

**O'AHU INVASIVE SPECIES COMMITTEE
2003 STRATEGY WORKSHOP**

Monday, September 9th, 2003
9 am – 3 pm

LYON ARBORETUM

I. Call to Order/Welcome & Introductions (Ryan Smith, OISC Coordinator)

II. Background Information

The structure of this year's reprioritization meeting was different from last year's. In the past OISC looked over several different species and sorted through them to see if they would be a worthwhile target. This year OISC staff presented an annual summary report for each species that OISC controls. They included last year's management strategy, amount of field days spent/ number of species treated, and any additional knowledge gained in the past year. Within this structure, OISC staff members proposed a new management strategy and an estimated allocation of field time. Some new species were proposed for target, some species were dropped off the target list, and others were added to non-priority target, taxa of concern, or monitor lists.

A non-priority target list is a list of species that are not priority targets, yet OISC will still devote effort towards. A taxa of concern list contains all species that OISC is concerned about, but there is not enough information to place the species as a priority target. A monitor list is for species that have been eradicated and OISC is monitoring for new sites or re-growth on old sites. After group discussion these propositions were modified and agreed upon.

Finally, OISC decided that it would use the New Zealand weed risk assessment to establish a numerical priority to the 2003/2004 OISC target species list. The order of the list is not based only on the weediness of species, but includes other factors such as practicality of control.

Below are the species summaries with proposed management strategies and discussion notes. Additionally, Earl Campbell requested to look at some broader issues such as aquatic invasives, which was discussed later in the meeting.

III. Summary of Meeting Results:

OISC TARGET SPECIES	OISC TARGET SPECIES			
2002 -2003	2003 - 2004	Proposed FY 03 -04	Proposed FY 03 -04	
Species	Species Rank determined by New Zealand Assessment	Est. # Field Days	Est. % of Field Time	Nox weed List
Existing Target Plant Species	Existing Target Plant Species			
1. Miconia calvescens	1. Miconia calvescens	120	43.0%	X
2. Eleutherodactylus coqui	2. Eleutherodactylus coqui	20 to 40	8 - 16%	--
3. Rubus discolor	3. Rubus discolor	8 to 15	3 - 6%	X

4. Pennisetum setaceum	4. Schizachyrium condensatum	20 to 30	10 - 12%	--
5. Morella faya	5. Buddleia madagascariensis	4 to 6	2 -3%	X
6. Schizachyrium condensatum	6. Leptospermum scoparium	12 to 20	5 - 8%	--
7. Hiptage benghalensis	7. Pennisetum setaceum	25 to 35	10 - 14%	X
8(a). Leptospermum polygalifolium	8. Morella faya	5 to 20	2- 8%	X
8(b). Leptospermum scoparium	9. Melastoma candidum	10 to 20	4 - 8%	X
9. Prosopis juliflora				
10. Tibouchina urvilleana	Additional Incipient Target Species	3 to 8	1- 3%	X
(RR) Buddleia madagascariensis	Aquatic Invasive species	4 to 6	1.5 -2.5%	X
(RR) Senecio madagascariensis	(TSM) Tibouchina urvilleana	3 to 8	1- 3%	X
(RR) Cortaderia jubata & selloana	(NPT) Cortaderia jubata & selloana	1 to 5	1.0%	X / --
(TAC) Melastoma candidum	(NPT) Senecio madagascariensis	4 to 8	1- 3%	X
	(NPT) Hedychium gardenarium	10 to 20	4 - 8%	--
NPT = Non-Priority Target	(NPT) Hiptage benghalensis	4 to 5	1-2%	X
RR = Rapid Response				
TAC = Taxa of Concern				
TSM = Target Species to Monitor				

* 1 Field day = 3 field works x 8 Hrs

IV Evaluation of Individual Species:

OISC TARGET #1

Common Name: MICONIA

Scientific Name: *Miconia calvescens*

1. A) Known Locations:

Koolau Range

1. Manoa
2. Tantalus/Makiki: Brash Estate
3. Nuuanu: Original Plant Marx Estate
4. Kalihi: Original Plant abandon nursery
5. Maunawili: unknown origin: no mature off of trail
6. Waimanalo: unknown suspected from nursery in Waimanalo 2 mature along HECO power line survey, and another possibly mature sighted
7. Kahaluu: Original plant at Art Gallery residence
8. Wahiawa: Wahiawa Botanical Garden

B) Unverified Sites

1. Maunawili falls: seedling reported

2. Control Method: Apply herbicide (Garlon 3A or 4, 20% concentration in water or crop oil, respectively) to cut stumps immediately after cutting. Pull seedlings and hang in trees for roots to dry. For mature trees, remove all panicles with fruit; bag and either autoclave or incinerate fruit/seeds of plant material.

3. Threatened Area: Currently in lower disturbed rainforest. Potential to decimate both native and weedy areas.

4. **Notes:** Aerial surveys seem to be very effective method for surveying more remote and determining population boundaries.

5. **Noxious Weed (y/n):** Yes

6. **Progress Report:**

2003 Objectives:

1. Conduct ground surveys in areas identified from the priority task list generated from the November 9, 2001 Miconia Strategy Meeting, and from the GIS miconia database reference.
2. Identify the outer boundary of populations in miconia-infested areas.
3. Identify and survey all high-probability habitats around infestations.
4. Aerially survey a 1km radius around all known miconia sites

OISC currently working towards all objectives

OISC Progress to Date:

1. OISC expanded survey covering over 871 acres
2. Found 35 mature trees and 3,424 non-reproductive plants
3. Highly successful aerial surveys covering 1,741 acres.

7. **Time spent on species:**

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	106	58%
Proposed 2003-2004	120	52%

8. **Management Strategy:**

1. Continue w/ 2003 years objectives
2. Monthly Sierra club hunt become invite only. Would like to continue with dedicated volunteers.
3. Create Sierra Club Trips for special projects as they come up.
4. Quarterly re-valuate Miconia task list: considering historical records.
5. Expand ground survey areas.
6. Increase aerial surveys 3/2months. Extend boundary for aerial survey to 2-3 kilometers.
7. Look at aerial surveys for missed areas.
8. Train staff for aerial Miconia spotting.

OISC TARGET # 2

Common Name: COQUI FROG

Scientific Name: *Eleutherodactylus coqui*

1. **Known Locations:**

1. Home Depot/Iwilei—population controlled on 12/12-12/13, 2002
Area ~ ¼ acre, 17 *E. coqui* and 195 *E. planirostris* caught or killed
2. Wahiawa/Schofield East Range—work in progress
Area ~ 9 acres, population size > 200

3. Waimanalo nursery—
Area- unknown, population size- unknown
4. North Shore nursery—
Area- unknown, population size- unknown
5. Kahaluu nursery—
Area- unknown, population size- unknown
6. Various single calling males throughout the island mainly in town: All have been responded to by either DOA or DOFAW

2. Control Method:

- A. Citric acid mixed in water at 16% - spray
- B. Hand capture
 1. Wahiawa/Schofield E. Range
 - cut and chip under story
 - cut transects in gulch
 - spray citric acid (16% solution) at night
 - monitor area and follow-up spray using backpack sprayers (initial monitoring intervals every 2 weeks, adjust intervals according to number of calling males heard); monitoring duties to be rotated among OISC, DPW/Army Environmental, DOA and DOFAW personnel
 2. Waimanalo nursery
 - owner and employees have been hand capturing frogs and keeping them in cages
for pick-up and disposal by DOA or DOFAW personnel
 3. North Shore nursery
 - owner and employees have been spreading hydrated lime on ground beneath plants
 4. Kahaluu nursery—control method(s) unknown

3. Threatened Area: Wahiawa only known “natural” area. Foreseeable spread potentially to more native areas. Public nuisance / disturbance w/ economic impact.

4. Notes:

5. Noxious Weed (y/n): No: trying to declare as an official “pest” possibly with new Hawaii State Invasive Species Council

6. Progress Report:

2003 Objectives:

1. Create and maintain GIS database of frog locations
Working in conjunction w/DLNR technician to standardize database
2. Frog strategy meeting
Several have been implemented regarding the Wahiawa population
3. Designate and support DLNR invasive species technician to become point of contact for frog control information
Scott Williamson has been hired as the DLNR invasive species technician
4. Produce radio information spot to complement previous efforts by HDOA
No

5. Developed informational flyer for nurseries and garden shops to educate the public on identifying and catching frogs

Developed by UH-CTAR

6. Assist HDOA w/ presenting information on frogs to garden clubs, nursery associations and other groups that may encounter coqui.

No meetings have been arranged

OISC Progress to Date:

1. Home Depot population considered eradicated: no calls since 4/24/2003
2. Wahiawa is a “work in progress”: 3 sections have been sprayed appear to be effective in reducing the number of calling males. Monitoring and continued control via spraying (backpack and possibly power sprayer) will be necessary for several more months (probably through next summer) to ensure that all coqui are eliminated from the infested site.
3. Infested nurseries on Oahu will need to work with DOA personnel and DOFAW Invasive Species Technician to develop a coqui control/eradication program.
4. DLNR / HDOA responding to individual reports

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	2	2%
Proposed 2003-2004	20-40	8-16%

8. Management Strategy:

1. Control all known populations
2. Continued monitoring of Wahiawa site (15 – 20 days)
3. Hold a strategy meeting to determine most effective treatment of other populations
4. Collaborate with nurseries with coqui infestations to best manage and control the populations.
5. Keep the frog control under the direct control of Scott Williamson (DOFAW) and the Department of Ag.
6. Put together a media campaign for Coqui frogs.

9. Additional Action Items From Meeting:

1. Ask MISC for coqui PR spot. Contact KTUH about playing coqui PR spot.

10. OISC Member Discussion:

- Earl Campbell along with Fred Krauss have done some research on Caribbean frogs looking at frogs stomachs and see very high danger of risks to native birds and insects. *C. planirostris* appear to be spreading in higher densities while *C. coqui* appear to be able to make there way to higher elevations. Of the known locations Haleiwa does not have a clear status.
- Scott Williamson is the point person for this target. OISC has taken a secondary role. After initial treatment of Wahiawa OISC would like to do a rotating treatment schedule.
- Rep. Marcus Oshiro is a distribution point for citric acid.
- Talbert suggested initiating a media campaign for coqui frogs. It could be some way to empower people to manage it themselves, possibly with citric acid.

Christy Martin said that she is getting reports from community groups passing resolutions to protect neighborhoods from coqui frogs.

- On the Big Island they bought a large sprayer that they loan out for free. – Nilton. They are looking at other distributors such as Fukuda Seed store.
- Do we want to resurrect a media campaign, possibly flyers and posters? “Outside Hawaii” sometimes advertises environmental issues. Penny suggested that many neighborhood organizations have small amounts of money set aside for mail-outs that they receive from the counties.
- Nilton requested some more hard science facts and figures to respond to the people that argue with him about the true threat. Earl was tasked with helping him out.
- It would be good to look at the Education of nurseries and gain support of nursery companies. (Christy Martin)
- MISC may have a coqui PR radio spot that OISC can go off of.

OISC TARGET #3

Common Name: HIMALAYAN BLACKBERRY

Scientific Name: Rubus discolor

1. Known Locations:

Koolau Range

- ◆ Palolo Valley near BWS tank area: ½ day every 3 months for eradication (½ acre)
- ◆ Palolo Valley River area: <½day every 3 months for eradication (½ acre)
- ◆ Lanipo: 3 days every 3 months for eradication, pop extent survey still needed, plants sporadic in this area. (16 acres)

2. Control Method: 2.5% foliar application with Roundup Pro using hand squirt bottles

3. Area threatened: Rubus discolor poses a threat to natural areas by forming dense impenetrable thickets that exclude other native plant species.

4. Notes: Initially OISC used snip and drip method with Garlon 4 at 20%, however had low efficacy. Through experimental trails discovered foliar application of 2.5% Roundup Pro to be very effective.

5. Noxious Weed List: No, although several other Rubus species are.

6. Progress Report:

2003 Objectives:

1. Map and retreat all known populations
Currently treating known populations
2. Promote Volunteer service trips to revisit/retreat
Has not been a priority to date – considering future trips

OISC Progress to Date:

1. Recent systematic control of Palolo valley has been highly effective. The same strategy is now being applied to Lanipo Ridgeline

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	4	2%
Proposed 2003-2004	8-15	3-6%

8. Management Strategy:

1. Reconnaissance survey in Lanipo area (2 - 4 days annually)
 2. Continue systematic treatments of Lanipo and finish up follow-ups of Palolo Valley (5 - 10 days annually)
 3. Promote Volunteer service trips to revisit/retreat populations
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OISC TARGET # 4

Common Name: FOUNTAIN GRASS

Scientific Name: Pennisetum setaceum

1. Known Locations:

Koolau Range

- Diamond Head: containment only outside 5 days every 6 months, inside 2 days biannual w/HIARNG (~200 acres)
- Chaminade: 2 days every 6-8 weeks for eradication (~18 acres)
- Lanikai: containment only: 1 day every 6 months, trail clearing (~150 acres)
- Sierra Drive: 1 hour every 6-8 weeks (~<1 acre)
- Pali Highway: couple hours every 6-8 weeks
- Lagoon Drive: 3/4 day every 6-8 weeks for eradication.
- Waimanalo HWY: 1 day every quarter for re-visit. Possibly eradicated.
- He'eia: OISC never visited. DOA originally treated a couple hundred plants
- Bellows AFB: full population unknown OISC hasn't surveyed entire base. Annual visit to part of base w/HIARNG.
- Kahuku Military: DPW .
- Dillingham Military: DPW

Waianae Range

- Makaha: few plants more recon. needed
- Kaala Learning Center: few plants more recon. needed
- Koolina HWY/ Waimanalo Dump: Annual revisit

2. Control Method: Preferred foliar application using Roundup Pro at 2% concentration in water for green plants. Also used Velpar at a 10% concentration in water on plants in a dormant state. Most ideal time is fall and winter as the plants are not dormant.

3. Areas threatened: All dry forest areas, pasture lands. It is a fire promoting grass.

4. Notes: The limiting factor of controlling Fountain Grass is the difficulty in getting to the plants and the large population size for the given resources. Many plants are growing

on steep, crumbly rock that are impossible to get to and do not have adequate tie-downs for accessing via ropes (esp. Diamond Head and Lanikai). This combined by the numerous plants and the necessity for many follow-up visits (due to seed longevity 7 years) make it a highly time consuming task in very harsh working conditions.

5. Noxious Weed List: yes

6. Progress Report:

2003 Objectives:

1. Eradicate FG from Waianae Mountains.
Not all Waianae sites have been visited / more reconnaissance needed .
2. Survey and treat all other satellite populations
OISC is currently systematically treating satellite populations
3. Re-treat all high traffic areas on Diamond Head and Lanikai on a bi-annual basis
Yes

OISC Progress to Date:

1. Recently initiated a systematic control of satellite populations. This appears to be reducing the numbers at these sites and with continued follow-ups would be able to eradicate these areas.
2. Control work on Waianae plants is on standby until plants become green again (seasonality).
3. Coordinated interagency effort to contain Fountain Grass outside Diamond Head crater.
4. Treatment of high traffic areas of Lanikai

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	25	14%
Proposed 2003-2004	25-35	10-14%

8. Management Strategy:

1. Eradicate FG from Waianae Mountains. (5-10 days)
2. Systematically survey and treat all other satellite populations (6days / quarter initially)
3. Re-treat all high traffic areas on Diamond Head and Lanikai on a bi-annual basis (5 days annually)
4. Limit effort of FG on Diamondhead crater but continue to aid HIARNG with any projects they set up to control FG in key areas.
5. Coordinate w/HIARNG and Air force/Marines for strategy to treat Bellows to prevent military spread of FG (3-4 days?/yr)
6. Update the sign at Lanikai. Add, "If anyone is interested in being stewards contact OISC"
7. Do a presentation to the Lanikai community board. There is a possible long-term stewardship potential with this group.

9. OISC Member Discussion:

- There is a question as to whether we should continue to do large-scale projects on large infestations. Bellows is a considerable concern. We have been to some parts of Bellows, but not the most concerning parts. (Art Buckmman oversees environmental and cultural projects for military areas and may be a good contact for control work in Bellows. When talking to him make sure to include the potential risks to the Army. (i.e. fire, mobility) –(Earl Campbell))
 - Kapua- education for landowners that have FG in there yards.
 - Penny- Nat'l Guard is promoting native grasses inside the crater. Suggests keeping FG out of the crater. Would prefer annual sweeps inside the crater. There is a question of doing less treatment on Diamond crater. Penny would appreciate help for treating at least key areas. At this point it seems feasible. If there is a push OISC will determine if it is feasible.
 - Mindy- FG tends to flower and grow after a significant rain.
 - Army would like to participate in surveys of Kaala learning center
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OISC TARGET # 5

Common Name: FIRE/FAYA TREE

Scientific Name: *Morella faya* (formerly *Myrica faya*)

1. A) Known Locations:

Koolau Range

- Hauula- Waipilopilo Ridge: 1 large tree and several smaller trees found
- Wiliwilinui : lone tree controlled by DOA in 1995
- Lanipo Ridge: lone tree, monitoring phrenology

Waianae Range

- Numerous sites throughout the s. range / large population w/in TNC preserve

B) Unverified Sites

Forestry Planting records / Bishop records

- Pupukea: Harumi on pineapple farm
- Waiahole: 45 planted in '27 with no specific site described; this F.R. also spans a long distance;
- Kuliouou F.R.
- *Morella cerifera* was also planted in Honolulu FR at Kolowalu (50 seedlings)
- Waahila ridge

2. Control Method: Basal frill cut and herbicide with Garlon 4 (50% crop oil). Hand pull seedlings.

3. Threatened Area: Forms dense single species stands / displaces natives changes soil composition

4. Notes: •Many of the FR plantings have little information associated with them making comprehensive surveys difficult and time consuming. • Monitoring Lanipo tree to see if produces fruit to help determine if other trees in area

5. Noxious Weed (y/n): Yes

6. Progress Report:

2003 Objectives:

1. Survey: Determine population boundary of the core population.
Population boundary for Waianae Mts. Not done by OISC estimated by TNC
2. Survey the two sites in the Koolaus.
Reconnaissance done in known sites in Hauula. Believe to have controlled population
3. Treat: All known populations in the Koolaus
Have done for verified populations
4. Work with TNC to treat around TNC periphery
Have done a couple of work trips w/ TNC

OISC Progress to Date:

1. Found individual on Lanipo ridge (Bishop record).
2. Treated satellite population of main infestation in Waianae summit between Pu'u Hapapa and Pu'u Kanehoa.
3. Treated periphery of main infestation Palikea and Maunakapu.
4. Reconnaissance to Hauula (Bishop records / CY) found and killed 3 plants
5. OISC returned to resurvey the Waipilopilo ridge and the adjacent Kawaiipapa(Hauula) no more trees
6. Several reconnaissance trips to s. Koolaus revisiting treated plants and searching from Bishop records.

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	5	2.5%
Proposed 2003-2004	5-20	2-8%

8. Management Strategy:

1. Prioritize and follow up on Bishop records and Forest reserve plantings (5-10days)
2. Monitor Lanipo tree to determine if it has the potential to produce seeds, which would deduce the necessity for more surveying in that area.
3. Assist TNC w/ large control / containment efforts in Waianae Mountains (0-5 days)

9. OISC Member Discussion:

- Ryan - Detection is our biggest challenge. Some records are difficult to narrow down as the location description is very broad.
- Kapua – There were some trees in the northern Koolaus specifically Makua. These have been treated by Army Environmental

OISC TARGET #6

Common Name: **BUSH BEARDGRASS**

Scientific Name *Schizachryium condensatum*

1. Known Locations:

Koolau Range

- Halawa valley- Along H3 DOT access road and H3 road cuts.
~ 16.5 acres. Time ~ 2 days every 8 weeks.
- Ahuimanu / Temple Valley neighborhood (Kahalu'u)
~ 100 residential properties within the neighborhood
Time (unknown based on landowners)

2. Control Method: Foliar application of Round-up 2% in water. Remove inflorescences.

3. Threatened Area: Currently on road cuts of H3 and in residential areas of Temple valley. Fire promoting grass – Fear of spreading and establishing in other parts of the island.

4. Notes: For Temple Valley neighborhood, time is needed to coordinate control efforts with the property owners. Need right of access permissions from property owners.

5. Noxious Weed (y/n): No

6. Progress Report:

2003 Objectives:

1. Survey: Determine population boundary of population.

Done

2. Treat both populations.

OISC has been systematically controlling H3 population and done some work within Temple Valley

3. Resurvey and Retreat:

Resurveyed H3 population

OISC Progress to Date:

1. Controlled the whole H3 population 3 times. Population decline is evident and control yields positive results.

2. 2 surveys /initial treatments of Temple Valley neighborhood. Collected addresses and surveyed some land in the mauka edge of the neighborhood.

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	6	3%
Proposed 2003-2004	20-30	8-12%

8. Management Strategy:

1. Systematic control and treatment of H3 population
Initially (2 days every 8-10 weeks)
2. Contact landowners and treat Temple Valley population
Unsure of time needed (~2days every 8-10 weeks)
3. Annual re-survey of both areas. (2 days)

4. Display an ID fact sheet at the Times grocery store.

9. OISC Member Discussion:

- Would be a good idea to explain financial risks to homeowners on a flyer
- Kapua- would be good idea to place an I.D fact sheet /poster at the Times grocery store.
- OISC should check out the potential to present to a community association board.

OISC TARGET #7

Common Name: HIPTAGE

Scientific Name: *Hiptage benghalensis*

1. A) Known Locations:

Koolau Range

Manoa: Several sites (New infestation, parking lot, Kahuna, Acupon)

- pop. undefined

Kalihi: abandon Nursery site (Charlotte Y. is contact)

- Only one site identified

Nuuanu: Pali Hwy site by temple, / Marx Estate

- no known naturalized sites

Makiki: Pauoa: 40' x 40'

Kaneohe: Just below Waialele Bridge

Lanikai: 1123 Koohoo Pl (Fred Krauss)

Waikane: 45-4966 Kamehameha Hwy, cultivated "Hakipu" Waikane

Kailua: below Ulumawao peak (see below): Steve Manning found:

Waianae Range

Kealia: Talbert T. killed about six years ago, should revisit.

B) Unverified Sites

Unverified Sites (From Bishop Museum records)

- UH Campus (2)
- Liliha St. (1)
- Lanikai (1)
- Waikane (1)
- Pali Hwy Overlook (1)

2. Control Method:

Cut stump with Garlon 4. Currently monitoring test plots where OISC staff members used chainsaws to make initial trails into thick areas with 2-3 people following with herbicide.

3. Threatened Area:

In the short-term Hiptage will continue to threaten low elevation weedy areas, but in the long-term it may travel farther mauka. Hiptage can climb up to 3500ft elevation. It appears to be spreading in many weedy areas, making them completely impenetrable.

Known problem on other Hawaiian islands

4. Notes: Population size unknown and estimated time for control unknown. Need results from experimental plots to determine feasibility of control.

5. Noxious Weed (y/n): Yes

6. Progress Report:

2003 Objectives:

1. Identify, GIS map and quantify all currently known populations on Oahu.
Not all records have been investigated.
2. Control smaller satellite populations in area where populations are encroaching on critical habitat areas.
OISC has not done any control as it is still testing possible control methods.

OISC Progress to Date:

1. Found an effective method. One test plot was set up about one year ago. At last revisit it appeared to be 90% effective. Only plants that were missed were still alive. Highly effective, yet highly labor intensive. OISC is now proposing chainsaws to speed up treatment, by initially creating trails to penetrate thicket.

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	0	<1%
Proposed 2003-2004	3-5	Unknown

8. Management Strategy:

1. Move to Non Priority Target list.
2. Possibly treat select satellite sites
3. Treat Kealia in Waianae (1 day)
4. Search the population in Makiki - Pauoa
5. Check out windward populations 2-3 days
6. Get a full understanding of the distribution on Oahu and find the best method of treatment. Re-evaluate after more information is gathered

9. OISC Member Discussion:

- Army can send a person to follow up on Kealia in Waianae.
- OISC will not do extensive surveys in Manoa as there is so much in the area.

OISC TARGET #8

Common Name: MANUKA

Scientific Name: *Leptospermum polygalifolium*

1. Known Locations:

Koolau Range

- Wiliwilinui - Waalae Iki ridge large population extending over 1.2 mi
Long-term control several years
- Mauume (Lanipo) ridge: 30-100 trees total
1-2 days / biannually
- Manoa Kahuna ridge: 200+ trees
2 days / biannually

2. Control Method:

- Cut stump G4 @ 20%
- Initial treatment w/ chainsaw and handsaw followed by hand application of chemical

3. Threatened Area: Currently Leppol populations are limited to lower elevation-disturbed areas. However they are also found in transition zones and could foreseeably impact / threaten more native areas.

4. Notes: Time consuming / difficult to control due to large population sizes and use of herbicide. discovery of and two successive field outings the Wiliwilinui population, priority shifted from Leppol due to the daunting size of the population, the method of control and limited resources of OISC staff

5. Noxious Weed (y/n): NO

6. Progress Report:

2003 Objectives:

1. Survey and retreat any re-growth of *L. polygalifolium* species
Not completed due to "new" population discovery

OISC Progress to Date:

1. Control of Lanipo population
2. Control of Manoa population
3. initial mapping /control / assessment of Wiliwilinui population

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	24*	13%*
Proposed 2003-2004	1-3	1-3%

* Total for all Leptospermum species

8. Management strategy:

1. Control of satellite populations (Lanipo / Manoa)
2. Drop Wiliwilinui ridge from management strategy

OISC TARGET #8

Common Name: MANUKA

Scientific Name: *Leptospermum scoparium*

1. Known Locations:

Koolau Range

- Kahuku Training Area several sites Pupukea, Laie: many plants time unknown (DPW)
- Kawailoa Training Area several sites: many plants time unknown (DPW)
 - Puukainapuaa : originally thousands of trees currently revisit on semiannual basis
 - Poamoho Ridge originally thousands of trees currently revisit on semiannual basis
- Kippa trail: many plants (largest naturalized population OISC knows of) Fish and Wildlife Service time unknown
- Waimano trail: many plants
- Manana trail: many plants lower
- Waiau trail: some plants / one ridge known with many plants
- Kapalama trail: many plants
- Konahuanui: originally thousands – currently some recruitment

Waianae Range

- Waianae Kai / Mt Kaala: many plants time/ size unknown

2. Control Method:

- Cut stump / hand pull (no herbicide needed)

3. Threatened Area: Manuka is proven to be an aggressive invader throughout the more native areas of Oahu. Unchecked populations pose serious threat to native environments

4. Notes:

5. Noxious Weed (y/n): No

6. Progress Report:

2003 Objectives:

1. Assist other organizations with the control of satellite populations that are encroaching “critical habitat” areas of the Koolau Mountains *Yes*
2. Organize a strategy meeting involving other organizations and interested parties in identifying and mapping all known populations of manuka and implement control measures with assistance from other agencies. *No*

OISC Progress to Date:

1. Assist DPW with control trips to Konahuanui, Puukainapuaa and Poamoho Ridge
populations seen marked success and dramatic reduction in population size
2. Began work on Waimano ridge population in conjunction with other agencies (DPW/OISC/DOFAW)

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	24	13%
Proposed 2003-2004	12-20	5-8%

8. Management strategy:

1. Control of satellite populations that are encroaching on “pristine” habitats prioritizing which populations to target.
 2. Perform an aerial survey of Waianae.
 3. Perform initial treatment of area in Waianae (Near Waianae kai/ Kaala bog)
-

OISC TARGET # 9

Common Name: THORNY KIAWE

Scientific Name: *Prosopis juliflora*

1. A) Known Locations:

- Barber’s point
- Sand Island
- Koko head crater

B) Unverified Sites:

- several areas along the coastline are suspect. Has not been fully surveyed.
- DOA has list of sites some verified

2. Control Method: Cut stump with 20% Garlon 4. Very time consuming and hazardous as trunk is difficult to reach due to thorny branches. A granular herbicide, Spike, has been proven to be highly effective, but Department of Agriculture believes it is not an environmentally safe option due to the species proximity to the high tide water line.

3. Threatened Area: *Prosopis juliflora* invades dry arid coastlines, both native and non-native areas. *Prosopis j.* invades recreational beach areas causing a hazard to the general public. *Prosopis j.* has created an impenetrable barrier to the beach at barking sands on the Pacific Missile Range Facility.

4. Notes: *Prosopis juliflora* hybridizes with *Prosopis pallida*. Some botanists believe if left on its own this hybridized version will slowly replace both the *pallida* and *juliflora* species creating a longer thorned kiawe than the more common *Prosopis pallida*. KISC is treating all satellite populations (with Spike).

5. Noxious Weed (y/n): Yes

6. Progress Report:

2003 Objectives:

1. Reduce the spread of thorny kiawe by removing it from high-use recreational areas at public parks, camping areas, stream inlets, and residential properties.

This has not been done

2. Continue surveys to determine extent of thorny kiawe infestations

Some initial surveys have been performed

3. Provide support for the DOA’s staff during control efforts

OISC has been in communication w/ HDOA

OISC Progress to Date:

OISC has put little effort towards this species. OISC staff has helped DOA to survey some coastline areas. This species is under re-evaluation by OISC as it is fairly widespread and it is a very time intensive species.

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	0	0%
Proposed 2003-2004	Unknown	Unknown

8. Management Strategy:

1. Move to Non Priority Target list
 2. Assist DOA in their effort.
 3. Collect more data on this species.
-

OISC TARGET #10

Common Name: GLORY BUSH

Scientific Name *Tibouchina urvilleana*

1. Known Locations:

Koolau Range

- Kahaluu resident : single plant time ¼ day
- Whitmore Village: on Navy lands DPW taking lead: quarterly revisit few seedlings each time

2. Control Method:

- Foliar application using 2% Garlon 4.

3. Threatened Area: Currently limited to disturbed lowland area. Potential to spread mauka into more native areas of the Koolaus.

4. Notes:

5. Noxious Weed (y/n): YES

6. Progress Report:

2003 Objectives:

1. Assist Army Environmental with eradication of the Wahiawa population.
– **YES OISC support no longer solicited**
2. Survey Nuuanu area for Bishop Museum collections record of *T. urvilleana*.
– **YES no plants found**
3. Survey other Bishop Museum collection records for spread into adjacent lands.
– YES remaining records too little information

OISC Progress to Date:

1. Assist DPW with control of Whitmore Village population
2. Reviewed Bishop M. records and conducted reconnaissance surveys in Nuuanu and Lyon Arboretum.

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	0	0%
Proposed 2003-2004	0	N/A

8. Management strategy:

1. Move to Monitor list.
 2. Control of Kahaluu private residence. Kill remaining individual plant
 3. Review Bishop museum records to see if can deduce where other possible sights of Tiburv.
 4. Assist DPW w/ control efforts if needed
-

OISC RAPID RESPONSE CANDIDATE

Common Name: SMOKE BUSH / BUTTERFLY BUSH

Scientific Name: *Buddleia madagascariensis*

1. A) Known Locations

Makiki – Tantalus Drive

Estimated size < 1 acre. Est. control effort = 1 day/ every 3-4 months

B) Unverified Sites:

Manoa – 1 record.

2. Control Method:

Basal bark stems <3 inches diameter with 20% Garlon 4. Frill cut larger stems. Wear protective masks to avoid dust and pollen irritation.

3. Threatened Areas:

Threatens native forest. Buddleia has naturalized in Kokee State Park, Kauai.

4. Notes:

Buddleia is not widely spread and can be an easy target for eradication. Buddleia was rated as a pest on the Weed Risk Assessment.

5. Noxious Weed (y/n): Yes

6. Progress Report:

2003 Objectives:

1. Listed as a Rapid Response Candidate.

OISC Progress to Date:

1. Property owners have been contacted. Respirators have been ordered. Control due later this month.
2. Need to decide if it should be moved to target species list.

7. Time Spent on Species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	0	%
Proposed 2003-2004	4-6	1.5-2.5%

8. Proposed Management Strategy:

1. Add to Target list
2. Control known location on Tantalus (3-4 days/yr)
3. Investigate Woodlawn rd. population. Manoa valley site. (1-2 days/yr)
4. Continue to solicit information on other possible locations
5. Add *Buddleia davidii* to Taxa of Concern list

OISC RAPID RESPONSE CANDIDATE

Common Name: FIREWEED

Scientific Name: *Senecio madagascariensis*

1. A) Known Locations:

- Schoffield Barracks South Range

Est. Size = 1 acre

B) Unverified Sites:

- Other Integrated Training Areas may be infested due to tainted seed mix, transport.

2. Control Method:

Initial control of seedbank with a granular pre-emergent herbicide called Snapshot . Plants will be treated with Roundup Pro at 2.5% concentration in 2-3 week intervals. Scheduled treatments of *Senecio m.* will be coordinated with Army environmental, the Hawaii Department of Agriculture (HDOA), and the Army's Integrated Training Management Program (ITAM) on a rotational basis.

3. Threatened Area:

Senecio m. is an agricultural threat as it is toxic to cattle and horses, less so to sheep and goats. Large infestations have ruined pasturelands on the Big Island.

4. Notes: *Senecio* goes from seed to flower in two weeks. *Senecio* seeds persist in the soil for a long time. OISC staff members must be escorted by an Army employee to access the South Range.

5. Noxious Weed (y/n): Yes

6. Progress Report:

2003 Objectives:

1. Listed as a Rapid Response Candidate

OISC Progress to Date:

1. OISC has done an initial treatment in cooperation with Army Environmental.
2. Army Environmental did several follow-up visits after the initial treatment in March. From June until August there was a break in treatments.
3. During the last visit only five plants were found probably due to the dry summer.

4. When plants start germinating again OISC will begin

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	1	.5%
Proposed 2003-2004	4-8	1-3%

8. Management Strategy:

1. Work in collaboration w/ DPW, HDOA, and ITAM to control known population and respond to new sightings
2. Resurvey area (biannually)
3. Monitor Pali highway site.
4. Call Dan Sailer about Senecio site near TNC property.

NON-PRIORITY TARGET

Common Name: PAMPAS GRASS

Scientific Name: *Cortaderia selloana(?)*

1. A) Known Locations:

- Nuuanu valley residence
- Aiea (2 sites) private residence and state park

B) Unverified sites

- Schofield golf course (KK sighting)
- Koolina (DS sighting)
- Waimea private residence

2. Control Method:

- Foliar application of Round-up 2% in water

3. Threatened Area: Currently only known in residential areas.

4. Notes:

Taxonomy difficult to discern the species. Only *C.jubata* on the noxious weed list.

5. Noxious Weed (y/n): No (but *C. jubata* is)

6. Progress Report:

2003 Objectives:

1. None: preciously not considered for target

OISC Progress to Date:

1. Recorded and GPS of town sites
2. Initial communication w/ Aiea state park for control of grass
3. Trying to collaborate w/ DOA about treating other sites

7. Time Spent on Species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	0	%
Proposed 2003-2004	1-5	1%

8. Management strategy:

1. Investigate unverified sites
2. Write letter to landowners for voluntary compliance.

NON PRIORITY TARGET

Common Name: MELASTOMA CANDIDUM

Scientific Name *Melastoma candidum /septemnerium*

1. Known Locations:

Koolau Range

- Waihee Valley: population remains undefined (survey and control) (unknown 5-10days?) (~20?acres)
- Kahaluu lone plant found need more reconnaissance (1-2days)
- Maunawili (BWS, Castle, Falls Park): think main population (~3-5acres) known, more reconnaissance needed (5-8days)
- Kalihi: old nursery 1 day every 6 months (~1 acre)
- Tantalus: Resident 1 day every 6 months (~1 acre)

2. **Control Method:** Cut stump Garlon 4 at 20% in crop oil. In satellite populations fruiting berries are also removed and incinerated.
3. **Area Threatened:** Melcan grows into thick bushy trees that will crowd out other native vegetation. Seems to establish in mesic to wet exposed areas.
4. **Special Notes:** Appears to like open areas, and has been found mostly in open disturbed areas such as road cuts, old pastures.
5. **Noxious Weed List:** yes
6. **Progress Report:**

2003 Objectives:

1. Gather more information as to the size of populations and consider mapping and evaluating as a potential target

OISC Progress to Date:

1. Initial surveys and treatments in Waihee, Maunawili, and Kalihi.

7. Time spent on species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	8	4%
Proposed 2003-2004	10-20	2-8%

8. Management Strategy:

1. Add to Target list after a few recon surveys.
2. Perform a reconnaissance surveys and control of Maunawili, Waihee, and Kahaluu
3. Control known populations in Kalihi and Maunawili
4. Continue follow up monitoring of satellite populations

9. OISC Member Discussion:

- Gain more info with survey.
- Christy – Cautions calling it an incipient target
- This could be a possible Sierra Club trip
- May need to reevaluate after initial survey.
- Talbert – Get more information with the Board of Water supply. Check/drive all of their reservoirs. Amy may have already done this. Check with her.

NON PRIORITY TARGET

Common Name: **KAHILI GINGER**

Scientific Name: *Hedychium gardenarium*

1. Known Locations:

Koolau Range

- Unknown presumably many sites throughout the S. Koolau range
~ Tantalus, Nuuanu, Kalihi

Waianae Range

- Mt. Kaala: size unknown presumably 10-days

2. Control Method: Escort 1.5g/L Cut the growing stems and then spray on the mixture with a hand sprayer mostly

3. Threatened Area: Mt. Kaala bog

4. Notes: Concern of control effort in area would be potential further spread of weeds incipient to area ex sphagnum moss. It is thought that the only the 1st 400meters of bog to contain ginger.

5. Noxious Weed (y/n): No

6. Progress Report:

2003 Objectives:

1. None: preciously not considered for target

OISC Progress to Date:

1. Assisted DPW with Mt. Kaala bog searches for Kahili ginger on Army lands
2. Preliminary assessment and searches / control of Kahili ginger on the state owned side of the bog

7. Field Time Spent on Species:

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	0	0%
Proposed 2003-2004	10-20	4-8%

8. Management strategy:

1. Hold a meeting with DOFAW, Army, and OISC to determine appropriate strategy.

2. List as Non Priority Target. Hold off as target as of yet.

9. OISC Member Discussion:

- It is proposed that OISC can do transects through the state side of the bog
 - 20m swath and go 200 meters and come back Do an aerial survey near June or July when ginger is flowering and most visible. Army may be able to do an aerial survey for us if we do Manuka surveys for them.
 - To avoid areas with sphagnum moss one can possibly enter from the opposite side of the bog that does not contain sphagnum moss.
 - Christy – Suggests that we are very clear on what action OISC takes.
-

V. Additional Species:

A) OISC treated Opportunistic species (now Non Priority Target) on an individual basis.

- Dillenia is dropped from list as it is too widespread.
- Melastoma- actively controlling
- Tibouchina herbacea – not on Oahu, the one record of it on the island has not been verified. The Army Environmental were the informants on this.

B.) Rapid Response Candidates:

- Buddleia, pampas grass, and Senecio have been found on the island. If others are found on this list then OISC will start treating it.

C.) Taxa of Concern:

Note: OISC has not done much research on the Taxa of Concern (previously Species of Concern)

- Get staff up to speed on identifying these species.
 - Run these species through the Bishop museum database.
 - Train staff by sending them to the Big Island. Keep better communication with Army about the new invasive species that they are detecting.
-

VI. Topics of Discussion

A. Aquatic Invasive Species: Should OISC incorporate Aquatics?

Andi Shluker from The Nature Conservancy presented the opportunity for OISC to expand its mandate to include aquatic invasive species. Andi is not asking that OISC accept or reject the idea at the moment, but instead think about the possibility for the following year. She proposed the idea if OISC could put a little field time toward experimental testing of aquatic invasive control.

1. Discussion comments:

- Marine ecology- too different
- Freshwater plants- most similar to OISC work

- Not a differentiation between incipients and established, b/c to tough to determine.
- Aquatic Invasives Coordinator will hopefully spawn from a Federal Act.
- Kapua - OISC has been focused on incipients, while DOA has taken on topics of public health.
- Define site-specific high value aquatic ecosystems.

OISC Field Effort	# of Field Days	% of Total Effort
2002-2003	N/A	N/A
Proposed 2003-2004	3 - 8	1-3%

2. Action Item:

- OISC will test out a couple of sites.
- OISC will get info from Aquatic Division about aquatic invasives to add to OISC presentations. The Aquatic Division will think about projects that could be possible for Sierra Club trips.
- OISC will set up a more extensive meeting regarding this issue.

B. Increased Detection

Ryan asked the question of how can OISC increase detection efforts. Maui hired Forest and Kim to do roadside survey. MISC has found this very beneficial.

Discussion Notes:

- Road survey – Potentially too many roads. It is an expensive project. Is there potential money to fund this? Forest and Kim would be the best choice for bringing over here.
- Talbert - Could survey the end of roads where they abut natural areas
- Rob - Survey areas near botanical gardens.
- Mindy- Trail survey is another idea.
- Ryan- sometimes people tell us about potential threats much after they find them. We need to encourage people to think about contacting us when they see something strange. Maybe we can initially ask them to keep a look out for certain species and then remind them quarterly to tell us about anything odd. We can give them a report form to fill out.

Action: Put some initial thought into what the priority would be for a weed survey on Oahu.

C. Committee Involvement:

Ryan is concerned that enough people aren't coming to the meetings and wanted people to think about if the format should to be restructured or scheduled differently to encourage more people to attend.

Discussion:

- Ryan – It lately been feeling like the OISC meetings have been more of reports rather than an interactive meeting.

- Kapua- Thinks the main reason they don't feel it is necessary to go to the quarterly meetings is due to the fact that they feel confident in the way OISC is being run and that they know that OISC will call them if they need their help.
- Mindy asked if people thought that maybe the number of meetings should be cut down to 2 meetings a year that would coincide with the OISC annual reports.
- Christy Martin cautioned against this as she thought it is good to report things quarterly and cautioned not to cut back too much.

~PAU~

Attendees: Talbert K. Takahama, Kapua Kawelo, Andi Shluker, Rob Hauff, Penny Levin, Christy Martin, Meghan Halabisky, Mike Yamamoto, Paul Murakawa, Scott Lynch, Nilton Matayoshi, Leila Gibson, Mindy Wilkinson, Coleen Cory, Ray Baker, Jen Saufler, James Yuen, Earl Campbell, Ryan Smith