BISCO BIG ISLAND INVASIVE SPECIES COMMITTEE

Final Report to the Hawaii Invasive Species Council



## **Early Detection and Control of Invasive Species**

Yep, the BIISC Crew was wearing face masks in 2019, before it was cool! When you need to find every last plant in a Little Fire Ant-infested forest, you suit up!

The BIISC field crew works island-wide to eradicate or control the highest risk invasive plants and wildlife threatening our environment, economy, and way of life. HISC funds supported a portion of costs for a five-person plant control crew tasked with eradicating eleven target species from the island of Hawaii. Funds also partially supported the Program Manager, Data and GIS Analyst, and Fiscal Associate. Emergency wildlife response was also funded by HISC through the end of February, 2019, when our last wildlife biologist left the program. At that point, feral rabbit and Axis Deer response was handed off to DOFAW.

In 2019 the Plant control crew continued its efforts to eradicate some of the highest-risk early invaders across the island of Hawaii. The Plant Crew followed an established action plan with clearly stated goals and standards to measure and report progress toward success. Maintaining this well-trained crew ensures their availability to assist with other agency needs. The BIISC crew is often called upon to pitch in on small contracts to knock back more widespread, high-impact weeds in key sites, including conservation areas and potential inter-island dispersal pathways such as military training lands. BIISC's work in 2019 was also supported by the Hawaii Division of Forestry and Wildlife, Natural Area Reserves System, the Hawaii Army National Guard, the Hawaii Department of Agriculture, and the US Fish and Wildlife Service.



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## 2019 Deliverables/Expected Outcomes:

- 200 miles of roadsides will be surveyed for new species:
  - 200 miles of roadsides were surveyed. Two new island records, *Digitalis purpurea*(Foxglove), and *Stenocarpus sinuatus* (Firewheel Tree) were documented, and are
    pending confirmation as newly naturalized species on the island of Hawaii. The small
    stand of Foxglove was located near the border of a Natural Area Reserve and is currently
    being managed as a Rapid Response (eradication) target.
- Provide rapid response capacity to new outbreaks of high-risk plants within 30 days, and within 72 hours for introduced wildlife, including snakes, rabbits, and deer, and devastating diseases like ROD (Rapid Response).
  - Two populations of rabbits were surveyed by the BIISC Wildlife Biologist in January and February 2019. Maps and contact information were provided to HDOA and DOFAW.
  - One credible Axis Deer report merited a field response in early 2019. Roads and accessible properties were surveyed on foot. Maps and contact information were provided to DOFAW.
  - After separation from BIISC in February the wildlife biologist position was not filled.
  - Both newly-detected species of invasive plants were well-researched, scored, and surveyed within 30 days of detection. One (Firewheel) is undergoing continued monitoring as flowers and fruit have yet to be observed. The other (Foxglove) has been adopted as a rapid-response target.
- Nine target pest species will be advanced toward eradication according to timelines laid out in the BIISC Target Species Action Plan;
  - Pampas Grass was eradicated in 2019.
  - All nine species have advanced toward eradication in 2019 except for Photinia, which could not be accessed due to ROD-related restrictions in place by the landowner. New funding and renegotiated sanitation restrictions have allowed work to resume on Photinia in 2020.
  - o Six of the nine target species were mapped at fewer than 2 mature plants per acre.
  - o The BIISC Action Plan has been updated to reflect current status of all nine species.
- Provide monthly (12) hands-on workshops to control the impacts of species like Albizia, Ficus, and Cinnamon Tree, which can be managed through citizen and partner networks.
  - The BIISC Field Crew assists with hands-on trainings, led by the BIISC Outreach Team. In
     2019 we held 34 hands-on workshops, including nine focused on plant control.
- Standardized methods and the risk assessment procedures used to prioritize target species will be published on the BIISC website;
  - This long-term goal was finally realized at the end of 2019. BIISC now has thorough written procedures detailing procedures to rate both the risk and feasibility of controlling newly detected invasive plants on the island of Hawaii. The process is not yet posted on the website, but a user-friendly version is under review.

			Action Area (acres)			Controlled Plants by Lifestage		Controlled Plants by Method		Total Hours			
	Taxon Name	Common Name		Area Controlled	Total Plants Controlled	Total Mature	Total Juvenile	Total Chemical		BIISC	Partner	Volunteer	Contributed
Plants: Eradication	•												
	Buddleja madagascariensis	Smokebush	257.018	0.057	37	18	19	24	13	267.8			
	Cortaderia jubata	Pampas Grass	0.010							3.5			
	Cortaderia spp.	Pampas Grass	11.533							14.0			
	Cotoneaster pannosus	Silverleaf Cotoneaster	1061.758	0.376	6641	589	6052	4125	2516	970.0		120.0	
	Cryptostegia madagascariensis	Madagascar Rubbervine	806.918	0.138	53	33	20	44	9	484.2			
	llex cassine	Dahoon Holly	64.519	0.012	27	27	0	27		64.0			
	Markhamia lutea	Nile Tulip Tree	6.120	0.540	47	0	47	17	30	49.0			
	Pereskia aculeata	Barbados Gooseberry	4.194	0.032	319	55	264	58	261	147.0			
	Rubus sieboldii	Molucca raspberry	251.105	1.061	17126	17095	31	17123		474.5	10.0		
Plant Totals		' '	2463.175	2.217	24250	17817	6433	21418	2832	2474.0	10.0	120.0	0.0
				0.09%									
Plants: Assessme	ent, Containment, or Local Control												
	Alstonia macrophylla	Deviltree	75.787	0.179	1722	63	1659	332	1390	92.0			
	Bocconia frutescens	Parrotweed	163.002	0.156	180	159	21	175	5	400.0	190.0		
	Cenchrus setaceus	Fountain Grass	2056.195	1.320	5832	3557	2275	4951	881	1030.0	440.0		
	Clidemia hirta	Clidemia	9.768	2.074	2788	1524	1264	619		72.5	166.0		
	Cyathea cooperi	Australian Tree Fern	0.000	0.042	14	14	0	013	14	0.0	_56.6		
	Digitalis purpurea	Foxglove	0.010	0.010	9	3	6		9	7.0			
	Falcataria moluccana	Albizia	1268.883	78.192	21878	1524	20354	21767	111	1023.0		46.0	24.0
	Grevillea robusta	Silk Oak	0.010		15	7	8	13					
	Hedychium gardnerianum	Kahili Ginger	27.571	2.994	3061	1239	1822	1878	1183	122.5	166.0		
	Hypericum kouytchense	St. Johns Wort	0.010	0.065	83	41	42	43		122.0	100.0		
	Megathyrus maximus	Guinea Grass	0.010	0.020	161	160	1	161		0.0			
	Miconia calvescens	Miconia	0.010	0.010	1066	12	1054	36	1030	48.0			
	Morella faya	Fire Tree	488.514	0.208	628	279	349	315	313	160.0	150.0		
	Passiflora tarminiana	Banana Poka	10.940	0.411	244	195	49	44		40.0	60.0		
	Persicaria chinensis	Knotweed	4.240	0.375		155			200	40.0	00.0		
	Phyllanthus reticulatus	Potato Bush	30.400	0.373	0	0	0			22.0			
	Psidium cattleianum	Strawberry Guava	7.298	0.490	582	210	372	184	398	46.0	34.0		
	Rubus argutus	Sawtooth Blackberry	200.868	1.560	0	0	0	104	330	140.0	128.0		
	Rubus ellipticus	Yellow Himalayan Raspberry	0.020	0.250	82	25	57	42	40	0.0	120.0		
	Stenocarpus sinuatus	Firewheel Tree	6.035	0.230	02	0	0	7-	40	12.0			
	Ulex europaeus	Gorse	2482.391	1.706	3010	761	2249	3010		115.5	285.5		
Plant Totals	отех сигорисиз	100.00	6831.962	90.060	41355	9773	31582	33570		3370.5	1619.5	46.0	24.0
Tidit Totals			0031.302	1.32%	41333	5773	31302	33370	7703	3370.3	1015.5	40.0	24.0
Invertebrates				1.5270									
	Apis mellifera	European Honeybee	20596.020							155.0			
	Oryctes rhinoceros	Coconut Rhinoceros Beetle	20820.030							179.5			
	Wasmannia auropunctata	Little Fire Ant	241.014	100.157						684.5	9.5	230.5	
Invertebrate Tot	<u> </u>	Little File Allt	21061.044	100.157						1019.0	9.5	230.5	
mvertebrate 10t			*honeybees and CRB sur		rea					1019.0	9.5	230.3	
Vertebrates			noneybees and CNB sur	veyeu over saille di	Cu								
Vertebrates	Axis axis	Axis Deer	363.000							25.0	8.0		
	Oryctolagus cuniculus	European Rabbit	51.400						4	57.0	8.0		
Vertebrate Total		European Nappit	414.400						4.000	82.000	16.000		
vertebrate rotal	,		414.400						4.000	32.000	10.000		
<b>Grand Total</b>			28307.406	190.216	41355	9773	31582	33570	7789	4471.5	1645.0	276.5	24.0
Grana rotal			20307.400	150.210	41333	3773	31362	33370	1103	77,1.3	10-3.0	2,0.3	24.0

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Interns Josie and Axl join veteran Field Leader Shannon to survey for rubbervine in Ka`u, to protect our coastal and dry forest conservation lands.

## • Other efforts and accomplishments:

In addition to making steady progress on eradication targets, the BIISC Plant Crew continued to provide field support to conservation partners, funded by grants and service contracts from those partners. In 2019 BIISC field crews removed pyrogenic fountain grass, monotypic faya tree, and smothering toilet-brush ginger from Natural Area Reserves; suppressed miconia, alstonia, and little fire ants on training areas for the Hawaii Army National Guard; assisted with arthropod surveys on the Mauna Kea Summit; hosted a Youth Conservation Corp team; and controlled gorse in outlying areas on Mauna Loa with the Three Mountain Alliance and NARS. The plant crew's efforts on eradication targets were additionally funded by the Hawaii Department of Agriculture.