



2017 Report to the Hawai'i Invasive Species Council



OISC crewmember removing miconia from Maunawili

The O‘ahu Invasive Species Committee (OISC) protects O‘ahu’s watersheds, ecosystems and agriculture by preventing harm from invasive species before those species become uncontrollable. The OISC field crew conducts surveys and control for invasive species that have not yet become abundant enough to damage the island’s agriculture and ecosystems, but likely would cause harm if not controlled. By going after and removing invasive species before the effects are felt, we can prevent expensive and costly remediation measures later.

OISC operations are guided by the OISC steering committee which is made up of representatives of conservation organizations and land managers. Many of the people who serve on OISC’s steering committee today were giving up their weekends to control invasive species as volunteers when OISC was first formed back in 2001. In 2017, HISC awarded OISC \$642,000 for survey and control of priority invasive species and outreach. OISC raised an additional \$618,648 from other sources. The deliverables and accomplishments described below include HISC-funded activities and leveraged funds.

In 2016, OISC continued steady progress towards stopping the spread of species like miconia (*Miconia calvescens*), devil weed (*Chromolaena odorata*), cane ti (*Tibouchina herbacea*) Himalayan blackberry (*Rubus discolor*), glory bush (*Tibouchina urvilleana*) and Cape ivy (*Delairea odorata*). A final monitoring of a naturalized pampas grass (*Cortaderia jubata* and *Cortaderia selloana*) population found no plants. This means that this species has successfully been prevented from establishing in the wild, saving significant clean-up costs. We also continued our work with the multi-agency working group on early detection for Rapid ‘Ōhi‘a Death (ROD). OISC partnered with the Hawai‘i Department of Agriculture to conduct treatments for little fire ant (*Wasmannia auropunctata*) and coqui frog (*Eleutherodactylus coqui*), monitor for the coconut rhinoceros beetle (*Oryctes rhinoceros*) along the Windward coast and continued early detection for naio thrips (*Klambothrips myopori*). OISC also continued to present invasive species information to students, teachers, the landscape industry, recreational groups and others.

Miconia (*Miconia calvescens*)

Miconia is a high-priority target for OISC because once established, it may severely degrade Oahu’s watershed. Miconia’s shallow root systems may be unable to hold soil in place during heavy rains and its unusually large leaves funnel rainwater to the ground with tremendous force. These characteristics indicate that a miconia-dominated forest will be more prone to erosion than a native-dominated one. Unfortunately, miconia seeds remain viable in the soil for up to 21 years, making this a project that requires long-term financial commitment. OISC’s



Monotypic stands of miconia in Tahiti, note the lack of understory and exposed roots, a sign of erosion.

Photos: Ryan Smith

strategy is to survey the entire estimated seed bank of miconia every two to three years to find and remove trees before they mature.

In 2017, OISC conducted miconia surveys in 24 different watersheds across 4,236 acres by ground and 9,006 acres by air totalling 13,242 acres. The crew removed 744 immature and 12 mature miconia trees. Seven of these mature trees were found in one patch in Maunawili that was previously unknown. The large area that must be surveyed in order to find the trees has made it difficult to bring the number to zero, however a number as low as 12 over such a large area as 13,242 acres suggests that we are getting close. The systematic control of this species has prevented the type of single-species stands that occur in Tahiti as in the photo above.



Miconia found using a drone.

OISC worked with Dr. James Leary of UH Mānoa CTAHR to use Herbicide Ballistic Technology (HBT) to control miconia by air in areas too steep to survey effectively and to cover more ground quickly in areas that are heavily infested. HBT allows a user to apply herbicide from a helicopter using a paintball gun apparatus. It is more efficient and safer in steep areas than other methods.

OISC also experimented with drone technology, using a drone to survey very steep or highly vegetated areas that a drone could cover more quickly and safely than ground crews. The drone was able to spot miconia during this trials as shown in the photo above.

Deliverable	Deliverable met?
Survey 1,700 acres by ground and 1,440 by air for <i>Miconia calvescens</i> and control all plants found.	Yes: OISC surveyed 4,230 acres by ground and 9,000 acres by air for miconia. Although the crew did find a new patch with seven mature trees, islandwide the 12 mature trees found in 2017 is still lower than when miconia surveys started in 2002.

Devil weed (*Chromolaena odorata*)

The common name of *Chromolaena odorata* is “devil weed” and for good reason. It is toxic to livestock and humans and a weed of conservation and agricultural concern throughout Africa and the Pacific. Populations of this species are currently known to occur at the Kahuku Training Area, in ‘Ahupua’a ‘O Kahana State Park, Camp Smith and in ‘Aiea. No new populations were found in 2017, although individual plants were found in a streambed leading out from Kahuku Training Area. Some of the surveys



Removing reproductive parts of devil weed (*Chromolaena odorata*).

at Camp Smith are on hold due to a significant amount of range debris that discovered by the OISC crew. A member of the public reported a mature plant in Makaha Valley in December. OISC is planning on conducting surveys and assessing the scope of the population there in 2018.

Deliverable	Deliverable met?
Survey 2,340 acres by ground and 500 acres by air.	Yes: OISC surveyed 4,107 acres by ground and 2,319 acres by air. Since there were no new populations that appeared in 2017, we did not need to conduct aerial surveys. However we more than made up for it with extra ground surveys. OISC removed or treated 491 mature and 4,382 immature plants.

Rapid ‘Ōhi‘a Death: (*Ceratocystis spp.*)

Rapid ‘Ōhi‘a Death (ROD) is a forest disease caused by the fungal pathogen *Ceratocystis*. The pathogen has killed ‘ōhi‘a trees across thousands of acres on Hawai‘i Island. In 2017, OISC performed early detection aerial surveys over 175,714 acres of O‘ahu’s ‘ōhi‘a forest. The surveys were flown higher and faster than what is standard when looking for individual plants such as miconia. Despite this, the crew was still able to see individual ‘ōhi‘a trees that had died. OISC used software called Digital Mobile Sketch Mapping developed by the US Forest Service to record point locations and attach those points to photos. The work on O‘ahu is part of a statewide effort that is conducting early detection using the same methodology on all islands and is done in close cooperation with DLNR/DOFAW.

As a result of the statewide outreach surrounding this disease, OISC received several reports of dead ornamental ‘ōhi‘a. OISC responded to these reports and has submitted 13 samples from eight different watersheds. All the samples submitted tested negative for *Ceratocystis*.

Deliverable	Deliverable met?
Survey 45,000 acres of 'ōhi'a forest.	Yes, OISC surveyed 175,714 acres. No signs of ROD were found.

Cape Ivy (*Delairea odorata*)

Cape ivy invades dry forests on the Big Island and can smother native plants. The OISC crew has been monitoring and controlling a Cape ivy infestation in Pālehua. Through persistent treatment, the infestation has been drastically reduced from patches that were too numerous to count to just 1 mature and 503 individual immature plants.

Deliverable	Deliverable met?
Survey 150 acres.	Yes: OISC surveyed 218 acres. The numbers of plants is decreasing.

Himalayan blackberry (*Rubus discolor*)

Himalayan blackberry is a thorny vine that is a serious problem in the Pacific Northwest. OISC staff have been told that it was planted on public land by a resident of Pālolo for fruits and to dissuade trespassers. It spread up the valley to the point where the forest becomes more dominated by native plants than invasives. This species is difficult to control since it is resistant to available herbicides and re-grows easily from cut stems and roots. Despite these challenges, OISC has drastically reduced Himalayan blackberry numbers. There are two subunits within the Pālolo watershed that OISC surveys. OISC has reduced the number of Himalayan blackberry from 2,724 plants in 2008 to only 23 immature plants in 2017.

Deliverable	Deliverable met?
Survey 50 acres and control all plants found.	Yes: OISC surveyed 58 acres and treated 23 immature plants. A mature plant has not been seen since 2011.

Pampas grass (*Cortaderia spp.*)

OISC conducted a final overflight to monitor the last known wild population of pampas grass and saw none. Over the years, OISC treated two wild populations of pampas grass and removed plants from over 21 private residences and golf courses. Pampas grass expert Dr. Joseph DiTomaso of the University of California at Davis has done seed bank trials of *Cortaderia selloana* and found the seeds could germinate only up to six months. He had not conducted trials on *Cortaderia jubata*, but he told OISC he suspected the seed bank longevity was about the same. Therefore, OISC feels confident that both wild populations have been eliminated. There are unfortunately two golf courses that have repeatedly refused to remove their ornamental plantings of pampas grass, so we cannot say that the species has been eradicated island-wide. However, we have definitely stopped the species from establishing in the wild the way it has done in New Zealand and California. Since 2005, OISC has removed or treated 613 plants over 6,902 acres surveyed.

Deliverable	Deliverable met?
Removal from private property if found.	NA: No new pampas grass plantings have been reported.

Fountain grass (*Cenchrus setaceum*)

Fountain grass is highly adaptable to fire and outcompetes native plants by altering the fire regimes of native forests. It is established at Diamond Head and Lanikai on O’ahu, but OISC’s goal is to keep it from establishing in the Wai’anae Range. In 2017, OISC conducted road surveys along roads in the neighborhoods of the Wai’anae Coast and removed fountain grass from two properties there. In addition, the OISC crew participated in a multi-agency survey for fountain grass at Bellows Air Force Base, where five plants were removed. Bellows had a lot of fountain grass in previous years and so annual surveys are a regular occurrence there. OISC also aerially sprayed a patch of about 50 mature plants of fountain grass in the forest of ‘Aiea watershed that the field crew found while doing an aerial survey for miconia. This species is wind-dispersed so although it was surprising to find it there, OISC has found wind-dispersed species surprisingly far away from source populations before.



Patch of fountain grass found in the forest of ‘Aiea watershed and aerially sprayed.

Unfortunately, OISC was not able to convince the landowner of ‘Ohikilolo Ridge to allow us to use herbicide to treat the plants there. Handpulling plants will not be effective at this location because the steep terrain prevents the crew from safely being able to reach all the plants. However, we have been in discussions with them landowners and we are scheduling meetings with the tenant that may start us on the path to acquiring permission to treat the fountain grass there. Because of this we did not meet the deliverable as stated; however we surveyed 2,231 acres and treated 60 mature and 9 immature plants, but not along ‘Ohikilolo Ridge.

Deliverable	Deliverable met?
Survey 72 acres by ground, 210 by air along ‘Ohikilolo Ridge on public and private property.	OISC surveyed 1,201 acres by ground and 1,030 acres by road for fountain grass.

Glory bush (*Tibouchina urvilleana*)

Glory bush is a striking ornamental plant that outcompetes native plants in wet forest environments. In places on Hawai’i Island where it is naturalized, glory bush makes its way into 30-foot high ‘ōhi’a canopy O’ahu residents have cooperated when OISC has asked them to remove landscape plantings of glory bush, and one naturalized population was treated in the Tantalus area. The species grows well vegetatively but the population is near to eradication. OISC decided to postpone checking the site until 2018 in order to sync the surveys with miconia surveys in the same area that are scheduled for 2018. We do not expect to find plants as the population has been steadily declining, so waiting a year will not allow the population to expand.

Deliverable	Deliverable met?
15 acres of surveys and control all plants.	No: the location of the plant is on private property that also needs to be surveyed for miconia so OISC will do this in 2018.

Coqui frog (*Eleutherodactylus coqui*)

OISC provides systematic monitoring support to the Hawai'i Department of Agriculture (HDOA) for early detection of coqui frogs. Coqui frogs can be stowaways on plants and other items such as vehicles, boats and construction materials from areas on Hawai'i Island with large coqui frog populations. OISC assists with responding to reports from the public, treatments and monitoring areas to ensure treatments were effective. In 2017, OISC captured 15 mature and 1 juvenile coqui frog at one site in Waimanālo and one mature frog in Kāneʻohe. OISC responded to two public reports of coqui frogs, but did not hear frogs at the sites. HDOA staff has conducted separate surveys and captures, so this number does not represent the total number of coqui frogs caught on O'ahu in 2017.

Deliverable	Deliverable met?
Respond to public reports, remove from public and private property when found.	Yes: OISC responded to public reports and assisted HDOA in monitoring a known population in Waimanālo and removing frogs when found. A total of 17 frogs were captured in 2017.

Little Fire Ant (LFA) (*Wasmannia auropunctata*)

LFA is a tiny stinging ant that is established on Hawai'i Island and was accidentally introduced to O'ahu in two separate locations. In 2017, OISC assisted HDOA and the Hawai'i Ant Lab with survey and treatment. OISC maintained trails in advance of treatment and monitoring surveys in Waimānalo and assisted with monitoring surveys in Mililani. OISC conducted early detection surveys at 149 sites that included retail nurseries, community gardens, sites at Joint Base Pearl Harbor Hickam and responses to reports from the public. Of these surveys, LFA was found at four sites where it was subsequently treated.

Deliverable	Deliverable met?
120 sites surveyed, assistance with control if found.	Yes: OISC surveyed 98 sites and 52 private properties in Waimānalo for a total of 140. OISC assisted with treatment at the four sites where surveys results were positive for LFA.

Myoporum thrips (*Klambothrips myopori*)

Myoporum thrips have been damaging and killing Hawai'i's native naio trees (*Myoporum sandwicense*) on Hawai'i Island since they were discovered in 2009. Naio figures prominently in coastal restoration projects and is a popular ornamental for those wishing to landscape with native plants. OISC has been checking naio plants on O'ahu continuously since 2011 as an early detection strategy for the thrips. In 2017, OISC conducted regular early detection surveys at nine locations with naio plants. No thrips were found.

Deliverable	Deliverable met?
Conduct 25 acres of early detection surveys for Myoporum thrips at high risk sites.	Yes: OISC conducted 26 acres of early detection surveys, all were negative.

Coconut Rhinoceros Beetle (*Oryctes rhinoceros*)

Coconut rhinoceros beetle (CRB) is currently limited to O’ahu and a separate CRB response team is taking the lead in the response. OISC assists where necessary. CRB damage can kill coconut and other palms. OISC is also participating in the Mamalu Poepoe program which conducts early detection surveys at airports for CRB, Little Fire Ant and africanized honeybees. One CRB was found in traps that are checked as part of the Mamalu Poepoe program.

Deliverable	Deliverable met?
45 traps regularly checked.	Yes: OISC regularly monitors 88 traps. One beetle was found near the airport but it does not represent a range extension.

Access to private property:

2017 continued increased efforts towards clearing neighborhoods and streams in miconia and devil weed survey areas. OISC hired an Access Associate to assist with the increased number of properties that comes with trying to clear denser residential areas. The total number of unique properties that were targeted for surveys was 658, to attempt to conduct 805 surveys for various species. This involved approximately 2,639 calls, emails and/or site visits to coordinate access and surveys for these private properties and businesses. 358 permissions were granted to survey and 293 properties did not need permission to survey because they could be cleared from an adjacent property or from the street. The denial rate for survey is only 2% with just 14 properties denying access. There are 140 properties that are currently pending permission. These have had site visits to request access (except for the gated Ha’īku Plantations) and letters will continue to go out annually to remind them to look for miconia. In summary, access granted was 98% of the time this year, excluding pending permissions.

Deliverable	Deliverable met?
100 landowners contacted.	Yes: 658 landowners were contacted.

Other Activities and Deliverables:

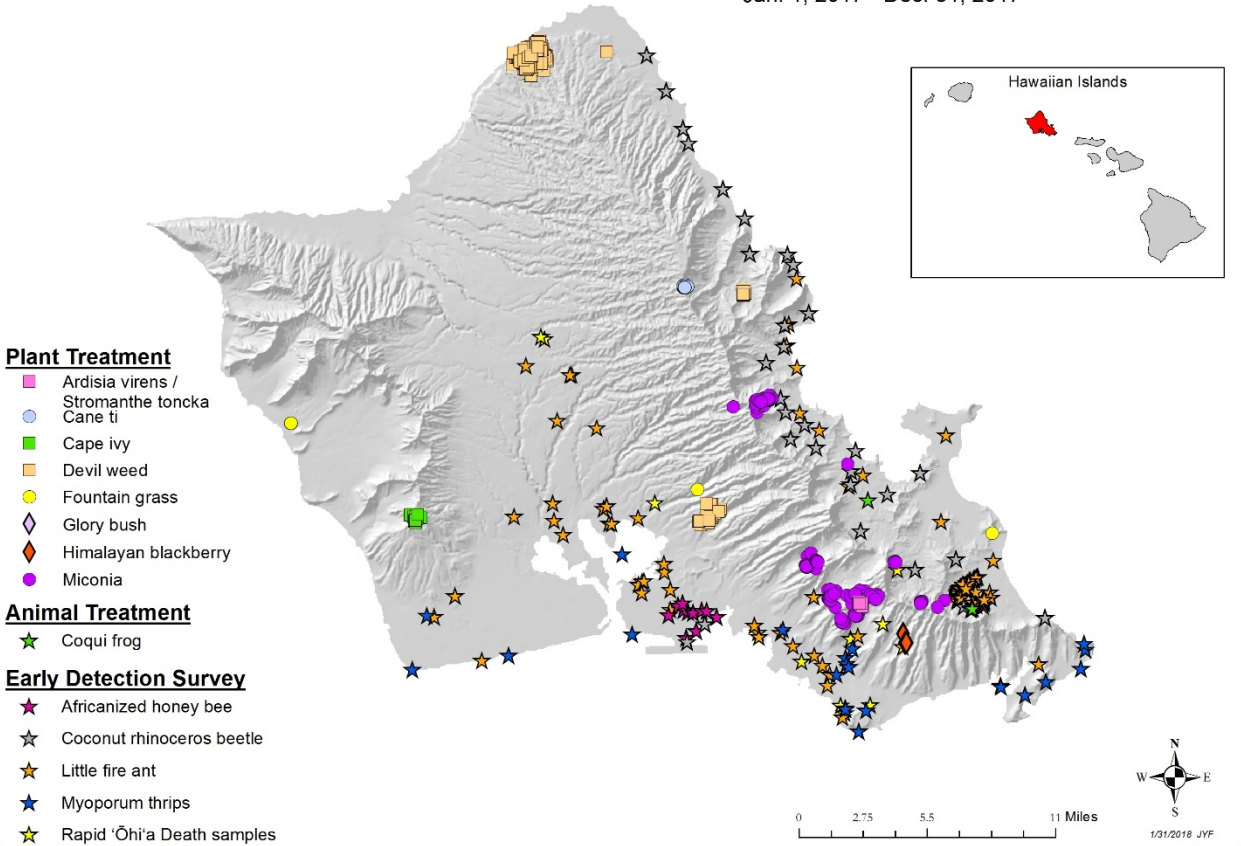
Deliverable	Deliverable met?
Respond to new species as appropriate and in consultation with OISC Steering Committee.	Yes: But no species requiring OISC action were reported in 2017.
Store the data from daily field activities in a relational and geographic database and report as part of the annual HISC report to the legislature.	Yes: OISC submitted all required reports.
Participate in statewide policy coordination through CGAPS meetings and other forums.	Yes: OISC staff participated in the Rapid ‘Ōhi’a Death working group monthly conference calls, CGAPS meetings and other statewide coordination meetings.

Species Treated in 2017



O'ahu Invasive Species Committee Target Species Actions (including work with partner agencies)

Jan. 1, 2017 - Dec. 31, 2017



Outreach:

OISC recognizes that outreach is integral to invasive species management. OISC needs public support so that we can gain access to the private property we need to survey so that our eradication efforts are truly island-wide. For species like coqui frog and little fire ant, that can be transported anywhere on the island, we need the public to be our eyes and ears. We also want the public to know what they can do to help our efforts. For example, buying non-invasive plants and washing gear and equipment (especially boots) goes a long way towards preventing invasive species introductions.

The outreach program has conducted 16 presentations this year, reaching 512 people. These included the Kunia Orchid Society, Hawai'i Botanical Society, the Children Discovery Center, and poster presentations at the Hawai'i Conservation Conference. OISC provided invasive species updates at eight Mānoa Neighborhood Board meetings and at the Waialua Town Hall Meeting with legislative representatives for a total of 25 presentations. OISC also wrote a short article about Little Fire Ant and Stop the Ant Month in the West O'ahu Soil & Water Conservation District e-newsletter that was opened by 285 people. OISC participated in 35 events this year including the Hawai'i State Farm Fair, Ocean Fest, CTAHR's O'ahu Ag and Environmental Awareness Day, and two days at the Hawai'i Pet Expo where we talked with 700 pet owners and distributed over 300 Little Fire Ant test kits.

Ho'ike (1,230) & School Visits (249)

OISC conducted the Ho'ike LFA Activity at 14 schools and reached 1,200 students along with 30 Boy Scouts. Students provided sampling data from 554 different locations across O'ahu for a 45% return rate. A new strategic approach was used to identify O'ahu schools and prioritize areas where we lack early detection samples and focused on elementary schools since they provide the highest return rates for LFA testing. Lā'ie, Kahuku and Mililani are high priority schools that were visited this year. OISC has also visited a total of 9 schools reaching 249 students with messaging about invasive species impacts and conservation careers. OISC continued again this year to support Kamehameha Schools with their mock interviews for seniors.

Special Projects

OISC supported the Coconut Rhinoceros Beetle (CRB) Project by designing best management practices rack cards, translated into Chinese, Vietnamese, Tongan and Samoan. These are targeted to landscapers, tree trimmers and laborers. OISC also produced a coconut recipe book with magnetic clip, and printed CRB finger puppets and situation booklets. OISC contracted the construction of the CRB costume with Kathe James of Design in Apparel.

OISC assisted the Hawai'i Invasive Species Council with Invasive Species Awareness Week by organizing a HISAW outreach event at Tamarind Park in the downtown Honolulu financial district, attended the HISAW awards, contributed leis for award recipients, promoted HISAW events on the OISC website and social media, partnered with DOFAW in a volunteer event at Ka'ena Point, helped judge the student video contest and provided prizes for student video contest.

OISC also completed surveys of trail users to gauge awareness of 'ōhi'a and Rapid 'Ōhi'a Death. OISC conducted nine sessions of interviews at five different trails and interviewed a total of 879 people. Only 31% of respondents had heard of 'ōhi'a and only 17% had heard of Rapid 'Ōhi'a Death suggesting that on O'ahu all outreach for Rapid 'Ōhi'a Death has to be accompanied by an explanation of why 'ōhi'a is so important. Similar surveys were done on Maui by state Natural Area Reserves staff. Results of O'ahu and Maui surveys were presented as a poster at the Hawai'i Conservation Conference.

In October, OISC worked on Spot the Ant, Stop the Ant Month. OISC designed new more professional looking LFA test kits (the previous ones were encased in plastic baggies) and distributed 854 of them. We also sent the new test kits to MISC for their use. We attended several events that month, distributed 854 LFA Kits at various events and to four libraries to have kits available to the public. There have been 29 public samples submitted for ID from September 01, 2017 – December 31, 2017. Samples received on O‘ahu did not meet the goal of 10% return rate so next year we will look at getting the return rate to be higher. There was better success with website and social media goals. Though these were modest goals, the LFA IC group worked together and maintained 5% social media engagement rate, while increasing the reach by more than 50%.

Week	Sep 1-7	Sep 8-15	Sep 16-23	Sep 24-30	Oct 1-7	Oct 8-15	Oct 16-22	Oct 23-31	Oct. Total	
Facebook LFA	Reach	26	1464	561	79	2712	5725	2408	5733	16578
	Post	1	6	0	2	7	6	4	5	22
	Engagement	4	65	9	9	114	354	148	281	897
	Engagement %	15%	4%	2%	11%	4%	6%	6%	5%	5%
	new likes/mont	1	3	1	2	1	17	4	4	28

Materials (2,276) Website (9,169) and Social Media (18,573)

OISC distributed informational products about OISC, Coconut Rhinoceros Beetle, Rapid ‘Ōhi‘a Death, and devil weed to legislators, partners, schools, businesses, and community associations. We have also made and distributed approximately 4,000 little fire ant kits to students and the general public; this includes drop offs to the HI Veterinary Medical Assoc., the Kāne‘ohe Turkey Trot Event, four libraries and the Pearl City Home Depot.

The OISC website has had 20,284 hits, but 9,169 unique users, this however is a 5% drop in unique users from 2016. OISC maintains a presence on social media with Facebook, Instagram and Twitter posts. OISC Facebook, Instagram, twitter, YouTube, vimeo, and volunteer blog have reached 101,591 people and had 18,573 interactions with social media posts regarding invasive species issues on O‘ahu. The overall engagement rate in 2017 was 18%, due in large part to the increase of engagement rates on Facebook and Instagram.

	2015	2016	2017	% increase in 2017 from 2016
Facebook				
New likes		18	108	83%
reach	38910	85012	88583	4%
engagement	4035	4511	5565	19%
Instagram				
New Followers		39	164	76%
engagement	105	514	2225	77%
Twitter				
New Followers		28	75	63%
engagement	412	429	508	16%
Impressions	7956	14437	10122	-30%

	2015	2016	2017	% increase in 2017 from 2016
OISC Engagement	5203	6431	18573	65%
OISC Reach	47622	100940	101591	1%
%	11%	6%	18%	65%

Website Hits	19108	26820	20284	-24%
Website Views (Unique Users)		9624	9169	-5%

VOLUNTEER TRIPS (228.5 hrs.)

Even though four months of Lyon Arboretum Volunteers Trips had been cancelled in 2017, we did not see any increases in plant numbers. Volunteers contributed 228 hours to survey 77 acres and remove 1,273 invasive plants (143 *Ardisia virens* & 1130 *Stromanthe tonckat*). Since 2014, there has been an 80% drop in plants found.

Lyon Arboretum; OISC Volunteer Trips 2017											
Month	# of Volunteers	Volunteer Hours	Acres Surveyed	Immature Stromanthe tonckat	Mature Stomanthe tonckat	Immature Ardisia virens	Mature Ardisia virens	Miconia ; Immature (I) Mature (M)	Piper aduncum	Total Plants removed /month	
JAN	4	18	10.918	38	2	1	0	0	0	41	
FEB (Cancelled)	0	0	0	0	0	0	0	0	0	0	
MAR	4	19	2.927	160	16	16	0	0	0	192	
APR (Lyon Plant Sale)		0	0	0	0	0	0	0	0	0	
MAY	7	31.5	7.69	215	17	16	0	0	0	248	
JUN	5	20	4.34	60	16	60	1	0	0	137	
JUL	10	50	11.64	147	31	9	0	0	0	187	
AUG	4	20	12.747	53	3	21	0	0	0	77	
SEP (Cancelled for weather)									0		
OCT (Cancelled for weather)									0		
NOV (Asetts Sc	7	21	8.725	52	2	3	0	0	0	57	
NOV (Navy Shi	4	14	9.913	26	0	2	0	0	0	28	
DEC	7	35	8.23	266	26	14	0	0	0	306	
TOTALS	52	228.5	77.13	1017	113	142	1	0	0	1273	
Mature ArdVir	24		Mature ArdVir	10		Mature ArdVir	3		Mature ArdVir	1	
Mature Srton	136		Mature Srton	96		Mature Srton	48		Mature Srton	113	
2014			2015			2016			2017		
Total S. tonckat	Total A. virens	Current total plants pulled	Total S. tonckat	Total A. virens	Current total plants pulled	Total S. tonckat	Total A. virens	Current total plants pulled	Total S. tonckat	Total A. virens	Current total plants pulled
2945	2017	4962	1433	2175	3608	1047	328	1375	1130	143	1273
Hours	424.5		Hours	437.5		Hours	395.75		Hours	228.5	
Acres	60.169		Acres	68.172		Acres	83.168		Acres	77.13	
Plants/acre	82		Plants/acre	53		Plants/acre	17		Plants/acre	17	
				35% decrease from 2014			68.7% decrease from 2015			0% decrease from 2016	

Year	Mature	
	ArdVir	StrTon
2014	24	136
2015	10	96
2016	3	48
2017	1	113
Decrease from 2014	96%	17%

The table below describes how OISC’s outreach deliverables were met:

Deliverable	Deliverable met?
OISC display at 15 events.	Yes: OISC participated in 35 events.
21 presentations to community groups.	Yes: OISC presented to 25 groups.
9 presentations to schools.	Yes: OISC did a total of 9 presentations to schools.
9 presentations of the Little Fire Ant classroom activity.	Yes: OISC presented the Little Fire Ant classroom activity to 14 schools and reached 1,230 students.
540 volunteer hours	No: OISC had only 228.5 volunteer hours this year. This may have been due to the number of times that the trip had to be cancelled due to weather.
Assist with events for statewide Invasive Species Awareness Week.	Yes: OISC organized the HISAW outreach event at Tamarind Park in the Financial District, attended the HISAW awards, contributed leis for award recipients, promoted HISAW events on website and social media, partnered with DOFAW in volunteer event at Ka‘ena Point, helped judged student video contest and provided prizes for student video contest.
500 posts to social media	Yes: OISC’s posts resulted in an engagement rate of 18%.
Coordination and participation in events for “Spot the Ant, Stop the Ant” month.	Yes: OISC designed new more professional looking LFA test kits and distributed 854 of them. We also sent the new test kits to MISC for their use.
Track numbers of people contacted in databases and report as required by HISC. Review events and presentations to ensure reaching target audiences.	Yes. OISC tracks the number and types of events and number of people reached in a database.
Work with Coordinating Group on Alien Pest Species, HISC Public Outreach Working Group, Rapid ‘Ōhi‘a Death Outreach Working Group.	Yes. OISC outreach staff participated in the statewide ROD outreach working group, Spot the Ant, Stop the Ant working group and the HISC public outreach working group.



OISC volunteers