

MAUI INVASIVE SPECIES COMMITTEE
MEETING MINUTES
Thursday, January 28, 2021
9:00am – 12:00pm

ATTENDANCE: Fern Duvall, Gerald Gregory, Forest and Kim Starr, Marshall Loope, Adam Radford, Kari Bogner, Adam Knox, Elizabeth Anderson, Susan Frett, Elizabeth Speith, Abe Vantze, Makale'a Ane, Monte Tudor-Long, Kai'ena Bishaw, Carl Schwarz, Randy Barlett, Brooke Mahnken, Lori Buchanan, Betsy Black, James Fleming, Mike Ade, Mikiala Puaa-Frietas, Erin Johnson, Lissa Strohecker, Jeremy Gooding, Teya Penniman

- The meeting was called to order at 9:07am by Fern Duvall, Chair.
- Introductions were made around the Zoom screen.
- Minutes from the November 19, 2020 meeting were approved. They will be posted on the MISC website.

Response to COVID-19

- Knox: We continue to observe all the COVID-19 mitigation guidelines that we talked about in the last MISC meeting in November. Our staff have done a really good job with this and we've gotten indications that we're definitely above par on our protocols based on conversations with PCSU. Unfortunately, we did have a positive COVID-19 case within the MISC team. That individual is still in quarantine and is doing fine, and was exposed to external sources outside of work. All of the employees who were potentially affected were isolated. We had a rigorous testing process as a precaution as well as protocols in place for a few others who were in exposure proximity, meaning within six feet for 15 minutes or more in a 24 hour period, as per CDC and other similar guidelines. No additional cases have been found. We're past the infection window at this point, and it was a good exercise in following through with protocols, utilizing the resources available. Luckily, Maui has an extensive network of free testing options, which has been beneficial for our staff. We'll continue to follow our protocols and observe the COVID-19 and mitigation guidelines and strategies and do the best we can. We've adjusted to a new normal but it's still a huge challenge operationally, our staff are doing a great job. Vehicle coordination is a big thing for us, we have 43 staff and a total of 13 vehicles. Luckily, we're getting some new ones but we're on that razor's edge going down to one person per work vehicle. Right now, two people are allowed in a work vehicle. It's challenging to do that operationally, but like I said, our staff have done a great job.
- Fern: Is it possible through the university to get reimbursed if they drive their own vehicle?
- Knox: Yes, it is. That has been a huge component for us, for our adaptation and success. You're stuck with this interesting logistical problem where you start to get people to the sites but their cars can't make it all the way. That's where the potential challenge lies as per our protocol. If we get up to a 5% positivity rate, then we're instructed to have one person per work vehicle. Automatically that cuts down our carrying capacity quite a bit and trying to get people trucks to use, it's a huge rate-limiting factor. Luckily, I think

Maui is at 3.7% the last I checked through the emergency management resource that we use online. To answer your question, Fern, that's definitely a tool that we've utilized extensively and I can't thank Erin and Elizabeth enough for organizing the reimbursements, it's kind of been a nightmare for that many people, but they've done a great job. We did utilize rental vehicles for quite some time, which was extremely helpful, but that's expensive and it's not sustainable. Luckily, we have a brand new quad-cab coqui truck, we're going to pick that up today. Then we have another one on the way, on the slow boat, it will be here next week. We got two new LFA vehicles, and so our capacity has improved. Unfortunately, some of these are replacing vehicles that barely work, but we have had an increase so it is helpful.

- Fern: Great. How is the university setting up for you guys, do you have any special access to vaccinations, as essential workers, or have you explored that through the university?
- Knox: It's a good question. This has been a topic that's been on Dr. Duffy's level and we've been interacting with him and asking questions about it. A university-wide questionnaire was sent out. That was a prioritization exercise to figure out how to allocate resources within the university system. We're also trying to figure out if there's any resources that we could utilize within Maui County, whether it's a hospital, or state or county level, that would get us there. We've talked about this a few times but by all indications it does appear that we're in that 1b category, we've been designated as essential, so we want to do the best we can to get staff those resources for their health and safety, and that of their families. As soon as we get indications that there's enough to go around, or we're in the queue, we want to jump right on it.
- Fern: Yes. I think it'd be good to prioritize the jobs with public interaction, like the community outreach, people that interact all the time with the public. They should be first on the list.
- Knox: Absolutely.
- Forest: Is there any possibility of getting like COVID stimulus or relief funds to pay for new vehicles?
- Knox: It's probably a possibility. Adam might be able to speak to this a little bit more. If you recall, we did go through that CARES Act process on back in August or September. We put together a proposal. We didn't get funded on that but we had included some equipment like that in the proposal as part of an attempt to get a lot of staff on board quickly and supporting them with the tools and resources needed, including vehicles.
- Radford: Yes, that was through CARES Act money that came through the mayor's office. Lori Buchanan and I were asked to sit on the mayor's task force for how to potentially distribute those funds. That round of funding needed to be spent by the end of last calendar year. As Knox said we weren't selected as one of the recipients of those funds, but the taskforce continues to meet. I don't know all the dates off-hand but I'm going to sit on the environmental committee, and Lori is going to sit on the culture and arts committee, but we still have an iron in the fire there for the local level, and potentially other sources may become available with the new administration, we'll see. The way the CARES Act funding seemed the most relevant to us, came through the federal government to the state to the counties, and then each county decided how to distribute

those funds. I think the focus for the mayor's office for Maui County was on, which makes sense and I respect his decision, frontline workers and small businesses to keep those businesses alive. His stated mission, if there is more funding available, is innovation and job creation and training for new careers, keeping it local. I think what we put together in the fall, which was quite an ambitious proposal, would have been a huge endeavor among many projects, not just MISC. What we proposed was essentially to be a clearinghouse for more or less all the conservation entities that we work with. That proposal may fit into future funding very well, if that funding becomes available.

- Fern: It's really good to hear that COVID didn't have a greater effect for the people that have been in contact with it, that's good.
- Knox: I think it's advantageous that our new facility is large and expansive and pretty much outdoors. We don't have internet so there's no reason to be in the office, most of our administrative and management staff work from home. I think by design, we're in a good position, just based on all the mitigation strategies we put in place.
- Radford: We had a lot of protocols and procedures in place before our first positive employee. It was a valuable exercise and we were able to look at how our guidelines actually work. It's made us look a little more closely at how we respond when someone may have been exposed or in close contact with a person that tested positive. How do you get that person back to work? We tightened up some of those procedures and I think we learned a lot from that experience. In terms of outreach and education from MISC, that's a good question, about who interacts the most with the public. The people that interact most with the public are the field crew. In terms of outreach and education endeavors, as you would traditionally think of them, a lot of our material we continue to move to virtual platforms. We're not doing classroom visits or those kinds of things. I don't anticipate doing those for a while. Our Maui Mauka Conservation Awareness Training is a curriculum that has been moved into a virtual platform. I imagine we'll talk a little bit more about some of those things when we get to outreach and education on the agenda. But, our frontline workers are the field crews.
- Knox: By virtue of where we work we are going to interface with the community. It's not uncommon for people just to be excited and walk right up to talk and say hi.
- Forest: We filled out a survey from UH for vaccinations, we of course want to get vaccinated as soon as possible. In that it had a risk category, and your interaction with people, with your caregivers that sort of thing, and I think that might be a good guideline for prioritizing this stuff as well.

Facilities / Moving

- Knox: Facility-related this quarter, we got our two year infusion of citric acid, I think it was over 600,000 pounds, and it came in 22 shipping containers. Those all had to be unloaded at OMH and covered. Unfortunately, we have a lack of covered space, or we did when we were trying to get this all sorted out. Luckily, we have incredible staff, Darrell Aquino and Shane Santos, and for those of you who don't know Shane, he's the guy who stepped into Carl Martin's role. Those guys put an incredible amount of effort and coordination into getting prepared for the citric acid delivery. They constructed either

temporary or semi temporary covering to house the 600,000 pounds, I believe it was 540 pallets or something like that, all stacked. That facilities rush occurred over the holidays, we were all kind of working overtime to try to get that sorted. Luckily, it worked out really well. We're excited to have it. It's incredibly valuable and it's been a lot easier having everything in one place, but it also underscores just how supportive our community has been in Haiku, in particular with community members letting us store this product in their backyards, barn spaces, etc. One of the recipients of the Malama I Ka Aiana award that was presented last quarter was Mark Blitz, he is the owner of the land where we had been keeping citric acid for the last nine months or so. It's really nice to have all of the citric now at OMH. Some of the challenges we still face at the facility are utilities. This is an old property and we're working on the Wi-fi. We're working with Harmer Electronics, they're going to install a Wi-fi beam network and so there's a new tower that's coming up at Puu Nia Niau. Essentially, they'll beam a radio wave down from there through line of sight to the facility. This is the same technology that's used at Kaho'olawe. We'll have that hopefully within the next month if all goes to plan, but the caveat is, before we can get the Wi-fi, we have to get power to the router and make sure it all works. There're two areas that we are functioning out of, the office space which has power, and then there's the ops area which is the back of the property and there's no power back there, but we need it. There is existing infrastructure, it had power at one point, the next step is for us to have it assessed and repaired. Once it is fixed and metered, we'll have MECO come and turn the power back on. Once we get that we can power the Wi-fi router and a host of other things, and so we're working on that right now. We'll hopefully have it resolved soon.

- Fern: For the citric acid storage, are there any restrictions on amounts per acre that can be stored, sort of openly like that? I'm not sure, if you have a concentrate, how much you can have present before you need to have a particular type of retainer for it?
- Radford: I've never run into that before it's a good question though. It's generally exempt from most, because it's not a traditional pesticide in the classic sense of that word. It's a food additive. We'll double check.
- Fern: How's it going with the lease with the county?
- Radford: Teya could probably start on that one. Just for background, she's been working on the MOU and subsequently the lease.
- Teya: Thanks Adam, yes, I can weigh in on that. Initially there were questions about whether we were going to go with RCUH or with the University of Hawaii, we looked at a whole bunch of different variables to try and figure that out. But, long story short, one of the biggest variables that we were interested in is how long could we be there? How comfortable are we with a longer term lease? The other key variable is facilities - if we were to build new structures in the area that we're occupying, would that involve UH or not, it likely would. I think for now, we've decided it makes sense to go with RCUH. The county is open to a lease that could be as long as 60+ years. That gives us the confidence that we can invest the funding, make the investment to be there long enough. As Knox pointed out, we need water. We need either a well or movement of water from the county system and that's going to cost money and take time. Where we are right now, we have the drone work from Adam Knox and the mapping that Brooke has done. It has been

really helpful at laying out our vision of our longer term use of the property, and then another key element of this whole process will be community engagement. We're grateful to have moved in there and thank you so much to the county, and others who have helped us, and RCUH and UH. We plan to ramp up our community outreach to make sure that it's okay with the community to be there long term. So, that's where we are at present. Any questions?

- Randy: I have a couple of funding questions. Back to the vehicles - those are probably funded through county funds? The second question, or comment - as far as power goes, if you plan on being there for a while, I would think you might want to consider trying to get as much solar power installed as you can afford.
- Knox: We met with a guy, two days ago, who gave us an estimate for what an operational solar setup out there would look like. It's expensive but you make a good point. It definitely could be extremely valuable.
- Elizabeth: Yes, Randy. All of the new trucks, for LFA and coqui, were paid for off of county grants.
- Randy: You guys are lucky to have that level of funding, good on you guys.
- Forest: Along with being grateful for the county funding, we just want to reiterate how grateful we are for the new site. After going through the selection process and everything, it is a diamond in the rough, there's a lot of work to do but, yeah, it's a new dawn.
- Radford: Yes, the potential there is this really exciting. Right now we're trying to get things solidified for existing programs and then with the long term lease, once that's in place, then we'll move forward on a bigger vision. As Teya mentioned, water and those kinds of infrastructure commitments take money, so before we put significant amounts of money into the property or seek funding for those projects, we need to get the lease in place. The other thing is just morale, which is in the minutes from the last meeting. You see it in people's faces like a sense of relief and security. Just because the Piiholo site was so uncertain and changing almost daily. I think a lot of our staff now have a sense of ownership of the property and their space, each group has their own zone and containers and things like that, so it's functional. I think it's only going to be better from here and the other thing that Knox has highlighted, and I agree with, is that things have calmed down a little bit, but we moved really fast. That's a total complement to the staff, especially Darrell and Shane for figuring it out and making it happen. The nice thing with the property was that, as was shown in the screenshare, a lot of cement pads were there. At least having a foundation to work off of is huge. That was really helpful, and some of them we didn't know were there until we started clearing it.
- Randy: It's a great location with a lot of potential if you can get the power and the internet infrastructure solved. One thing you might want to consider before the county budget committee starts to meet later on in the spring, is maybe ask to set up a field trip for the council members and show them what you've done so far with the property. Maybe let them know what your challenges are so they can consider it during their budgeting process.
- Radford: Good point.

- Knox: Let me know if you have any questions about the property and how we're utilizing it. We're happy to show you either through these photos (screen share) or explaining it. I'm happy to answer your questions now or later.
- Randy: I think for the council members, especially because there are new ones, it might be nice if they can find the time to go out there in person and actually see it for themselves. That can have a really strong impact.
- Elizabeth: I'll add that to the action items.
- Fern: That's a good thing to add as an action item. The other one that I was thinking of is just trying to figure out a date for a virtual community meeting, so that you can update the community with what the plans are, and maybe talk to Friends of Old Maui High so that they can also be at this virtual presentation. I think it's important to show to the council members that you have public outreach, that you talk to the public in general.
- Radford: Yes, we were hoping to get together, and start with a group of key stakeholders, and then go broader from there.
- Fern: What I've seen from meetings, when we hold a public event, of course, invite those important people to that meeting to be participants. The other thing is to open it up to the general public, for awareness and public buy in. I think you can have both things happen at the same time.

Coqui Control Efforts

1) General Field Work

- Abe (Screen-share presentation): The commendable coqui crew, they're the ones who make this stuff happen in the field, and without them none of these frogs would be getting addressed and we would have frogs everywhere. Interesting statistic, over the last year we have had 39 different people on the coqui crew in 2020. So we have a capability for healthy growth, 2020 has given us the ability to grow. We have more tools to bring people on and get them ready to go, understanding the complexity of the project quicker than we've ever had before, mostly out of necessity, but that works. Total, including me and Susan at the coordinator level and down, there are nine people on staff today.
- Forest: How many of those field crew have been there more than a year?
- Abe: Not very many. Actually, 2-3: Scott, Meghan, and Kayani. This is Darrell Aquino here, he makes stuff happen. He just does, and the importance of institutional knowledge being shared. Shane Santos, who fixes all our broken stuff, without their help we would be broken on the side of the road, just absolutely amazing. Anyway, having this facility, having the space to work on these things, it's a game changer all around we're still getting into it but night and day difference. Alright, so we have a Maui County overview, we're going to do an overview to get a sense of what's happened in 2020. (Screen share) Red tracks are citric treatment areas, blue tracks are habitat reduction, and trail work yellow tracks survey, or just general path where the crew is walking in the white lines, delivery pipeline. You can see it from 100 miles above Maui. Here's where most of the frogs are, so we had to put in the pipeline. So this is the current status of

our populations. We have 20 eradicated, the green circles. We have one that's extreme. We have one that's just in a really high level, or it's medium moving towards low. We have five that are low, they're pretty close to being eradicated, but not ready to put up the success flag yet. Any questions on populations?

- Fern: You're talking about population, so you're losing density, like the number of frogs for your extreme, high, medium, and low?
- Abe: Yes, so getting frog density counts is not effective in some ways. This is just like if you're walking around and how many frogs are around you. Maliko is crazy, there's a million frogs everywhere. But, as you take a population towards eradication, the amount of area that you're working remains the same, but the density of frogs goes down. You still have to cover the same amount of area, but you're not spraying everything, it's more spot treatment but it still takes a lot of time. There are single frogs that pop up, there's a lot of vectoring from Maliko itself, but we do have introductions from the Big Island and elsewhere. Mostly it's the MISC crew working, Susan can talk about the community people who go out. Mostly the strategy has been, I go out and grab single frogs because I can go by myself to get them, so the crew can stay in the big area, we don't want those areas to get bigger. It's been really challenging, but with increased staff we have more capacity to do it. The public has stepped up public controls of frogs on their own. They talk about it with their friends and family so we cannot overestimate the importance of empowering everyone and their ability to do things that they think they can't do.
- Forest: The outliers, they're supported by the public?
- Abe: Yes, on our website, which just gets found, I have done very little and we have done very little promotion of our reporting systems, but we have an online reporting form that people go in and they just submit. The web forms get submitted and go into a system automatically where we see if we can follow up and track it. It's totally different from the way that it used to be, but it makes it so that teamwork can happen, and we have more people who know how to do it. Since Susan started, that's taken a lot of pressure off of me, so that I can do other things and build technology systems. We had that set up before COVID, and then when COVID hit we had the system set up and functional. Let's look at a couple populations here, the arrow pointing to the Wailuku area. This is a central Maui nursery. Quarter three you can barely see anything happening here, there's a couple yellow tracks where we went and listened to a couple things a couple times but not a lot happened in quarter three. We're still getting our COVID coqui feet happening there. Quarter four, though, we went back and did a number on the nursery and put in the time. Let's go deep Haiku here. We have three different pipelines in this view of varying sizes. This is all coqui crew. The ACE, conservation experience, crew that came to Maui in September, and this work represents three weeks with 11 staff, this is part of the Jaws coqui population, they stayed here for their full work term. They started down there. The next quarter, there were only five of them, looks like that. A lot of that is habitat removal, they went to town with some weed eaters. The ACE crew, I cannot say enough about

the bang for the buck that we got with them - highly competent, highly driven, highly motivated. It blows my mind at what they were able to do, what they accomplished, and the amazing attitude that they had from start to finish, working with the people in that gulch, start to finish, just outstanding. This is around 50 acres for the Jaws area, it's quite a lot. Here is that group of five that we're able to do that. This crew was supported by the MISC coqui crew, the MISC crew mixed their citric and delivered it to them, so the ACE crew could just show up to work. Basically, day and night they were on site weed eating, spraying and capturing frogs, and working with the residents. This is a deep gulch, not like the residential Pukalani type of neighborhood, they did really, really well, and built relationships with everybody down there to a greater degree than we already had, it was really outstanding. This area here by Giggle Hill, this is Maliko proper, this is the pipeline. We're not working here right now because we're working on the peripheries, i.e., Kauhikoa Gulch. On the east, this goes from just mauka of Giggle Hill, on the right side, all the way down to the reservoir below the Kokomo cannery. So we started quarter three, this is before we were mixing, this was just crews going out in their own cars and hand capturing. They were running around in that reservoir and taking care of frogs that had jumped across this red area on the left side of the screen. Here's the fourth quarter, the thing to note here is the pattern, which is the same at Jaws, as in Kauhikoa Gulch. Frogs get in a gulch and they go downstream and they also go upstream. They're not just getting washed downstream, the frogs go downstream and upstream and then they climb out. This is a repeated pattern that the frogs do, you can see these are frogs going east, though it is quite challenging to deal with all of that gulch, and the residential sides. All right, now to trends and data numbers. Let's look at the graphs, gallons on the bottom left are going up, this is a yearly. Quarter one of 2020 starting in January. Now, this is COVID time, we only lost a little bit of citric through all that. This is right before the ACE crew showed up. Very tail end of that, and then massive mixing. I mean that's a lot of bags crews picking up and mixing and driving around. Then we have contributor hours, if we didn't have Darrell, if we didn't have Shane, and if DLNR didn't come and help us out - we have many mahalos for help with the facility to move. This graph shows the gallons of citric on the left side, and from 2017 quarter four to present. And then on the right side. This is the cumulative number of crew present and site visits, so if crew were citric, this would be like gallons of crew. Look at the consistency or inconsistency we've had, down, up, down, up, down, and then hopefully it stays up so that we can maintain what we've done, we've done a lot of work, but we have to maintain it, to get ahead even more. Really, really challenging to do what we're doing. But again, Maui would be covered in frogs. Not to the highest density, but there would be frogs. Basically every part of Maui from Hana to Kapalua, and everywhere in between, climbing up the mountains on Hana Highway, in the nursery, all over the place. I can't overstate, despite the scale of what we're dealing with now, how big the scale would be if we hadn't done

anything, for me, the forest, the biodiversity up in the mountain is the most important thing.

- Forest: Did you have any idea of how Kauai and Oahu are fairing with coqui?
- Abe: Not really, not to this scale. I don't know of anybody doing what we're doing, the way we're doing it. I'd eventually like to create a nice little package, so in case they need that help, they could reach out and then we could share what we did, give recommendations and the lessons we learned from it.
- Forest: Do you have any indication of the potential range for this frog on Maui?
- Abe: There was a map that I didn't include in this, in hindsight, I would include. Most of the forest, they've been up to 4000 feet before, and 1000 feet on the Big Island, I think the graph, the curve on Big Island is still just growing, the area is expanding, and the density is increasing.
- Forest: Populated areas regardless of rainfall?
- Radford: Are we seeing changes in their potential range? Personally, I don't think that range has really changed that much. I think that they're expanding in terms of where it's an ideal habitat, they're thriving, or could. But, we're not seeing them at 10,000 feet on Haleakala, or something, they're generally where expected, just here and there. We don't really see them above 4000, certainly not 5000 feet. They like water, so I don't know if they're going to thrive in Kanio, but if they're in Wailea, sure they'll be great. If you look at where greenhouse frogs are too, they thrive in people's water meter boxes in Kihei, they love it. That's my observation anyway, and correct me if you've made different ones, Abe.
- Fern: Do we have any sort of communication line that's open between nurseries or Botanical Gardens, or areas that we don't think about frogs, so that they know to contact MISC? Should they ever hear a frog? If the Department of Ag finds frogs coming in, it might be helpful to find out where those goods were to be delivered, in case others have gotten there within the same time frame. Just to be sure that we're not missing frogs farther out into the wet forest or farther out towards Hana. Is there any communication between the botanical gardens and MISC so that there's a gauge for where the frogs could be going that maybe is not getting assessed?
- Abe: I would say not to the degree strategically that I would like to implement. I think social media can be leveraged in a way, we have strong social media, it's been growing. I think there's other things we can do with that. A lot of it is still just passive recording. I mean we literally just put a web-form on our web page and people found it. If we promoted it a little bit more, and did some social media tricks to increase visibility. We get reports from people that drive with their windows down, and they're like, "oh I heard a frog Mile Marker 4.5, whatever on mauka side." Then we go listen for it, and follow up on it.
- Radford: We also have the coqui free programs, it has waned because we don't have a person leading that charge. That could be revamped, we've put a lot of time into it. My observation is that most nursery people, plant providers, know what coqui are, and I think many, maybe all, know that we work on coqui and we get reports from plant providers for sure. The other thing is that Christy Martin

received some funding that will go to statewide efforts to improve the plant pono program, so there might be an opportunity to tie in some of our messaging over this next year.

- Fern: I think that'll be great. The only reason I bring that up is when I look at the map that you have showing the distribution where you're working. I always think it's like downed seabird type issues. Downed seabirds show up where you have people that find them. There's a direct correlation between where people are and where they're reporting it. That doesn't mean that they don't come down under lights and power lines, elsewhere, where people are not at. How big is the gap just based on the fact that you're expecting people to report it to you. I do think putting it on social media, like a red alert - Please report any sighting for any hearing of coqui to MISC. It could be part of an invasive species month campaign.
- Abe: I agree, Fern. If you look on this chart, here, reports from the public, our numbers have gone up dramatically. These used to be below 50, now we're looking at 144 and 134 reports. This includes phone calls, web-form fills, text messages, and informal contacts from community members. I cannot overemphasize while doing something like that it's important to utilize this system that we already have and grow data systems wisely so that it becomes an efficient process. People send in text messages of audio clips and video clips to see if it's a coqui, it takes time to check and respond. I do want to do those things and advocate to do that and I think that would be really helpful. There's a lot of reach that we could have that we don't have yet.
- Speith: I hate to bring it up in here but I'd also like to put a little, a shout out. For the past six months, the hotline as well as the online reporting system and apps do receive both greenhouse frog and coqui frog reports for Maui Nui, and Maui specifically. It's one of the biggest things that we get. It's like one of the top species that's reported on Maui, and we pass those reports along to MISC. Hopefully we can talk about this and do it in partnership, one of the messages going out is to also support these kind of overarching pests reports in complement with what MISC does for their internal reporting processes. Thanks.
- Fern: It would be good to have a short clip of what coqui sounds like, the single calls that they make sometimes and that typical call. This way anybody looking at your social media has rapid access to what they sound like. That may eliminate some of the questions about whether it's a kolea, or some other calling.
- Abe: We started an audio monitoring project, we'll start seeing a large amount of audio that will get fed into an AI algorithm, and can also be used for exactly that purpose. I also have a collection of those things and I intend to do that. This presentation is a jumpstart into the HISC frog progress presentation that I'm putting together and I would like to have those things together as well for that presentation, and have a video version of that presentation so it can be shared more widely and include audio in there. Just got to get to it. Additionally, in some of these populations, personally, I have found more than one large population of frogs because somebody said I hear a frog. I would hear one or two, but something smells a little weird, and then I'd go crawl around in the bushes and

find a giant population that people know about but didn't tell us. There's definitely room for improvement, those were shocks, but nonetheless.

- Fern: We should figure out an outreach thing for Molokai on Earth Day too, highlight the calls and how to reach us.
- Abe: We've just begun working with Sam Aruch on data systems as well, I anticipate this being another great leap in our data systems. We went from Access database paper forms and "I heard something at a gas station" and now hopefully this next leap and data system should be a pretty powerful improvement to our reporting capabilities and our analyzation capabilities, and also our communication to the public, so that is really exciting. Ok, last things - back to the ACE crew. The reason we sprayed a bazillion gallons here during this fourth quarter is because of the ACE crew. If you look over at this graph on the right side, you can see our crew went down, but gallons still went up and that's a factor of the MISC crew mixing and supporting the ACE crew. That dedicated funding makes it happen and the more consistency we can have, because the frogs are consistent in their messaging and their behavior, they're very consistent, and any inconsistency in our ability to follow up has dramatic impacts 4, 5, 6, and 8 months down the line. Cheers to the crew again. If we don't have funding or we stop, there's just going to be white pipeline, and gulches, and there'll be frogs everywhere. But, looking up the mountain, that's where I look when I think about this stuff. It's nice to take care of people and help them sleep, and limit all that impact on our community. It's a biblical plague of frogs moving towards the mountain and we keep intercepting them, and keeping them away. So, thank you for all the support from the county, it's absolutely huge, and thanks to all admin at MISC doing all the less glorious things than the crew work. It's just remarkable how they show up and do the work and the support and the dedication that we have throughout the organization, it's remarkable and it's amazing what we've achieved, it really is. It's intense, and it's a lot, but it's worth it.
- Fern: Thank you very much.
- Randy: Thanks for the great work.
- Radford: I just wanted to make one comment on the ACE crew. If you aren't clear, we had funding to hire local positions, but this was when the economy was still strong, we had a really hard time finding people that were interested in working on the crew. So we pursued a variety of different options and ended up working with American Conservation Experience (ACE) and Julia Parrish, who was the OISC manager. Some of you might remember her. But anyway, our experience with them was exceptional and they're really easy to work with. Julia obviously knows what's going on in Hawaii. It's tied to AmeriCorps; they're actually AmeriCorps, and the ACE program facilitates their experience. They did recruit locally; however, the group that came out was from the mainland, but if we were to utilize their services again they have committed to trying to hire local. They did that last year but unfortunately, we didn't get local applicants. But just a heads up, it's a great program if people want more information about how that worked and who to contact and the details, we're happy to provide it. As I

mentioned, there were five ACE members with the coqui crew and then another six that went to Hana. There was a period where we actually had all 11 working on coqui in the fall too. That was a significant push. It's a great program. It was really easy to work with them, and a great way to get a big push of work done.

- Randy: How were they housed? How long was their work?
- Radford: Their work period got broken up because of COVID-19. They came originally in February 2020, and then they went home in March. Then they came back in August 2020. They did their 14 day quarantine and were housed at the bird house, Hanna Mounce's and DLNR's house on Piiholo Road near the top. She was very kind and allowed us to use that facility since they didn't have interns there at the time. Until December 15, I think, the five working on the coqui crew were housed there on Piiholo road. Once the other six went back to Hana, we retrofitted the base yard, there's a bunkhouse now, so they lived out of that bunkhouse. That is one of the longer term goals also with the Old Maui High facility, if that all works out, we'd have housing for interns, students, and researchers right there. We also have the yurts that we hope to put back up at some point, and they could be essentially housing and a kitchen at OMH.
- Abe: I forget who asked about potential habitat, but here's a visual. I completely agree with all of this up into Kipahulu, and all around west Maui. Personally, I think they would just crawl to the top of West Maui, I don't see any reason that they wouldn't just go right to the peaks, it's warm enough up there when there's sun.
- Brooke: I adapted this from a study, I did not create suitable habitats. All I did was take a course map from one of the papers to overlay it into GIS and create this layer as close to what the author had created. I didn't have the GIS layers so this is not anything I came up with for coqui habitat. This is their research with graduate students. Just to explain what else is on this map here: the blue are parcels that have houses on them. And that acreage is under 1000 acres. The reason I included that is because that's where a lot of coqui frogs are, outside of the suitable habitat range, because it's artificial habitat, because people are watering their lawns, etc., and that's why we have frogs in those areas outside of what is predicted to be suitable habitat.
- Abe: Yes, thank you Brooke. You made it pretty, it's much easier to look at and understand all of the numbers. Thanks for Brooke for doing that because we didn't have anything like this, hopefully this is helpful and insightful
- Fern: I think those sugarcane fields, and irrigation there, probably would support some coqui frogs but not super densities, but it could be a good corridor.
- Abe: Especially as agriculture grows and expands on those areas, and we start getting some tree canopy cover.
- Mike Ade: Hey, I just want to give a little shout out with that map that was just up for Hana crew who did the hand captures out there. Presently we have two ex-coqui frog crew guys working on Hana Miconia crew. As the coconut wireless flies out on the Hana side, if there's even a peep, or any suspicion of any frog, one of those guys knows pretty fast. They're good at responding.

- Fern: That helps with training, and everyone at MISC needs to have eyes and ears for everything that's out, so that they can distinguish what's new and novel that's not supposed to be here.
- Forest: Just want to say thanks Abe, that's a pretty impressive project you've got going on there. We're glad that you hanged out all these years, providing institutional memory and guidance to support your crew and everything. Nice work. Thanks.
- Radford: Thanks Abe, for all of your hard work, it's really impressive.

2) Community Engagement

- Susan (screen share): Can everybody see that, yes? Just to start off with Abe's presentation was great with all that spatial information that he's able to get through the crew. With the community people doing this, we're largely reliant on paper data sheets, and with COVID we have not been able to get those paper data sheets digitized, since all of our data is still at the office and that's a big challenge. We don't have as much fancy spatial data, but we have lots of good information here. To start off, this image is one of the signs that we give out to community members to show their support and involvement in the program. We also use bigger signs. These have been a really great low effort, low tech, outreach tool. The one in the top corner is for coqui spray week, that's our newest iteration sign and we put these out about a week before spray week starts. It's both a prompt for the people in the neighborhood to know it's happening and they should check their email to look for the schedule and sign ups. It's also great for people who are driving by on the road. They'll see this and want to know what it is about and find out more. I get a lot of calls based off of these signs and people wanting to know what we're spraying, what they can do for the coqui in their yard, and how to get involved. These have been a great tool to help get the word out about the program. Other outreach tools that we're using all the time are the e-newsletters, and sending out MailChimp emails to the participants in the program. We'll also send out an email announcement to the people in the community about a week ahead of time, that includes a link so that they can sign up on the schedule. Then a week or so after the spray week, I send out a wrap up email acknowledging people that participated in the spray week, share details about how many properties were sprayed, and all kinds of things have happened. It's good to give people that shout out and let them know the great work that they're doing. We also talk about what we're doing in social media posts. We had a press release come out in the fall about the program, or I guess it was maybe December. Press releases further help get the word out. We're also spending a lot of time on the phone, people are calling about coqui frogs asking what they can do, how to get them out of their yard. So, I will spend a lot of time on the phone talking to people. It's a great way to get to know people especially since we can't go into the community as much as we used to. This map shows the five main neighborhoods that we have for the program. There's been four participating since 2019, and just in the last quarter of 2020 a fifth neighborhood joined. That neighborhood

includes Ala Olu Place, Akoa Place, and Makaio Place, or Akoa-Ala Olu-Makaio neighborhood, I'm trying to come up with a catchy name for them, it's kind of a mouthful. Each of the neighborhoods typically have a spray week on a six week recurring schedule. According to one participant in Haiku Hill, doing this spray every six months has reduced the number of frogs on their properties from hundreds of frogs to only a handful remaining. It's really showing that this is effective and the communities are seeing that it's an effective program for them. Each of the five different neighborhoods requires a different level of support from MISC, like Haiku Hill, they were one of the first ones. They're almost completely autonomous, we just give them citric. Others need more help with logistics, etc. Some statistics here from the fourth quarter. We had eight communities spray weeks across those five neighborhoods. 96 unique properties where public control happened, so it was only public control there, no MISC staff present. These people are getting the supplies, the tools from us, and going out to control coqui frogs on their own properties. Similarly, we had 4,095 gallons of citric acid applied with one of our MISC liaisons present helping the community members, and then another 9,160 gallons citric acid applied by the community on their own with no MISC presence, they're just going out and spraying the frogs.

- Fern: One comment I have, Susan, for this write up, especially if it goes out to the county council, or council members, is that you should say 4,095 gallon citric acid, mix applied.
- Susan: Sure, we always try to say the 14% citric acid solution, is that what you mean, so that we're clear about what we're putting on the landscape.
- Fern: Yes, I think that's important because so many people are sensitized to what's happening.
- Susan: Absolutely, yes, thank you for that, I will include that for public presentations. So, to me these numbers really indicate that the community will do this work. If they are supplied with the tools, etc. that they need and have the proper training to do it effectively. It's a really good indicator that the community can do this and are willing to do it. Also, during the fourth quarter, we started offering smaller community spray nights. These are targeted to smaller neighborhoods that don't need the full spray week treatment. There's not as many properties, just smaller little groups of neighbors, perhaps there's a cul de sac, and they come together for a night and work together to spray the frogs, just like a community spray week just on a smaller schedule. This map shows a few of the places that we went to at the end of the fourth quarter in the last month or so of 2020 we started hitting these places. For these, one MISC staff person, checks out our truck and one of our sprayers, and then works directly with a group of neighbors that have been typically organized by their neighbors and gets everybody to come out, so that takes some of the logistics off of us as well. I also just wanted to mention COVID protocols. We have established relationships with a lot of these people, and they understand our COVID protocol and we've communicated that to them. We always wear our masks when we go out and work with people and we ask them to wear their masks as well. And also, of course,

maintain our physical distance, and we disinfect the high touch areas on equipment and carry disposable masks in the MISC truck, in case anybody doesn't have one. But this hasn't been an issue, everybody's happy to follow the protocols and do what is necessary, that's been great and allows us to continue to do this work with the communities in their backyards.

- Fern: If anybody was to become infected with COVID they would be willing to share that information with you guys?
- Susan: I'm pretty sure if someone thought that they had gotten infected because we had been out doing one of these things that we would hear about it. I feel like the people that we work with, if they knew that they had COVID, they would let us know and we would just reschedule. We have really good working relationships with all of these folks.
- Fern: That's excellent work that you're doing and thanks.
- Susan: Here are just a few more pictures of some of these community participants doing the coqui control work. The middle picture is our first micro neighborhood group on their first night of a community spray. They were super enthusiastic to work with Beth and Carl, come and learn about the program, and they wanted a picture as a group when they were done. We also use this on social media to highlight community spray activities. The other two pictures are some of our more long standing participants, they know what they're doing, you get there and give them the hose and they can crank up the equipment and go spray the frogs, they're really, really good with it. We teased them that they could come and work on the coqui crew if they wanted to because they're pretty skilled with prowling around these interesting areas, gulches in their backyards, and they really get into it. They do a great job. This picture is of our top Captain John Phelps. He's the one that organizes Haiku Hill and makes them totally autonomous. During the fourth quarter, we started our community coqui control advisory group. It was a lot of the people that had been involved in the program. We invited people from each of the neighborhoods to participate, and then another person to represent Haiku at large that isn't in one of these community coqui control neighborhoods. These meetings are a great time to hear their feedback about the program. Generally they had really positive things to say and it was also good to be able to connect them together. Some of them know that other neighborhoods are doing it, but this was a way for them to get connected and share tips and tricks and things that they did. We've had a couple really good quotes from people, one of the captains said that the community spray weeks are like a barn raising with the community working together. And then John Phelps said this, about how it would be devastating to us, meaning, their community, if MISC lost the ability to provide that premix citric, due to budget challenges they might be happening because of COVID. For example, in Haiku Hill during spray week they average 3,300 gallons of that 14% citric solution every time they have a spray week. They are largely able to do that because they have this pipeline around their neighborhood, so they're using their truck and our 100 gallon sprayer. And then they have this pipeline that they actually built. MISC gave them the materials, and

at least one of the community members also contributed some funding to the pipeline, but the community built this pipeline themselves around their neighborhood so that they can spray and keep the frogs out of their yards. This is about, I think, a mile and a half of pipeline around their neighborhood.

- Fern: That is really amazing, that should be shared widely with Oahu where I know the Department of Agriculture still responds to infrequent coqui but just showing what community groups can do to keep their neighborhood safe. That's truly amazing should really be shared.
- Susan: I agree, for sure. The lower Kokomo neighborhood also has a pipeline that runs in the gulch in their neighborhood as well. These pipelines really amp up the ability, just like for the coqui crew, it makes it possible to get more citric out there and keep the frogs back. I've talked about this briefly in these meetings before, but we've been doing this green waste diversion program. This was made possible by partnering with Maui Disposal. They've given us a great rate on 30 cubic yard Greenway bins. They'll bring one out to a neighborhood and let it sit there as long as needed to fill it up with the green waste from these people's yards. It's a very cost effective tool, for \$400 we can haul out a lot of green waste. Some of these places have a big green waste pile and the coqui frogs love to be in these piles. A couple of the captains have said they use a lot of citric just trying to soak one of these green waste piles, it's so much better to haul it out and not have to spray it every six weeks. This is very effective, people are excited about this and continue to ask for us to provide this service. I know we're going to try to provide this when funding allows us to do it in feature, and when the neighborhood is asking for it. It's super effective and reducing the coqui habitat can reduce the coqui frog levels by about 30%. It also makes it easier to spray citric and have it reach the remaining coqui frogs in the vegetation if it's been cleared out of all the dead stuff, and everything. This is a great tool that's been working well for us. We still do our no cost powder citric delivery. We have everything from 1.28 small Ziploc bags of citric, and that will make one gallon. This lady here has a 50 pound bag of citric, that's all in a garbage bag. And we have everything in between a couple pounds and a couple 50 pound bags. We've been doing this since the start of the COVID stay at home order. Since then we've done 2,200 pounds of citric delivery, just for people trying to do control in their backyard, and most of it is just a few of those 1.28 pound bags at a time. People are really into doing this, they'll call and ask for it and we drop it off. We do have documents to give people for guidance on how to mix up the citric to make the proper solution, how to find a coqui frog in their yard, and then how to also make their yards unfriendly for coqui frogs. That's like thinning out the vegetation and getting rid of the dead stuff. We also make sure that people read the citric acid waiver form, and we developed the community coqui control code of conduct for people that get citric delivered and participate in the program. We asked them to follow that. It's all about treating each other with respect, respecting people's boundaries for their properties and using our equipment appropriately and that kind of thing and using the citric as it's required on the label. This has been a great option for folks to

keep doing control during COVID times, and it prevents people from just showing up at the MISC baseyard since the baseyard is still mostly closed to the public. A few people, if they have to get the sprayer or something, we make an appointment with them. But that really has cut down on the public traffic coming into the baseyard so we don't have that risk. This was alluded to a little bit earlier, the community program has taken the lead on deploying and managing the acoustic monitoring project. We have 17 monitors that are shown here. The first one was deployed on December 30th. As of yesterday, we have 12 of these out and five more waiting on permissions from the property owner to deploy. The locations for the initial deployments represent a range of coqui frog population levels. We're going to give all of this data to the Conservation Metrics folks who are going to develop an algorithm so that we can analyze coqui populations in the future. They want every kind of coqui noise from the really low level sites to what we've called the insane from old sites, and everything in between so that they can learn and their AI can learn how to judge these calculations. We should be getting lots more data in and we'll have lots of audio recordings to make good clips. We also have great clips already through people submitting coqui recordings, like I was saying we ask people to try to get a recording of what they're hearing when they're making a report so we can confirm that it's a coqui frog. We'll have more on this probably the next time we meet. I'm excited that the community program is taking the lead. Carl and Beth have been out the last few days putting these recorders out, it's a cool project to help us learn a lot more about the populations as we go forward. One of the great perks of working on the coqui project is getting to see some really beautiful sunsets while we're out doing our work. Happy to take questions.

- Fern: Does Conservation Metrics have the money for doing the analysis?
- Radford: Yes, they do. We contracted with them for the initial push to collect the preliminary data, get the song meters in place, and then start working on the AI technology portion of it. We may seek additional funding, we'll just have to see where we're at once they get through this initial round, but their goal is to get us set up to self-manage this project. I think that's going to take a couple of years at least to get to that point, but we currently have the funding to get this off the ground.
- Fern: It'll be interesting. It'd be good to have one set up in Puerto Rico to see what are the differences between native range and introduced range.
- Radford: That would be really interesting. One of the other things we want to add into this at some point is weather data. We'd like to quantify it in a more rigorous way, how that impacts activity. We kind of know already, but not with that level of sophistication.
- Forest: Really good presentation. On the Big Island are communities still trying to battle this thing, or they just kind of rolled over?
- Susan: They're still trying to do what they can, but they don't have the same level of support to do what we're able to do here. They're kind of all doing their own thing as far as I know.

- Radford: Yeah, that's the big difference really, they don't have any dedicated resources to this kind of an endeavor so whatever they put towards it, they pay out of pocket. It's a totally different model. Ours is still for these communities who are certainly pushing frogs back if not eradicating. Whereas on the Big Island it's to defend your borders. It's kind of like the little fire ant situation, it's the inverse of what we're doing on Maui or trying to do.
- Forest: For like those in Haiku Hill, every 6 weeks is it infested again, or do they just need to work on or spray the perimeter?
- Susan: Haiku Hill, it's more just continuing to kind of mop up small amounts of frogs. Places that have been doing this longer, there's not as many frogs like Haiku mauka in particular, they've had a great response especially in the fourth quarter. When they had their first spray week in January, they weren't hearing that many frogs, so there weren't many people participating, which is kind of a hard way to judge the success of the program. If citric use drops off, does that mean people aren't participating because they gave up or because it worked and they don't need it anymore? We're trying to get different metrics to show the success, or not, of what we're doing. We just started trying to do what we're calling public coqui counts. We ask people in the communities to go out and listen before the spray week and try to estimate how many frogs that they're hearing, but especially report if they don't hear any frogs on their property. Then we can start to count how many properties in this neighborhood don't have frogs now that used to have frogs. That can be more of our metric of success, and still work on messaging to get people to really do it and focus on their place, not their neighbor's.
- Forest: It's encouraging that you've been able to make progress in the communities and it's an impressive project. Thank you very much for your hard work.
- Radford: I agree completely with you, Forest, Susan's done a great job. For perspective, she got hired, moved here, took on this position, which was a new endeavor, a significant one to take on. She got here, we had her start, and then we said now you get to stay home because there's this thing called COVID-19. She's put all of this together while working at home and while out with communities. That's a great transition to take on and then obviously be successful, up and running, and coming up with creative ideas, and implementing them. So great job, Susan. Thanks for your hard work.

Other Vertebrates

1) Training

- Fern: I'm interested in talking about and trying to plan how we might set up training for MISC staff on vertebrates, what things are supposed to be here and what things aren't supposed to be here, and what things we don't think are here. We haven't done that in years for the MISC staff, or for other people who are interested like from Marshall's colleagues or from DOFAW and forestry, we could have a lot of people doing it depending on how we set it up and when it's

scheduled. If I'm going to do any part of that, I'd like to know so that I can schedule getting presentations updated and ready to do it.

- Marshall: I'd be interested in sending some of our new inspectors if you do have a course or class that'd be good for them.
- Radford: We can do it two ways. One would be to pick a few dates, then that forces us to make it happen, because we've been talking about this for a while. The second part, I think we talked about this before, is to have a subcommittee of people to help put this together, which I think is how we did it last time, right Fern? A few of us put the whole structure of the training together and then implemented it.
- Fern: I think that's right. The other thing we should figure out is who the audience might be to figure out what the scope of it is and the level at which we're going to do the presentation. If we're going to do a snake search with rubber snakes at Old Maui High, I think it could be done socially distanced. That could be an add on to it. We need to have a committee to decide how we want to go about doing it. It'd be me, Radford, Knox, maybe Marshall, for sure, and I'm not sure who else would want to do that. The idea would be to get everybody up to snuff and be eyes and ears for what's out there and what people should be looking for and aware of, so they can hit the alarm. The skunk is really pretty obvious, black and white, and not supposed to be here. But a lot of other things might not be quite that way, like new lizards, new chameleons, or new frogs.
- Knox: Yeah, I think an important part of that training would also be, well, a lot of technology has developed since the last time we did comprehensive training like that. The camera trapping technologies are far advanced as well as audio monitoring and other early detection technologies. That would be something we should probably leverage to train, depending on what the various groups have available. I know internally we have a lot of expertise in some of these things, so it's probably something we want to explore.
- Fern: We should have something planned for MISC to use if something comes in, in regards to cameras and know how to monitor them, what you're looking for or can hear.
- Radford: We can schedule a committee meeting in the next couple of weeks, come up with a path forward and a proposed date for doing the training. Would that be the most efficient?
- Fern: Yes, I think so. That'll be our action item in the next two weeks to get together as a committee. Then Knox, you, and Elizabeth can let us know when it's best to plan for MISC. Maybe Lisaa wants to sit in on it too, so she knows what's going on, and maybe Susan. Also, maybe to invite other volunteers that are very gung ho to help with the coqui frogs, so that they are also officially trained as adjuncts to MISC staff.
- Radford: That would be a neat opportunity for them, they might be quite interested in it.

- Fern: And Elizabeth, if you have input from 643-PEST, that should be covered. Let's get a subcommittee going, it'll be Knox, Radford, me, Marshall, and then anyone who is interested that I have not named.
- Radford: Let's pick a lead on it. Knox? I'll totally help with that, just have you help schedule it and keep it from falling through the cracks.
- Knox: Sure thing, sounds good, looking forward to it.

General MISC Updates

1) Plants

- Mike Ade: No updates, we're locked into pampas grass at the moment. On a side note, Susan intercepted a call and forwarded to me about a pittosporum up out by the old Walker estate that I've been trying to kill since 2003. When our first eradication for that species came up, the old owners moved on and informed the new owner that we were looking to dispose of that tree. So the new owner, I contacted her and we have permission to kill it. It's the one that's been seeding out the entire area. It's quite sizable. Once we get that one, we'll go down and take the rest of them out down the road, there's quite a bit on that place. That's the only update I have with that, we're just plugging along. Our crew is downsized. The Hana crew seems to be the largest MISC crew at this juncture. They're being swamped by bad weather out there. The other two guys, Billy and Ross, are doing daily Pampas surveys on the upper elevations of Haleakala Ranch, that'll be for next couple weeks, and then just moving east and west from there. So yeah, that's it. I don't have any other updates besides the pittosporum.
- Fern: The other thing, it's great to see the weekly updates from Forest and Kim. It's really nice to see when they have new detections and new submissions. It's good that you're adding more things into the records. Good to know that somebody has their eye open.

2) Little Fire Ants

- Brooke: No updates.

3) Public Relations

- Lissa: Serena has jumped right in. We're basically tag teaming the PR program, she's taking the lead on social media and Facebook and is doing amazing things. She's creating reels and stuff I didn't know was possible, it's much appreciated. She's becoming more familiar with our target species, while she's been part of our community for a while, she's coming up to speed with the impacts and distribution for the wide range of species that we worked on. She wrote a Maui News article in January. We're going to trade off on every other month. We're spearheading MISC's involvement in invasive species awareness month. With everything being virtual, we're able to reach a broader audience and it's advantageous in some ways, it's challenging in others. Serena has been reaching out and working with some of our coordinators. I know we're getting a presentation from Knox, Abe, Susan, and Brooke on the work that they're doing. For Hawaii Invasive Species Awareness Month, every county has a week so we're the second week on, and it will all be shared through social media and the

presentations will be virtual, and available on Facebook. They can also be exported and sent out later. I think it's a good way to expand awareness of the on the ground work in a novel way. We're also doing an invasive species scavenger hunt. Essentially, you sign up to do three items and then share your findings on social media. It's to survey your yard for little fire ants and send in a sample, try to look for coqui frogs, learn what they sound like, identify them, and do a backyard plant survey, look up those you don't know. She came up with that idea. It's great for increasing the level of awareness of what's going on in our community, and in their backyards. It'll be interesting to see what we get because we've never tried something like that virtually. We've done those kinds of activities with classrooms, but not as an online community wide activity. This will be cool. One of the other projects that we're working on is classroom visits. We will be hiring in the near future a dedicated position for this, like, what we had in the past. Serena is taking that lead right now. We weren't certain how much interest there would be, but she sent out an email and she's booking up quickly with classroom visits, and they're all going to be virtual of course. We're adapting the activities so that it will work in a virtual format but there seems to be a lot of interest. That's promising and will help us meet our deliverables. Additionally, there's our Maui Mauka Conservation Awareness Training. One of those is coming up, working with the different guest speakers. The material is geared towards tour guides, but these trainings are open to anybody in the community, they'll be virtual as well. We've been getting pretty good attendance so far, more than we did in person. Our guest speaker on February 11th will be Adam Wong talking about the impacts of having no tourists on Molokini and some of the survey work that they did. What the lack of snorkelers out there has done. Teya Penniman will be speaking on February 23rd on wolbachia to help curb mosquito populations in efforts to save our native bird populations. Another project that we're working on is streamlining our quarterly newsletter, which helps distribute some of the field work and awareness of what's going on to the community. We used to have the quarterly report that would go out to the committee that Elizabeth would compile and then we would have a glossy print newsletter. For a while I tried to do an electronic newsletter, all different variations. We revisited the concept and plan on compiling a newsletter that will go out through email on the MailChimp mailing list. It will touch on each of the coordinators or each of the projects, briefly, and then you can click on the link and for more detailed information, and those will live on our website. It will provide a record of our efforts over the years in a timely manner. That's where we're at, essentially. We do need to go back and revisit with Teya about the outreach around the Friends of Old Maui High, and we identified stakeholders, so we need to go revisit that for sure. I like the idea of doing more awareness campaigns. The little fire ant awareness campaign in October was quite successful and it'd be good to do something similar to that for coqui in the spring. We could train people on how to catch coqui themselves and report them to MISC. That's kind of the really quick summary of where we're at and some of the ideas.

4) **Funding**

- Radford: All right, I'll just update quickly. We're kind of where we were before - we have it committed but we don't have it in the bank. That's still the major challenge that we work on pretty much every day.
- Elizabeth: I got an email from Chin Lee a couple minutes ago. The HISC account is finally fully executed and we should have the money within a few days.
- Radford: We still have three other rather large grants that are still in the pipeline, even though those proposals were submitted in June, or early July. So that's \$2.2 million in funding. That's something to be aware of, and Elizabeth has been doing a great job of helping keep us afloat, for sure.

General Partner Updates

- Marshall: We are currently responding to a Black Panther sighting. We've been there for about three weeks in Ulumalu and through the EMI gate. We're lucky that it's kind of Fleming's backyard so he could take us right to the spot where the initial sighting was, we had more than, I'd say, three or four people that reported it to us. It was supposedly an adult with four cubs. We don't have any hard evidence quite yet. We sent scats to the Honolulu Zoo. One of the first came back as an herbivore, it was a pig. The second one came back as a feline with four different parasites in it. One of them being a rodent. They're kind of leaning towards feline, but it could be canine. To us it looked like a large cat, it's pretty hard to determine that kind of stuff. We set up six trail cameras up and down the river and on the ridge of that gulch. We've been trying to monitor it several times a week. The weather was not cooperating with us last week, all the big rain. Right now we're just going to continue monitoring that area, till we get stronger evidence. If we do get evidence we'll probably have to contract out some pro trappers or something, it's pretty remote to get to. Now the skunk update - we've been responding since Saturday. We have a video of it, we know there's a skunk, hard evidence. We currently have nine traps around the Costco area, and the hotel. So far, we haven't caught any skunks so it's still out there running around. We haven't really publicized the panther sighting yet because we don't want everybody up there. As far as a skunk, we haven't really put word out on that either yet.
- Fleming: I was just looking through some of the cam footage, it's interesting. If that poo might be canine, we've never seen a dog on the cams. Also, we've never seen a big cat but there's house cats out there, pigs, mongoose, and rats, so far that is all we have seen on the cams. That's about it.
- Fern: Are the traps for the cat the big box trap where the cat would have to step on the trigger?
- Marshall: Yes. We've been successful with them in the past so we've used them. We have nine deployed I think. We're going to add two more today. We're also changing our feed from sardines to marshmallows and peanut butter, to try to stop getting non target animals like cats and mongoose, it was recommended to us by the people on Oahu.
- Fern: Do you have traps for the cat?
- Marshall: No, we pulled those, we had smaller traps, we couldn't get any from DLNR, they didn't have any available of their large pig traps. We ended up not putting any large traps out there. We had smaller traps with cameras on them, we figured if we caught a mongoose we'd have live bait and maybe something would get interested in it. It's kind of a new situation for us so we're trying all kinds of stuff, looking for signs. We found a

big cave, maybe three or four feet off the ground with a track in there. Also, simultaneously that same week we had a picture of a large cat in Kula across from Rice Park. That one was hard to get a reference for size. It's kind of like when it rains it pours, it's like skunks and panthers and jaguars all of a sudden.

- Fern: I saw the one from Rice Park and I think that it was a pig. What looked like a trail was likely just the dark background from vegetation or whatever it was, I actually think that was a pig and had no tail.
- Marshall: I could see how the lady could see that in the picture. But as far as size reference, we went out there and the pictures were taken 500 yards away, it's zoomed in and blurry so it's kind of hard to tell.
- Fern: Actually, the way the animal looked was not right, it didn't have the neck or head type, or even shoulder type protuberance that a cat would have, regardless of the type of cat. It did not look like a cat.
- Marshall: Exactly. We haven't made a statement and we do definitely want people out there, trampling through that area.
- Fern: Right. Understood. Good, not to do that. This thing of getting as many skunks as have been showing up, it's really interesting to know where those containers are coming from and if there isn't work that needs to happen, and tell people that we're getting skunks from your shipping location.
- Marshall: We sent scat in for rabies, it came back negative. We're working with a gentleman, he's one of my father's colleagues, but he was offering to do DNA testing to possibly find out the origin of the skunk. The last one that we set the brain in for. But this next one I guess we'll try to track it down, but obviously it's probably from Costco, they've been off loading their dry goods right there. It's a hitchhiking skunk, that makes the most sense to me.
- Fern: Where they offload containers, is there a low wall or anything?
- Marshall: Not at all. It's right there in the parking lot. When you drive in the back entrance of Costco you'll see all those 40 foot containers lined up there and that's where they pull out all their dry goods. Refrigerated stuff is unloaded inside the warehouse. But dry goods, furniture, whatever you see that stores, pretty much is just pulled out before it lifts right in the parking lot in the early morning.
- Fern: OK, thanks for the update. This points out that things like this keep coming in and we need to be aware of it.
- Marshall: It's a learning experience for us right now. It turned out to be a helpful path of learning the game camera, great idea given to us by the biologists. We've learned how to set those up and use them for future stuff.
- Randy: So Marshall, do you guys have cameras in the parking lot area?
- Marshall: The cameras are for the panther, actually. We haven't set up any for the skunk. It's not a great place for cameras, lots of traffic and people walking all the time, so not likely to be successful there. The cameras are for the remote locations, we can check once a week or twice a week, as weather permits.

Action Items

- Set up a subcommittee and meeting date for making plans for vertebrate training
- Schedule a county council member field trip to the Old Maui High (OMH) site – Makale'a and the mayor

- Figure out dates for a virtual community meeting regarding Old Maui High, and group of stakeholders meeting
- Get the MOU back from NPS

Next Meeting Date: April 1st

Pau