

Kaheawa Wind Power II Site Visit:

Makamakaole Mitigation Site and Kaheawa Wind Farm II

February 22, 2018

ESRC: Scott Fretz, Michelle Bogardus, Darren LeBlanc, Loyal Mehrhoff, Jim Jacobi

Staff: Attorney General: Linda Chow

DLNR-DOFAW: Jim Cogswell, Fern Duvall, Lainie Berry, Emma Gosliner,
Glenn Metzler, Stephanie Franklin, John Medeiros

FWS: Diane Sether

Public: Mitch Craig (Terraform Power), Ben Campbell (Auwahi Wind), Nuuanu Santos
(Auwahi Wind), George Akau (Auwahi Wind)

Scott called the meeting to order at 8:45 at DOFAW Maui Baseyard. All committee members, staff and members of the public introduced themselves. Scott asked if there was any public testimony. There were no public comment at that time.

Arrived at gate to Makamakaole 10:15

Background of the History of the Mitigation Site

- Site was chosen due to petrel calls from one gulch over
- Each enclosure (A and B) are about 4 acres
- Constructed in fall 2013
- 50 artificial burrows in each enclosure. Speakers in each enclosure broadcasting calls records on Kauai or West Maui.
- So far, birds are attracted to burrows closest to the speakers. Keep game cameras on active burrows.
- Grass outside and around burrow tunnels are managed
- Mitch- the placement of burrows are closer to the steeper areas. Wondered if the burrows might be too hot, so the team added an additional cover on top. Surveys are only done to determine if birds are still present.
- Mitch gave a summary of the five nesting seasons. There have been more NESH showing interesting in nesting. Seabird experts did not think it would negatively impact birds by playing calls for both NESH and HAPE.
- More NESH coming down even in petrel enclosure, been seeing fewer HAPE

Predator Control

- Mesh size is small enough to keep out mice
- Predator control is done in the offseason when the birds are not present. Includes bait traps inside the enclosures, as well as DOC 250 traps in boxes for rodents.
- Do 10 traps and tunnels monthly

- No cat or mongoose presence
- Rats in enclosure, catch a couple a year but they travel in groups.

Challenges

- Erosion issues, wearing on culverts, water funneling near culverts
- Eggs laid were cracked, not from predation. Fern was able to determine that one may be viable

Committee Comments

- Jacobi noted that having birds exploring the area is a good trend. Trouble nesting could just be the birds need more time, is it appropriate habitat, or there are still predators present inside the enclosure.
- Scott noted that there was a lot of natural areas in the enclosures for nesting, not just burrows.
- Jacobi asked if species is mutually exclusive elsewhere, or if there are characteristics of landscape better for one species or the other? Mitch replied that where they have seen HAPE, they have also seen interaction between NESH fighting or mating. WTSH have a history of pushing out bonin petrels from burrows

Barn Owl Discussion

Scott asked about barn owl evidence and impact. Mitch replied when one is removed, another one comes in. There are no reported owl/seabird interaction on night surveys. Lance DeSilva said he has never seen more than two owls at a time during his 22 nights out at the site. His team uses speakers playing mice sounds to call owls in, and spotlights. Scott suggested looking at stomach contents of removed birds. Lance suggested turning off the seabird speakers to use the mouse speakers to draw in owls. The seabird speakers are really loud, there was some discussion on if the speakers were too loud. Fern noted that for forest birds that had been a problem in the past.

Fern noted that pre-enclosure there were a lot of HAPE flying over the area, and few NESH. Ground calling showed nesting outside of the enclosure area for HAPE, who also like laua'e fern. If he had to change one thing about the enclosures, it would be more uluhe coverage. Also important to look outside of the enclosure B in uluhe to see if there is any increased petrel nesting.

Possible changes for better nesting success: modify substrate in burrows, incorporate more uluhe fern in burrow area, adding more speakers.

Kaheawa Wind Farm, Turbine 8 arrive at 1:15

- Craig gave an overview of wind farm. Mehrhoff asked if there are any turbines that cause more mortalities, or that take more than others.
- Fretz asked if KWP II has looked at increasing their curtailment regime, and its effect on take request and economic. Craig said he thought that increasing to 6.5 m/s would be an

additional \$50,000 per year, but it turned out to be double. He indicated there would likely be no way to tell if bat take was reduced by increasing to 6.5 and without any downed birds it would not affect EoA model take numbers

- Would be good to evaluate location of carcasses for all species to determine the effect of the prevailing winds.
- Curtailment time required to stop or start is stipulated in PPAs but Craig thinks typically only takes 1 or 2 minutes; however rolling average of 10 minutes is used to decide if curtailment should be started or stopped. There was some discussion of whether increasing to 20 minutes might reduce take as research has shown this could be effective; smart curtailment is probably too slow to respond to bat movements.
- The PPA is important because it could determine when a particular wind sites turbines have priority and other specific requirements of operation.
- Discussion of maximum extent practicable; Mitch suggested using probability of detection each year and what changed; may have to rely on data from other wind farms because there are so few takes here.
- If it is too windy the turbines will stop around 15-20 m/s.
- Craig assumed the following reductions in take with minimization: KWP I – a reduction in take of 50% from manufacturer cut-in speed to 5.0 m/s; a reduction in take of 15% at KWP II going from 5.0 to 5.5 m/s cut-in speed.
- Craig indicated there had been 3+ Nēnē nests at KWP II this year; 2 Nēnē were observed resting and flying at KWP II during the site visit.
- During the site visit numerous turbines were starting and stopping and changing yaw with wind direction.