

**Meeting Minutes**  
**MAUI INVASIVE SPECIES COMMITTEE**  
December 7, 2007

ATTENDANCE: Kuhea Paracuelles, Jeff Herod, Pat Bily, Steve Anderson, Randy Bartlett, Lloyd Loope, Sean Birney, Sam Aruch, Mindy Wilkinson, Jeremy Gooding, Chuck Chimera, Brooke Mahnken, Mike Ade, Teya Penniman, Elisse Deleissegues, Adam Radford, Sam Akoi III, Tanya Vasquez, Elroy Krause, Chad Smith, Floyd Helekahi, Imi Nelson, Kanamu Tau'a, Elizabeth Anderson

- The meeting was called to order by Randy Bartlett, ML&P at 9:15am. Introductions were made around the room.
- Minutes from the 10/12/07 meeting were approved. They will be posted on the website.

ANNOUNCEMENTS

- Elizabeth: the Sig Zane miconia T-shirts are still available for \$10/each.
- Teya: Joylynn had her baby and has been on maternity leave for the last 2 ½ months. She will be leaving her position at MISC to stay at home and be a full-time mom. She will be working at home for the Fishpond Association. Joy will be very much missed. She is in the office for a couple of weeks to wrap things up. Her last day of work will be December 14. We will begin recruiting to fill Joy's position immediately. Please pass the word on to any potential candidates. The announcement will be sent to the MISC list when it is available.
- Kuhea: I am collecting testimony for a plastic bag reduction bill. The idea is to get the big grocery stores to use compostable or reusable bags. There will be a gradual phase in. Stores earning over \$250K annually will have a period of time to comply. Smaller stores will have a five year period. The County spends a substantial amount of money to collect the bags that blow around in the landfill area on a regular basis. I would like to have letters in by December 15. Teya: is this something that MISC should support? It is outside the general scope of our mission. The subject came up at a recent Maui Conservation Alliance (MCA) meeting. If there is an issue that we can all support together, a letter will go out from the MCA. If not, then individual agencies would send in their own letters. Kuhea: even if it is not within your mission, if it is good for the environment, it is worth supporting. Lloyd: it really doesn't have anything to do with invasive species, but on an individual basis it is something we should support.
- Teya: MISC will be having a post-holiday party on Saturday, January 5 at 5pm at Steve & Elizabeth's house. Please join us and help start the New Year right!

BRIEF UPDATES

- Teya: we have hired Dave McPherson as a temporary on the plant crew. He is currently back-filling behind Carl and we hope to convert him to a regular position soon. Carl has started a six month round of chemotherapy. He appreciates calls, visits, etc.
- Teya: as everyone knows MISC is housing Chuck Chimera, the new WRA Specialist, in our office. There will be an additional WRA Specialist that may also be housed here beginning in February. We also had a request from the Fish and Wildlife Service to house an Endangered Species Specialist. I am looking at what it would cost to put in a septic system on the property since that currently limits our capacity. Randy: what about composting toilets? Teya: we would like to add additional yurts for office space and possible intern housing.

## **Funding**

- Elizabeth: our incoming funding looks good, but for the moment we are just about broke. There have been delays with the State/HISC/USFS funding (\$658,000) and we are currently operating off of advances and last year's DWS funds. Other incoming funds: OED general @\$550,000 (\$300,000 earmarked for miconia), OED BBTV @\$50,000, OED coqui @\$250,000, DWS @\$250,000, and NRCS @\$75,000. Kuhea: OED is anxious to get the 2008 proposals. Elizabeth: we have also been awarded two grants through the HISC: \$75,000 for a fixed-spray system to control coqui in Maliko Gulch and \$6,200 for printing the early detection booklet.

## **Public Relations**

- Pat: the Sunday Maui News article on coqui frogs was great. Kudos to Adam. Teya: the reporter learned about our program through a presentation that Fern gave for the Pacific Whale Foundation. Pat: I enjoyed the article. It was front and center and it was told in a way that encompassed the Maui community at large. It really showed that the community doesn't like them. Teya: the latest MISC newsletter, focusing on miconia, is out. The spring 2008 edition is already underway and will highlight early detection and eradicable species. Elizabeth: we have had an exhibit on invasives in the Hawaiian Airlines terminal for the last three months. The airport invited us to leave the exhibit up for another three months and we moved it to the central rotunda area on the way to Aloha Airlines. They are interested in having a new MISC exhibit when this one is removed in February.

## MICONIA

### **Miconia efforts elsewhere**

- Teya: there were a number of presentations at the Perth meeting that touched on miconia directly and indirectly. Mindy, Lloyd, and Chuck were all at that meeting. There were papers or posters about the impact of cyclone Larry and the impacts of disturbance after a major landscape scale event. Lloyd: there were several talks from Queensland where they have had miconia for at least 20 years. They do some on-the-ground control and they have a research team focusing on miconia and other invasive species. They had a cyclone that went through in 2006 and hit the area where there is miconia. They are monitoring the response to the storm. There really isn't a take home message at this point. Mindy: the area is rain forest and they do have feral pigs in the area too. After the cyclone, miconia did best in areas where there was bare mineral soil. A lot of the species they were tracking died after the cyclone, but only one miconia plant died. The cyclone seemed to benefit miconia. They tried to model the spread. Local wind and gravity were significant. Lloyd: there is also some research being done on how far miconia seeds spread from a tree. Mindy: the buffer they estimate is within what we are currently using. Teya: there were a limited number of species with the potential to invade after disturbance. Proximity to artificial disturbance also increased abundance. Lloyd: miconia is targeted for eradication, but they don't even know the location of all the plants. They are still finding trees in town. Chuck: they are concerned, but not as concerned as you would think. They have a lot of bad weeds and Queensland is large.
- Teya: there was a poster on *Melastome* dispersal in a tropical rain forest that Lloyd pulled together. Jeremy was the senior author. It is posted here at MISC if anyone would like to see it. Lloyd: we need to document our success. There are a lot of weeds in Australia. Most of the country is dry so miconia only threatens a small area. Teya: there was a poster from the Big Island by Anne Marie LaRosa. They looked at suitable habitat for miconia on the Big Island. They prepared two maps of potential distribution. One using rainfall and elevation data from Tahiti and the other using the GARP model which looks at current distribution and environmental gradients (elevation, slope, precipitation, and windwardness). In Hawaii, miconia may be limited to lower elevations (2,500 to 3,000 feet) than in Tahiti (<4,300 feet) and may be expected in drier areas (60" in Hawaii compared to >80" in Tahiti). On the Big Island, miconia is occupying the full range of suitable habitat in some areas and in other areas it is not occupying the full range. It is interesting to look at different tools for determining suitable habitat. The Big Island plans to focus on outliers and limiting the population.

- Teya: there is not much happening on the other islands with regard to miconia. Molokai has completed full aerial sweeps. Pat: it is good that Molokai is being proactive. What premise are they operating on regarding the path of miconia? Sam: they mostly started in places we would expect it - Wailua, Halawa, etc. and hiking or hunting areas where people might be coming from Maui. Teya: does it make sense to continue aerial surveys on Molokai? Our current goal is full coverage once every three years. Lloyd & Steve: yes. Lloyd: they have been working on it on Oahu as long as we have. Mindy: there are no known trees on Oahu. We did find one flowering tree this year. If funding is limited, you could probably stretch the resurvey interval for Molokai to longer than three years. Steve: I think it is important to maintain the interval since they are using a multiple species concept. Sam: they looked for unusual stuff. Mindy: it is good if you are bundling miconia with other species. Sam: we found a variety of unexpected things. Lloyd: there is miconia in other areas of the world. In New Caledonia it is out of the bag and they won't be able to get rid of it. French Polynesia has a good education program, but there is danger of spread to the Marquesas Islands. Miconia is supposedly in Sri Lanka too.

### **Miconia Regional Meeting – 2008**

- Teya: there has been talk about a regional miconia meeting for the entire Pacific region, not just Hawaii. The first (and last) such meeting was in Tahiti in 1997. It is time to do another one - perhaps on Maui. There is some funding available from FWS and from HISC. Mindy: about a year and a half ago FWS rebudgeted for additional projects that were not regular field work. I proposed getting more facts on what miconia does. We don't really have the published information to back up what we say. We tried a pulse project concept where you get a group of people together and try to answer a bunch of questions all at once. We kept coming up with water and canopy cover. We decided that this wasn't an appropriate use of pulse analysis. Kim Barnett and Ryan Smith worked to come up with a longer term strategy. We can't just go to Tahiti and answer all the questions. We have \$200,000 to work with. Tom Giambelluca will work on answering some of the hydrology questions on the Big Island. The conference will take the place of the pulse project and help us to come up with ideas regarding what we need to do next and what we need to know. We need to determine what data we need in order to replace our assumptions with actual answers. Burnet and Smith can go to Tahiti afterwards for follow-up.
- Mindy: The original proposal was for a conference in June 2008, but we may want to bump it back a bit. Travel is difficult to arrange and we want to be sure to include the Australians and New Caledonians. Lloyd: I was the one that suggested the conference. It is a lot of work to put on a conference, but we need to actively tap the knowledge of other countries and share knowledge about what we are doing. Teya: the focus of the conference would be status and sharing. Mindy: I think three days and field trip included would be about right. We want to cover biology, economics, etc. Teya: MISC is willing to help organize such a conference. I think we will need a year lead time in order to figure out everything. We have made some initial inquiries. Pat: is the Big Island ruled out? KMC can accommodate a lot of people. Teya: there are details to be worked out. The international ant conference cost ~\$110,000. Kanamu: the Keanae YMCA can accommodate large groups and there is a range of accommodations. Lloyd: it would be attractive to have it in or near Hana. Teya: please let us know if you are interested in helping us plan. Jeremy: it would be nice to get a bunch of Blue Hawaiian helicopters and provide over-flights. Kuhea: put in a proposal and maybe the County can help. No guarantees.

### **ACTION ITEMS:**

- *Establish a planning committee for a 2008/09 international miconia conference (Teya & Eliz)*
- *Put in a funding proposal to the county for support for a miconia conference (Teya)*

## Management Units Update

- Teya: we have recently completed revision of the miconia management units. The units represent well defined areas we want to cover completely either by ground or aerially. They are repeatable, defined areas. We had existing management units, but the ground units needed some work. Jeremy, Brooke, and Elisse have worked together to address issues with the existing units. Brooke: the old units have not all been covered multiple times. We truncated some units and added some. Some of the units were just made opportunistically because we worked in an area. We tried not to alter the old ones. Wherever possible we used natural boundaries and in some areas the boundaries are TMK-based. We covered all the area where there is miconia and included the point buffers. Jeremy: just because there is a defined management unit it doesn't mean it will get swept (i.e. Hana ranch or areas that are covered via aerial operations). Brooke: we have a site-based data system. The units are important for structuring the data. We use different units for aerial management. The aerial units only changed a little based on the no-fly zones. There is some overlap between ground and aerial units although we have minimized this where possible. In some areas, like where there is high canopy, we need to cover both by ground and air.
- Teya: the total area we need to cover aerially is 53,762 acres. Our old ground area was 8,349 acres. The new area to be covered on the ground is 13,411 acres. There is an overlap of 6,600 acres between aerial and ground. Brooke: two of the largest units are for data structure only. They are areas we won't cover again. Jeremy: it has taken some time to refine the units. They make a lot more sense now and they more closely reflect what will actually be covered. This is a big step forward towards a better long term plan for miconia. Our aerial units' acreage will expand because we are adding a 500 foot elevation gain. The current units only go up to 3,000 feet elevation and they will be extended up to 3,500 feet. Randy: are the aerial units defined by elevational contour and streams? Jeremy: yes, gulches or streams and ridges. Teya: potential suitable habitat goes up to 5,000 feet and we aren't looking that high.
- Teya: we've had very good ground coverage in peripheral areas around Haiku this year. These areas took a lot of work for permissions. Both Adam's and Mike's crews worked on the peripheral coverage. Mike: the weather is lousy a lot of the time and we need EMI permission every time we go. Teya: this was a very important accomplishment. Adam: we do have gaps in coverage because of permissions. Luckily some of these gaps are in pastures. There are also some areas of unworkable terrain. Brooke: Adam swept some areas by boat. Mindy: I processed my first warrant last month for access for a day gecko area. It is going OK so far, but this is definitely gray territory for DLNR.
- Teya: our acreage covered for the last three fiscal years is: FY05: ground = 3,110 acres, aerial = 30,602 acres; FY06: ground = 4,195 acres, aerial = 54,200 acres; and FY07: ground = 2,938 acres, aerial = 44,664 acres. On average, we cover 3,400 acres per year on the ground. In order to cover all the ground units every three years, we should be covering 4,500 per year. We would need an additional ground crew in order to cover that much. Another five person ground crew would cost ~\$300,000 per year. Sam: has West Maui been surveyed for miconia? Teya: we have pretty good coverage of West Maui via our pampas flights. If there was miconia, we would see it. Pat: why is the 2007 ground coverage low? Teya: that is a function of the terrain we were in and the density of the miconia. Jeremy: this past year we have focused on some high density areas adjacent to the core. In 2007, we found more mature plants than in 2006 but less than in 2005. We started getting complaints about helicopter noise from a Hana resident and as a result we increased the buffer for her residence to 400 meters. We have added some high density areas to ground units and that is bulking up the number of mature plants treated. Pat: I am impressed with the tightness of coverage in the Huelo area. You guys are doing a great job.

## Public Relations

- Teya: we do have some public relations issues in the Nahiku area. Joy will be continuing on with us on intermittent status and will help us pull together a community meeting in Nahiku. There are some misconceptions in the community regarding our staff and what we do. We want to give them a chance to express their concerns. Tanya: you should take permission forms for them to sign at the meeting. Teya: we haven't used permission forms in the past, but that is a good idea.

## Resource Needs

- Elisse: transportation continues to be an issue. Teya: we have been in a bit of a crunch for vehicles. The DOFAW “dinosaur” has been in the shop for a long time and Jeremy had to turn in one of the Federal trucks that we had been using in Hana. Jeremy: I will be getting a new truck in March. It can live here and we can redistribute from here to Hana. I will need to use the truck sometimes myself.
- Pat: what about the idea of bulldozing the core? Teya: we did put together a proposal to NRCS, but it didn’t get funded. We will try again. We looked into renting and contracting options. Mindy: what about DOT? Jeremy: they don’t have any dozers out there. Mike: there is a guy who leases four acres of the core and he is willing to work with us. Sean: what about boom spraying? Pat: you could defoliate the core. Jeremy: that would work. It would need to be repeated every couple of years and DOFAW would need to buy in. Pat: from an IPM standpoint mechanical control, involving heavy equipment or animals, should not be ruled out. Tanya: bringing in animals can lead to a lot of issues. Pat: fencing would be a big issue.

## Priorities

- Teya: we have the units and we know that with current resources we can’t hit everything we want to in a year. Brooke is creating a model to apply to existing units to help define where the priorities should be. Intuitively high priorities would include areas close to high-value natural areas, areas with mature plants, and outlying areas. At this point we really have several cores. To determine outliers we need to factor in the distance from various cores. Time since the last visit also must be factored in. Brooke: it is a two step process. First we define priority based on biology, natural areas, etc. Then we look at when the unit was last visited or if it is a place we have never been. Teya: we have been covering what we need to cover aerially. The prioritization is more important for ground work. Brooke: we considered accessibility and practicality in how we defined the ground areas.
- Steve: have we tried to assess the aerial units as to what we think is detectable from the air with canopy height? Jeremy: do you mean how much potential area is missed via air? Steve: yes, below the canopy. We are assuming that the air control is adequate for the high elevation areas to protect natural areas. I am not confident that is good enough. Elisse: if the canopy is high, it is valuable to go in on the ground but you must take into account how hard it is to get there. If it is close to a natural area, we will go regardless. By covering via both ground and air we can be confident. Teya: it works the other way too - we miss some by ground. Elisse: the rappelling has been a valuable tool. We have been able to get to some areas that we have never been able to do before. Adam has been coming out to Hana regularly to run rappelling operations. Jeremy: we could get an idea of how much we are missing via air by backtracking kill numbers from the Puu ki area that has been covered twice. If we backtrack control dates and compared to the two ground sweeps, we could see how many we missed using existing data. Teya: I think it would be worth while to set up a comparison for next year. Brooke: there will be opportunities for that soon. Pat: at some point you may need to put in some higher elevation LZs to ground-truth things. There area a lot of spots in the 2,500 foot elevation range that have already been cleared out by the pigs.

## ACTION ITEM:

- *Set-up a comparison to get a handle on what we miss (Brooke)*

## Funding – FY08

- Jeremy: helicopter funding is still morphing. The contract has been solicited. Teya: the county budget is expected to be flat next year which is great for us given we received an additional \$500,000 this year.

## Biocontrol

- Teya: Tracy Johnson did a nice write up on biocontrol for our last newsletter. A nematode and a couple of weevils are the most promising agents at the moment. The MCA is moving forward on a biocontrol resolution that will go through the Mayor to County Council.

- Pat: seeing the fungus in action in Tahiti was interesting. The leaf drop from the fungus has resulted in a light level increase of six times. In areas that were bare ground, there are native ferns and also weed recruitment. Some of the individual trees were really hammered and have only about 5% canopy left. We did try the fungus in Hawaii, but it wasn't closely monitored and unfortunately we released it during a seven year drought. I would like to keep that in the background. The fungus is already approved for release. It may be an issue of the amount of biomass. It might be worth considering a new release. It reduces the competitive ability. If funding is tight, you may need to let some places go and this would be something to consider. Mindy: on the Big Island they find it where they look, but it is not abundant. The weather is cyclical. I wonder if folks at CTAHR could help with fungal production. We could use it as a mycoherbicide. It is an alternative tool. It is probably more important on the Big Island than here.
- Teya: before we close the meeting, I'd like to acknowledge the Hana miconia crew for all the hard work they do. Mahalo.

**Proposed MISC Meeting Schedule – 2008** (unless otherwise noted all meetings are from 9am to noon)

- February 1: Other Islands/Partner Updates
- April 11: Action Plan/Strategic Plan
- June 13: Public Relations
- August 8: Vertebrates
- October 10: Priority Setting (all day)
- December 12: Miconia