj 2]

Strategy 2: Inter/Intra-island movement of terrestrial invasive species

Objective: Keep Hawaii's top invasive species threats from spreading within Hawai'i (inter- and intra-island), by identifying and addressing high-risk pathways and major modes of introduction and spread, and by improving early detection/rapid response for new populations.

Lead/Chair: HDOA. Organizational and communications support by Stephanie Easley for CGAPS and Leyla Kaufman for HISC. The working group for Strategies 1 and 2 are combined to maximize HDOA and other partners' participation and develop projects that address both the prevention and intra-State spread of high risk invasive species.

Key Actions

- HDOA, HISC and other partners collaborate on generating a Hawai'i Limited Distribution Priority List of high-impact localized invasive species to address inter-island and intra-island movement.
 - Led by HDOA, [a list of species](#) was produced. As with the Hawai'i Prevention Priority List, the Prevention and ED/RR working group is considering how or whether the Limited Distribution Priority List can be effectively used to measure and guide efforts to prevent inter- and intra-island spread of terrestrial invasive species within Hawai'i.
- Include an assessment of the Hawai'i Limited Distribution Priority List to support HDOA in developing and executing a clean nursery program that reduces inter/intra-island movement of invasive species. [link to Obj 1]
- Conduct risk analyses and assessments to identify and prioritize pest pathways and high-risk gaps for movement of terrestrial invasive species within Hawai'i.
- Identify and implement cost-effective tools, technologies, and methods that improve management of priority pathways by state agencies and private companies.
 - CGAPS continued to support a project that would use HMLF funds to contract an LFA detector dog and provide handler training for staff. More information can be found in the HMLF Projects section.
- Clarify HDOA authority and determine capacity needed to assess and inspect high-risk non-agricultural commodities and cargo and develop voluntary initiatives to mitigate risk.
- Work with ISCs to increase County support for prevention and rapid response of invasive species not known to occur on their island(s). [link to Objective 6]
- Support HDOT implementation and 2022 update of the Statewide Noxious and Invasive Pest Program Strategic Plan in cooperation with public and private stakeholders.
- Create standardized contract language for BMPs to minimize the spread of invasive species and incorporate into contracts by state agencies and other partners.
- Promote the use of the State Pest Reporting System. [link to Objective 7]
- Track and report annually on status of species on the Hawai'i Limited Distribution Priority List (e.g. prevented at source, detected & removed, established, other).

Strategy 3: Aquatic biosecurity

Objective: Prevent the introduction and spread of aquatic non-native (ANS) into, between, and around the Hawaiian islands, by reducing species movement through ballast water, biofouling, intentional import and release, and unintentional modes of introduction.

Lead/Chair: DLNR DAR. Support: Andrew Porter for CGAPS, Chelsea Arnott for HISC. Two working group meetings were held.

Key Actions

- Conduct risk assessments to identify and prioritize aquatic pest pathways and risks into and within Hawai'i.
- Develop aquatic rapid response plans to address high-risk vessels.
- Establish a vessel inspection program in Hawai'i harbors with the maritime industry and government partners, including a framework to co-regulate commercial vessels related to ANS as incidental discharges regulated under VIDA.
- Develop framework and associated rules to manage ANS risks from non-commercial vessels (those not exempted and not covered under VIDA).
- Fund and establish an aquatic biosecurity team to perform vessel ballast water and biofouling risk assessments within Hawai'i. [link to Obj 6]



- CGAPS staff worked with DLNR DAR, HISC, HDOT Harbors, and others to draft a bill for general funds to support a team of ten. However, [SB 2935](#) died with many other bills when the legislature shut down due to the pandemic.

Senate Bill 2935 SD1, a bill to support a ballast water and biofouling team funded by general funds had successfully passed hearings in the Senate and had crossed over and passed first reading in the House before the legislature shut down.

- CGAPS staff took the lead in developing and submitting appropriations requests on VIDA-related issues and worked with DAR partners to include appropriations language in DLNR's submittals.
- Identify and implement tools, technologies, and methods that improve detection and/or management of priority species and pathways. [link to Obj 1 & 2]
 - CGAPS staff supported DLNR DAR in planning and soliciting partner assistance in recovering monitoring units placed in and around Honolulu Harbor, and in identifying the fouling species and their origin.
 - Contracting for testing in-water cleaning technologies was placed on hold, although CGAPS staff continued to work with national partners to assess the types of technology that would be the highest priority for testing. More on this project in the HMLF Projects section.
- Increase awareness of key private stakeholders of their role and opportunities to help address aquatic invasive species introduction and spread. [link to Obj 7]
 - With the help of HISC staff, CGAPS and DLNR DAR staff presented an analysis of proposed EPA rules in a virtual Brown Bag with questions and answers available through Zoom and YouTube. Maritime companies and partner agencies were encouraged to attend, and several comments and questions came from local maritime company representatives.
- Research and develop a list of high-risk aquatic animals and prohibit their introduction to Hawai'i.

for at least one more.

- Ensure the large-scale impact is sustained, including regular monitoring and follow-up. [link to Obj 6]
- Assist lead agencies to evaluate the large-scale project(s), including model community engagement, evaluation and follow-through.

Strategy 5: Pacific regional biocontrol center

Objective: Increase the capacity and scope of biocontrol work in Hawai'i by creating a Pacific regional biocontrol center with planning for new facilities, base funding, and core staff in place. With existing capacity, release biocontrol agents for at least three top priority established invasive species and annually assess, prioritize, and advance critical biocontrol projects.

Lead/Chair: HDOA. Support: Christy Martin and Kailee Lefebvre for CGAPS, Chelsea Arnott for HISC. Monthly partners teleconference meetings have been held since January 2020.

Key Actions

- Build a broad coalition to support the building and long-term maintenance of Pacific regional biocontrol facilities that can test potential classic biocontrol organisms across different taxonomic groups.
 - Momentum built with Governor Ige's 2018 [Western Governors Biosecurity Initiative](#) led to the first coalition meeting with partners in January 2020 spearheaded by HISC staff, which included site visits to the facilities at USDAARS PBARC, USDA Forest Service, and HDOA. Ongoing monthly meetings are organized and hosted by HISC staff.
- Develop a feasibility assessment for raising capacity of new Pacific regional biocontrol facilities for Congressional delegates and agency use.
 - On behalf of the coalition, CGAPS staff took the lead in developing and submitting appropriations requests on planning Pacific Regional biocontrol facilities, language that DLNR also submitted. CGAPS and partners worked with staff from Hawaii's Congressional offices to provide information, and language supporting this Strategy passed with the FY 21 Omnibus Appropriations in December (see [Div. A, pgs. 5, 12](#)).
- Identify and secure lines of potential funding, site(s) and designs for climate-resilient containment facilities, including options for natural hazard mitigation. [link to Obj 6]
- Maintain and develop new regional and international partnerships to strengthen regional biocontrol capacity and success of exploration missions.
 - Plans to use regional conferences to discuss the initiative and strengthen partnerships were disrupted or placed on hold. FY 21 Omnibus language (Div. A, pgs. 5 and 12) could help address this.
- Secure funding and increase biocontrol staff for both state and federal biocontrol projects. [link to Obj 6]



Pacific regional biocontrol project partners visited the HDOA biocontrol facility on O'ahu. Parts of the facility are no longer functional and the limited number and types of ongoing projects do not meet the demand for sustainable pest management tools.

- Test at least eight biocontrol agents, and release five by 2025.
- Evaluate and harmonize the biocontrol regulatory process for greater efficiency.
- Build and maintain public support for 21st century biocontrol practices. [link to Obj 7]
 - CGAPS and DLNR DOFAW staff continued to improve the only current Hawai'i biocontrol information website and planned the production of an explainer video on classical biocontrol.
- Measure effectiveness of released biocontrol agents over time (>5 years) and track the number of biocontrol agents in pipeline and released annually.

Strategy 6: Increased and diversified funding for invasive species priorities

Objective: Increase & diversify funding for invasive species priorities to secure at least \$100M annually through county, state, federal, regional, and private sources, including \$90M for operational and personnel requirements and \$10M for essential facilities (in support of other Strategies).

Lead/Chair: HISC. Support: This Strategy does not yet have a working group. Instead, HISC and CGAPS staff continued to discuss how to move forward, knowing that state and county funds are not likely to be available until the pandemic and economic situations are addressed.

Key Actions

- Work with a diverse group of advocates to increase State general funds to DLNR, HDOA, UH, HDOH and HDOT for implementing HIBP actions (e.g. staff, electronic databases, adopting new technologies).
- Secure additional HISC project funding to support specific critical new initiatives in the HIBP and 2025 Strategy, including risk assessments.
- Secure a funding mechanism (public and/or private) to provide at least \$1 million annually for emergency response to new terrestrial or aquatic incursions.
 - At the request of National Invasive Species Council staff, CGAPS and HISC staff provided information on state invasive species response funding mechanisms and the lack of dedicated ED/RR funds and decision structure.
 - CGAPS staff worked with West coast partners to increase the number of Appropriations requests for Congress to initiate the new Coastal Aquatic Invasive Species Mitigation Grant Program and Mitigation Fund authorized with the passage of VIDA in 2018. The fund was established (but not funded) with the FY 21 Omnibus ([Div. B pg. 21](#))
- Increase annual support from all four counties to ensure stable and effective Invasive Species Committees (ISCs), ROD response and other priority invasive projects.
- Double private discretionary funding to support CGAPS' ongoing and new invasive species initiatives. (estimated at \$700K per year). [link to Obj 10]
- Build a relationship with visitor industry decision-makers and develop mutually beneficial projects.
 - A 2021-2022 CGAPS project funded by HMLF will seek to engage the Hawai'i Tourism Authority (HTA), Hawai'i Department of Transportation-Airports, USDAAPHIS, HDOA, and a private contractor to develop and install an interactive biosecurity learning display at the Daniel K. Inouye International Airport.
- Investigate existing and new lines of federal funding for invasive species work.

- The projected reduction in state funds for the Invasive Species Committees in FY21 and beyond became a focus for CGAPS staff. Several grant opportunities were identified, and CGAPS staff submitted a proposal for federal farm bill funds to support outreach to the nursery industry by the ISCs statewide, securing \$96,155 for the project through the USDA Plant Protection Act's Section 7721 program (formerly known as the Farm Bill).
- Identify invasive species management as a priority use for DLNR's forest carbon offset program and secure annual commitment in addition to annual appropriations to HISC funds and Watershed Partnership Program Grants.
- Secure capital funding for essential facilities. [link to Obj 5]
- Repeat funding analysis conducted by LRB in 2015 to assess progress.

Strategy 7: Engaged and supportive community

Objective: Raise or maintain strong awareness and support (70% in polls) for key invasive species issues and expand, diversify, and mobilize a network of allies to achieve 2025 Strategies.

Lead/Chair: CGAPS. Support: Ambyr Mokiao-Lee for CGAPS, Randy Bartlett for HISC. Two meetings were held.

Key Actions

- Provide quality, timely, accessible information to community, decision-makers and allies.
 - CGAPS staff worked with lead agencies to provide current, timely, and accurate information.
- Develop resonant/targeted messages (related to the core values of the audiences) and use effective methods/channels to help key audiences that:
 - 1) Value Hawaii's natural environment, agriculture, economy, and the health, lifestyle, and culture of its people,
 - 2) Understand the threats posed by invasive species and related compounding issues, such as climate change,
 - 3) Respond to a call to action to address these threats.
 - Community engagement on ROD continued to be a good example of this Key Action, with resonant messages and delivery, innovating to all-remote engagement by April. See HMLF Projects section for details and measures.
 - CGAPS and HISC staff participated in the newly-named [Pacific Regional Invasive Species and Climate Change](#) (Pacific RISCC) management network, as part of a core team of six. The aim of this new collaboration is to focus research and advance knowledge, understanding, communication, and attention on the synergistic effects of climate change and invasive species (information is temporarily housed on a partner website).
- Increase adoption of specific biosecurity behaviors at ports of entry, especially airports. [link to Objectives 1 & 2]



CGAPS staff continued to coordinate communications on priority issues in support of the 2025 Strategies, such as the briefing on ROD funding and biocontrol facilities for staff from Hawaii's Congressional delegates.

- CGAPS staff worked with partners to develop and print new ROD Alerts for posting in airports statewide.
- Identify and engage influencers in different sectors, industries, and groups who can champion invasive species priorities.
 - Staff initiated conversations between invasive species, conservation, and other environmental issues group leaders to assess the opportunities to engage and empower inclined future activists and evaluate and address barriers to participation in civic action.
- Increase CGAPS & partner understanding and use of social science and raise capacity for the effective use of social science concepts and social marketing for invasive species messages.
- Increase political will to support policy and funding needs.
 - To support the Strategies and increase political will, participants in the Public Outreach Working Group were asked to identify a Strategy and message, and commit to producing and distributing at least one press release, article, social media post, or other media format per year, to increase the number of invasive species mentions in the media through 2025.
- Coordinate statewide or regional strategies and messages across lead agencies and partners; provide communications/coordination support for agencies and partners for key issues.
 - CGAPS staff provided communications capacity and expertise, including coordination of messages, to agencies on LFA, CRB, ROD, ballast water and biofouling, biocontrol, and other issues.
- Evaluate effectiveness of communications periodically and use these lessons to improve future initiatives.



Updated ROD Travel Alert posters were developed, printed, and provided to HDOA for posting throughout airports statewide.

Strategy 8: HISC engagement across sectors

Objective: Improve HISC’s engagement and support across key sectors (agriculture, conservation, economy, health, tourism, transportation, and culture/way of life), and systems (terrestrial and aquatic), as measured by engagement in HISC activities and effective use of HISC tools (e.g. funding, policy resolutions, testimony).

Lead: HISC staff, Council members or designees, and working group chairs.

Key Actions

- Formalize and establish liaison roles within each agency to identify priorities that HISC can actively support (e.g., policies, resolutions, strategies, projects, research questions, communications, joint workday opportunities).
- Improve engagement and interaction with HISC Council members.
- Submit HISC testimony on bills that are important invasive species priorities, as requested

by Council members. (Historically, HISC regularly testified on bills within DLNR's scope. By 2025, the staff hopes to work more closely with all its member agencies on legislative priorities.)

- Review and reconvene HISC Working Groups to reflect 2025 strategies and address balance amongst sectors.
 - Although this is an internal HISC Strategy, CGAPS staff assisted with strategizing ways to engage different sectors, particularly through the working groups.
- Increase participation in Hawai'i Invasive Species Awareness Month across all sectors.
 - CGAPS staff are assisting with the coordination of a virtual HISAM in February 2021.
- Develop and use a tracking system to assess balance across sectors for HISC tools (e.g., quantifying the number of resolutions, testimonies, funded projects relevant to each sector).

Strategy 9: Strong CGAPS network

Objective: Include representatives across the diverse invasive species community of practice in the CGAPS Network and actively engage all partners needed to implement this 2025 Strategy.

Lead: CGAPS staff and Steering Committee members.

Key Actions

- Continue to engage and support CGAPS partners by assessing and improving current network communications, including general meetings, list-serve, website, information sharing and other network activities.
 - A core function of CGAPS is to promote inter-and intra-agency/NGO communication and collaboration on invasive species. One way this is accomplished is through organizing quarterly meetings where participants can provide invasive species updates and announcements and ad hoc Steering Committee meetings. Three general CGAPS meetings and several Steering Committee meetings were held in 2020, .
 - CGAPS staff planned and conducted an assessment of network communications and found that there is a high level of satisfaction with meeting formats and other communication platforms, with some suggestions to accommodate the new 2025 Strategy reports and online format. More details in the HMLF Projects section under CGAPS Planner.
- Provide and socialize a simple description of what CGAPS does and how it relates to HISC with all CGAPS participants, especially Steering Committee members.
- Challenge the CGAPS Steering Committee to actively lead, implement and/or support elements of the 2025 Joint Strategies (Objectives and/or Key Actions) most relevant to their positions and agencies.
 - More than 95% of the Steering Committee or their alternates have participated in one or more of the Strategy working groups, and two are the Agency leads for Strategies.
- Identify and recruit additional public and private sector partners needed to implement the 2025 Joint Strategies, using various meeting formats, venues and other engagement mechanisms.
 - CGAPS staff participates in Hawai'i Green Growth (HGG) meetings, and supports HGG through funds provided by HMLF. HGG, convenes a diverse group of business, agency, and NGO representatives to focus on a broader set of sustainability goals including the implementation of the Hawai'i Interagency Biosecurity Plan.

- CGAPS and HISC staff continued to engage the nursery and horticulture industries through serving on the Board of Directors and a variety of committees for the Landscape Industry Council of Hawai'i.
- Track member participation and periodically gather input on their satisfaction with the CGAPS network and opportunities for adaptive management.

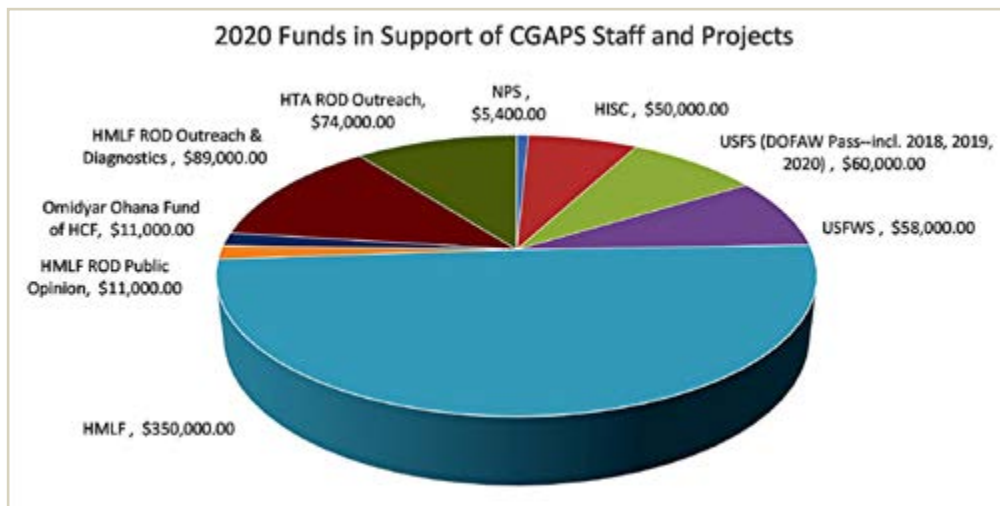
Strategy 10: Stable CGAPS funding and staffing

Objective: Secure committed, consistent annual contributions from CGAPS partners to provide core support for two staff and core operations (est. \$250K per year, not including project funds).

Lead: CGAPS, Steering Committee members.

Key Actions

- Review CGAPS funding needs with the Steering Committee and request/secure annual contribution commitments from all members.
 - The annual funding spreadsheet was shared at the third quarter Steering Committee meeting with the request for support. The 2020 funding chart is provided below.
- Work with the CGAPS Steering Committee to assess the potential core funding mechanisms, contributors, and amounts to ensure CGAPS financial security and continuity after 2021 (when HMLF 10-year commitment ends).
- Secure additional annual commitments from active CGAPS partners outside the Steering Committee.
- Complete the first ten years of partnership with HMLF and agree on future partnership priorities by 2021.
- Present CGAPS “value proposition” and funding needs to the Environmental Funders Group (EFG) to seek core funding and/or project support.
 - Through the help of HMLF, CGAPS staff presented the top five invasive species/issues to the EFG. The meeting was a “no pitch zone” and no requests were made at that time.
- Explore feasibility of permanent funding for one CGAPS position in a partner institution’s budget (e.g. faculty specialist at UH).
- Provide annual CGAPS budget and financial report to the Steering Committee, especially tracking core support from partners.



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 2020 was the ninth year of HMLF's ten-year funding commitment. Summaries are provided as updates on progress for some multi-year projects, and as final reports for others. In addition, project and salary funds for the CGAPS Program Manager and Statewide ROD Outreach Coordinator are provided by a combination of sources, including HMLF.

Little Fire Ant Detector Dog (2015-2016, extended through June 2021)

HMLF funding for this pilot project (#14-1210-31-210; UHF 12702104/ORS 450362, returned to HMLF in 2020, re-awarded with HCAF as administrator) was returned from UHF to HMLF due to the complexity of sole-source contracting from a foreign company, despite the company's proven track record at selecting, training, and providing dogs that can detect LFA, and its record at training handlers with dogs for this particular species of ant. The award was re-issued in 2020, with Hawai'i Conservation Alliance Foundation as administrator for the grant. With 2020 travel restrictions and hazards, the window for purchasing the dog selected for this project and for flying staff to Western Australia for handler training is closing and a new dog may need to be selected.

CABI Invasive Species Datasheets (2018, extended through 2020)

This project used HMLF funds administered by HCAF to support a contract with CABI, the Centre for Agriculture and Biosciences International, to research, produce, and post on the CABI Invasive Species Compendium website (www.cabi.org/isc) full biological and pest risk datasheets on six priority species. This is the first step of a pilot project to assess whether or not CABI datasheets are beneficial in supporting risk assessments and prevention policies to mitigate risks posed by those species. In 2018, Dr. Michael Melzer, member of the CGAPS Steering Committee and lead scientist in the UH CTAHR Agrosecurity Laboratory, solicited from colleagues a list of suggested pests that are not-known to occur in Hawai'i, are considered high risk, and are not currently (explicitly) regulated or regulated through the plants or commodities that are likely to transport them. Over 100 species from a variety of biota types including nematodes, mites, weeds, algae, fungi, etc., were suggested, which were then prioritized and a list of ten were sent to CABI in spring of 2019. The final report was submitted to CGAPS in March, 2020.

Testing In-Water Cleaning Technologies (2018 – 2019, extended through 2021)

This two-year project, administered by HCAF, was initially delayed due to the passage of the Vessel Incidental Discharge Act in December, 2018, which made it unclear how in-water cleaning may or may not be regulated. The publication of EPA's proposed rules establishing discharge standards in October, 2020, included a section on in-water cleaning technologies. However, there were no numerical discharge standards in the rule. The use of these funds to test in-water cleaning technologies could lead to national discharge standards, as EPA is required to review standards every five years. Funds have been extended through the end of 2021.

Invasive Plant Prevention/NAPPRA (2020-2021)

CGAPS contracted the services of Rachel Neville, formerly the OISC Program Manager, to research and complete petitions to place 35 plants not known to occur in Hawai'i (and believed not to occur in the U.S.) on the list of species that are Not Approved Pending Pest Risk Analysis (NAPPRA). Since May, 2020, research has been conducted on more than 20 and draft petitions completed for 9 species. This same list is also part of the 2018 Restricted Plant rule and list petition that the Board of Agriculture approved to be sent to Plants and Animals Subcommittee (no movement on state rulemaking to restrict this list of species, a step that must at least be in process before a federal restriction would be considered). Both projects are ongoing.

Support for Hawai'i Green Growth (annual)

With support from HMLF, CGAPS again contributed funds to support the operating costs of [Hawai'i Green Growth](#) (HGG), administered through the O'ahu Economic Development Board. Although support does not directly build a strong CGAPS network, HGG convenes a diverse group of business, agency, and NGO representatives to focus on a broader set of sustainability goals, with local leadership via the Aloha + Challenge, and local implementation of the 17 United Nations Sustainable Development Goals. The [Aloha + Challenge](#) dashboard measures progress towards agency goals of implementing the Hawai'i Interagency Biosecurity Plan, protecting 30% of priority watershed forests, 30% of nearshore waters by 2030, and increasing local food production and renewable resources, all of which include invasive species messaging and can significantly help address invasive species issues. In October, the annual partners meeting was held via videoconference, where participants shared some barriers to meeting the Aloha + Challenge goals, ideas for overcoming barriers, and some new measures for tracking and highlighting progress on these commitments, including the Hawai'i Interagency Biosecurity Plan implementation.

CGAPS Legal Fellows (annual)

The CGAPS Legal Fellows (#19-1211-08-333) is 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 to support better invasive species prevention policies.

Andrew Porter continued in his role as the CGAPS Aquatic Legal Fellow and focused on the issues of ballast water and biofouling, and other issues important to the prevention of aquatic invasive species (AIS). Andrew worked closely with the DAR Ballast Water and Biofouling Coordinator, Natalie Dunn, to help bridge the gap between the legal and scientific realms required for effective regulation. In addition, due to the complexity of VIDA and the proposed EPA regulations, and the tight deadlines for analyzing language, preparing and conducting briefings, and providing official comments, work on VIDA was collaborative with CGAPS colleagues Stephanie Easley and Christy Martin.

Andrew started off 2020 by working with DAR staff to draft what was known as the Aquatic Biosecurity Bill 2020 (SB2533, SB2935, and HB1876) which sought to (1) authorize DLNR to co-enforce with USCG regulations for incidental discharges developed under the Vessel Incidental Discharge Act of 2018, 33 USC § 1322(p) (VIDA), and (2) to appropriate funds to support staff and operational costs associated with aquatic biosecurity inspection, investigation, monitoring, management, compliance, and enforcement. Andrew assisted in providing comment to committees on behalf of both CGAPS and DAR and attended many of the committee hearings in person to support this bill. This bill received widespread support and

easily passed through many of the required committees prior to the COVID -19 emergency recess of the legislature. Unfortunately, as happened to most bills requesting appropriations for new positions and programs, this bill was not taken back up when the legislature reconvened.

As anticipated, in 2020 Andrew was primarily focused on the EPA's development and roll-out of its regulations required under VIDA. VIDA is part of the Clean Water Act and provides authority for the EPA and USCG to regulate, and preempts states from regulating, discharges incidental to the normal operation of a vessel, including AIS issues related to ballast water, vessel hull biofouling, and in-water cleaning of vessel hulls. Under VIDA, the EPA was required to coordinate and consult with the states during the development of discharge standards for the covered incidental discharges and have such regulations finalized by December 4, 2020. Regulations allow for comment on proposed regulations in three ways: (1) state agency comment on the proposed regulations during the public comment period, (2) Governor's objections to the proposed regulations under a special provision of VIDA, and (3) a required consistency review for potential impacts of the proposed regulations on state coastal resources under the Coastal Zone Management Act (CZMA).

Andrew attended the EPA's state consultation webinars in which the EPA gave a general overview of the VIDA statute and answered a few of the many questions presented to them by state representatives. Andrew also participated in weekly meetings with west coast states, including Washington, California, Oregon, and Alaska, in which they developed a coordinated strategy to respond to the EPA's proposed regulations in what was anticipated to be a very short comment period. Andrew also worked closely with Natalie Dunn and Stephanie Easley in developing a presentation which was given to DAR staff, representatives from the Hawai'i Department of Health and Department of Transportation, and the Governor's office. This presentation was developed to present the status and anticipated content of the EPA's proposed regulations as well as provide a forum for regulators to discuss a protocol for the signature and submission of the multiple state comments on a very short timeline. Andrew also participated in a DLNR Brown Bag Lunch streaming presentation on the EPA's proposed rules which was developed for the U.S. Coral Reef Task Force All-Islands Committee, the maritime community, and available to the public via YouTube.



CGAPS and DAR staff provided briefings for Gov. Ige's staff related to the proposed EPA VIDA rules.

The [EPA's proposed rules](#) were finally published on October 26, 2020 and only allowed a thirty-day comment period for States (and the CGAPS/DAR team for Hawai'i) to review the 328 pages of regulations and supplemental material, develop comments and supporting scientific information, and have such comments reviewed, signed, and submitted by DLNR Chairperson Suzanne Case. During this period, Andrew also consulted with the Hawai'i Office of the Attorney General on the content and process of the comments to be submitted by DLNR. Once the DLNR comments and [CGAPS comments](#) were finalized and submitted, Andrew turned his focus to work with Stephanie and Natalie on the Governor's Objections. Andrew, Christy, and Natalie also met with staff from the Office of Planning Coastal Zone Management Program and provided background information and draft language for the Coastal Zone Management Act consistency review process.

Aside from VIDA, in 2020 Andrew has worked with DAR staff to develop a list of invasive aquatic animal species in the aquaculture trade that are not expressly prohibited for import, and

initiated the process petitioning their addition to the Department of Agriculture's prohibited import list under HAR § 4-71-6. Andrew also worked with DAR staff on an initial fact-finding mission and questionnaire to understand the scope and level of in-water cleaning of recreational vessels (which are not preempted from state regulation under VIDA) in Hawai'i harbors for a future project aimed at regulating this activity. Andrew is also a member of the CGAPS/HISC aquatic biosecurity working group which meets monthly to discuss projects and coordinate actions to achieve goals outlined in the HISC & CGAPS 2025 Strategic Plan.

Related to his role as a legal fellow, Andrew was a lecturer at the William S. Richardson School of Law in the Spring 2020 semester for a class titled Pacific Islands Environmental Legislative Drafting (PIELD). The goal of this class was to engage law students from the Pacific islands to learn the skills needed for environmental legislative drafting while at the same time understanding how these skills can be used while drafting in the unique socio-political climate of each Pacific jurisdiction. An overarching principle of the class was to emphasize the need to adapt the current western/colonial legal structure in these jurisdictions to fully incorporate traditional customary law. It is hoped that by teaching legislative drafting with this understanding, the legal fellows program can effectively expand to provide capacity to Pacific island jurisdictions in the field of environmental law and regulation.

Stephanie Easley continued in her role as the CGAPS Terrestrial Invasive Species Legal Fellow and focused on working with the HDOA staff to accomplish activities to prevent the introduction or spread of invasive species in Hawai'i. Stephanie worked to build relationships with HDOA staff to support invasive species prevention and response projects and priorities.

One of these projects involved addressing the movement and importation of firewood as a pathway for invasive species introduction and spread. Stephanie researched the law and regulations of Hawai'i, other States, and the Federal government related to the firewood pathway. She worked with HDOA, local and national USDA personnel, and The Nature Conservancy's Don't Move Firewood campaign to address the importation of untreated and uninspected firewood to Hawai'i from other States. She drafted and submitted to HDOA a letter for importers to remind them that imported firewood must be presented for inspection in Hawai'i. This letter could be the first step to ensuring that only pest-free firewood is brought into the State. She also prepared and submitted to HDOA staff draft regulations requiring heat treatment for firewood imported into Hawai'i from other States.

In February 2019, CGAPS submitted a petition to the Board of Agriculture seeking to start the process to adopt regulations to implement the Plant Import Statute, HRS section 150A-6.1, including a list of invasive plant species that would be prohibited from importation into Hawai'i from other States. While HDOA has not taken final action on that petition, Stephanie reviewed CGAPS proposed regulations and prepared a revised draft that streamlined the regulatory text. As part of this project, she researched existing statutes and regulations that permit the Board of Agriculture to modify restricted species list with public notification without going through full rulemaking. This type of administrative authority is very common in other



As presented by Andrew Porter at the Hawai'i Conservation Conference, one of the goals of the UH William S. Richardson School of Law Legal Fellows program (including the CGAPS Legal Fellows), is to engage pre- and early-career lawyers in Pacific regional conservation and environmental issues as a foundation needed for future regulators and decision makers.

States and has been granted to HDOA by the Hawai'i Legislature to fairly and more quickly address invasive species threats.

Stephanie assisted HDOA in updating and revising the Noxious Weed Seed Administrative Rules and Species Lists (Chapter 4-67 HAR) & the Noxious Weed Administrative Rules and Species List & Rules (Chapter 4-68 HAR). These rules and lists were last revised in 1992 and require significant updating. She worked closely with Becky Azama, the acting Plant Industry Administrator, and the Prevention and ED/RR working group to prepare the revisions. The goal of this project is to have the revisions ready for public meetings and Board of Agriculture review in 2021.

Stephanie utilized her background in legislative drafting to assist in preparing and submitting appropriations requests to Hawai'i's congressional delegation for consideration. As previously noted, Stephanie also spent a significant amount of time assisting in some high priority aquatic species issues, including in the CGAPS/DAR team preparation of the aquatic biosecurity bill for consideration by the Hawai'i Legislature and of comments and objections to the EPA's proposed rule for VIDA National Standards of Performance. Stephanie provided additional insights through internal and regional meetings, partner agency briefings, and related collaborative work.

ROD Emergency Special Funding Projects (2019, 2020)

HMLF has provided special additional support for emergency response work on ROD, which is deeply appreciated. Most ROD funds are administered by the University of Hawai'i Foundation and Office of Research Services because UH plays a key role in the research, response, and extension work on ROD.

Funding provided for 2019 (#18-1212-22-321) has been extended through 2021. A portion of the funds were used to fill a gap in payroll for a lab technician housed at USDA ARS to help process the thousands of samples submitted for ROD pathogen testing. The remaining funds are being used to support the production of more effective boot brush stations and signage, in partnership with Hawai'i Volcanoes National Park and other ROD partners, a project that was put on hold for most of 2020.

Funding for 2020 (#19-1211-13-338) again provided partial payroll support for lab tech Eva Brill, housed at USDA ARS, and also provided half of the salary and operating costs for Ambyr Mokiao-Lee, Statewide ROD Outreach Coordinator. An additional project (#19-1211-14-339) to conduct public awareness surveys on ROD and related issues, was not initiated in 2020 due to the pandemic. Funding for this project is administered by HCAF and has been extended through the end of 2021.

Ambyr Mokiao-Lee, the ROD Statewide Outreach Coordinator, works under the supervision of CGAPS. This position was initially established through a HMLF grant under Dr. Mike Melzer of UH CTAHR, and in 2020, fund from HMLF (#19-1211-13-338), U.S. Forest Service passthrough, the Hawai'i State Legislature via DLNR DOFAW, and Hawai'i Tourism Authority funds supported salary and partial operating and project funds for ROD outreach. HTA funds in the amount of \$158,000 were secured by a grant written by Ambyr and now-former Hawai'i island CTAHR ROD Outreach & Extension specialist, Corie Yanger, although the award was reduced to \$74,000 at HTA's request due to their COVID-19 response plan.

Although a handful of outreach events were held in person at the beginning of 2020, by the end of March, all outreach programs were re-structured and moved to online formats, and all staff worked from home. There was a steep learning curve with all of the new online programs, and additional responsibilities were taken on by Ambyr after Corie accepted a new position in August. However, the ROD outreach team and partners were successful in engaging new audiences and in some cases, outreach offerings were attended or viewed by a much

higher number of people than in-person events. The following is a list of major projects Ambyr coordinated, conducted, or participated in, and measures for those events, wherever possible.

1. Workshops: Ambyr again led the planning and hosting of the annual ROD Outreach Workshop for 35 formal and informal conservation educators, held in-person in February. The [ROD Strategic Response](#) public engagement strategy calls for extending our reach by training the trainers. Therefore, the purpose of this workshop was to provide these educators with the knowledge and tools to conduct ROD outreach in their networks and to work together to plan ROD outreach and messaging moving forward. Ambyr coordinated travel stipends, speakers, facilities, vehicles, site visits, and other logistics. The costs of the workshop were supported through funds provided by Hau'oli Mau Loa Foundation.

Together with partners, Ambyr hosted 5 online 'ōhi'a-free lei workshops for the public. With many lei shops and flower vendors closed or not easily accessible for May Day, Mother's Day, graduations, and Father's Day, workshops were held on May 8th, 15th, and 22nd, and July 24th and 31st. Approximately 50 people attended each workshop. Goals of the workshop included teaching attendees about 'ōhi'a, its ecological and cultural importance, how ROD threatens these values, and how to protect 'ōhi'a including by using non-'ōhi'a alternatives in two different methods/styles of lei making.

Feedback from the workshops has been good, with surveys (n=80) showing that 34% of attendees were from out of state, 86% of attendees increased their appreciation of Hawaii's natural and cultural resources, the majority had learned a lot about sustainable harvesting practices, and majority of attendees have never made an 'ōhi'a-free lei before, indicating that they learned a new technique through our workshops.

For these and many other online workshops, Ambyr and the team worked together to ensure that the speaker could focus on delivering content while someone else monitored the chat on the video conference platform, and sometimes a third person responded to and conveyed comments as the content was streaming live to social media platforms.

On December 11, Ambyr led an 'ōhi'a-free wreath making workshop for about 60 attendees, again with help from partners due to the online format. In this workshop we featured the cultural importance of 'ōhi'a, the story of how 'Ōhi'a Lehua got it's name, sustainable picking practices, and proper permitting for harvesting from State forest reserves. The participant survey contained great reviews and most importantly, a better understanding of Hawaii's natural and cultural resources, and knowledge of 'ōhi'a. Survey results (n=11) indicated that 90% of respondents already had some knowledge of ROD, 90% of respondents indicated that they increased their appreciation of Hawaii's natural and cultural resources, and the only comments that people had was that we should have held more workshops.

2. Webinars: 2020 would have been the 4th annual ROD Hawai'i island symposia, summaries of research and findings presented to the public, that would have taken place in Hilo and Kona during the month of March. Instead, the ROD outreach team organized the symposia as eight weekly webinars available to the public via Zoom and advertised through the ROD Facebook,



Timo Sullivan of the UH SDAV Lab led a demonstration on using drones for ROD surveys for outreach specialists from across the state. The workshop was one of the last in-person events prior to stay at home orders.

listserv, and other communication platforms. Each weekly hour-long webinar was hosted by outreach staff and the presenter/s at 12:00pm and repeated at 6:00pm and was also recorded. Approximately 100 people attended each noon session and about 30 attended the evening webinars, a 50% increase compared to the in-person events of previous years. Due to the demand for current ROD information, additional webinars will be planned for 2021.

3. ‘Ōhi‘a Love Fest: This festival has taken place at the ‘Imiloa Astronomy Center in Hilo for the past 3 years. These day-long educational events were free to the community and had an average annual attendance of 3,000 people. In 2020, Ambyr and the ROD Outreach team created a week-long online ‘Ōhi‘a Love Fest from November 16-21 that engaged a statewide, national, and international audience and the online content has been viewed more than 6,500 times by the end of the year. Ambyr led the committee that organized eighteen online events that consisted of webinars/workshops, online video tutorials, and dozens of partners sharing their understanding of ‘ōhi‘a through art, hula, oli, research, history, and interviews.



The kīpaepae ([opening ceremony](#)) for ‘Ōhi‘a Love Fest was led by Halau ‘Ōhi‘a and streamed via Facebook Live. Since posting, the video has been viewed more than 1,300 times.

Preparation for the event included contracting KHON 2 for help advertising the event via social media and creating a :30 second video ad that ran as pre-roll when visitors viewed online KHON 2 News videos. The contract also included an interview for Living 808 that Ambyr planned and that featured Kaua‘i ROD Outreach Specialist Kim Rogers. A portion of a grant from the Omidyar Ohana Fund of the Hawai‘i Community Foundation supported \$1117,79 of the contract and DLNR DOFAW supported the remaining \$1,500 (see Table 1).

OLF Advertising Measure	KHON Pre-roll	KHON FB	KHON IG	ROD Outreach FB
# of Posts	1 30-sec video	1 30-sec video	1 OLF graphic	107
Impressions (# of times content is displayed)	33,334 (CTR 0.09%)	91,034 (CTR 4.49%)	58,407 (CTR 2.93%)	-
Reach (# of people who see the content)	-	-	-	102,500
Conversion & Engagement (Clicks, likes, shares, comments)	31 (CTR .9%)	6261 (1,085 engagements incl. 303 shares)	(data combined w/ FB)	4,426

Table 1. A small contract for KHON to use social media and a video ad on online news content and posts made by the ROD Outreach team drove people to the ROD website which for the calendar of events and links for the streaming events.

Survey results (n=137) indicate that 92.8% of attendees had not been to an ‘Ōhi‘a Love Fest before, 99% said they would attend again, 95% have heard of ROD prior to the event, 88% stated that they had an enhancement of Hawaii’s natural and cultural resources from our ‘Ōhi‘a Love Fest. Suggestions for improving next year’s festival were creating a hybrid festival model that combines virtual and in-person events, greater inclusion of the cultural importance of ‘ōhi‘a in the presentations, and making all the events available online after the festival.

There were 533 real-time virtual participants and more than 6,500 views of events available on-demand via Facebook, YouTube, from November through the end of 2020.

4. Outreach to Schools: Outreach to schools has been a priority of the ROD project for years, with staff conducting presentations, activities, and events for schools throughout the state. With the current state of affairs and in-person teaching/school cancelled, Ambyr was able to develop a semester-long curriculum for 100 9-11th graders at Kapolei High School in classes hosted by their kumu and with the help of their Kupu Environmental Education Leader. The curriculum was delivered in the fall and covered watershed management, invasive species, native species, Hawaii’s forests, ‘ōhi‘a and ROD, how to plant your own ‘ōhi‘a, civic engagement at the legislature, a virtual field trip using drone survey data to highlight current ROD research, and it concluded with an ‘ōhi‘a-free lei making workshop.

5. Social Media & ROD

Website: The ROD Outreach team continued to update the www.rapidohiadeath.org website, and develop content to post on the ROD Facebook (FB), and Instagram channels. We have a weekly schedule of posts and are currently trying new techniques for engaging the public. We hosted a week-long social media event for April, Native Hawaiian Plant Month and April 25th, the Governor-proclaimed ‘Ōhi‘a Lehua Day. Each day featured a new video or live broadcast and included lei making, collecting ‘ōhi‘a seeds, different ‘ōhi‘a varieties, how to grow ‘ōhi‘a from seed, FAQs about native plants, and a garden tour. Engaged audience members also posted videos on how to draw and paint ‘ōhi‘a, as well as a Kaua‘i hālau who produced a video montage of haumana (students) dancing to a song about lehua.



Tracking social media and website traffic for events is part of the outreach work that guides future outreach plans. For example, the Google Analytics for ROD website visits starting the month before and after the Nov. 16-21 ‘Ōhi‘a Love Fest (blue line) shows the efficacy of marketing to drive traffic to a central information point. The orange line is visitors to the site during the same period in 2019.

An online Facebook survey for users to gauge the efficacy of FB page and posts garnered just 16 respondents, but the results showed that 75% of respondents thought our FB posts were “extremely valuable”, and 80% “strongly agree” that the posts have helped to inform their actions on decontaminating shoes, gear, and equipment, while 73% said that posts have helped to inform their actions on cleaning their vehicles. Respondents stated that they

participate in sanitation of shoes, gear, and equipment because they are concerned about ROD (87%), and 80% “strongly agree” that our posts have increased their understanding and appreciation of ‘ōhi‘a.

For the year 2020, the ROD Outreach team posted a total of 533 posts, have a cumulative fan base of 9,500 people, had an increase in 2,000 new followers all for a total engagement of 38,000 likes, shares, hearts, etc.

6. Radio Interviews/PSAs: Radio is an important communications platform for residents of Hawai‘i Island and Kaua‘i, and also happens to be the islands where both ROD pathogens are present. Paid and free radio ads were used to convey the messages of not wounding ‘ōhi‘a, decontamination, and other spread-reduction messages. Radio ads were also used to promote the ‘Ōhi‘a Love Fest. Currently, the ROD Outreach team and partners are working together to create an ‘ōhi‘a/ROD seed banking Initiative television PSA that will air on ‘Ōlelo Community Channel on O‘ahu. The television PSA was completed in collaboration with Kalehua Consulting Company (Dr. Marian Chau, the originator of the ‘ōhi‘a seed banking initiative in 2016). If that is successful, the PSA will be adapted for neighbor islands to utilize as a messaging tool.

7. Articles, Press Releases & Print Media: During the beginning months of 2020, Ambyr researched and wrote an article for the Landscape Hawai‘i magazine May/June issue dedicated to ‘ōhi‘a, which was direct mailed to more than 4000 industry participants with a new full-size poster about ‘ōhi‘a varieties poster that was created by former LICH president Chris Dacus.

Ambyr worked with DOFAW staff and the DLNR Communications Office to develop press releases which are sent by DLNR. One such project involved HECO’s planned donation of 6 boot brush/decontamination stations to be placed at major trailheads across O‘ahu. The fabrication of the stations by HECO is still in progress and a draft of the joint DLNR/HECO press release has been developed for the installation and media event sometime in 2021.

With funding from the Omidyar ‘Ohana Fund of the Hawai‘i Community Foundation, Ambyr coordinated the editing and production of new ROD Travel Alert posters. A total of 175 PVC coated full-color posters were provided to HDOA for posting at airports statewide in 2021.

8. Saving ‘Ōhi‘a Documentary: The CGAPS documentary, [Saving ‘Ōhi‘a - Hawaii’s Sacred Tree](#), continued to be used to raise awareness through hosted video-streaming events and on-demand (6.8K YouTube views), and through the use of clips and “digital shorts” from the video (11.2K YouTube views through the end of 2020) that have been translated into Chinese and Korean, distributed through YouTube and the HTA website. In 2020, Ambyr coordinated the translation of those clips into Japanese, and the Japanese subtitling of the entire 28-minute documentary in partnership with UH and the HTA Japan Team.

Capacity Support for CGAPS Program Manager/PIO and Planner (annual)

HMLF provided 100% of the funds supporting the CGAPS Planner salary and operating costs which supported Kailee Lefebvre, formerly with the Coconut Rhinoceros Beetle Response, who started as CGAPS Planner in mid-April, 2020. HMLF funds also supported a portion of the salary and operating costs for the CGAPS Program Manager/PIO, with additional 2020 funds received from the U.S. Forest Service through DOFAW, NPS (#P17AC01216 Mod2), USFWS, and HISC.

The CGAPS Planner position description lists biosecurity project planning and coordination at 40%; outreach planning and coordination at 20%; partner communication at 20%, and 20% correspondence, report writing, and other duties.

Kailee Lefebvre started as CGAPS Planner in April, thus all training and work planning

was conducted via videoconference. Similar to previous Planners, Kailee was assigned the review and updates to the CGAPS website, which helped her familiarize herself with the different projects and issues. Kailee also took responsibility for organizing the CGAPS General Meetings, monthly staff meetings with the Chair, and listserv maintenance.

In the summer, Kailee conducted the first-ever CGAPS participant survey to assess satisfaction and explore areas of improvement with the format and content of CGAPS General Meetings, CGAPS website, and communications through the listserv. A total of 29 responses were gathered, with just over 20% each from federal, state, and non-governmental organizations, 10% from academia, and minimal business and public representation. The number of years participating in CGAPS General Meetings showed a good range of experience, with 38% having participated for more than six years, 38% for 1-5 years, and 24% for less than a year. Results showed that respondents overwhelmingly value CGAPS General Meetings, with 90% rating them at least an “8” out of a maximum score of 10. Respondents listed the opportunity to learn about issues from a variety of agencies and the opportunity to engage and network with other participants as the top two of the reasons they value CGAPS General Meetings. During this year of COVID, the loss of in-person networking space and time, and the benefits of unstructured “water cooler moments” led CGAPS to assess and begin to implement possible solutions such as opening the meeting platform early and staying late for anyone wanting to catch up.

In support of Strategy 7, public engagement, Kailee conducted foundational work to engage the willing public in advocacy, with the goal of building a network of community voices to support invasive species and related conservation priorities. Kailee initiated conversations between partners in the invasive species community to assess needs and barriers, and also engaged the leaders of groups that have successfully planned and conducted advocacy education programs. There appears to be a need for more engaging resources and opportunities to learn about and practice civic engagement, and a willingness to work together to try to address these and other barriers. Next steps will likely include some targeted surveys and social science planning for designing an engagement pilot program.

Kailee supported work in other areas of CGAPS, including with the ROD and LFA outreach teams to support outreach plans and implementation. As the former Outreach Specialist for the Coconut Rhinoceros Beetle (CRB) Response, Kailee provided continuity for outreach efforts by working with the new CRB Outreach Specialists to develop resonant and targeted messages for partners, businesses, and the public, and helped to produce content for new CRB branding, printed material, and the program’s first ever social media and web pages.

Christy Martin continued as the Program Manager/PIO, responsible for public and policy maker outreach and media-related duties (50%); staff direction and supervision, partnership coordination, and partner project support services (25%); grants and reports, planning, and project management (20%); and other duties as assigned (5%). In this position, Christy continued to supervise and guide the CGAPS staff and contractors, work with fiscal staff and administrators on procurement and contracting, and assist the CGAPS Chair and Steering Committee, all in support of the partnership and to advance action on the 2025 Strategies.

Christy continued to provide support to agencies by organizing and hosting the O’ahu



Kailee Lefebvre organized and hosted monthly CGAPS staff meetings and prepared agendas and speakers for the CGAPS General Meetings (photo above), which are open to the public.

LFA Incident Command System meetings, and by participating in the ROD Outreach Working Group, chairing the HISC Public Outreach Working Group (now Strategy 7), chairing the LFA Outreach Working Group, and serving as a steering committee member for DAR’s Ballast Water and Hull-fouling program, as part of the planning team for the Birds, Not Mosquitoes landscape-scale mosquito control project, and several other projects related to the Strategies. Christy has been a board member of the Landscape Industry Council of Hawai’i since 2011, and in 2020 partnered with former LICH president Chris Dacus to plan and edit a special issue of the Hawai’i Landscape magazine on ‘ōhi’a.

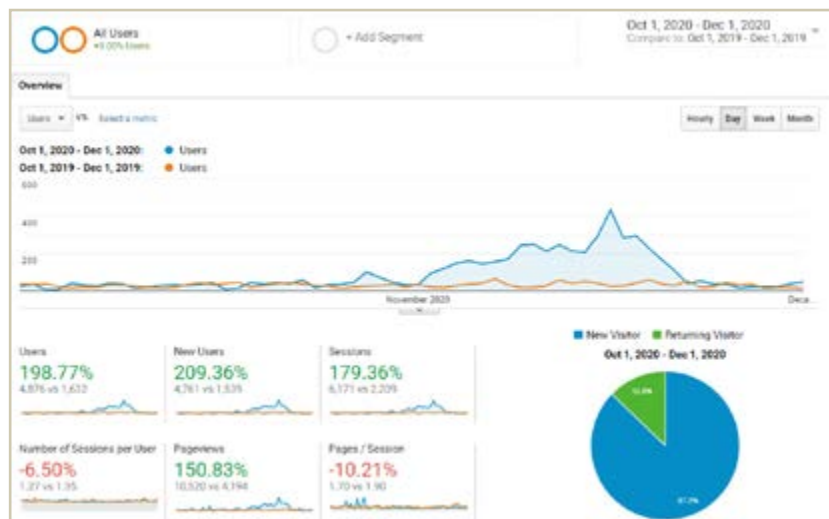
Continuing work that started in 2019, Christy participated as part of the core team to advance knowledge, understanding, communication, and attention on the synergistic effects of climate change and invasive species. In 2020, the core team planned and hosted two webinars and a workshop during the Hawai’i Conservation Conference, which engaged hundreds of researchers and resource managers from the different disciplines. Following the lead of the Northeast Regional Invasive Species and Climate Change (Northeast RISCC) management network, this new group will be called the Pacific Regional Invasive Species and Climate Change (Pacific RISCC) management network, and the core team will be expanded to include climate change and invasive species experts from other Pacific islands. Other regional RISCCs are also in the early formation stage.

In support of the University of Hawai’i PCSU and RCUH, Christy supported links between the University and the community and invasive species work through lectures, informal advising, and other communications with students and faculty.

HISC Project: Stop the Ant Month, A Statewide Outreach Campaign on the Little Fire Ant

CGAPS staff continued to provide outreach and communications support to HDOA, the lead agency for responding to Little Fire Ants (LFA) through the Public Outreach Working Group (Strategy 7, Engaged and Supportive Community). In 2020, Christy and working group partners from KISC, OISC, MISC, BIISC, DOFAW, and the Hawai’i Ant Lab coordinated the 6th annual Stop the Ant Month campaign in October, with input from HDOA. Through the HISC, CGAPS received \$15K to support materials, supplies, and media communications to promote public awareness and engagement in collecting and submitting ant samples for identification. As in past years, this group worked together to analyze past messages and methods, the barriers to success, potential benefits, and other information to plan and implement the 2020 campaign.

The working group updated the collaborative www.StopTheAnt.org website with the latest infestation information for each island, and to ensure that messaging is consistent throughout the



The call-to-action for Stop the Ant Month is to collect ants and send them to officials for identification, but including instructions on how to collect ants and where to send them is too complex for short ads, so all calls-to-action include urging people to visit www.StopTheAnt.org. In October 2020, 3,159 people visited the website (blue line) compared to 377 in 2019 (orange line).

outreach materials. The website is also referenced in most outreach and communication pieces as the site to visit for more information, including how to collect ants and where to submit ant samples. In 2020, there were 3159 visits to the site during October, compared to 446 visits to the site during the same period in 2019, an 800% increase.

As in previous election years, the working group again drafted a letter to elected officials and candidates in county councils, and in the State House of Representatives and Senate, requesting their help sending LFA information to their constituents. The letter provided a variety of outreach materials to select from, including a short article, informational bullet points, and an [infographic](#) that OISC developed which was formatted for use in e-newsletters. Several officials included one or more pieces of the information in their newsletters or social media posts, and Senator Ke'ohokalole's weekly e-news contained the infographic multiple times in October.

Each year the group's social media presence and activity has generated increasing amounts of attention and engagement. In his new position as DOFAW Outreach Coordinator, Josh Atwood worked with the group to plan, produce, film, and edit an engaging [one-minute video](#) call-to-action, which was also edited into a 30 second ad. With HISC funds, CGAPS contracted KHON to run the 30-second video as "pre-roll"—the short ad that runs before on-demand video news stories—and to post the video to Facebook and manage social media engagement on the post. The video also ran as a PSA on 'Ōlelo. Part of the advertising package included a short television interview about Stop the Ant Month for *Living 808*, which aired twice during October.

Additional content for the StopTheAnt Facebook and Instagram accounts were developed and scheduled by BIISC and OISC staff. The video, posts, and island-specific social media posts were also produced and shared by individual ISCs, HAL, and DOFAW to their own social media channels.

STA Advertising Measure	KHON Pre-roll	KHON FB	STA FB	STA IG
# of Posts	1 30-sec video	1 30-sec video	29	25
Impressions (# of times content is displayed)	90, 440 (47,585 to completion, 52.62%)	129,140	-	-
Reach (# of people who see the content)	-	-	73,176	2,667
Conversion & Engagement (Clicks, likes, shares, comments)	145 (CTR .16%)	6,181 (4.79%)	948 (198 shares; 5.9%)	240 (6.4%)
Cost	\$3,500	\$1,500	\$90 (boosts, not incl. staff time)	-

Table 2. The Stop the Ant campaign used a fun and engaging 30-second video to ask people to collect ants from their property and submit them for identification and to visit the website for a free test kit and more information. The pre-roll numbers are interesting because viewers could skip the ad after the first 15 seconds, yet more than half did not skip the ad. On KHON's Facebook account, the video engaged 6,181 people. Website traffic increased 800% over the same period in 2019.

October demographics for KHON social media showed that for each of the age groups (18-24, 25-34, etc.), the percent of people clicking the video to learn more increased with each

age group. Of the 129,140 impressions 80,824 were male with a 22.58% CTR, while 47,298 were female with a 30.53% CTR. Review of the KHON social media interactions showed that it reached beyond our normal collective sphere, and the demographic information can be used to better target future communication strategies. For ISC posts, memes were popular for both Facebook and Instagram, while the animated “did you know” video did well on Instagram. Strategy over volume of posts will be a goal for 2021.

HISC funds also supported the purchase of radio broadcasting time to run LFA information ads on multiple stations for a total of 246 announcements on Kaua’i and 412 on Hawai’i Island. On Maui, direct mail postcards were selected as the primary communication tool, with 4500 postcards produced and direct mailed to neighborhoods resulting in 38 samples submitted to date. Additional direct mail postcards are being planned on Maui and O’ahu which will target the neighborhoods where LFA have been found, to support efforts to delimit infestations, identify additional infestations, or communicate the importance of the issue to the community.

Early in 2020, the group prepared supplies by working with a local printer to produce approximately 10,000 test kit envelopes tailored for use in each county. In September, each ISC and HAL had a different mix of distribution points for the kits. For example, on O’ahu, kits were provided for checkout counters at the Hale’iwa, Lā’ie, and Kāne’ohe Ace Hardware stores, the Pearl City Home Depot, and at Ko’olau Farmers in Kāne’ohe and Kailua. HAL distributed 160 kits to garden supply/pesticide distributors and 60 kits to community groups. On Kaua’i, kits were distributed island-wide for pickup by the public at all six Kaua’i libraries who again agreed to help despite being under partial lockdown and were limited to curbside service only during October. An initial 35 kits were distributed to each site, and three sites requested a second delivery, for a total of 300 kits distributed. In addition, kits were mailed out when requested by people via 643pest.org. Hawai’i island HAL and HISC staff that manage online reports to 643-PEST.org piloted the use of thin chipboard sticks in the test kits to reduce the occasional issues that some residents have reported when mailing samples. A total of 10,200 sticks were ordered, at a cost comparable to the coffee stir sticks currently used, and staff mentioned the reduced postage cost for mailing requested kits with the new style of sticks.

Between Oct. 1 and Nov. 15, there were 331 calls about ants and 212 samples submitted for identification. Three samples from O’ahu residents were identified as LFA.

Partner	Calls, emails, reports	Samples Submitted
Podio (data primarily for O’ahu, incl. HDOA, HAL-O’ahu, OISC)	10	12 (three LFA)
KISC (info not available for HDOA-Kaua’i)	0	3
MISC	9	38
BIISC	10	11
643pest.org	11 reports, 58 kits requested	N/A
HAL-Hawai’i Island	233	148
Total	331	212

Table 3. The number of calls and samples submitted to partner agencies between Oct. 1 and Nov. 15, which should capture results of outreach efforts at the end of October and ant samples sent via mail. Previous campaigns also included the samples collected by students during outreach to schools. On O’ahu, there were three samples that contained LFA during the Oct 1-Nov. 15 timeframe, and a fourth positive LFA sample from a kit distributed during the campaign.

CGAPS Staff Media, Outreach, Presentations, Workshops & Events

Staff participated in a number of outreach opportunities in 2020, with the vast majority of outreach via online video or streaming since March. The following is a list of events where Ambyr Mokiao-Lee (AML), Stephanie Easley (SE), Andrew Porter (AP), Kailee Lefebvre (KL), and Christy Martin (CM) conducted outreach to the public or groups via presentations, workshops, booths at community events, or via radio, print, television, or social media.

- | | | |
|---------|--|---|
| 1/9 | Booth (AML, CM): DLNR programs outreach event for legislators at KUPU Ho'okupu Center about 'ōhi'a, ROD, ballast water & biofouling and other invasive species |  |
| 1/14 | Presentation (AML): <i>'Ōhi'a and the Five Things you can do to prevent ROD</i> , with Q&A for 5th graders at Punahou Elementary School | |
| 1/15 | Opening Day at the Capitol (AML, CM, SE): outreach about ROD and aquatic invasives to Legislators | <p><i>Ambyr Mokiao-Lee with Senator Gabbard at the Ag Day at the Capitol in January. Community events and in-person outreach was re-imagined and conducted through online video streaming and social media platforms.</i></p> |
| 1/21 | Booth & television news interview (AML): 'Ōhi'a and ROD booth and interview at the HIBP joint info-briefing | |
| 1/21 | Presentation (SE): <i>Federal NAPPRA process for adding Myrtaceae taxa to the restricted list</i> for UH Law School Administrative Law class | |
| 1/30 | Presentation (AML): <i>'Ōhi'a and the Five Things you can do to prevent ROD</i> | |
| 2/1 | Booth (AML): Outreach and activity at Kapalina Homes in Ewa about 'ōhi'a and ROD for Hawai'i Invasive Species Awareness Month | |
| 2/5 | Booth (AML, CM): Ag Day at the Capitol outreach booths on ROD | |
| 2/14 | Workshop (AML): ROD Seed Conservation Workshop | |
| 2/20-21 | Workshop (AML, CM): ROD communications workshop on Hawai'i island for conservation outreach staff from each island | |
| 2/21 | Presentation (CM): LFA info and survey training for BYU Hawai'i biology classes | |
| 3/4 | Presentation (CM): <i>Challenges for restoration of invaded Hawaiian wet forest ecosystems</i> for the Weed Science Society of America annual conference | |
| 3/10 | Presentation (AML): 'Ōhi'a presentation to the three kindergarten classes | |
| 3/16 | Newspaper interview (CM): Silent danger lurks , in The Garden Island. | |
| 4/24 | Lei Kit Giveaway (AML): Lei kit giveaway of alternative plants for use for lei during Native Hawaiian Plant Month | |
| 4/25 | Keiki Kit Giveaway (AML): Lei kit giveaway of 'ōhi'a products produced by 'ōhi'a outreach team to keiki around the state for Native Hawaiian Plant Month | |
| 4/25 | Presentation (AML): Presentation about 'ōhi'a on 'Ōhi'a Lehua Day for Native Hawaiian Plant Month | |
| 5/1 | Article (AML, CM): <i>Where to buy 'ōhi'a</i> , in the Special 'Ōhi'a Issue of the Hawai'i Landscape Magazine | |
| 5/8 | Workshop (AML): 'Ōhi'a-free lei making workshop | |
| 5/13 | CGAPS 2nd Quarter General Meeting (all). There was no first quarter meeting. | |
| 5/15 | Workshop (AML): 'Ōhi'a-free lei making workshop | |
| 5/20 | Presentation (CM, SE): Hosted screening of Saving 'Ōhi'a, followed by Q&A | |

- 5/22 Workshop (AML): 'Ōhi'a-free lei making workshop
- 7/24 Workshop (AML): 'Ōhi'a-free lei making workshop
- 7/31 Workshop (AML): 'Ōhi'a-free lei making workshop
- 8/3 Presentation (AML): Presentation to UH botany class on 'ōhi'a and ROD
- 8/13 Presentation (CM): *History of the HPWRA and Plant Pono* for Ka'ulunani Urban & Community Forestry Program Board
- 8/18 Presentation (CM): *Tale of two pests: examples from the battle against invasive species in Hawai'i* for the American Chemical Society annual conference
- 9/2 Presentation (CM): *Speak for the trees! How to participate in the State lawmaking process* for the Nāhululehiwakuipapa Workshop at the Hawai'i Conservation Conference
- 9/3 Presentation (AP): *Exploring Partnerships to Expand Pacific Island Jurisdictions' for Environmental Law and Policy* at the Hawai'i Conservation Conference
- 9/14 Presentation (AML): *Watershed management and forestry* for Kapolei High School
- 9/28 Presentation (AML): *Invasive species and native forests* for Kapolei High School
- 10/1 CGAPS 3rd Quarter General Meeting (all)
- 10/5 Presentation (AML): Presentation to educators from Project Learning Tree about 'ōhi'a and ROD resources available for different age groups
- 10/9 Television interview (CM): [October is Stop the Ant Month on Living 808](#), KHON
- 10/13 Presentation (CM): *Natural history of Hawai'i, HPWRA, and Plant Pono* for UH Landscape Architecture class
- 10/18 Newspaper interview (CM): [Invasive avocado lace bugs wreak havoc on prized trees](#) in the Honolulu Star Advertiser
- 10/19 Presentation (AML): *'Ōhi'a and ROD* for Kapolei High School
- 10/21 Presentation (CM): *Invasive species and NGOs* for UH Marine Option Program seminar class
- 10/23 Presentation (AP, SE): *Analysis of the proposed EPA National Performance Standards for Discharges Incidental to the Normal Operation of a Commercial Vessel* for HISC Brown Bag
- 11/2 Presentation (AML, CM): *Speak for the trees! How to participate in the legislative process* for Kapolei High School
- 11/5 Presentation (CM): *Ballast Water & Biofouling Risks and Regulations* for UH Botany 350 students
- 11/6 Presentation (AP): Presented and participated in the Environ-mentors Event hosted by the William S. Richardson School of Law, Environmental Law Society for mentoring students interested in careers in environmental law
- 11/16 Crafting Video for 'Ōhi'a Love Fest (AML): Created a [YouTube video for children](#) to follow along with crafting sessions
- 11/17 Presentation (AML, CM): Hosted screening of Saving 'Ōhi'a, followed by Q&A for 'Ōhi'a Love Fest
- 11/18 Presentation (AML): Moderator for one of the 'Ōhi'a Love Fest webinars entitled: The Importance of 'Ōhi'a: Past and Present



Stop the Ant Month and the importance of collecting and submitting ants was featured on Living 808 with Tannya Joaquin which ran in the morning and evening prime time on KHON 2.

- 11/20 Television news interview (AML): Provided information on the [‘Ōhi‘a Love Fest for KHON2 News](#).
- 11/30 Presentation (AML): Presentation with Spatial Data Analysis and Visualization Lab at UH Hilo for Kapolei High School Students
- 12/2 Presentation (AML): ‘Ōhi‘a and ROD for three kindergarten classes at Le Jardin
- 12/3 Presentation (CM): *Biosecurity: Laukahi targets 12 and 13* for the annual Laukahi Network Members, partners, and friends meeting
- 12/8 Presentation (CM): *An intro to policy: why you need to know how to speak for the trees* for UH Botany 350 students
- 12/11 Workshop (AML): Using ‘ōhi‘a alternatives for wreath making
- 12/14 Workshop (AML): Using ‘ōhi‘a alternatives for lei making for Kapolei High School
- 12/16 CGAPS 4th Quarter General Meeting (all)
- 12/17 Presentation (CM): *5 of the worst invasive species and the gaps that need filling* for the Environmental Funders Group

2021 HMLF Projects

1	Legal Fellowship Support. Salary, fringe (through 1/31/22) & operating support for two legal fellows + 2 interns	12/31/2022	UHF	\$ 144,400	\$ 7,600	\$ 152,000
2	CGAPS Core Support. Partial salary, fringe & operating support for PIO and Planner, projects, PCSU project support	12/31/2022	UHF	\$ 95,000	\$ 5,000	\$ 100,000
3	Support for Hawai‘i Green Growth. Annual support for multi-sector approach to sustainability, incl. invasive species priorities	12/31/2021	OEDB	\$ 23,364	\$ 1,636	\$ 25,000
4	Airport biosecurity display. Contract for the production and installation of a biosecurity display at DK1 airport	12/31/2022	HCAF	\$ 38,700	\$ 4,300	\$ 43,000
5	Plant Pathogen Rapid Diagnostic Tools	12/31/2021	UHF	\$ 28,500	\$ 1,500	\$ 30,000
Total						\$ 350,000
Item	ROD Supplemental Projects	Term	Admin	Subtotal	Overhead	Total
1	ROD Prevention Outreach & Diagnostics	12/31/2022	UHF	\$ 95,000	\$ 5,000	\$ 100,000
Total						\$ 100,000