O‘ahu Invasive Species Committee
General Meeting
August 13, 2008
Bishop Museum Paki II
9:00 a.m. – 12:00 p.m.

AGENDA

9:00–9:10	Welcome and introductions
9:10–10:00	Partner Updates (everyone attending please give a 5 minute update about your invasive species projects or anything else you think the group should know about)
10:00–10:30	OISC program updates
10:30–10:40	Break
10:40–11:15	Presentation by Dr. James Leary, Invasive Weed Management Research Scientist
11:15–12:00	*Schizachyrium condensatum* strategy session
12:00	Adjournment

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I. Welcome and introductions. OISC Operations Manager Rachel Neville went over the agenda, then everyone introduced themselves.

II. Partner updates

Hickam Air Force Base: Aaron talked briefly about Hickam’s biggest concerns, including invasives coming over from the Big Island.

DOFAW: Lanky Morrill talked about his work in forestry and the concerns they have with invasive species not recognizing land ownership boundaries.

O‘ahu Early Detection: Alex talked about OED’s roadside surveys. They have recently surveyed at Hickam and are working on access to other military bases. Also public roads, they have done about half the island.

HISC: Chris Buddenhagen said that tomorrow is the HISC Resources Working Group meeting at which the final ISC budgets will be determined. The chair is with DBEDT.

USFWS: Karl Buermeyer said the USFWS grant to OISC is ready and the contract will be ready in the next few weeks.

HDOT: Chris Dacus said HDOT is still working on the statewide invasive plant program. About a year of contracting work has been done now with SWCA Environmental Consultants. Chris also represents the Landscape Industry Council of Hawaii (LICH) on invasive species. LICH is reviewing plants with the Weed Risk Assessment (WRA), and the industry is figuring out HB 2516 (which adds plants to the restricted list, what you can’t sell or buy) and how that affects them. The landscape industry has gotten more involved in these issues in the last two years, and the more they’re involved, the fewer objections they have.

Board of Water Supply: Amy Tsuneyoshi said that yesterday the BWS did some blackberry control from the 2003 fire in Waianae Kai, about a 7-acre burn area. They’ll be doing some site prep ahead of time in October, then koa outplanting in December, if anyone wants to come. DLNR provided helicopter funding. *Buddleja* came up like a carpet, but it has settled down. *Grevillea*, Christmasberry, and guava

also came up but a lot of koa regenerated. Rachel said that OISC has been sending a couple of people each time.

Army Natural Resources: Jane Beachy said they have been trying Escort on *Rubus*. Comment: At Hakalau they use Garlon. Susie: We have some plots: a handpull, a crop oil/Roundup, and an Escort plot. So far it seems like cutting, allowing a little growth, then spraying with Escort works the best. One population we found recently had hundreds of plants. Six months after treating with Escort there were only about 15 left. With handpull only, it is really hard, there are always runners. The cocktail-treated population went down and then plateaued. It is too soon to say for sure but so far Escort seems the best.

Jane: We use Escort at about 1 g/L. Susie: we use 3 g/1500mL, a very low percentage.

Dan Clark (FWS) used Escort for *Rubus* a lot in Florida, it is very effective.

Chris: Escort is very strong on legumes.

Amy: BWS is very cautious about what they allow on their property. The burn site is on a ridge between BWS and State land. Some research says Escort may contaminate water, and BWS didn't allow it. DOFAW allowed it on their side as a small trial.

Rachel: HDOA may be making some change to the label that will change our use. I will follow up with HDOA.

James: Triclopyr, glyphosate, and Escort are the main three herbicides that are always used. There is a whole suite of new chemicals that could be investigated for our target species.

III. Army Natural Resources. Jane gave a slide show with some updates:

We haven't found fountain grass recently at any of the monitoring sites.

Kahuku Training Area, the military is building a dip pond and vehicle wash rack near the Charlie Gate entrance. Jane and Kapua Kawelo did a survey of the site. The contract manager would like to use a well to supply water to these facilities. However, if this does not work, a water line which goes directly by the one known Penset site in KTA may be installed. We talked to the contract manager, and if this water line route is chosen, we will flag the area and the contractor will avoid the Penset site.

Coqui frogs at Wahiawa, nothing has been heard.

On August 6 we found *Tibouchina herbacea* in the Koʻolaus, we took photos and a point. This is worrying because we don't know of any naturalized populations on Oʻahu. We have no idea how it got there. It may have been on someone's gear from Maui.

It is in a really nice native area between the monument and the cabin at Poamoho summit. Natives like *Phyllostegia* are there, and lots of others.

They killed the plant but haven't yet had time to do surveys. It is on the leeward side of the crest, which is easier to survey. Part of the surveys will be on Army leased land, part on State land. There is a gulch with a lot of *Arthrostemma* near the trailhead. This is another melastome, maybe it's in with that. They will be doing lots of surveys.

Slides of *Tibouchina herbacea*. It can be hard to spot from the air because from above it looks similar to the local *Phyllostegia*.

You need to bag the entire plant because it can generate roots from leaves, which makes it more threatening. Jim: The growth form is pretty distinctive. Aerial surveys would be the best because you need to get beyond the trails. Randy Bartlett may have info about when it flowers. It favors open areas. Beside roads and trails is where it starts.

Rachel: A couple of years ago OISC found one in Halawa Valley, which hadn't flowered. We thought it may have been brought in on hapuʻu from the Big Island. We're there twice a month looking for bush beardgrass and haven't found it. We're also looking for *Rubus ellipticus* and *Tibouchina*, so we would know if it had come back in that spot.

Jim: *Rubus* is so bad, I recommend keeping it right at the top of your target list, it's so bad on the Big Island.

Jane: Jennifer Crummer reported *T. herbacea* several years ago. Kapua's group did some really extensive aerial surveys. The voucher was lost, and the record is lost. They didn't find any more on the aerial surveys. Mid-elevation Koʻolau surveys are very tough. Susie: We did some midrange Koʻolau work and saw quite a bit of *Melastoma candidum*, which is a bit similar from the air, it may have been that.

Equipment for spotting from the air is usually binoculars, some photos and the human eye. Not to the level of aerial imagery.

Jim: Resource Mapping Group's photos really work. They can go down to 2 cm. It is only $1.50 to $2.00 per acre. They provide a compiled dataset, a georectified file that you look at and interpret. It might be a good idea for this species. Maybe concentrate on more open areas first. *Tibouchina herbacea* will occupy those areas first, then denser, more native forest areas.

Jane: The Army doesn't land there because the landing zones are too small.

Rachel: I asked Aaron Lowe, who has been up there, about it. You need a permit, so we can ask him if hikers from the Big Island or Maui have been up there.

IV. Strawberry guava

Rachel: On the strawberry guava controversy, it would be good if we can attend the listening sessions and support the project. There is a resolution in front of the Hawai‘i County Council to ask the Forest Service not to release the biocontrol.

Christy: It has been tested and the Forest Service is proposing to release it now. The reason for doing this is that the Forest Service and DOA thought they would receive a lot more support from the conservation community. We think there is a knowledge gap. The biocontrol project for guava was started 20 years ago. It seems like people have forgotten that conservation folks requested help with biocontrol.

Prevention/Early Detection/Rapid Response/Ongoing Control: The sequence is basically laws and agreements that prevent new species from entering, inspection at ports of entry, but some things get through. If something becomes widespread, we can choose to do nothing (which is appropriate for certain things), or we can choose to protect only high-value areas. When things must be controlled, yet they are too widespread for manual/chemical methods, we can choose to do biocontrol. The cost of biocontrol is low compared with other methods done in perpetuity.

People tend to say, "Oh it's another mongoose. It's just like the cane toad." Those were brought in the days when anybody could bring anything in, without testing. Only one person brought in the cane toad, against protests from others, and we are still trying to get away from that negative image. Since the 1970s, we have embarked on a whole new era of biocontrol. We should have renamed it. None of the 51 biocontrols introduced since 1975 have switched hosts. The selection and testing process seems to be pretty effective. None of the agents since that time have become pests in their own right.

Biocontrol is the only hope we have of limiting gall wasp and replanting native wiliwili. We do believe the *Eurytoma* wasp will control it, but not eradicate gall wasps. It lays a single egg into the gall so the larva goes into the gall chamber and feeds on the wiliwili gall wasp larva. DOA is ready to release it but they are concerned about the reaction that biocontrol has received (in the case of strawberry guava). It is clear that there are many misconceptions about biocontrol, testing, and relative risk.

Stinging nettle caterpillar: This is spreading on the Big Island, O‘ahu and Maui. We need biocontrol, pheromone work is too far away. There is a tiny wasp in Taiwan

where nettle caterpillars are native, and the caterpillar is hard to find there. It has passed host specificity testing.

Strawberry guava: New research by Tom Giambelluca shows that guava-infested forests lose 27% more water through respiration and transpiration, compared to native ʻōhiʻa forests. *Tectococcus ovatus* is a scale insect that feeds on the leaves. The plant forms galls, using a lot of energy that would otherwise go to seed production. The plant still spreads, but it will be much slower. This is expected to make it act more like a "normal" plant, so plants like ʻōhiʻa can compete better. The insect dies when it loses its host, it cannot complete its life cycle. It has shown that it does not switch hosts, even when offered closely related plant species.

We need support for these biocontrols. One of the reasons this problem has gotten so bad is that people don't understand the science or some of the choices we need to make, such as the relative risks from strawberry guava continuing to invade versus the risk of this insect switching hosts. Although we have had lots of successful biocontrol projects, this is very poorly communicated. Biocontrol researchers are notoriously bad at communicating their successes. They move on to the next one without telling people much about it. In the past they never had to list the environmental assessment in the *OEQC Bulletin*. This is where a lot of people have been watching to see what is going on. We anticipate more people opposing biocontrol projects. The Hawaiʻi County Council hearing on guava biocontrol was very long. It was fairly balanced for and against, but there will be another hearing in October.

The public comment period will end and then DLNR will make some decision for the time being.

We should do a documentary for biocontrol/guava, but the project needs funding.

V. Rachel went over a chart showing OISC activity for the last 6 months. It compares actual time spent on each species with estimates from the 2007 strategy meeting. If this is useful information let Rachel know, if not, she won't do it for next time.

We hope to move into our new baseyard before the end of 2008, the site preparation is still in progress.

We had some unexpected species pop up that took some of our time, *Medinilla heterophylla* and kudzu for example. The bush beardgrass is different between expected and actual because I included time for the Pali population which we haven't done, aerials and so forth. Our outreach person has been really great on pampas grass, finding owners of vacant houses, meeting with golf course managers. We are going to write a grant to work with Koʻolina Golf Course to replace their plants. It will be a bit tricky to find the right, large replacement plants.

Chris: Rick Barboza knows a good substitute, a tall-growing native sedge, and I've been talking with a prominent landscape architect about writing some articles about recommended golf courses here.

Rachel: Kawelu grass on Midway looks beautiful, but it seems like the plants here and on Maui don't look so nice. Greg Koob brought some seeds back to their lab and they're looking at whether it is a habitat difference or if they could look good here too.

Miconia: Our ground buffer includes about 9,000 acres of search area. The aerial buffer is outside that.

Rachel went through slides showing OISC's miconia acreage completed and needing to be done next year. FWS has provided $10,000 for aerial surveys, we're working on more.

VI. O'ahu Early Detection (OED). This is a new program started with seed money from HISC. Road surveys are on track to be completed in 2009.

Right after our last meeting they found *Pennisetum villosum* (feathertop) in someone's yard. It got a 24 on the WRA. It presents all the problems of fountain grass but can handle more moisture. It is a threat to the Ko'olaus. Julia is working on getting permission from the owner to remove it.

We should all get on the OED LISTSERV. Curt Daehler said this plant is being sold in Martha Stewart seed packets at K-Mart. We found it at Iwilei. Maybe Julia can talk with K-Mart. We're still talking with Navy Exchange about their seeds. The laws are that if you're licensed to bring in seeds, there is only a short blacklist, and a lot of the ornamental grasses aren't on that list.

Chris: There is a USDA prohibited seed list that is different from the HDOA noxious weed list. There has been a process discussed about a white list and black list; there is progress. We want to make sure everything gets screened.

Kudzu: Last year Alex and Danielle found it on the windward side. They have also found it in Pearl City and Kaneohe. They sell the tubers in Chinatown. People eat it. The crew has gone to the sites a couple of times, and it is still not all gone. It is very difficult to control. We should all be alert for it since the road surveys aren't done. It is a food and medicine, so we are leaning toward removal if it is in a natural area. It is going to be hard to get out of people's yards because it is food, not just decoration.

The internet is opening a huge way for people to get all different kinds of plants from anywhere. There is the novelty factor. OED is finding quite a few things not previously documented.

Chris D. suggested a survey by OED for the yards that tend to have a lot of exotic plants. Ask where did they get their plants, do they belong to a garden club, etc. There is a neighborhood effect too.

Susie: Kudzu vegetation dies back a lot in the winter, even here. It comes back when it warms up. One day we removed hundreds of pounds of tubers from one yard.

VII. Outreach. Julia has been doing lots of events. The volunteer program is going well. Julia showed a couple of slides, volunteers controlling *Medinilla magnifica*. It climbs up into the trees.

VIII. ESRI 2008 Special Achievement in GIS Award. Jean gave a presentation at a quarterly ESRI User Group meeting on the current use of GIS at OISC including the use of geoprcoessing models to track and plan our miconia survey strategy and the use of GIS in the field to increase our survey efficiency and data tracking accuracy. The ESRI Hawaii office nominated OISC to receive a "2008 Special Achievement in GIS" award from ESRI, the leading geographic information system software company. OISC was among 170 awardees chosen from more than 100,000 ESRI user sites worldwide "in recognition of their outstanding work in the GIS field."

IX. Chelsea Arnott, our new vertebrate ops supervisor, started July 2. She was on the coqui temp crew and is already up to speed. She has mainly been going to Waimanalo nurseries to listen and talk with owners, and working on the remote monitoring device. She also participated in a big operation with HDOA at a nursery, there were about 5 calling males and some females and juveniles. We haven't heard any more calls since. We will have another coqui working group meeting.

Chris B.: It would be good to get HDOA involved in more outreach about coqui on O'ahu. The local politicians do not seem to be aware of the need for coqui control here.

X. Kelly Cloward, UH PIPES program intern, has been working on an avian seed dispersal project. She gave a slideshow. It has been determined that one Japanese white eye could have up to 1,800 miconia seeds in its droppings over a period of 200 minutes (she read a study where birds were fed and put in a cage and timed it). She checked OISC's buffers by looking outside the buffers for mature miconia. She also looked at all the frugivores and granivores on O'ahu, including zebra dove and seed predators, since small seeds can pass through intact. They did recon around Maunawili and two other sites. She found that outside breeding season, white eyes and leiothrix form flocks that can travel up to 16 km. Seed retention time is important. Seed retention time is very dependent on seed characteristics such as weight and size of seed. Also how attractive the fruit is, whether it is arillate or not, fleshiness, weather and landscape structure.

Jim suggested analyzing the characteristics around the trees to see whether how far out the seedlings are is correlated with wind direction, topography, etc. Model the zone around the source trees.

99% of the miconia seedlings we find are within 500 meters of a source tree.

XI. James Leary, invasive weed management researcher with CTAHR for the last 16 months, is looking at control tools and the effectiveness of actions being taken. The use of herbicides has negative connotations. He is trying to develop responsible, overall efficient strategies. He showed two 8-minute videos, one on grass suppression in areas of koa restoration, and one on herbicide ballistic technology. Imazipir has good selectivity for grass and not koa. Legumes seem tolerant of it, but ʻōhiʻa is not. Mamane, koa, ʻawikiwiki, start with those in a restoration project as the first natives in, for cover.

James is looking for selectivity, to remove grasses and reestablish broadleaf native plants. He has used it on fountain grass as well. Imazipir is more effective than glyphosate.

The second video shows researchers shooting paint-ball style herbicide balls at target plants. He is working with BASF and Dow. This may be the best way right now to apply very low volumes of target herbicide. They're trying to answer some key questions: How low can you go? What is a lethal dose? One ball isn't enough, they know that. How many projectiles does it take? Currently the best technology is the spray ball. This takes at least a minute once it is on the target. Paintball reduces the time to 10–15 seconds. Operators don't know how many plants they kill with a spray ball. There are about 3 hours of flight time possible before fatigue sets in. With applicators, the pilot only has to fly, and two gunners, on each side of the aircraft, apply herbicide, which goes out to 30m.

XII. Bush beardgrass at Ahuimanu and Halawa. H3 is visited twice a month. At Ahuimanu there are 200 homeowners with half-acre properties. We have never had full access to that neighborhood. Some people just don't respond at all, not even to say "No you can't access my property." In 2006, on an annual survey, we found it up on a knife ridge, grass on a vertical slope, very close to the neighborhood. It will require several applications, so community concerns would take a lot of time to address, if we could even address them. We did not have helicopter money, so we did binocular and spotting scope surveys. It is hard though to tell different grasses apart. (Rachel put up a map showing potential populations.) It needs to be checked out with a helicopter. A week after the May meeting, we found it on the leeward side of the summit during a miconia survey.

Susie: We didn't get to check farther from that site, we didn't have funding to extend the surveys. The populations may be more extensive.

Rachel: We can look for it in the miconia buffer with the money FWS is giving us. Bishop Museum will also help with surveys of their land. We need to discover the size of this. We may need to switch to containment, but it needs to be official one way or the other. We have been spending $60,000/year on these two sites. We would like to know from you if it is possible to contain it.

James asked which herbicide we are using. If it is taking multiple applications, it may just be the wrong chemistry.

Jim: This species changes the ecology of the places it establishes. Once it is firmly established, that's it for that site.

Susie: It will be very important to do surveys and see how far it has spread. If it is already widespread then it is outside OISC's mission. If it is not, then since it is invading native areas, then it is a real problem.

Chris B.: KMWP can be a help with the various partners. Not all the landowners have a management program for their lands. This species is not on KMWP's target list. Maybe they could add it. It is a funding issue for both KMWP and OISC. If the committee feels like it should be site-led it should be voted on.

Jim: I think you need to 1) complete surveys, 2) model what it is going to impact, and 3) look at your control techniques and see what can be done to improve those, formulation and application techniques. All three of these need to be done before you can really make a decision on it. BWS may be amenable to a target application like the ballistic technology.

James thinks a single application may be achievable. Amy talked about a study of where the water flows. They don't want herbicide in those areas.

Chris B.: Models like that using terrain data are available showing how the water will flow.

Jim: BWS needs to be a partner because it can have a critical impact on management. We still need to know which areas need to be protected. Some additional money is probably warranted. It is easy to waste a lot of money on this and not be effective, or to turn your back on it.

Jane will talk to KMWP to see if they will add it as a target, and that may help with aerial money. Unfortunately it is not on Army land. SNIP may be able to provide some money for aerial surveys when it is further along. Jim suggested talking with NRCS. Grasses are not considered good watershed vegetation. They compete with tree species. Try Kirstie Swinnerton, she may have a water study comparing grass vs. other vegetation.

XIII. The meeting was adjourned.

ATTENDING:

Arnott, Chelsea	OISC	CGAPS	Coordinating Group on Alien Pest Species
Beachy, Jane	OANRP		
Buddenhagen, Chris	HISC	CTAHR	UH College of Tropical Agriculture and Human Resources
Buermeyer, Karl	USFWS		
Chee, Patrick	HISC	DOFAW	Hawaii Division of Forestry and Wildlife
Clark, Dan	USFWS		
Dacus, Chris	HDOT	HAFB	Hickam Air Force Base
Frohlich, Danielle	OED	HBWS	Honolulu Board of Water Supply
Fujikawa, Jean	OISC	HDOT	Hawaii Dept. of Transportation
Hebshi, Aaron	Hickam AFB	HISC	Hawaii Invasive Species Council
Ikagawa, Mary	OISC	OANRP	Oʻahu Army Natural Resources Program
Iott, Susie	OISC		
Jacobi, Jim	USGS BRD	OED	Oʻahu Early Detection
Lau, Alex	OED	OISC	Oʻahu Invasive Species Committee
Leary, James	CTAHR	USFWS	US Fish and Wildlife Service
Martin, Christy	CGAPS	USGS BRD	US Geological Services, Biological Resources Division
Morrill, Lanky	DOFAW		
Tsuneyoshi, Amy	HBWS		