

Department of Land and Natural Resources (DLNR)
Division of Forestry and Wildlife (DOFAW)
ENDANGERED SPECIES RECOVERY COMMITTEE (ESRC) MEETING
Virtual Meeting - Zoom
January 27, 2021

MEETING MINUTES

MEMBERS: David Smith (DLNR), James Jacobi (USGS), Lisa Spain (At-Large), Melissa Price (UH), Michelle Bogardus (USFWS), Kawika Winter (At-Large), Loyal Mehrhoff (At-Large), Bob Reed (USGS)

STAFF: DOFAW: Koa Matsuoka, Glenn Metzler, Afsheen Siddiqi
DLNR: Linda Chow

OTHERS: Tom Snetsinger, Jenny Taylor

ITEM 1. Annual HCP Implementation Review FY 2020 – Nā Pua Makani Wind Energy Project

(22:05) David Smith calls Tom Snetsinger to present.

(23:00) Tom Snetsinger introduces himself and his presentation on Nā Pua Makani Wind Energy Project Annual HCP Implementation Review FY 2020.

(24:06) Tom Snetsinger introduces the Nā Pua Makani Wind Energy Project. It is located in Kahuku, O‘ahu. They have 8 Vestas V136 wind turbines, 4 of which are on privately owned land and the 4 others are on DLNR land. The covered species are the Hawaiian Hoary Bat, Hawaiian waterbirds (gallinule, stilt, coot, duck), Hawaiian Goose, Newell’s Shearwater, and the Hawaiian Short-eared Owl.

(24:58) Tom Snetsinger says that FY 2020 focused mostly on post construction mortality monitoring (PCMM), bat acoustic monitoring, mitigation, permitting, and biological monitoring (invasive plant species surveys, nighttime monitoring).

(26:42) Tom Snetsinger then gives a project status update. Vertical construction began October 19, 2019. They began testing turbine generation on August 16, 2020, and then began PCMM searches shortly after on August 26, 2020. Commercial operations began on December 11, 2020. They have been implementing planned monitoring and avoidance minimization as described in the HCP.

(27:24) Tom Snetsinger talks about their avoidance, minimization, and related efforts. They have bat deterrents on 4 of their turbines and the selections were based

on proximity to edge habitat. The deterrent research plan is under development. They have acoustic monitors installed at 4 turbines and the selections were intended to capture range of habitats at the project. Security cameras replaced lights to reduce risk of attracting seabirds.

(30:11)

Tom Snetsinger talks about their invasive plant species monitoring and management efforts. Annual surveys of construction areas mostly for *Chromolaena* (fireweed) and fountain grass were conducted. None of these species were found during the first two surveys which were at the start of construction and the end of construction. They did detect *Chromolaena* in discrete locations during the fall 2020 survey. They are working with the O'ahu Invasive Species Committee (OISC) to address *Chromolaena*.

(31:24)

Tom Snetsinger says they have initiated PCMM. They are doing weekly systematic searches at each turbine using canine search teams, vegetation management, and will be beginning scavenger control in Q3 of FY 2021.

(32:00)

Tom Snetsinger continues to talk about post-construction mortality monitoring by going over their systematic searches for Evidence of Absence (EoA) analysis. The roads and pads are within 75% of maximum blade tip height (MBTH) plots, other cleared areas that can be practicably maintained are within 50% MBTH plots, and carcass distribution is based on Hull & Muir ballistics model. EoA analysis will be used to estimate fatalities from any observed fatalities that are found.

(34:47)

Tom Snetsinger talks about mitigation for the Hawaiian Hoary Bat. Tier 1 is to mitigate for 34 bats within the Poamoho Management Area by improving the habitat there and minimizing the impacts of invasive species. A research plan and a management plan are under development. For Newell's Shearwater and Hawaiian Short-eared Owl, funding was provided and the reporting agreement is in the final stages of review.

(36:53)

Tom Snetsinger continues to talk about mitigation starting with the Nēnē that included a James Campbell National Wildlife Refuge (JCNWR) fence project being planned and an on-going discussion with agencies to address extirpation of local populations. As for Hawaiian waterbirds, he states that adaptive management will be required and a revised mitigation plan is under development.

(38:40)

Tom Snetsinger mentions that on July 25, 2020, there was a Hawaiian Petrel fatality observed which was collected and reported according to protocol and then additional minimization efforts were implemented. They are amending the HCP to add petrels in the initial review and development of that HCP. There was no significant risk assessed in consultation with USFWS/DOFAW when the HCP was developed and there have been petrel status updates since the approval of the HCP.

- (39:53)** Jim Jacobi asks what killed the bird.
- (40:03)** Tom Snetsinger replied saying that it flew into a stationary turbine. It was found about 20 meters away from the turbine.
- (40:18)** Jim Jacobi suggests that it was an incidental observation, asking that it wasn't in a targeted search area.
- (40:25)** Tom Snetsinger says it would've fallen within the targeted search area but they weren't implementing the monitoring at the moment.
- (40:52)** Michelle Bogardus asks to clarify that the lights were modified at that time because the assumption was that the lights were what drew the bird in.
- (41:04)** Tom Snetsinger says that is correct, the security lights were being used at that time so after they lowered the lights and took action to reduce the impacts of the lights which were later replaced with cameras that don't need lights.
- (41:48)** Tom Snetsinger goes over their FY 2021 HCP Compliance and Monitoring Plan. They are doing PCMM monitoring, bat acoustic monitoring, invasive plant species monitoring, mitigation plans review, approval and initial implementation, bat deterrent study planning/implementation, and reporting compliance with HCP and associated permits.
- (43:10)** Tom Snetsinger finishes his presentation up and asks if there are any questions.
- (43:15)** Jim Jacobi asks if the deterrents are the same as the ones being used on Kawailoa or if they are a different brand/strategy.
- (43:23)** Tom Snetsinger says it's the same NRG deterrents and same general strategy. They have deterrents on the 4 most likely turbines that are anticipated to cause the most issues.
- (44:25)** Jim Jacobi asks how they are going to assess whether the deterrents will work or not.
- (44:48)** Tom Snetsinger says they are under the assumption that they will be effective. They won't be doing anything to adjust their calculations. They have the bat deterrent research project that will be implemented and hopefully will allow them to better understand how well the deterrents are working.
- (45:48)** Jim Jacobi asks if weekly searches is adequate since they do not currently have predator trapping underway because of the lack of traps.

- (46:12) Tom Snetsinger says they are collecting carcass persistence information and while they are losing carcasses to scavengers, the probability of persistence is greater than 50%. They will be deploying traps within the next week or two.
- (47:13) Michelle Bogardus asks which turbine was the Hawaiian Petrel found at.
- (47:24) Tom Snetsinger thinks it may be turbine 1 but is unsure.
- (47:41) Michelle Bogardus asks to follow up later to confirm. She says the map is helpful in thinking about where the turbines are laid out.
- (47:52) Tom Snetsinger says he will follow up and then asked if there any other questions.
- (48:20) Koa Matsuoka says he looked at the downed wildlife report and says it's turbine 9.
- (48:25) Tom Snetsinger points out that turbine 9 is the one right next to the base yard, the northern one on the private side of the wind farm.
- (49:20) Jim Jacobi mentions that he is looking forward to seeing the mitigation implementation plan, research, and strategy.
- (49:33) Tom Snetsinger says yes, they will be seeing the ESRC again soon.
- (49:50) Loyal Mehrhoff asks if they are doing any other acoustic monitoring other than the ones that are already on the turbines.
- (50:00) Tom Snetsinger replies that they are not. They're monitoring at the four locations adjacent to those turbines which are turbines 1, 4, 6, and 9.
- (50:24) Jim Jacobi comments that one of the suggestions in the new bat guidance document states that acoustic monitoring at both the wind farm site and the mitigation site should be set up in a way that it could be added as a site in the island-wide occupancy monitoring. He is hoping that this project and the other projects would be amenable to having that kind of information incorporated.
- (51:05) Tom Snetsinger says they can certainly look at that with the client. He restates that there will be acoustic monitoring at Poamoho as part of the management and research plans.
- (51:35) Loyal Mehrhoff asks what the frequency the deterrents are running on.
- (51:44) Tom Snetsinger says he doesn't have that kind of detail but he can follow up on that.

- (51:12) Loyal Mehrhoff asks if those are B136's.
- (52:16) Tom Snetsinger says they are.
- (52:32) Loyal Mehrhoff asks when they expect the results of the Searcher Efficiency (SEEF) and Carcass Retention (CARE) trials.
- (52:37) Tom Snetsinger says they will report them as part of FY 2021. They are doing CARE trials quarterly and SEEF trials periodically throughout the month.
- (53:46) David Smith asks if there are any other questions. There are no other questions so David motions to move on to Kahuku.
- ITEM 2.** Kahuku Wind Power HCP 2020 Annual Report
- (54:14) Jenny Taylor introduces herself and mentions her and Tom Snetsinger will be presenting on all Brookfield sites.
- (55:24) Jenny Taylor gives an overview of what she will be talking about throughout the course of her presentation.
- (55:54) Jenny Taylor says that operations commenced in March 2011 with 12 turbines. There are 8 covered species, 7 of which are USFWS federally protected and 8 of which are DOFAW protected. These are the Hawaiian Hoary Bat, Hawaiian Short-eared Owl, Newell's Shearwater, Hawaiian Petrel, Hawaiian Coot, Hawaiian Moorhen, Hawaiian Stilt, and the Hawaiian Duck.
- (56:19) Jenny Taylor talks about their PCMM program. They have 35-meter search plots centered on the turbines, weekly search intervals, canine search teams that have been in place since FY 2019, monthly vegetation management, and scavenger control twice a month.
- (57:12) Jenny Taylor goes over the take estimation parameters for the Hawaiian Hoary Bat which had a SEEF of 0.88 and CARE of 0.79. She then goes over the SEEF and CARE for seabirds, waterbirds, and the Hawaiian Short-eared Owl which were 1.00 and 0.98 respectively.
- (57:58) Jenny Taylor mentions that there was no observed take for covered species in FY 2020, but currently there have been 4 observed take, 9 estimated direct take, 1.7 estimated indirect take, and an estimated 11 total take at the end of FY 2020 of the Hawaiian Hoary Bat. There is potential for tier 2 exceedance at these numbers. There has been no observed take of seabirds, waterbirds, and Hawaiian Short-eared Owl.
- (59:05) Jenny Taylor says acoustic monitoring for bat activity has been conducted continuously since the start of operations. The dataset shown includes years

since 2014-2020. There have seen stable detection rates and similar temporal patterns during pregnancy and lactation periods over the past 7 years. Generally, the activity on site is very low. In 2020, activity was captured at only 6 of 1409 detector nights.

- (1:00:17)** Jenny Taylor talks about mitigation for the Hawaiian Hoary Bat. Baseline (tier 1) is complete by providing funding for restoration at Kahikinui Forest Reserve conducted by DOFAW. They are in the planning stages for higher level of take (tier 2) and are in discussion with USFWS and DOFAW.
- (1:01:09)** Jenny Taylor says mitigation has all been completed for seabirds (Kauai seabird colony assessment and predator control on Kauai and Lehua Island), waterbirds (Hamakua Marsh predator control), Hawaiian Short-eared Owl (funding to Hawaii Wildlife Center and DOFAW population research).
- (1:01:44)** Jenny Taylor talks about the FY 2021 HCP Compliance and Monitoring Plan. They will continue the PCMM program and management actions in FY 2020. They are planning tier 2 bat mitigation in consultation with DOFAW and USFWS.
- (1:02:52)** Jenny Taylor ends the presentation and asks for any questions for her and/or Tom Snetsinger.
- (1:03:03)** Loyal Mehrhoff asks why they are planning on tier 2 mitigation.
- (1:03:12)** Jenny Taylor responds by saying that they are approaching the 75% threshold of tier 1 so they are anticipating that they would need to start discussions on tier 2.
- (1:03:29)** Loyal Mehrhoff asks what the amount of bat take was in 2020.
- (1:03:33)** Jenny Taylor says they had 0 in 2020.
- (1:03:42)** Loyal Mehrhoff asks why they were approaching tier 2 in 2020 if they didn't have any take.
- (1:04:10)** Tom Snetsinger says they are concerned about it because the level of take for the project is relatively low, so they want to be ready since they are approaching the threshold.
- (1:04:55)** Loyal Mehrhoff says he didn't realize they had take in 2021.
- (1:04:59)** Tom Snetsinger says yes, they had one observed bat take which was the first observed take since the start of the project in 2014.
- (1:05:17)** David Smith asks if 2014 is when they installed the deterrents.

- (1:05:27)** Tom Snetsinger says there aren't deterrents installed at Kahuku. They have adaptively managed the low wind speed curtailment program.
- (1:05:50)** David Smith asks when they installed the new low wind speed curtailment regime and if that is when the take went to 0 for several years.
- (1:06:00)** Tom Snetsinger says yes, since 2014.
- (1:06:17)** David Smith asks if there any other questions and there are none, so Jenny Taylor moves onto her next presentation.
- ITEM 3.** Kaheawa Wind Power I, Kaheawa Wind Power II HCP FY 2020 Annual Reports
- (1:07:54)** Tom Snetsinger gives an overview of the presentations' format.
- (1:08:36)** Tom Snetsinger says the KWP I project (located in West Maui) has 20 turbines, operations commenced in June 2006, and the covered species are the Hawaiian Hoary Bat, Newell's Shearwater, Hawaiian Petrel, and the Hawaiian Goose.
- (1:09:11)** Tom Snetsinger says the search strategy is a road and pad setup within 70 meters of turbines. They have weekly search intervals, canine search teams, vegetation management, and scavenger control.
- (1:09:54)** Tom Snetsinger talks about the take estimation parameters. Due to their search strategies, they have high confidence they will find any fatalities. For Hawaiian Hoary Bat, seabirds, and Hawaiian Goose the searcher efficiency was 97-100% and the probability of persistence was 84-96%.
- (1:10:50)** Tom Snetsinger goes over a summary slide for the observed, estimated direct, estimated indirect, and total estimated take. There was an estimated total take of 30 for the Hawaiian Hoary Bat, 19 for the Hawaiian Petrel, and 45 for the Hawaiian Goose.
- (1:12:01)** Tom Snetsinger continues to talk about observed and estimated take where the Hawaiian Hoary Bat had 9 total observed take used in their analysis, 0 observed take in FY 2020, and a low probability of tier 2 exceedance. The Hawaiian Petrel had a total observed take of 7 used in their analysis, 0 observed take in FY 2020, and a low probability of tier 1 exceedance. The Hawaiian Goose had a total observed take of 25 used in their analysis, 0 observed take in FY 2020, and a low probability of tier 2 exceedance. There was no observed take for Newell's Shearwater.

- (1:13:27)** Tom Snetsinger goes over the acoustic monitoring for bat activity where they see patterns and spikes of increased detections in the lactation/post-lactation months and the pre-pregnancy/pregnancy/post-pregnancy periods.
- (1:14:30)** Tom Snetsinger says they tested for the evaluation of trend analysis at the project over time. They see a significant increase in trend for annual detection rates.
- (1:15:35)** Tom Snetsinger talks about mitigation for the Hawaiian Hoary Bat. Tier 1 mitigated for 20 bats which was completed with a USGS radio tracking study. Tier 2 mitigated for 30 bats which was completed by H. T. Harvey Maui research and USGS research on Hawai'i Island.
- (1:16:34)** Tom Snetsinger talks about seabird mitigation at Makamaka'ole. They conducted status review with agencies and experts, there were no fledgling Newell's Shearwaters produced, there was an increase in adults survival, established a new breeding colony, improved management, and provided research opportunities.
- (1:18:53)** Tom Snetsinger continues to talk about seabird mitigation. They got approved to do predator control work on Lāna'i which resulted in 36 fledging Hawaiian Petrels above baseline in 2018. They are working with DOFAW and USFWS to quantify benefits with input from seabird experts, respond to mitigation challenges, and define 2021 mitigation approach.
- (1:20:08)** Tom Snetsinger talks about Hawaiian Goose mitigation which is ongoing. Tier 1 is 60 geese and the work that has been ongoing is at Haleakalā Ranch pen predator control. There has been 65 fledglings produced from 2011-2020 and they are working with agencies to quantify mitigation credit. They are considering options for tier 2 planning.
- (1:21:00)** Tom Snetsinger says they are not on track to meet obligations, but results are variable year-to-year. Their contracts were revised and mitigation continues in FY 2021 at Haleakalā Ranch.
- (1:22:00)** Tom Snetsinger mentions that the wildfire in the lower elevation of KWP I was in FY 2020 (Q2) and vegetation continues to recover. He also mentions that there was no disruption of monitoring efforts due to COVID-19.
- (1:22:31)** Tom Snetsinger talks about the FY 2021 HCP Compliance and Monitoring Plan. They are continuing monitoring and management actions as in FY 2020. They are working with DOFAW and USFWS to quantify Hawaiian Goose mitigation benefits, address Hawaiian Goose mitigation challenges, quantify seabird mitigation benefits, and address seabird mitigation challenges.
- (1:23:32)** Tom Snetsinger ends and asks if there are any questions.

- (1:23:41)** Jim Jacobi asks if there is monitoring going on outside the fence at Makamaka'ole and he would like to understand what the zone of attraction is around the fence.
- (1:25:01)** Tom Snetsinger says they don't know about the zone of attraction outside the specific management area. He says there hasn't been any burrows found outside the area.
- (1:26:34)** Jenny Taylor adds that in 2019 & 2020, all of the burrows were within 2-3 meters within the acoustic playback mechanism.
- (1:26:51)** Jim Jacobi asks if Tom can talk about the discussion he's had with the agencies about the potential and viability of this site for mitigation.
- (1:27:31)** Tom Snetsinger says, with respect to Newell's Shearwater, that they are continuing to see growth and there are minor changes in management around the substrate and burrows.
- (1:30:18)** David Smith asks if there any other questions. David calls for a 5-minute break and then they will continue with KWP II.
- (1:36:08)** Kawika Winter asks if they will be given a presentation about all the cumulative take by island and total for state this year.
- (1:36:33)** David Smith agrees it will be helpful and will get someone on it.
- (1:36:58)** Koa Matsuoka says those numbers and graphs should be in the packet he sent out.
- (1:37:27)** Jenny Taylor starts the presentation on the KWP II project which are the lower elevation turbines (14 turbines). Operations commenced in July 2012 and KWP II has the same 4 covered species as KWP I: Hawaiian Hoary Bat, Newell's Shearwater, Hawaiian Petrel, and Hawaiian Goose.
- (1:38:00)** Jenny Taylor says KWP II also has the same search strategy as KWP I. There are roads and pads within 70 meters of turbines, weekly search interval, canine search team, vegetation management, and scavenger control.
- (1:38:47)** Jenny Taylor talks about the take estimation parameters. They have a 100% SEEF for Hawaiian Goose, Hawaiian Hoary Bat, and seabirds. They have a CARE of 95% for Hawaiian Goose and 86% for Hawaiian Hoary Bat and seabirds. They are using chickens for surrogates for the Hawaiian Goose, dark rats for bat surrogates, and wedge-tailed shearwaters for seabirds

- (1:39:37)** Jenny Taylor says they had take of Hawaiian geese in FY 2020. At the end of FY 2020, they had 12 observed take of the Hawaiian Goose. The total estimated take was 23 plus one gosling. They had 4 observed take of the Hawaiian Hoary Bat and had a total estimated take of 12.
- (1:41:29)** Jenny Taylor reviewed the observed and estimated take numbers and concluded that projected estimated take of the Hawaiian Goose suggests that the permit limit may be exceeded and the projected estimated take of the Hawaiian Hoary Bat will stay within the permit limit. There has been no observed take of the Hawaiian Petrel and Newell's Shearwater.
- (1:42:41)** Jenny Taylor goes over bat activity at KWP II. She goes over the figure which shows patterns observed in FY 2020 is consistent with patterns observed in previous years which include an increased peak in activity in the post-lactation period and a smaller peak in the pregnancy period. In FY 2020, Hawaiian Hoary Bats were detected 117 nights out of 1146 detector nights sampled. There was no identifiable significant trend in acoustic activity for this site when compared to all years.
- (1:43:58)** Jenny Taylor talks about Hawaiian Hoary Bat mitigation. Tier 1 and 2 for 11 bats have been mitigated for and completed at the DOFAW Kahikinui restoration project. Tier 3 for 19 bats is ongoing in the form of the USGS research project for Hawaii.
- (1:44:33)** Jenny Taylor talks about seabird mitigation at Makamaka'ole. Information provided here is same as KWP I.
- (1:45:24)** Jenny Taylor talks about Hawaiian Goose mitigation which is still ongoing. Tier 1 is for 18 adults and 3 fledglings. Funds were provided to DOFAW Pi'iholo Ranch pen predator control and they are working with agencies to quantify mitigation credits. They are not on track to meet obligations based on their modeling numbers. They updated agreements with DOFAW in 2020 where they improved communication and reporting and provided funding for 2021.
- (1:46:52)** Jenny Taylor talks about the wildfire in FY 2020 which is the same information as previously discussed with KWP I.
- (1:47:22)** Jenny Taylor mentions the FY 2021 HCP Compliance and Monitoring Plan which is the same as KWP I.
- (1:47:55)** Jenny Taylor ends the presentations and asks for questions.
- (1:48:00)** Loyal Mehrhoff asks which KWP II turbines had bat take.

- (1:48:11)** Jenny Taylor says she doesn't have that information but can provide that information later.
- (1:48:32)** Kawika Winter asks if on the last year's annual report, it was mentioned that the Nēnē mitigation wasn't working because of chick predation and asks if that is still an issue.
- (1:49:00)** Tom Snetsinger says there was occasional predation but he's not sure if DOFAW has been able to address that. He says they are seeing reproduction though.
- (1:50:14)** Kawika Winter asks what the HCP says as far as adaptive management when the project is financially supporting mitigation, but the mitigation isn't achieving a cumulative net benefit for the species.
- (1:50:45)** Tom Snetsinger says adaptive management is needed at these sites in order to generate these types of benefits required by the mitigation criteria. He says they will continue to work with agencies to achieve success.
- (1:51:17)** Kawika Winter asks if there were no prescribed adaptive management plans.
- (1:51:35)** Tom Snetsinger says there's no explicit list of actions that would be taken if they weren't meeting targets.
- (1:52:06)** Jim Jacobi says adaptive management was a general term used in the plans but nothing specific in terms of triggers but that doesn't mean it shouldn't trigger the type of discussions Tom is talking about.
- (1:52:26)** Kawika Winter asks if those type of discussions have yet to be initiated and if that is the case, who would be in charge of getting that going.
- (1:52:42)** Tom Snetsinger says they have had those conversations with the agencies and continue to discuss them.
- (1:52:59)** Kawika Winter asks if there are any agency representatives that want to comment on that statement.
- (1:53:06)** Afsheen Siddiqi mentions that Stephanie Franklin will be there tomorrow and she's the one managing the pens so they can get into a lot of the details of adaptive management tomorrow. She wouldn't say the mitigation isn't working, but the way it was funded and the allocation of funding wasn't fully funded by KWP I for Haleakalā Ranch so even though the number of fledglings was sufficient, it wasn't credited to the wind farm.
- (1:54:07)** Michelle Bogardus asks if there is money coming in from another project or if it is DOFAW money.

- (1:54:13)** Afsheen Siddiqi says it is DOFAW money.
- (1:54:20)** Loyal Mehrhoff asks if KWP didn't realize DOFAW was funding it and thought they were funding it instead.
- (1:54:25)** Afsheen Siddiqi says that's correct, it was not communicated well. She says the project is working but the crediting isn't working as it should and they should have been in better communication from earlier on.
- (1:55:06)** Loyal Mehrhoff asks if that hasn't been figured out in the last year or is there now a resolution on that.
- (1:55:15)** Afsheen Siddiqi believes they have an accounting of that, but now KWP is behind on their mitigation.
- (1:55:28)** Loyal Mehrhoff says there should be some way of rearranging their expenditures or using their money somehow so that they get credit for it if they were planning on it and they actually said they were going to do that, rather than having DOFAW take part of it.
- (1:56:10)** Afsheen Siddiqi says they did use all of the funding they've received from the wind farm. They were supplementing the project in the past with DOFAW funds.
- (1:56:32)** Loyal Mehrhoff asks if the funds coming from KWP wasn't adequate for the project.
- (1:56:44)** Afsheen Siddiqi says this is correct and there was a delay when they were using their funding.
- (1:56:53)** Loyal Mehrhoff says he doesn't understand that.
- (1:57:01)** Afsheen Siddiqi says they were paying for civil service staff to manage the pen and they were not able to use the mitigation funds based on where the money was going, so they were supplementing that. It was an accounting issue. Then they contracted that out to technicians to manage the pen in order to use the mitigation funds.
- (1:58:29)** Loyal Mehrhoff asks if all the money that KWP wanted to put into the project was actually put into the project.
- (1:58:35)** Afsheen Siddiqi says yes that's correct.
- (1:58:38)** Loyal Mehrhoff says he was confused because it seemed that last year KWP was getting penalized because the money couldn't be spent.

- (1:58:50)** Afsheen Siddiqi says no, they figured out a way to work on it.
- (1:59:09)** Michelle Bogardus asks to clarify, that this is an issue that has happened in the past and it has been resolved and it's not likely to happen again.
- (1:59:23)** Afsheen Siddiqi says yes.
- (1:59:27)** Loyal Mehrhoff asks if KWP is okay with the outcome.
- (1:59:33)** Tom Snetsinger says they are continuing the conservation with DOFAW and the USFWS to make sure the project is getting adequate credit, but they don't have complete agreement on the mechanism at this point.
- (2:00:08)** Lisa Spain adds that this raises the kind of complexity of doing these mitigation projects on private land because that private landowner may then have for NRCS funding and those kinds of things to do habitat improvement on their own properties. She asks if there are Safe Harbor Agreements being set up for these private landowners for these mitigation obligations being implemented on their properties.
- (2:00:51)** Jim Jacobi says there is for Haleakalā ranch.
- (2:00:54)** Michelle Bogardus says there are safe harbors for both of these properties. She thinks that it is not ideal in the way that the mechanism was set up because the Safe Harbor was put together prior to the mitigation being anticipated and so the Safe Harbor Agreement is reasonably quiet on the possibility of mitigation. She thinks there are better ways to do this in the future.
- (2:02:50)** Jenny Taylor says that if there are no other questions that Gordon Tribble and Dave Johnson will present on research on bat mitigation projects that have been in progress for both sites. However, Gordon and Dave are not in the call at the moment.
- (2:03:32)** Koa Matsuoka says Dave Johnson wasn't going to present anymore since he doesn't have any new information since the bat workshop.
- (2:03:47)** Jim Jacobi says Gordon was going to talk on it. He asks Bob Reed if he can summarize the discussions that Gordon was going to present on.
- (2:03:58)** Bob Reed says that Gordon had to get onto a regional call and that he had put something in the chat but he doesn't see anything in the chat.
- (2:04:13)** Jim Jacobi says maybe they can come back to it later.
- (2:04:26)** Koa Matsuoka says that this is actually the last agenda item for the day.

- (2:04:56)** David Smith says they can touch base on it the following day. He asks if anyone wants to add anything.
- (2:05:16)** Kawika Winter asks Koa to bring up a screen with the overview of the data of the cumulative take. He thinks that the cumulative bat take is about 300 and so he's wondering what kind of population level impact that is. He asks if anyone is aware of any modeling on that kind of data.
- (2:07:14)** Koa Matsuoka brings up a graph summarizing all incidental take as of FY 2020. The y-axis has the take count and the x-axis has each species that's covered under all the ITLs and HCPs. The orange bars represent the total permitted take, the yellow bars are the total estimated take, and the green bars are the total observed take.
- (2:08:22)** Loyal Mehrhoff asks if this data for the end of June last year.
- (2:08:26)** Koa Matsuoka responds yes, FY 2020 up to June 30th.
- (2:09:26)** Koa Matsuoka says the Hawaiian Hoary Bat has the highest permitted take out of all the species and then he presents a graph of the Hawaiian Hoary Bat data broken down by island (O'ahu and Maui).
- (2:10:01)** Loyal Mehrhoff asks if this doesn't include the Kawailoa amendment.
- (2:10:05)** Koa Matsuoka says yes it doesn't include it.
- (2:10:16)** Tom Snetsinger asks Koa to confirm if the total estimated take is the sum of the eighty percent upper credible limits from each of the projects.
- (2:10:30)** Koa Matsuoka confirms this is true.
- (2:10:31)** Tom Snetsinger says that's improbable that a sum actually represents an estimate of the total take given they are summing upper limits. He says that they are adding together the upper bounds from each project, it's more likely to be a high estimate than an actual estimate of take from all of the projects combined.
- (2:11:22)** Loyal Mehrhoff mentions that this graph doesn't have the current number, it's from last year.
- (2:11:35)** Jim Jacobi says that this is the value they're trying to use.
- (2:11:42)** Tom Snetsinger says in the context of population impacts, that this is more like a regulatory measure rather than a measure of what the actual impact is.

- (2:12:09) Jim Jacobi says that they unfortunately do not have a good measure of what the population is.
- (2:12:27) Koa Matsuoka adds that the total permitted take doesn't include Pakini Nui.
- (2:12:40) Kawika Winter asks to go back to the first graph and then mentions that the only species that the estimated take is above 50% of the permitted take in bats and nēnē so that stands out as concerning.
- (2:13:13) Michelle Bogardus thinks that those numbers (permitted take) are expected to rise once the HCP amendments are approved. She mentions that they really can't have the estimated take ever exceed the permitted take.
- (2:13:39) Loyal Mehrhoff adds in that that's why they did the amendments.
- (2:13:44) Michelle Bogardus agrees and says they need to make sure that the mitigation is keeping pace with the real take and the permitted take.
- (2:13:55) Kawika Winter responds that unlike with bats, he thinks they have a pretty good understanding of what the Nēnē population is like. He asks if there is any research that would give them some insights about thresholds as far as impacts at the population level per island or statewide.
- (2:14:34) Jim Jacobi thinks that would be a good idea to have and it gives them the opportunity to look at what the population impacts are on each island. He mentions that the overall population is highly influenced by Kaua'i so that the island impacts would be very instructive to look at. He thinks they should be able to do a type of PVA modeling for this.
- (2:15:13) Kawika Winter asks who could do something like this. He wonders if it would be DOFAW or USGS staff possibly.
- (2:15:26) Michelle Bogardus says she's not sure that they're in a position to do any of the modeling but they do have the species numbers per island and the take numbers over periods of time that they can incorporate into this. She mentions that the USFWS is not just looking at the permitted take associated with HCPs but they are also looking at other threats or other take that is occurring outside of the HCP process. She says they can run those numbers for Nēnē and seabirds as well.
- (2:16:21) Kawika Winter says those numbers would be useful in assessing future applicants and their take estimates.
- (2:16:34) Jim Jacobi says that was part of the impetus in terms of Loyal and Theresa Menard doing those first models for the bat to see at what point do you get to a tipping point.

- (2:16:51) Loyal Mehrhoff adds that they didn't look at anything with Nēnē, it was just bats.
- (2:17:02) Kawika Winter asks Michelle if USFWS could give a brief presentation on this for their April 21st meeting.
- (2:17:45) Michelle Bogardus says that she will volunteer to pull together the numbers and provide basic information but they are too busy to tackle true modeling efforts.
- (2:18:09) Jim Jacobi recommends Michelle to sketch it out with her staff and then bring it back to another ESRC meeting for a discussion on the agenda that they then decide how to move on from there.
- (2:18:27) Michelle Bogardus says they can do that.
- (2:18:29) Melissa Price recommends that Michelle reach out to Jake Ferguson who may have the capacity to do this work.
- (2:18:47) Loyal Mehrhoff mentions that even knowing the cumulative take that's occurred for Nēnē and the cumulative mitigation production being done for Nēnē on each island or HCP would be useful even without any modeling.
- (2:19:14) Michelle Bogardus says that, with very few exceptions, they're assuming that there is no passage in between the islands for Nēnē, so it is very important to look at the data at an island scale.
- (2:19:38) Jim Jacobi says this is a good thing to bring up and hopes this type of discussion can help better understand particular things like the impacts on bats.
- (2:19:52) Kawika Winter asks if this is okay to add this as an agenda item for the next meeting.
- (2:20:05) David Smith says yes, whenever the work is done and can be presented.
- (2:20:26) Jim Jacobi asks if they will have time during the April meeting with the guidance document discussion to address this or will it be the meeting after that.
- (2:20:36) David Smith says that they will look at the agenda and see what it looks like.
- (2:20:40) Jim Jacobi mentions that it would definitely fit into the discussion of the modeling that's been done for bats.
- (2:21:17) David Smith asks if there is anything else.

- (2:21:23)** Michelle Bogardus asked if they talked about USGS bat research.
- (2:21:34)** Jim Jacobi responds that they're going to wait for Gordon to get into it. He also mentions that this discussion has been very useful and this is the kind of review that the ESRC should be doing on all these projects.
- (2:22:44)** Jim Jacobi moves to adjourn and everyone agrees.

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