

# **OISC General Meeting**

## **October 13, 2014**

Ho'omaluhia Botanical Gardens  
45-680 Luluku Road  
Kaneohe, HI 96744

### **Attendance:**

Julia Parish (OISC), Lisa Ferentinos (DOFAW), Jean Fujikawa (OISC), Erin Bishop (OISC), Zoe Eisenpress (OISC), Keoki Kanakaokai (WMWP), Emily Montgomery (HISC), David Duffy (PCSU), Shahin Ansari, Rob Curtiss ( HDOA), Christy Martin (CGAPS), Josh Fisher (USFWS), Rob Hauff (DOFAW), Alex Lau (OED), Danielle Frohlich (SWCA), Corrina Carnes (Volunteer), Laurent Pool (Waimea Valley), Angela Kieran-Vast (HIARNG), Mary Ikagawa (KMWP), Mandy Hardman (DOFAW), Jane Beachy (OANRP), Amy Tsuneyoshi (BWS), Josh Atwood (HISC), Jenna Tomasa (DOFAW), Alisa Kimura (OISC)

### **Welcome and Introductions:**

Julia opened the meeting at 1:02 pm with a brief welcome; all attendees introduced themselves.

### **OISC Steering Committee:**

Julia started the meeting by saying that the first item of business was to be the transition of the office of OISC Chair; however, the selection process has been delayed and Josh Fisher will continue to serve in that capacity. She thanked Josh for agreeing to maintain his position as Chair and recognized him for his many years of service, as well as being the longest serving OISC Chair.

Julia announced that Mary Ikagawa and KMWP have agreed to be a member of the Steering Committee.

Jane remarked that it's very convenient that it's all former OISC-ers in these positions and Danielle will need to be tasked with a position soon.

### **OISC Staff Updates:**

Julia began her presentation with recent OISC staff updates by welcoming on Ryan Chang as our temporary hire and Alex Bessemer who was a temporary hire during the summer and is now a permanent field crew member. OISC has also hired on in this past month -- Pila Young who was previously with the CRB temporary team at HDOA/USDA and Christine Kline, formerly an intern with Mandy. Derek Ford was OISC's AmeriCorps/Kupu intern this past year and he will start permanently with OISC next week. Summer PEPS intern, Jamie Komata, assisted Aaron Works with CRB, LFA and all other pest species during her term. Kari Bogner was a temporary hire over the summer and now a grad student at UH. Also, if you have not already heard, Danielle Frohlich has moved on from OISC and is now with SWCA, but is still here at the OISC meetings. Within the next few weeks will be hiring on another permanent field crew member and are still in recruitment process for an AmeriCorps/Kupu intern.

### **Overview of OISC Target Species & 2015 Funding:**

Julia presented a slide listing all of OISC's current target species encompassing 26 species being managed at varying levels of intensity, including "no action". The species which are italicized and asterisked will be reviewed later in the meeting for reprioritization. There are 16 plant target species and 5 early detection rapid response species which are species that are not known to occur on the island and, if detected, OISC would respond rapidly to control them. Three on the list are pest species, one of which is coconut rhinoceros beetle (CRB) which is not technically an OISC target species but is a contributing species and OISC is being funded by HISC to manage this species. Two plant species are part of OISC's monthly volunteer trips that are being managed at Lyon Arboretum, but they are not official target species.

The next slide illustrates OISC's outlook for 2015. Target funding goal is \$1.4 million with a staff of 19; 13 of which would be field crew. A gap of approximately \$240,000 currently exists between secured amounts and OISC goal. The majority of the gap remains in salary & fringe and helicopter operations. Two proposals are currently out in the ether pending approval. One with National Fish & Wildlife Foundation (NFWF) which is a joint proposal with OISC, KMWP & NARS with OISC's portion at \$32,000. The other proposal will be submitted to Hawaii Tourism Authority (HTA) later this week for \$100,000. The take-home message is that OISC is still a bit short, but has done really well with FY15 being another record funding year for OISC.

Josh A asked if the HTA proposal is specific to miconia. Julia confirmed that the request will be for miconia. We considered adding a little bit of LFA, but based on the RFP, decided to concentrate on miconia for this proposal.

### **Miconia Summary:**

Julia began by presenting a chart depicting the acres completed from January 2014 up through September 30<sup>th</sup> and a brief summary of the survey methods involved for miconia detection. These include on the ground by foot surveying the hills of the Koolaus, aerial surveys by helicopter, roadside surveys and binocular surveys for areas that are too steep to survey by ground but within the ground buffer. Julia explained that a bino survey is conducted when we get to a ridge area that can't be accessed by foot and it's not big enough to put into the aerial buffer because it would be a weird little puka that we can't get to.

Referring to the slide, the "Survey Acres Completed" are the total acres the crew has surveyed up through the end of September, which is 4,465 acres. The annual target goal with current staffing is 4,800 acres. The "Goal Acres Remaining" are the survey acres from the annual survey goal and "Actual Acres Remaining" are the acres within the goal and also includes roll-over acres from previous years, specifically 2012 and 2013. "Roadside Surveys" are rainy day projects so we don't have a target goal and "Bino surveys" also do not have a target goal.

Within this time period, unfortunately, one mature was found in Kalihi by Zoe and surprisingly we only found 316 immature plants, which is a really low number.

We started the year with over 8,000 acres to survey and the average amount we can survey annually is around 4,800, which is a pretty significant surplus. We are really close to reaching our average survey amount and are on target to surpass it, so it has been a really productive year.

Josh F. asked for clarification of where the one mature miconia was located. Zoe replied that it was in Kokua Kalihi Valley, in the core, up the stream where plants are always found; not in some random spot.

For 2014 looking into 2015, we have 2,600 roll-over acres from 2012 and 2013 yet to complete. Our 2015 roll-over acre total is projected to be over 3,700. So the projected 2015 survey acres to complete will be 6,100 and within that, the ground surveys acres are a little over 3,200 and aerial is close to 3,000. Julia explained that this means that there are areas, which were up for survey in 2012 and 2013, that were rolled over and thus, we will have areas that haven't been surveyed for possibly 5 or 6 years, which creates an increased likelihood that we will find a mature plant in those regions.

Julia presented another way of looking at the information with a stacked column chart starting with the total acres to survey at the beginning of this year, on the left, and progressing to acres needed to be surveyed at the beginning of 2015 on the right. The bold numbers at the top of the stacked columns reflect the total acres to survey and the red portion of the column represents the roll-over acres, which are the areas that were scheduled to be surveyed within a given year, but were unable to be completed in a given year and keep being added on to the acres to be surveyed. We had close to 1,300 acres of ground survey rollover acres at the beginning of the year and the acres up to survey for 2014 totaled a little more than we normally achieve during any given year. The great news is that we have whittled the total acres needed to survey to a little under 2,000 as of September 30th. Jean has projected that the field crew will survey around 300 acres between now and the end of the year. Julia pointed out that December is a really hard month to get ground surveys done because of lots of rain and vacation days.

OISC projects to start next year with over 3,200 ground survey acres to complete. Julia reminded the group that the target goal is usually 2,400; that is what we have been able to achieve in the past given a field crew size of 7 to 8 people. This would mean that we'd need to average 270 acres per month to complete all acres; our average is typically 200 per month in a given year.

For aerial acres, Julia presented a similar stacked column chart with the red bars representing roll-over acres which are primarily the initial survey acres within the aerial survey buffer which is 800 meters and is outside of our ground survey buffer. It's been slowly surveyed over time, and is considered the lowest priority of our miconia survey buffers and encompasses a little over 2,200 acres. For initial aerial acres within the 800 meter ground survey buffer, we only have about 9 acres left. That's a low number that we will be able to achieve in our next heliops.

The red line on this graph indicates the initial survey acres within our aerial buffer. Julia reminded the group that we have an 800 meter circle around any mature plant which is the ground buffer. There is an additional 800 meter aerial survey buffer and the aerial survey acres to be completed are around 2,200. But also in our strategic plan we want to survey streams that are outside of the 1,600 meter survey buffers. So the total initial aerial survey acres is around 2,500 acres. For aerial acres, we need to average about 270 acres per month, which is ironically the same as ground. Julia also pointed out that we were unable to fly and do aerial surveys for the first six months of the year due to a multitude of issues, but once we got in the air, it was

super productive. Julia pointed out, on the chart, that between now and the end of the year, we have projected zero acres left to survey out of what was up for this year, which was an astonishing amount of acres getting surveyed by air and she thanked the OISC crew for the great effort. We are projected to start 2015 with close to 3,000 acres to survey aerially.

To recap, Julia again presented the slide with the table outlining the projected acres to survey for miconia in 2015. She asked the group to remember these numbers as we progress through the rest of today's agenda regarding reprioritization of OISC target species. The take-home message is that next year we are projecting to have 6,100 acres to survey juxtaposed against what we can typically do in year at 4,800. This will leave a deficit of 1,300 acres that will need to be surveyed and we are hoping with our increased field crew size we will be able to accomplish this goal.

Mary asked if OISC had any theories about the decreased number of immatures that have been found this year. For example, does it seem like the seed bank is aging or characteristics of the particular acres that are being surveyed. Zoe replied that we have not been in the areas of the major hot spots this year. Julia concurred but also added that we have not yet done any significant analysis. Julia continued by saying that the low number seems like it's because of the areas where we have been and acres that are about to come up that there's potential for not finding a lot of plants.

Jane asked how the roll-over acres are chosen and prioritized; rather than going to the oldest first, are areas prioritized by how important they instead of the length of time since they've been surveyed. Julia replied that there are many variables that attribute to the prioritization process. In an ideal world, we would hit all of the 2012 roll-over at the beginning of the year. But there's several reasons why those areas haven't been surveyed and got rolled over in the first place – access permission may be required or it's in a remote location, like a very difficult-to-get-to-rainy-spot in the Koolaus and all of these things go into it why it's really, really hard to complete these areas. We have recently initiated a huge access permission effort on Tantalus which is really slowing us down. It involves going door-to-door knocking on people's doors and leaving flyers which has resulted in months of effort to get permission to survey some of these acres. OISC has also had a lot of staff transition lately so we have been trying to focus on "easier" areas in the beginning of the year. Zoe and Chris Frohlich have initiated this access permission program that has become a well-oiled machine and it's now a matter of getting those acres surveyed. In an ideal world, we would want to prioritize the roll-over acres first, but that doesn't actually happen. Jane summarized that those roll-over acres may not be as high priority as the new acres that are coming up in the current year.

### **Devil Weed Summary:**

We just finished our annual contract with OANRP to conduct devil weed work in Kahuku Training Area (KTA); project year goes from October to September each year. Our action plan for this species in this area consists of completing 160 work hours per month with a target acre survey goal of a little over 1,100 acres. Our plan was to sweep once through all the hot spots within our area of KTA. Julia reminded the group that OANRP is also managing for devil weed in another portion of KTA. Originally, we were going to survey once through the sub units

numbered 3, 4, 7 & 8. But mid-year, decided to change that to survey through them twice a year and we would treat any plants encountered except areas larger than a hot spot. A hot spot is defined as an area with 5 mature plants or more. We would then survey and treat populations on the adjacent private property. We were going to be survey and map trails within the 800 meter buffer, but Jane was lucky enough to hire on or steal Taylor Marsh and he with a temporary field crew are doing that work.

Over the past year we were able to control a little over 300 mature plants. Julia pointed out that this does not mean that's how many mature plants were there, that's just how many we controlled. We controlled almost 2,000 immature plants and were able to spend a little over 1,700 work hours in this area.

Josh F. inquired whether the treatment is working; he wondered whether we have been able to finalize an herbicide cocktail for it. Jane responded that the treatment has been effective; it is easy to kill with the mixture that they have. Julia added that there have been some logistic issues that have prevented more widespread controlling by OANRP. Jane shared that they have gone and done some hot spot sprays and Matt Wicke from First Wind was able to come out with his ATVs so OANRP learned a lot about what can't be done and that was really productive. So hopefully there will be a few hot spots that we will have controlled.

Julia presented a map of the sub units that OISC is managing within KTA. She reminded the group that the map is not encompassing of the entire KTA region, just of the areas that OISC is managing; sub units 3, 4, 7 & 8 are displayed on the map. The last four management trips have started to utilize a strategic survey rotation starting with sub unit 7 and working around clockwise to sub unit 3. Previously we had been surveying slightly kapakahi and surveying areas that were oldest, as in length of duration between surveys. So after re-strategizing mid-year, we have adopted a more comprehensive and cohesive survey cycle. Julia estimated that in the next two trips we should be able to sweep through the remaining areas in sub unit 3 and then will start the rotation all over again. The blue areas on the map are the survey areas completed within this project period.

Josh F. asked if the adjacent area on the top right of the map is an area that OANRP is responsible for. Jane confirmed that it's OANRP's area. Josh F. asked for clarification of how big the infestation site is. Jane replied that it's pretty frightening because that gulch is a hot spot where the most plants are and then it goes further east off the map and gets less and less that way. Then as you travel mauka it gets less and less. OANRP is doing road surveys all across KTA as well trail surveys. The orange team crew is doing surveys around some of the outlying plants that were found on Drum Road and elsewhere. Jane summarized that it's a mix of good news and bad news. They are finding it in more places, but most of them are clustered together; however, it's a pretty daunting picture.

Josh queried whether it has been found on PTA (Pohakuloa Training Area, Big Island). Jane reported that it is not there and purposely did not add the word "yet". Julia also added that PTA has an incipient weed program where they conduct roadside surveys which will hopefully catch it.

Rob H. asked for confirmation of Julia's earlier statement that we have completed our contract. Julia clarified that the previous year's contract ended on September 30<sup>th</sup> so we are now in a new contract year. Rob asked whether OANRP is really making the call on the strategies that OISC is utilizing in these areas. Jane and Julia affirmed that OANRP and OISC have been working collaboratively in terms of the plan in the OISC areas. Jane asked Rob H. if he meant OANRP's management plan for Chromolaena in general. She affirmed that OANRP is still going after it pretty hard in terms of resources in controlling it. OANRP is still controlling it in Kahuku and Schofield as well. They have put quite a bit of effort into it, but Jane was unsure what the most realistic long term goal is for eradication. OANRP's three-year seed trial isn't totally finished running yet; so it's still on OANRP's action list. Rob H. asked if that OANRP's efforts are only on Army lands or all of Oahu? Jane said so far it's only on Army lands and there is some consultation happening, but unsure of what will arise out of that.

Julia continued with the update of devil weed not on Army lands. She briefly reviewed the history of a mature plant found in the back of Kahana Valley reported by Mashuri Waite in January 2013. She presented a map of the current population that OISC is currently trying to delimit. Thanks to some additional funding from the Watershed Partnership this year, OISC was able to start delimiting surveys in Kahana Valley for this population. Our goal was to survey within the 200 meter buffer area of the known plants. Julia pointed out the plant points on the map that were detected in 2013 when we did our initial scouting mission.

As of today, the plants controlled in this area have been a little over 1,600. The area is extremely difficult to access during day trips. The population is larger than we anticipated/hoped and it's more dispersed within the buffer area than initially thought. We are discovering that we will need to camp in this area to be really effective and efficient with controlling and surveying. The take-home message for devil weed in general is, if OISC is going to continue to manage this species on an island-wide level then we would need to do early detection surveys at high-risk sites across the island which we currently, unfortunately, do not have the funding or resources to do. Julia has put in grants in the past to survey high-risk sites but it hasn't quite panned out yet. She's really glad that we are focusing on Kahana Valley to get an idea of what it would take if we were to find more isolated populations. We don't know how devil weed got to this area and, as you can see, it's pretty far back there, about an hour hike in, and it is in an area that had previously burned. Luckily there is some bad habitat for it so hopefully it won't be too widespread. OISC will survey a 200 meter buffer area and control all plants found. Then we're going to bump out into our 800 meter buffer area, but surveying good habitat and focusing on areas more mauka which is closer to high-priority watershed areas.

Josh F. asked if there was a firefighting response in the burn area. Julia recalls talking to Fred about it while he was still at Na Ala Hele and Rob H. confirmed that there was a fire in the back of Kahana Valley that DOFAW responded to a couple years ago. Josh F. asked if there was any hao planting or anything after that. Rob H confirmed no, but that doesn't mean that it couldn't have been brought in on equipment that was used in another area. Jane mentioned that it is along the trail and it has been known to spread along trails in Kahuku. Jane said she would definitely consider trails a highly likely source of introduction. Julia added that it's very possible that someone hiking, or bike riding or hunting could have brought it in.

Jane added that in terms of numbers of plants, 1,600 is a really frightening number, but it is possible to have 1,600 plants inside an area the size of this room, particularly immatures. She did not want to make light of the number being high, but the biology of the plant is that it's a shrub, an aster; it will have those flushes of keiki and it's just part of what is expected. Jane also pointed out that the numbers going up, in the short term, doesn't necessarily mean that your control isn't effective from one visit to the next. It could just mean that you're really good at killing all the plants and grasses around it and can now see them.

Julia shared that on her recent trip to Guam, she was absolutely terrified by this plant there. It's everywhere and Guam actually has a bio control that's been released on the island. Seeing how devastating it is, even with a bio control, gave Julia a renewed energy towards getting rid of this species. Julia expressed her desire to find some time to do some early detection surveys at high risk sites to get a better understanding of where this plant is on the island, because it must be in other places. Julia also added that the bio control has been successful on Guam, but hasn't necessarily been successful everywhere it's been introduced.

### **Reprioritization of Target Species:**

To begin the topic of reprioritization of species, Julia presented a list of OISC's current target species and called attention to the color-coded handout that was distributed. The species that are italicized are the ones which will be discussed for reprioritization.

Julia presented a series of slides to illustrate OISC's method of scheduling the field crew's monthly calendar as well as what the projected 2015 calendar looks like. Julia expressed her appreciation to Jean for all of her hard work compiling the information. The first slide lists the number of days that are in each month of next year and a subsequent slide listing the number of actual work days available in each month. February is always a short month and November has many holidays.

All months have at least 19 work days and some have up to 22 days in which to schedule plant field activities. Julia's next slide depicted what a typical month might look like with the number of days attributed to each target species as a different color; then layering our typical monthly schedule on top of this calendar.

We try to always dedicate 10 days of plant target operations to miconia so we can reach that 200 ground survey acres per month goal. Four days are dedicated to managing *Chromolaena* in KTA and that alternates with three days managing cape ivy or *Delairea* in Palehua. This means that if we're camping for Delodo, which happens twice a year, we're not going out and managing *Chromolaena* that same month. We try to dedicate two days every month for aerial surveys whether this happens or not. And we have one Baseyard Day; on a Baseyard Day we do data entry and veg maintenance activities that "pay rent" at the DOFAW baseyard. We also have various trainings throughout the year at RCUH and other things like that which are accounted for in the Baseyard Day. This leaves a minimum of two days and potentially up to 5 days a month to schedule management of the other 13 target plant species we have on our list.

Julia showed an example of the Google calendar that we use for scheduling. The sample month is October which is one of the months which has 22 days available for us to work. Transposing

the color-coded species onto our October calendar reveals that we have scheduled 11 days to work on miconia, two aerials, three days dedicated to Chromolaena and we were able to tackle four other target species, one of which was wedge-tailed shearwater day. We're also scheduled to survey for Chromolaena on private lands adjacent to KTA, a fireweed control day, also have Rubus discolor, a training day and a baseyard day. This is the optimal calendar that we can have and a great job of scheduling by Zoe.

Rob H. asked if all those activities require a full crew which Julia replied that some do and some don't. Julia singled out one day as an example that has one field crew member entering data in the office while everyone else has a day off due to the camp trip. Another day has everyone on the plant field crew team attending a training except for one person who will be assisting the pest response field crew leader. Julia also pointed out some miconia days which will have two crews split out, but miconia does require all of the crew at a minimum of ten days a month to get the acres done. Julia also expressed hope that once all of the new crew members are trained up we'll be able to split out a little bit more. We'll still need to have the same amount of time dedicated to miconia next year because of all of the acres that we need to do.

Jane asked if, with the new hires coming on, OISC will be back up to full staff or higher than before. Julia responded that we are currently back up to where we were but because it takes so long to get people trained up to do the work, we are still not quite at full capacity. We have the bodies and will be back to the number of field crew that we had back 2007 and 2008 when we had two plant crews.

The next slide Julia presented was a projected calendar for 2015. The chart lists the extra two to five days in each month to work on the other plant species. The white boxes are the days within a month that are available to work on other target species and the gray boxes are work days that actually don't exist.

Julia requested the group to please note that the target species that we are proposing to suspend or drop, except for pampas grass, are listed on work days that don't actually exist. Pampas grass has been getting short shifted for the past few years as we currently don't have permission to remove known populations from golf courses in Kapolei and Ko Olina nor have we had the time to manage this species. Julia also pointed out that, not included in this schedule, is multiple-day trainings such as wilderness first aid or helicopter training. Rain days and natural disaster events such as hurricanes are also unplanned and not included. The take-home message that Julia hoped to convey is that there is literally no room on the calendar to effectively manage the amount of species we have on our current target species list. We haven't been able to go back and follow up with these species or do delimiting surveys, but they are still hanging on there and we talk about them at our monthly strategy meetings.

Josh A. asked Julia to confirm that if the species that are listed on the days that do exist are completed, would OISC meet their 2015 management goals. Julia replied that we would get really close. Julia was reluctant to say "yes" because there's more that needs to be done, especially with Chromolaena, but this schedule is what we are funded to do and not necessarily what our management goals are.



Josh A. requested clarification of the species that are listed multiple times and asked if that amount of days are needed for OISC to be able to approach what needs to be done for that species. Julia replied by citing the example of *Rubus discolor*, Himalayan blackberry – since there are 3 populations in Palolo that are treated every six months sometimes it takes more than one day to treat or survey one population. *Rubus* will be scheduled in multiple months but that's because we're managing separate populations on each day. This is typically what the schedule looks like to manage it effectively and achieve our management goals for this species. However, Julia pointed out that in the case of *Chromolaena*, we have days for it here, and again here, but these days are for private land and Kahana Valley. The schedule doesn't incorporate the need to delimit the species on an island-wide basis; that would be our management goal, but we're not funded to do it.

Julia called attention to the OED Priority Rank column on the handout listing all of OISC's target species. Alex and Danielle developed a system to rank species that they detect during their surveys or OISC or others come across when out in the field. This system is used as an initial assessment to understand the potential risk the species has here on Oahu and if OISC should consider taking it on as a target species. Julia presented a slide to briefly review how the priority ranking was developed. An initial assessment of a plant species involves answering a few yes or no questions about the species in question. First, ask whether it is a significant threat; if the answer is yes, then you move on to the next question. Second, ask if it is widely cultivated or naturalized on Oahu; if that's a yes, then you continue on. The third question is "Where is the species found?" which will lead to other questions such as "Is it on state land or other protected land where control and access will be relatively easy?" or "Is it on private land, like in the neighborhood of Tantalus, where OISC would need to initiate a huge effort for access permission and landowner cooperation". Once you've determined that the species should move further into the assessment, it's given a Weed Risk Assessment (WRA) score and any species that has a score of zero or higher continues further into the prioritization process. Alex and Danielle developed an Effect On System score (EOS) this attempts to capture species that may not have scored high on the WRA but may still have significant ecological impacts. They do this by reviewing the species behavior either in other areas where it's been introduced or in its native range. For the EOS, there are three categories that are scored with a ranking between zero and three, with the max EOS score being nine. The three categories analyzed for the effect on system score are: suppression of native regeneration, impact on agriculture and on the composition or structure of native communities. A score of 3 would be a major impact and 0 would be no effect. Next, a Weediness score is calculated by adding the WRA score to the EOS score. This number determines which Weediness group this species will be put in. Group A has the highest potential for weediness. Then you assess the practicality of control or basically how much time it would take to control this species on a single event. If the initial control cheap, and you can achieve control of the population within one day, the score is 10, which is easy. Then this species should be high priority. If the species is widespread, then the score is given a 5. Out of this, you derive a priority ranking which is a combination of the Weediness group and the practicality of control number.

So in 2011, the OED program presented Rachel with a list of target species they suggested OISC to take on. Some of the species we will be talking about today were on that list. They are important species but have been put as a low priority.

Julia pointed that this priority ranking is an initial assessment and not the final determining factor for adding new target species, as there are multiple variables that go into the decision to take on a target species. But it is a useful tool to analyze the multiple current OISC target species.

**Klambothrips myopori:**

In discussions regarding target species, Jean and Julia realized that OISC had not received an official okay from the Steering Committee to take on *Myoporum thrips* as an early detection target species. It's currently an unofficial ED target species with minimal effort going into this species. Aaron Works has been doing early detection surveys for the past few years surveying naio plants across the island and working with Rob H. and Cynthia King on a response plan. For 2015, we have scheduled less than one day a month dedicated to this target species and it's often included in LFA surveys. Julia requested feedback from the group on whether OISC should continue to do early detection surveys.

Rob H. asked what Aaron would be doing if he wasn't doing *Myoporum thrips* surveys. Julia replied that he would be doing longer LFA surveys.

Rob C. asked where Aaron is surveying for LFA and thrips in the same places. Julia responded that it is areas that are lower priority, but if he's going out to do a naio thrip survey then he places vials out for little fire ant. For example, the Koko Head Botanical Garden has naio plants so he can do two species at one time and just following up on historic monitoring. We are doing the highest priority surveying for LFA but we are able to do two surveys at one time.

Lisa asked about the possible routes for introduction of naio thrips; would it be from PTA or nurseries on the Big Island and how have those areas been prioritized. Julia replied that the potential introduction of *Myoporum thrips* from PTA was basically via Schofield or other military lands where OISC is not surveying. The other introduction areas are around ports which OISC also does not have permission to survey either. Rob H. added that there definitely aren't host plants in all of those areas so it wouldn't be necessary to do a survey there. Lisa raised the concern that it's a pretty common landscape plant, such as at the airport.

Jane added that there was non-native naio located on Schofield and the previous entomologist was doing surveys, but the position has been vacant for almost a year. OANRP has one person on staff who has done them before but Jane was unsure of what kind of regularity surveys are currently occurring or how much was communicated with HDOA. Julia added that OISC has the Army survey points and, in 2012, Aaron was in communication Army and DOFAW regarding them, but 2013 was an unusual year with a lot happening with naio thrips.

Rob H. clarified that all populations have been mapped island-wide, whether it's landscaping or natural population. Various areas were divided up among those organizations could do early detection monitoring. But that was a long time ago and it sounds like the plan needs to be revisited if we want to continue with it. Josh A. asked Rob H. whether there are DOFAW crews now doing monitoring. Rob H. said not in a systematic way. Julia said that it could potentially mean that OISC is the only one doing early detection for this species, which may be significant.

Julia shared that she was working at PTA when they found it and it was devastating. Lisa also added that it looks like the situation is getting worse and not slowing down on the Big Island.

Rob H. confirmed that they were working with Dept. of Ag and OISC on the response plan and agreed that the plan will need to be revisited. He added that he spoke with Cynthia today and they agreed that it is something they need to go over again. Especially with Army not having the entomologist position filled, they would like to find out who's doing what and who may be able to monitor other places since the response plan was created a while ago and things have changed.

Christy commented that since OISC is currently only doing this one day a month and we will need to work on re-prioritizing where monitoring will need to occur; one day a month of OISC effort is reasonable. Jane concurred especially since it does not require the whole crew for one day a month either. Julia agreed that with this species it can be just Aaron doing the surveys. He doesn't necessarily have to have a partner because the areas are generally safe. He's also going to places that OISC doesn't usually go, like botanical gardens and things like that, so there's potential that he will be able to observe other things that OISC would be interested in.

Josh A. asked whether it is only Aaron that works on the pest target species – LFA, CRB and coqui. Julia affirmed that Aaron Works is OISC's Pest Field Crew Leader which is a new position within OISC and he leads the pest crew, which is himself. We have been rotating each member of the plant crew, so they all get a chance to work with him and get trained up for when he goes on paternity leave, for example. We get other people trained to do what he does and can make sure that we can continue surveys. Josh F. added that a lot of times he's partnered up doing joint work with HDOA or with Cynthia.

Jane said that definitely sounds like there's an island-wide need for thrips monitoring. Josh A. said that he'll vote yes because there aren't many other species that Aaron is working on and one day a month doesn't seem like too much. Julia clarified that some places don't take an entire day and it doesn't take a whole lot of effort for hopefully good results.

Rob H. said he and Cynthia will follow up with Aaron and will also keep Steph Joe at OANRP in the loop for anything insect related.

Lisa asked if outreach to nurseries has been continuous or what has been done in the past. Julia clarified that OISC is not doing any naio thrips outreach to nurseries. Rob H. said that it has been done on an informal level to nurseries and whenever DOFAW does outreach there are flyers distributed. Whenever there's an opportunity, DOFAW educates people about it, but there is no systematic program for visiting every nursery. Rob H. also added that he thinks it's pretty limited in the nursery trade and not a wide spread plant that people plant; it's pretty easy to know who plants them because it's kind of this niche species.

Julia asked the group to send data points to OISC if anyone in the group is out in the field and comes across any Myoporum species, not only the native one; we'll share data with DOFAW and Army. In all likelihood, because it is a landscape plant, we don't know where all the naio is and Rob H. added that it will change over the years, since there are issues with it as a landscape plant. He shared that when they were on Maui surveying for it, a lot of people had just ripped it

up because they had problems with it so it's always going to be changing. Doing the early detection work will be ongoing because new plants will get planted and we'll have to go there and then they'll disappear and we'll have to find out where the new plants are and then we'll have to go there and it will continue to be a moving target.

### **Tibouchina herbacea:**

To begin the discussion on adding *Tibouchina* as a target species and reprioritizing, Julia presented a slide outlining the species to be discussed and the proposed actions.

For fountain grass, OISC is currently controlling two locations on the Pali Highway and 4 in the Waianae mountains. We're requesting to reduce our management area of the species to the Waianae Mountain range and suspending control of the two Pali Highway locations.

For *Piper aduncum*, a species close to Laurent's heart, we have 2 known populations one in Lyon Arboretum and one in Waimea Valley. We're requesting to suspend this species and hope that the botanical gardens can control it.

For *Cissus repens*, we're requesting to drop this as a target species. The rest we are requesting to suspend so that we can focus on *miconia* and add *Tibouchina*, which ranks higher than most of these species we are requesting to reprioritize.

Josh A. asked for specific examples of why an A6 plant is higher than a C10. Julia said an A10 species is one that we could potentially control the entire population of the species in less than one day; it could potentially be on state land where access permission would be really easy and species in the category A group has a high WRA score and also EOS score; so A is the top category.

Alex added that some of the highest threat species can end up in a lower weediness category like a B just because there is an attempt to use the WRA score where people think the higher the score, that it's a higher threat, but it's really a higher likelihood to naturalize; so looking in detail at the EOS score will give more information about impact. For example, *miconia* is in a B category even though it has an effect of system score that is at a maximum because the WRA doesn't always rank trees as high as herbaceous species. Danielle added that *miconia* is an 11 so it starts out with a lower WRA score than a grass, like *Pennisetum* which is a 26. Alex followed with the take-home message about threat and priority is the priority ranking as it relates to management action and the only thing that we say "You should definitely do something about this" are the A10s. A C9 is in the same category as an A9 in terms of how hard we should look at them. A lot of plants will fall into the same groups and have very different letters and numbers.

Josh F. asked if all or some of those species have been delimited. Alex responded by saying when the OED Ranking was developed, none of these species had been delimited yet; only by roadside surveys conducted by Alex and Danielle. Josh F. furthered by saying that not until taking it on would you even know what you're dealing with; you just know that there's a spot there and that potentially could just open that door. Jean affirmed that the next thing would be to delimit it to determine the extent of the population and then decide. Christy continued by saying

you would then need to decide whether we should begin immediately, what would be the control process, delimiting, assessment, etc.

Josh F. asked and answered his next question of which would be the ones that are low hanging fruit and you don't really know that. You know potentially that this could be the only one and maybe they are because a lot of them are nursery surveys or roadside, so if you knew that, then it would be really good to jump on those. Danielle answered that some of them are still unknown because we haven't fully delimited; which is unfortunate because some of the grasses out there are still not delimited; some of them have access issues. So we still don't know necessarily, but we still think it's low. Jane added it's not entirely true that we have no delimiting information available. We have the results of the roadside surveys and any other Bishop records, which is something; not the whole picture but quite a bit. Danielle agreed that it is quite a lot of information since there are a lot of roads on Oahu and Alex and she drove all of them.

Josh F. asked Danielle if it has come up on the radar in other places. Danielle confirmed that her radar is always out for those top ones and she has not seen them yet. Josh F. deduced that the likelihood of these being truly incipient is pretty high. Julia concurred that for some of them, the likelihood is still high. Danielle added, that *Chromolaena*, for instance, started out as a very high likelihood of ability to control because they just found one small patch of it alongside the road and that little tiny patch turned into a ginormous beast of acreage. Mandy asked whether *Chromolaena* would be one to recommend to be on OISC's target list, if Army wasn't already on board to control it, although it's not one of OISC's usual target species. Jane added that *Chromolaena* is still less acreage than *miconia*; it's just one of the highest in the ranking system. Julia furthered that OISC's current management of fountain grass is definitely more widespread than devil weed.

Moving on to *Tibouchina*, Julia stated that OISC is proposing to re-add this species as a target species. It scores out as an A6 in the OED ranking which is technically outside of the high priority on an initial level, but it does have a WRA score of 24. This species has been managed off and on since 2008, after Army's initial detection. Julia presented a map of historical management activities with the grey polygons from OANRP aerial surveys; the light blue lines, which look like streams, are KMWP surveys and the pink polygons are OISC plus partner agencies. Depicted are OISC's traditional 200 meter scour buffer area and the blown out 800 meter. OISC dropped this species in 2012.

Our current strategy related to our funding proposals is to survey the 200 meter buffer around the know population and we're going to be surveying from the outer areas inward into the population to reduce the potential for unintentional spread. Since this species has been managed over time by varying agencies there has been a lot of data collection, sharing and figuring out what has been done and what hasn't. In collaborating with KMWP and NARS, if we are going to take this species back on we're looking at it like starting from scratch and re-surveying everything in one fell swoop. So conduct a 200 meter scour OISC-style, going in and trying not to kill any native plants and just starting over with this species from ground zero, but with the resource of having this historic information. During our surveys we're going to be mapping areas too steep to survey by ground as well as areas that we are surveying with binoculars. We

also need to investigate historic reports from pre-2008 detection and also survey good habitat areas within the 800 meter buffer first.

Some challenges with this species is initially weather because this is in Poamoho in the summit area and they do get some rain up there. It's also difficult to detect in uluhe and also it's difficult to ID when it's really small because of other look alike plant species. Management by multiple organizations with different and varying survey techniques and management priorities is sometimes challenging. The pathway of introduction is unknown and the dispersal risk is extremely high and by various means. The plant easily disperses itself and then humans easily disperse it. Also the population is at least 6 years old but may be older and the seed bank longevity is currently unknown.

Josh F. recalled working on Tibouchina when he was on the field crew, but remembers it was more on new construction landscaping in Mililani Mauka and such. The group collectively corrected Josh F. that he was remembering Tiburv rather than Tihber.

Josh F. raised the concern of the difficulty of working upcountry versus backcountry and asked how involved KMWP is with the upper areas and if they are managing those certain areas that are really hard. Julia agreed and pointed out that it does take helicopter operations. She added that during the March meeting when OISC had been asked to take this species back on by KMWP and NARS because their resources were limited and they cited that OISC would be the best organization to lead the management of this particular population because of the survey skill set that the OISC crew possesses. Mary continued by saying that the people who have seen it on Maui are telling us to "just get it"; the threat level is very, very high. Various characteristics fall within OISC's sphere and it seems like the best organization to handle it with data analysis, decontamination processes, etc. Mary summarized by saying that it's not a location issue, it's a species driven response.

Josh F. asked if this is the only population on the island. Julia assented that it was the only one known and presented a reference map she found which was created in 1996 from Hear.org. The slide shows green points which are the current known population of Tibouchina in Poamoho and the pinkish purple points are the populations that were reported in 1996. In reviewing some of the meeting notes of HEAR, Julia discovered that there were several huge meetings with amazing people in natural resource management in 1995 to 1996 who all got into a room and talked plants -- where are plants, what are they doing. These three points were discussed in a meeting and placed on a map without the benefit of GPS. They were attributed to three individuals, all of whom we have now contacted and none of them remember anything of these points. So this map exists out there in the world; we don't know what it means. Julia revealed that she had a slight heart attack when Jean transposed the known population onto it because this is really close. There were literally people pointing to a map and saying here or discussing a watershed that it may be in. The top left pinkish purple point is in a watershed with the same name as a watershed on Maui with a large Tibouchina population. Julia talked to Pat Conant about this population because he was attributed to these points and he feels like there's a high likelihood that this population could be the one in Maui and something got messed up in the notes.

Rob H. asked for clarification of where that point is and whether it is a management area. Julia said that it's in the watershed called Kawainui Iki. Julia continued by saying that the particular point has not been documented other than on this 1996 map. It is hundreds of meters from rare plant points that are monitored by Army and DOFAW and it is not near LZ points. Julia reminded that group that it's not a digital data point and the inaccurate scale would make it gigantic.

Rob H. requested confirmation that the green points are from post 2008; which Julia confirmed and they are actual GPS points.

Julia referred to the center point located near an Army LZ where there actually had been written reports of Tibouchina post 1996 but no digital data was collected nor confirmation of a plant upon subsequent scouting missions. An Army staffer reported it, but the data was lost, and when they went out to look for Tibouchina, they didn't find it, but they found some look alike plants. Jane added that the point was lost because the point was on a helicopter that did not survive an accident so that data was lost. There were subsequent aerial surveys to look for it. Julia continued that the point is near a lot of areas that are actively managed by multiple agencies so there is a high likelihood that if it was there and had been there since 1996 then somebody would have seen it by now.

The third point is really close to the known population. Julia concluded by saying that these data points are opportunities for scouting surveys but wouldn't be the highest priority for surveys. It would be nice to go out and it would be pretty easy for any agency to tell us if there's anything there; the furthest one would take a little more work to get to.

Alex asked what is the status of the plants that were found at the Harano tunnels. Julia said OISC stopped monitoring that population since we didn't find any subsequent plants. We went back for multiple years because she remembers doing those surveys, but we are no longer monitoring that population. Josh F. asked for a refresher regarding that population; he recalled that there were a couple that were planted and couple that spread. Alex confirmed that it was one plant that was suspected to have come on hapuu and it was planted up there.

Julia reported that OISC, KMWP and NARS have been awarded \$75,000 from HISC to control the Poamoho population. KMWP and OISC allocated some FY14 watershed funds to towards this species so we were able to start work on managing Tibouchina this past month. We were able to survey close to 28 acres. Some areas were surveyed by bino because of the difficult terrain with a lot of uluhe, native and steep slopes. In the upper regions there was a significant amount of endangered species as well. The crews controlled 3 mature plants and 255 immature plants. Our main priority was doing the surveys so we weren't doing a lot of control for this trip. We're hoping to delimit the population as soon as possible. In addition to the \$75,000 from HISC for next year, we've submitted a NFWF proposal for \$75,000 to manage this species which would be split between the three organizations. We have an estimated first year management budget of roughly \$230,000 so if we're awarded the NFWF grant we'll have a budget short fall of \$80,000 to fully manage this species next year. The initial start-up cost is high because we have stringent decontamination protocols for this species; during the last camping trip, they came up with the idea of having multiple tabis to switch out once you get out

of the known infestation area. This would be one of the most intensive decontamination species that we would take on.

Josh A. asked if there is an idea of the recurring costs after the first year. Julia replied not really because there are so many unknowns right now. It will take time to calculate that cost estimate since we haven't delimited the population and then we'll need to gain a full understanding of effective control operations.

Josh F. asked if it would be all aerial survey that would have to be done to the right (of the map). Julia revealed that a topo map was purposely chosen to provide a clear idea of what this terrain looks like on the ground, which is steep with thick veg. Jane added that it's easier for bino surveying because it's the steepest of uluhe. Zoe shared that she was surprised at how much they were able to cover on the windward side.

Rob H. asked for confirmation of the length of the camp trips. Julia replied it is a week. Rob H. concluded that we should be able to delineate the population with the funding received over the course of the next year. Julia countered that is only if the population is not larger than we currently anticipate. If there's plants over here (on map) it's going to pop our buffer out past this map. There are a lot of grey points winding through here which are the previously controlled plants.

Mandy added some brief history from her perspective as she was working with Army when the plant was found on the trail. After that plant was found, it was decided that OISC would take the species on and it came to a point where they had done delimiting surveys and all that was known were those grey points right on the summit trail and then on the Pali side. Right before Rachel left, OISC was running low of funds and wanted to get rid of some of those excess species. I had transferred over to DOFAW by this time and was happy to take on the responsibility of checking that particular area because it was seedlings being found and it was just quarterly checks. But last year in October, on one of our weed trips, there was a huge patch found where the yellow dot is (on the map). It seems that it is dispersing down the water drainage that goes off from that site on the trail. So that patch has probably been established for a couple years; it was a big patch. That's the new situation we're at now. As far as DOFAW staff, there's just me and we just hired Jenna. We don't have the capacity to treat such a high priority target. It is a significant watershed-altering plant and it's just figuring out who is the best around to do the management. We're still happy to cooperate however we can. Jane asked if Mandy would potentially assist with field work or more with logistics. Mandy responded that she's committed to the camp trips and can continue to assist but will be minimal with the staff that they have.

Julia summarized by saying that this is the information we have about the species, we have some funding but not all of the funding we need to manage this species with all of the other target species we have on our plate as well. We are looking to add this as an OISC target species and believe it is a really good candidate for multiple reasons. It's a great partnership opportunity working with NARS and KMWP and if we do add this then we'll be able to go on and talk about the other species that we suspend to make sure that we have time to work on this.



Rob H. offered his support of adding it as a target with the caveat that if you find that it's widespread up there then it shouldn't be an OISC target. He expressed that he didn't think it should be treated the same way as miconia. It would be great if OISC could accomplish the delimiting surveys with the funding you have and come back next year with the results. Then decide at that point if it's something that should continue and take on as an island wide target. Potentially it could be in other watersheds and you don't have the resources for that. Josh A. added that it was hard to evaluate the proposal because the population was not delimited and it was not an OISC target species; so if the group feels that it should be a target species then you can see next year what type of costs will be involved. Josh F. offered his agreement with Rob H's comments. He asked if the buffers are based on bird dispersal and added that he is a little concerned about downward movement in the drainage especially if there is a high water event. It would be interesting to see if there's been any other management activity within that drainage area. Jane reported that there have been other management activities further down the drainage, but for other species. Mandy added that Chelsea of KWMP said that there is a waterfall and big pool at the very last point, and nothing has been found further down that stream so there may be a natural barrier. Julia said that after delimiting we definitely want to take a look at these other areas and do some surveys to see what's going on.

Jane offered her support by saying that it's a good target and it is an important threat. She has seen it on Maui and it's horrible. The other good thing is there's a lot of other activity in that area; Army does some work up to the north, KWMP is that area and State also. There are eyes around that aren't doing surveys but hopefully will see things and we can be more confident that people are paying attention in that region.

Julia expressed her belief that we have a stronger chance of securing other types of funding because it is such a collaborative partnership and management for a singular species in a high priority watershed than if it was just OISC managing this species or even for some of our other target species.

*By show of hands Tibber was accepted as an official OISC target species.*

Julia thanked Rob H. for his feedback and will be reviewing the species at the end of next year because we will have a lot more information.

### **Reprioritizing OISC Target Species:**

Julia reminded the group that the list of species that are being discussed for reprioritization are on page three of the handout.

#### Fountain Grass

Referring to the presented map, Julia pointed out the green points are controlled plants, but they are not encompassing of the actual current population size or distribution in the southern Koolaus.

For the Waianae Mountains, the population with the green circle is the population in the Keeau watershed that we are currently managing. It is adjacent to the valley. It's a fairly dispersed population that is difficult to manage because of the steep terrain that it's found in and the

landowner does not allow us to use herbicide and the commute from Kailua is pretty long. So it takes 10 hour days and a lot of that is driving.

We have two populations here in orange that are in the final monitoring stage. This means that plants haven't been seen in either of these population locations since 2010, and we have only one final trip scheduled for these two sites before we take it off of our monitoring strategy and we don't go back. That's really exciting.

Then, Keoki, in June, discovered a new population, here in a private residence in Waianae Valley. The plants had been in this person's backyard for several years. When Erin Bishop spoke to the resident, he said he had the plants for 15 years. Recruitment was observed outside of property boundary, along the roadside and it's right next to a bus stop.

Josh F. asked how obvious it was to see from the road. Keoki said it was spilling out of a chainlink fence; because it was slightly obscured by the bus stop and neighboring veg he did a couple of doubletakes to make sure it was Penset. Julia added that she's not sure what may have happened in this case because she has done roadside surveys in these areas, with Keoki, when she was on the field crew; we have roadside surveyed the neighborhoods in this area before. Josh F. wondered about the guy saying that he's had the plants for years; that maybe it wasn't there for that long. Keoki added that the neighborhood was recently developed; the walls were all newer than 15 years.

Amy asked Keoki if it's spreading along Farrington; Keoki responded, no, on Old Government Road.

Julia reported that OISC was able to collect three large bags of plant material and 7 recruits were seen near the bus stop. Chris Frohlich also said he saw about 30 keiki in or around the yard.

Josh F. acknowledged that fountain grass in Waianae is bad; there's a lot of other grasses so there's a lot of material out there. He recalled when he was on the OISC field crew carrying backpack sprayers on Diamond Head trying to treat that population. It's not fun giving something up especially when a lot of effort has been put into it, but you have to think of what it means for something to be incipient. There's no chance that anything's going to be done with Bellows or Diamond Head. A lot of the other spots are along transportation routes. For example, at the airport, they mow so frequently that it gets to be a couple centimeters and it sprouts a seedhead that quick because it's been habituated to do that now. Josh F. questioned what is the end goal; we want to keep it out of the Waianaes and that's respectable, but for the rest of the island, it's just not feasible.

Jane offered some insight to some of the historical points on the map. She indicated that the one up directly north of Makua in the green circle has been excavated and is gone; the one at Dillingham Airfield is gone. OANRP had a site in Kahuku, one is gone and the other two are currently under control and very, very small; the point in the very center of the island is at Schofield and that is gone. OANRP did a seeds buried trial and the seeds last less than a year so as a prognosis for eradication, this is way better than any melastome.

Josh F. said the results of the seed trials is encouraging and asked if there are still plants here and there at the Kaala Learning Center. Julia confirmed that we're not finding plants in those two

sites which is why we're taking it off of monitoring. Jean replied that it finally went down to zero and stayed that way for several years. Jane added that given that the seeds don't last longer than a year, four to five years of monitoring should be sufficient. Julia reported that the monitoring period was extended because there was a fire in the area so we just wanted to be sure. These two sites would have been taken off monitoring sooner if there hadn't been a fire.

Josh F. commented that all the ones down in town side would be way more widespread if it wasn't for the fact that it's a concrete jungle. They do pop up here and there and are probably taken out by somebody who decides that they don't want plants growing out of the sidewalk. Josh F. notices them growing all over the place and then they're not there anymore.

Christy added that it's a state noxious weed and, while we're really good at making that communication and going and delimiting, especially when it's off in the bushes instead of in people's property, we really should see what the noxious weed specialists would be willing to do about this species. Josh F. added that a lot of them are on Dept. of Transportation land.

Julia pointed out one of the two Pali Highway populations which we are requesting to drop management activities. Julia briefly described the location of the management area for the group to visualize. The site has a very aggressive houseless community present so every time we have to treat this population we have needed a DOCARE escort. We, unfortunately, no longer have DOCARE support because they have limited staffing resources so that's an issue. Julia then suggested that Danielle take on this area in her new capacity with SWCA.

Josh F. commented that when he thinks of Tibber and potentially what it can represent and the expertise of OISC, it makes more sense to go after Tibber if it's in its incipient stage versus all Penseet in East Oahu. Julia replied that we can also discuss dropping fountain grass as a species, but we didn't want to upset Jane. Jane responded that she didn't think Army would ever be able to coordinate working on the private lands. Josh F. offered that he still thinks there's value on the west side. Julia summed up that basically what we're asking is to change our management strategy to try to keep it out of Waianae Mountains.

Amy asked what the two dots down on the south left side of the map represent. Julia answered that they are controlled plants that no longer exist since there's no survey buffer around them. We would still be monitoring them if they still existed.

Mandy asked if the house with the newly discovered population is willing to let OISC come in to conduct control work on the property. Julia replied that we have already gotten rid of the plants and we would have to go back for several years to treat all the keiki. Then we'd also need to do roadside surveys within the 200 meter; the whole bit. Danielle, speaking as SWCA, asked if OISC would be paid to work on those. Julia replied that this population isn't within the buffer of the state highway and would not be covered by a SNIPP contract. Danielle asked if there are some areas that are within the state highway buffer. Julia, pointing to a roadway on the map, confirmed yes, we could get paid to survey this and OISC via Danielle & Alex did survey this last year, but you can see that the newly discovered point is further inland. Danielle added that we did find that one population near the caves. Julia concluded by saying that we could potentially get some funding.

Julia summarized that OISC will drop the Pali Highway fountain grass populations and keep it out of the Waianaes; the group non-verbally agreed.

Jane remarked that it would be awesome if DOT could take on the Pali Highway area as the thought of some of the fruit falling onto cars and dropping it along the road side is very scary. Although if the cars are going to Kailua, it would be okay because it's already there.

Julia pointed out another location that is new to OISC that Keoki, The Fountain Grass Whisperer, discovered. It has not been fully delimited, but there's fountain grass everywhere. Jane replied that Army is not suggesting that OISC take it on, but they suspect that the Makua population was brought in by hikers. There's a cave that everyone sees on the roadside and a corresponding upper cave; it's gotten incredibly popular recently. There's always somebody walking up to it. Army was doing an aerial spray and couldn't work in part of the area they planned because there were people hiking. So it really seems like it was brought in by hikers and Jane suggested that maybe whoever takes care of the Diamond Head hike and Lanikai could install signage or boot brushes or something to help inform people to not spread it to every other trail. Zoe also added that it's on Olomana too; she saw it there a year or two ago.

Julia reported that DOFAW has been tasked with doing something about the Lanikai Pill Box trail so they are in management discussions with Na Ala Hele. There's a lot happening with that trail because the residents are very upset with the trail using population. So there is the opportunity to put signage up.

Julia presented the last slide which lists OISC's current 16 plant target species to manage, not including our early detection species. We are requesting to reduce this total by 8 but add one plant target species, Tibouchina, for a total of 9 plant species to manage in 2015.

#### Piper aduncum

Piper aduncum is the only plant ranked as a high priority for OISC that we are requesting to reprioritize. The reasons for this is that it ranks lower than Tibouchina, it has an intensive management effort because it is difficult to train staff on detection and then we would need to go at least every 3 months to ensure correct ID because there are similar looking plants dispersed within the population. There's a high risk of misidentification and it's also very difficult to detect even for the highly skilled. It has really time consuming surveys because of the detection difficulty, so our 200 meter scour goes pretty slow just trying to make sure we're getting all the plants. It's also only found within botanical gardens and in theory this species could be managed by their staff. Julia offered as a side note that this species does have a significant potential to be relisted as a target, similar to what's happened to Tibouchina, in the upcoming years. We just currently don't have the time; we haven't been managing this species for the past few months either.

Jane asked to confirm that it's not found anywhere except at the two botanical gardens listed; Julia said yes. Josh F. replied that maybe just some really good outreach is necessary because it's difficult to control. Laurent added that it's hard to find; it's hard to ID. Laurent asked if

OISC would be interested in helping train botanical garden staff on OISC surveys methods so they can keep the ball rolling and replicate OISC's style of survey; Julia replied, yes, definitely.

Josh F. asked how it is spread; Alex replied, by birds. Laurent suggested killing all the birds. As a whole the group did not think it would be a feasible solution.

Amy asked if this Piper is the one that's an edible crop. Danielle replied, not this one; there are other Pipers that are. There's one called lolot from southeast Asia that is used to wrap food items and is a weed but pretty common.

Lisa asked if it is spread from seed. Danielle answered that she has not seen actual ripe fruit on lolot because they were surveying for it for a short time; but it probably spreads just vegetatively. Danielle expressed that she felt pretty strongly about aduncum; that it's a bad, bad weed. But she felt that the justification sounds good and the fact that it's in two botanical gardens that we already talked to and we're working really closely with them. Danielle said she would really like to see it come back as a target in the future. Julia agreed that it's a major weed but felt that we should prioritize catching up with our miconia surveys over this species and the others that we'll be talking about.

Jane asked if it could be added to the OISC volunteer trips at Lyon, although it's difficult to ID and she hasn't seen it in the field. She wondered if there would be any potential or if it is in a totally wrong place and not appropriate for volunteers. Jane consented that things that are hard to ID are not good for volunteers anyway but wondered if there was a way to work it in as an option. Erin commented that we are getting quite a bit of repeat volunteers. If there were a couple people on each trip, at least herself, that were able to confidently, positively ID it, then we could add it for people to look for, since we're only looking for two species now. Then even if it's a look alike it may be worth it to consider adding it to the volunteer trip. Jane asked if it's a look alike and it gets killed will anything bad happen? Erin agreed that we'd have to be conscious of what's in their collection. Julia added that part of the area where the volunteers survey is where piper is possibly located. Jane commented that it may be a way to maintain attention to it without dedicating full staff to it. Jane asked how the other species that are currently on the volunteer trips rank out. Julia referred the group to page 5 of hand out for more information. There were initially three volunteer target species, but one was removed because it does get frustrating for volunteers if something is hard to detect. Jane agreed that it's very satisfying, as volunteer, to actually get to kill things.

Someone from the group suggested tapping into the geo cache community, but Alex pointed out that we would then need to put it somewhere for them to find. Danielle vehemently opposed planting them.

*General consensus from group to suspend Piper aduncum.*

Alex suggested the possibility of the field crew keeping their eyes out for it on miconia surveys in Lyon; is it possible to look for both species within high priority areas? Julia replied that we have tried it before, and the field crew typically does notice other species if they're looking for miconia but dual species surveys aren't effective for either species. Zoe added that Piper is

really hard to ID. There has been several years that many different OISC crews have bypassed a Pipadu tree. We only recently discovered it and it was huge. This is after years of various crews going through the area; there were a few good sized plants that we missed for several years. Julia followed up by saying that is a huge contributing factor to why we wanted to put it on the suspension list, because it's really hard; hopefully the botanical garden staff will be more familiar and know what is out of place. Zoe commented that there only seems to be one core that needs to be monitored because there's always sprouts coming up. Jean added that it is in a few areas that we know of, and the garden staff can easily check those areas.

Rob H. asked if this one gets suspended, will OISC meet with Lyon Arboretum and tell them that we've dropped it and make recommendations on how they might want to manage it. Julia answered that she would really like to meet with Lyon Arboretum sometime in the next year. They have had a lot of staff transition recently so it's unclear what's happening; they have an acting director. Julia intends to schedule a meeting with whomever becomes the director, to discuss the volunteer trips, miconia and other target species. Rob H. suggested that the list handout should have another column for who/which agency we will be turning over management to. There's not always going to be somebody, but at least it would indicate an effort to pass it on.

With that, Julia turned to Laurent for discussion of the Pipadu population at Waimea Valley. Laurent asked whether OISC thought it would be a doable task for his botanical garden staff on a quarterly or annual basis; only two of them have ever seen it. Julia said that in all honesty, given Laurent's staffing capacity and available time, there's no way they could manage it at the level that OISC has been but they could be making some effort.

Danielle agreed with Rob H.'s point about Lyon not currently having a permanent director and asked if there would be the option of waiting to suspend this species until the position is filled then passing on the information. Rob H. asked Danielle if the Piper would take over the Arboretum in a year; she reluctantly acquiesced, no. She voiced her concern about that information could be lost. Jane commented that perhaps that's the best way to tell Lyon when the new person comes on, "by the way this is something you need to do". Danielle was concerned that the information may not be passed on because people have different priorities. Rob H. expressed his idea that one of OISC's roles should be as a repository for information on every species that we have targeted. So in 20 years, when somebody finds a new population of something that OISC once worked on, that information will be available. Danielle agreed that it will be available so long as databases are all the same. Josh F. summarized by saying that there may not be any on the ground action for Piper but we can still have it on the radar to speak with the new director and to still prioritize it saying, "We can't go after this right now but it's still really important and we want to bring it to your attention." So there's still an outreach management action.

Laurent asked if OISC could still be involved by sending one experienced staff out to basically lead the crew from that botanical garden in the interim. OISC would only have to give up one person, but can keep up with the methodology and data collection. Laurent would be willing to send their two staff and interns to help conduct the surveys. Julia replied that it may be close to a year from last management action that the field crew would be able to give up either Zoe or Nate

or Alex to go out. Alex added that because there's been difficulty with IDing, he would be more than willing to come help with surveys. Since you're not going to see them all that often, you don't really get trained up to get a feel for it; you may see one every two years or so. Jane added that she thought it would be a great idea because, logistically, it can be very difficult to coordinate; it simply means that surveys will take even longer than if it was the full time staff. But that's fine as long as everyone is aware that it's definitely not going to be the same attention, effort, and detail.

Julia called attention to the species listed on the table that have a designation of low priority. Julia commented that, in her opinion, OISC shouldn't have any low priority species. Going out to train Laurent's, and eventually Lyon's crew is a great idea; however, we're then relegating this species to low priority and what kind of significance does that have for our program. Jane agreed that it's a low priority species in comparison to the other things on the list but they wouldn't even be on the list if they didn't deserve attention. Jane summarized the question as, "Do you even make any progress towards eradication without giving full effort?" which is a good point.

Christy commented that ultimately it could be a semantic issue, that it would be another type of volunteer trip. It's another way of expanding your capacity or your understanding of this species while towing the line. If you're going to drop it, sending that one crew to train other people is necessary, but if it's a suspension then it's a good idea to, in some way, shape, or form, have some level continue. Not to add to Erin's to do list, but it can be just one of those outreach targets. Julia added that once we get caught up with miconia, we'll have lots of time to work on it. Jean continued by saying that the suspension idea is, "We can still do some of these but we're going to do a less than great job, so maybe we just shouldn't". If we stop for now, focus on our core species and then, once we get caught up, come back and take a look at what we can add. And we'll take the additions from this list because it has already been ranked and determined as important. Jean concluded by saying that what we're asking for is, if you can help us to vote to put these as something we don't need to look at right now.

Josh F. sought clarification about Hiptage; asked for clarification that it was dropped a long time ago. Julia replied that it had not been officially dropped. Julia added that we can discuss dropping the other species on the list, but definitely didn't want to drop Piper because of the weediness. So in conclusion, we can agree to shift Piper to low priority and not suspend; still keep it on our radar, and that radar can be just having one staff go out two or three times a year at the botanical gardens. Laurent agreed that once the botanical garden staff has been trained up to speed with the methodology it's a very small population so the potential of getting rid of it is really high. Mandy commented that at least we can say we tried.

Rob H. expressed that the goal does not have to be eradication; it can be turned over to the entity and that could mean that when it breaks out in certain areas, then they take care of it. It doesn't mean that they have to take the OISC systematic eradication protocol and duplicate that. We're saying, "We can't eradicate this so we're letting you know and can advise you on control methods or whatever but now it's your responsibility because we're not going to be working on it." Josh F. added that it's not that we can't eradicate it, it's that we can't waste the time to and Julia added that we don't have the resources to do it.

Julia summarized the take-home message -- Piper is a low priority instead of suspended and we will transition our management style for this species for next year and reevaluate at the end of next year based on what we are able to do with miconia.

#### Hiptage benghaliensis

Julia provided a summary of Hiptage; when Rachel transitioned out, she informed Julia that this species hadn't been dropped during the meeting in which a mass dropping of species occurred in 2012. It was on suspension and Rachel put it on the 2013 schedule to finish our last round of monitoring for this species. So it's technically still a target species but low priority in the monitoring stage. Julia added a bit more background, Hiptage is a liana native to India, Southeast Asia. It does occur in the Koolau's so this was a site specific control project in the Waianae Mountains. We need to finish the last monitoring trip for this species, but it requires 3 days of camping and we have not had time to complete it either in 2013 or this year. It was detected in 2000 by Vicki Caraway and controlled; in 2003, Josh Fisher and crew treated 300 mature plants. The last plant was detected in 2006; the last survey for this species was in 2010. The idea in suspending this species is that it is not a priority to take three days of camping to finish the last monitoring effort.

Josh F. asked for confirmation that it's a site specific spot and Rob H. asked where the spot is located. Julia replied that it's right above Peacock Flats. Rob H. suggested that DOFAW be asked to take it on. We could say, "Look you have this species that's too widespread on the island so we can't eradicate it. We're not going to go there anymore but this is where it is and we'd recommend you send a tech go out there every six months." Julia replied that there might not even be a plant there; there's most likely no plant. The group suggested to send Lanky to monitor the area. Jane added that it seems like it's just a matter of going back to verify there's no plants then recommending to say it's eradicated. Julia concurred and why she is proposing to suspend it rather than drop it because we may be able to say that it's eradicated, but won't be able to do that next year. Jane agreed that suspension would be the way to go since it's to that point already and it might actually be eradicated. Turning it over to someone else would be really hard logistically and we could miss out on an opportunity to claim a victory. Julia mentioned that she did not know of it occurring anywhere else in the Waianaes. Jane agreed that she had not hear of it anywhere else either, but hasn't really looked. Danielle said that she and Alex looked and they didn't see it. Julia summarized that in theory we could declare "Waianae Mountains – Eradicated". It's a great trip when we have the time for all of us to go out and do the survey because it's really a great camp spot, but probably not our highest priority for next year. Jane suggested that if it is suspended and OISC is later able to go and do that camp trip perhaps DOFAW staff can attend so if something is found, then you can tell them that this is our last trip so now you can do it.

*No opposition to suspension voiced by the group.*

#### Melinus nerviglumis, Nassella tenuissima, Pennisetum villosum

The next species on the list are a cluster of ornamental grasses – Melner, Naster and Penvil. There's multiple locations of these species. Penvil, feathery fountain grass, is actually a species of concern in Australia. We could potentially make this an outreach species cluster for the one



recalcitrant homeowner in Hawaii Kai, but we do not have time to complete delimiting surveys on these populations. The other populations of these species have been controlled; however, the one in Hawaii Kai, is where the homeowner doesn't allow us to control any of these three species that are on his property. He sort of manually removes them and he'll give us bags of plants. Julia is requesting to suspend these, but potentially ask Erin to write him every six months and say, "Hey we can come pick up your plants!" Danielle added that she would feel more comfortable suspending these species if there was a schedule for checking up on that guy. Rob C. suggested that, since he's that difficult, we should send him a letter or message every month. Julia replied that she did not think it would be wise to not give him reason to be less cooperative. It doesn't need to be six months, it could be three months and would entail sending a letter and organizing a pick up. Josh F. asks if the homeowner is difficult because he wants the plants to be removed his way. Julia thinks that he loves the plants and doesn't want to get rid of them. Danielle added he has a xeriscaped yard and it's very meticulous.

*Group agreed with suggested action of checking in with the Hawaii Kai resident.*

Jane asked to for confirmation that if OISC will be checking in with that guy, then all known plants have been controlled and one exuberant landowner is engaged in communication, but no delimiting surveys have been done; Julia affirmed.

#### Senna artemisioides

Julia is requesting to suspend the Senna species. It is a Fabaceae shrub, endemic to Australia; is drought tolerant and loves full sun. There's currently no known locations and one historic location, but the plants were presumably removed by the owner in 2013. We supposedly went out in 2013 to check on this plant and did not see plants, but the field form vanished so there's no documentation that the work was done except for a note in the outreach compendium. Danielle replied that she was there. Julia asked Danielle whether the plant was there; Danielle said, no. Julia requested that Danielle complete a field form since there is nothing in our action database regarding this. Rob H. asked if this species is in the landscape industry. Danielle replied that it is not. For this particular plant, a guy brought it over in his pocket from Arizona. Rob H. revealed that he just Googled it, and there lots of pictures of it in landscaping in the southwest. Danielle agreed, yes it's popular on the mainland. Julia proposes to suspend doing the 200 meter delimiting survey and move this species over to Early Detection. Danielle said that they actually drove the roads in a 200 meter area. Alex declared that it's eradicated. Danielle agreed, that, unless it's in his backyard and spreading all over the place, it's eradicated as far as we know. Julia asked Danielle if there's anyone on that survey that still works for OISC; Danielle said, no; that it was Taylor, Keoki and Danielle. Julia will contact or email the individuals who participated that day to gather any information can be added into the database.

*The group agreed to the proposed suspension of Senart.*

#### Suriana maritima

Julia reported that Surmar is a shrub with a coastal area habitat and it grows on beaches. The scary thing is that the fruits are buoyant and remain viable for long periods in sea water enabling it to colonize. Julia shared a cool fact that it is a monotypic genus – it's the only species within this genus. We don't have access permission for this species; there's a minimum of 4 plants and

Danielle & Alex can probably provide more information, but we checked on it in 2011 and 2013 and the owner has not responded to repeated contacts. There is a note in the compendium that Danielle spoke to someone that said the plant is very sentimental.

Danielle confirmed that this is another “pocket-plant” brought over by this lady’s husband from the Marquesas or something a long time ago. She has had it for over 20 years and it has a lot of sentimental value to her because it’s a token of her husband’s travels and he may have now passed away. Danielle and Alex did a little informal driving around looking for it and didn’t see it spreading at all, but it is definitely in habitat where it would enjoy itself; it’s similar to naupaka in the way it spreads and it’s right near coastal areas. Josh F. asked if City & County can contact OISC when the property changes owners. Julia agreed that we can monitor that. There could be potential for the new resident in upcoming years to be more cooperative. Mandy expressed concern that since the plant is so sentimental to her she may decide to take the plant with her when she moves. Danielle added that they were very cordial while talking to her to gather more information rather than tell her that the plant was bad. Alex also brought up that of the species on the list there is not a record of naturalization for this plant anywhere in the world; however, it may not be planted anywhere else. It doesn’t have a very good weed history. The reason it made the list was because the practicality of control was so high since it’s a population of one plant. We knew the introduction history and if we could have easily convinced the homeowner to remove it, it would have been an easy eradication. But it sounds like it hasn’t been easy. Since it’s that category of plant, Alex and Danielle would be happy to either suspend or drop. Josh F. added that if there’s a change in owners maybe we can swoop in there while the property is in escrow and dig it out. Julia agreed to put it on the outreach schedule to monitor the ownership of the property.

### Cissus repens

The last species on the agenda to discuss is *Cissus* which is a vine in the grape family and is in one location. This species should have been dropped in 2011, but it was kept on the rotation to control during Penset Kaala surveys since OISC would be in the area anyway. The Penset Kaala surveys will be ending as of this year and we haven’t had any success in systemic killing it. Laurent asked if it is anything like solata; Julia confirmed, yes. Laurent agreed that when fruits that big fall on the ground, it’s going to grow. Amy asked if it is on BWS land. Julia replied that it’s at the heiau. Laurent asked if it is the same one that’s at the Makiki Baseyard; no, that’s a different *Cissus*. Laurent said that Waimea has that one too and it’s very difficult to kill. Amy asked if it’s near the tunnel; Keoki answered that it’s right by the wrought iron gate thing. Jane asked if there is potential to talk with the people who take care of the heiau and the land. There is a possibility to hand it over to them since it is an actively managed heiau. Julia confirmed that OISC had been using herbicide and it’s not killing it. Keoki added that the crew had been making some headway in bringing it out of the canopy but actually getting rid of it is basically impossible. Jane asked whether Imazapyr was tried; Keoki answered that since it was on BWS land, we did not have permission to use herbicide. Amy clarified that it may not be on BWS land, but it’s quite near a water source so it wouldn’t have been approved. Laurent shared that they have been working for about 10 years on about 2 acres and it’s still there. Julia added that this species doesn’t rank out very high for our program as well. Amy asked if there is potential for the cuttings to reroot; Danielle answered, yes. Amy asked what is the recommended control method; how do you get rid of it? Danielle said that every bit must be removed, and it has

tubers. Jane asked how large the tubers are and how are they supposed to be dug out of a heiau? Keoki answered that it is in historic rock walls, so it's not possible to just yank everything out. Trying to non-invasively control it contributed to the lack of success.

Alex commented that it sounds like we're discussing threat, and distribution and ease of control which was not something that was put through OED's threat prioritization scheme; maybe we should go back to reevaluate it. We were aware of that species it made our initial criteria and kind of fits into that category of unknown threat. We've already tried control it and found it to be difficult so it's not going to get a 10; now we know a little bit about it and it fits in the drop category really well. Danielle added that one of their hesitations with the species was that it was a little more cryptic; we didn't think we had seen it, but there's a possibility that we could have missed it because it looks like other things and it wasn't on our survey list. So at the time all of these things were stacking up and we were looking for something for the crew to go after just to try it. They have tried it and it was hard so maybe we should give up. Julia replied that it was near *Cordia alliodora* that we were actively managing so it was easier to decide to go after it too.

Rob H. commented that it seems like the heiau management people should be alerted just so they don't spread it around by pulling it and disposing of the tubers in another part of the island. Julia suggest that we give them our information and then drop it from our target species.

*Group agreed.*

Alex asked for some information on *Rauvolfia vomitoria*, it was one population in Hoomaluhia Garden, which was suspended in the past but it was an A10. He recalls starting the delimiting surveys and wondered what was left to be completed. If all that is remaining is one day of delimiting surveys and then we can call it eradicated then we should add it to the list and finish that survey. Julia asked if that delimiting survey would end up being part of OED's botanical surveys. Alex said sweeps are sort of logistically difficult to do on your own. Alex was just curious as to what was left to finish. Keoki answered that he didn't think we got very far; we hit that hao bush in the marshy area which stopped progress. Alex asked if the good habitat had been completed; Keoki answered, yes, but it was only that small fraction of the buffer that we had attempted to survey. Alex commented that we should look at it in more detail to bring up at another meeting. Jane agreed that it would be a good one to discuss at a later meeting and perhaps get a UAV to fly over the hao. Jean reminded the group that the idea is that at some point, we'll catch up and look at the list of species that we've suspended and put those back on the target list. Josh F. suggested that we revisit this in the future. Jean said that it was already suspended at a previous meeting but still remains on the larger list. Jane added that a lot of the species were most likely suspended due to lack of funding and just because it was suspended in the past doesn't mean we shouldn't look at it again and bring it up with more information.

Julia thanked everyone for attending, especially those people who are on holiday today; the meeting concluded at 3:52 p.m.