

Department of Land and Natural Resources (DLNR)
Division of Forestry and Wildlife (DOFAW)
ENDANGERED SPECIES RECOVERY COMMITTEE (ESRC) MEETING
Virtual Meeting - Zoom
January 28, 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)

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

OTHERS: George Akau, Joel Thompson, Marie L. VanZandt, Matt Stelmach

ITEM 1. Auwahi Wind Habitat Conservation Plan (HCP) Annual Report – FY 20 Update

(23:00) David Smith calls George Akau to present the Auwahi Wind HCP

(23:45) George Akau introduces himself and introduces the topic of his presentation: Auwahi Wind HCP year 8 annual report from July 1st, 2019 – June 30, 2020.

(25:04) George Akau gives an overview of the Auwahi Wind project based in Auwahi, Maui and states that the facility has been operational since December 2012. He states it's a wind farm facility with eight 3-megawatt Siemen turbines and an 11-megawatt battery storage system.

(25:53) George Akau states that they have a federal Incidental Take Permit/state Incidental Take License (ITP/ITL) issued for 25 years that expires in 2037. It covers 4 endangered species: Blackburns Sphinx Moth, nēnē (Hawaiian Goose), 'ōpe'ape'a (Hawaiian Hoary Bat), and 'ua'u (Hawaiian Petrel). Auwahi wind is in tier 1 (19 adults/7 chicks) for 'ua'u, no take of nēnē, and tier 4 (31 adults) for 'ōpe'ape'a.

(26:49) George Akau states that they have been doing post-construction monitoring with ongoing monitoring and bias correction trials for the past 8 years. He displays their FY20 SEEF and CARE results. George Akau says they do predator control in their areas which sometimes catches ungulates in the traps as the area is open for grazing operations. Cat traps have had high success in recent years which has had an impact on the carcass persistence numbers.

(28:48) George Akau now goes over FY20 results. There were eight 'ōpe'ape'a fatalities and an estimated cumulative take of 58 which was calculated using

Evidence of Absence (EoA), reporting the range, with 80% upper credible limit, and incorporated indirect take. One bat injury was reported but it did not turn into a fatality. No take of 'ua'u with an estimated cumulative take of 4.

- (29:30)** George Akau reviews updates since the FY20 annual report. They are doing more thermal analyses. Bat deterrents have been installed and he states that a bat fatality has not been captured on camera yet. They are interested in bat behavior and want to find out how a bat dies at a turbine in order to figure out how to mitigate take. USGS is still performing bat genetic studies with the 2020 bat fatalities. Since the annual report, there have been 4 bat fatalities found in August-September 2020. One fatality was just a bat wing found by the search.
- (30:50)** George Akau introduces the mitigation success criteria. For nēnē, \$25,000 for management funding was provided to Haleakalā National Park Service to build a release pen which was completed for 10 goslings and 1 adult. He mentions there were sightings of a pair of nēnē at their site, but no take has been reported. For Blackburn's Sphinx Moth, they restored 6 acres of dryland forest in the Auwahi Forest Restoration Project which was contracted to Leeward Haleakalā Watershed Restoration Project (LHWRP) for \$144,000. No take of Blackburn's sphinx moth was reported in the past year. Restoration included 1,500 out plantings of 'aiea and 10 'iliahi which was completed in November 2018. Surveys are still being conducted and any Blackburn's Sphinx Moth found is translocated. For 'ua'u, predator control was implemented within the management area and the methods have been successful. The predator control is ongoing with 534 predators removed from 2013-2019 and 109 predators removed in just 2019. Mitigation efforts result in one more fledgling or adult than required to compensate for the requested take of the required tier. This is ongoing with 9 chicks fledged in 2019 and 58 total from 2013-2019.
- (34:55)** George Akau gives updates on 'ua'u mitigation control. Four burrows have been found and managed in 2019. He identifies the major issue with the burrows are the goats trampling on the burrows which has increased in 2019 with July having the most amount of trampling events.
- (36:05)** Michelle Bogardus asks George if there was supposed to be a fence going around all or a portion of the 'ua'u mitigation site.
- (36:11)** George Akau responds by saying he will check with DOFAW on the fence building process. He mentions he heard that interior and smaller area fences are being worked on. He suggests a hunting session during June-July could help manage the ungulate impacts. He says he caught a couple ungulates in footholds.

- (38:14)** George Akau gives updates on the 'ōpe'ape'a mitigation control. For tier 1, they established a conservation easement of 132 acres for the Waihou Mitigation Area, completed fencing and removal of ungulates within the 132-acre fenced area (quarterly fence checks are done), completed and continue to do maintenance on vegetation restoration within the fenced area, and completed acoustic monitoring at turbines 1 and 6 within the wind farm site. For tier 2/3, they completed a USGS Waihou mitigation bat research project. He mentions that agriculture lands are important and working with private landowners and ranches would benefit bats.
- (41:53)** George Akau goes into the tier 4 mitigation success criteria updates. They are required to install hedgerows, ponds, and egress structures, this work is ongoing. There has been 80 acres of fence line constructed, 30 acres of koa planted, the first pond was completed in December 2020, and egress structures were documented at water troughs and ponds. They have a tier 4 bat acoustic an insect study that is ongoing, February-July bat calls were detected ranging from 21-11,707 calls per detector. The Leeward Haleakalā Occupancy and Distribution Study is ongoing, field data has been finished as of December 2020. They recorded the conservation easement for land to be protected in perpetuity. USGS presented technical report HCSU-093 at NWCC Wind Wildlife Research meeting.
- (45:10)** George Akau gives updates on the tier 4 conservation easement lands. He shows lands that are protected on the ranch and what type of vegetation is present which was mostly prime pasture used for out planting.
- (46:24)** Joel Thompson gives updates on the tier 4 mitigation sites. He presents a map showing variability in detection of calls across 38 detectors from February-July 2020.
- (47:38)** Joel Thompson presents another map of the leeward sites showing variability in detection of call from July 2019-August 2020. He points out the most activity occurred at the mid-upper range elevation sites. Lower elevation sites had much lower bat activity. COVID slowed down the data collection and analyses for this study.
- (49:39)** Melissa Price asks Joel Thompson if the next time they present bat call data that they could avoid using decimal points on the binning for the detection rates. She asks if he could make sites of importance to stand out more in the map to make it more intuitive.
- (50:28)** Joel Thompson agrees with the suggestions and mentions the data is mostly consistent with the data he presented last spring in terms of call data distribution.

- (50:43)** Joel Thompson presents a graph depicting acoustic detection rates by site across seasons (first 3 seasons: summer, fall, winter) from July 16, 2019-December 20, 2019. Compared to Oahu, some sites on Maui are seeing more activity during the late fall-winter seasons. Joel Thompson mentions that George Akau is planning to continue to monitor some of the detectors and they are planning on working with DLNR to deploy more detectors.
- (52:44)** George Akau adds that they planted koa back in detector locations where landowners did not want the detectors to continue running.
- (53:46)** Kawika Winter asks George Akau to clarify the specific success criteria relating to the out planting of the 'aiea trees. He would like to know if there is some measure of survivorship or some type of data that goes beyond just the initial out planting.
- (54:44)** George Akau responds first by saying they have gone above the \$144,000 dedicated to the dryland forest restoration and they have created their own 1-acre site without planting and working with endangered species. They still do vegetation control on the restoration plots.
- (55:22)** Kawika Winter mentions that they had discussed adaptive management in a previous meeting and wanted to know if there is more of a commitment to maintaining this out planting. He thinks that, as the ESRC, they need some kind of survivorship or habitat creation.
- (56:00)** Michelle Bogardus agrees with Kawika and thinks that there is room for adaptive management.
- (56:16)** Melissa Price reads a comment from Marie L. VanZandt stating that the success criteria was just the out planting.
- (56:29)** Loyal Mehrhoff asks what the success rate was on the 1500 out planted 'aiea.
- (56:34)** George Akau says he will try to reach out and get a number on what's still surviving.
- (56:54)** Kawika Winter says he brought this up because 'aiea is a tricky tree and he hasn't seen a high survivorship of that genus in general. He thinks the ESRC needs to be better in how they approve these HCPs in this regard.
- (57:25)** George Akau agrees that 'aiea is tricky but they have seen out planted 'aiea fruiting and have collected seeds from these out planted trees. They have observed natural recruitment of 'aiea and he believes it's a stable and reproducing population.

- (57:52) Kawika Winter asks George to include some picture of the naturally recruiting 'aiea in his next presentation.
- (58:02) George Akau agrees and says he will find some pictures for next time.
- (58:15) Michelle Bogardus mentions that ESRC has room to think more carefully for mitigation for Blackburn's Sphinx Moth, whether out planting is the right strategy or if out planting isn't successful, what would be the next step.
- (58:38) George Akau says he has observed Blackburn's Sphinx Moth on out planted 'aiea. He mentions that tree tobacco does provide good habitat for Blackburn's sphinx moth and questions whether they want to remove tree tobacco or not.
- (59:17) Michelle Bogardus says she prefers the 'aiea route over tree tobacco. She asks how they should think about these upcoming projects that include the removal of occupied tree tobacco.
- (59:31) Loyal Mehrhoff says he has seen 'aiea out planted and was just curious about the success rate and tells George that they would expect success rate data for any of the out plantings.
- (59:57) George Akau says he will try and find a more definitive answer for the 'aiea results. He mentions again that he drives by often and sees the plants flowering and fruiting.
- (1:01:15) Jim Jacobi points out that while there are higher detections numbers at higher elevation sites, there has been a number of fatalities in some of the lower sites suggesting that there's some feature of the wind towers that may be a problem in such an open landscape.
- (1:01:53) Joel Thompson responds by agreeing but says he would like to look at the historical acoustic data to get a better idea.
- (1:02:42) Jim Jacobi states that this detection data could be used to decide where to place or not to place sites depending on detection levels to reduce bat take.
- (1:03:27) Joel Thompson agrees with this statement but says there's a lot of caveats that goes with this such as the potential effectiveness of the bat deterrents.
- (1:04:17) Jim Jacobi mentions that the main criterion for where projects have been sited is good wind speed and willingness of the landowner. He states that mitigating for take in other areas may be less of an issue.
- (1:04:44) Joel Thompson mentions he would be curious to see what the situation would be like around the rest of Maui. He believes the wind farm is in a pretty good area according to the data collected.

- (1:05:14)** Melissa Price asks how to interpret the bat fatality data shown currently versus the bat fatality data they were shown the day prior. She's wondering if a lower bat take count is attributed to good mitigation or due to lower bat population densities because most of the population has already died out. She asks if the fatality count is higher or lower than expected.
- (1:06:12)** George Akau says they're monitoring what their acceptable take levels are to stay within the permit and license and they have triggers that will require them to do some additional minimization actions if they exceed the threshold value. He mentions this is what led them to monitor the take and install bat deterrents this past year.
- (1:07:14)** Loyal Mehrhoff asks how this data compares to somewhere else like O'ahu or Big Island.
- (1:07:29)** Joel Thompson says the levels at the Maui site is higher across the board compared to O'ahu. Most of the sites on O'ahu were topping out at around 4 calls per night whereas on Maui there's about 15 calls per night on average. The lower Auwahi sites see about half a call per night on average and O'ahu detector sites see lower numbers. He mentions the Auwahi turbines are in a more open landscape compared to a more forested landscape. He says that while bat take was higher on Maui, there seems to be less activity compared to sites on O'ahu.
- (1:09:13)** Melissa Price says that from an abundance perspective, you would actually expect less fatalities, all other factors being equals, compared to the sites presented the day prior where the fatalities were zero.
- (1:09:32)** Joel Thompson agrees but says that this is still not a full year's dataset yet.
- (1:09:49)** Matt Stelmach asks if these are ground based acoustic detectors and mentions that ground based acoustic detectors are poor predictors of fatality rates according to the literature.
- (1:10:06)** Joel Thompson agrees and says they've done a lot of work to back this up.
- (1:10:16)** Matt Stelmach suggests to the ESRC to look into papers by Marcos Gorrensens where thermal monitoring has been done at both of the sites mentioned and the most recent paper published showed thermal monitoring done at Auwahi and speculates differences at the two sites.
- (1:10:40)** Michelle Bogardus asks Joel what are currently considered the better predictor of mortalities.
- (1:10:54)** Joel Thompson says he's not sure what is the best predictor. He says they've always leaned on pre-construction acoustic surveys but through a lot of

analyses it doesn't appear to be correlated partially due to the attraction theory. He mentions one of the best things they lean on is historical mortality data. If there are no other nearby sites with historical data, they would use data from elsewhere in the region with similar habitat and features.

- (1:12:00)** George Akau mentions that the way USGS interpreted risk in their technical report was interesting, he says that risk doesn't always equal fatalities. He says with the thermal you can tell some type of distance the bat is within the rotor swept area and how long it's within that area and that could give some information on what the risk is at that site. He said that with all that risky behavior they still did not find any fatalities on camera or with the ground searches.
- (1:12:51)** Michelle Bogardus asks if there has been any internal conversations about the relative efficacy of deterrent technology at Kawaihoa versus Auwahi.
- (1:13:04)** George Akau says it has reduced their take and reduced their VFR level. They had some initial take when the units were first installed but since the August fatalities, they haven't had any other take. He mentions there still is some risky behavior occurring within the risk zone. He says bats on the ground is what really will tell if the deterrent system is working.
- (1:14:26)** Loyal Mehrhoff asks what the projected likelihood of exceeding their take is.
- (1:14:42)** George Akau says with the units and as of the last report, they are not expected to exceed the take especially with their adaptive management plan implemented.
- (1:15:16)** Melissa Price asks if there's any data supporting the idea of more fatalities could mean that the population is doing well so that there's just more chances for take to occur or the idea of no fatalities being recorded due to the fact that the population levels are so low that there are no bats to be recorded as take in the first place.
- (1:16:28)** Matt Stelmach responds by saying the behavior of bats, the utilization of each site, differs at each site. He says at Auwahi, data suggests that bats are coming from a distant location, stopping at the site, then moving on to another site. Kawaihoa data suggests roosts are nearby and then they move on to foraging grounds later in the night.
- (1:18:03)** George Akau commented that this data would be helpful for minimization efforts. They have been interested in collecting daytime bat activity data.
- (1:19:13)** Melissa Price suggests that they really need the island-wide monitoring as opposed to site specific data.

- (1:20:30)** Loyal Mehrhoff mentions that there was a paper that looked at pre and post activity seen and says that's there's a correlation and there's more bats after post-construction compared to pre-construction.
- (1:21:39)** Michelle Bogardus asks George if he said that he's had 4 bats since the last recording period.
- (1:21:43)** George Akau says they had 4 carcasses observed including one which was just a bat wing. He says they're around the tier 5 planning threshold, there were about 66 estimated take in October. No fatalities since the October report.
- (1:22:50)** Loyal Mehrhoff asks if the evidence of absence project those data out for the life of the project.
- (1:22:57)** George Akau responds by saying that yes, it's a requirement that they report the threshold value and baseline fatality rates. He said they initiated conversation about tier 5 planning since they are nearing it with 66 take. He says they have more detectors to use on acquired parcels.
- (1:24:50)** Michelle Bogardus says that she's pretty concerned at the level of take with deterrents running.
- (1:25:13)** George Akau says they've got a semi-annual meeting coming up and says that they are meeting more. He says he will keep everyone in the loop and they are constantly reporting the fatality rates.
- (1:26:54)** David Smith asks for any other final questions, comments, thoughts. There were none, so David closes out the presentation. He asks the group if there was something else they wanted to cover.
- (1:27:50)** Michelle Bogardus says she looked back at that Auwahi restoration report and says that of 1500 'aiea, there was 65-75% success, varying slightly among the 6 different sites.
- (1:28:14)** Melissa Price asks if they can talk about things that came up in the current meeting that they want to follow up in subsequent meetings.
- (1:28:53)** David Smith says ok and asks Melissa if she has suggestions.
- (1:28:56)** Melissa Price asks to have an agenda item that goes over all projects as a whole and talks about how individual projects affect the well-being of species. She wants presenters to state their success criteria and how they are meeting the criteria at the start of their presentations.
- (1:30:52)** David Smith responds by saying each project is independent and you can't tie them all together into a discussion item.

- (1:31:00)** Melissa Price says when they are making a decision on an individual project, they have to gauge how a certain number of take contributes to the overall well-being of a species for example.
- (1:31:54)** Jim Jacobi says he supports Melissa's ideas. He supports that the larger context matters.
- (1:32:37)** David Smith says that updates isn't a decision-making thing on the part of the ESRC and thinks that a discussion with the agencies with how things are looking across the board with cumulative projects would be good.
- (1:33:24)** Jim Jacobi says they have taken advantage of the larger picture view and gives an example of how the surveys done on Kauai on seabirds fits into their terms of thinking and impact mitigation.
- (1:33:40)** Lisa Spain says to consider the Kamehameha school's request to reduce their numbers, they have to consider what those plants are doing well elsewhere at other state or private land sites.
- (1:34:06)** Linda Chow agrees that you do need to look at that the larger context and the recovery of the species as a whole.
- (1:35:28)** Melissa Price says she found it really useful when during the nēnē presentations, the ability for people to say the proportion of numbers out of the total on the island was useful.
- (1:37:20)** Michelle Bogardus mentions that on the federal side it's their obligation to look at take requests within the context of species population, trends, and recovery and define it in their decision documents. She thinks the committee has done a good job of looking at all projects and using the information to best inform the development of projects and what the impact of those projects mean within the context of the species when it comes to bats. She mentions they have not done the same with all species.
- (1:38:57)** Loyal Mehrhoff thinks that they have not done that very well with the annual reports. He reaffirms with Michelle that for a new agenda item she wanted to look at the take and mitigation offset of the nēnē. He says that he would like a listing or spreadsheet with the actual requirements for each of the HCPs or Safe Harbor Agreements so they know what actions they should be looking at. He also wants to look at changes to the baseline that was discussed previously with outplantings that die.
- (1:41:08)** Michelle Bogardus responds to Loyal about the Kamehameha example he just gave, saying that they approved in the Safe Harbor Agreement that they knew they were going to do an updated survey within the first two years and that they anticipated updating the baseline condition.

- (1:42:00)** David Smith asks if there any other suggested agenda items.
- (1:42:30)** Michelle Bogardus suggested to have a template for annual reports for certain projects and a template for presentations so that all information can be defined upfront and quickly.
- (1:43:16)** Melissa Price agrees that it will help permittees be more prepared when coming before the committee.
- (1:43:35)** Jim Jacobi asked if it would be possible to charge a task force to help the staff pull something like this together with a couple members of the ESRC on it.
- (1:43:48)** David Smith asks if there was a problem with the presentations.
- (1:43:59)** Melissa Price says she doesn't see a problem with the presentations but still thinks a template with the important information they want to see would be helpful.
- (1:44:34)** Gordon Tribble agrees and thinks it wouldn't take much staff time to put together.
- (1:44:47)** Michelle Bogardus mentions that there has been an issue with uneven reporting and a template would help the permittees put the pieces for evaluating both compliance and the biological impact of their taking and their mitigation/conservation actions and put it into a form that's easy to understand. She also suggests having a standard set of questions to ask would be helpful.
- (1:45:50)** Glenn Metzler mentions that they do have a template for annual reporting in the path guidance as an appendix.
- (1:46:37)** Linda Chow mentions that you don't need a task force if you keep it to just 2 people.
- (1:46:51)** David Smith asks if anyone would like to take the lead on this.
- (1:47:00)** Michelle Bogardus volunteers to take the lead.
- (1:47:03)** Linda Chow says that's good so that Michelle can make sure the federal and state template are similar.
- (1:47:14)** Melissa Price says she is willing to review whatever template they have.
- (1:47:35)** David Smith asks if there is anything else. He says that the reports seem good and that they seem to be doing pretty good compared to the earlier days of the HCPs. He thinks that most of the minimization work has been pretty effective.

- (1:49:12)** Michelle Bogardus suggests having a specific meeting on the current state of seabirds across the main Hawaiian Islands.
- (1:49:55)** David Smith agrees and says he thinks seabirds don't get enough attention and would like to focus more on terrestrial and high elevation colonies for seabird recovery.
- (1:51:21)** Lisa Spain agrees that it would be helpful.
- (1:51:46)** David Smith mentions that seabirds are very manageable, it's just a matter of having the resources to go after it.
- (1:52:35)** Melissa Price asks if the offshore wind stuff is likely to come across the ESRC's agenda or if it's outside of the 2-mile radius.
- (1:52:44)** David Smith says he sent an email to Scott Glenn asking where are they going with the state energy office, what are their plans, what does a full buildout for renewable energy in wind and solar, what are they looking at with potential take and their plans to mitigate that. He says he isn't too sure on the regulations for offshore.
- (1:53:45)** Melissa Price mentions that it is out for comment. She thinks it's good to anticipate things that will be coming to their desks rather than playing catchup.
- (1:54:52)** David Smith says that BOEM had made a run at something and then withdrew it.
- (1:54:59)** Michelle Bogardus says that she has not heard anything but will pass anything along when she does. She mentions it would come to her side for impacts to T & E species.
- (1:55:18)** David Smith thinks with the current system that they will hit a regulatory wall pretty soon.
- (1:55:52)** Lisa Spain mentions that the Lava Lab at UH Manoa has a 3D map of a projected renewable energy build out.
- (1:56:39)** Jim Jacobi asks if they can request that as an information session at an ESRC meeting.
- (1:56:47)** Lisa Spain responds that that would be an energy office request.
- (1:56:52)** David Smith summarizes that going fully renewable, zero carbon emissions would be very difficult. Taking it to scale going up to 100% would be very resource and time demanding.

- (1:58:23)** Melissa Price says that wind farms coming from the mainland look at potential overlap in critical habitat but most of the species that the ESRC focuses on won't pop up. She thinks that these groups that have these major plans will either go over the endangered species and species will decline, or they will hit major roadblocks and there will be frustrations on all ends.
- (1:59:44)** Loyal Mehrhoff thinks they need to talk more about mitigation and how to document good mitigation when it does happen because of how underperforming it has been.
- (2:00:45)** David Smith mentions how difficult it has been to permit. There are a couple of bills being introduced to authorize the department to do conservation mitigation banks. They have authorization for marine conservation mitigation banks but not terrestrial. One bill is trying to modify the marine statute to include both marine and terrestrial and the other bill is to authorize terrestrial conservation mitigation bank.
- (2:02:51)** Jim Jacobi mentions that island-wide occupancy projects are ending so he asks how do they keep the momentum going to continue getting funding to support the information they need to continue their work.
- (2:04:02)** David Smith says he would like to see what it would cost for different studies and get different applicants that would buy in for that data on a cost-effective basis.
- (2:05:54)** Jim Jacobi says, with mitigation, they need to know whether they are actually producing something new to offset what was taken. Once they get to the point where they can take action that will lead to a mitigation offset, that's where they want to be and it can fit into a mitigation bank type of thing.
- (2:07:10)** Melissa Price thinks it's important to distinguish between monitoring and research. She thinks it's important to have the island-wide monitoring of bats to determine whether there is an individual and an overall impact of the take occurring at specific sites and so from that perspective, because the information given from a single site on the amount of take is not enough to help us to determine how that is impacting the overall population, if every applicant or permittee pays into a pool that helps maintain the island-wide monitoring to make sure that the collective of the projects is not overall impacting it. This will help them determine if these are effective HCPs or not.
- (2:08:19)** Jim Jacobi asks if he's correct on that if a portion of the budget for a project goes into helping the state and help support the administrative costs of doing what they're doing.
- (2:08:45)** Matt Stelmach suggests that the ESRC would see a lot of buy-in from permittees and new applicants if they relate these to the recovery criteria and

possibly monitor just in peak seasons to be more cost-effective. He suggests differentiating the wish list items from the have-to-haves list and then relating that back to recovery.

- (2:10:45)** David Smith mentions it's similar to the stream monitoring effort and it's something to work on moving forward.
- (2:11:42)** Joel Thompson says they plan to take their new insights gained and looking at what would be the most efficient study design moving forward. He says they will more discuss after these analyses later in the spring/summer.
- (2:12:48)** David Smith asks for any other questions/insights. There is nothing else and David Smith adjourns the meeting.

DRAFT