

MAUI INVASIVE SPECIES COMMITTEE
Meeting Minutes
Friday, September 14, 2012

ATTENDANCE: Jeremy Gooding, Randy Bartlett, Lloyd Loope, Fern Duvall, Forest Starr, Kim Starr, Elizabeth Speith, Adam Radford, Teya Penniman, Mike Ade, Lissa Strohecker, Brooke Mahnken, Elizabeth Anderson, Pat Bily, Dennis Green

- The meeting was called to order at 10:10am by Pat Bily (TNC/MISC Chair)
- Minutes for the June 22, 2012 meeting were approved. They will be posted on the website.

ANNOUNCEMENTS

- Adam: there may be opportunity for an introductory BTS training in Guam from October 29 to November 17. The funding to send people is not confirmed yet. We hope to send one person from MISC to the training if possible.
- Adam: Darrell Aquino's father passed on Aug 31. There is a service today in town and one at Keanae tomorrow at noon. The family is requesting plants rather than flowers or money.
- Teya: Lloyd officially retired on September 1. MISC will be hosting a retirement party for him on November 3, 5-8 pm here at Piipolo.
- Fern: the new DLNR District Manager has been selected. Scott Fretz will be starting in the position on October 8.
- Elizabeth A.: MISC is planning an all staff trip to Hana the last week of November. We are inviting our partners to join us in the field on November 27/28. There will be a potluck at the Hana yurts on the night of the 27th – come join us for a day or two or just for the evening.
- Pat: OISC has been doing a major coqui frog PR blitz. They had a two day focus for a one hour period each day where they invited residents to call in coqui reports from their Smart Phones. They received 17 reports that they are following up on. There is so much plant trade; it is hard to imagine that there aren't more.
- Teya: I will be gone for a month starting next Friday and returning on October 2.
- Adam: for today's meeting we are taking another step in the direction of benchmarks and more refined planning. At our next meeting we will summarize where we are and have an economic discussion tied in as well. We are looking at sound data analysis for trends and finding we are finally there with a lot of our species. Today we want to look at what we are seeing based on our data and highlight the work our crew does. The vertebrate crew works from 1-11:30pm in the summer. It is very challenging work. We have a great crew. They have good ideas and are very committed - an awesome team of people to work with.

COQUI FROGS

- Dennis: there are a lot of frogs out there and we definitely need more people and more funding. We are half a step away from just controlling them, but not eradicating them. We are making headway, but if we stopped work for a month, it would be all over. We are keeping up on the non-Maliko sites. Frogs like certain habitat and where that habitat is it produces corridors. There are a couple of people along the gulch that pushed stuff into the gulch and caused a landslide. What came back was cane grass and frogs love cane grass. It is like a freeway for them. They like Christmas berry too. The branches die and the bark curls up making perfect frog habitat. We need funding to go into Maliko, or at least along the rim, to do habitat modification work. Where we have had our best success is with habitat modification. Opening up the space would really help us. Forest: you should look at wildland/urban interface fire reduction funding through USDA. Adam: it might be better to get a commitment of help rather than actual funding. The county might be able to help with some areas. The east side is seemingly more infested than the west side. Fern: Farm Bureau funding might be an option for the A&B portion. Adam: nearly all the residents are supportive of using fire as a tool to do habitat modification. We need more than just removal - ongoing maintenance is essential.

- Adam: the last time we met about vertebrates, I said that to be truly successful we would need to double the crew and have 300,000 lbs of citric on hand. In the gulch, we are shrinking the infested area. The rim and residential portions are going well. Jeremy: this has been a very wet summer. If you are having success this year, you are doing well. Adam: our current plan, *Species Planning & Benchmarks Summary* states: “On Maui, eleven of seventeen known coqui infested areas have been successfully controlled and eradication seems likely for two of the remaining six populations. No coqui have been heard at those sites for several months and only one or two have been heard during regular visits over the last year. MISC will continue monitoring these population centers until a year has passed with no coqui heard. Three of the remaining sites are at nurseries where reintroduction seems to be occurring from off-island sources. Eradication at these locations will be difficult to achieve as long as reintroduction is an issue. The last remaining population center is in a heavily-infested gulch on the north shore of Maui. Although control work has begun, the last large population is spread in varying density over a four-mile long drainage. Terrain challenges and limited resources make progress slow in the gulch. MISC staff have also removed coqui from several new locations throughout the year as a result of resident reporting.” Teya: for the ongoing sites, it would be good to summarize the efforts we’ve made and give the summary to the County Council member for that area for follow-up. Adam: there have been very few introductions on Lanai or Molokai and they are typically picked off as they come in. As far as new introductions go, ~ 2/3 are residential and the remaining 1/3 are nursery or hotel. We can generally trace the residential ones back to nurseries.

Objectives & Goals

Objective 1: Contain or eradicate populations of coqui frogs on Maui and prevent their establishment on Molokai and Lanai.

1. Decreased numbers of individual vertebrate targets.
 - Not yet achieved in Maliko or consistently at infested nurseries.
 2. Decreased number of infested acres.
 - Slight drop to around 147 infested acres.
 3. Increased percent coverage of infested areas.
 - Achieved this year. Sprayed nearly all infested areas in Maliko and all infested areas at other known population centers.
 4. Decreased volumes of pesticide used or applied on target species.
 - Not achieved this year.
 5. Decreased labor employed on target species.
 - Not achieved this year.
- Teya: it would be good to summarize in-flow data and pathways. We should consider a press release on how many reports we receive, vectors, etc. Adam: we easily get one call a day. This summer it was more like 2-3 calls a day. On many of the single introduction sites, the crew shows up and can catch the frog in ~15 minutes. Our big accomplishment in Maliko is that we have completed the infrastructure. We have storage containers and a PVC delivery system that spans the gulch. We have had huge support from the community – this has been a cooperative project with community. We have broken the gulch into management units and we work mauka to makai, rims to bottom, and unit to unit. We try not to leave a unit until no frog is heard. The walls of the gulch are really challenging still. We are using ropes to get down the walls. Teya: some of the wall area can be reached with high volume spray from above and some from the ground up. Dennis: it really comes down to habitat. We can only reach small areas with spray due to habitat issues. It takes a lot of time to pull the hoses around.
 - Adam: we have done some helicopter work as well. The volume of citric acid used and the cost of the helicopter are issues, but we haven’t written it off as a technique yet. Helicopter spraying is very high volume. Dennis: the helicopter must be used during daylight hours when the frogs are typically hiding. Adam: the best tool we have found is people applying citric at night. The gulch isn’t uniformly infested. There are still segments where there aren’t frogs. In the last year we have covered every place we can get to that has frogs.

Maliko Gulch Management Options:

Helicopter

- Cost per acre: \$2,500
- Best use: on areas that can not be treated in any other way and / or for initial suppression.
- Major drawback: must treat in the day, expensive delivery.

Fixed Line System

- Cost per acre: \$1,900
- Best use: on areas that are accessible by foot, but are a long walk.
- Major drawback: expose employees to greater level of risk, can not get everywhere.

Sprinkler

- Cost per acre: \$1,800
- Best use: on steep sided walls, narrow parts of the gulch, or where access is feasible.
- Major drawback: lots of preparation time, not mobile.

- Fern: it might be good to get your partners/funders into the gulch to see what is being done and show them what the conditions are. I haven't been down there myself. When you say you need more staff, what does that mean? For how long, how well trained, etc.? Adam: we need at least a full second crew for the summer time. There are currently four people doing the work and they are doing other projects as well. Fern: you need to be really specific about what your needs are. Adam: it would be great if we had an additional year-round crew, but a dedicated crew of 4-5 during the summer months would go a long ways. Fern: what training is needed? Adam: it is not so much the technical skills, but the experience working in that environment that is important. Fern: temporary hires might be the answer. Maybe the way to do it is when Scott gets here to say we need an incident command structure and see if DOFAW folks could be assigned to do some of this night work. Teya: we should look at some different scenarios for staffing even if we don't have more money. Adam: I am not sure how useful partner help would be. We need consistency.
- Teya: Representative Choy from Manoa Valley is very concerned about frogs and is on the Finance Committee. He may know where there are pots of funding. Adam: the ideal would be an exclusive crew that is doing nothing else for a 4-5 month period. Fern: technically Neisman and Honn are funded by invasive species dollars. Pat: ideally it should be a MISC-based crew because of accountability issues. Forest: are there areas where movement risk is highest? Adam: we have a goal of keeping frogs out of vectoring pathways. Fern: it would be good to work up a cost estimate so people can take a look. Adam: last year we said it would take an additional \$250,000 to double the crew year-round. Fern: I think what we should do is come out with a priority recommendation and then go to various places to look for funds. I need to be able to answer the question – what do you need? Adam: double the crew for five years. We have the equipment but we would need more citric acid.
- Fern: that brings up the biosecurity issue. We need to either stop them when they get here or stop them before they leave another island, which is tricky. Teya: we should write up something for Rob Parsons. Fern: we have to deal with the interisland issue. Elizabeth S.: this is really a dual issue as LFA are spreading in same areas of the Big Island. The need for biosecurity will be for both species. Adam: on Maui, once things are here we are good at finding them and picking them off. We have tons of public cooperation and staff working all over the island day and night. I will produce the summaries Fern is requesting. Randy: vectoring is a problem that obviously needs to be solved. I would like to see us look at what it would take to have a crew down at the dock intercepting shipments. What would be required in the way of dollars and manpower? We need to be able to say this is what we need to take care of it. Teya: it would take a statutory change. CGAPS will be getting a legal intern assigned to HDOA. CGAPS is putting together a list of priorities for that person to work on and this issue is on the list. We also need a statutory change for negligent transport of invasive species. It is a very real economic threat. The mainland may shut Hawaii off. Fern: we don't want to all of a sudden find ourselves dealing with mongoose interception on Lanai. We have a mongoose-free island that we want to maintain. We can piggy-back off of that for interisland issues.

- Randy: we need the intern to take a look at and review existing legislation and regulations so we can be clear on what we need to do to fill in the gaps. Teya: HDOA's priority is on food. They don't have enough inspectors. Elizabeth S.: have there been discussions of other techniques for detection? Teya: we need detector dogs that could do LFA as well. Pat: we need action now. There are too many legal stumbling blocks. Elizabeth S.: I know that the reports I get are just the tip of the iceberg. Adam: we can continue to improve on our documentation of when we see these introductions. Teya: we need to put together a case statement for why we need interisland control. Dennis: the cost of us getting those single frogs is less than having an inspector and things will still slip through. The cost of us getting the single frog isn't that much.
- Excerpt from *Species Planning & Benchmarks Summary*: "MISC's coqui-free nursery certification program recognizes the proactive efforts of plant-related businesses to prevent the spread of coqui. The program is based on meaningful standards developed in cooperation with HDOA and plant industry representatives. MISC staff ensure that the standards are met and provide incentives via free advertising (e.g., on the coqui-free website, via word of mouth, through fliers and brochures). A total of 31 businesses have met the certification standards. Thirty businesses are on Maui and one is on Molokai. Surveys occurred at all coqui-free certified businesses last year. A couple of those surveys resulted in detection and removal of coqui."

Objectives & Goals

Objective 2: The landscape and agricultural industries are supportive partners. Nurseries, plant providers, and the public participate in the coqui-free certification program. Limit the spread of coqui frogs via the nursery industry.

1. Participation grows by 10% per year.
 - Although one new participant joined the program and is now certified this goal was not met.
 2. At least two new incentives are provided to participant businesses per year.
 - New goal. Although free advertising and outreach materials were provided to certified businesses last year this goal was not met.
 3. The program will be the focus of at least two outreach efforts per year.
 - Achieved. Several articles were associated with the certification of a Molokai nursery. Coqui-free was also a major component of one of our public event booths.
- Elizabeth S.: would there be any value in trying to get a program like this going on the Big Island? Teya: some years ago we shared our structure with folks on the Big Island. Some areas on the Big Island are striving to be coqui-free. Adam: the original goal of the program was to go statewide. Elizabeth S.: it could really help Maui if the Big Island initiated something like this. Teya: I don't think there would be any incentive unless there is a statutory incentive. Adam: my vision was ultimately for a statewide certification run by some entity other than the ISCs. Lloyd: it seems like the regulation should be that only certified nurseries should be allowed to ship off island. Teya: Maui will have to take a stand. Pat: the goal of 10% growth a year seems lofty. Without a hammer there isn't enough incentive. Adam: that goal translates into an addition of just three nurseries a year. There are only ~120 active nurseries on Maui. Fern: could you give credit/recognition for how long they have been on the coqui-free list? Adam: we want to have a blog with real time updates and focus on getting the story and testimonials out there.

Benchmarks / Key Considerations

- Maliko gulch is treated as thoroughly as possible at least once per year.
- Coqui are kept in the gulch.
- New reports and outlier populations are made the highest priority.
- The population centers in Wailea and Makena are eradicated by the end of next summer.
- The three remaining population centers are contained.
- LICH or other industry affiliates endorse the coqui-free program.
- The coqui-free website is updated.

Gaps / Needs

- Doubling the crew size would help us realize successful control of the gulch.
- Having a stronger biosecurity system / hot water treatment facilities for Maui would greatly improve the likelihood of eradication at the three nursery population centers.
- Improving our ability to capture infested acreage and other relevant data is needed.

CONURES & LOVE BIRDS

- Adam: conure control is ongoing. There are still two flocks in two locations: Waipio Bay and Huelo Point. The biggest hurdle with this project is maintaining the relationships we have in the area. The community is divided on control 50/50. If we lose access, it will significantly impact our ability to complete the project. Teya: Adam has done a great job of dealing with the communities including, landowners and caretakers. Huelo Point is the challenging area. The Waipio area isn't so hard because it is mostly pasture. Adam: right now there are ~30 birds left between the two populations. There is a certain amount of intermingling between the two populations. We are sure we have seen them all together recently. There have been a total of 58 control outings conducted for a total of 774 hours. There have been 169 birds hit resulting in a time per hit of 4 hours and 40 minutes (this includes DLNR and MISC time). We need a minimum of 20 more outings to be getting close to the end. Fern: it is interesting that the total number hit is higher than the highest count we ever made. Reproduction accounts for that. They typically can produce two chicks per pair and I'd guess reproduction starts at year three. Adam: at least four birds have been hit by area residents. We see them loafing, but they are far away. There is the potential to be done by end of next summer. We typically send out a team of two people (usually Adam and Darrell). Staffing availability is limiting. It would be nice to recruit assistance.
- Adam: lovebirds are known to be present at two or more locations in Kihei, in Nahiku, and they have been reported upcountry. There are two key questions on lovebirds: 1) should we finish the conure project before beginning another high visibility bird issue?, and 2) should we draw HDOA into the discussion since it is an urban interface issue? There are easily over 100 birds in the Kihei area. Fern: at the retirement home we could feed them in a cage and then close the door. Adam: I will start looking at aviary options. Lloyd: are they established in other parts of the world and what are the impacts? Adam: we don't know for sure. They are a known agricultural pest. Lloyd: they seem more benign than conures. Brooke: shooting lovebirds sounds really bad. Fern: they prefer to eat dry seed, which is not a big issue with what Monsanto does today. We do have a policy of no new vertebrates. They are noisy and they will chew on things. Elizabeth A.: there is a public perception issue when people call in to report them and we say they shouldn't be there and yet we aren't doing anything. We would probably be looking at netting/baiting rather than shooting since they are in a neighborhood setting. Pat: I have a group from Monsanto coming on a hike in December. I will put in a pitch. Elizabeth A.: fresh corn is my lovebird's favorite food.
- Teya: we should take this on a case by case basis. How difficult would it be to lure them, capture them, and find them homes? Fern: they are very social. You could lure them in. Elizabeth A.: they are not great pets if they haven't been hand-reared. I checked with the pet store when my birds had eggs in the past and they didn't want them. The reproductive rate is huge. My female will lay 4-5 clutches a year of 4-6 eggs each. Fern: seed predators are different than birds that eat fruit. Seeds pass through which is more of a risk. Teya: we should go through the risk assessment process. Adam: I can start on that. Fern: if they are incipient we have a chance. They are probably not spreading weeds, but they may pose an economic issue. They do destroy houses. Pat: we don't have direct evidence of an environmental threat. Randy: we should wait until after the conures are taken care of. Fern: this is a new environment and we don't really know what the outcome might be (for example, barn owls only eat rodents normally, but have shifted to seabirds in Hawaii). You never know what could happen. Teya: we should do a more thorough literature review and talk to the retirement community.

Objectives & Goals

Objective 1: Maui Nui's highest priority target species are eradicated or contained.

1. Decreased numbers of individual vertebrate targets.
 - Achieved.
2. Decreased number of reports from the public and / or anecdotal reports that residents are seeing birds.
 - Achieved.
3. Decreased labor employed on target species.
 - Not achieved.

Benchmarks / Key Considerations

- Mitred conures are extirpated from the wild by the end of summer 2014.
- Respond to new bird reports and coordinate appropriate response with HDOA & DLNR staff.
- Follow up on lovebirds once conure control is complete.

Gaps / Needs

- Having partners assist with control may accelerate our timeline.
- Continued cooperation is essential to the success of this project.

VEILED CHAMELEONS

- Adam: we have had no recent finds. Our last search was in November 2011. We are due for another revisit. We want to maintain a presence in the community. We need to write up our results. They have been reduced to below detectable levels. Fern: Fred still believes there is no way they are eradicated. We should try to enlist some experienced searchers for the next search.

Objectives & Goals

Objective 1: Maui Nui's highest priority target species are eradicated or contained.

1. Annual visits to the community are conducted and all high probability areas are searched.
 - Achieved.

Benchmarks / Key Considerations

- New reports receive immediate follow up and appropriate response.
- Outreach materials are given to area residents and made available to the general public at least annually.

Gaps / Needs

- Developing a timeframe to stop searching if no animals are detected would be helpful.

LITTLE FIRE ANT

- Adam: my metrics are not as concrete for this one. We need to look financially at how much time we want to put into surveying vs. putting funding into public relations. Forest: this is another one of those forever things. Elizabeth S.: even with the outreach that has been done, I don't think people still really comprehend. Fern: is there a portion of the film that can be shown at the county fair? Teya: we have been searching the places that have the highest possibility of introduction. Adam: at the next MISC meeting we need to look at how much time/funding we have available and then decide where we are going. Fern: it would be great if we could have a kit for everyone at the county fair to send in. Elizabeth A.: we don't get many of the kits back that we distribute. Forest: for most of the staff surveys there are usually ~50 vials per site. Kim: for the small nurseries we do every aisle and around the perimeter. For the large nurseries, we target the most likely vector plants. Teya: I feel good about our surveys. Adam: we are not maintaining a level of effort. We need to decide what that level should be. Teya: we need to look at where the priority sites are and what our revisit frequency should be. Cas is a strong advocate of PR. It is less likely that we are going to go somewhere and find them than that a member of the public will report them.

- Adam: we definitely need to survey in the community around the Waihee site at least annually. We have a historic list of high probability sites. That list has been exhausted and we need to define where to go now. Cas hasn't gotten us a new list. Fern: the locations from the trace forward and backward list should be on your list of sites to survey regularly. Adam: the list contained places that receive shipments from the Big Island. Teya: we can contact the places on the list and reconfirm that they are still getting shipments from the Big Island. Adam: we could also call all the nurseries on our coqui-free list. Pat: do you feel confident that people are able to distinguish between LFA and tropical fire ants? Adam: Waihee is no longer completely eradicated. They found a small non-contiguous population. It was a spot that hadn't been treated approximately 150 feet away from the original population.
- Teya: we talked about doing a statewide workshop on interisland transport, but there wasn't much support. I am still willing to keep pushing it. There is funding available from Hauoli Mau Loa Foundation. I spoke with them and they are supportive of funding for dealing with interisland issues. As a committee, we said we would like to move forward here on Maui regardless of what happens statewide. Lloyd: coming up with an analysis to describe the problem would be helpful. As long as nurseries on the Big Island can still ship plants that have LFA and coqui, we aren't going to get anywhere. Elizabeth A.: we talked about having a stakeholders meeting here on Maui to get input and start moving ahead. We are hoping to pull something together for early January. Lloyd: we need to get started on Maui. Pat: we should think about involving someone from the medical community. Forest: Dr. Pang would be great. Pat: we need to educate doctors on what the symptoms/stings look like. Teya: in Tahiti they see a lot of secondary infections. Elizabeth S.: it would also be good to alert veterinarians.

Objectives & Goals

Objective 1: Prevent the establishment of the little fire ant (LFA) within Maui County. Conduct surveys across Maui County to ensure the early detection of any colonies of little fire ant.

1. Increased percent coverage of potentially infested areas.
 - Achieved. Many new locations were surveyed this year.
2. Consistent labor employed on target species.
 - Not achieved. Need to determine acceptable level.
3. Consistent number of vials collected.
 - Not achieved. Need to determine acceptable level.

Benchmarks / Key Considerations

- New reports receive immediate follow up and appropriate response.
- The community surrounding the known infestation is surveyed at least annually.

Gaps / Needs

- A concrete, regularly updated, need to survey (i.e., high probability locations) list would be helpful.

BANANA BUNCHY TOP VIRUS

- Adam: we go to Molokai annually to assist with surveys. So far, BBTv is restricted to central Molokai and the agriculture park. It has not been found on the extreme ends of the island. MoMISC goes back into the community approximately once per quarter to recheck. They have a couple of recalcitrants. We are recommending that people not move bananas around. It is best if they get bananas from a neighbor within the community. BBTv was recently found next door to the Keplers in a potted plant. A good place to get bananas is from Maui Tropical Plantation. They participated in our replacement program. We do annual surveys on Lanai. On Maui, BBTv is found everywhere except East Maui and Kahakuloa. It was found on one small farm in Lahaina, but only a limited amount.
- Adam: BBTv is a unique project for MISC. It is not eradicable. There is a natural enemy in the pipeline. As we have found more, we have had to adapt our strategy. In the past, we did communitywide surveys. It is now beyond our capability to do these annually. We are adopting a more site specific strategy. What we are really trying to protect is East Maui. Generally most of the communities we are working in are either holding or getting better. In Pukalani, we have removed huge

amounts of bananas. We haven't covered all of Haiku yet and we are finding more there. We should be focusing on defending our borders rather than working in dry areas like Kihei. We could spend all of our time in Kihei now. I am not suggesting we abandon any community, but we should give priority to higher value areas and borderline areas. We need to define how much time we have available. Teya: our funding for BBTv comes from OED. In past years it was via a separate proposal. This year all the OED funding is rolled into one so in a way we have more flexibility regarding how much resources we put into different species. Adam: hopefully we can actually continue suppression in all communities.

Future Efforts:

- Continue systematic survey and control efforts in impacted communities unless suppression becomes ineffective or demand exceeds available resources.
- Expand search efforts and random sampling in apparently uninfested areas and high value areas.
- Expand, intensify and modify public outreach efforts.
- Make the best use of available funding to maximize survey, control and outreach efforts; particularly on neighbor islands.
- Work more closely with the agricultural community and HBIA to ensure the longevity of Maui's banana industry and cultural heritage.
- Continue to survey for LFA while looking for BBTv.

Objectives & Goals

Objective 1: Control banana bunchy top virus (BBTV) on Maui and Molokai. Conduct early detection surveys for BBTv on Lanai.

1. Increased or consistent percent coverage of potentially infested areas.
 - Achieved. Many new locations were surveyed this year.
2. Consistent labor employed on target species.
 - Not achieved. Need to determine acceptable level.
3. Consistent number of sites surveyed.
 - Achieved.
4. Consistent ratio of sites surveyed to those with BBTv.
 - Achieved.

Benchmarks / Key Considerations

- New reports receive immediate follow up and appropriate response.
- All known infested properties and surrounding properties are surveyed at least once per year.

Gaps / Needs

- Doubling the crew size would help us realize successful suppression.
- Release of a natural enemy may help slow the spread.

OTHER SPECIES

- Adam: we have had a couple of possible snake reports in the last few weeks. We get fairly regular rabbit reports. We go to the neighborhood and try to determine who they belong to. Fern: if you get any Bengal cat reports let me know. We don't deal with red-eared sliders, but we do want to know about tortoises and other less common turtles. It is good to continue to be on the lookout for new species of lizards. Nurseries at night are good places to look. We definitely want to know about Cuban night anoles. Everyone should make sure they know what blackbuck look like. Don't assume everything is a deer. Female blackbuck are light colored. Teya: there is funding from HISC to hire a deer coordinator through the University. The person will be responsible for implementing the axis deer action plan on Maui.