

State of Hawai'i  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Forestry and Wildlife  
Honolulu, Hawaii 96813

October 25, 2018 Meeting

Endangered Species Recovery Committee  
State of Hawai'i  
Honolulu, Hawai'i

Committee Members:

**SUBJECT: REQUEST FOR COMMENTS ON THE AUWAHI WIND FARM  
SEPTEMBER 28, 2018 DRAFT HABITAT CONSERVATION PLAN  
AMENDMENT**

**BACKGROUND:**

Auwahi Wind Energy, LLC (Auwahi Wind) operates an 8-turbine, 21-megawatt wind energy generation facility on Ulupalakua Ranch in the southern half of Auwahi Ahupaua'a on Maui, Hawai'i. Auwahi Wind was issued an Incidental Take License (ITL) designated ITL-17 in February 2012 for incidental take including the Hawaiian Hoary Bat (HHB, *Lasiurus cinereus semotus*). The bat take authorized was 19 adults and 8 juveniles over the course of the 25-year permit term and later converting juvenile bats to adults, resulting in an adjusted approved take permit for 21 bats. In June 2016, model estimates showed that the calculated bat take limit of 21 had been reached. Auwahi Wind has requested an amended HCP and amended ITL to address impacts to the bats and increase the incidental take for this species over the remainder of the 25-year permit term. Low wind speed curtailment is proposed as an impact minimization measure for the bats. Auwahi Wind proposes no changes to the approved HCP and ITL for the incidental take and mitigation of Hawaiian Petrels, Nene, or Blackburn's Sphinx Moths. To date, the take of HHB by the project is estimated with 80% confidence to be at or below 46.

**INCIDENTAL TAKE AND MITIGATION PROPOSED:**

The project has the potential to result in additional incidental take of species listed under the Federal Endangered Species Act and State Endangered Species Statute. Incidental take is determined from direct take and indirect take because it is possible that the death of a listed adult during the breeding season could result in loss of eggs or dependent young. Auwahi Wind has requested the addition of Tiers 4, 5, and 6 to the Hawaiian Hoary Bat incidental take Tiers 1, 2, and 3 in the existing approved HCP and ITL. Table 1 summarizes the take requested for the species covered in the HCP Amendment.

Table 1. Take Levels Requested by Tier

(Revisions to the take in the February 2012 approved HCP Amendment are shown with underlined text.)

Common Name	Scientific Name	Tier Level	Requested Incidental Take Authorization
Hawaiian Hoary Bat 'Ōpe'ape'a	<i>Lasiurus cinereus semotus</i>	Tier 1	5 bats
		Tier 2	11 bats
		Tier 3	21 bats
		<u>Tier 4</u>	<u>81 bats</u>
		<u>Tier 5</u>	<u>115 bats</u>
		<u>Tier 6</u>	<u>140 bats</u>
Hawaiian Petrel 'Ua'u	<i>Pterodroma sandwichensis</i>	Tier 1	18 adults/fledglings 7 chicks/eggs
		Tier 2	32 adults/fledglings 12 chicks/eggs
		Tier 3	64 adults/fledglings 23 chicks/eggs
Hawaiian Goose Nēnē	<i>Branta sandvicensis</i>	NA	5 adults
Blackburn's Sphinx Moth	<i>Manduca blackburni</i>	NA	25 acres

Mitigation for the Hawaiian hoary bat incidental take at Tiers 4-6 would consist of habitat restoration of 1,752 acres of degraded forest/pasture in the Waihou, Duck Ponds, Cornwell, and Kaumea Loko areas of Maui, entering into a conservation easement for the mitigation parcels, and bat monitoring.

#### ANALYSIS & RECOMMENDATIONS:

Division of Forestry and Wildlife (DOFAW) Staff have worked with Auwahi Wind and its contractor through several rounds of revisions of the draft HCP amendment. DOFAW staff provided additional comments to Auwahi Wind on the September 28 draft HCP amendment after it was provided to the ESRC to review for the October 25 ESRC meeting. Subsequently, Auwahi Wind agreed via email response to address most of the DOFAW staff comments, therefore those comments are provided separately in an addendum to this submittal. The remaining comments and concerns that DOFAW has on the September 28, 2018 version of the document are listed below.

### **Hawaiian Hoary Bat Distribution, Population Estimates, and Ecology**

1. *Section 3.8.1.1 Distribution, Population Estimates, and Ecology.* A bat core use area (CUA) of 20.3 acres, developed from the median value of measurements of a set of bats by Bonaccorso et al. (2015) is used to develop mitigation acreage in the HCP. The ESRC 2015 Guidance Document also used the 20.3 acres CUA but with additional analysis made a recommendation that 40 acres per bat take should be considered for mitigation. This was re-affirmed in the more recent 2018 ESRC

bat task force interim report Mitigation of 40 acres per bat should be recognized and specific justification provided for deviation from that recommendation.

## **Hawaiian Hoary Bat Impact Evaluation**

### **Summary:**

A take of 60 bats is proposed for under tier 4, 34 in tier 5, and 25 in tier 6, which is an increase of 119 HHB from the original HCP take request. Clarification is needed on several points. In particular is the issue of the term on the ITL, 20 versus 25 years and which is applicable for allowable take of HHB. The discussion of current and future abundance and distribution of HHB on Maui island is potentially misleading and needs clarification. Statements are made about the impact of the project and cumulative impact of the project on the population of HHB on Maui that are unclear and are not adequately substantiated.

2. *Section 5.1.3 Authorized Take Request for the ITP/ITL for the HCP Amendment.* Including the upper range of 76 percent effectiveness of low wind speed curtailment (LWSC) at 6.9 m/s is not justified given that this assumes all take would be in the months with the proposed 6.9 m/s curtailment.
3. *Section 5.1.3.1 Potential for Population-level Impacts.* The following statement is made: "The total number of acres for the island of Maui is 465,280 of which approximately 32.2 percent is forested (NOAA Coastal Change Analysis Program; CCAP 2011). This equates to approximately 150,000 acres of forest on Maui, which translates to an estimated bat population of 7,300 based on a CUA size of 20.3 acres." There is no basis to this statement and it is far too broad; it should be deleted.
4. *Section 5.1.3.1 Potential for Population-level Impacts.* The following statement is made: "...the estimated offspring from this population would range from 1,000 to 2,000 new adults produced each year." It is not clear how this range was calculated. In any case, the numbers are taken to imply that the bat population would continually rise by that amount each year which is not supported by any information or observations of the bat population trend on Maui.
5. *Section 5.1.3.2 Cumulative Effects Associated with the HCP Amendment.* This section concludes that there is no cumulative impacts associated with the project. Concerns expressed about the analysis and conclusions in section 5.1.3.1 make this conclusion questionable and not adequately substantiated.

## **Hawaiian Hoary Bat Mitigation**

### **Summary:**

This part of the draft HCP amendment has a number of areas of concern, primarily with the tier 4 mitigation proposal. One concern for the ongoing mitigation for tiers 2/3 is the misleading suggestion regarding the success of the project specific to bat use of the area because it does not account for the baseline use of the area. For the tier 4 mitigation proposal a major concern is the specifics of the mitigation area and acreage proposed.

The clear guidance to date of the ESRC has been to specify 40 acres of forest restoration per bat taken and the proposal only acknowledges 20.3 acres per bat (1,752 acres).

The details of the proposed mitigation are also of concern because the actual area proposed for forest planting is 311 acres in hedgerows surrounding and through grasslands where cattle graze, which corresponds to 5.2 acres per bat take requested. In addition, there is commitment for planting only koa (*Acacia koa*) and 'a'ali'i (*Dodonaea viscosa*) in hedgerows which will result in low diversity. DOFAW is not aware of any report that koa has been used for roosting by HHB and so the benefit would only be for foraging. Hedgerows may help to direct bats to the area but this has not been clearly shown in the HCP.

The second major part of the mitigation proposed is to create new water sources for HHB, including replacement or retrofitting 15 cattle watering troughs so that they are full of water year-round and installation of two small ponds. Concerns with this proposal are the lack of support for showing that HHB need to drink surface water (versus obtain water from food, condensation, etc.), whether HHB will use cattle troughs, and whether two new small ponds would be of substantial benefit when five ponds are already present in one part of the proposed mitigation area.

6. *Section 6.2.4.1 Mitigation Area: Habitat Description.* The following statement is made: "The existing open habitats would be expected to provide little benefit to bats except foraging near hedgerows or limited use by bats transiting the area." The Gorresen et al. (2015) study on O'ahu concluded "Although only marginally significant, canopy cover was negatively related to bat detection (Figure 11), and indicates that Hawaiian hoary bats frequent open habitats with little tree cover. Landcover heterogeneity was negligibly associated with detection."
7. *Section 6.2.4.2 Mitigation Actions: Reforestation of Hedgerows.* The proposed 311 acres of forest creation in hedgerows corresponds to 5.2 acres per bat take requested, an unacceptably low mitigation rate even with the addition of water sources, given that the primary benefit is foraging only. In addition, even this limited acreage may not be significant for 5 or more years after installation.
8. *Section 6.2.4.2 Mitigation Actions: Reforestation of Hedgerows.* Koa has not been shown to be used as a roost tree. To include this as a potential benefit a reference or references should be provided that document HHB roosting in koa trees.
9. *Section 6.2.4.2 Mitigation Actions: Reforestation of Hedgerows.* A diversity of planting species is important given the lack of information about the correlation of insect species on koa and 'a'ali'i, the diet of HHB, and the benefit proposed as primarily a foraging habitat. A more diverse habitat would be more likely to support a food source for HHB and would adhere more closely to established practice for forest restoration in Hawaii. A minimum number of species or minimum diversity should be proposed to meet this need.
10. *Section 6.2.4.2 Mitigation Actions: Reforestation of Hedgerows.* The terms "where intended" and "where required" in this section introduce a vague commitment and should be replaced to show a solid commitment to fence all planted hedgerows.

11. *Section 6.2.4.2 Mitigation Actions: Water Feature Management.* The design for the pond installation should include a description of how the pond area would be protected from degradation from cattle trampling.
12. *Section 6.2.4.2 Mitigation Actions: Legal Protection.* The prohibition within the conservation easement of the “removal of trees over 15 feet tall during the bat pupping season (April 1 through September 15)” should be supplemented with a provision for no removal of trees for commercial purposes.
13. *Section 6.2.4.3 Take Offset/Net Benefit.* The suggestion that the new proposed ponds would provide a substantial benefit for firefighting is not substantiated given that the duck ponds are also relatively close and could be used instead.
14. *Section 6.2.4.3 Take Offset/Net Benefit.* DOFAW does not agree that the proposed mitigation as written increases the likelihood of recovery of HHB as required in HRS 195D because of all the deficiencies noted in comments on the entire document.
15. *Section 6.2.4.4 Measures of Success.* A proposed measure is “Record an increase in bat activity (i.e., average feeding buzzes) over the baseline monitoring year(s).” Additional support needs to be provided that feeding buzzes are easily detected and are a good measure of success. If retained the criteria needs to be more specific.
16. *Section 6.2.4.6 Adaptive Management: Monitoring.* A change in the monitoring plan as proposed here would require approval of DOFAW and the US Fish and Wildlife Service (USFWS), which should be stated.
17. *Section 6.2.5.1 Land Restoration/Management: Take Offset/Net Benefit (Tiers 5 and 6).* DOFAW does not agree that the proposed mitigation as written increases the likelihood of recovery of HHB as required in HRS 195D because of all the deficiencies noted in comments on the entire document.

## **Adaptive Management for Avoidance/Minimization**

### **Summary:**

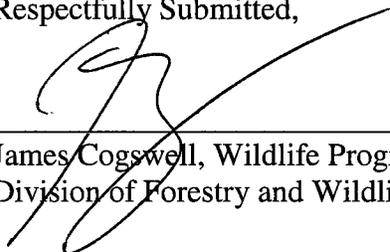
Concerns in this part of the draft HCP amendment are the proposal for potential reversion of minimization measures, responses to avoid/minimize take when the take rate trigger is exceeded, and the lack of adequate consideration of deterrence technology and potential application at Auwahi Wind.

18. *Section 7.4.1.3 Implementation, Reversion Trigger.* The criteria for relaxation of a specific type of minimization should not simply be lower than projected take rate but data or studies indicating a minimization is not effective, is effective at a lower level, or that a different type of minimization is achieving better results. Approval of DOFAW would be needed and should be added.
19. *Section 7.4.1.3 Implementation.* The following is the response proposed if triggered by exceedance of the baseline fatality rate: “Responses may include modifications to the LWSC program and other actions based on the best available science.” Approval by the USFWS and DOFAW should be added.
20. *Table 7-1. Adaptive Management Framework in Section 7.4.1.3 Implementation.* Responses in all evaluation years should include the option of shutting turbines

down at night for some or all of the year because if all other methods fail to meet the reduction in take rate this will be necessary.

21. *Section 7.4.1.4 Future Technologies.* The discussion in this subsection on deterrence is outdated information. Newer information on deterrent technology and ongoing testing is available and should be described here. Staff believes technology is advanced enough that it can be employed immediately upon availability or in a very short time frame. If there are concerns with implementation of the technology, they should be described here for review by all parties and the public.

Respectfully Submitted,



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Division of Forestry and Wildlife