

MAUI INVASIVE SPECIES COMMITTEE
MEETING MINUTES
April 9, 2010

ATTENDANCE: Elizabeth Speith, Chuck Chimera, Forest Starr, Kim Starr, Lloyd Loope, Pat Bily, Rachel Neville, Fern Duvall, Stuart Funke-d'Egnuff, Jeremy Gooding, Sky Harrison, Philip Thomas, James Leary, Mike Brady, Tricia Rodriguez, Lissa Fox, Teya Penniman, Brooke Mahnken, Adam Radford, Mike Ade, Elizabeth Anderson

ATTENDING VIA WEB-EX: Rob Hauff, Keren Gundersen

- Pat Bily (TNC) called the meeting to order at 9:10am.
- Introductions were made around the room.
- Minutes from the February 26, 2010 meeting were approved. They will be posted on the website.

ANNOUNCEMENTS

- Adam: my parents are coming to visit next week. My dad owns a full-service fundraising organization. He will be doing a workshop for the Maui community on April 22 from 8:30am to 12:30pm at MCC. He focuses on private sector and individual donor fundraising. The workshop will be free. Let Adam know if you are interested.
- Stuart: I would like to introduce Michael Brady, the new coordinator for NRCS and Tri-Isle. He has a unique ability for tracking down grants. He has been finding some good sources and we have already submitted a couple. If you have any ideas, talk to Michael. There are a lot of funds out there now through ARRA. They are broadening their scope. There is often a very quick turnaround. It would be good to have something prepared in advance and have it ready to go should the opportunity arise. We need to be creative. For example, Dr Pang received over a million dollars to address obesity. He is working with Community Work Day to establish working events. It is indirect, but we could tie in. Teya: it would be helpful to have a fundraising case statement and then we could pull out paragraphs as needed for specific pots of money.
- Pat: we had a funding opportunity through the Forest Service with a deadline last week. The focus was on the Pacific Region. TNC and Landcare New Zealand collaborated on a proposal for Kahili ginger biocontrol agent research. It was a last minute thing.
- Lloyd: DOT has a plan that they are asking us to comment on. The plan is for spending \$3 million a year over the next 10 years on really good invasive species projects including early detection and biocontrol. They are getting a match from the Federal government. Rob: HDOA submitted a few proposals through this program including one for albizia and Tracy Johnson submitted a proposal as well. Forest: albizia is a big deal for highways from a safety standpoint. Teya: they are looking for support for the plan. I would propose MISC write a letter of support if that is OK with the Committee. All: yes, agreed.

EARLY DETECTION (ED)

Strategic Plan Goals & Objectives

- Teya: the Strategic Plan section that relates to early detection is copied below. I want us to use that as a platform for this meeting. Pat: it keeps the plan alive and flexible if we review portions as we go. Teya: I went to a County Council budget committee meeting a couple of days ago and they asked if we had a strategic plan that we base our decisions on. I was able to say yes. Keep the following questions in mind as we go through the various presentations today.

1. Are we accomplishing our stated goals/objectives?
2. Do the goals and objectives need to be modified?
3. How can we improve on what we are doing?

GOAL 1: PROTECT MAUI NUI FROM THE HARM OF INVASIVE SPECIES.

Early Detection – Objective 1.1: New terrestrial invasive species are detected at the incipient stage of invasion – when control or eradication is still feasible.

Strategies:

1. USGS & MISC collaborate in implementing Maui-based early detection reporting system.
2. Survey Maui's roadsides, nurseries and botanical gardens during FY08.
3. Improve staff capacity to identify plant, vertebrate, and invertebrate species.
Conduct biennial vertebrate identification training for Maui Nui natural resource workers.
4. Implement "Eyes & Ears" program to expand public's familiarity with target species.
5. Support public awareness of the statewide PEST hotline.
6. Increase MISC's awareness of on-island activities for other taxa (e.g., invertebrates). Identify gaps in early detection.

Performance Measures:

1. Public reports about invasive species via the state PEST hotline or directly to MISC increase.
2. Numbers of trained observers familiar with MISC targets and other identified incipient species.
3. Number of miles surveyed; number of new detections.

USGS-PBIN Early Detection Program (E. Speith)

- Elizabeth S.: the goal of the eyes and ears network is to increase public awareness of invasive species and engage communities in the monitoring of their own neighborhoods. We are coordinating a two-pronged process - creating a tool for reporting and doing outreach. The program vision is to "...stimulate early detection; provide a mechanism for user friendly reporting and rapid assessment of reported biota; and ultimately facilitate rapid response." We started by creating an online system (www.reportapest.org) for reporting that would complement the 643-pest hotline. To date, this system has not really been publicized outside of our workshops. We created the system with the idea that we would want to be able to link it with other systems that were receiving pest reports. This hasn't happened yet, but the potential still exists. The system is designed to allow for rapid evaluation and verification of reports to determine if they are actionable. The information can then be disseminated to facilitate rapid response. We also started doing targeted outreach, the eyes and ears program, in conjunction with MISC.
- Elizabeth S.: CGAPS has a strategic objective to create an alert system that allows numerous formats for the alerts. If a report meets certain criteria, it would be put out to the early detection community. We need to evaluate how we can effectively get information out of Pestnet and know we need to be on the lookout here in Hawaii (i.e. gall wasp). We are also hoping to support a flexible methodology for creation of early detection lists. Most of the islands have different methods. We know the system needs to be flexible. We also have funding for targeted outreach. Future priorities for 2010 to 2012 include:

Early Detection Alert System:

- Aggregated and reviewed from multiple alert sources (Compiled from County Extensions, State, Federal, International, "ad hoc" sources such as Pestnet, email lists and other web resources)
- Maintained in publicly accessible database
- Multiple easy to digest formats for users (email, Twitter, RSS, SMS text, web)

Early Detection Plant Target List Creation:

- Flexible science-based methodology based on Hawaii experience
- Possible application for Pacific Islands territories

Hawaii Early Detection Network:

- Continued statewide expansion (focus Hawaii, Molokai (?), Oahu (?))
- Expanded report assessment and diagnostic support for all Hawaii Islands
- Continued support of online reporting capabilities

- Fern: I will be over on Lanai next week and can follow-up with the people who reported the bulbul. Elizabeth S.: in the reporting system there is the capacity for the individual who sees something to report it, but there is also an associated interview process. Lissa and I did an early detection workshop on Lanai and had a fairly reliable report of a red-vented bulbul at Manele. Forest: it would be good to get that information out to birding networks. Fern: the birding network tends to flood the system with a lot of comments. Sky: we would probably want to make it a one-way street so we don't receive from the network, but just send out an alert.
- Elizabeth S.: the project framework contains three main elements: 1) island-specific target list creation, 2) human and technical infrastructure, and 3) targeted public outreach. Every island has its own unique set of plants and animals. Other considerations for creating target lists include species that are charismatic and actionable, and a formal review and update process. The lists for Maui, Molokai, and Lanai were created by the MISC Committee and based on the experimental eradications list created by Forest and Kim Starr, USGS. The target list for Hawaii was created by the BIISC early detection crew with input from Page Else, BIISC outreach coordinator. The list from Kauai was created by KISC and was based on preliminary early detection roadside survey data and their existing target list. OISC will be going through a formal process of evaluating the species found on their roadside surveys. I will be going to the Big Island next week and we will be coming up with a vetting process for them.
- Elizabeth S.: reportapest.org has pest lists for all of the islands except Kauai posted. Kauai will be posted by the end of the month. There is also a link to the reporting form. We are on Facebook too. We are in the process of doing content revision for the early detection field guides for each island and we will be conducting in-depth workshops. We are moving forward with expanding the current network statewide:
 - Kauai*
 - Target list creation: KISC designated, 2009
 - Kauai Early Detection Field Guide, March 2010
 - Targeted Public Outreach: Prototype workshop in April 2010
 - Website ID pages: April 2010
 - Oahu*
 - Oahu Early Detection project (OED)
 - OED Detection Community Discussion Forum
 - OED Survey Species Guide
 - Maui Nui*
 - Maui:
 - Continued workshops to expanded audiences
 - Maui "Sting Operation" Little Fire Ant Outreach
 - Lanai:
 - Target list designated by MISC, 2005
 - Target audience list creation, workshops initiated March 2010
 - Molokai:
 - Target list designated by MoMISC, 2006
 - Target audience list creation, workshops initiated 2010
 - Hawaii*
 - Target List Creation: 2009 BIISC
 - Website ID pages: April 2009
 - Target audience list creation, workshops initiated 2010/2011
 - Field guide, 2010/2011 (anticipated)
- Pat: do you have a record of report data? Elizabeth S.: yes, I can make that available.

Early Detection Surveys (Roadsides, Nurseries, Landing Zones) (F&K Starr)

- Forest: our work since 2008 includes roadside surveys, nursery surveys, and landing zone surveys.

Nursery Surveys

- Forest: the first nursery survey was done in 1998. We basically take a pencil and paper and start writing down names. We also take pictures. We primarily cover botanical gardens and big box stores. Everyone has been cooperative. We haven't had any problems. Our ratio of field time to office time for this project is 1:10. In a single field day, we can take up to 20 pages of notes on single spaced notebook paper. Back at the office, we complete identifications, update the database, and post images online. We use many different resources for identification. Sometimes we get a name in the field. Sometimes we just get a common name and other times just a picture. We covered 25 nurseries during our most recent survey. We only entered seven of these. For the locations we didn't enter, we used the data from old surveys and online resources. Results: we identified 1,870 species from the 25 nurseries. There were five (<1%) MISC targets the first time and only one the second time. We found 11 (<1%) HDOA weeds, 79 (4%) high Weed Risk Assessment (WRA) rated weeds, 498 (27%) plants that the Global Compendium of Weeds (GCW) rates as environmental weeds elsewhere, and 923 (49%) plants someone says are weeds elsewhere. We found 314 new state records - cultivated plants that had not been recorded by Bishop Museum or elsewhere. This project is pau. Partnerships are important. Getting the owners on-board is critical. We need to be dealing on all islands, as we know things can move. It is important to have people doing similar work across the state.
- Forest: for the future, better labeling practices would be very helpful and improve our system. It would be great if you could just scan a barcode and get a plant identification. We would like to do more collecting. Of the 314 new state records we found, 295 still need to be collected. If we do the collection, we would want to do it in conjunction with Bishop Museum. We would need a budget for plants that would need to be destroyed to get a voucher. More surveys would be good. There are a lot of botanical gardens we haven't been to and retail and wholesale establishments change by the hour. Pat: do you have target nurseries on the west side? Forest: yes, there are tons. We don't have any specific funding at the moment. Sky: what about the 1:10 ratio? How can we make that better? Kim: better labels would help.

Road Surveys:

- Forest: we drove all the roads on Maui at 5-10 mph. The process of picking targets is difficult. We tried to be repeatable and transparent. We included the following in our targets: MISC targets, HDOA targets, cooperator targets, biofuel plants, GCW weedy plants, and high WRA plants. We wanted to find the most invasive weeds with the lowest populations on Maui. After the surveys, we do expert interviews to fill in gaps in our maps. We try to collect anything new or unrecognized and we take tons of pictures. We drove 850 miles in 2000 and again in 2009. Weeds are where the people are. The expert interviews give us information on the areas beyond roads. We take all the information collected and crunch it into maps. We gathered 8,332 points for 75 species from our surveys and another 788 points for 84 species during expert interviews. Comparing the 2000 and 2009 maps shows that pampas grass residential control is working. Capeweed (*Arctotheca calendula*) was a new state record that was found during the nursery surveys. It has a high invasive score and there is a lot in the wild upcountry. Carrotwood (*Cupaniopsis anacardioides*) is still cultivated. It is more common on Oahu and we found it planted in commercial developments, perhaps where there was an Oahu developer. It would be nice to do the surveys twice in a year to get an idea of seasonality. New technology (i.e. Google Maps) could also be helpful in the future.

Landing Zones

- Forest: there are pukas in the rainforest that are used for conservation work and can contribute to weeds getting moved around. We identified landing zones (LZs) to survey on a variety of different conservation lands. After obtaining permission for a specific LZ, we did preflight preparation using Google Earth. This allowed us to get the landmarks down and really helped in finding these remote, obscure sites. We would fly in and write down all the non-native species in the LZ. We also interviewed people. A lot of organizations already have data on their LZs. We obtained data on 135 out of 222 LZs on Maui. We surveyed 29 out of the 222. We also surveyed base LZs. We compiled an LZ database and made maps. We mapped 75 species. Incipients found = bog rush (*Juncus effuses*). The only record was from the park.

- Forest: there is a risk in going into these remote areas, but people do need to go in for management purposes. There seems to be a good balance with the protocols that are in place. Joint operations with other organizations provided quite a bit of costs savings. We found that we could be dropped while a crew was being extracted. Ultimately, the field staff needs to be aware of species to be on the lookout for.

Other Projects

- Forest: we are assisting CTAHR with fireweed monitoring. We have 15 plots across the island and we are looking at insects and grass height. We are also doing some tephritid fly work. There are natives and biocontrol introductions in this group. We search native host plants and collect the flies, bring them back and rear them. We then pin and label them and send them to the museum for identification and archiving. Our Plants of Hawaii website has had almost 2 million visits since 2008.

Early Detection Workshops (L. Fox, E. Speith)

- Lissa: when planning the outreach component of the early detection program we first identified several targeted segments of the public for participation. First priority was other conservation professionals, (staff at MISC, watershed partnerships, field technicians). In 2005, the MISC Committee identified priorities for targeted outreach including neighborhood associations/community members (public meetings), harbor/dock workers (Kahului Harbor), nurseries (Maui Association of Landscape Professionals), golf courses, utility workers, and road crews. The goal of the workshops is to get the word out to folks about what the species we are looking for, how to recognize them, and how to report. We offer three general types of workshops targeted for different audiences:
 1. “What’s in my Backyard- Invasive Plants and Animals of Maui” - general public
 2. “Be Maui’s Eyes and Ears” - conservation staff
 3. “First Line of Defense” - road crews, APHIS staff, golf course workers, etc.
- Lissa: our key message is “you are crucial in the search for invasive species.” Our Eyes and Ears toolbox includes species web pages that can be shared, printable pest fliers, field guides, and a Facebook fan page. We have done 23 workshops to date with ~310 people attending. The workshops are a minimum of one hour and usually go for two or more hours. We try to focus on 3-5 species depending on the audience and based on species they may encounter. Everyone attending gets a copy of the guide. We try to develop and maintain a personal relationship with attendees. For groups like the Maui Forest Bird project and AmeriCorps we do annual presentations when new staff come on. Elizabeth S.: we originally printed 500 early detection books. We are almost out now and there is funding available to do a reprint. We would like to review the species listed and discuss whether any should be added or removed. We will be reprinting in a new format similar to the Australian guide. The new format will be available statewide. It is weatherproof and is held together by a carabineer clip instead of being bound. The current species list for Maui is:
 - Ivy Gourd
 - Pampas Grass
 - Rubber Vine
 - Bingabing
 - Red & Asian Melastome
 - Miconia
 - Jerusalem Thorn
 - Fountain Grass
 - Australian Cheesewood
 - Downy Rose Myrtle
 - Yellow Himalayan Raspberry
 - Banana Bunchy Top
 - Veiled Chameleon
 - Stinging Nettle Caterpillar
 - Coqui
 - RIFA
 - LFA
 - Other strange animals

- Discussion: stinging nettle caterpillar is not actionable any longer on Maui. It will be removed. We have been talking about combining Jerusalem thorn (*Parkinsonia aculeata*) with long-thorn kiawe (*Prosopis juliflora*). For the general public any longer thorned kiawe is probably adequate. Long-thorn kiawe is beyond actionable on Maui. Ok to go ahead and combine. Bulbuls are covered on the “other animals” page already. They won’t be added as a separate page. Pages will be added for *Silybum* and invasive algae. We need to do further delimiting surveys for *Erica lusitanica* to determine if it is actionable. A new location was just discovered far away from the known site. Having it in the book would be a way to find more. Mapping is an actionable response. Agreed we will add *Erica* in hopes of getting information that will help us delimit the population. For parasol leaf tree (*Macaranga tanarius*), we will clarify that it should only be reported on East Maui. Any species that we are uncertain about we will keep on for now. With this new format, we can add or subtract pages as needed. Actionable is a good criteria.
- Fern: another audience would be CTHAR. Elizabeth S.: we hope to get more information on suggested target audiences. The original audience list was created by MISC. We will send out an email of the list and get input. Lissa: Hike Maui is interested and we have a list of initial contacts for exterminators. We hit a dead-end with hunter groups on Maui. Pat: I ran into the same wall with them on miconia in the past. Mike B.: you should check with NRCS regarding cost sharing for the printing. You could include target tabs in the book for different groups.
- Lloyd: the main reason to do this is to get public support. It is probably not worth beating your head against the wall. Public acceptance of the need for eradication is crucial. How well is this working? Elizabeth S.: in the message we present to each group we talk about pests that hitchhike from other islands and we focus on what can be done to prevent bigger problems in the future. People feel empowered that they are playing a role. Lloyd: how effective is it as a general outreach tool? Even if the reports aren’t useful, the bottom-line is that it is helping us to gain public support. Elizabeth S.: we have been trying to follow-up with people afterwards. Elizabeth A.: one-on-one individual contact builds support. Mike B.: do you have anything in the paper? The best marketing tool out there is a small box in the paper that is there all the time in the same place. Lissa: we do have a monthly column. Mike B.: unless you are looking for it you don’t see it. If it is daily, you see it and it sticks. It needs to be a consistent message and it doesn’t have to be huge. Pat: the DWS box on native plants is a good example.
- Lissa: we are starting to offer workshops specifically on the little fire ant. We are telling people they can survey their own backyards. There are posters on the Maui buses and the website is up. Elizabeth S.: we are asking people to send in surveys. Cas suggested 10,000 sites. We have 2,000 so far.

Early Detection Little Fire Ant Surveys (F&K Starr)

- Forest: the grant we are working under to survey for little fire ant (LFA) was actually received before LFA was discovered on Maui. We use peanut butter baited vials to survey in high-risk locations. We have been focusing on places that have received shipments from the Big Island, around palms and bananas, etc. We take GPS points for every vial and we are able to deploy 200-400 vials per day. We identify the ants using a microscope on loan from HDOA. We compile the data and link to GIS data. We have collected over 2,000 vials to date and identified 16 species. No LFA have been found so far. We all need to keep looking and we need all sorts of people looking. Kim: we are covering a broad spectrum of nurseries and new developments. Nurseries that receive shipments from the Big Island are a high priority. Mapu and the MISC staff are spending a day per week surveying nurseries and we are focusing on new developments. We (FKS) do the identification for the MISC crew and for the ants collected during Hoike school programs. Fern: it seems like Kipahulu would be a good place to survey. Elizabeth S.: we have a good relationship with the Kipahulu Community Association. We should try to do an LFA workshop for them.

Weed Risk Assessment Project (WRA) (C. Chimera)

- Chuck: as of today (from September 2009 to April 2010), we have screened 977 plants. We are approaching the magic 1,000 number. Of the plants screened 366 rated as high risk (38%), 511 low risk (52%), 100 need further evaluation (10%), 36 are pending, two are in progress, and eight are incomplete.

- I received a call at MISC last week from a landscaper complaining about an invasive cactus with toxic sap that was spreading in Kihei. He said it was a species of *Rhipsalis*, but didn't know which one, only that the milky sap burned his skin and caused him respiratory problems when he tried to cut it back. He said he refused to deal with it anymore and wanted me to call the property owners to warn them about the hazards this plant might cause to any landscapers who tried to deal with it. I had never heard of a cactus with milky, toxic sap, but this guy sounded like he knew what he was talking about, so I went ahead and started an assessment for *Rhipsalis baccifera* (aka pencil cactus, or mistletoe cactus). This species is a popular ornamental. It turns out that there is no evidence that this species has toxic sap, and it has scored as low risk in the WRA (score = 0). I am now convinced that what the guy was talking about is pencil tree (aka *Euphorbia tirucalli*), which is well known for its highly allergenic sap and superficially resembles the cactus. There's no WRA for this species, but it does have a reputation of weediness from other areas. We'll add it to our list of species to be assessed. It is recorded as naturalized on Kauai and is known from a few locations on Maui as well.
- The new WRA database has been unveiled. Philip Thomas, Sky Harrison, and Sam Aruch have been key in developing it. We are entering new assessments into the database as we go. There are 900 plus assessments that need to be entered into the new database from the old spreadsheet format. Hopefully, the new format will make the assessments more useful to people. All the information we are gathering will be available in a standard format. There are many potential applications. Forest: is there a query interface? Chuck: there will be eventually.
- Jackie Kozak will be doing a regular column in the Landscape Industry Council of Hawaii (LICH) newsletter featuring WRA assessed plants. Patti has taken a lot of initiative to create outreach and promote use of the WRA. She has started a publication series about plants that have been screened and are low risk. She uses WRA assessment information on where certain plants will grow, under what conditions, etc. She is focusing on the idea that thinking about what you are planting is a good thing. She is also participating in the Million Trees of Aloha Program. The Hawaii State Legislature's Keiki Caucus in conjunction with the Children and Youth Month Planning Committee is spearheading a grassroots effort to encourage the planting of trees (native or fruit bearing) by commercial groups, non-profit organizations and private citizens. The goal is to plant one million trees by October 2010, which is celebrated as Children & Youth Month in the State of Hawaii. They have a recommended list of trees to plant that has been reviewed. Elizabeth S.: there will be a new website launched soon called Plant Pono that will include information from the WRA. Christy Martin has been instrumental in the development of the website. The site will promote using plants that score as low risk.
- Chuck: we have done assessments on biofuel species and did a poster for the 2009 Conservation Conference on biofuels. We are in the process of preparing a paper on risks of invasive biofuels for the journal *Biofuels*. This peer-reviewed journal is devoted to the rapid publication of topical commentary and analysis in biofuel research. Algae, jatropha, camelina and other crops are mentioned as possible fuel sources. Hawaii Pure Plant Oil grows jatropha on 250 acres of former sugar and papaya land in Keaau on the east side of the Big Island. The company claims jatropha, which doesn't compete with food stocks, is up to 50 times more productive than corn per acre for biofuel. Jatropha is viewed as the miracle biofuel plant. I don't think it is that invasive, but I am concerned about what will happen if the biofuel concept doesn't work out and then we have acres and acres of jatropha. The potential for large-scale farming of potential invasives for biofuel is my concern. Chinese tallow would be a real issue. It is touted as a potential biofuel species and could be very bad.
- Chuck: our future goals include timelier update of completed assessments, continuing assessments, increasing public outreach, looking for alternate funding sources, and developing a user-friendly webpage. We have opened a Facebook account for the WRA.

MISC Staff Capacity Development

- Teya: we are continuing to make sure that our staff have regular training in identification of plants and vertebrates. Rachel put together a Forest Service grant on early detection and rapid response. The proposal was statewide. There is a small pot of funding over two years for each island to work on early detection species. Rachel: basically, each county is in a different phase. Some are just finishing surveys. The funds can be used to do assessment and decide which species you are going to go after. It can fund delimiting surveys. The goal is eradications. It will be called initial control because obviously, if you have a 50 year seed-bank, eradication is problematic. The funds can be applied to targets we have already identified as problems. There will be ~\$37,000 per ISC for each of two years.

Gaps in Early Detection / Next Priorities

- Teya: there has been a lot of great information presented at this meeting, but we really didn't have time for discussion and identification of the next steps. Our next meeting is on plant prioritization and I propose we send out the notes from this meeting and as part of the process, we will identify the things that we want to discuss at the next meeting.

Next Meeting: June 4th – Plant Priority Setting