

**MAUI INVASIVE SPECIES COMMITTEE
MEETING
FRIDAY, JUNE 07, 2002
9:00 AM - 12:00 NOON**

ATTENDANCE: Randy Bartlett, Tina Lau, Lori Buchanan, Forest Starr, Kim Starr, Jack Peterson, Russell Suzuki, Mike Walker, Christy Martin, Erik Barnard, Steve Anderson, Elizabeth Anderson, Fern Duval, Mindy Wilkinson, Mach Fukada, Bob Hobdy, Nathan Varns, Trevor Lu, Mark Ono, Alex Michailidis, Pat Bily, Jeremy Gooding, Philip Thomas, David Cheever, Scott Cheever, Creighton Low

- The meeting was called to order by Randy Bartlett, MPC/Chair, at 9:15am
- Minutes from the April 19, 2002 meeting were approved. They will be posted on the website.

NEW BUSINESS

COORDINATOR PD REVISION (R. Bartlett)

- Randy emailed a draft revision of the MISC Coordinator's Position Description around yesterday. David Duffy and Randy have been thinking for some time now that the job we are asking Jack to do is more than one person can do. Randy has assumed new responsibilities at Maui Land and Pine and may not be able to spend as much time as before on MISC business. We need to make sure government liaison issues are covered. We should probably convene a subcommittee to look over the PD and discuss.
- Fern asked if there is a timeline for the revision. Randy responded that he hopes to have it done in the next month or two. It is a big job and we need to get it taken care of. This is not a reflection on the job Jack is doing. We need some higher level responsibilities. We may even give the revised position another title and keep the coordinator position.
- The subcommittee for the PD revision will consist of Fern, Randy, Steve, Alex, and Lloyd. They will get together soon to discuss and work on it. If anyone else has comments about this revision, feel free to get in touch with Randy.

BUDGET/FUNDING STATUS REPORTS

Coordinator's Budget Report (Jack Peterson)

- We are operating off of County, Federal (USFWS), and HCF funds right now. We are in good shape with support from County. Nathan and Jack attended a County Council meeting on May 21, Jack presented oral testimony and gave copies of the MISC Action Plan to everyone on the Council. There were no opposing viewpoints as to continuation of County funding for MISC. We don't know yet if they have included fireweed in the \$200,000 award. We are asking for miconia and other species this year. Fireweed may be included in the other species category. That afternoon they also attended a Board of Water Supply meeting. The Board is also very supportive. They are impressed with the work we are doing.
- Nathan noted that when we write up Tri-Isle's report we can write in that we want to have other species included next year.

County Funding Update (Nathan Varns)

- See notes above. We have worked most of the kinks out of the County reporting system and we are getting our bearings on how to communicate with PCSU/RCUH.
- We just received the latest proposal/contract for the new NFWF funding. This round of funding runs from April 1, 2002 to March 31, 2003.

DOFAW Budget (Mindy Wilkinson)

- Everything is basically the same as reported at the last meeting. A total of \$614,000 in State funding was distributed at a joint meeting with \$131,000 passing through to Maui.

EEWF Redux

- There was approximately \$40,000 in leftover funding in the statewide EEWF account from the last appropriation. Tom Ishii told us we (MISC) were going to receive this since they were impressed with our program. We were able to switch our remaining EEWF crew members over to this account from the EPMT account. These funds will continue our crew until the end of June.
- We are hopeful we will be getting additional EEWF funding to hire a crew of 4-5 for six months beginning July 1. The current EEWF Bill is on the Governor's veto list. He has until June 24 to veto it. At this point we are looking at \$500,000 statewide. There will be fewer programs to split the funding between this time.

Federal Funding Update/Haleakala N.P. (Steve Anderson)

- No real change in status since the last meeting. OAS is working on a miconia helicopter contract for us. It has been temporarily shelved because of the fires on the Big Island. Hopefully it will be ready later this summer. There are funds that need to be obligated by the end of September. The contract will be good for one calendar year from when it is awarded.
- We do need to work on compliance. We are officially beginning the Incident Command system for miconia. We will be calling a Budget and Finance Committee meeting in near future, followed by a strategy meeting based on the funds identified as available. Hopefully we will be eliminating duplication and filling in gaps in miconia efforts.
- For next Federal fiscal year we are looking at \$2-300,000 out of Haleakala base funds and \$1-200,000 from EPMT for miconia.

Other Funding

- Mark Ono added that there will be a \$200,000 grant for Caribbean frog work through a USDA - Cooperative Research Education and Extension Service Program administered through the University of Hawaii. This is a UH program for small research type projects. The \$200,000 is a one-time allocation, but indicates support for future federal frog control funding through the support of the Hawaii Congressional Delegation. As described in a cooperative Frog Eradication Plan produced by USDA and HDOA, the \$200K is the beginning of a four-year work proposal to help eradicate frogs through out the state. The total proposed budget for FY 03-07 is approximately \$3.5 million each year. This frog plan is currently going to Senator Inouye's office.
- Because we already have some funding for frogs on Maui, they will probably start work on Kauai and the Big Island. They are hitting stumbling blocks with NEPA compliance. Without the compliance they can't move forward. There is talk of a full-blown EIS.

PR/EDUCATION STATUS REPORT (Christy Martin)

- Christy and Russ are beginning work on a general educational MISC video to show how our partnership works. They will be grabbing people for interviews after the meeting this afternoon.
- We need to thank Home Depot for letting MISC get rid of their infected hapuu for them. An article about this and about the transfer of pests interisland has been submitted to Landscape Hawaii newsletter and will be sent to newspapers.
- Christy also responded to an item about coqui frogs in the Maui News. Her letter showed up in yesterday's newspaper and relayed MISC's position: Coqui are native to Puerto Rico and it is great that Puerto Ricans celebrate their native species, but when species are moved out of their native habitat into another, there can be profound and irreversible effects on the existing food web.

- We had a booth at the Ulupalakua Thing. The response was great. We should plan on doing it again next year.
- We will also do a booth at the all Hawaii State Association of Counties Year-end Conference at the end of June. We hope to make it an all ISCs display with an emphasis on the great support we get from Maui County.

Global Invasive Species Programme

- Randy received a package that he needs to pass off to Christy. It looks like there is some good material in it.

MOMISC UPDATE (Tina Lau, Lori Buchanan)

- There is a lot happening with MoMISC right now. We have our first and only position funded through Hawaii Community Foundation. Lori Buchanan has been with us since April in a temporary position and starts today officially in a regular, part-time RCUH position. Lori is great for the position. She has a strong connection to Molokai community and already knows the environment well.
- We have ~\$8,000 left in our HCF account and \$7,500 remaining from the money MISC allocated for us. Tina is still serving as the MoMISC coordinator. She would like to ask MISC for assistance keeping Lori on after the HCF funds run out (probably sometime in October). Randy responded that MISC will discuss continued funding and let Tina know.
- Lori is working half-time right now. Tina will reassess in a few months if more time is needed. Up until now most of the MoMISC activity has been planning. Now that there is an employee they will be going in on the ground and implementing their Action Plan.
- Lori gave an activity update for MoMISC. They are working on several projects right now. Lori started in April and she was immediately thrown into cat's claw. This is the first priority. There are two main populations. MoMISC is still looking for input on control methods. Currently they are using cut stump and Garlon 4. There were a lot of sprouts after all the rain. They hope to get a volunteer group to work on cat's claw soon.
- MoMISC's second most pressing priority is the newly found Barbados gooseberry. They have gone out and done initial ground work and are developing a protocol. It covers about an acre now and they think it is primarily distributed by humans. They really need to survey Halawa Valley.
- MoMISC has also agreed to do fountain grass follow-up for the Department of Agriculture. There was a gold gecko captured by a Young Brothers employee. It arrived on a barge in a shipment of plants. It has been sent to Bishop Museum. A MoMISC volunteer captured a coqui frog recently. It also probably came in on the barge.
- MoMISC is also developing educational programs for schools this fall. They will be setting up a database workshop with Mike and Aaron soon.
- Fern suggested they talk to Lyle regarding agriculture funding.

HEAR PROJECT UPDATE (Philip Thomas)

- Carol Annable has officially been hired as Philip's assistant. She will be helping to manage the list serves in addition to other duties. Carol will eventually be able to help update websites for us when Philip is not available.
- Philip has been in Australia for a couple of months working on the global compendium of weeds, which contains plant references, literature citations, web sites, etc. Rod Randall's book will be released by

September for the 13th annual Australian Weed Conference. The book contains reports 20,000 taxa including information on invasiveness. The contents will also be on the web. It will give you a list of literature references for the 20,000 species listed. This is a good first place to go to find information on plants. Philip is working on Rod's database and getting it into proper relational format.

- Philip reminded everyone to send him copies of press releases, notices, articles, etc. so he can post them.

ONGOING BUSINESS

See the attached Activity Summary for an overview of the MISC crew's schedule since the last meeting.

VERTEBRATE CONTROL UPDATES

Caribbean Frogs (Fern Duvall & Jack Peterson)

- Earl has been away. He will be back on June 10th.
- There are stipulations that are still going to impact the use of caffeine. We need to get the inspector, Glenn, to come over to Maui to check out our sites. Jack added that Glenn has been scheduled to come to Maui next Wednesday. He will need to check out each applicator once and each site. Each person applying caffeine will have their own label and that will allow them to purchase the caffeine. There is a mandate for a buffer zone equal to 25% of the area treated. Glenn will need to be assured that nobody will be able to go into the buffer area. For some of our sites that may include houses. There is currently no caffeine on Maui. It will need to be sent over from the Big Island. The situation continues to be complex.
- The Big Island is waiting to see what happens on Maui before proceeding. Mindy asked if we need to pressure the Big Island to do trials as well or is Maui adequate. Fern responded that the Big Island should be encouraged to do trials as well. There are specifically different circumstances and there will be different application techniques (like big trees) that we don't have on Maui.
- Mark Ono noted that with the \$200,000 in funding they are receiving, they very likely pursue a quarantine label. This would be good for three years. He wants coordination with MISC because we are the first to try to do anything. The trials are needed to get a label, after you have label anyone can do the application.
- There was a discussion regarding non-target impacts of caffeine. We need to treat low elevation, non-native forest areas now in order to keep the frogs out of native forest areas where there could be impacts on native insects. Pat asked what the half-life of product is and whether it needs to actually contact the animal. Fern responded that it must contact the animal and that we are required to look at non-target species. We don't know about the residual effects. Bob Sugihara has suggested that we should evaluate using 1% (which is half the label amount of 2%). The more variables we cover with the first round the better. Randy noted that the BIISC Coordinator has concerns regarding PPE and safety.
- Mark mentioned that he was there when they did the hydrated lime application. They took decibel meter readings from outside and inside the forest and it showed promise. The problem is the next day everything is white. Lyle thinks it may be a promising tool. It is the same situation as the caffeine --- it must hit the animal in a wet form. A lot of farmers are trying to take a proactive approach. The bottom-line is economics and the Dept. of Agriculture will be reluctant to deal with quarantine.
- Fern noted that if nurseries and hotels aren't dealt with they can re-infect wildland areas.
- Mach mentioned a possible fungus for frog control, but it is not likely to be a good solution because the fungus could be transported to places with native frogs via hikers.
- Jack continued that MISC has interviewed people for a Frog Operations Leader position and we think we've found a good person. We hope to offer the job by the end of next week.

- We have done some preparatory field work and talked to some folks from the Galapagos. They have been using caffeine in mangroves. They seem pretty casual about it (not recommended). They say it does burn their eyes a bit and there is a problem with spraying it up into trees. We have one site with a lot of hau and we are looking at dropping the hau before we treat the area. Maliko Gulch is totally infested --- we don't think we will ever eradicate them from that area.
- Fern added that the recommendations for PPE are still being revised. Jack continued that the most dangerous time is when you are mixing the stuff because it is so concentrated, and in a fine dry powder form. Steve noted that we have a ridiculous situation when we only have until the end of September to show results and they are still messing with the label.
- There will be a pivotal meeting on the Big Island in the next couple of weeks. Jack is planning to attend for Maui. There will also be a "Safe Practices" class on the Big Island in July. They may be able to do the course on Maui as well if we have enough people to attend.
- The number of reports we get is directly related to the awareness.
- Philip brought up a bigger issue --- How can we prevent this from happening the next time something new shows up on Maui? The key right now is individuals. The various departments and agencies aren't dealing/acting. They get in the way of us trying to solve problems. We need to address the issue of dealing with new introductions otherwise every new infestation gets out of line. Someone needs to take that bull by the horns and deal with it. Mark asked if the local politicians are involved on Maui. Overall no, but we do have good support from the County.

Parrot-Type Birds (Fern Duvall)

- Fern received a report from MARS recently. There were no activities reported that are listed on the permit. The report contains pictures of the feeding stations and parrots in wild near the feeding stations. MARS has played conure calls but this has not resulted in parrots landing on the feeding stations. It appears that people have not been manning the stations regularly.
- There was a radar count of parrots completed. The results showed more parrots at the colony than MARS had reported. Also, more birds than Fern had previously counted. Unfortunately, they were able to see more birds visually than were counted on the radar. They saw pairs with fledgling young. We should head towards Hana to look for more. There is a report of a pair of mitred conures from Waikamoi (4,300 feet elevation) by Jonathan Ross and a group of Boy Scouts. We may need to change our strategy to focus on removing small colonies/groups.
- The red bird that has been reported in Waikamoi Gulch for the last few years is not a parrot. It has been identified as a golden pheasant.
- Mark Ono added that it is difficult to do low level control in a safe manner. There really isn't an effective way to trap the birds. They can't even figure out how to trap the rose-ringed parakeets on Kauai.
- Pat, Hank, and Fern went up into Waikapu Valley and located two Moluccan cockatoos. These were not the birds that had been recently seen. The nest site that had been seen previously has filled up with debris and that breeding pair was not present. They didn't hear the cockatoos. The birds may have relocated and may be breeding. They do become silent during incubation and brooding. We need to try to relocate them.

Saffron Finches (F. Duvall)

- The finches have not been seen at Keopulani Park recently. If they show up again we will use the net gun to capture them. We think there are two males.

PLANT CONTROL UPDATES

Miconia Ground Work (J. Peterson)

- Most of our energy right now is directed toward miconia. Jack passed around maps to give an idea of the groundwork done on miconia recently. Our combined crews (EEWF/EPMT/MISC) spent 30 days on miconia since the last meeting. They covered 790 acres and controlled 9,890 plants (about 20 fruiting trees). Most of this work was done in peripheral areas. We have been mainly focusing on Keanae.
- From the map you can see the complexity of the task at hand. Good navigation and GPS data is needed to come up with strategy for continuation. We want to complete entire areas. If we are incomplete, it will just mean we have to go back. We want to fill in all the blank areas and say we have done each pass as completely as possible.
- Randy asked how many meters from known plants we are working. In some places we are going 500 meters. Generally, 1000 meters from seeding/mature plants makes the most sense. Randy asked about the criteria for bumping out to 1000 meters. Jack responded that this is decided considering the actual **context** of the location which includes nearby buffer zones, likelihood of as yet undetected “ladder” trees, location in relation to stream corridors, “peripheralness” on a larger scale (i.e. proximity to one of the main five population core areas), and even terrain, weather, and crew “intangibles.” Basically we have a crew of only 14 people now. The amount of area we would like to cover is more than we can possibly do with this crew.
- Jeremy added that the 500 vs. 1000-meter buffers are by the seat of our pants. It is what we can realistically do. We are relying on aerial operations to find the seeding the tress. Keanae is dissected and there is a lot of area that can’t be walked. We need to get the MISC crew re-certified for climbing. There are areas we can’t get to even with helicopters.
- Fern asked if we have targets for ground and aerial areas that will be covered in a given time period. Jack responded that we do and that we are trying not to let any plants slip through. Randy noted that some of the areas look very large and asked if we are breaking them down. Jack said that this is primarily a function of how easy it is to cover particular ground with confidence (i.e. again a function of terrain, vegetative cover, slope aspect, etc.). Jack noted that the crew isn’t having much fun out there now --- they are working in rough areas.

Miconia Aerial Work (J. Peterson)

- We conducted four miconia helicopter operations since the last meeting. We had to cancel two operations because the choppers are on the Big Island fighting fires. We conducted two “spray-con” operations covering 525 acres and controlling 139 trees. We also conducted one recon flight covering 1093 acres and locating three new plants and flew one bio-control fungus spray in Nahiku, primarily in the Hanawi River valley which has a significantly established infestation on very steep valley walls.

Miconia/Hana Crew (B. Hobdy)

- Bob introduced Creighton Low. Creighton has been working for the State for 28 years now on field crews. He knows Maui well. He comes to us now in as the new District Invasive Species person. He will be working with the crew under Glenn and he will be doing other invasive species work in addition to miconia.
- The Hana Crew is continuing down the west side of the population. There was a continuation of helicopter operation that went on about time of last meeting. They had some complaints because they were working low over town. There were five complaints. They worked up higher the next day, but were pau down below anyhow. Jack added that Glenn had told him that after giving personal attention to all the complaints (calling them all back, etc.) the people were satisfied, cooperative, and actually significantly grateful that they had been considered and responded to (not ignored). Any attempts at advance notice would seem to be warranted and would pay high dividends.

Miconia/Bio-Control (Erik Barnard)

- We are close to success in growing the fungus at MISC. There have been some contamination and environmental issues (light, condensation, etc.). Mach and the NIFTAL staff have been a huge help. Hopefully in the next month we will have a batch ready to spray. This has definitely been a lesson in microbiology for Erik.
- Mach noted that all the rain we have been getting is helping the fungus that has already been sprayed. It appears to be moving.
- Mach also indicated that in a month we should be getting some additional bio-control help in the form of a flower feeding moth for clidemia that may transfer to miconia. It is working well on clidemia on the Big Island. He will need help to release in it areas where miconia and clidemia are close together. The adults don't live more than three days. They appear to be good melostome feeders that will switch-hit although they haven't been really well tested on miconia.

Miconia/Peripheral Populations (Pat Bily)

- Pat and Erik and visited the Peahi site and found nothing in the traditional hot spots. There are properties we don't have access to in the area. Pat is optimistic to see an area where we had seedlings is clean now. A mature tree was cut down there in the fall of 1995. The Haiku report has not been confirmed.

Pampas Grass (J. Peterson)

- There were at least two partial crew days spent on pampas grass since the last meeting. We dug out approx. 6 plants.
- Christy asked if there was any movement on seloana being listed. Forest responded that they had pulled data together and then really haven't heard much more. Hopefully next round we can get it. Mindy offered to follow-up.

Fountain Grass (J. Peterson)

- There was one day of recon done on May 15. We have consistently been finding steady to decreasing numbers (approximately one dozen or less plants at Maui Lani and about six at Waiehu and dunes).

Ivy Gourd (J. Peterson)

- Part of the crew did eight days ivy gourd work, on both East and West Maui, since the last meeting. There were 93.8 acres covered and 907 plants treated. Of these, 178 were fruiting plants.
- Mach noted that the bio-control at Kapalua is taking hold. He can see the vine borers doing work. It is a matter of wait and see now. Rats are becoming a problem. They are breaking open the galls and eating the borers. He is also seeing a lot of beetle mining. "The beetles are out of their mines." He will be releasing more of the leaf-mining weevils in inaccessible areas and needs to identify locations on the east side. Christy suggested they take a ride to Kihei next week on Wednesday. There is a problem with releases on the golf courses because of pesticide drift.
- Philip asked about the status of ivy gourd on Maui. Jack suggested that we need to review the big picture. Philip asked about the revisit schedule, how many sites there are, whether we know that we have treated every known plant, etc. Christy responded that we are always finding new spots, some of the old spots are completely gone, but new spots are popping up. Forest indicated that it is naturalized in Kihei, Kapalua, Lahaina, and Wailuku.
- Randy asked if Mike could work up a status report including distribution, visits, etc. Philip noted that it would be nice if for every meeting we could have a status report on each target species. Jeremy responded that every month would be excessive --- maybe quarterly. Mike reminded us that every meeting there is a report of accomplishments since the last meeting. Philip countered that the point is what is left not how

much was treated each month. We need to answer the questions --- Are we making progress? Are we close to getting rid of it? How much more is out there? Do we have more sites that we need to revisit? Steve suggested that the problem is we don't have a complete survey of every species at every point in time. This is variable and becomes a very complex question. Pat continued that it is hard to quantify if surveys are continuing to find new plants. Philip concluded that we should be able to get meaningful data even if there are caveats.

- Randy indicated that Philip should work with Mike, Jack, and Erik to see if they can come up with a system.
- Fern backed up to vertebrates briefly while we were on the subject of data. Bob wants to know if MISC's frog data format is the same as Fern's. We need to get what we have to Bob. It was mentioned that in December Earl sent out an updated database and we've only had one new report since then. Christy asked about reporting reinfestations for areas where there were frogs before, they were eliminated, and now are being reported again. Fern said yes to include those. Steve indicated that Bob is now the person maintaining the data and it should all go to him.

Arundo (Pat Bily)

- There is a good size patch of arundo at Waikapu bordering the top side of the reservoir. There is no sign of it spreading and it is surrounded by agricultural land. This is a good example of the importance of qualifying our successes with what we know. It could be in so many places that we don't know about. There are a lot of places where we might find arundo that we wouldn't even think to survey. This patch is about 50 meters long, not too wide, and very dense. Forest noted that the airport site looks pretty dead.

Fireweed (Jack Peterson)

- A portion of the MISC crew (four people) spent one day on fireweed working with Jordan at Ulupalakua Ranch. It was an important opportunity because of the cooperation the Ranch gives on access for fountain grass. We also wanted to cooperate with and support Jordan's (National Guard's) efforts. There were 12 people total for the day.
- Mach noted that bio-control for fireweed is five years away if we are lucky.

Other Plants

- Kim and Forest went back to the Lahaina *Parkinsonia* site. They pulled a few seedlings. There are a few that were too big to pull that could benefit from herbicide.
- A survey was conducted into Waikapu Valley by Hank Oppenheimer, Fern Duvall, and Pat Bily (TNC). The focus of the survey was to assess potential threats to the West Maui Mountains Watershed. See the document at the end of these minutes for a summary of results.

Other Ongoing/New Business

- Philip mentioned the idea that since MISC is supposed to be spending 50% of our time on miconia, it might be better to have a crew that just does other things besides miconia. He is wondering if a better way to structure things would be to have a couple of people whose job it is to do everything except miconia. This might be more effective. Forest agreed. To a certain degree this is what Matt and Russell have been doing. They are spending minimal time on miconia.
- Steve contended that we just need to be sure that we have a good shopping list for each month for non-miconia projects. This allows much more flexibility. Jack noted that the current EEWf crew is pau in three weeks and this will give us a chance to refocus on other targets a bit.
- Fern added that a similar thing applies with frogs because of the night work involved. It will take a different sort of planning. We also need to get a better grip on where the parrots are and that will take everyone not just a subset of the crew. He agreed with Steve that we shouldn't break out people.

- It was suggested that we might be due for a strategy/planning workshop soon to take a close look at everything that needs to happen and how to fit it all in. We will target having a two-day operations workshop before the Conservation Conference. July 1 and 2 were set aside. (NOTE: the dates have since been changed to July 29 and 30). We may not need two full days but will have them available if needed. Everyone should come with an idea of what has to happen for each species.
- A Miconia Budget and Finance meeting was also scheduled for June 19 at 9am. People who have or track miconia resources should attend. We will hold a separate miconia strategy meeting after the finance meeting.
- Steve reminded the group that we don't want to be just the Miconia Invasive Species Committee. We have obligations to our funding sources and we need to be look at how the funding we have breaks out.
- Mike Walker proposed that when new sightings occur a public relations effort is made initially. Whoever makes the sighting should try to make a contact right then if possible (knock on the door or leave a note).
- The folks from Kaulunani are promoting the Weed Risk Assessment system. They will be putting together an August meeting of the ISCs as a preview for workshops they are planning for October. The October workshops will be for the nursery and landscape industries. There will be four workshops --- one on each main island. The exact dates have not been set yet. They are planning to use a lot of methods to get people to attend. The focus will be preventing the introduction of invasive plant species.
- Alex mentioned that he is hiring a Field Crew Leader and a crew of 4-5 members for EMWP. Let him know if you know of any good people looking for a job. The postings close on June 19.
- Pat noted that Haleakala Ranch has decided to hire a full-time gorse control crew. They are also looking for interested workers. Let Pat know if anyone is interested.
- The status of MISC at NIFTAL is still uncertain. The homeless shelter plans have been scarped. The County is now looking at the site as a possible base-yard and we might be able to stay. We are hopeful.
- Fern noted that NIFTAL should look at what is spreading into nearby fields, things they planted, before they move out.

Next Meeting Date/Time: Rescheduled to Friday, August 30, 9am to noon.

MISC ACTIVITY SCHEDULE April 22 to June 7, 2002

- 4/22 Miconia: Lower Nahiku (Mike A., Sam, & merged EPMT/EEWF crews)
Ivy Gourd: Lahaina (Russ and Matt)
- 4/23 Miconia: Lower Nahiku (Mike A., Sam, & merged EPMT/EEWF crews)
Miconia: bio-control lab work (Russ and Matt)
Data training in Hana (Mike W.)
- 4/24 Miconia: Lower Nahiku (Mike A., Sam, & merged EPMT/EEWF crews)
Ivy Gourd: Kihei (Russ and Matt)
Data training in Hana (Mike W.)
Frog recon. p.m.: Huelo (Jack)
- 4/25 Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews)
Miconia: bio-control lab work w/ Eloise (Erik, Elizabeth, Matt, & Russ)
Helicopter Spray Operation: Miconia bio-control (Jack)

- Dispose of contaminated hapu'u logs from Home Depot (Russ and Matt)
- 4/26 Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews)
Helicopter Spray Operation: Miconia, Hana (Erik, Matt, Russ, & Mike W.)
Meet with Juan Chavez, Galapagos National Park (Jack, Christy)
Frog recon. p.m.: Howards & Maliko Gulch (Jack)
- 4/27 Ulupalakua Fair Exhibit (Christy, Jack, Mike W., & Russ)
Miconia: bio-control lab work (Erik)
- 4/29 Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews), Rain out
Frog field trip w/ Bob Sugihara, Fern, Trevor, Steve A, Erik, Jack, & Mike A.
Ivy Gourd & Rubber Vine: Kahului (Russ and Matt)
- 4/30 Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews)
Ivy Gourd: Waikapu (Russ and Matt)
- 5/1 Crew Meeting in Hana
Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews)
Miconia: bio-control lab work (Erik, Matt, & Russ)
- MISC ACTIVITY SCHEDULE con't
- 5/2 Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews)
Miconia: Haiku & Peahi, sweeps (Erik and Pat Bily)
Rubber Vine: Lahaina (Russ and Matt)
Ivy Gourd: Kapalua (Russ and Matt)
Nahiku Community Meeting, p.m. (Jack, Christy, Mike A., & Jeremy)
- 5/3 Miconia: Hana, west of cinder pit (Sam & merged EPMT/EEWF crews)
Miconia: bio-control lab work (Erik)
- 5/6 Full Crew Meeting at MISC, mission planning
- 5/7 Miconia: Hana, west of cinder pit (Mike A., Sam, Matt, & merged EPMT/EEWF crews)
Clean DAGS vehicles (Irving)
- 5/8 Miconia: Hana, west of cinder pit (Mike A., Sam, Matt, & merged EPMT/EEWF crews)
Miconia: bio-control lab work (Erik)
Miconia: strategy meeting (Erik, Jeremy, Jack, & Mike W.)
Ivy Gourd: Kihei (Irving)
County Council meetings w/ Arakawa, Johnson, Carroll, Molina (Christy)
- 5/9 Miconia: Hana, west of cinder pit (Mike A., Sam, Matt, & merged EPMT/EEWF crews)
BBC World News Radio interview on Coqui frogs, live from London (Jack)
RCUH Recruitment Training (Jack & Elizabeth)
- 5/10 Miconia: Hana, west of cinder pit (Mike A., Sam, Matt, & merged EPMT/EEWF crews)
- 5/13 Miconia: Hana (Mike A., Sam, & merged EPMT/EEWF crews), Rain out
Data training for Carl w/ Mike W.
Gear/Office cleaning (Russ and Matt)
Miconia: bio-control lab work (Erik)
- 5/14 Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews)
Ivy Gourd: Lahaina & Kapalua (Russ and Matt)
Rubber Vine: Lahaina (Russ and Matt)
Miconia: bio-control lab work (Erik)
- 5/15 Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews)
Fountain Grass: Kula (Russ and Matt)
Pampas Grass: Kula (Russ and Matt)
Miconia: bio-control lab work (Erik)
- 5/16 Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews)
Ivy Gourd: Kapalua (Matt)
Miconia: bio-control lab work (Erik)

- 5/17 Miconia: Hana, west of cinder pit (Mike A., Sam, & merged EPMT/EEWF crews)
Hana Ranch Roads and Recon w/ Boy (Mike A, Carl, & Jeremiah)
Helicopter Recon Operation: Miconia, Keanae (Jack, Erik, & Matt)
Pampas Grass: Pukalani (Matt)
RCUH Performance Evaluation Training (Erik and Jack)
- 5/20 Miconia: Keanae (Mike A., Russ, Sam, Matt, & merged EPMT/EEWF crews)
Miconia: bio-control lab work (Erik)
- 5/21 Fireweed: Ulupalakua w/ Jordan (Russ, Sam, Matt, & Jeremiah)
Miconia: bio-control lab work (Erik)
County Council Budget Meeting, testimony & report (Jack)
Water Board Hearing, testimony & report (Jack)
- 5/22 Crew Meeting in Hana
Office and gear cleanup (Russ, Sam, & Matt)
Miconia: bio-control lab work (Erik)

MISC ACTIVITY SCHEDULE con't

- 5/23 Miconia: Keanae (Mike A., Russ, Sam, Matt, & merged EPMT/EEWF crews)
Miconia: bio-control lab work (Erik)
- 5/24 Miconia: gear decontamination
Helicopter Spray Operation: Miconia, Keanae & Hana (Mike W., Russ, & Matt)
Miconia: bio-control lab work (Erik)
- 5/27 Memorial Day Holiday
- 5/28 Miconia: Keanae (Mike A., Russ, Sam, Matt, & merged EPMT/EEWF crews)
- 5/29 Miconia: Keanae (Mike A., Russ, Sam, Matt, & merged EPMT/EEWF crews)
- 5/30 Miconia: Keanae (Mike A., Russ, Sam, Matt, & merged EPMT/EEWF crews)
- 5/31 Puu Kali w/ Art Medeiros: training & in-kind trade (all crew).
- 6/3 Miconia: Keanae (Russ, Sam, Matt, & merged EPMT/EEWF crews)
- 6/4 Miconia: Keanae (Mike A., & merged EPMT/EEWF crews)
Staff Annual Performance Evaluations (all office staff, & MISC crew)
- 6/5 Miconia: Keanae (Russ, Sam, Matt, & merged EPMT/EEWF crews)
Management Personnel Meeting: (Randy B., Steve A., Jeremy G., Jack, Erik, & Mike A.)
- 6/6 Miconia: Keanae (Mike A., Russ, Sam, Matt, & merged EPMT/EEWF crews)
- 6/7 Miconia: Keanae (Mike A., Sam, Matt, & merged EPMT/EEWF crews)
MISC Committee Meeting

WAIKAPU VALLEY SURVEY
MAY 27, 2002

A survey was conducted into Waikapu Valley by Hank Oppenheimer (Pu'u Kukui Watershed), Fern Duvall (DOFAW), and Pat Bily (TNC). Permission was granted through landowner C. Brewer/Wailuku Agribusiness, as the focus of the survey was to assess potential threats to the West Maui Mountains Watershed and the landowner is a partner in the larger protection through the West Maui Mountains Watershed Partnership.

BOTANICAL INFORMATION:

While the valley floor has long been converted to non-native vegetation, weeds that were surveyed for in particular include more recent introductions that may have impact to ecosystem and watershed health, especially within intact, native dominant cliffs, valley walls, and ridges. A priority target was *Macaranga tanarius* (L.) Mull.Arg., a large leafed Malaysian tree with potential to replace canopy and diminish understory and herb layer.

Macaranga is currently naturalized in the vicinity of the town of Waikapu, and there is the possibility that it has spread there from intentional plantings up in the valley. During the survey, it was noted throughout Waikapu Valley and the surrounding cliffs and ridge tops. This species seemed to thrive in climates ranging from low elevation dry habitat up into high elevation wet ridge tops.

In many locations, *Macaranga* formed dense stands of sapling trees over 10 meters tall, with a density spacing of less than one meter between individual trees. Non-native ground covers persisted sparingly within these stands, under a leaf litter of *Macaranga*. The trees grew spindly, straight trunks that did not branch out until they reached about 8 meters in height, or broke through other canopy. One huge *Macaranga* ('Mother tree') was noted near one of the tunnels, estimated to be at least 22 meters tall, with a breast-height diameter of one meter. Wild populations of this plant exist on Oahu and Kauai, and reports indicate it can invade subcanopy, and in some areas, replace canopy.

Another invasive tree seen was *Melochia umbellata* (Houtt.)Stapf. Large seeding trees were found in the field above Waikapu Reservoir, but further exploration of their range was not pursued. Evidence of reproduction was confirmed by various size plants seen in a localized area, and as the seed can be wind dispersed, it is likely that it has spread beyond the range observed. This species was cultivated by Territorial Foresters throughout the Hawaiian Islands, and now naturalizes readily on the Big Island where it out competes other canopy species in the Hilo and Puna Districts.

Also seen directly above the Waikapu Reservoir was a large continuous stand of the giant reed, *Arundo donax*. This plant presents problems in California and other areas by damming drainages, providing medium wildfire fuel, and altering natural riparian habitat. However, it is not known to reproduce by seed in Hawaii, and this Reservoir population has probably not spread since its original cultivation, except by vegetative expansion.

Various native plants common to the mesic habitat were seen sporadically throughout the hike. At one point, the survey went up steep slope south of the south fork of Waikapu Stream, where native plants dominated the various vegetation layers. Some observations were unusual (i.e., multiple *Reynoldsia* saplings), but *Macaranga* saplings were also noted establishing in the area. Other non-native vegetation was scarce.

ANIMAL INFORMATION:

The survey went to a location where four wild Mollocan sulfur-crested cockatoos have been monitored in the past. Although none of these birds were seen during the earlier hours of the survey, once we approached a nest, a pair of 'sentinel' cockatoos began squawking. Upon checking the nest in a tree cavity (where a breeding pair had been seen before) and seeing it collapsed from the inside, it was determined that the breeding pair must be elsewhere, possibly quietly establishing a new nest. Another abandoned nest was seen, all the while in the watchful view of the two guard birds.

Although there was minimal indication that someone had been hunting in the area not so recently, there were no signs of feral pigs noted. Ground disturbance seen was either very old animal damage, or caused by water run-off or rock slides.

A dog (lost from hunting?) was heard on the steep slopes south of (above) the flume tunnel.

RECOMMENDATIONS:

The *Macaranga* infestation in Waikapu Valley is very established and beyond control. It will likely continue to invade and displace new areas in the valley, on the cliffs, and ridge tops.

However, it may be a worthy goal to minimize the spread of this plant into un-invaded valleys adjacent to Waikapu.

The *Macaranga* was observed to be flowering and fruiting at the time, producing a BB-sized seed which is probably wind dispersed or shot out at a fair distance upon dehiscing. Larger birds may feed on the pods and carry the undigested seed to higher elevations.

Further reconnaissance for this plant is needed in adjacent valleys and ridge tops to determine the extent of its' West Maui range. The wide foliage of this plant may make it possible to easily identify from the air when performing helicopter assisted surveys.

Confirmation of the range of *Macaranga* and the practicality of control measures will determine if this weed can be contained to the Waikapu region.

Melcohia will also need further reconnaissance surveying to determine its current range. Control options would be hinged on the range, expansion, and perceived threat.

Arundo is a target weed for the Maui Invasive Species Committee (MISC) to control. If the MISC field crew has time to consider controlling the population at the Waikapu Reservoir, they will first contact the landowner with a proposal and request permission to size-up the site.

Mollacan cockatoos have been targeted by the State DLNR and MISC as a feral parrot species needing monitoring and/or control. Wild parrots pose a severe risk to the agricultural industry (especially seed corn), as well as having potential to impact natural areas by spreading invasive plants and avian disease. Live capture of these birds would prove extremely difficult, and as a breeding pair has already been observed, the population can spread to more remote areas, decreasing the likelihood of future control.

Submitted by Pat Bily, The Nature Conservancy of Hawaii-Maui Field Office