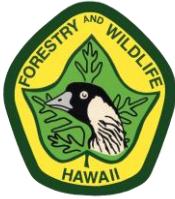
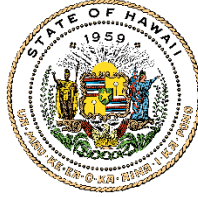


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February 26, 2025

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

SUBJECT: Division of Forestry and Wildlife Evaluation of the Kawaihoa Wind Project
Habitat Conservation Plan Implementation During Fiscal Year 2024 and
through Q1 and Q2 of FY 2025

Dear Committee Members,

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) is respectfully requesting the Endangered Species Recovery Committee (ESRC) to review the Kawaihoa Wind Project, located on the island of O'ahu, annual report in accordance with the requirements of HRS § 195D-25. This annual report was prepared by TetraTech, on behalf of Kawaihoa Wind (licensee) as part of the obligations of the Kawaihoa Wind Project Habitat Conservation Plan (HCP; SWCA 2011) and State Incidental Take License (ITL; ITL-14). This submittal provides a summary of the annual report and includes comments from DOFAW.

BACKGROUND

ITL Licensee: Kawaihoa Wind (Kawaihoa Wind), LLC

Project: Thirty wind turbine generators (WTGs) with a total of 69-MW energy generating capacity, and two meteorological (met) towers.

Amended ITL Duration: This ITL was originally issued on January 6th, 2012 and was reissued with amendments on February 26th, 2021. It is valid 20 years from the date of original issue and will terminate on January 6th, 2032. As of the end of FY 2024, this project is twelve years (60%) through the permit term.

Status of ITL

The Habitat Conservation Plan (HCP) for this facility requires that reports are submitted on an annual basis, with supplemental quarterly reports that provide updates on incidental take events. Therefore, take in relation to the status of the ITL will be evaluated for the period of the State FY 2024 (July 2023 – June 2024) and the first two quarters of State FY 2025 (July 2024 – December 2024). This is consistent with the other wind projects that are included in this annual review.

One Hawaiian hoary bat fatality occurred in FY 2024, but no other incidents were observed through Q2 FY 2025. There was no take during FY 2024 or through Q2 of FY 2025 for the remaining seven Covered Species. Hawaiian petrel is included in this analysis as there have been observed fatalities prior to the period covered in this annual review.

Figure 1: Total observed fatalities and estimated total take since ITL issuance under the Kawaiiloa Wind ITL as of December 31st, 2024.

Common Name	Total Observed Take¹	Estimated Unobserved Take²	Incidental Observations³	Indirect Take using HCP multipliers	Total Estimated Take as of Q2 FY 2025⁴
‘Ōpe‘ape‘a	41	45	2	9	97
‘Ua‘u	0	2 adults	-	2 chicks/eggs	2 adults and 2 chicks/eggs

¹ Excludes hoary bat takes that were incidental and not observed during systematic monitoring (incidental takes are evaluated as part of the EoA modeling software and therefore accounted for in the unobserved take).

² Based on the 80% credible maximum using the following model: Dalthorp, D., M. M. P. Huso, and D. Dail. 2017. Evidence of absence (v 2.0) software user guide: U.S. Geological Survey Data Series 1055.

³ Carcasses that were found during a routine search, but outside of the designated search area.

⁴ The installation of acoustic deterrents represents an inflection point in the bat fatality rate, reducing the risk to bats at the Project. Based on results from 5 years of monitoring, USFWS approved the use of an unbiased estimate of deterrent effectiveness in June 2024. Monitoring data through FY 2024 suggests that the unbiased estimate of deterrent effectiveness at the Project reduces the risk to bats by 87.3 percent ($\rho = 0.127$). Therefore, these values have been updated for these years in this annual report using a modified ρ value in the EoA model.

Total Projected Take at the End of the Permit Term

In FY 2023, Kawaiiloa Wind and DAPPER Stats developed a statistical analysis to produce an unbiased estimate of the benefit of the deterrents. Updated results indicate the unbiased estimate of ρ to account for deterrent effectiveness from FY 2020 to 2024 is 0.127 (0.032 – 0.338), an 87.3 percent reduction of risk. Ultimately, the

assessment of rho in the post-UAD installation period is expected to incorporate ongoing fatality monitoring results in the post-UAD period and an unbiased estimate of the deterrent benefit. The inclusion of additional years will continue to increase statistical rigor to accurately assess changes in rho. Therefore, the rho value applied to periods with the current minimization measures will be re-evaluated annually to incorporate new data.

Take projections were generated with EoA and the methods outlined in the HCP Amendment to estimate the likelihood of staying within the permitted take. Given the use of an unbiased estimate of the rho value of 0.127 post-UAD for FY 2020 – 2024, the median take projection at the end of the ITL term (January 2032) is 98 bats (Interquartile Range [IQR]: 94, 102). Alternatively, the HCP Amendment specifies a comparison of the current take estimate and the current take rate to the total authorized take over the permit term to determine if adaptive management is warranted. This method can also be used to evaluate take rates on an ongoing basis. EoA estimated the take rate at the Project between FYs 2020 and 2024 as 1.55 bats per year; extrapolating from the current direct take estimate (using a rho of 0.127) and the current take rate, the Project estimates a direct take total of 99.6 bats at the end of the ITL term (88 bats estimated by EoA as direct take through FY 2024 + 1.55 bats per year * 7.5 years remaining in the permit term). This value falls within the IQR generated by EoA that was previously described.

When an estimate of indirect take of 9.5 adult bat equivalents (9.5 percent * 99.6 bats estimated from direct take) is added to the direct take estimate, **the estimated take is 109.1 adult bat equivalents (99.6 bats estimated through direct take + 9.5 bats estimated through indirect take) when the ITL expires.** This indicates that while the Project is likely to stay below the Tier 4 maximum of 115 bats through the permit term, it is also possible that it could surpass this value. However, EoA indicates that there is an 88.8 percent chance that the project will remain within Tier 4 given the current rate of take. Nevertheless, both the EoA and HCP methods of generating take projections indicate the Project will stay below the total HCP Amendment take estimates (up to Tier 6) through the permit term.

'Ua'u was added as an HCP Covered Species through an amendment in 2019 after a fatality occurred. It should be noted that there is a distinction between the Project estimated take and the level of take occurring under the authorized ITL and amended HCP. To address this issue, estimated take over the period of Project operations was analyzed first. Following this analysis, a ratio was applied to the portion of the Project's operations under which the Hawaiian petrel was an HCP Covered Species. This identified the estimated take for tracking purposes with respect to the applicable regulatory permits. **The total estimated take as of Q2 FY 2025 is two adults and 2 chicks/eggs.**

As noted above, from a regulatory perspective, take of the Hawaiian petrel has only been permitted for a portion of the Project's operational timeline. To measure take against the authorized take limit we apply the proportion of time the Project has

operated with permits authorizing incidental take of the Hawaiian petrel, to the estimate for the entire period of Project operation and round-up. For this analysis, the Project has operated from November 2012 through December 2024 (12.17 years) and the Project has been operating under permits (ITP and ITL) authorizing incidental take of the Hawaiian petrel from September 2019 through December 2024 (5.34 years). Rounding up, **the cumulative Project take of Hawaiian petrels as measured against the authorized take limit is 1 adult and 1 chick/egg.** This estimate is below the authorized take limit of 19 adults and 5 chicks/eggs.

Avoidance and Minimization Measures Implemented in FY 2024

Following approval from USFWS and DOFAW to operate under a 10-minute rolling average in Q4 of FY 2021, the Project reverted to a 10-minute rolling average (from a 20-minute rolling average) on April 3, 2021. The Project continued to operate under this rolling average throughout FY 2024 and through Q2 of FY 2025.

Kawailoa Wind installed acoustic deterrents at all 30 WTGs in May and June of 2019. Since deterrent installation, three bat fatalities have been observed at the Project—a significant reduction from pre-deterrent conditions. It should be noted the deterrent systems at each WTG were functioning as expected for the fatalities that occurred after installation. Deterrent functionality at Kawailoa Wind Q2 FY 2025 is monitored remotely to ensure the systems function properly.

Deterrent units (DU) and deterrent unit controllers (DUC) that are identified as underperforming are replaced as soon as possible based on manufacturer recommendations. In October 2024, 24 DU were replaced at 15 different WTGs. No DUCs were replaced in Q2. Each WTG is installed with five DU, each with overlapping coverage. The result of a single DU failure is a loss of coverage that is less than one-fifth of the rotor-swept area. If one DU is deficient, a WTG has adequate coverage across the rotor-swept area due to redundancy provided by the other four DUs. Kawailoa Wind and NRG work together to install replacements as quickly as feasible. Based on data provided by NRG, **the total sitewide deterrent availability at the Project was 93.4 percent through Q2 of FY 2025.**

Mitigation Status:

The mitigation plan for the 'Ōpe'ape'a in the HCP/amended HCP includes a total of six tiers, of which the Project is currently in Tier 4. The actions listed in the HCP/amended HCP include a combination of habitat maintenance, predator control, monitoring, funding for research, and funding for land acquisition. The first tier of mitigation actions at 'Uko'a Wetland in FY 2024 and the first two quarters of FY 2025 focused on invasive vegetation removal, predator control and monitoring, fence monitoring and maintenance, bat acoustic monitoring, and bat lane maintenance.

In FY 2024, Hapa Landscaping conducted quarterly maintenance visits to remove any areas of invasive species. These included water hyacinths (*Eichhornia crassipes*) or

other invasive vegetation that regenerated in the previously cleared, open water areas like water lettuce (*Pistia stratiotes*) and California grass (*Urochloa mutica*). Invasive vegetation removal and control remain ongoing through Q2 of FY 2025.

The Project contracts Grey Boar Wildlife Services, LLC (Grey Boar) to conduct predator and ungulate removal at 'Uko'a Wetland, in addition to monitoring and repairing the fence. In FY 2024, a total of 138 predators were removed from 'Uko'a Wetland including 27 pigs, 95 mongoose, and 16 rats. Also, 29 mongoose and 6 rats were trapped during Q1 of FY 2025. During Q2 of FY 2025 a total of 24 mongoose and 4 rats were trapped.

Pigs continue to move into the fenced area at 'Uko'a Wetland due to breaches in the fence caused by trespassers cutting the fence and stochastic events like tree falls. Tracking tunnels are generally set out quarterly to assess the presence of rodents, mongoose, and cats within the wetland. In FY 2024, tracking tunnels were set out in September 2023 and March 2024, with 25 tracking tunnels placed during each event. Tracking tunnels were deployed in September and December of 2024 and the results will be presented in the FY 2025 annual report. Overall, tracking tunnel data since 2014 shows a general reduction in predator presence since the predator program was initiated.

Fence inspections were conducted by Grey Boar while checking predator control traps. The fence was visually inspected for any signs of ungulate disturbance, damage, or vandalism. During FY 2024, several sections of fence were repaired. Causes of fence damage in FY 2024 included: tree falls, cutting by trespassers, and inadvertent damage from neighboring landowners.

There are 16 bat lanes within 10 zones throughout 'Uko'a Wetland. During FY 2024, bat lane maintenance occurred on eight lanes in May 2024. Oahu Tree Works, LLC performed maintenance on six bat lanes along the eastern side of 'Uko'a Wetland on November 18 and 19, and December 13, 2024.

Bat acoustic monitoring is conducted as part of mitigation activities at 'Uko'a Wetland. During the 2024 Bat Sampling Period (June 2023 – May 2024), Hawaiian hoary bats were detected on 595 nights out of 2,227 detector nights sampled (26.7 percent). The annual detection rate during the 2024 Bat Sampling Period was greater than the previous sampling year (19.7 percent), but not statistically different (Tukey's HSD: $P = 0.963$). Detection rates in the 2024 Bat Sampling Period increased throughout the lactation reproductive period (mid-June to August) and peaked (0.54) in August of the lactation reproductive period. Following the peak in August, detection rates declined in September, October, and November of the post-lactation reproductive period (September to mid-December) before increasing again in December. A second peak in detection rates occurred during December followed by subsequent declines in detection rates during January, February, and March of the pre-pregnancy reproductive period (Mid-December to March), reaching the lowest detection rate (0.11) in April at the start of the pregnancy reproductive period (April to Mid-June). A third increase and the second-highest peak in detection rates (0.39) occurred in May.

In addition to observed increases in monthly detection rates, there was also an observed increase in the mean proportion of nights with feeding buzzes recorded at several monitoring sites after management was implemented. The observed increases in the detection rates and feeding buzzes are a positive indication of the effects of management actions. However, they may correlate with factors other than invasive plant species removal or bat lane installation.

Per the HCP, assessing bat activity at the mitigation site is required for three years post-restoration, and at subsequent five-year intervals. The Project has nearly 7 years of post-restoration bat acoustic data at the wetland (June 2017 to May 2024). Acoustic monitoring was suspended here on June 1, 2024, and is planned to resume in 2029. Other mitigation tiers have been completed in previous years.

Some waterbird mitigation actions overlap with those prescribed for the Hawaiian hoary bat (e.g., invasive vegetation removal, predator control, and fence maintenance). There is also an additional monitoring component focused on fledgling production.

Comprehensive weekly waterbird surveys began at 'Uko'a Wetland in January 2017 following invasive vegetation removal in the open water area and have continued annually throughout FY 2024. In FY 2024, waterbird surveys were conducted weekly from July 2023 through August 2023, and again from December 2023 through June 2024. A total of 39 waterbird surveys were completed in FY 2024. A qualified biologist conducted surveys at nine point-count (PC) stations set up near the open water and in areas with previous waterbird sightings. Independent waterbird observations are also recorded while walking between stations.

In FY 2024, Hawaiian gallinules (either adults, chicks, or fledglings) were observed on every survey date, and recorded at eight out of the nine PC stations. Two gallinule breeding events were observed in FY 2024. A breeding event observed in late April 2024 resulted in the successful fledging of two gallinules. A second breeding event was observed in early June 2024; though, it was determined to have failed due to unknown causes. The nest was empty at the end of June and no chicks were observed. No new gallinule breeding efforts were observed in Q1 or Q2 of FY 2025.

In FY 2024, Hawaiian stilts were observed on 31 of the 39 survey dates. Ae'ō detections have increased in comparison to previous fiscal years. Although their numbers continue to be low, the average number of adults detected per survey was highest in FY 2024 compared to all previous years. These birds were observed in seven out of nine surveys conducted during Q1, and all four surveys conducted during Q2 of FY 2025. No stilt nests were seen during the first two quarters of FY 2025 at 'Uko'a Pond. A juvenile stilt (between 5 to 8 weeks old) was observed near PC 4 on August 8, 2024. This is the first juvenile Ae'ō observed at 'Uko'a since surveys began in January 2017. Based on the age of the bird, the habitat present, and the consistent territorial behavior demonstrated by the adult pair of Hawaiian stilt for the two months prior, it is believed that this juvenile fledged here.

'Alae ke'oke'o were detected on two separate surveys in August at 'Uko'a Wetland in Q1 of FY 2025. A single Hawaiian coot was detected on August 21 and a single coot was detected on August 29. These detections are the second and third Hawaiian coot observations since comprehensive waterbird surveys began in January 2017. Previously only one Hawaiian coot was detected at 'Uko'a in March 2017. Hawaiian coots were detected on three out of the four surveys conducted during Q2 of FY 2025. A single 'alae ke'oke'o was detected on December 3, 19, and 27. It is believed that these detections are of the same individual that was first observed at the wetland in August 2024.

Mitigation for 'a'o, pueo, and 'ua'u has been completed in previous years. In response to a contested case settlement, Kawailoa Wind provided \$250,000 to Pacific Rim Conservation in FY 2022 to conduct research related to Hawaiian petrels on O'ahu. These funds were used in 2023 and will also be used during breeding seasons from 2024 to 2026. No Hawaiian petrel nests were found in 2023.

Last ESRC Review:

The ESRC made the following recommendations at the FY 2023 annual review meeting that **were incorporated** in the FY 2024 actions:

- 1) Proposed Rho value change request to be analyzed and discussed with USFWS and DOFAW.

The ESRC made the following recommendations at the FY 2023 annual review meeting that **were not incorporated** in the FY 2024 actions:

- 1) Continued discussion between the Project and the Agencies to identify alternative waterbird mitigation sites for Hawaiian coots or seek an amendment for the project's take.

Issues and Concerns:

Waterbird mitigation issues: unable to produce ae'o and 'alae ke'oke'o

Current and past annual reports through FY 2021 have indicated that there has been consistent production of 'alae 'ula fledglings at this site, but only a single ae'o fledgling has been produced that was observed in Q1 of FY 2025. To date, no 'alae ke'oke'o fledglings have been produced. The Project is required to mitigate for 20 Hawaiian coot and 24 Hawaiian stilt fledglings. Since 2022 the Agencies have encouraged Kawailoa Wind Project to move mitigation sites; however, the Project has remained reluctant to pursue this avenue. Another recommendation provided by the Agencies is for the licensee to reduce their take request. There has been ongoing dialogue between all parties involved, but no resolution.

Agency Recommendations:

Waterbirds

Since FY 2021 there has been no production of Hawaiian coot or Hawaiian stilt fledglings. The Agencies have encouraged the licensee to pursue other options such as **1)** conducting mitigation actions at a new site, or **2)** requesting a decreased take for these species. While dialogue between all parties has been ongoing, no resolution has been reached. DOFAW encourages the Project to pursue and finalize a decreased take limit within the next fiscal year (FY 2026).

If you have any questions, please contact Habitat Conservation Planning Program Associate, Jesse W. Adams at jesse.w.adams.researcher@hawaii.gov

Respectfully Submitted,

for DGS *Robert Hauff*
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