

**MINUTES OF THE FEBRUARY 12, 2018 NATURAL AREA RESERVES SYSTEM
COMMISSION (NARSC) MEETING, HONOLULU, O'AHU**

COMMISSIONERS PRESENT:

Draft subject to approval

Mr. Leo Asuncion
Mr. Glenn Bauer
Ms. Janis Matsunaga
Dr. Tom Ranker
Dr. Jon Price
Dr. Scott Rowland
Ms. Michelle Clark
Dr. Norine Yeung
Dr. Sheila Conant
Mr. Bob Masuda

COMMISSIONERS ABSENT:

Ms. Hi'ilei Kawelo
Dr. Robin Newbold

PRESENTERS:

Ms. Alison Cohan, Maui Nui Forest Program Director, The Nature Conservancy (TNC)
Mr. Ed Misaki, Moloka'i Programs Director, TNC
Mr. Shalan Crysdale, Hawai'i Island Forest Program Director, TNC
Mr. Bryce Masuda, San Diego Zoo Global Site Manager
Dr. Hanna Mounce

STAFF:

Ms. Emma Yuen, DOFAW Administrative Office (Admin.)
Ms. Leah Laramee, Admin.
Mr. Jason Omick, Admin.
Mr. Jim Cogswell, Admin.
Ms. Sidney Stiefel, Admin.
Ms. Lainie Berry, Admin.
Mr. Fern Duvall, NARS Specialist Maui Nui
Mr. Nicholas Agorastos, NARS Specialist Hawai'i Island
Ms. Jackie Gaudioso-Levita, Wildlife Biologist Hawai'i Island

ITEM 1. Call to order. Vice Chair Price called the meeting to order at 9:30 a.m.

ITEM 2. Approval of the Minutes of the July 31, 2017 Natural Area Reserves System Commission Meeting. Commissioner Glenn Bauer was not present on the meeting minutes but was present at the meeting. Name change from Mr. Rouen Lin of HECO to Mr. Rouen Liu.

MOTION: Commissioners RANKER/ROWLAND moved that the Natural Area Reserves System Commission approved the minutes of July 31, 2017 as corrected.

Motion carried unanimously.

ITEM 3. Natural Area Partnership Program Renewals.

ITEM 3a. Recommendation to the Board of Land and Natural Resources for approval for authorization of funding for The Nature Conservancy for \$1,201,200 during FY 19-24 for continued enrollment in the Natural Area Partnership Program and acceptance and approval of the Waikamoi Preserve Long Range Management Plan, TMK 2-3-05:04, Maui.

Ms. Alison Cohan, Director of the Maui Nui Forest Program for The Nature Conservancy (TNC) presented on Waikamoi Preserve and is seeking renewal of funding for NAPP, with a 2:1 match for State funding.

Haleakalā Ranch was the original Waikamoi Preserve, then extended the Preserve to East Maui Irrigation (EMI) lands to make it the largest private preserve in the State. Waikamoi was established for the native forest birds, now there are 10 native birds—4 of which are endangered, along with 40 endangered species of plants. Waikamoi contains multiple Plant Extinction Prevention targets, with species that have less than 50 individuals in the wild. The Preserve has rare māmane (*Sophora chrysophylla*) dry forest and alpine communities. This area is also the core of the east Maui watershed that provides water to 36,000 residents and businesses.

Main threats are the Himalayan ginger, blackberry, pines (Mexican weeping pine, Sugi, and Monterey pine) and gorse. Waikamoi is steep and rugged, including multiple gulches. Further eastward the forest transfers into subalpine grasslands. The first management actions were to remove ungulates, beginning in 1989. In FY07 the fences were completed by East Maui Watershed Partnerships. There have been no animal catches since FY15. They still have a dog program despite having no pigs in the Preserve.

TNC has been using innovative technology, such as smart traps where staff can close trap doors remotely. They are also using Forward Looking Infra-Red for detecting animals. Pines have spread out, particularly in a 2007 fire, and are being treated aerially via a very targeted approach, with about a 75% efficacy. TNC is also using Herbicide Ballistic Technology treating strawberry guava and also ginger with imazypyr.

Staff are also using unmanned aerial vehicles for spotting weeds. A remote camera has been installed and has provided wifi to areas without cell service, enabling surveillance of the area. A monthly hike and a quarterly service trip are offered.

The University of Hawaii's Economic Research Organization has been contracted to do an economic return on investment. They are running the models on how much net present value the preserve provides.

Commissioner Conant asked if there is monitoring for feral cats. Ms. Cohan explained that the Maui Forest Bird Recovery Program has traps and game cameras that identify cats. She added that they have mapped scat and sign throughout the western Preserve, and the density is relatively low, however there are many mongooses.

Commissioner Clark asked if there is any evidence of predation from cats. Ms. Cohan and Dr. Mounce explained that mongooses haven't been seen chasing 'apapane (*Himatione sanguinea*) and feathers have been found. They also explained a young adult male parrotbill had been taken, evidenced by its remaining legs, which indicated a cat had preyed on it.

Commissioner Bauer asked what the source of information for water capture is and Ms. Cohan shared that it comes from Dr. Giambelluca's data on freshwater recharge.

Commissioner Rowland commented that the quarterly volunteer projects seem infrequent and asked if there is little demand for them. Ms. Cohan explained that it is more due to the lack of staff capacity. She further explained that they used to have monthly volunteer trips but fewer volunteers would attend so they decided to hold less trips and have more attendance per trip.

Commissioner Clark asked what type of herbicide is being used for the pines. Ms. Cohan indicated that glyphosate is being used for Monterey, Mexican weeping, and Sugi pines. She also mentioned that glyphosate is also important.

ITEM 3b. Recommendation to the Board of Land and Natural Resources for approval for authorization of funding for The Nature Conservancy for \$288,715 during FY 19-24 for continued enrollment in the Natural Area Partnership Program and acceptance and approval of the Mo'omomi Preserve Long Range Management Plan, TMK 5-1-02:37, Moloka'i. Mr. Ed Misaki, Director of programs for TNC Moloka'i, presented on the history of work being done at Mo'omomi Preserve. Mr. Misaki shared that NAPP has funded this project for about 30 years and is essential to the function of the conservation work on Moloka'i.

The Mo'omomi Preserve is known as the best example of coastal sand dune ecosystem in Hawai'i. It is important for conservation, as well as cultural traditional use of the ocean. Thirty-eight plant species are known, and 8 are considered rare, 3 of which are endemic to Moloka'i, and 5 that are endangered. Monk Seals regularly visit the area and the largest nesting green sea turtle community is adjacent to the preserve. Since 1999, the area has had an 'ua'u kani (wedge-tailed shearwater, *Puffinus pacificus*) population. In 2014, there were 973 active nests identified compared to the most recent census of over 1,423 active nests identified. Laysan albatross are also now flying over the preserve.

Dogs and cats have been found in the preserve and domestic stray dogs are the biggest threat. They come into the preserve not to eat the birds, but to kill them. Axis deer were at first a smaller

problem, only eating naupaka, but now they are adapting and eating much of the vegetation, and spreading *Prosopis pallida* (mesquite or kiawe) seedlings. They also trample the ‘ua‘u kani nests, often killing the chicks. *P. pallida* blankets the Preserve. Passive restoration of these native species is occurring. The native ‘aki‘aki grass (*Sporobolus virginicus*) takes over after the *P. pallida* is removed. They have so far removed over 11 acres of *P. pallida*.

In 2016 the predator proof fence was built. This was after the deer exclosure pilot project was completed, which demonstrated that the deer presence was a big problem. The fence is 1.5 miles long, and protects 175 acres. The fence uses minimal metal products; instead uses wooden posts and deer mesh. The preserve is protected from dogs, cats, and axis deer. The fence is easy to install and should last 15 years. The fence is easily fixed and monthly checks are performed. Game cameras are installed to monitor animals. It is believed that there is no longer a cat presence, but some deer remain.

Engaging with the local community is especially important on the small island of Moloka‘i. There are ‘ua‘u kani banding trips that happen twice a year and attract people from the local community and other islands. The Moloka‘i Land Trust also has many trips that involve community members and are focused on weeding and outplanting.

Commissioner Ranker asked what the highest fence an axis deer can jump is. Mr. Misaki explained that this value is debatable but that he believes a 6-foot fence is sufficient, elaborating that the fence provides a visual barrier due to the nature of the mesh.

Commissioner Conant asked if there are cultural fishing resources found at the Preserve. Mr. Misaki explained that the public can use the Preserve for crabbing, fishing and collection of limu and salt.

Commissioner Conant also asked if there are any native yellow-faced bee species (*Hylaeus spp.*) found in the Preserve. Mr. Misaki explained that 2 of the 3 species are found there.

Commissioner Ranker asked what the status of ‘ohai (*Sesbania tomentosa*) is in the Preserve. Mr. Misaki explained that ‘ohai occurs mainly east of the Preserve but there are a couple of plants present inside and expressed intentions of the staff to outplant ‘ohai.

Commissioner Clark asked about the rare *Solanum* species in the preserve and Mr. Misaki explained that the *Solanum nelsonii* is doing well.

ITEM 3c. Recommendation to the Board of Land and Natural Resources for approval for authorization for funding for The Nature Conservancy for \$1,148,400 during FY 19-24 for continued enrollment in the Natural Area Partnership Program and acceptance and approval of the Kamakou Preserve Long Range Management Plan, TMK 5-4-03:26, Moloka‘i. Mr. Ed Misaki, Director of programs for TNC Moloka‘i, presented on the history of work being done at Kamakou Preserve. Mr. Misaki explained that this is the oldest and first

preserve for TNC Hawai‘i, and held the first conservation easement that was established in 1983. The Preserve contains wet and mesic rainforest with Pēpē‘ōpae bog. The Preserve is part of the East Moloka‘i Watershed Partnership. It is in the ahupua‘a program, starting with the fringing reefs and ending at the mountain tops.

Since 2014, the Kamakou fenced area has been ungulate-free. Extensive weed control is occurring, particularly along the road, and there are few weeds in the upland remote areas. Melastomes are the main problem. Dog collars are used to help keep track of staff who are doing weed sweeps, increasing accuracy and enforcing safety. The Moloka‘i Maui Invasive Species Committee works with them, and shares an office.

There have been many efforts for developing protocols to monitor the resources. Since 2007, there have been 6 transects every 6 years, to note and photograph pig signs, other animal signs, and weed signs. The Plant Extinction Prevention Program has been very helpful, and brought back *Cyanea procera* from the brink of extinction. The creation of the Moloka‘i Fire Task Force has helped address the fire problem. The task force has helped convene firefighting authorities with keys to gates, access to water, etc. Widening of the road in Kawela stopped a 2009 fire.

In 2007, USGS chose Kawela for a ridge to reef project. They studied the reef, stream, vegetation, and soil. The area was called the “moonscape” because it was so barren, with less than 1% ground cover. Then, in 2014, there was 75% vegetation cover, and most of it is native. Erosion was reduced 10-fold due to reduction of feral goats. The Department of Transportation has significantly less overtime since they don’t have to deal with as much sedimentation on the road.

There are monthly volunteer trips to Kamakou, and frequent interaction with local ‘Aha. Twice a year there is a Nature’s Newsflash provided to all Moloka‘i residents. The Earth day festival draws 1,000 people per year, out of a total population of 7,000 on the island.

Commissioner Bauer asked how the animals are prevented from coming up the Manuahi ridge. Mr. Misaki explained that it is not fenced and that they are currently looking at possible implementation of additional fences, adding that the area is extremely rugged.

Commissioner Bauer asked how much time is needed to perform a transect. Mr. Misaki explained that two teams of three people can cover a transect in one day.

Commissioner Yeung asked about constructing a snail enclosure on Moloka‘i. Mr. Duvall explained that he would not oppose it but that they must look into determining a location. Mr. Misaki suggest snail meadow since it is down the road. Commissioner Yeung indicated that they might want to consider a location at a higher elevation after considering climate change and what the snails need to survive.

ITEM 3d. Recommendation to the Board of Land and Natural Resources for approval for authorization of funding for The Nature Conservancy for \$807,132 during FY 19-24 for continued enrollment in the Natural Area Partnership Program and acceptance and approval of the Ka‘ū Preserve Long Range Management Plan, TMK 3-9-7-001:002, 003, 004, 007, Hawai‘i. Mr. Shalan Crysdale, Director of TNC’s Hawai‘i Island forest program presented on the work being done in the Preserve. There is a field team of 4 based out of Na‘alehu. The Preserve has been in the program since 2006. TNC’s Hawai‘i island management covers about 17,258 acres encompassing Kūka‘iau, Kamehame, Ka‘ū, Akina, Kona Hema, and Kahuku Iki.

In 2009, the first fence unit was created, which prevents pigs and mouflon from entering the area. Cane roads provide access to the area and public hunters can access. Twenty-eight pigs have been removed by the public and when interests waned 5 additional boars were removed by staff efforts. Most removal was accomplished by dogs.

In 2014, the Kaiholena fence was built, adding another 800 acres of protected area with a 70 degree slope that provides a natural barrier. So far there have not been any signs of ingress through the natural barrier. Twelve pigs have been removed by the public in the last 6 years and 7 have been removed by staff in the Makaālia unit.

There aren’t as many forest birds, however there are rare *Pritchardia* species. Game cameras have provided a lot of information to determine how many pigs are remaining. About 4 animals are remaining in the unit, including one sow and piglets.

Some areas have sheetflow during periods of heavy rainfall which have required retrofitting fences to have tarps installed as a skirt. The tarps require about one or two monthly checks to restring the areas that moved due to water flowing beneath them.

Strawberry guava, tibouchina, clidemia and silk oak are invading the lower Hilea ridge. This has been confined to about a 25 acre area of core weeds. Clidemia is being reduced, however tibouchina is increasing.

They have installed monitoring plots that are similar to the Moloka‘i Understory Monitoring method. All plots were over 90% native vegetation with a sparse presence of tibouchina and junkus. Monitoring also showed that there are little weeds in the Maka‘ālia area. Strawberry biocontrol is being spread and they are finding it most effective to throw the leaves up in the trees to spread the biocontrol to the highest parts of the leaves.

Drones have been most useful to rule out the presence of weeds, as well as locate 2 rare *Pritchardia lanigera*. These trees had seedlings, which has not ever been seen before. There is FWS funding for 64 Goodnature traps to place them around known *P. lanigera* and *Pittosporum hawaiiense*. Game cameras have found about 4 individual cats, many mongooses, and many rats.

Samples for Rapid 'Ōhi'a Death have shown that there is species B Ceratosystis. Near the edge of the preserve there has been a species A found. They are monitoring the known tree for signs of frass.

Vice Chair Price asked what the weed species is in the forest reserve. Mr. Crysdale explained that they are looking for outliers of *Hedychium garnerianum* (toilet brush ginger). They have done about 40 acres of *H. garnerianum* control, particularly along the plantation tunnel trails, which had plantings. Nightblooming jasmine (*Cestrum nocturnum*) was another problem, and they are holding the line in the Kaiholena unit. Australian Tree Fern (*Cyathea australis*) has been found in a certain area, particularly in a nearby eucalyptus population, which is not under control.

Commissioner Conant asked about seabird populations. Mr. Crysdale explained that 'Ua'u (*Pterodroma sandwichensis*) have been reported in Wood Valley.

Commissioner Clark inquired about the plan for Goodnature traps. Mr. Crysdale explained that they intend to put one by a population of loulou (*P. lanigera*), and the remaining 60 will go to the Hoawa (*P. hawaiiense*) and a Kona Hema species of *Pritchardia schattaueri*.

Commissioner Yeung asked if toxicity is known for inverts for Escort (ginger control herbicide). Mr. Crysdale explained he did not know, but the limits are far below the agricultural use. He emphasized that they follow the National Park's protocols, and is also open to the Commission's input on best protocols.

Commissioner Bauer asked if there are weather stations. Mr. Crysdale explained that the ash layer might be reducing the recharge, and causing the sheet flow.

Commissioner Conant asked about the funding situation. Ms. Yuen explained that there is flat funding for the future preserves.

Commissioner Yeung suggested including more information on invertebrates in the Long Range Management Plans.

MOTION: Members RANKER/CONANT moved that the Natural Area Reserves System Commission recommend approval of the Natural Area Partnership Program renewals for the Waikamoi, Mo'omomi, Kamakou and Ka'ū Preserves.

Motion carried unanimously.

ITEM 4. Request for special use permit to install a stream gage in Hanakapi'ai stream by the United States Geological Survey in the Hono O Na Pali Natural Area Reserve, Kaua'i. Ms. Yuen represented Kaua'i and expressed support of this item. Ms. Yuen explained this will help NARS create a helicopter landing zone (LZ) that has already been sought out and that they

have not expressed any concern about the gage. The project is being funded by DLNR State Parks. Funding is secured for about 3 years and more needs to be found. They are thinking they will get 3 years in permits and that it does not make sense to come back to the commission in 3 years. They are suggesting acquisition of/asking for an indefinite permit and if there is evidence USGS is not maintaining the project, the permit would be revoked and USGS would have to remove the gage.

Commissioner Ranker agreed this permitting strategy makes sense. Vice Chair Price added as long as the language is clear to determine when the gage should be dismantled, etc.

Commissioner Clark asked if anyone had visited the site before. Ms. Yuen explained that they have just flown around but plan to carry out a reconnaissance mission soon. Vice Chair Price asked if Ms. Yuen knows why they have been wanting the LZ. Ms. Yuen commented that she did not.

Vice Chair Price asked if staff is taking responsibility for it. Ms. Yuen explained that USGS will help clear it and fund it. Commissioner Bauer commented that while he was with the Water Commission they installed a rain gage and staff had to fly in numerous times because the weather and conditions cause the gage to deteriorate quickly. He further commented that he would imagine they would have to maintain the project on a quarterly basis. Ms. Yuen believes they plan to make maintenance trips every other month. Commissioner Bauer commented that stream and rain gages are always difficult because of funding and if State Parks takes it over, the Water Commission would probably be interested in being involved.

Commissioner Clark expressed concern for the rare plants, explaining knowledge of rare species further up the drainage. Mr. Duvall asked if there were any invertebrate studies that the staff has planned alluding to the situation at Olowalu which happened to be in the middle of a *Laminella* population. Ms. Yuen explained that the reconnaissance mission in March with Adam Williams and Chris Mottley will probably lend a better idea of what is in the area. Commissioner Yeung commented that it would be good to know if the area has rare invertebrates and vertebrates in addition to any rare plants. Ms. Yuen explained that they will look at the area to determine whether the LZ location is suitable or not. Commissioner Rowland commented that if the area is not suitable, they would like to ensure the LZ is not created anyways. Ms. Yuen reassured they will not and that is why staff is attending the reconnaissance mission. Commissioner Conant requested the commission be updated on the status of the report. Commissioner Bauer asked if there is a reason why they chose this location. He further asked if the gage would play a role in flash flood notifications. Ms. Yuen explained that Hanakapi'ai stream was selected in order to track flash floods which have killed many downstream, but she did not know how the flooding information would be disseminated by USGS. Commissioner Bauer commented that he would like to know, emphasizing the value of having that information.

Vice Chair Price asked for clarification that the reconnaissance and creation plans are scheduled for the same trip. He further commented that he believes one trip may not be enough to

understand the biological status of the area. Ms. Yuen responded that is why staff that are trained botanists will be attending. Vice Chair Price reinforced concern for the invertebrates because they are harder to inspect, survey and assess. Commissioner Yeung commented that Adam Williams is the botanist but it would be good to have a designated invertebrate specialist. Commissioner Clark suggested having Cynthia King, William Haines, or David Sisco attend. Commissioner Yeung suggested recommending any of them attend even if it is just to take photos for identification later. Ms. Yuen stated she will make the recommendation and also suggested it can be a recommendation on the permit.

Commissioner Rowland asked how often maintenance would be and how frequently the LZ will be used. Ms. Yuen commented that it will be used 6 times a year by USGS, and more times for staff. Commissioner Rowland emphasized the importance that nothing fragile is at the proposed location especially because of the amount it will be frequented. Vice Chair Price added that it would be useful to have that level of clearance due to the location. Commissioner Clark asked if they will be using special contamination protocol. Ms. Yuen commented that contamination protocols are on the standard conditions of all NARS special use permits.

Vice Chair Price asked for clarification regarding requests in addition to having an invertebrate specialist attend the reconnaissance trip. Commissioner Clark commented that there will also be a follow up report indicating what is in the area. Commissioner Rowland expressed that he is still concerned and asked if NARS staff will be able to determine if they do not want the LZ in the proposed location. Ms. Yuen commented that she does not believe the LZ will have that large of an impact, adding that there are many of them throughout the island and more are continuously being created. She also reminded that USGS will also be utilizing the LZ. She suggested the NARS C could approve the permit right now and hold off on the issuing of it until the reconnaissance is done because it does not need the signature of their administrator before the LZ it is cleared. She added that they can have the permit issued after the reconnaissance and review. Commissioner Conant commented that this condition should be in the motion, adding that experts should be consulted if certain species are unknown like species of invertebrates. Ms. Yuen reminded that they recommended to have a trained entomologist in the field. Commissioner Yeung discussed the possible presence of the endangered water snail. Commissioner Clark added the Newcomb (*Erinna newcombi*) snail should be cautioned for as well. Commissioner Yeung suggested that any time a new LZ is being created, not just because USGS will be using it, there should be trained staff reviewing sites moving forward. Ms. Yuen commented that the motion can be edited to have the changes to the reconnaissance mission and response to the report. Commissioner Conant asked if this would mean there will be two trips. Vice Chair Price commented that the trip seems rushed given the nature of how certain species are identified. Ms. Yuen clarified the sequence as: 1. Fly in with Adam as botanical specialist, an invertebrate specialist and another NARS staff member. 2. Walk to the new location, check for any rare flora and fauna, create the LZ or not. She furthered that they would then create the report which would indicate what was found and subsequently approve the permit to have the rain gage installed. She clarified that they would want to have the survey immediately. Vice Chair Price commented that there should be language indicating if a candidate is identified, there

would be a hold put on the creation of the LZ until identified. Commissioner Conant expressed discomfort with having the survey condensed into one trip. Ms. Yuen asked for attending NARS specialists' input about creating new LZs. Mr. Duvall commented that if it is known the area has rare species, surveys are conducted and everything is not condensed into one mission.

Commissioner Clark asked if it is a hardship to conduct two trips, expressing that the Commission feels uncomfortable approving the mission because it seems rushed. Mr. Duvall shared they have had similar situations on Maui with USGS and they required USGS conduct vegetation surveys prior to creating a LZ. Ms. Yuen asked if they had to get it approved by the NARS Commission. Mr. Duvall clarified they did not. Ms. Yuen expressed concern in having to call another Commission meeting together in the next few months and asked if staff could be delegated to approve. Chair Price commented he thought that was fair. Commissioner Matsunaga expressed the concern lies in no one knowing what is at the site. Ms. Yuen commented that conducting 2 trips, without a new LZ to leave from, takes a lot of staff hours. Chair Price added, like Mr. Duvall, ease in decision making varies depending on the area. He added that seeing the region is close to a stream that is a finite region with flow in addition to other knowledge of the area, it seems likely there are rare species there. Ms. Yuen asked if he is worried about the stream being impacted by the LZ or the gage. She added that the gage will be installed after the recon trip and therefore there could be a thorough statement regarding the gage.

Commissioner Clark noted that what she does know about the area is that there are generally a lot of rare species. Commissioner Bauer commented that they will need a Water Commission permit for the gage. Ms. Gaudioso-Levita asked if any previous invertebrate surveys have been conducted on the section of stream or nearby. Ms. Yuen explained there most likely has not been but that this will be a great opportunity to do so. Ms. Gaudioso-Levita commented that this seems like the main gap in knowledge for making decisions. Ms. Yuen commented that staff on the reconnaissance trip can look at the stream and conduct assessments to see if anything will be impacted by the stream and follow with a report contingent on that issue. She added that she doesn't not believe the gage itself will have an impact on flora and fauna. Chair Price commented that the LZ seems like it has the larger footprint.

Ms. Yuen asked if anyone has recommended wording for the motion that was stated. Commissioner Rowland asked if there is a rush from USGS. Ms. Yuen explained they want it established by September 2018 because their funding will expire. Commissioner Rowland suggested creating a permit to issue the LZ creation first. Ms. Yuen reminded that DOFAW has the authority to permit LZ establishment. Commissioner Yeung commented that it seems the LZ will be created regardless. Commissioner Clark asked for clarification if USGS will be paying. Ms. Yuen confirmed but that DOFAW is jointly involved in the project. Commissioner Rowland commented that he has confidence in NARS staff to be concerned enough. Commissioner Asuncion asked what would happen if they discovered the location is not suitable. Ms. Yuen clarified they will not establish the LZ and will survey other areas.

Vice Chair Price commented the unknown factor seems the most worrisome. Commissioner Rowland commented the wording in the motion needs to address the rain gage, furthering that whatever cautionary words are used for the LZ should also be applied to the gage and maintenance (i.e. people walking through 6 times a year). Commissioner Bauer agreed emphasizing that is why USGS should be at the meeting because they are the ones who know what installing and maintaining the gage entails. Commissioner Rowland asked Ms. Yuen if they know that. Ms. Yuen explained they are responsible for all other permits so they should know. Commissioner Rowland emphasized that the situation can't be fully understood without having people on the ground. Commissioner Bauer commented that it appears the site was chosen because it is more open than other areas.

Commissioner Conant asked to have the motion restated. Chair Price clarified the motion is approval with a recommendation that the reconnaissance trip is accompanied by experts in botanical and invertebrate, with deferral of any action until any taxonomic uncertainties are identified. Commissioner Conant asked if that requires 2 trips or not. Vice Chair Price indicated they would proceed with the LZ if nothing rare is found. He added they can follow their recommendation to be extra cautious. Commissioner Yeung asked if that includes both terrestrial and aquatic species. Commissioner Ranker added there is a variety of rare ferns that grow in the area near waterways. Ms. Yuen indicated she will tell Adam.

Vice Chair Price added if everyone was clear on the wording, adding that it seems like the motion builds in some flexibility for staff. He asked if they have a motion to approve pending the second recommendation.

MOTION: Members MATSUNAGA/ROWLAND moved to approve the request for a special use permit to install a stream gage in Hanakapi'ai stream by the United States Geological Survey in the Hono O Na Pali Natural Area Reserve; with the provision that botanical and invertebrate specialists attend the reconnaissance mission and there be deferral of any action until any taxonomic uncertainties are identified.

Commissioners Yeung and Conant opposed the motion.

Motion carried.

ITEM 6. Renewal request for continued work by San Diego Zoo Global (SDZG) to continue to work on the release of 'alalā (*Corvus hawaiiensis*) back into the wild at Pu'u Maka'ala Natural Area Reserve, island of Hawai'i. Bryce Masuda, San Diego Zoo Global (SDZG) Site Manager, presented on past and current reintroduction efforts.

The project has a flight conditioning aviary that is a greenhouse styled structure for 'alalā to develop flight muscles prior to release. There is a total of around 12 birds planned for the next release. The release aviary is more north to the Mauna Loa Boys School Unit. The aviary was built last summer with refabricated panels, mesh netting on top with much wood support. The

plan is to move the aviary to another area of the NAR. Part of the aviary remains so ‘alalā can come in and get supplemental food. The Mauna Loa Boys School Unit is a temporary field camp that allowed the team to reduce their footprint, reducing the number of times they had to drive in and out.

There are 4 established telemetry towers that provide a means to monitor and track ‘alalā. They are still a work in progress. The current accuracy is around 100 m. Bryce is working closely with Evan (USGS) and Alex Wong (NARS).

Releases in the fall of 2017 were divided into two groups because an aviary can only hold around 6 birds at a time. The birds were divided based on behavior, sex ratios and parent rearing. Post-release movements remained close to the release site but as time passed the birds ventured farther away. The birds still return for supplemental food and always return to the site after venturing off. The birds are found feeding on native fruits, invertebrates and the supplemental food. They forage on branch surfaces, under tree bark, in crevices and on the ground. They return regularly but are essentially wild birds at this point. They appear to be one cohesive unit socially. Some of the birds are going to reach 2 years old, approaching sexual maturity, so it will be interesting to see how they pair. Rather than being predated by ‘io, they chase them away which is their natural behavior. The birds in the second release were 10 months older than those of the first, the release site was 700 feet further above sea level, the forest was different and more complex, and predators were refined.

The requested permit conditions are essentially the same as the current permit, which encompasses road access, constructing a new release aviary, continuing providing supplemental food, et cetera. The plan is to release another set of birds this summer.

Commissioner Conant suggested since a wounded ‘ōhi‘a tree is a key way ROD spreads, to include prevention of wounding of ‘ōhi‘a trees.

Vice Chair Price asked out of curiosity what the process of the birds being gradually weaned off the supplemental feed is. Mr. Masuda explained they are trying to make a database for information about the amount of supplemental feed being consumed each day. He added they have recently been seeing more fluctuations but are expecting to see downward trends due to the fact they tend to wean off on their own. He further explained that tracking their movements is key because the further they travel the more independent they are.

Commissioner Rowland asked if there is any way to entice them to return. Mr. Masuda explained there is a certain feeder that always makes them come back. He further explained they intended to make them as wild as possible so they are not trained to respond to any specific signal, which is also a testament to the conditions of the NAR at Pu‘u Maka‘ala as well.

Commissioner Conant asked for Mr. Agorastos’ input. Mr. Agorastos explained he is in full support of the project. He further highlighted a couple of points for the commission to consider

which revolved around the additional unbudgeted pressure the project puts on NARS staff. He finished emphasizing his support of the project and clarifying that the short-term concerns outweigh the opportunity. Commissioner Conant asked what the possibilities are for NARS to get more support from SDZG. Mr. Masuda agreed with the point made and expressed it is worth sitting down with Mr. Agorastos to discuss. He added that he encourages his team to pull weeds when they see them to help NARS. Mr. Agorastos clarified that most of the manpower he brought to attention encompasses regular due diligence (~75%).

Vice Chair Price asked if there were any further questions or comments.

MOTION: Members CONANT/RANKER moved to renew the request for continued work by SDZG to continue to work on the release of ‘alalā (*Corvus hawaiiensis*) back into the wild at Pu‘u Maka‘ala NAR, island of Hawai‘i.

Motion carried unanimously.

ITEM 5. Request for delegation of authority to Branch Managers or Administrator of the Division of Forestry and Wildlife to issue permits listed in Exhibit 2 for Hawai‘i Administrative Rules Chapter 13-209, Rules regulating Natural Area Reserves. Ms. Yuen explained DOFAW has requested to amend the list of types of activities NARS Commission delegates to the Staff, Branch Manager, Administrator and the Chairperson to sign off on. She explained the purpose of this request is to streamline things that have not been put on the list before, which would allow staff to grant permits for access into areas closed off after hours. She highlighted DOFAW currently has a wildlife biologist, entomologist and botanist that approve statewide permits. She further explained they look to the specialists for guidance in addition to the NAR special use permits and thought it would be good to amend these types of activities. She further explained they want to streamline permitting to allow groups that request for permits to do beneficial activities to apply through them rather than wait long periods of time for the next commission meeting.

Commissioner Clark asked if this is because there is no longer an executive secretary position. Ms. Yuen confirmed and explained that the executive secretary position used to act on behalf of the NARS commission. Commissioner Conant asked if anything on the current list is removed. Ms. Yuen explained nothing is removed and only additions are made. Chair Price commented that it seems some of the amendments have other areas of delegation and so it does not appear like they would make the system less regulated. Ms. Yuen added that now they have specialists whereas they did not before. Commissioner Yeung asked what does change and what the commission will review if approved. Ms. Yuen explained infrastructure permits that last over longer periods of time will still come to the commission. She further explained that the commission will review research permits depending on the impact, adding that if the research involves an activity such as installing towers it will need to be reviewed by the commission. She also highlighted that staff can bump permit approval to the commission if they want additional opinions and public opinions.

MOTION: Members CONANT/BAUER moved to approve the request for delegation of authority to Branch Managers or Administrator of the Division of Forestry and Wildlife to issue permits listed in Exhibit 2 for Hawai'i Administrative Rules Chapter 13-209, Rules regulating Natural Area Reserves.

Motion carried unanimously.

ITEM 7. Update on the planned Kiwikiu translocation to the Nakula NAR (Maui) and associated activities and improvements. Hanna Mounce presented on behalf of the Maui Forest Bird Recovery Project (MFBRP) and their work in Nakula NAR. Kiwikiu are the most endangered bird on island compared to fossil records that show they used to be distributed island wide. They are federally listed as critically endangered. The Kiwikiu have a unique life history with one chick that depends on its parents for a year, which also makes them difficult to save.

Abundance estimates are critically low and the birds are also hard to detect due to their cryptic nature and distribution across multiple landowners. The surveys are conducted using vpc counts every 5 years. The data shows a population decline and estimates indicate a wild population under 300.

The MFBRP worked with the po'ouli project until the last died in 2004, now MFBRP is focusing on Kiwikiu. Reintroduction of Kiwikiu have been in the USFWS plan since it was drafted.

Nakula NAR links to other areas that are becoming restored, if introduced at Nakula they anticipate the birds will spread into other nearby areas. The existing infrastructure in the area is the MFBRP Camp Release.

The initial restoration timeline involved large-scale outplantings and predator abundance studies. Current techniques focus most of the planting in corridors. Natural regeneration strips are snaked to encourage the natural regeneration of koa and a'ali'i that is then supplemented with outplants. There are erosion scars with traps that still need to be worked on.

The proposed predator control focuses on rats, mongooses and cats. They have strategized aviary locations and plan to spread them to avoid territorial stress. The proposed release cages have 2 birds per cage. The proposed feeders slowly dispense live meal worms over time which reduces the number of times they need to be checked.

Proposed releases and monitoring are planned over 3 years but are adaptive depending on how the birds perform. January 2019 is the intended first release.

Each trip has a maximum of 10 people with only 3-4 that are actual staff.

Commissioner Bauer asked if they have used any Kaho‘olawe Island Reserve Commission (KIRC) people for erosion scars. Ms. Mounce shared that they have conversed with KIRC but KIRC has never seen their site.

Commissioner Clark asked what is being used to make erosion scars. Ms. Mounce clarified it is a Roundup mix applied by backpack spraying.

Ms. Gaudioso-Levita asked if they have conducted surveys for Lepidoptera in the area. Mr. Duvall confirmed that Bob Peck conducted a survey and found per unit vegetation, there is a greater abundance of the insect species they depend upon in the Nakula area. In terms of targeted outplants, the Kiwikiu plants are being targeted.

Ms. Gaudioso-Levita asked how long they plan to supplement feed and Ms. Mounce indicated that it depends on what the birds tell them. She further clarified that the Kiwikiu they plan to release that are older have been supplement fed all their lives, so they may depend longer.

ITEM 8. Updates: Native Ecosystem Protection and Management Section Personnel, State Legislative Session. Ms. Yuen introduced Leah Laramee as the new NEPM planner and Lainie Berry as the new Forest Bird Biologist. She also announced Matt Kier as the new State Botanist. Ms. Yuen suggested deferring the remaining items offline.

Vice Chair Price asked if there were any further comments and with no further comment adjourned the NARS C meeting at 1:12 p.m.