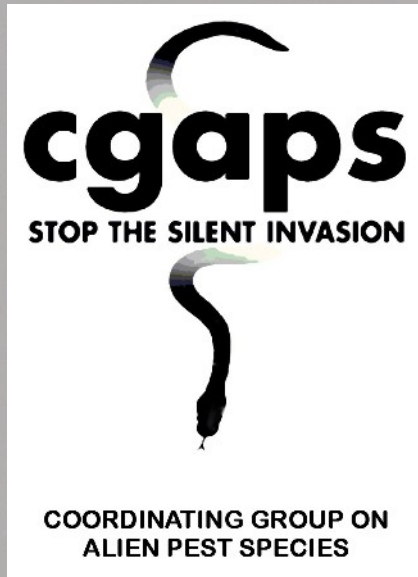


Island-based Partnerships and Statewide Coordination to Address Incipient Invasive Pests



Presented by
Christy Martin, Public Information Officer
CGAPS--Coordinating Group on Alien Pest Species
Invasive Species Committees of Hawaii
www.hear.org/cgaps

Formation of Partnerships



- 1992 report by The Nature Conservancy of Hawaii and the Natural Resources Defense Council examined Hawaii's system for invasive pest prevention, rapid response and ongoing control. The report highlighted gaps in the system.
 - lack of funding for proper prevention measures
 - lack of rapid response capability
 - unclear or conflicting jurisdictions and mandates
 - outdated laws or lack of policies
 - lack of communication and cooperation between agencies
 - lack of committed leadership to address these issues
 - need for public awareness
- The need to address this complex problem led to formation of the Coordinating Group on Alien Pest Species (CGAPS) in 1995.

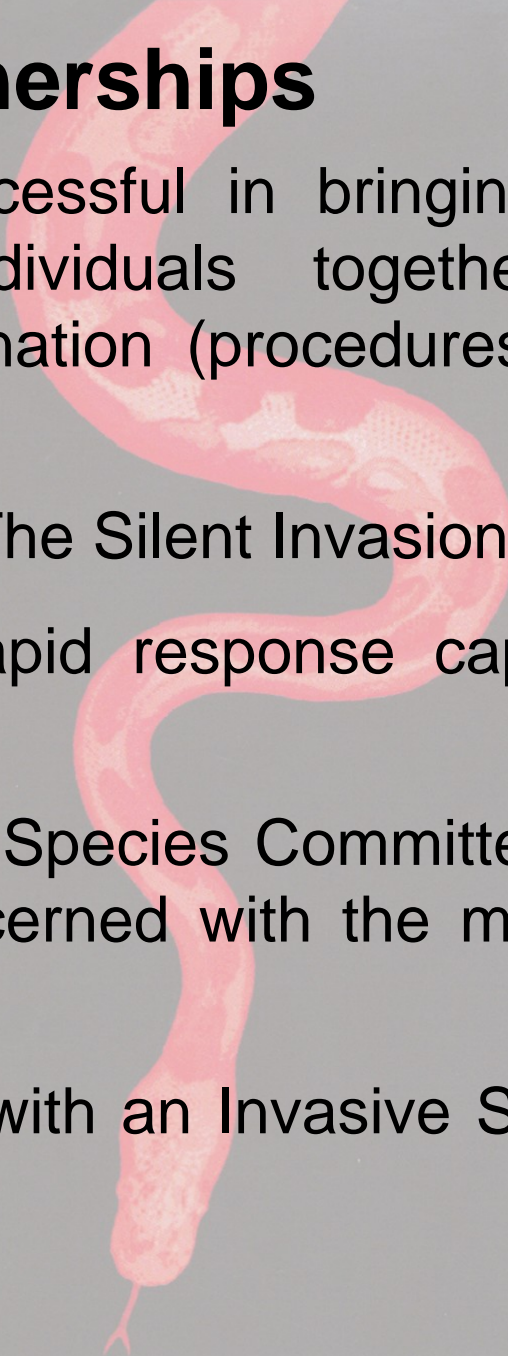
CGAPS: Statewide Partnership

- CGAPS is a statewide partnership of agencies and organizations working together to close the gaps in Hawaii's biosecurity.
- CGAPS partners meet quarterly to discuss prevention measures for the most threatening invasive pests and coordinate actions on existing pests. CGAPS also works to promote policy and procedural change and to raise public awareness of invasive species issues.

Hawai'i Department of Agriculture, Hawai'i Department of Health, Hawai'i Department of Land and Natural Resource, Hawai'i Department of Transportation, Hawai'i Farm Bureau Federation, Hawai'i Tourism Authority, Hawai'i Visitors and Convention Bureau, University of Hawai'i, Pacific Cooperative Studies Unit, The Nature Conservancy of Hawai'i, Bernice P. Bishop Museum, Big Island Invasive Species Committee, Kaua'i Invasive Species Committee, Maui Invasive Species Committee, Molokai'i Invasive Species Committee, O'ahu Invasive Species Committee, USDA Animal Plant Health Inspection Service, USDA Forest Service, USDA Natural Resource Conservation Service, US Fish and Wildlife Service, US Geological Survey—Biological Resource Division, National Park Service, Haleakala National Park, US Air Force, US Army, US Marine Corps, US Navy, US Customs Service, US Postal Inspection Service, US Postal Service

Formation of Partnerships

- CGAPS has been successful in bringing most agencies, organizations and individuals together for improved cooperation and coordination (procedures, legislature, field work).
- 1997 media campaign, The Silent Invasion.
- CGAPS helped gain rapid response capabilities on each island.
- 1997 the Maui Invasive Species Committee (MISC) evolved from a partnership concerned with the melastome invasion (including Miconia).
- Other islands followed, with an Invasive Species Committee on each island today.





Invasive Species Committees: Island-based

Invasive Species Committees (ISCs) are island-based, grassroots partnerships of government agencies, non-profit organizations and private businesses working together to control or eradicate the worst incipient pest species that threaten each island.

ISC participants select a limited number of target species based on the potential for successful control or eradication, while weighing the potential costs of inaction.



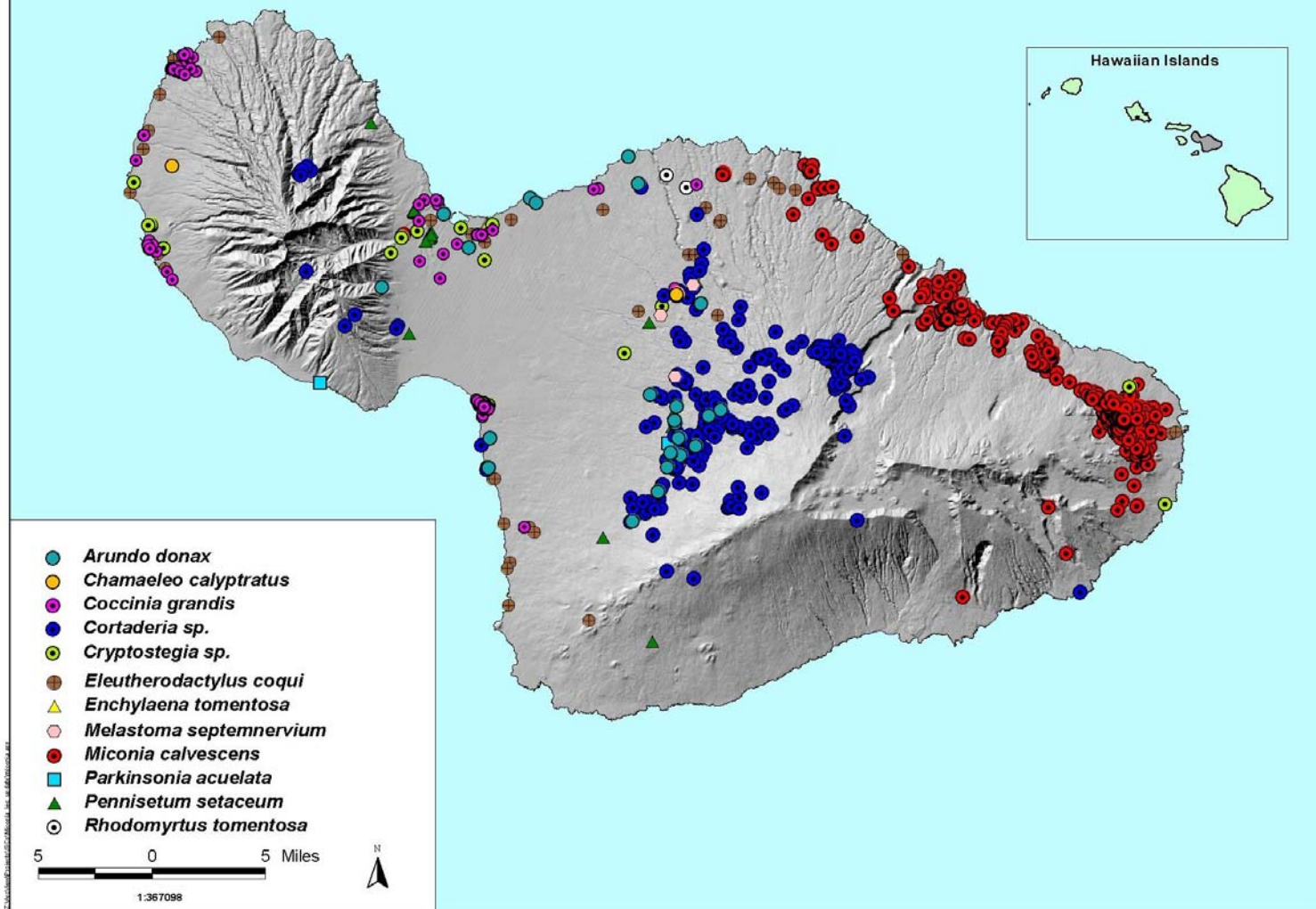


ISCs on the Ground



ISCs have field crews on each island that survey, map and conduct control work on selected target species. ISC field crews act as rapid response teams to control or eradicate new invasive pests before they spread.

MISC Target Species Distribution



USGS-BRD Preliminary Evaluation of Potential Targets

Lloyd Loope, Forest Starr,
and Kim Starr

Estimated Control Time

* = 1 day

** = 1 week

*** = 1 month

**** = 1 year

Estimated Threat

M = Medium

H = High

Noxious Weed, MISC Target

X = Yes

-- = No

Species	Est. Time	Est. Threat	Noxious weed	MISC target	Est. # owners	Area over which all known individuals would be controlled
<i>Caesalpinia decapetala</i>	*	H	--		1	Ulupalakua
<i>Macaranga mappia</i>	*	H	--		1	Maui
<i>Macaranga tanarius</i>	*	H	--		1	E. Maui
<i>Melastoma candidum</i>	*	H	X		4	Maui
<i>Morella faya</i> [<i>Myrica faya</i>]	*	H	X		1	W. Maui
<i>Parkinsonia aculeata</i>	*	H	--		1	Maui
<i>Rhodomyrtus tomentosa</i>	*	H	X		4	Maui
<i>Rubus ellipticus</i>	*	H	X		2	Maui
<i>Acacia podalyriifolia</i>	*	M	--		1	State
<i>Acacia retinodes</i>	*	M	--		1	State
<i>Enchylaena tomentosa</i>	*	M	--		1	State
<i>Maclura pomifera</i>	*	M	--		1	State
<i>Morella cerifera</i> [<i>Myrica cerifera</i>]	*	M	--		1	Maui
<i>Sideroxylon persimile</i>	*	M	--		1	Ulupalakua
<i>Chrysophyllum oliviforme</i>	**	H	--		1	W. Maui
<i>Leptospermum scoparium</i>	**	H	--		1	Polipoli
<i>Ulex europaeus</i>	**	H	X		1	Kahikinui
<i>Acacia auriculiformis</i>	**	M	--		1	Maui
<i>Acacia mangium</i>	**	M	--		1	Maui
<i>Bassia hyssopifolia</i>	**	M	--		4	Maui
<i>Pittosporum viridiflorum</i>	**	M	--		5	Maui
<i>Tibouchina urvilleana</i>	**	M	X		1	Hana Hwy.
<i>Coccinia grandis</i>	***	H	X		50	Maui
<i>Pennisetum setaceum</i>	***	H	X		5	Maui
<i>Arundo donax</i>	***	M	--		20	Maui
<i>Centranthus ruber</i>	***	M	--		1	State
<i>Cryptostegia</i> spp.	***	M	--		20	Maui
<i>Cytisus palmensis</i>	***	M	--		1	Maui
<i>Flueggea virosa</i>	***	M	--		10	State
<i>Jasminum fluminense</i>	***	M	--		1	Maui
<i>Omalanthus</i> sp.	***	M	--		5	Maui
<i>Salsola tragus</i> [<i>S. kali</i>]	***	M	X		5	Maui
<i>Solanum robustum</i>	***	M	X		1	State
<i>Tetrastigma pubinerve</i>	***	M	--		1	Maui
<i>Cortaderia</i> spp.	****	H	X		100	Maui
<i>Hypericum canariense</i>	****	H	--		50	State
<i>Miconia calvescens</i>	unknown	H	X		100	Maui

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<i>Macaranga mappa</i>	*	H	--	--	1	Maui
<i>Macaranga tanarius</i>	*	H	--	--	1	E. Maui
<i>Melastoma candidum</i>	*	H	X	X	4	Maui
<i>Morella faya</i> [<i>Myrica faya</i>]	*	H	X	--	1	W. Maui
<i>Parkinsonia aculeata</i>	*	H	--	X	1	Maui
<i>Rhodomyrtus tomentosa</i>	*	H	X	X	4	Maui
<i>Rubus ellipticus</i>	*	H	X	X	2	Maui
<i>Acacia podalyriifolia</i>	*	M	--	--	1	State
<i>Acacia retinodes</i>	*	M	--	--	1	State
<i>Enchylaena tomentosa</i>	*	M	--	X	1	State
<i>Maclura pomifera</i>	*	M	--	--	1	State
<i>Morella cerifera</i> [<i>Myrica cerifera</i>]	*	M	--	--	1	Maui
<i>Sideroxylon persimile</i>	*	M	--	--	1	Ulupalakua
<i>Chrysophyllum oliviforme</i>	**	H	--	--	1	W. Maui
<i>Leptospermum scoparium</i>	**	H	--	--	1	Polipoli
<i>Ulex europaeus</i>	**	H	X	--	1	Kahikinui
<i>Acacia auriculiformis</i>	**	M	--	--	1	Maui
<i>Acacia mangium</i>	**	M	--	--	1	Maui
<i>Bassia hyssopifolia</i>	**	M	--	--	4	Maui
<i>Pittosporum viridiflorum</i>	**	M	--	--	5	Maui
<i>Tibouchina urvilleana</i>	**	M	X	--	1	Hana Hwy.
<i>Coccinia grandis</i>	***	H	X	X	50	Maui
<i>Pennisetum setaceum</i>	***	H	X	X	5	Maui
<i>Arundo donax</i>	***	M	--	X	20	Maui
<i>Centranthus ruber</i>	***	M	--	--	1	State
<i>Cryptostegia</i> spp.	***	M	--	X	20	Maui
<i>Cytisus palmensis</i>	***	M	--	--	1	Maui
<i>Flueggea virosa</i>	***	M	--	--	10	State
<i>Jasminum fluminense</i>	***	M	--	--	1	Maui
<i>Omalthus</i> sp.	***	M	--	--	5	Maui
<i>Salsola tragus</i> [<i>S. kali</i>]	***	M	X	--	5	Maui
<i>Solanum robustum</i>	***	M	X	--	1	State
<i>Tetrastigma pubinerve</i>	***	M	--	--	1	Maui
<i>Cortaderia</i> spp.	****	H	X	X	100	Maui
<i>Hypericum canariense</i>	****	H	--	--	50	State
<i>Miconia calvescens</i>	unknown	H	X	X	100	State

*Eradications:
The first year it sleeps...*

MISC Target Species	Acres	# Killed
Malabar melastome (<i>Melastoma candidum</i>)	.1	2
Jerusalem thorn (<i>Parkinsonia aculeata</i>)	.1	17
Downy rosemyrtle (<i>Rhodomyrtus tomentosa</i>)	2.2	152
Ruby saltbush (<i>Enchylaena tomentosa</i>)	.1	30



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<i>Macaranga mapp</i>	*	H	--	--	1	Maui
<i>Macaranga tanarius</i>	*	H	--	--	1	E. Maui
<i>Melastoma candidum</i>	*	H	X	X	4	Maui
<i>Morella faya</i> [<i>Myrica faya</i>]	*	H	X	--	1	W. Maui
<i>Parkinsonia aculeata</i>	*	H	--	X	1	Maui
<i>Rhodomyrtus tomentosa</i>	*	H	X	X	4	Maui
<i>Rubus ellipticus</i>	*	H	X	X	2	Maui
<i>Acacia podalyriifolia</i>	*	M	--	--	1	State
<i>Acacia retinodes</i>	*	M	--	--	1	State
<i>Enchylaena tomentosa</i>	*	M	--	X	1	State
<i>Maclura pomifera</i>	*	M	--	--	1	State
<i>Morella cerifera</i> [<i>Myrica cerifera</i>]	*	M	--	--	1	Maui
<i>Sideroxylon persimile</i>	*	M	--	--	1	Ulupalakua
<i>Chrysophyllum oliviforme</i>	**	H	--	--	1	W. Maui
<i>Leptospermum scoparium</i>	**	H	--	--	1	Polipoli
<i>Ulex europaeus</i>	**	H	X	--	1	Kahikinui
<i>Acacia auriculiformis</i>	**	M	--	--	1	Maui
<i>Acacia mangium</i>	**	M	--	--	1	Maui
<i>Bassia hyssopifolia</i>	**	M	--	--	4	Maui
<i>Pittosporum viridiflorum</i>	**	M	--	--	5	Maui
<i>Tibouchina urvilleana</i>	**	M	X	--	1	Hana Hwy.
<i>Coccinia grandis</i>	***	H	X	X	50	Maui
<i>Pennisetum setaceum</i>	***	H	X	X	5	Maui
<i>Arundo donax</i>	***	M	--	X	20	Maui
<i>Centranthus ruber</i>	***	M	--	--	1	State
<i>Cryptostegia</i> spp.	***	M	--	X	20	Maui
<i>Cytisus palmensis</i>	***	M	--	--	1	Maui
<i>Flueggea virosa</i>	***	M	--	--	10	State
<i>Jasminum fluminense</i>	***	M	--	--	1	Maui
<i>Omalanthus</i> sp.	***	M	--	--	5	Maui
<i>Salsola tragus</i> [<i>S. kali</i>]	***	M	X	--	5	Maui
<i>Solanum robustum</i>	***	M	X	--	1	State
<i>Tetragymma pubinerve</i>	***	M	--	--	1	Maui
<i>Cortaderia</i> spp.	****	H	X	X	100	Maui
<i>Hypericum canariense</i>	****	H	--	--	50	State
<i>Miconia calvescens</i>	unknown	H	X	X	100	State



Eradications:

The next year it creeps...MISC is still working on these

MISC Target Species	Acres	# Killed
Fountain grass (<i>Pennisetum setaceum</i>)	8,230	658
Giant reed (<i>Arundo donax</i>)	2	910
Rubber vine (<i>Cryptostegia spp.</i>)	1.6	23



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<i>Macaranga mappa</i>	*	H	--	--	1	Maui
<i>Macaranga tanarius</i>	*	H	--	--	1	E. Maui
<i>Melastoma candidum</i>	*	H	X	X	4	Maui
<i>Morella faya</i> [<i>Myrica faya</i>]	*	H	X	--	1	W. Maui
<i>Parkinsonia aculeata</i>	*	H	--	X	1	Maui
<i>Rhodomirtus tomentosa</i>	*	H	X	X	4	Maui
<i>Rubus ellipticus</i>	*	H	X	X	2	Maui
<i>Acacia podalyriifolia</i>	*	M	--	--	1	State
<i>Acacia retinodes</i>	*	M	--	--	1	State
<i>Enchylaena tomentosa</i>	*	M	--	X	1	State
<i>Maclura pomifera</i>	*	M	--	--	1	State
<i>Morella cerifera</i> [<i>Myrica cerifera</i>]	*	M	--	--	1	Maui
<i>Sideroxylon persimile</i>	*	M	--	--	1	Ulupalakua
<i>Chrysophyllum oliviforme</i>	**	H	--	--	1	W. Maui
<i>Leptospermum scoparium</i>	**	H	--	--	1	Polipoli
<i>Ulex europaeus</i>	**	H	X	--	1	Kahikinui
<i>Acacia auriculiformis</i>	**	M	--	--	1	Maui
<i>Acacia mangium</i>	**	M	--	--	1	Maui
<i>Bassia hyssopifolia</i>	**	M	--	--	4	Maui
<i>Pittosporum viridiflorum</i>	**	M	--	--	5	Maui
<i>Tibouchina urvilleana</i>	**	M	X	--	1	Hana Hwy.
<i>Coccinia grandis</i>	***	H	X	X	50	Maui
<i>Pennisetum setaceum</i>	***	H	X	X	5	Maui
<i>Arundo donax</i>	***	M	--	X	20	Maui
<i>Centranthus ruber</i>	***	M	--	--	1	State
<i>Cryptostegia</i> spp.	***	M	--	X	20	Maui
<i>Cytisus palmensis</i>	***	M	--	--	1	Maui
<i>Flueggea virosa</i>	***	M	--	--	10	State
<i>Jasminum fluminense</i>	***	M	--	--	1	Maui
<i>Omalanthus</i> sp.	***	M	--	--	5	Maui
<i>Salsola tragus</i> [<i>S. kali</i>]	***	M	X	--	5	Maui
<i>Solanum robustum</i>	***	M	X	--	1	State
<i>Tetrastigma pubinerve</i>	***	M	--	--	1	Maui
<i>Cortaderia</i> spp.	****	H	X	X	100	Maui
<i>Hypericum canariense</i>	****	H	--	--	50	State
<i>Miconia calvescens</i>	unknown	H	X	X	100	State



Eradications:

The third year (and beyond) it leaps...we have stopped using the "E" word.

MISC Target Species	Acres	# Killed
Ivy gourd (<i>Coccoloba grandis</i>)	247	8,233
Pampas grass (<i>Cortaderia spp.</i>)	44,368	2,817
Miconia (<i>Miconia calvescens</i>)	24,050	252,450



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Noxious Weed, MISC Target

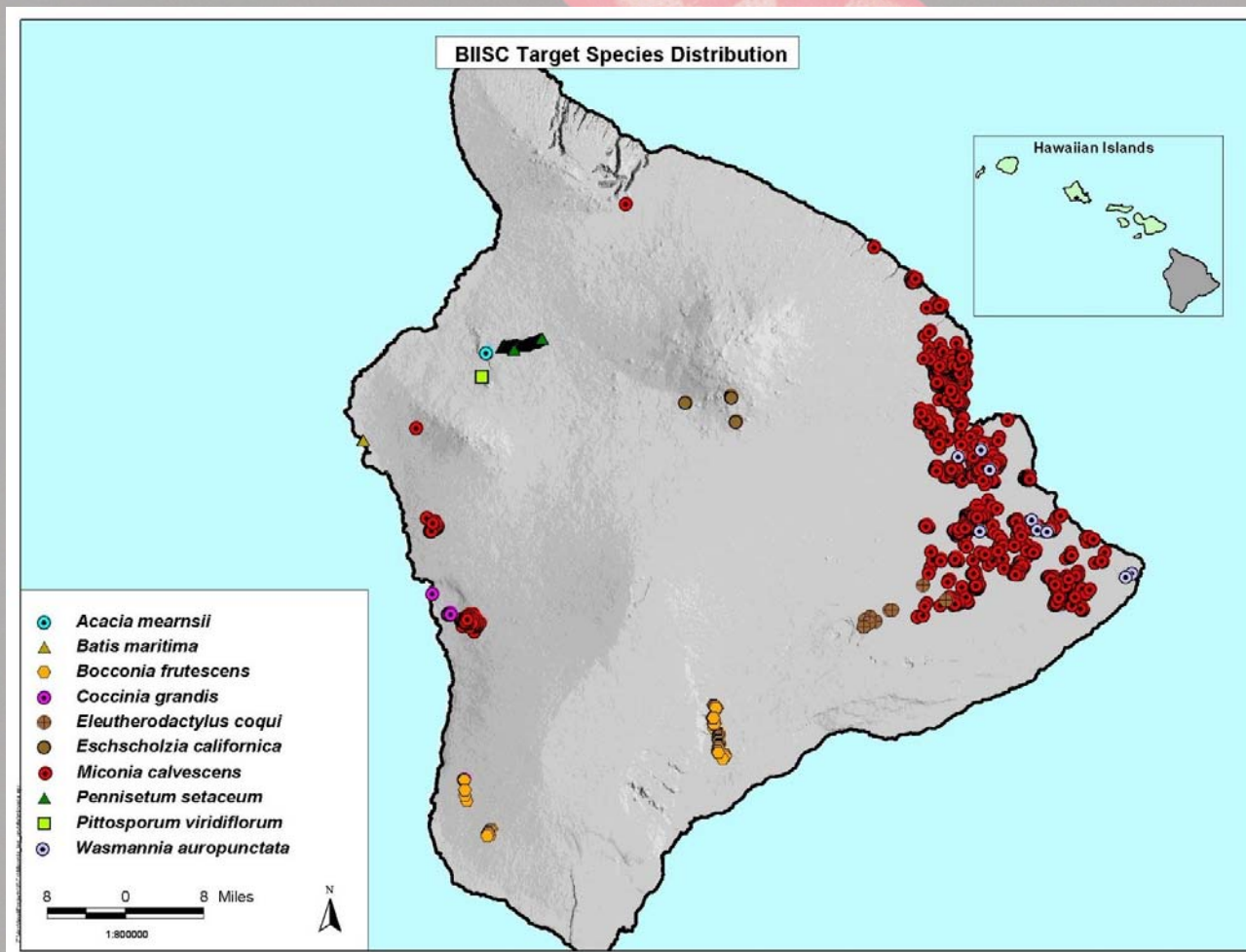
X = Yes

-- = No

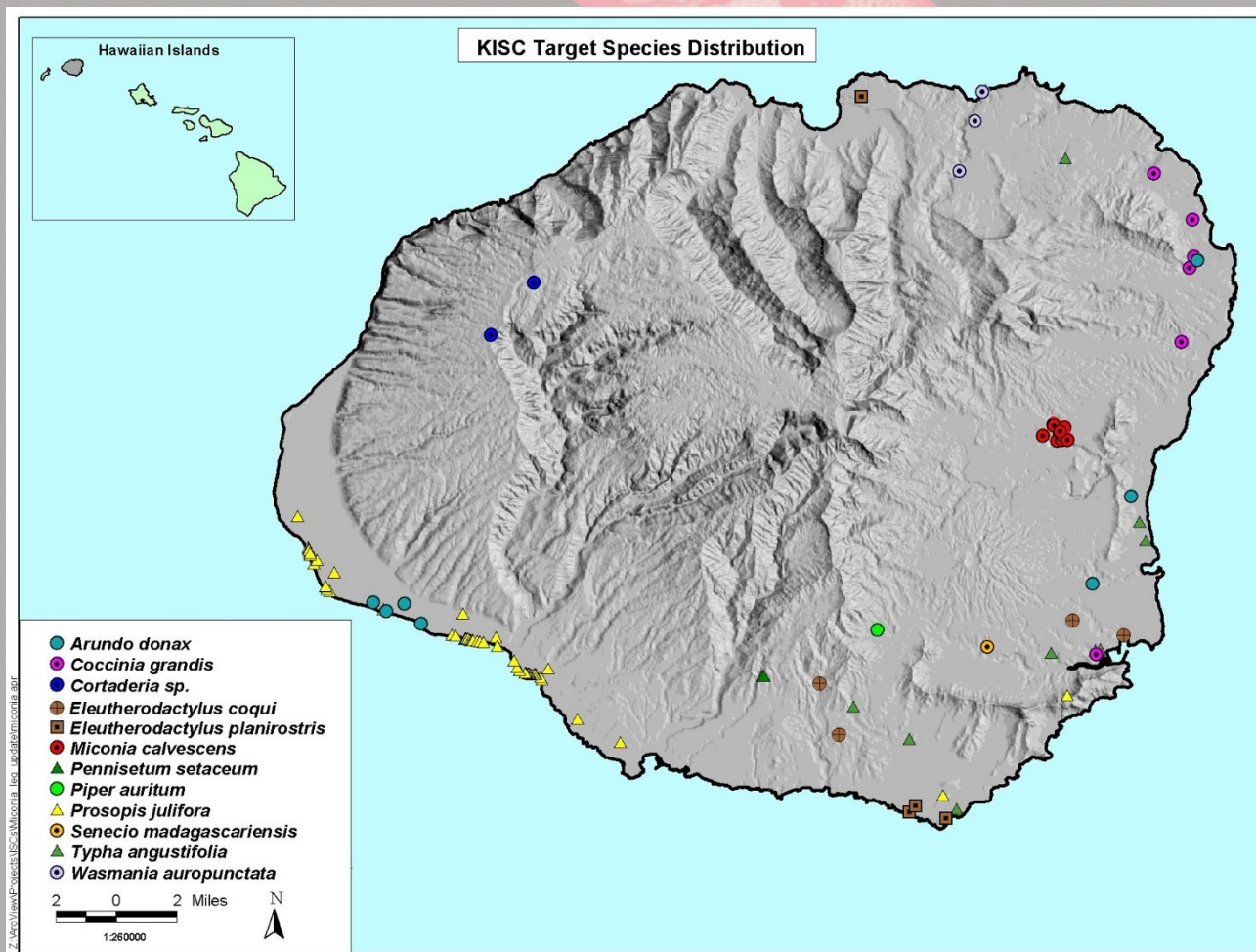
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<i>Macaranga mappa</i>	*	H	--	--	1	Mau
<i>Macaranga tanarius</i>	*	H	--	--	1	E. Mau
<i>Melastoma candidum</i>	*	H	X	X	4	Mau
<i>Morella faya</i> [<i>Myrica faya</i>]	*	H	X	--	1	W. Mau
<i>Parkinsonia aculeata</i>	*	H	--	X	1	Mau
<i>Rhodomyrtus tomentosa</i>	*	H	X	X	4	Mau
<i>Rubus ellipticus</i>	*	H	X	X	2	Mau
<i>Acacia podalyriifolia</i>	*	M	--	--	1	State
<i>Acacia retinodes</i>	*	M	--	--	1	State
<i>Enchylaena tomentosa</i>	*	M	--	X	1	State
<i>Maclura pomifera</i>	*	M	--	--	1	State
<i>Morella cerifera</i> [<i>Myrica cerifera</i>]	*	M	--	--	1	Mau
<i>Sideroxylon persimile</i>	*	M	--	--	1	Ulupalakua
<i>Chrysophyllum oliviforme</i>	**	H	--	--	1	W. Mau
<i>Leptospermum scoparium</i>	**	H	--	--	1	Polipoli
<i>Ulex europaeus</i>	**	H	X	--	1	Kahikinui
<i>Acacia auriculiformis</i>	**	M	--	--	1	Mau
<i>Acacia mangium</i>	**	M	--	--	1	Mau
<i>Bassia hyssopifolia</i>	**	M	--	--	4	Mau
<i>Pittosporum viridiflorum</i>	**	M	--	--	5	Mau
<i>Tibouchina urvilleana</i>	**	M	X	--	1	Hana Hwy.
<i>Coccinia grandis</i>	***	H	X	X	50	Mau
<i>Pennisetum setaceum</i>	***	H	X	X	5	Mau
<i>Arundo donax</i>	***	M	--	X	20	Mau
<i>Centranthus ruber</i>	***	M	--	--	1	State
<i>Cryptostegia</i> spp.	***	M	--	X	20	Mau
<i>Cytisus palmensis</i>	***	M	--	--	1	Mau
<i>Flueggea virosa</i>	***	M	--	--	10	State
<i>Jasminum fluminense</i>	***	M	--	--	1	Mau
<i>Omalanthus</i> sp.	***	M	--	--	5	Mau
<i>Salsola tragus</i> [<i>S. kali</i>]	***	M	X	--	5	Mau
<i>Solanum robustum</i>	***	M	X	--	1	State
<i>Tetragium pubinerve</i>	***	M	--	--	1	Mau
<i>Cortaderia</i> spp.	****	H	X	X	100	Mau
<i>Hypericum canariense</i>	****	H	--	--	50	State
<i>Miconia calvescens</i>	unknown	H	X	X	100	State



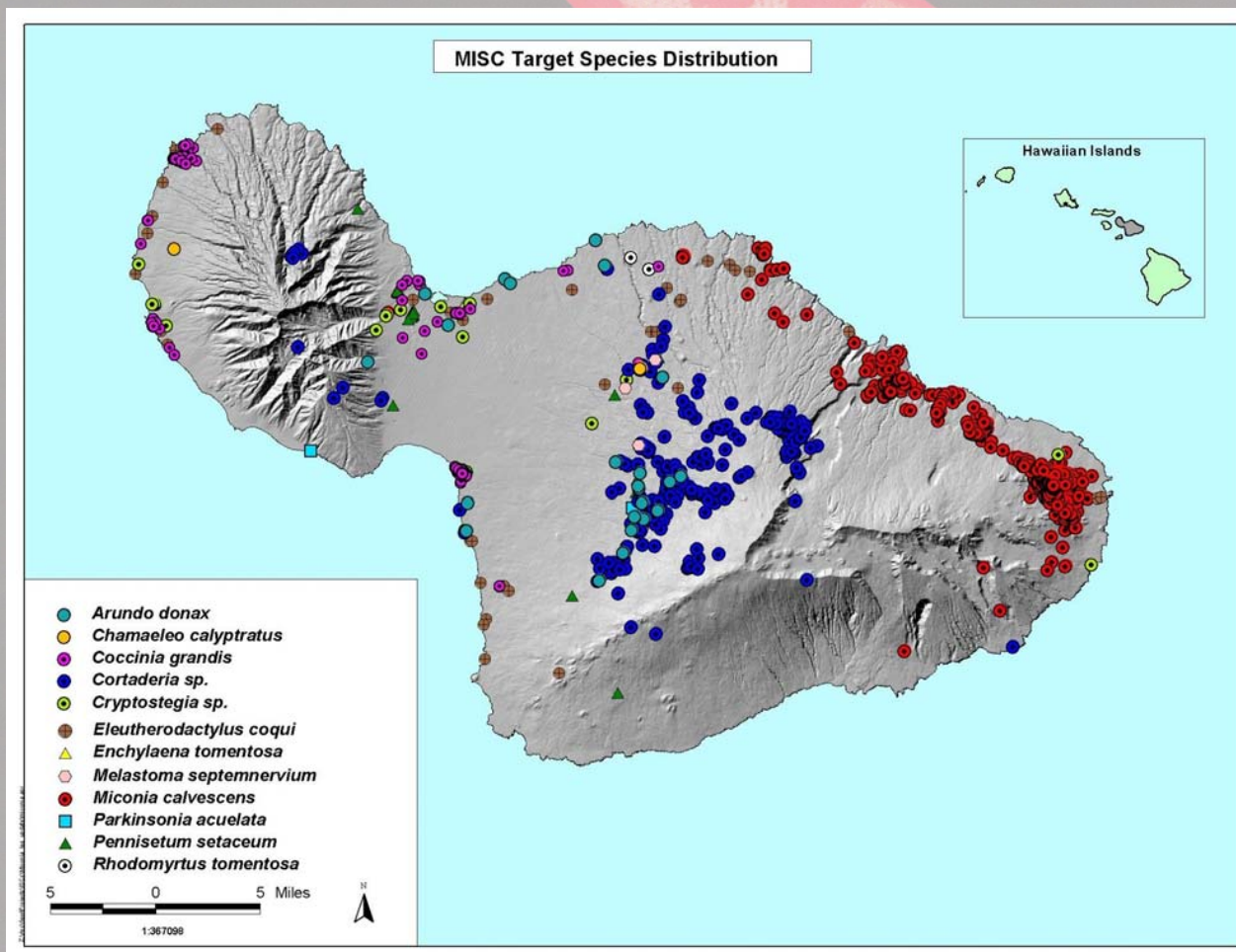
<u>Island</u>	<u>(7/01-12/02, 7 staff)</u>	<u>Acres</u>	<u># Killed</u>
Big Island Invasive Species Committee		27,555	385,653



Island	(4/02-12/02, 2 staff)	Acres	# Killed
Kauai Invasive Species Committee		1,066	3,244

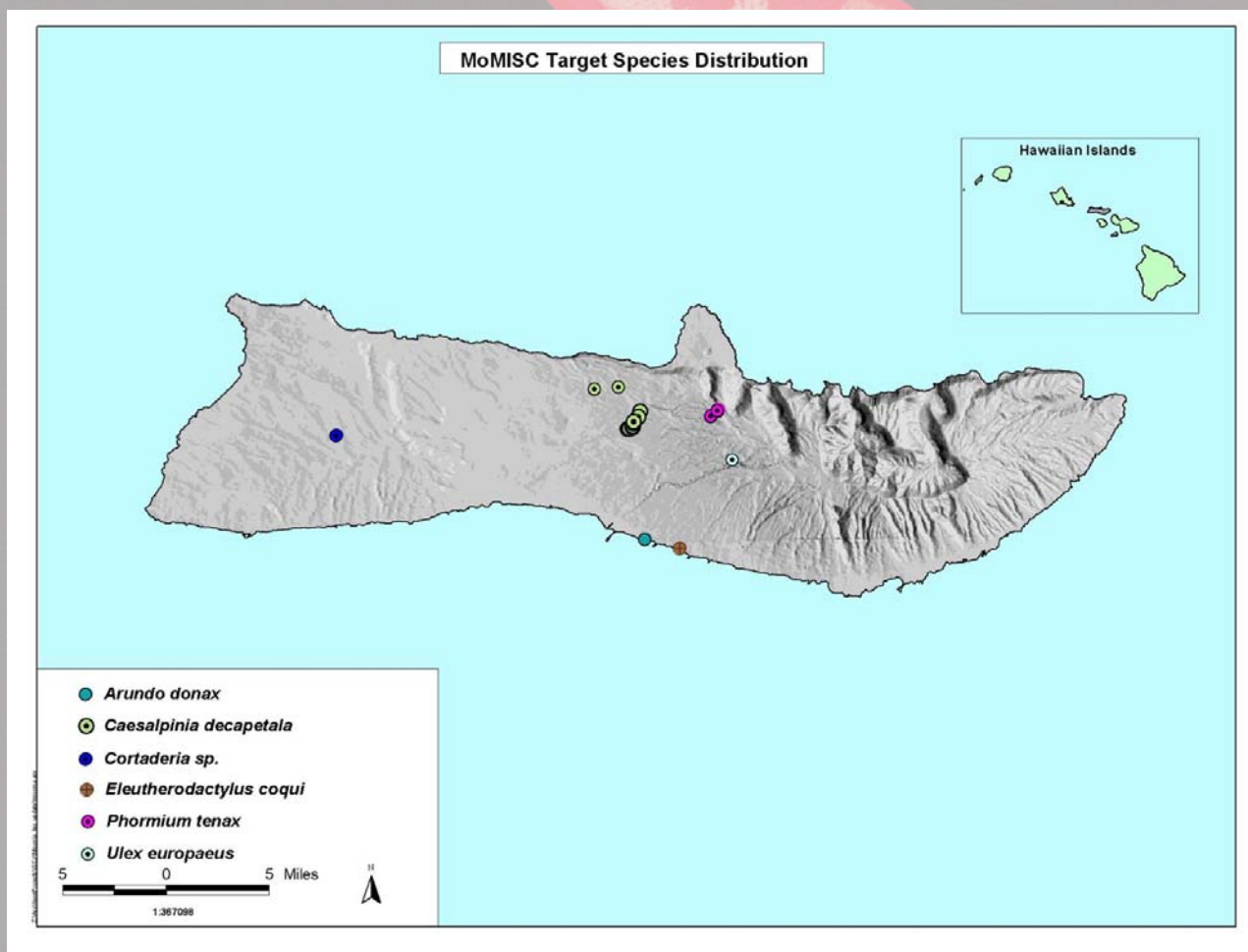


Island	(7/01-12/02, 10 staff)	Acres	# Killed
Maui Invasive Species Committee		76,931	265,293

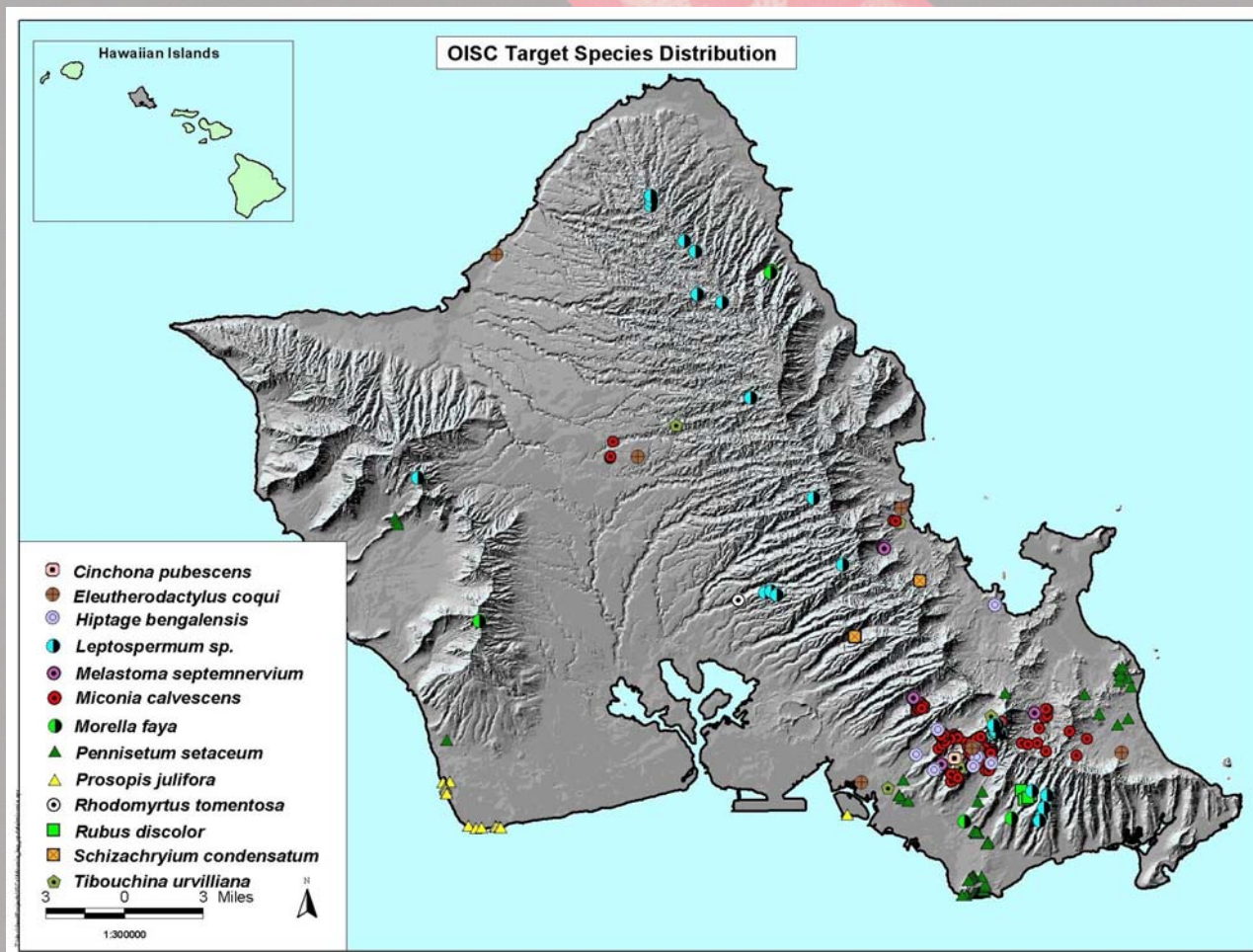




Island	(7/01-12/02, ½ staff)	Acres	# Killed
Molokai	Invasive Species Committee	190	8,407



Island	(7/01-12/02, 5 staff)	Acres	# Killed
Oahu Invasive Species Committee		3,380	32,228



Current Status of ISCs

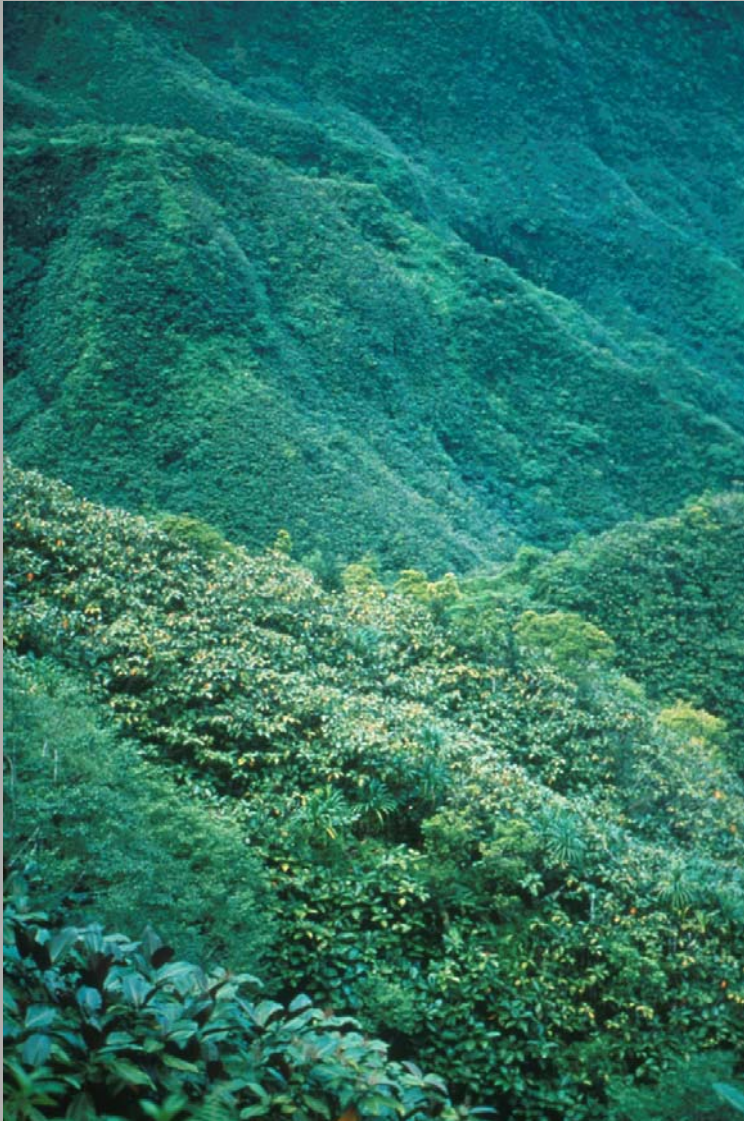
- ISCs have full-time field staff on most of the main islands.
- Funding from Fed., State, private grants, some from counties. Still not an internalized cost.
- Rapid response V. ongoing control issues



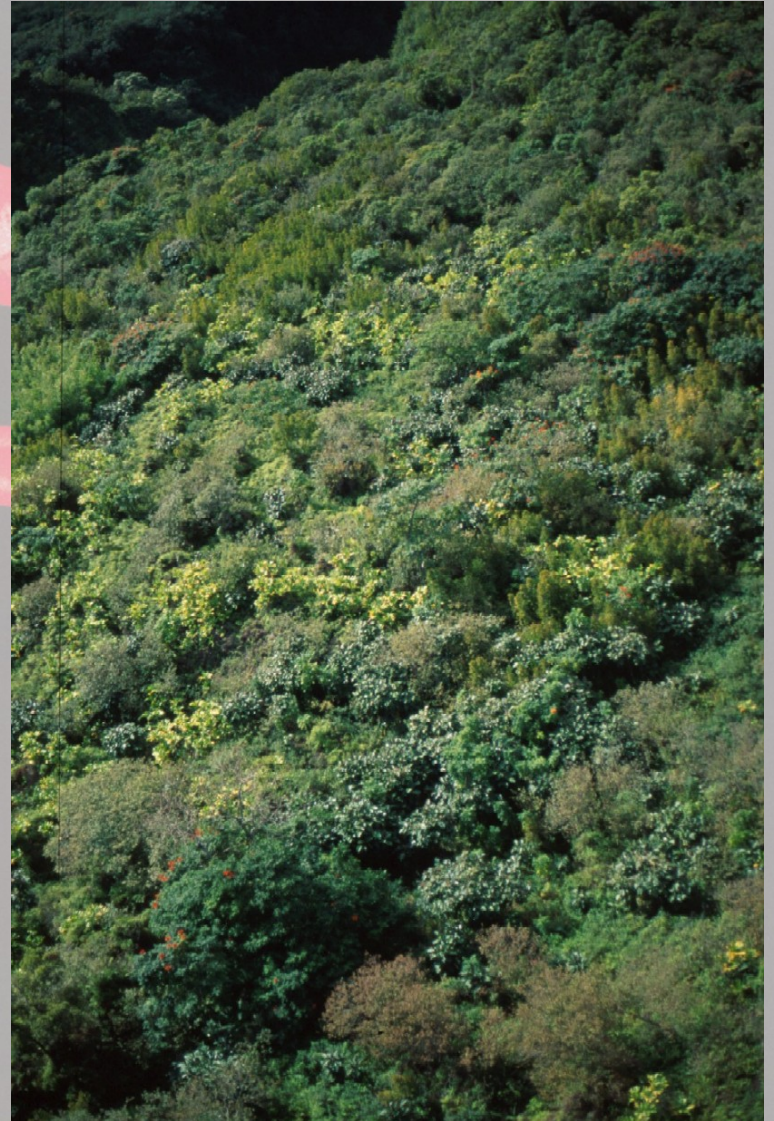
Miconia invasion on Tahiti



Miconia invasion on Maui



Miconia invasion on Tahiti



Miconia invasion on Maui





Current Status of CGAPS

- CGAPS functions well at the staff level, but agency heads necessary to make cabinet-level administrative and budgetary decisions.
- Hawaii Invasive Species Council (HISC), 6th of its type in the nation (Delaware, Idaho, Illinois, Minnesota and Oregon). Will help facilitate inreach, legislative actions, internal agency review.
- CGAPS 2004 Silent Invasion Media Campaign

Message #1: Report a Pest

- We need to increase public involvement in reporting plant and animals pests.
- 94% of people would call “authorities” if they saw a snake (TNC 1997), but people don’t know who to call, what the number is, or that they need to call immediately.
- A public service announcement (PSA) will be produced and aired on local stations in 2004 to address these issues.



Snakes



Miconia



Asian Longhorn Beetle



Little Fire Ant



Coqui and Greenhouse Frogs

Message #2: Don't Pack a Pest

- Pests arrive via airlines, ships, freight forwarders, and postal service, a large number of which are unintentional introductions of insects, animals and plant diseases and seeds.
- A PSA will be used to tell people how pests are getting in, about the need to declare items that may carry pests, and to keep their shipped items clean.



Plant pests



Biting Sand Fly



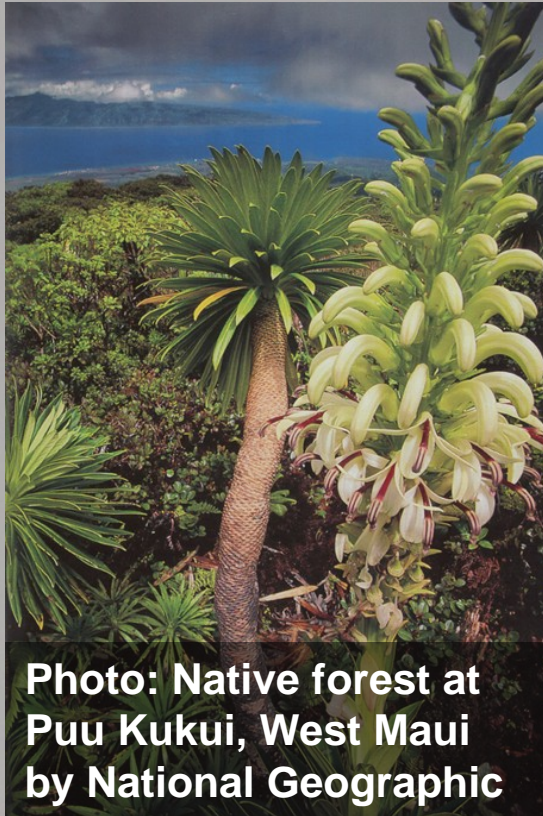
Plant diseases



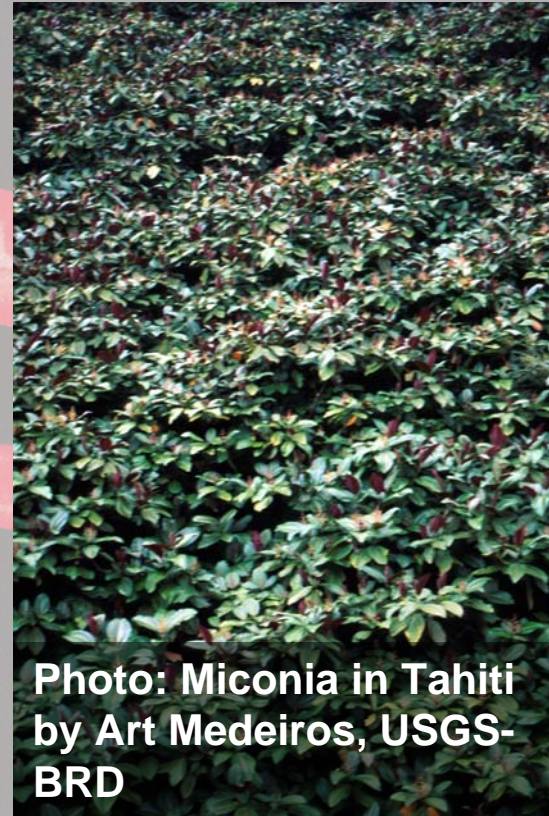
Red Imported Fire Ants

Message #3: Don't Plant a Pest

- 91% of the plants that pose the greatest threat to native Hawaiian ecosystems were intentionally introduced as ornamentals, for crops or for forestry, while 9% were accidental introductions (Smith 1985).
- This PSA will ask people to plant non-invasives and to look for stickers that indicate a plant is “safe for the environment” when they are shopping for plants.
- Nurseries are having their stock lists scored using the Weed Risk Assessment system, modified from the Australian system. A list of plants that passed the WRA will be sent to nurseries and garden shops with stickers and posters.
- Pest Alerts will be made and distributed for some of the invasive plants that may be popular ornamentals in the future.



**Photo: Native forest at
Puu Kukui, West Maui
by National Geographic**



**Photo: Miconia in Tahiti
by Art Medeiros, USGS-
BRD**

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