

MAUI INVASIVE SPECIES COMMITTEE
MEETING NOTES
June 4, 2010

ATTENDANCE: Fern Duvall, Pat Bily, Kim Starr, Forest Starr, Randy Bartlett, Lloyd Loope, Jeremy Gooding, Chuck Chimera, Elizabeth Speith, Michael Brady, Kuhea Paracuelles, Lissa Fox, Teya Penniman, Adam Radford, Brooke Mahnken, Mike Ade, Wendy Swee, Elizabeth Anderson

ATTENDING VIA WEB-COM: Christy Martin

- The meeting was called to order by Pat Bily (TNC) at 9:15am.
- Introductions were made around the room.
- Minutes from the April 10, 2010 MISC meeting were approved. They will be posted on the website.

ANNOUNCEMENTS

- Lloyd: the report on ohia rust that I finished a year ago is finally online. It took a year to get through all the hoops. The report presents the information and concludes with the question – “What are we going to do about it?” It would be nice if there was an institutional response from somewhere. In mid-July a graduate student from Brazil, working on the genetics of the rust, will be giving a series of seminars. Teya: congratulations, this is a huge accomplishment. Lloyd: it has been just over five years since the rust was first found in the state. There has been no genetic variation found so far. This is hopeful. HDOA has a policy of visually inspecting all Myrtaceae. That is a good policy, but we know that just a visual inspection isn’t enough to stop it. Teya: we’ve seen what this rust is capable of doing in terms of rose apple.

BRIEF UPDATES

- Teya: as most of you know, we did move forward to create an Operations Manager position at MISC. Adam Radford is in the position as of a couple of days ago. He will be helping with fund raising and overall project management while continuing to oversee the coqui project.
- Teya: we anticipate receiving an additional \$600,000 for coqui work (\$400K from the FWS and \$220K from the State). We are working on hiring a temporary crew of four for the summer. This will double the size of our coqui crew for the summer. We will also have two interns in Hana this summer and one on the coqui crew.
- Fern: I have been in the field again with Helen James doing fossil work in the lava tubes that Bryon Stevens found in the Kanaio NAR. We have added a number of new things in terms of what had been in the NAR historically. Findings include two crows, a large flightless rail, the long-legged owl, a band-rumped storm petrel, a very small cave-dwelling bat, a flightless ibis, an io (new for the island), and petrels from sites that we don’t know them from. It was amazing how much was in there.
- Kuhea: on August 25 there will be a brown tree snake training workshop sponsored by the County. We will be flying someone in from HDOA in Honolulu and Fern, Adam, Lissa, and Elizabeth S. are involved. The workshop is being held in response to the anticipated military build-up on Guam. There will be two 3-hour sessions offered during the day. The training will include PowerPoint presentations and field exercises and will cover identification, potential impacts, and appropriate response. There will be an evening session for the general public at the Kahului Community Center on the same day. The daytime sessions are open to state, county, conservation, and non-profit workers. If there is someone with a vested interest, they should come to one of the daytime sessions. We are trying to be ahead of the game. We are also thinking of doing a tree snake bus poster similar to what we did for the little fire ant.
- Adam: we just did another veiled chameleon survey and we didn’t find any. We haven’t found any since 2008. Pat: that is worthy of a press release in the Maui News.

- Chuck: BIISC had a priority setting meeting yesterday. They sent us a quick request list of seven plants for WRAs.
- Teya: Christy Martin is acting as interim for Mindy until the new person arrives. The “new” Mindy is also named Christy. She is due to start at the beginning of July. Pat Chee’s position and Mindy’s are currently merged.
- Christy: HDOA is getting ready to repost the draft EA for strawberry guava biocontrol. They are posting it on June 23. We will be pulling together fact sheets and information on why we need this tool. DLNR will put out a press release.

TARGET SPECIES EVALUATION

- Teya: I drafted the definitions below for this meeting.

Criteria for Evaluation: the last time we evaluated our targets, we scored them using the New Zealand protocol. We are still using the same overall criteria: threat, feasibility of control, cost of control, seed bank, etc. The factors haven’t changed.

Definitions:

Priority Target Species: a species that meets MISC’s initial criteria for selection. Control work has moved beyond initial suppression and data supports continued control efforts. Available resources justify the continued effort.

Early Detection / Rapid Response: a species that meets MISC’s initial criteria for selection and for which initial surveys indicate very limited distribution. Initial suppression supports the feasibility of eradication and control efforts have lasted less than one year. A species can move from one list to another as we work on it.

Eradications: a species meets MISC’s initial criteria for selection and control efforts have successfully removed all known individuals. The seed bank has been exhausted or continued systematic surveys are expected to detect new plants within the known infested areas. We are not addressing reintroduction in this definition. This is always a likelihood and we could never really call anything eradicated if reintroduction is considered.

- Teya: we will switch back and forth between the PowerPoint and maps during this discussion. The maps show the footprint of each target. Brooke: we have created a buffer based on how the species is dispersed - Wings (birds), Wind, and Other (includes by foot, equipment, planting, etc.). We have put a larger buffer around mature plants and a smaller buffer around immature plants. We do need to buffer immature plants as it is likely there would be more than one. Most immatures are eclipsed by the mature buffer. The wing vector was looked at based on a number of studies. All the buffers are probably on the low side of reality. Fern: it would be good to look at specific bird home ranges and factor that in. Teya: when you look at the maps, you will see that even with these reduced buffers we aren’t coming close to covering the entire buffer. One thing we want to do better is to have more clearly defined objectives for a given year and then see how we did. The map data doesn’t include roadside surveys or multiple species/incidental surveys.

<u>Buffer Areas (meters)</u>		
<u>Vector</u>	<u>Mature</u>	<u>Immature</u>
Other	250	125
Wing	500	125
Wind	1,000	250

Priority Target Plants

Island-wide (* = on target for eradication)

1. Fountain grass (*Pennisetum setaceum*)

- Teya: this is a success story. We are seeing a steady decrease over time. Mike: central Maui has been the same for a long time. We control one or two plants each visit. Occasionally we miss one and it starts over again. It is very hard to find in small numbers and mixed with other grasses. The Makena site is mostly gone. We found mature plants at the Waiehu water tank. We are concerned about seed movement because the same person maintains all the water tank sites using a weed-eater. As a result, we are in the process of visiting all the water tanks. We are still rappelling at the Kahakuloa site and we find ~ one plant a year. Pat: there is always a high chance of reintroduction with fountain grass. Teya: heavy equipment gets moved here from other islands. We are getting adequate coverage.

Summary for fountain grass

- ◆ steady decline in the number of mature plants
- ◆ visits per site = 3-5 per year
- ◆ footprint: 5,528 acres in 2010
- ◆ wind-dispersed: buffer = 1km for mature plants

2. Ivy gourd (*Coccinia grandis*)

- Teya: the area created by the buffer is huge and is much more than we have searched. The footprint on the map is based on the buffer. We are seeing a significant decrease. Lloyd: in the past I questioned whether it is worth doing ivy gourd. How much does MISC spend on ivy gourd? Teya: it has been ~20% of our total effort in the past. Lloyd: the amount spent per year is really meaningful as far as objective criteria. It would be nice to have a dollar figure for each species. Teya: I would like to have a summary for each species that includes status over time, effort, expenditures, our objectives, and plans for the next year, etc. Kuhea: it would be nice to compare that information for the other ISCs. Teya: the data is standardized, but a uniform cost calculation is difficult to standardize. You need to allocate administrative costs, data costs, etc.
- Fern: road surveys missed the plants in Lahaina. Your data could help you refine the buffer. Is your data taken in a way that would allow you to refine your buffer over time? Teya: we address that with miconia with the “no-need” layer. Fern: maybe you only find ivy gourd when it is already a major vine. Forest: one lesson we have learned is that when doing road surveys on actively controlled species, we are going to miss some. Teya: the take-home point is that it is important to have both sets of data. Elizabeth S.: you need a search efficacy measure that could be factored into the buffer calculation. It is hard to know what you have missed. You can look at hits in the buffer areas and use a statistical model to help refine the buffer. Brooke: if you are controlling something, it may not be there on one visit but it may come back up. Did you miss it, did it re-sprout, or did a node not die? It would be hard to make assumptions about efficacy. Teya: there are models out there already. One of our measures of success is that the number of mature plants is decreasing. It looks like that is happening for ivy gourd. The hours per acre surveyed has decreased.
- Lloyd: the biocontrol was considered a success. Is the biocontrol not taking care of it on the islands where it was released? Teya: it is a success at keeping it in check but not controlling it. Pat: the fact that ivy gourd is dioecious adds complexity. Teya: we consider a plant mature if there is any reproductive part present. Mike: we also track male vs. female plants. Most places if there are mature plants and we revisit the area, we already know if they are males or females. Teya: it is taking us a lot less time to cover the acres than it used to.

Summary for ivy gourd

- ◆ number of mature plants is decreasing
 - ◆ time per acre surveyed is decreasing
 - ◆ visits per site range from 3-6 per year
 - ◆ bird-dispersed
 - ◆ footprint in 2010: 7,067 acres
- Elizabeth S.: you should factor in where it is not found. Brooke: you are talking about habitat modeling. That is very complex. We can only be so specific. We go back to known locations as a basis for how much of the buffer is covered. Teya: we need to go beyond our known sites and beyond road reconnaissance. Forest: you can start with a small buffer and then expand as resources are available. Pat: sampling the far extent of the buffer is a good strategy, especially after a wet spring. You can't cover the entire buffer, but doing the extent of the buffer is a good sampling strategy. If seed suppression is good from control efforts, long distance dispersal by birds is less likely. Mike: our primary strategy is to eliminate seeds. Teya: in conclusion for ivy gourd, we will carry on with our current strategy and possibly refine the buffer based on habitat, terrain, and known reproductive status. Brooke: one note on the buffers is that they are based on all plants over time which makes them as large as they can be. We need to keep that in mind. Teya: we will include the known literature information in the summaries we are making for each of the target species.

3. Pampas grass (*Cortaderia spp.*)

- Teya: we are doing a lot of aerial work this year. Elizabeth S.: why are there aerial surveys outside of the buffer zones? Brooke: we can't fly in residential areas and we are looking at potential habitat outside of the buffer zone. The south slope data includes multiple species work done by the National Park. We included it in our data set even though it is outside of the buffer zone. Teya: the numbers are still high. We are seeing significant decreases in Honomanu. Brooke: so far this year, there are a lot of immature plants and far fewer mature plants. Elizabeth: we are hitting pampas hard this year given we have a generous helicopter budget from the park. This will likely not be the case in future years. Forest: is the population delimited? Brooke: in general it is, but on West Maui we are finding new sites. The east is fairly well delimited.
- Kuhea: can people still buy pampas on the Internet? Teya: yes, *Selloana* can still be brought in. Pat: it looks like the residential area has shrunk. Teya: the crew is doing back-to-back weeks in Honomanu and we did an eight-day drop at the beginning of the season. We are using a more systematic grid system for the wildland areas this year. Jeremy: with the increased effort this year, you will need to deal with the numbers in a manner that doesn't throw your graphs off. Brooke: we are doing pretty well covering the buffer aerially. The areas we are missing are residential. Fern: there will be more fencing and ungulate removal on the south slope and the ungulates may be what is keeping it in check in that area and making it hard to detect.

Summary for pampas grass

- ◆ number of mature plants is not decreasing yet
- ◆ seeing decreases in Honomanu
- ◆ hitting pampas grass hard this year
- ◆ time per acre surveyed is fairly constant
- ◆ visits per site range from 1-3 per year
- ◆ wind-dispersed = larger buffer (1 km)
- ◆ 75,912 acres in 2010

4. **Miconia** (*Miconia calvescens*)

- Teya: in 2009 we covered a lot of territory on the ground. When you add in aerial work, everything under the buffer was covered. The miconia buffer is ~19,000 acres and we are doing a really good job of covering the area. Elizabeth S.: are you finding new locations? Jeremy: we found one in Kapipi Gulch in the last 12 months. Also one mature tree near Waimoku Falls by the Park. We evidently missed this during reconnaissance. There were several hundred immature plants below it. The tree was way above the falls at the top of the cliff. We don't find significant new populations often. Three years ago we found a new population by Wailua. In the last 7-8 years we have only found four significant new populations. These are outlier mature plants rather than huge populations. Teya: I consider that to be a success. We have expanded the aerial units to make sure we are getting thorough coverage. Jeremy: FY11 will likely be a very thin year for helicopter funding.
- Teya: on the ground we are seeing a decrease in the number of immature plants and the number of mature plants has gone down since 2003. There are still a couple hundred mature plants being found every year. The outlier areas also show this dropping trend. We have seen an increase in mature numbers for aerial as an artifact of increased work in the core. Forest: what is the maximum elevation for miconia on Maui? Jeremy: close to 3,000 feet. Kuhea: what will happen after April with no aerial funding? Jeremy: three years ago when we went five months without helicopter work it took a year and a half to catch up. Aerial search is a coarse method and we know we miss plants, which is why we have to repeat. If we miss a cycle, we will miss plants and they will seed. Kuhea: what is the minimum funding needed to maintain the status quo? Jeremy: \$350-400,000K per year. Lloyd: it is clear we need biocontrol. Otherwise the situation is pretty grim. We need to lobby to encourage biocontrol. There are things in the pipeline, but politics are causing delays.

Summary for miconia

- ◆ number of mature plants is not decreasing yet
- ◆ coverage by ground and air is good
- ◆ footprint: 19,632 acres in 2010

5. **Rubber vine** (*Cryptostegia grandiflora*)

- There are still recalcitrants; otherwise rubber vine would be eradicated.

6. **Cape pittosporum & Victorian box tree** (*Pittosporum viridiflorum* & *P. undulatum*)

- There is a huge gulch of *undulatum* in Kula. Mike: *viridiflorum* is easy to deal with, but people don't want to kill *undulatum*. It is a nice hedge plant. Fern: *undulatum* is primarily moved by gravity, but a bird could move it. Teya: we should talk about this again at a future meeting with more data available.

7. ***Water wattle** (*Acacia retinodes*)

8. ***Osage orange** (*Maclura pomifera*)

- We are still dealing with root suckers. There is only one location.

9. ***Common mullein** (*Verbascum thapsus*)

- We are still dealing with the seed bank. We need to get the Ulupalakua point from Elizabeth S. The seed bank is long lasting.

Limited Geographical or Ecological Areas

1. Giant reed (*Arundo donax*)

- We are only controlling arundo in high value wetlands. It doesn't vector by wind or wing and as a result has a very small buffer.

2. Cat's claw (*Caesalpinia decapetala*)

- We are only controlling cat's claw upcountry in Ulupalakua. There is a seed bank. There was one plant behind the old mill. It is mixed in with other vegetation.

3. Parasol leaf tree (*Macaranga tanarius*)

- This tree is only a target on East Maui. It is also a nursery contaminant. We are currently controlling it at one nursery.

"Eradicable Species"

1. Queensland silver wattle (*Acacia podalyriifolia*)

- Mike: there are only two plants that we know of. One is at Bob Hobdy's house and there is one on Waipoli Road. We don't have permission to control the Waipoli Rd. plant. We haven't seen keiki. Kim: it is known to spread in Australia. *Acacia retinodes* seems to spread more here. Pat: it does produce viable seeds, but rarely naturalizes by seed. Because we don't have an animal vectoring the plant away from the seeds, it doesn't seem imminent. How much of a threat is it if there is no localized recruitment? Lloyd: Mike should talk to Bob because he knows how much it has spread in Australia. Teya: if we can get permission, we should go for it. Otherwise, we should take it off the priority list. (Update: Forest & Kim Starr checked the *Acacia podalyriifolia* on June 16, 2010 and found several seedlings in the area near the parent plant. Previously, no seedlings had been reported.)

2. Bully tree (*Sideroxylon persimile*)

- Teya: bully tree is present in a number of locations. The Ulupalakua monster would take a lot to get down. Forest: it is fairly widespread from Baldwin to Giggle Hill. Teya: we should take it off the list and leave it for the Ranch to control. It is no longer incipient.

3. Wax myrtle (*Morella cerifera*)

- Mike: we can't find the site. Forest: we will hook up with Mike sometime and go find it. Teya: there is only one known on East Maui. Randy: Hank got most of them from West Maui. We haven't seen much recruitment. Teya: it sounds like a follow-up survey in that area would be worthwhile. Elizabeth S.: this could be an island-wide eradication. Chuck: it scored really high on the WRA and it is widespread on the Big Island. If there is not a lot on Maui, it would be really worth going after. Teya: we will follow-up and do West Maui surveys.

Early Detection Species (working on less than a year)

1. Spanish heath (*Erica lusitania*)

- Teya: there was one site and we were working on it. The crew found a new site found about a mile away, during a pampas survey. Should we move this to the priority target list? We said before that we needed to do delimiting surveys. Pat: when you did road surveys on Upper Kimo, could you see into yards? Upper Kimo would be a suspect area for cultivation. Teya: the Starrs could do the delimiting surveys as part of the Forest Service project. Fern: the Kula Experimental Station is importing and selling *Ericas*. It would be nice to get a list of the ones they are selling.

2. Milk thistle (*Silybum marianum*)

- Mike: we were too late last year – the plants had already bolted. This year we have been on it since January. Forest: we checked out some leads and we haven't found any new road survey locations. Mike: we don't know what the seed longevity is in Hawaii. I have seen ~4 years in the literature. Forest: apparently it has been on the island for a long time. Teya: we should bump this up to the priority species. Lissa: we did a story on it for the Maui News and it is in our Early Detection booklet.

Species “Eradicated”

1. Ruby salt bush (*Enchylaena tomentosa*)
2. Bingabing (*Macaranga mappia*)
3. Asian melastome (*Melastoma septemnerium*)
4. Red melastome (*M. sanguineum*)
5. Jerusalem thorn (*Parkinsonia aculeata*)
6. Downy rose myrtle (*Rhodomyrtus tomentosa*)
7. Yellow Himalayan raspberry (*Rubus ellipticus*)

OVERALL PRIORITIES; FUNDING / STAFFING IMPLICATIONS / DISSCUSSION

Overall Allocation of Personnel Hours (2009)

Plants:	80%
Vertebrates:	16%
BBTV:	4%

- Teya: we promised to map *Salsola* and the Starrs included it on the roadside surveys. We should provide that information to William and Mae. Fern: it will shade out the fireweed eventually. Lloyd: it is a biocontrol target in California and that may be a promising idea for Maui. However, we do have a native *Chenopodium*. Teya: *Salsola* is an HDOA biocontrol target. Forest: it has really spread with all the abandoned pineapple land. Teya: MISC needs to have a response for Mae. We looked at it as a possible target in 2000, but it was just too widespread already. It is a valid criticism that maybe we aren't as ready to jump on an agricultural weed as a natural area weed. It is way too late now for this one. Pat: I brought in a voucher to the Farm Bureau when I first saw it in late 1990s or 2000. We did outreach to the Farm Bureau at the time. Teya: it points to the question of responsibility. Kuhea: in their mind the ISCs were created to support agriculture. We need to work together. There should be a conversation regarding who is responsible for what. Forest: could we have fact sheets on things like *Salsola* that we aren't dealing with? Teya: the last all ISCs meeting focused on how HDOA and the ISCs can work together. As part of the CGAPS strategic plan there were a number of specific actions identified. MISC will put together a workshop on this topic in the near future.
- Pat: we need a front page article on biocontrol to help educate the public before the EA comes out. Teya: strawberry guava was high profile. The public portion has been done. The rest aren't going to generate so much controversy. Lloyd: the gall wasp biocontrol is working and hopefully that is going to help with the overall image. Kuhea: we need to get the success stories out especially on some of the older ones. Forest: it would be nice to have fact sheets with information on the status of various organisms. Lissa: that was discussed at an Outreach Working Group meeting recently and Jackie put together a nice flyer

NEXT MEETING: September 10, 2010, PR / Education & Outreach and Early Detection