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ENDANGERED SPECIES RECOVERY COMMITTEE

December 8 2016 MEETING MINUTES

Meeting Location:

Hawaii State Capitol Building 415 South Beretania Street; Room #325; Honolulu, HI 96813

MEMBERS: Dr. Scott Fretz (DLNR), Dr. Jim Jacobi (USGS), Dr. John Harrison (At-Large), Dr. Eric VanderWerf (At-Large)

ABSENT: Dr. Kimberly Burnett (UH), Dr. Gordon Tribble (USGS), Dave Tessler (USFWS)

STAFF: DOFAW: Kate Cullison, Glenn Metzler, Emma Gosliner, Afsheen Siddiqi, Yuki Reiss, Marigold Zoll,

USFWS: Jodi Charrier, Diane Sether, Adam Vorsino

COUNSEL: None.

OTHERS: Tom Snetsinger (TetraTech), Alicia Oller (TetraTech); Loyal Mehrhoff (Center for Biological Diversity); Marie VanZandt (Auwahi Wind Energy); Mitch Craig (SunEdison/Terraform Power), Adam Young (Kawailoa Wind); Steve Rafferty (Trust for Public Lands); Namaka Whitehead (Kamehameha Schools)

ITEM 1. Call to order.
Introductions

ITEM 2. Review of Kamehameha Schools Safe Harbor Agreement

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Fretz: Stated he had no major comments on the substance of the Safe Harbor but asked about the process for major and minor amendment.

Cullison: stated that the committee will receive the final document 30 days before the next meeting when the safe harbor is expected to come for approval.

There were no public comments on this item.

ITEM 3. Briefing and update on the Evidence of Absence Take Estimator

Diane Sether representing US Fish and Wildlife Service presented a briefing on using the evidence of absence model.

Evidence of Absence was established by USGS and USFWS has been implementing since 2012. A second version with more capabilities will be publically available in January and will include teaching modules.

Evidence of absence is a used as an estimator based on Bayes probability theory, used in the case of rare events [such as on a wind farm].

Sether discusses searching and detection probability:

Infers “take” or absence of “take” from the number of carcasses found during carcass searches

Estimate of total take:

M = the total number of actual fatalities

X = number of observed fatalities in the search area

g = probability of detection

Factors contributing to Pr(detection)

v = proportion of annual mortality represented in the monitoring period

a = proportion of carcasses in the searched area (ballistic approach)

r = probability of a carcass persisting (does NOT equal average)

p = probability a carcass is actually found by searchers (searcher Efficiency)

k = factor by which “p” is reduced with each search

α = 1- level of assurance desired

M* = (1-α) quantile in the posterior distribution of M (take estimate)

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100(1-α)% assurance that actual fatality is ≤ M*

Sether: Estimator is using a measured quantity to predict or represent our parameters of interest.
Jacobi: But it's got a probability attached to it.
Sether: It has a probability attached to it, Baye's theory uses probability, not hypothesis testing.

Sether demonstrated the use of the model- all the inputs etc.

Discussion on calculating search area

Sether: Model is species blind-can use it for measuring any species take. You can use surrogates that are approximately the same weight and body mass, and we look at that distribution. The density decreases from distance of the turbine. Ballistic approach, important to use appropriate type of model for our species so we can determine what density we expect in each of these regions. Density changes and as you go out into these peripheral areas your search area increases greatly.

Jacobi: What about the even distribution going out from the center point. Expected an ellipse going down wind based on Hawaii's conditions.
Sether: Have manipulated these ellipses and ranges but don't have any empirical data.

Sether: The model cannot calculate a few parameters but USFWS uses biological knowledge to calculate them [such as the searchable area], and consultants help with GPS coordinates of all fatalities.
Craig: Manually calculated the search area using GIS. Using GIS to figure out what portion of each of those rings actually searched assuming uniform distribution and figure out how much of each of those rings actually searched. Then superimposing the distribution however you come up with that.
Jacobi: If you find that there are different turbines that consistently have a higher hit list it might be better to isolate them rather than pooling it in.
Fretz: Do you (Craig) divide the rings into quartiles.
Craig: You can divide them however you like, the issue is the fatality distribution. Combination of the weight of the fatality distribution and the proportion of the area of the rings you're actually searching.
Jacobi: Are you using information and data from other wind projects.
Craig: No.
Jacobi: Would like to see more consistency throughout the windfarms in calculations by sharing information; could create a consistent protocol or entity who does the search area calculations.

Harrison: The assumption of uniformity between every individual turbine could be a major liability.

Fretz: Does the staff checks the complicated models when receiving the annual reports.
Sether: Staff looks at parameters but do not field check their carcass density every year.

Jacobi: The ballistic model will be influenced by the different wind patterns. Would like to find a way to estimate that for different places.

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Craig: One possibility is to assume we are missing some percentage beyond and create that in the distribution.
Jacobi: Importance to be consistent throughout the wind farms.

Temporal Coverage

Sether: Temporal coverage relates to when you're searching what portion of the year and whether your species comes through at a certain time.
Jacobi: Can a model account for uniform presence across the year, but not uniform density or abundance across the year.
Sether: Yes.

Persistence distribution

Sether: The most robust way to do this is to use the field estimates. Carcass retention general recommendation is to use a minimum of 30 carcasses or more per size class for your species and for visibility class. Enter data from persistence trials; the model takes the data and fits potential models to it and the estimator fits the best curve to it.

Jacobi: How do you decide what carcass persistence data to use in developing the model.
Sether: Some wind farms are using a yearlong carcass persistency trial and search efficiency trial and producing a single model for that year. Other windfarms noticed they have a different persistence during different seasons, the model can take that into account as well.

Jacobi: What about consistency throughout the windfarms in calculating this.
Sether Have not been provided guidance by USFWS on how many times they will do separate trials. It's been left up to the wind companies and it's to their benefit to do carcass persistence trials frequently to get a good representative of a time span because it may produce a different g value.

Fretz: What would happen with the software in the case of large confidence intervals highly variable data points.
Sether: The estimator would give you a very wide confidence interval that feeds into the whole model. It will lower your g (probability of detection) value. Every wind farm with a permit does at least annual or semiannual or if a big event happens carcass trials.

Searcher Efficiency

Sether: Described issues such as if a facility has a night-active species you should place them at nights because there might be a different scavenger out or show more of an effect on carcass persistence. Carcasses put out also must represent the visibility classes, so representing different terrain.

Jacobi: Are dogs finding the carcasses on the first day they are put out.
Sether: Dogs are not 100% with the smaller carcasses.

Fretz: Are independent third parties are carrying out SEEF and CARE trials.
Sether: The agencies trust the entities, and do not field verify.

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K factor:

Sether: The k factor is a change in searcher efficiency with each search. This value is calculated based on information that goes in. the model will calculate the k for the searchers if you have repeated searchers.
Craig: For dogs it's hard to come up with a k because they find most of them on the first search. Potential that dogs can smell carcasses better the second time around so that k value could be greater than 1. Most important what happened on the first search, and less and less important on the subsequent searches.
Jacobi: It may be worthwhile to do a sensitivity analysis of how people are using k.

Sether: Multiple classes defined as easy, moderate or difficult terrain based on a certain percentage that is non-searchable. It is subjective to each wind facility.

Jacobi: How would the model change if an entity entered into the model all easy terrain. Sether replied that it would lower a facility's efficiency during their searcher efficacy, and have found that the bigger pads are to the proponent's advantage as the searcher efficiency goes up.

80% credibility level

Sether ran a stimulation of the model to demonstrate the difference between using the median versus an 80% credibility level of a one tailed probability distribution. The median may or may not be the number of actual take, but it's the number that would be closest to what has really happened out there. We've been using 80% to be conservative because that way we're 80% certain that the real number is somewhere below that. What this also gives us is the lambda rate which is the annual estimated take. We use this to project to the future, over the life of a permit. Gives you a projection based on the data already collected. We are 80% certain based on the input in there project take over the span of x years is not the exceed x bats.

Sether: The agencies have not come up with a solution in the model dealing with curtailing, since some facilities have been doing it since day one and some have introduced it later on. Uncertainty is also only getting broader because you're projecting out only four years of information. The more you inform the model the less uncertainty you have.
Jacobi: Could this be used to say an entity does not need to monitor anymore because they already have a projection.
Sether: It is possible to do probability tests around the lambda to see if your lambda is exceeding what was given in the original projection. As the uncertainty goes down, you can observe more animals because it's using the distribution from prior years.
Fretz: The committee has had a request before for a facility to cease monitoring.
Sether: Towards the end of the permit length there could be smaller tiers and use that lambda value as a gauge of how big those tiers should be.
Jacobi: USGS is not in support of curtailing monitoring, and cannot just rely on the models.

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ITEM 4. Briefing by consultant for Auwahi Wind HCP

Briefing by Tom Snetsinger and Marie VanZandt on the use of the Evidence of Absence model to set take for permit limits and triggering tier levels for bats.

VanZandt: The agencies have not given clear guidance on what models to use and how they would be interpreted. Agencies have requested that we report our take at the 80% upper credibility limit, but no rationale has been given. Auwahi wants to provide confidence that their take limit is not going to be exceeded, but also have an obligation not to overestimate the project impact. There has been a problem with overestimation skewing public perception and misrepresentation of the cumulative impacts happening at wind farms.

Snetsinger: The evidence of absence model built in conservative assumptions such as the use of surrogates using carcass persistency with rats similar in size to bats. A study that looked at rodents versus bats that showed carcass persistence terms were shorter for rodents. This provides a suggestion that Auwahi is underestimating the time that a carcass persists at the site because bats are easier to see with their wings. Argued that the central tendencies of the estimator have the highest probability of occurring, and most probable set of values. Snetsinger suggested using a maximum likelihood value [one of the central tendency values] with a confidence interval around that to measure compliance monitoring for bats. This way, the number of observed fatalities is the lowest occurring value and the maximum likelihood value is the central tendency and an upper credible limit that encompasses 80% of the probability distribution. Using the median predicting value at that conservative 80% upper limit gives Auwahi confidence that mitigation is occurring ahead of take where triggering tier planning is proposed at 80% upper credible limit resulting in mitigation prior to take.

VanderWerf: Has it been repeatedly shown that bats are easier to find that mice surrogates.
Snetsinger: Found one study that demonstrated that, but emphasized that it should be pursued in more studies.

Public comments:

Mehrhoff: It is unclear why Auwahi does not want the same system for compliance and monitoring. Using different systems would undercount for actual take and over count for take estimate of whole project, it does not make sense from a regulatory perspective.

Snetsinger: It makes sense for both parties to have a difference in the level of confidence in the prediction versus the measurement of compliance due to the amount of uncertainty going into the future. If Auwahi used that same level of confidence for both measures, then the prediction of take there is the problem of exceeding take at the end of the permit. When you're measuring that compliance at the end, you need to be more confidence about it. Discussed with Manuela and Dan and they agree with us. There needs to be a distinction to take into account different levels of uncertainty.

Mehrhoff: Discusses importance of actual take and incentives for less monitoring [much of discussion is inaudible].
Snetsinger: The level of your monitoring provides that level of confidence. Your monitoring

gives you those g values and if you're doing a poor job at monitoring you will inflate your estimates.
Mehrhoff: Questions Snetsinger's assertions [some discussion inaudible].

Committee Discussion

Fretz: What is the Auwahi amendment for.
VanZandt: For bats, but the amount has not been publicly released, so Auwahi does not want share specific numbers but want to discuss around the concept.

Fretz: I still don't understand what you're proposing. If you are proposing to amend 100 bats and you came up with that projection using that 80% projection and that puts you at 100. You write your HCP for 100, that's the amount of mitigation you pay. However, what you're suggesting is where you calculate take annually as you go and approach those 20 years if you would prefer to use some less confidence level to calculate this amount of take. Hopefully, at the end your take comes out to 80 instead of 100, but 100 it was, 100 you mitigated for.
Snetsinger: The determination of the 100 we're in a position now where we can look at the uncertainty in the future with only so much precision. Eventually, we will be on track for some potential future… 80% are going to occur within this envelope.

Jacobi: Based on the starting conditions you have and the assumption that the conditions are going to continue in a similar way.
Snetsinger We want confidence that any of those scenarios are going to be constrained within those. We start measuring compliance once we have the data. If we start measuring compliance with a different credibility level around the estimate versus the upper predictive limit. Incorporating the unknowns and uncertainties of those potential future trajectories. This envelope we want that to be our ceiling but we recognize that our actual estimates at the end is 100 then you're saying we need to measure that at 80% credible limit. That might be 105 bats instead the 100 we set our limit at. Trying to understand the uncertainty of the future in the context of the uncertainty around the estimate at the end of the time period. It needs to be the same or it reducing the confidence that we have that it won't exceed the permit at the end. 80% is not 80% if we're using that same level of confidence for measuring compliance.
Jacobi: Does that undermine your estimate at the end of each year in terms of what your actual take was, because that's the number I want to have the most security on.
Snetsinger: Between the mitigation structure and mean years of conservative use of bat surrogate to provide a conservative estimate of take so bats as well as the mitigation plan itself that provides confidence that mitigation is tracking and ahead of actual take.

Fretz: How would this appear in Auwahi's HCP.
VanZandt: Auwahi is proposing to use the central tendency to accurately measure as it occurs at our site. In order to create confidence of our total requested take, we are using a conservative estimate at 80%. Right now we are using a very similar methodology, we report the most likely value and the confidence interval surrounding it. That's what we are proposing to do going into our amendment. In our original HCP there was no probabilistic model used, so we didn't really have a framework for how we will report our take, but we want it described in the amendment.

Sether: Auwahi wants to use the median to track. The problem with the median is that 50% of the time it's underestimated, 50% overestimated. We have always been conservation in that on the mitigation end.
Fretz: 50% of the time the take is actually less, and 50% of the time the take is more and what we're trying to get at is confidence. To me, that's the opposite of confidence.
Snetsinger: We can look at best estimate of take and deal with the mitigation concept distinctly, and that it does not require overestimation of take in order to mitigate for that take.
Jacobi: It matters in terms of if the estimation pushes you into a new tier or not. By using the central tendency, it would take longer to reach tier limits rather than using 80%.

VanderWerf: This is our argument for not stopping monitoring even if the take continues at the same rate, the projected take will end up lower later on than what it would have been earlier. He said it was a good reason to continue the monitoring, you look at a finer resolution of what the take will be.

Jacobi: Recommended working with FWS and DOFAW to put together a position paper and bring in sensitivity analysis and examples for a clearer understanding. If he had to vote on an approval of this approach he could not vote yes on it because he did not completely understand it.
VanZandt: Agree with Jacobi. Would like to see the staff make a decision or recommendation, but that they deferred to the committee's expertise.
Fretz: Asked for a one page document that lays out how they will calculate take, confidence level that is recommended and recommendation that goes along with that bat guidance.
Jacobi: This is potentially a big decision and would like it to come back to the ESRC for that decision based upon a clearer understanding of the issue and what the consequences (positive or negative) are of making that change to the approach. It is a key foundational element in terms of tracking all of the species, and peer reviewed.
Fretz: If the staff on the DOFAW side wanted to change the 80% number, that they would write up a recommendation and give it to the committee, or they would have done it for this (and they didn't). He thought that the 80% number seemed like an accepted value.
VanZandt: Wanted to present justification for Auwahi's proposal and ensure justification for the current standard, which she has never gotten. Once the committee made a decision on these key points Snetsinger laid out, Auwahi will be able to move forward quickly with the amendment process.
Jacobi: Hopes to resolve this issue at the next meeting and to give the committee prep material as a broad request.

Snetsinger: Auwahi is looking at the 80% credible limit for when we're triggering tiers and the tier planning is proposed for the 80% credible limit and the mitigation itself would occur 6 months to a year later.

Fretz: The purpose of tiers is to address uncertainty in the full amount of take, not to enable incremental mitigation.
Snetsinger: Auwahi has framed its draft amendment right now to identify a tier where they think that upper limit meets that potential future. He does not think micromanaging and creating a lot

of small tiers is an effective approach.
VanZandt: Mitigation projects that are lined up is going to be really helpful in speeding the amendment process and that six months to a year is a realistic expectation for when a tier trigger actually has people on the ground doing that research.
Sether: The Service has the ability to lower take requests.

ITEM 5. Briefing by consultant for Kawailoa Wind HCP

Briefing on a tier 4 mitigation proposal by Adam Young (Kawailoa Wind), Marigold Zoll (DOFAW Oahu), Steve Rafferty (Trust for Public Land), and Tom Snetsinger (Tetra Tech).

The four presented on the proposed acquisition of the Helemano wilderness area as Tier 4 bat mitigation for Kawailoa Wind HCP amendment. Kawailoa sought ESRC recommendation to determine the viability of this of tier 4 mitigation option prior to amendment approval. Kawailoa proposed to provide $2.75 million towards the acquisition of Helemano wilderness area in partnership with Trust for Public Lands and DOFAW.

VanderWerf: Regarding the $16M asking price, is it was one owner who is selling the entire portion of land.
Zoll: It is all Dole land, and the Navy is interested in purchasing a southern gulch portion.
Fretz: If DOFAW did not obtain the $2.75 million from Kawailoa Wind would they would still be able to purchase the parcels.
Zoll: Its is most likely not feasible without the Kawailoa contribution.

Zoll: The Oahu Natural Resource program has been monitoring bats in the area and there has been bat detection all around the parcels, so there is a high chance that bats are actually present.
Jacobi: Reminded the presenters that from an ESRC standpoint the committee is looking at the value for bats specifically that the proposal offers.
Snetsinger: Former agricultural land is potential development land so this proposal would be protecting from development and increase connectivity between bat populations.

Zoll: The army currently does helicopter training up there, and would focus on small intermittent trainings designed to leave no trace.

Jacobi: Does DOFAW have an outline for a restoration strategy; would like to see a five-year outline.
Zoll: A lot of will depend on what funding sources we end up with and that will help drive what we actually do on the ground; has been working with forest reserve staff.
Fretz: The forest research program has allocated $5 million with certain goals that involve production and harvest. How will those goals fit into long-term bat habitat management.
Zoll: It would be complementary to bat habitat management side of things; the parcels can accommodate all of the interests.

Fretz: What are the different kinds of threats in the areas.
Rafferty: Due to infrastructure and easier road access, housing developments are a threat.

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Fretz: How does the amount of bat activity at Helemano differ from the amount from Kawailoa.
VanderWerf: There have not been bat surveys in the parcels in question because of private land, but based on proximity to known detections it seems likely.
Zoll: Helemano is far enough away from the wind farms themselves that the bats there would be ok.
Jacobi: Disagree. Through internal USGS there has been concern that there is potential for interaction of the two sites. There is an anticipation that bats that range down there would also get up to Kawailoa. What are Kawailoa's expectations as this proposition goes through the management and how it will benefit bats.
Snetsinger: The proposal will protect and enhance habitat, recruitment activity, and provide good opportunity to conduct research to measure success over the long term using different approaches.
Jacobi: Does this proposal have the potential for negative impacts with the development and recreational use and tree harvesting where elsewhere would require an HCP. Also, There are some potential impacts with the recreational areas and dogs and more rats which might be detrimental to bats.

Harrison: Thought it would be good to have some assurance that funding would be forthcoming in the future.
Jacobi: There has been a strong push from the Service that all mitigation and land that manages restoration have monitoring on top of that. Any of the areas being managed for bat mitigation has some monitoring program on top of it.

VanderWerf: Asked about the military interest in that lowest elevation parcel that is adjacent to their land as a buffer.
Zoll and Rafferty: The Navy is interested.
VanderWerf: The value of that was $600,000 but they were willing to contribute roughly double that.
Rafferty: We don't have a fixed amount yet, they do their own appraisal. We're also asking the Army for contribution, but they haven't said yes or no to express interest. We have a letter of commitment from the Army from 2014 and then they changed course and were not committed to the project and were considering purchasing the land for themselves for training. Since then, they've taken a potential partnering up again position.
VanderWerf: You mentioned $640,000 and $650,000 for the two parcels that the Navy is interested in. Is that the exact value? They may do their own assessment which might be different.
Rafferty: We have a ballpark appraisal, both of those are in that neighborhood. What we're hoping is that this parcel is technically in their zone of interest but it's not a critical interest and we're hoping that the Navy would consider the value of this parcel.
VanderWerf: It seems like if you did leverage DOD funding you're getting more than the value of the parcel they are most interested in.
Rafferty: Right, that's what we are hoping for. Now with some fairly recently enacted legislation Readiness in Environmental Protection and Engagement with military programs can be used for

matching funds for federal funding that includes Fish and Wildlife funding. It counts as non federal match even though it's federal funds.

Fretz: If purchased, ownership would be under DOFAW for forestry purposes or other suitable entity. He asked for clarification to what "suitable entity" implies. Rafferty clarified that in the case of DOFAW reconfigured into some other entity, that language is always included in there.

Jacobi: USGS supported the concept of acquisition but does not think there is enough information or formula on how to create more bats with a certain kind of management action. The committee needs to figure out how to overlay research and/or monitoring on top of the site to evaluate whether it's working or not.
VanderWerf: I have more confidence that this acquisition will help bats more than other actions the committee has considered.

Mitigation credit selling

Young: Kawailoa reserves the right to sell mitigation credit if it's not used.
Fretz: DLNR does not sell mitigation credits. Do not think state law has a way to enable an applicant or permit holder to sell their bat credits, but is a question for the AG.
Craig: Young was referencing a time where more waterbirds than needed were produced. There is a provision in the HCP that says if there is a surplus they can be traded to another project.
Fretz: AG has told DOFAW that there are no rules written for mitigation banking and wants to check before making a decision. No matter what the committee does today, you are taking a risk. He said that each member will make a statement about how they feel about the proposal and will give you an idea about it. But you're still taking a risk because the committee still has to recommend the amendment and that still has to go to the Board.
Jacobi: Based on the information supplied and discussion today USGS is definitely not opposed to this. He encouraged more details on the restoration plan and strategy in the amendment.

Fretz: Rephrasing the question - if the committee members here concur that this is acceptable to be written into the HCP to be included as part of the mitigation.

Harrison: The proposal has a great deal of conformance to the committee's purpose, and is supportive.
VanderWerf and Fretz: In support.

Jacobi: Would like to see Zoll come up with a concept map of the acquisition land to understand where the benefits and conflict may be such as timber harvesting.
Zoll: DOFAW envisioned planting common native trees rows, orchards for seeds for restoration projects and that would be a forest product rather than a timber harvest.

Public Comments

Mehrhoff: Asked about the standardization of mitigation credit.
Jacobi: I don't think we have an answer for that right now, we don't have a way of accounting for that.
Fretz: we don't have such a framework.

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Mehrhoff: [Response inaudible]
Fretz: We will review what they write in their HCP and make determination if it meets 195D.

Harrison: I keep going back to Makamakaole and how we made a decision there to mitigate benefits on the assumption that we were going to generate more birds and going wrong from an investment standpoint and we stirred contention. Perhaps with this one we are correctly identifying that this is a good site but making it very clear that needs to work on fortifying and consolidating the mitigation benefit.
Fretz: That was one of the big issues that was the impetus in the bat workshop with the agencies and experts and write up the bat guidance that lays out what the agencies should do with regard to bat mitigation and net benefit, and included using acquisition as mitigation and under what conditions would it be appropriate. You might find some answers in that guidance document.
Mehrhoff: [Response inaudible]
Jacobi: I think there is some challenge with acreage; one way to assess the value with bats is foraging habitat, roosting, and seasonal habitat. Growing trees may just satisfy certain requirements but not all of them.

ITEM 6. Update on Kauai Seabird Light-Attraction HCP

Yuki Reiss (KSHCP) presented this agenda item as an update on the Kauai Seabird Light-Attraction HCP and social attraction model. Reiss hoped to have a draft HCP out for public review by February 2017.

Jacobi: Referring to the map of known seabird colonies polygons - why do certain parts not have any known colonies.
Reiss: The map is based on detections during auditory surveys.
Jacobi: It would useful for restoration strategies in terms of what may be limited in the areas birds are not in.

<u>Social Attraction Model</u>

Reiss: The social attraction model compares productivity inside the predator proof fence and can simulate what happens if a bird lands inside versus outside the fence. The model inputs take into account life history, reproductive success, age of first reproduction, age of last reproduction, and survivorship per age class which are all built into the r-code as a basis for population trends.

Jacobi: What about the predation scenario inside the fence regarding barn owls.
Reiss: Predation inside the fence is zero.
VanderWerf: What about the population size at 6 years. Could the estimate shown really fit that many birds in a 5-acre area.
Reiss: I used burrow densities of denser colonies that have less predation.
VanderWerf: What about using the Lanai densities.
Jacobi: Within the fenced areas the lambda doesn’t change but the population within the fence does with the different scenarios which are really zero inside the fence.
Reiss: It is being driven by how many birds are available on that island.

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Jacobi: Population scenario outside the fence is a generalized value, but may have some hot spots and that this estimate is a rough and general assumption. Does the population estimate have a variance or a value.
Reiss: It was an actual value.

Take Request

Fretz: What about the proposed take request.
Reiss: SOS data has been consistent, and is about 150 fledglings a year. The HCP is looking to mitigate for 25 fledglings per year.

Fretz: What about the other fledglings that are not being mitigated for.
Reiss: Some of them are on federal land, such as PMRF who do their own mitigation, and some may be a part of the KIUC HCP.

Fretz: Can the declining island population of birds can sustain the level of take being requested?
Reiss: The take is declining too, much less fledgling fallout.
Jacobi: It might be a result of the entire population declining.
VanderWerf: It the decline continues but fallout increases proportionally, that would result in a steady number of fallout.

Predator Proof Fence Site Selection

Fretz: Would translocation increase the likelihood of success.
Reiss: Yes; there are a lot of adaptive management factors written into the draft.

Fretz: What are triggers for adaptive management. How is this project similar to Makamakaole where over five years into the project no breeding has occurred. Is the project is starting out with zero birds.
Reiss: Do not know, but the area contained known breeding habitat and auditory surveys confirmed birds in the area. Fretz noted that having birds already in the site that would make a big difference.
Fretz: I have a concern about starting with zero birds at the site, citing Makamaka`ole fencing project.
Jacobi: Makamaka`ole mitigation program had a similar presentation with models that implied there would be a high number of birds. Reiterated the importance of ground monitoring in how reality measures up to the model and expectations.

Fretz: Is the reason translocation was not included in the mitigation plan due to cost.
Reiss: Predator control in the area was part of it, and might be drawing young birds out of burrows.

Jacobi: Does not want to set a precedence that if mitigation is not successful that it’s acceptable and that we need to figure out how to replace the birds that are taken. The plan should build in a process that contains trigger points to begin alternative actions.

Predator Control

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Harrison: Was there previous predator control for barn owls and cats in the area and if program is going to augment that, or ramp it up.
Reiss: Yes, the eastern area of Hono O Na Pali has a roving barn owl team. The program only has funding until March 2017, but hope that it can continue.

Harrison: What about tracking cats.
Reiss: Hono o Na Pali predator control team is going to put radio tags on cats to gather information on home ranges and movement patterns.

ITEM 7. Announcements
There were no announcements. A date for the next ESRC meeting would be scheduled at a later date.

ITEMS 8. Adjournment