

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife (DOFAW)
Honolulu, Hawaii 96813

October 21 and 22, 2015

Endangered Species Recovery Committee

Committee Members:

SUBJECT: Request for recommendations from the Endangered Species Recovery Committee on all current habitat conservation plans, safe harbor agreements, and incidental take licenses. Review and briefing from DOFAW staff: Status of the issuance of incidental take licenses for endangered, threatened, proposed, and candidate species for the period July 1, 2014 – June 30, 2015

**I. SUMMARY OF HABITAT CONSERVATION PLANS AND ASSOCIATED
INCIDENTAL TAKE LICENSES BY PROJECT TYPE**

Wind Energy Facilities and Structures

Authorized incidental take includes both observed and unobserved take, as well as indirect take that occurs when an adult individual is taken during its breeding season. In order to determine the overall status of an ITL, and thus the overall impact to threatened and endangered species, most HCP applicants are required to implement the following two components as part of downed wildlife monitoring: 1) searcher efficiency (SEEF) studies to provide estimates of how effective searchers are at finding carcasses; and 2) carcass retention (CARE) studies to estimate the average time an avian or bat carcass remains detectable to searchers before being removed by scavengers or otherwise rendered undetectable due to decomposition. SEEF and CARE data are then combined with all observed documented fatalities using the best available scientific information to determine the total adjusted take of a wind energy facility. The science behind estimating take at wind energy facilities is evolving nationwide and DOFAW continues to consult with statisticians from the U.S. Geological Survey (USGS) and USFWS to ensure the best available scientific methods are used for estimating wind farm fatalities in Hawai'i. The statistical conclusions provided throughout this report are based on the best available scientific information at the time of writing and may change as the model and search protocols are refined. Fatality estimations are determined using the Evidence of Absence¹ estimator developed by USGS biologists, and recommended by DOFAW staff. An alternate estimator that can be used

¹ Dalthorp D., M Huso, D Dail and J Kenyon. 2014. Evidence of Absence Users Guide: U.S. Geological Survey Data Series 881, 34 p., <http://dx.doi.org/10.3133/ds881>.

by applicants is the USGS Data Series 729 Estimator² (pers. comm. Huso, 2014). The estimator used to calculate total adjusted take is indicated in the footnotes throughout this report.

**Kaheawa Pastures Wind Energy Generation Facility (KWP I)
Habitat Conservation Plan, Maui, Hawai‘i. Approved 2006.**

ITL Licensee: Kaheawa Wind Power, LLC; First Wind

Project: Twenty wind turbine generators (WTGs) with a total 30-megawatt (MW) energy generating capacity.

ITL Duration: January 30, 2006 – January 30, 2026

Take Authorization Over 20-year Term:



Kaheawa Wind Power project in West Maui above Ma‘alaea.

| Common Name | Scientific Name | Baseline Limit ³ | Higher Limit ² |
|----------------------------------|-------------------------------------|-----------------------------|---------------------------|
| ‘Ua‘u or Hawaiian Petrel | <i>Pterodroma sandwichensis</i> | 25 | 38 |
| ‘A‘o or Newell’s Shearwater | <i>Puffinus auricularis newelli</i> | 4 | 8 |
| Nēnē or Hawaiian Goose | <i>Branta sandvicensis</i> | 60 | n/a |
| ‘Ope‘ape‘a or Hawaiian Hoary Bat | <i>Lasiurus cinereus semotus</i> | 20 | n/a |

Status of ITL: Tables 1 and 2 provide a listing of all documented wildlife fatalities during the reporting period.

Table 1. Documented fatalities of HCP covered species and species of concern at KWP I during the reporting period.

| Common Name | FY2015 Observed Take |
|-----------------|----------------------|
| Nēnē | 4 |
| Pueo | 2 |
| Hawaiian Petrel | 2 |

Table 2. Documented fatalities of Migratory Bird Treaty Act (MBTA)-listed species and non-covered species at KWP I during the reporting period.

| Common Name | FY2015 Observed Take |
|-------------------------|----------------------|
| Ring-necked Pheasant | 5 |
| Gray Francolin | 3 |
| White-tailed Tropicbird | 1 |
| Eurasian Skylark | 1 |
| Black Francolin | 1 |
| Pacific Golden Plover | 1 |

² Huso, M.M.P., N. Som, L. Ladd. 2012. Fatality Estimator. U.S. Geological Survey, Data Series (Draft).

³ Take authorization is delineated by Baseline and Higher limits or in some cases Tiers. These demarcations serve as adaptive management triggers to ensure that mitigation keeps pace with take. If regulatory agencies anticipate authorized take to be exceeded, then the ITL licensee is required to seek a major amendment and provide a plan to achieve mitigation. ITL major amendments require approval from the Board of Land and Natural Resources.

Table 3 provides an estimate of the overall total adjusted take that has occurred since KWP I ITL issuance.

Table 3. Total observed fatalities including those from previous years and estimated total adjusted take covered under the KWP I ITL until June 30, 2015. There have been no reported injuries or fatalities of the Newell's Shearwater. All take estimates presented below are rounded to whole numbers for mitigation and ITL compliance purposes.

| Common Name | Total Observed Take | Estimated Unobserved Take | Total Adjusted Take ⁴ | Lost Productivity / Indirect Take ⁵ |
|--------------------|---------------------|---------------------------|----------------------------------|--|
| Hawaiian Petrel | 7 | 4 | 11 | 18 |
| Nēnē | 21 | 15 | 36 | 2 |
| Hawaiian Hoary Bat | 8 | 20 | 28 | 1 |

The total adjusted and indirect take of 29 bats exceeds the baseline permitted take of 20 bats. The HCP and ITL state that the "take authorized by the license can be increased provided that mitigation has been implemented such that benefits to the species outweigh the losses as detailed in the HCP." KWP I is currently in discussions with DOFAW and the USFWS to request an increase in the authorized take under the current ITL for bats in FY 2015.

In order to improve SEEF and CARE data used to calculate total adjusted take, SunEdison hired an independent contractor in FY 2014 to proctor independent CARE trials and SEEF trials for one year at KWP I & II. The trials began in March 2014 and ended in March 2015. A six-month canine SEEF trial was also conducted, and demonstrated a great deal of success, with an overall SEEF of 93.9% as compared to the human SEEF of 72.9%.

Mitigation Status:

Hawaiian Petrel & Newell's Shearwater. Mitigation for the two seabird species (Hawaiian Petrel and Newell's Shearwater) is being implemented in conjunction with Kaheawa Wind Power II. The primary mitigation entails construction and management of two approximately 4 acre predator-free fenced enclosures (one for each species), provisioned with artificial burrows and social attraction, at the Makamaka'ole site in West Maui. Construction of both enclosures was completed on September 5, 2013. Three sets of solar panels and speakers were installed (two in Enclosure A and one in Enclosure B) and have been active since March 6, 2013. These speakers broadcast recorded Hawaiian Petrel and Newell's Shearwater calls during nighttime hours to attract birds to the site. There are currently 50 artificial burrows in each enclosure. There are also species-specific decoys present in each Enclosure. As of the end of FY 2015, game cameras had captured images of both Hawaiian Petrel and Newell's shearwater individuals within Enclosure B. While there has been no nesting activity this year, the presence of these birds, in addition to

⁴ Total adjusted take based on the 80% credible maximum using the Evidence of Absence calculator.

⁵ Assessed in addition to Total Adjusted Take.

the Bulwer's petrel that was documented visiting the enclosures in FY 2014, is promising. This social attraction project is the first of its kind in Hawai'i and will serve to inform future seabird protection efforts worldwide. DOFAW continues to work closely in partnership with SunEdison staff and contractors to ensure the future success of the project.



Newell's Shearwater on June 28, 2015 inside Enclosure B, below speakers and next to burrow entrance.

Nēnē. Mitigation for the take of *Nēnē* at the Baseline level consists of providing funding to DOFAW for the construction of a release pen, and to support propagation and release of 50 *Nēnē*. Construction of a new release pen for *Nēnē* on Maui was completed and the first group of 10 birds was released on May 5, 2011. Twenty birds were released in FY 2012, seven birds were released in FY 2013, and eight birds (four adults and four fledglings) in FY 2015; totaling 45 birds released into the pen. Payments totaling \$264,000 were made to DOFAW between 2008 and 2011 in accordance with the HCP. Reproductive success in the release pen between FY 2012 and FY 2014 totaled 18 fledglings. In FY 2015, two nests were found inside the pen and one outside of the pen. The nest outside the pen was trampled by cattle, and the eggs were destroyed. Inside the pen, a total of nine eggs were laid in the two nests, six of which hatched and went on to fledge, for a total of 24 fledglings produced to date.

Hawaiian Hoary Bat. Baseline mitigation for the Hawaiian Hoary Bat included providing \$20,000 in support of bat research in Hawai'i. Bats have been monitored onsite since 2008 using acoustic detection and recording instruments. In FY 2015, bats were detected at nine of nine mounted 6.5 m high detector locations for a total of 249 out of 3,203 (7.8%) detector nights. Bats were detected at five out of seven detectors mounted at nacelle height for a total of 42 of 987 (4.3%) detector nights.

Issues:

Total adjusted take of Hawaiian hoary bats has exceeded the baseline permitted take level. The HCP states that, “take authorized by the license can be increased provided that mitigation has been implemented such that benefits to the species outweigh the losses as detailed in the HCP.” Therefore, the higher tier of increased take can be approved under the current ITL, and will not require a major amendment. SunEdison has submitted an amendment request and mitigation plan to the agencies. This plan has been approved by the USFWS, but has not yet been approved by DOFAW.

Staff Recommendations:

DOFAW staff recommends that SunEdison submit the bat mitigation proposal to the ESRC for review and approval.

Kaheawa Wind Power II Wind Energy Generation Facility (KWP II) Habitat Conservation Plan, Maui, Hawai'i. Approved 2012.

ITL Licensee: Kaheawa Wind Power, LLC; First Wind

Project: Fourteen WTGs with a total 21 MW energy generating capacity. Project is makai and adjacent to KWP I.

ITL Duration: January 5, 2012 – January 30, 2032

Take Authorization Over 20-year Term:

| Common Name | Scientific Name | Level of Take | 5-year Limit | 20-year Limit |
|---|-------------------------------------|---------------|--------------------------------------|---------------------------------------|
| 'Ua'u or Hawaiian Petrel | <i>Pterodroma sandwichensis</i> | Tier 1 | 8 adults/ juveniles & 4 chicks/eggs | 19 adults/ juveniles & 9 chicks/eggs |
| | | Tier 2 | 16 adults/ juveniles & 8 chicks/eggs | 29 adults/ juveniles & 14 chicks/eggs |
| 'A'o or Newell's Shearwater | <i>Puffinus auricularis newelli</i> | Tier 1 | 2 adults/ juveniles & 2 chicks/eggs | 2 adults/ juveniles & 2 chicks/eggs |
| | | Tier 2 | 5 adults/ juveniles & 3 chicks/eggs | 5 adults/ juveniles & 3 chicks/eggs |
| Nēnē or Hawaiian Goose | <i>Branta sandvicensis</i> | Tier 1 | 8 adults/ juveniles & 1 fledgling | 18 adults/ juveniles & 3 fledglings |
| | | Tier 2 | 12 adults/ juveniles & 3 fledgling | 27 adults/ juveniles & 3 fledgling |
| 'Ope'ape'a or Hawaiian Hoary Bat ⁶ | <i>Lasiurus cinereus semotus</i> | Tier 1 | 7 bats | 7 bats |
| | | Tier 2 | 11 bats | 11 bats |

Status of ITL: Tables 4 and 5 provide a listing of all documented wildlife fatalities during the reporting period.

Table 4. Documented fatalities of HCP covered species and species of concern at KWP II during the reporting period.

| Common Name | FY2015 Observed Take |
|-------------|----------------------|
| Nēnē | 2 |

Table 5. Documented fatalities of MBTA-listed species and non-covered species at KWP II during the reporting period.

| Common Name | FY2015 Observed Take |
|-------------------------|----------------------|
| Gray Francolin | 5 |
| Eurasian Skylark | 5 |
| Black Francolin | 3 |
| White-tailed Tropicbird | 2 |

⁶ Minor amendment to clarify permitted bat take processed on November 26, 2014.

| Common Name | FY2015 Observed Take |
|--------------------|----------------------|
| African Silverbill | 1 |

Incidental take authorized includes both observed and unobserved take, including indirect take that occurs when an adult individual is taken during its respective breeding season. Table 6 provides an estimate of the overall total adjusted take that has occurred since KWP II ITL issuance.

Table 6. Total observed fatalities since ITL issuance and estimated total adjusted take covered under the KWP II ITL as of June 30, 2015. There have been no reported injuries or fatalities of the Newell's Shearwater or Hawaiian Petrel at the KWP II facility. All take estimates presented below are rounded to whole numbers for mitigation and ITL compliance purposes.

| Common Name | Total Observed Take | Estimated Unobserved Take | Total Adjusted Take ⁷ | Lost Productivity / Indirect Take ⁸ |
|--------------------|---------------------|---------------------------|----------------------------------|--|
| Nēnē | 3 | 4 | 7 | 1 |
| Hawaiian Hoary Bat | 3 | 15 | 18 | 1 |

The total estimated take of 19 bats (with 80% statistical certainty and indirect take) exceeds both the Tier 1 and Tier 2 permitted take levels for bats. KWP II is currently in discussions with DOFAW and USFWS, and has submitted an application and amended HCP to the agencies for review and approval. The amendment went before the Endangered Species Recovery Committee (ESRC) in September 2015 for initial review and input, and will be released for public comment likely in the second quarter of FY 2016.

Mitigation Status:

Hawaiian Petrel and Newell's Shearwater. In addition to seabird mitigation activities underway in conjunction with KWP I at Makamaka'ole (see page 6), in the unlikely event that the initial five year mitigation targets at Makamaka'ole for seabirds are not met, KWP II is also required by the HCP to conduct surveys consisting of 14 to 20 survey nights, at two sites on West Maui where in-situ colony protection might be feasible. Site surveys were initiated at Kahakuloa, Maui in June 2012, but due to terrain and other access challenges, it was determined that the area was not desirable for in-situ conservation work. The



Enclosures A & B at the Makamaka'ole seabird mitigation site, West Maui.

⁷ Total adjusted take based on the 80% credible maximum when calculated using the Evidence of Absence calculator.

⁸ Assessed in addition to Total Adjusted Take.

Maui Nui Seabird Recovery Project (MNSRP) was contracted by SunEdison in FY 2015 to perform these surveys at new locations (expected duration May – August 2015) and has been provided with \$56,062 in funding for equipment and survey costs. The survey will assess areas adjacent to Haleakalā National Park, Maui in the area below Ko‘olau Gap and above Ke‘anae by deploying Wildlife Acoustics SM2BAT+™ acoustic detectors at 60 locations in approximately 8,000 hectares between 3,000-8,000 foot altitudes

Nēnē. The KWP II HCP requires that mitigation for Nēnē occur in the form of construction of a Nēnē release pen, or expansion of the KWP I pen, by June 2015. During FY 2015, it became apparent that building or expanding a pen at one of the ranches currently under SHAs with DOFAW would not be a possibility. Instead, it was determined that a project involving predator control traps and monitoring would be implemented. KWP II is currently in discussion with USFWS and DOFAW to come up with a plan.

In accordance with the KWP II HCP, systematic visual observations of Nēnē were made at KWP II during FY 2015. Data collection of Nēnē activity at KWP II will continue for the life of the project through the Wildlife Education Observation Program (WEOP). In FY 2015, WEOP trainings were given to 22 individuals who were on-site regularly for two days or more throughout the year. A total of 190 Nēnē observations were reported, and showed that they are found throughout the site, but are more prevalent at higher elevation turbines (turbines 1-7) and a group of three turbines located about two-thirds of the way downhill (turbines 10-12).

Hawaiian Hoary Bat. In accordance with the KWP II HCP, baseline mitigation for the Hawaiian Hoary Bat must consist of implementation of bat habitat improvement measures on at least 338 acres. DOFAW developed a mitigation plan for a 340 acre project area in the Kahikinui Forest Reserve (FR). Approximately 2.8 miles of fence apron was installed in July 2014 by DOFAW Forestry Program field crews. This fence section is part of the 7.3 miles of ungulate-proof fence that installed to protect the Nakula Natural Area Reserve (NAR) and the Kahikinui FR from encroaching ungulates. The entire fence line has been surveyed 13 times in the past 11 months. Field crews immediately repaired minor damages along the fence line and stream crossings following Storm Ana and Storm Iselle. Eleven additional inspections were conducted by DOFAW staff while performing aerial control missions for feral ungulates. Since October 2014, a total of 11 aerial control missions were conducted by DOFAW staff, resulting in 649 feral goats and 18 feral pigs dispatched from within the entire Nakula NAR and Kahikinui FR unit. It is estimated that there are very few feral goats (5-10 individuals) remaining within the entire unit. Quarterly aerial control missions to dispatch these remaining individuals will continue in FY 2016.

Due to a shortage of seed stock availability and seed viability, approximately 13,000 native tree seedlings (overstory and understory) were procured from Native Nursery, LLC. DOFAW staff completed three missions to outplant the 13,000 seedlings within the project area located in the Kahikinui FR. The outplanting work covers approximately 35 acres of the 340 total acres of the

project area. Species planted include a‘ali‘i, koa, ‘ōhi‘a, and pilo. The remaining 62,000 native tree seedlings will be procured in FY 2016 and outplanted in winter of 2015 and spring and fall of 2016.

In accordance with the HCP, low wind speed curtailment (LWSC) at 5 m/s was initially in effect for the months of April through November. This period was extended to begin mid-February and continue through December 15, 2014 in response to fatalities documented at KWP I and II in FY 2014. Prior to May 2014, 50% of observed fatalities at KWPI and KWPII had occurred in April and September, suggesting that collision risk was higher during these months. LWSC was therefore increased from 5 m/s to 6 m/s on April 10 through April 30, 2014, and was proposed to be raised to 6 m/s again in September. On June 6, 2014 SunEdison offered an adaptive management proposal to the USFWS and DOFAW for bats and on July 29, 2014 the LWSC was raised to 5.5 m/s between February 15th and December 15th. SunEdison continues to investigate ultrasonic bat deterrent technology, which is improving and showing great promise, but has not yet proven to be effective on a commercial scale.

Pueo. Although the Pueo is not a listed species on Maui, KWP II included Pueo in their HCP and provided mitigation compensation in the form of \$25,000 paid to DOFAW in FY 2013 to be directed toward Pueo research efforts. DOFAW is currently developing a Pueo research plan by pooling several different funding sources.

Revegetation. KWP II also has revegetation goals outlined in the HCP to mitigate for loss of native habitat as a result of project development. In FY 2015, 2,761 native plants were outplanted including ‘Ohi‘a (*Metrosideros polymorpha*), ‘Akia (*Wilkstroemea oahuensis*), Ko‘Okole ‘Olau (*Bidens micrantha*), ‘Iliahi (*Santalum freycinetianum*), Naupaka kuahiwi (*Scaevola gaudichaudiana*), ‘Ulei (*Pyrus anthyllidifolia*), and ‘A‘ali‘i (*Dodonaea viscosa*). This brings the total number of plants outplanted at the revegetation site up to 5,233.

Issues:

KWP II has exceeded both the Tier 1 and Tier 2 permitted levels of take for the Hawaiian hoary bat, and there is no Tier 3 under their current permit. SunEdison submitted a draft permit to the ESRC in September 2015, and is currently making edits to the proposal to address the Committee’s comments, and will be releasing the amendment for public review sometime in fall 2015.

Staff Recommendations:

DOFAW staff supports amending KWP II’s permit to include additional bat take. However, given the high take request levels and the uncertainty surrounding cumulative impacts on the bat population, staff recommends strengthening avoidance and minimization measures to the maximum extent practicable.

Kahuku Wind Power Habitat Conservation Plan, O‘ahu, Hawai‘i. Approved 2010.

ITL Licensee: Kahuku Wind Power, LLC; First Wind

Project: Twelve WTGs with a total 30-MW energy generating capacity.

ITL Duration: June 7, 2010 – June 7, 2030

Take Authorization Over 20-year Term:

| Common Name | Scientific Name | Level of Take | Annual Take Limit ⁹ | 5-year Take Limit ¹⁰ | 20-year Take Limit |
|----------------------------------|---|---------------|--------------------------------|---------------------------------|----------------------|
| ‘Ua‘u or Hawaiian Petrel | <i>Pterodroma sandwichensis</i> | Baseline | 4 | 8 adults/ juveniles | 8 adults/ juveniles |
| | | Higher | 8 | 12 adults/ juveniles | 12 adults/ juveniles |
| ‘A‘o or Newell’s Shearwater | <i>Puffinus auricularis newelli</i> | Baseline | 3 | 9 adults/ juveniles | 12 adults/ juveniles |
| | | Higher | 6 | 12 adults/ juveniles | 18 adults/ juveniles |
| Koloa Maoli or Hawaiian Duck | <i>Anas wyvilliana</i> | Baseline | 4 | 12 adults/ juveniles | 16 adults/ juveniles |
| | | Higher | 8 | 16 adults/ juveniles | 24 adults/ juveniles |
| Ae‘o or Hawaiian Stilt | <i>Himantopus mexicanus knudseni</i> | Baseline | 3 | 9 adults/ juveniles | 12 adults/ juveniles |
| | | Higher | 6 | 12 adults/ juveniles | 18 adults/ juveniles |
| ‘Alae Ke‘oke‘o or Hawaiian Coot | <i>Fulica alai</i> | Baseline | 3 | 9 adults/ juveniles | 12 adults/ juveniles |
| | | Higher | 6 | 12 adults/ juveniles | 18 adults/ juveniles |
| ‘Alae ‘Ula or Hawaiian Moorhen | <i>Gallinula chloropus sandvicensis</i> | Baseline | 4 | 10 adults/ juveniles | 14 adults/ juveniles |
| | | Higher | 7 | 14 adults/ juveniles | 20 adults/ juveniles |
| ‘Ope‘ape‘a or Hawaiian Hoary Bat | <i>Lasiurus cinereus semotus</i> | Baseline | 7 | 18 adults/ juveniles | 21 adults/ juveniles |
| | | Higher | 14 | 21 adults/ juveniles | 32 adults/ juveniles |
| Pueo or Hawaiian Owl | <i>Asio flammeus sandwichensis</i> | Baseline | 4 | 12 adults | 16 adults |
| | | Higher | 8 | 16 adults | 24 adults |

⁹ Exceeding the Annual Take Limit (including observed and unobserved take) will require one or more of the following: adaptive management, increased mitigation, or a major ITL amendment.

¹⁰ “5-Year” and “20-year” take limits are cumulative for the respective period of years.

Status of ITL: There was one fatality of an HCP covered species at Kahuku Wind Power during FY 2015. Tables 7 and 8 provide a listing of all documented wildlife fatalities at the Kahuku Wind Power facility during the FY 2015 reporting period

Table 7. Documented fatalities of HCP covered species and species of concern at KWP II during the reporting period.

| Common Name | FY2015 Observed Take |
|--------------------|----------------------|
| Hawaiian Hoary Bat | 1 |

Table 8. Documented fatalities of MBTA-listed species and non-covered species at Kahuku during the reporting period.

| Common Name | FY2015 Observed Take |
|--------------------|----------------------|
| Hawaiian Hoary Bat | 1 |

Table 9 provides an estimate of the overall total adjusted take that has occurred since Kahuku Wind ITL issuance.

Table 9. Total observed fatalities since ITL issuance and estimated total adjusted take covered under the Kahuku Wind Power ITL as of June 30, 2015. There have been no reported injuries or fatalities of the seven other protected species covered under the ITL. All take estimates presented below are rounded to whole numbers for mitigation and ITL compliance purposes.

| Common Name | Total Observed Take | Estimated Unobserved Take | Total Adjusted Take ¹¹ | Lost Productivity / Indirect Take ¹² |
|--------------------|---------------------|---------------------------|-----------------------------------|---|
| Hawaiian Hoary Bat | 4 | 6 | 10 | 4 |

Mitigation Status:

Hawaiian Petrel & Newell's Shearwater. In accordance with the Kahuku Wind HCP, the seabird mitigation plan for Newell's Shearwater and Hawaiian Petrel requires SunEdison to fund seabird colony-based protection and management measures on the island of Kaua'i. Staff from the DOFAW Kaua'i Endangered Seabird Recovery Project (KESRP) identified six sites to implement Barn Owl control as a form of seabird colony protection. DOFAW began to implement work in the fourth quarter of FY 2015 at the six sites: (1) Nualolo Aina; (2) Nualolo Kai; (3) Honopu; (4) Kalaheo/Kahili; (5) Lehua Islet; and (6) the back of Hanalei Valley. It is expected that these six areas hold significant potential for shearwater conservation through barn owl-specific predator control actions.



'Alae 'Ula or Hawaiian Moorhen swimming at Hamakua Marsh

¹¹ Total adjusted take based on the 80% credible maximum when calculated using the Evidence of Absence calculator.

¹² Assessed in addition to Total Adjusted Take.

Hawaiian Stilt, Hawaiian Coot, Hawaiian Moorhen, and Hawaiian Duck. Baseline mitigation for the four waterbird species covered under the ITL consists of payments to DOFAW to conduct predator control and wetland restoration at Hamakua Marsh, part of the State's Kawainui-Hamakua Marsh Complex, for four years. Predator control and vegetation maintenance have been ongoing since 2011 in order to maintain and increase waterbird productivity.

Survey results documented five Hawaiian Coot, 26 Moorhen, and three Stilt fledglings at Hamakua Marsh during FY 2015.

Hawaiian Hoary Bat. In accordance with the Kahuku Wind HCP, baseline bat mitigation consisted of a \$150,000 payment to DOFAW (procured on May 31, 2012) for preserving or enhancing foraging and/or roosting habitat by constructing an ungulate-proof fence around a roughly 280 acre section of the State Kahikinui Forest Reserve and State Nakula Natural Area Reserve. In FY 2015, approximately 2,500 meters of fence were installed to enclose the unit. Ungulates were then removed, a planting area prepared, and over 28,000 plants, including Koa, 'A'ali'i, Māmane, 'Ōhi'a, 'Iliahi, and Pilo were installed. The Kahuku mitigation funds were pooled with other funding sources to contribute to collaborative, concentrated management in the region.

In accordance with the avoidance and minimization measures described in the HCP, curtailment of all turbines up to a wind speed of 5 m/s is being implemented between sunset and sunrise from April through November.

Pueo. Payments have been completed to initiate the first Pueo research on O'ahu aimed at determining population status and management priorities. DOFAW is currently developing a Pueo research plan for O'ahu by pooling several different funding sources.

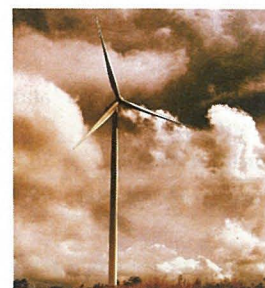
Kawailoa Wind Power Habitat Conservation Plan, O‘ahu, Hawai‘i. Approved 2012.

ITL Licensee: Kawailoa Wind Power, LLC; First Wind

Project: Thirty WTGs with a total 69 MW energy generating capacity.

ITL Duration: January 6, 2012 – January 6, 2032

Take Authorization Over 20-year Term:



Kawailoa Wind Power, O‘ahu

| Common Name | Scientific Name | Level of Take | 5-year Take Limit ¹³ | 20-year Take Limit |
|--|---|---------------|-------------------------------------|-------------------------------------|
| ‘A‘o or Newell’s Shearwater | <i>Puffinus auricularis newelli</i> | Tier 1 | 3 adults/ juveniles & 2 chicks/eggs | 3 adults/ juveniles & 2 chicks/eggs |
| | | Tier 2 | 6 adults/ juveniles & 3 chicks/eggs | 6 adults/ juveniles & 3 chicks/eggs |
| Koloa Maoli or Hawaiian Duck | <i>Anas wyvilliana</i> | Tier 1 | 4 adults/ juveniles & 4 ducklings | 4 adults/ juveniles & 4 ducklings |
| | | Tier 2 | 6 adults/ juveniles & 6 ducklings | 6 adults/ juveniles & 6 ducklings |
| Ae‘o or Hawaiian Stilt | <i>Himantopus mexicanus knudseni</i> | Tier 1 | 6 adults/ juveniles & 3 fledglings | 8 adults/ juveniles & 4 fledglings |
| | | Tier 2 | 8 adults/ juveniles & 4 fledglings | 12 adults/ juveniles & 6 fledglings |
| ‘Alae Ke‘oke‘o or Hawaiian Coot | <i>Fulica alai</i> | Tier 1 | 6 adults/ juveniles & 3 fledglings | 8 adults/ juveniles & 4 fledglings |
| | | Tier 2 | 8 adults/ juveniles & 4 fledglings | 12 adults/ juveniles & 6 fledglings |
| ‘Alae ‘Ula or Hawaiian Moorhen | <i>Gallinula chloropus sandvicensis</i> | Tier 1 | 6 adults/ juveniles & 3 fledglings | 8 adults/ juveniles & 4 fledglings |
| | | Tier 2 | 8 adults/ juveniles & 4 fledglings | 8 adults/ juveniles & 4 fledglings |
| ‘Ope‘ape‘a or Hawaiian Hoary Bat ¹⁴ | <i>Lasiurus cinereus semotus</i> | Tier 1 | 20 bats | 20 bats |
| | | Tier 2 | 40 bats | 40 bats |
| | | Tier 3 | 60 bats | 60 bats |
| Pueo or Hawaiian Owl | <i>Asio flammeus sandwichensis</i> | Tier 1 | 4 adults & 4 owlets | 4 adults & 4 owlets |
| | | Tier 2 | 6 adults & 6 owlets | 6 adults & 6 owlets |

¹³ “5-Year” and “20-year” take limits are cumulative for the respective period of years.

¹⁴ Minor amendment to clarify permitted bat take processed on November 26, 2014.

Status of ITL: Tables 10 and 11 provide a listing of all documented wildlife fatalities at the Kawaiiloa Wind Power facility during FY 2015.

Table 10. Documented fatalities of HCP covered species and species of concern at Kawaiiloa Wind Power during the reporting period.

| Common Name | FY2015 Observed Take |
|--------------------|----------------------|
| Hawaiian Hoary Bat | 10 |

Table 11. Documented fatalities of MBTA-listed species and non-covered species at Kawaiiloa during the reporting period.

| Common Name | FY2015 Observed Take |
|-------------------------|----------------------|
| Spotted Dove | 18 |
| Common Myna | 16 |
| Nutmeg Mannikin | 6 |
| Common Waxbill | 5 |
| White-tailed Tropicbird | 3 |
| Red-crested Cardinal | 3 |
| Zebra Dove | 3 |
| Java Sparrow | 2 |
| Japanese White-eye | 1 |
| House Finch | 1 |
| Pacific Golden Plover | 1 |
| Orange-cheeked Waxbill | 1 |

Table 12 provides an estimate of the overall total adjusted take that has occurred since Kawaiiloa Wind ITL issuance.

Table 12. Total observed fatalities since ITL issuance and estimated total adjusted take covered under the Kawaiiloa Wind Power ITL as of June 30, 2015. There have been no reported injuries or fatalities of the six other protected species covered under the ITL. All take estimates presented below are rounded to whole numbers for mitigation and ITL compliance purposes.

| Common Name | Total Observed Take | Estimated Unobserved Take | Total Adjusted Take ¹⁵ | Lost Productivity / Indirect Take ¹⁶ |
|--------------------|---------------------|---------------------------|-----------------------------------|---|
| Hawaiian Hoary Bat | 24 | 16 | 40 | 2 |

A total of ten Hawaiian Hoary Bat fatalities were observed during FY 2015. No incidental take of the other six covered species under the ITL occurred during the reporting period. The total estimated take of 42 bats (with 80% statistical certainty and indirect take) exceeds both the Tier 1 and Tier 2 permitted take for bats. SunEdison submitted a letter of intent to the agencies on July 10, 2014 stating that they would be seeking an amendment to their license, and have been in consultation with the agencies since that time. It is expected that the amendment will be submitted for review before the end of the 2015 calendar year.

¹⁵ Total adjusted take based on the 80% credible maximum using the Evidence of Absence calculator.

¹⁶ Assessed in addition to Total Adjusted Take.

Mitigation Status:

Newell's Shearwater. Baseline mitigation for Newell's Shearwater as described in the HCP consists of (1) providing funding for adapting a resetting trap for use in Hawai'i, (2) field testing traps at a suitable location where predators are known to occur, and (3) supporting a one-year pilot study to provide localized predator control in an area where Newell's Shearwater are known to be breeding. Components (1) and (2) were completed and reported on in FY 2013. In FY 2014, a scope of work was developed and an MOU between SunEdison and DOFAW was signed to deploy song meters at six known Newell's colonies on Kaua'i. Seabird colony activity assessment on Kaua'i was completed for the breeding season in the first quarter of FY 2015, and a summary report was delivered in the third quarter. This assessment is part of a predator control project co-funded by Kahuku Wind Power and completes the seabird mitigation as described in the HCP for Kawailoa.

Hawaiian Duck, Hawaiian Stilt, Hawaiian Moorhen, & Hawaiian Coot. As part of baseline mitigation for waterbirds, in July 2013 contractors completed a 4-foot high fence to completely enclose 135 acres of 'Uko'a Wetland for the protection of waterbirds and bats that are known to forage in the area. As outlined in the HCP, waterbird mitigation at 'Uko'a Wetland will consist of fencing, predator control, vegetation management, and monitoring in a 40-acre portion of the wetland. A plan was developed in May 2014, and the early stages of implementation began in May and June, including selection of contractors and removal of predators including pigs, cats, mongooses, and rats. Predator trapping, insect assessment, and fence maintenance continued through FY 2015, but vegetation management has ceased pending results of negotiations regarding conditions of the lease agreement between SunEdison and the 'Uko'a Wetland landowner.

Hawaiian Hoary Bat. The Tier 1 mitigation effort proposed in the HCP to offset the requested take of 20 bats included 80 acres of wetland restoration and 40 acres of upland restoration at U'koa Pond on the North Shore of O'ahu. This effort was proposed in conjunction with mitigation to offset take of waterbirds. Work began at U'koa in April of 2012, beginning with baseline bat acoustic monitoring that is ongoing. Since that time, a 3-mile long ungulate-proof fence has been constructed around the mitigation site and predator control (ungulate



Female Hawaiian Hoary Bat caught at U'koa Wetland, Oahu.

removal; cat, rat, mongoose suppression) has been ongoing. However, due to the proximity of the U'koa site to the wind facility and an unconditional revocation clause in the draft Conservation License for the U'koa site between Kawailoa and the landowner, Kawailoa has halted forward progress on efforts at this site until a resolution to this issue is reached.

Additionally, a potential Tier 2 project had the same Conservation License difficulties with the same landowner, and another proposed project was not approved due to its proximity to the

existing windfarm. Therefore, Kawaihoa is currently in Tier 3 of their permitted take and, apart from the fencing, an ongoing bat telemetry study and ongoing predator control measures as part of the U'koa project, Kawaihoa has not fully satisfied remaining on the ground mitigation requirements to offset bat take under Tiers 1 and 2.

SunEdison hopes to resolve the Conservation License issue within the next few months, and is working on putting together a proposal for Tiers 2 and 3 mitigation, pending review and approval of a Hawaiian Hoary Bat mitigation guidance document currently in development by DOFAW staff and the ESRC.

Pueo. Baseline mitigation for Pueo consisted of Kawaihoa SunEdison providing \$12,500 to the Hawai'i Wildlife Rehabilitation Center on Hawai'i Island in FY 2013, and \$25,000 for research in FY 2014. DOFAW is currently developing a Pueo research plan by pooling several different funding sources.

Issues:

While proximity concerns for mitigation were raised at the recent ESRC bat workshop, DOFAW staff is not certain that this should be a major concern at U'koa. DOFAW guidance has been to keep mitigation outside the average nightly foraging range for Hawaiian hoary bats of roughly 3km (Bonaccorso 2015) to provide a minimum distance between increased bat numbers as a result of mitigation activities and the project area, although this guidance has not been formalized or approved by the ESRC. DOFAW staff is also not supportive of abandoning U'koa for financial reasons, as the HCP states that mitigation responsibilities must be fulfilled regardless of cost. However, DOFAW staff understands the challenges associated with the Conservation License, and if it is certain that a resolution between Kawaihoa and the landowner for management to occur throughout the permit term cannot be reached, would support abandonment of the U'koa project in favor of another project.

Auwahi Wind Energy Habitat Conservation Plan, Maui, Hawai'i. Approved 2012.

ITL Licensee: Auwahi Wind Energy, LLC; Sempra U.S. Gas & Power

Project: Eight WTGs with a total 21-MW energy generating capacity.

ITL Duration: February 9, 2012 – February 9, 2037



Auwahi Wind Power, Maui

Take Authorization Over 25-year Term:

| Common Name | Scientific Name | Level of Take | 25-year Limit ⁸ |
|----------------------------------|----------------------------------|------------------|--|
| 'Ua'u or Hawaiian Petrel | <i>Pterodroma sandwichensis</i> | Tier 1 | 19 adults/ immatures & 7 chicks/eggs |
| | | Tier 2 | 32 adults/ immatures & 12 chicks/eggs |
| | | Tier 3 | 64 adults/ immatures & 23 chicks/eggs |
| Nēnē or Hawaiian Goose | <i>Branta sandvicensis</i> | Length of permit | 5 adults/ immatures |
| 'Ope'ape'a or Hawaiian Hoary Bat | <i>Lasiurus cinereus semotus</i> | Tier 1 | 5 adults/ immatures & 2 juveniles |
| | | Tier 2 | 10 adults/ immatures & 4 juveniles |
| | | Tier 3 | 19 adults/ immatures & 8 juveniles |
| Blackburn's Sphinx Moth | <i>Manduca blackburni</i> | Not applicable | 28-acres permanently disturbed habitat is an index of take |

Status of ITL: Tables 13 and 14 provide a listing of all documented wildlife fatalities at the Auwahi Wind Energy facility during FY 2015.

Table 13. Documented fatalities of HCP covered species and species of concern at Auwahi during the reporting period. Each row represents one individual. Each WTG has a unique number at each facility, and the WTG where the carcass was found is listed in the Location column.

| Common Name | Scientific Name | FY2015 Observed Take |
|--------------------|----------------------------------|----------------------|
| Hawaiian Hoary Bat | <i>Lasiurus cinereus semotus</i> | 4 |
| Hawaiian Petrel | <i>Pterodroma sanwichensis</i> | 1 |

Table 14. Documented fatalities of MBTA-listed species and non-covered species at Auwahi during the reporting period.

| Common Name | Scientific Name | FY2015 Observed Take |
|----------------------|----------------------------------|----------------------|
| African Silverbill | <i>Lonchura cantanus</i> | 5 |
| Great Frigatebird | <i>Fregata minor</i> | 4 |
| Gray Francolin | <i>Francolinus pondicerianus</i> | 3 |
| Common House Sparrow | <i>Passer domesticus</i> | 2 |
| Skylark | <i>Alauda arvensis</i> | 2 |

| Common Name | Scientific Name | FY2015 Observed Take |
|-------------------------|--------------------------|----------------------|
| Zebra Dove | <i>Geopelia striata</i> | 1 |
| White-tailed Tropicbird | <i>Phaethon lepturus</i> | 1 |
| Wedge-tailed Shearwater | <i>Ardenna pacifica</i> | 1 |

Table 15 provides an estimate of the overall total adjusted take that has occurred since Auwahi Wind ITL issuance.

Table 15. Total observed fatalities since ITL issuance and estimated total adjusted take covered under the Auwahi Wind Energy ITL as of June 30, 2015. There has been no reported take of the three other protected species covered under the ITL. All take estimates presented below are rounded to whole numbers for mitigation and ITL compliance purposes.

| Common Name | Total Observed Take | Estimated Unobserved Take | Total Adjusted Take ¹⁷ | Lost Productivity / Indirect Take ¹⁸ |
|--------------------|---------------------|---------------------------|-----------------------------------|---|
| Hawaiian Hoary Bat | 5 | 12 | 17 | 0 |
| Hawaiian Petrel | 1 | 1 | 2 | 1 |

Mitigation Status:

Hawaiian Petrel. Mitigation for take of Hawaiian Petrels in FY 2015 consisted of continued petrel burrow monitoring at Kahikinui Forest Reserve to obtain an estimate of the number of active petrel burrows and reproductive (fledging) success. As in previous years, all monitoring protocols followed methods used by the National Park Service. New burrows located were marked, mapped, and added to the monitoring dataset. In the most recent breeding season, 63 petrel burrows were being monitored, 29 of which showed signs of consistent activity. Six burrows successfully fledged a chick.

Auwahi Wind worked with Island Conservation and Tetra Tech to develop a predator control strategy for Kahikinui based on site-specific conditions and Island Conservation's expertise. The predator control strategy will allow predator control to be adaptively managed over time. Auwahi Wind deployed tracking tunnels to assess rat and mongoose activity across the entire management area, and then set 138 traps which were checked and baited every 2 weeks for a total of 36 weeks. Trapping resulted in the removal of 161 predators, including mice, rats, and mongoose.

Hawaiian Hoary Bat. Tier 1 mitigation for the Hawaiian Hoary Bat consists of the restoration of approximately 130 acres of pastureland in the Waihou Mitigation Area (the Pu'u Makua parcel) to create roosting and foraging habitat for the Hawaiian Hoary Bat. Restoration of this area includes a completed perimeter fence, the removal of ungulates and invasive plant species, and the ongoing reforestation of native species (19 acres planted in FY 2015).

¹⁷ Total adjusted take based on the 80% credible maximum using the Evidence of Absence calculator.

¹⁸ Assessed in addition to Total Adjusted Take.

For Tier 2 mitigation, Auwahi worked with Frank Bonaccorso of the US Geological Survey (USGS) to develop a research project combining radio telemetry and acoustic monitoring to track the success of mitigation efforts at Waihou, as well as to provide more information on the ecology of the Hawaiian Hoary Bat as part of their Tier 2 mitigation requirements. Implementation of the plan began in March 2015 with the deployment of six acoustic detectors. Monitoring will continue for one year.

Auwahi has initiated planning for Tier 3 mitigation and is expected to submit a proposal to DOFAW/USFWS in fall 2015.

Auwahi has seen a higher than expected take of Hawaiian Hoary Bats since the start of operations (2.5 years). For take of this listed species, Auwahi is expected to submit a major amendment of the ITL to DOFAW and USFWS for evaluation in FY 2016.

Blackburn's Sphinx Moth. Baseline mitigation for Blackburn's Sphinx Moth consisted of a payment of \$144,000 to the Leeward Haleakala Watershed Restoration Partnership (LHWRP) on April 17, 2012; to restore dryland forest by planting the equivalent of 6 acres of native endangered 'Aiea (*Nothocestrum latifolium*) throughout the Auwahi Forest Restoration Project. 'Aiea is known to serve as a host plant for the endangered Blackburn's Sphinx Moth. In FY 2015, 788 'Aiea were planted in an 11 acre section of the Auwahi III enclosure, with an additional 200 nursery grown seedlings awaiting outplanting.

Issues:

Monitoring for take of Hawaiian petrels under the facility's generator tie-in line (gen-tie line) is described in the HCP as being incidental only. Therefore, while take associated with the gen-tie line is included in the take estimate for the permit, there is currently no monitoring occurring that can provide a take estimate with any level of statistical significance. The HCP states that DOFAW has the ability to conduct monitoring as deemed necessary to evaluate take associated with the gen-tie line. DOFAW staff is in discussion with the Kaua'i Endangered Seabird Recovery Project (KESRP) and Maui Nui Seabird Recovery Project (MNSRP) to determine what the cost for this type of effort might be.

Staff Recommendations:

Staff recommends continuing to work with KESRP and MNSRP to determine the most cost effective way to monitor the gen-tie line, and identifying a source of funding to support the effort.

Habitat Conservation Plan for the Construction and Operation of the Lana‘i Meteorological Towers, Lana‘i, Hawai‘i. Approved 2008.

ITL Licensee: Castle & Cooke Resorts, LLC

Project: Install six 50-meter (165-foot) meteorological (met) towers to collect data on wind speeds and patterns throughout the northern portion of Lana‘i Island.

ITL Duration: October 10, 2008 – March 1, 2016

Take Authorization Over 8-year Term:

| Common Name | Scientific Name | Level of Take Authorized Over Entire ITL Duration | |
|----------------------------------|--------------------------------------|---|--------|
| | | Tier 1 | Tier 2 |
| ‘Ua‘u or Hawaiian Petrel | <i>Pterodroma sandwichensis</i> | 7 | 14 |
| ‘A‘o or Newell’s Shearwater | <i>Puffinus auricularis newelli</i> | 2 | NA |
| Ae‘o or Hawaiian Stilt | <i>Himantopus mexicanus knudseni</i> | 2 | NA |
| ‘Ope‘ape‘a or Hawaiian Hoary Bat | <i>Lasiurus cinereus semotus</i> | 2 | NA |

Status of ITL: Closed in FY 2015.

Castle & Cooke received a Board of Land and Natural Resources (BLNR) approval of the “Habitat Conservation Plan for the Construction and Operation of the Lana‘i Meteorological Towers, Lana‘i, Hawai‘i” and accompanying ITL on October 10, 2008. The ITL was amended twice by BLNR approval, first extending the expiration date until March 1, 2012 (approved March 11, 2010) and subsequently extending the expiration until March 1, 2016 (approved February 24, 2012).

Five of the original six towers were removed in February 2010, and the final tower was removed on April 29, 2014. In the interim, Castle & Cooke sold the property covered by the ITL and HCP to Pulama Lana‘i (2012). In accordance with the HCP and MOA, mitigation obligations to restore habitat at Lana‘ihale were completed in 2010, with ongoing monitoring and maintenance of the restoration site continuing until the end of the ITL term. Under the MOA, DOFAW was conducting monitoring and maintenance of the restoration site until the right-of-access agreement was not reissued under the new landowner. No observed take of listed species was reported during the permit term, and mortality monitoring at the site was discontinued following the decommissioning of the final tower.

Given that all towers were decommissioned, no take occurred, all mitigation obligations were fulfilled, and the new landowners expressed no interest in continuing the HCP in the absence of a current need for it, all parties involved agreed to terminate the agreement. A request went before the BLNR on March 13, 2015 and was unanimously approved.

Other Development Projects

A Conservation Plan for Hawaiian Stilt at Cyanotech Aquaculture Facility, Keahole Point, Hawai'i. Approved 2003.

ITL Licensee: Cyanotech Corporation

Project: Commercial microalgae farming operation.

ITL Duration: December 24, 2003 – March 17, 2016

Take Authorization Over 13-year Term:

| Common Name | Scientific Name | Total Authorized Over ITL Duration |
|------------------------|--------------------------------------|--|
| Ae'o or Hawaiian Stilt | <i>Himantopus mexicanus knudseni</i> | The greater of, 45 or the number of chicks produced to offset losses ¹⁹ |

Status of ITL: Table 16 provides a listing of all documented wildlife fatalities during the reporting period.

Table 16. Documented wildlife fatalities at the Cyanotech Aquaculture Facility during the reporting period.

| Common Name | FY2015 Observed Take |
|----------------|----------------------|
| Hawaiian Stilt | 1 |

In accordance with the Cyanotech HCP, surveys for incidental take are conducted twice per week during the nesting season and once per week during the non-nesting season. However, monitoring for injured wildlife is conducted daily as part of normal operations of the production raceways.

Table 17 provides an estimate of the overall total adjusted take that has occurred since Cyanotech ITL issuance.

Table 17. Total observed fatalities since ITL issuance and estimated total adjusted take covered under the Cyanotech ITL as of June 30, 2015. All take estimates presented below are rounded to whole numbers for mitigation and ITL compliance purposes.

| Common Name | Total Observed Take | Total Adjusted Take ²⁰ |
|----------------|---------------------|-----------------------------------|
| Hawaiian Stilt | 19 | 41 |

¹⁹ From 1999-2003, 66 Ae'o were found injured or killed at the facility due to the basin tanks also being used as foraging habitat. The tanks were netted in 2004, resulting in a significant decline in Ae'o fatalities.

²⁰ Total adjusted take based on the survival rate of 2.17 fledglings with respect to incidental take of adult as described in the 2006 Cyanotech Amendment.

Mitigation Status:

Hawaiian Stilt. According to the 2006 minor amendment, Cyanotech mitigation obligations include funding and implementing predator control at an off-site location. 'Opae'ula pond is a 3.24 hectare coastal wetland located in the North Kona district of Hawai'i Island and has been identified as a viable location for predator control efforts. In accordance with the Cyanotech ITL, take must not exceed "the greater of, 45 or the number of chicks produced to offset losses." Cyanotech is currently working with the private landowner to fund predator control efforts at 'Opae'ula pond to meet mitigation obligations.

Issues:

Cyanotech has not exceeded permitted levels of take for the Hawaiian Stilt, but need to secure funding of the mitigation actions. Cyanotech has assured the agencies that they are working closely and are likely to secure an agreement with the private landowner to fulfill their mitigation obligations under their permit. Cyanotech has requested an extension to their current ITL which is set to expire in March of 2016.

Staff Recommendations:

DOFAW staff believes Cyanotech is committed to the fulfillment of outstanding mitigation obligations under the 2006 amendment, and has informed Cyanotech of the imperative to solidify these obligations in order to remain in compliance. DOFAW is also working closely with Cyanotech on their permit extension and amendment process.

Habitat Conservation Plan for Construction of the Daniel K. Inouye Solar Telescope²¹ at the Haleakalā High Altitude Observatory Site, Maui, Hawai‘i. Approved 2011.

ITL Licensee: National Science Foundation

Project: Construction of the Daniel K. Inouye Solar Telescope (DKIST) within the 18-acre University of Hawai‘i Institute for Astronomy Haleakalā High Altitude Observatory site at the summit of Haleakalā.



DKIST Facility on Haleakalā summit.

ITL Duration: December 1, 2011 – December 1, 2021

Take Authorization Over 10-year Term:

| Common Name | Scientific Name | Total Authorized Over ITL Duration |
|--------------------------|---------------------------------|------------------------------------|
| ‘Ua‘u or Hawaiian Petrel | <i>Pterodroma sandwichensis</i> | 30 fledglings and 5 adults |

Status of ITL: A total of four Hawaiian Petrel carcasses or remains were discovered within the project site and Conservation Area during the reporting period. After agency review of documents, photos, and video footage of mortality incidents, staff determined that there was insufficient evidence to definitively state that these mortalities were associated with project activities, and are therefore not counted against DKIST’s ITL.

Birdstrike monitoring has occurred annually during seabird nesting season, February 1 to November 30, since 2011. In accordance with the HCP, areas around the two Federal Aviation Administration (FAA) towers, the telescope construction site, and the conservation fence are monitored. No collision events associated with the towers or conservation fence have been detected since birdstrike monitoring began in 2011. Noise and vibration monitoring is also conducted to determine if the burrows nearest the construction site are impacted by construction activities. As of June 30, 2015, no construction activity has produced vibrations meeting or exceeding the threshold of 0.12 in/sec established in the HCP, and noise levels have averaged 56 dBA which is not above ambient environmental levels.

Mitigation Status:

Hawaiian Petrel. In accordance with the HCP, DKIST constructed a 4.23 km ungulate-proof fence enclosing a 313 acre Conservation Area adjacent to Haleakalā National Park. As a result of the fence construction process and the intensive monitoring activities that were being implemented during the fence construction, all ungulates left the area before the fence was completed in November 2013. Based on footage from camera traps, no ungulates have been detected within the Conservation Area since September 12th, 2013.

²¹ Formerly the Advanced Technology Solar Telescope; name officially changed on December 15, 2013.

Predator control has been ongoing since September 2012 using A-24 automatic traps (targeting mongoose) and Havahart traps (targeting cats). In June 2014 the traps were rearranged to a more unified grid pattern, and supplemented with additional traps to cover the entirety of the Conservation Area. Traps are baited during Petrel season (February-November) each year. No predators were caught in FY 2015.

The 2015 Petrel season is ongoing. The 2014 season noted 165 active burrows in the conservation area, with 44 of those burrows successfully producing a fledgling.

Kaua'i Lagoons Habitat Conservation Plan, Kaua'i, Hawai'i. Approved 2012.

ITL Licensee: Kaua'i Lagoons, LLC

Project: Oceanfront resort encompassing approximately 600 acres.

ITL Duration: April 11, 2012 – April 11, 2042



Kaua'i Lagoons, Kaua'i.

Take Authorization Over 30-year Term:

| Common Name | Scientific Name | Type of Take | Total Authorized Over ITL Duration |
|--------------------------------------|---|-------------------------|------------------------------------|
| 'A'o or Newell's Shearwater | <i>Puffinus auricularis newelli</i> | Life of permit | 29* |
| Koloa Maoli or Hawaiian Duck | <i>Anas wyvilliana</i> | Mortality or Non-Lethal | 36 |
| Ae'o or Hawaiian Stilt | <i>Himantopus mexicanus knudseni</i> | Mortality or Non-Lethal | 38 |
| 'Alae Ke'oke'o or Hawaiian Coot | <i>Fulica alai</i> | Mortality | 110 |
| | | Non-Lethal | 180 |
| 'Alae 'Ula or Hawaiian Moorhen | <i>Gallinula chloropus sandvicensis</i> | Mortality | 40 |
| | | Non-Lethal | 30 |
| Nēnē or Hawaiian Goose | <i>Branta sandvicensis</i> | Mortality or Non-Lethal | 17 |
| 'Ua'u or Hawaiian Petrel | <i>Pterodroma sandwichensis</i> | Life of Permit | 1 |
| 'Akē'akē or Band-rumped Storm Petrel | <i>Oceanodroma castro</i> | Life of Permit | 1 |

*Authorized level of take changed from 27 to 29 as processed under the September 2013 Minor Amendment

Status of ITL: Table 18 provides a listing of all documented incidental take during the reporting period.

Table 18. Documented incidental take at the Kaua'i Lagoons site during the reporting period.

| Common Name | FY2015 Observed Take |
|------------------|----------------------|
| Hawaiian Moorhen | 3 |
| Hawaiian Coot | 3 |
| Nēnē | 2 |

Table 19 provides the observed mortalities that have occurred since Kaua'i Lagoons ITL issuance.

Table 19. Total observed mortalities since ITL issuance under the Kaua'i Lagoons ITL as of June 30, 2015.

| Common Name | Total Observed Take | Total with Adjusted Take |
|---------------------|---------------------|--------------------------|
| Newell's Shearwater | 2 | 2 |
| Nēnē | 2 | 2.72 |
| Hawaiian Moorhen | 4 | 4.325 |
| Hawaiian Duck | 1 | 1 |
| Hawaiian Stilt | 0 | 0 |

| Common Name | Total Observed Take | Total with Adjusted Take |
|---------------|---------------------|--------------------------|
| Hawaiian Coot | 6 | 6 |

In accordance with the Kaua‘i Lagoons HCP, the Kaua‘i Lagoons Resort (Resort) implemented the following minimization measures during this reporting period:

- On-site predator control;
- Comprehensive endangered species awareness training to all Resort employees;
- Deployment of construction monitors and biological monitors during construction operations to prevent harm to ITL covered species;
- Education program to inform golfers of the presence of endangered species and implement measures to avoid harm to such species while golfing; and
- Program to minimize light-induced attraction of seabirds to Resort facilities by installing appropriate lighting fixtures, and implementing appropriate seasonal restrictions and practices.

Over the past ten years, the Resort has assisted in efforts to increase the Nēnē population. However, due to the close proximity of the Resort to Lihue Airport, Nēnē from the Resort pose a bird-strike hazard to aircraft. In 2009, wildlife agencies determined that the Kaua‘i Lagoons HCP would solely address endangered species impacts from Resort construction and operation, as applicable FAA regulations require that the airport operator address aircraft-wildlife hazards. Thus, this HCP does not include or cover any specific Nēnē management measures designed to address aircraft safety issues. Instead, this HCP explicitly identifies and acknowledges aircraft safety issues, and commits the Resort to cooperate with the airport agencies and the wildlife agencies in their separate efforts to address these concerns in accordance with applicable FAA regulations. DOFAW will continue to work with the Resort and other state and federal agencies on the best approaches to minimize impact to wildlife while maintaining public safety.

On September 11, 2013, DOFAW processed a Minor Amendment to address seabird mitigation and authorized take levels. During the 2013 fiscal reporting period, two Newell’s Shearwaters were found downed in the vicinity of the Kaua‘i Lagoons existing Kalanipu‘u buildings. The original Kaua‘i Lagoons HCP/ITL authorized take of listed Hawaiian seabirds due to light attraction expected with the completion of new buildings, anticipated to occur in 2015. In order to include take associated with light attraction on existing infrastructure, a minor amendment was processed to change the authorized take from 27 Newell’s Shearwaters to 29 Newell’s Shearwater beginning in 2013.

Mitigation Status:

Nēnē, Hawaiian Stilt, Hawaiian Coot, Hawaiian Moorhen, & Hawaiian Duck. Baseline mitigation for waterbirds consists of providing and maintaining approximately 35 acres of lagoons on the property that are an important habitat for endangered waterbird species, including predator control trapping and wildlife monitoring. Predator control efforts during this reporting

period resulted in 13 cats, nine dogs and 1,725 chickens removed from the property. In addition, Kaua‘i Lagoons has provided DOFAW with \$85,000 to be used to conduct predator control and/or manage Nēnē at a translocation site(s) after the completion of the State’s five-year translocation project ending in 2016.

Newell’s Shearwater, Hawaiian Petrel, & Band-rumped Storm Petrel. The Minor Amendment also directed mitigation funding for seabird take, in the amount of \$10,000 annually, to the National Fish and Wildlife Foundation account, to be held until such time a Kaua‘i seabird island-wide HCP (currently in the planning stages) is finalized and approved.

Habitat Conservation Plans for Plants

Round-leaved Chaff Flower (*Achyranthes splendens* var. *rotundata*) Habitat Conservation Plan, Kenai Industrial Park, Kapolei, O‘ahu, Hawai‘i. Approved 2014

ITL Licensee: CIRI Land Development Company

Project: Industrial development on a 0.75-acre parcel

ITL Duration: February 10, 2014 – February 9, 2024



Achyranthes splendens var. *rotundata*.

Take Authorization Over 10-year Term:

| Common Name | Scientific Name | Total Authorized Over ITL Duration |
|---------------------------|--|------------------------------------|
| Round-leaved Chaff Flower | <i>Achyranthes splendens</i> var. <i>rotundata</i> | 3 individuals and their seed bank |

Status of ITL: All plants at the site were removed during this reporting period under supervision of the State botanist.

Approximately 23,000 seeds were collected in 2014. Roughly 400 of the seeds collected were used to germinate plants at Hui Ku Maoli Ola native plant nursery; the remainder are in storage at the Lyon seed facilities. The seeds at Hui Ku Maoli Ola were propagated during the reporting period and were used for outplanting at the mitigation site.

Mitigation Status:

Round-leaved Chaff Flower. In accordance with the HCP, seeds were collected from the project site and were either stored or propagated for future out-planting at the mitigation site located at the Kalaeloa Unit of the Pearl Harbor National Wildlife Refuge.

A total of 155 plants were installed in four plots within the Kalaeloa Unit in December 2014 (see example, Plot 1). In April 2015, at the end of the establishment period, 148 plants were living. Plants received supplemental water to reduce drought stress during hot and dry summer months. Minimal hand-clearing of weeds was needed to maintain a 2-foot buffer around each plant. Mealy bugs were treated as needed. All year-one success criteria have been met: there are at least 120 living plants (139) and there are no mature kiawe (*Prosopis pallida*) within the four plots.



Plot 1 outplants on 6/25/2015

Funding Status: In September of 2014, CIRC Land Development Company (original owner of the property under the ITL), sold the property to AKC Leasing Corporation. AKC Leasing Corporation has acknowledged and understands that ownership of the property is subject to conditions under the approved Incidental Take License Number ITL-18 and the associated Round-Leaved Chaff Flower (*Achyranthes splendens* var. *rotundata*) Habitat Conservation Plan, Kenai Industrial Park. AKC Leasing Corporation is required to provide all funding necessary to fulfill obligations outlined in the approved HCP including funding assurances. In FY 2015, AKC Leasing Corporation used their own procurement processes to fulfill HCP obligations.

Habitat Conservation Plan for *Abutilon menziesii* at Kapolei, O‘ahu. Approved 2004.

ITL Licensee: Hawai‘i Department of Transportation

Project: Development of 1,300-acre East Kapolei Master Plan project and construction of the North-South Road arterial highway planned to bisect the 1,300-acre property.

ITL Duration: March 18, 2005 – July 31, 2021

Take Authorization: All plant individuals of *Abutilon menziesii* within the 1,381-acre project area.



*Ko'olua'ula (Abutilon menziesii),
Island of O'ahu.*

Mitigation Status:

Abutilon menziesii. The goal of the HCP is to initiate and sustain a program that will result in an overall net gain in the number of endangered *Abutilon menziesii* plants on O‘ahu. The end goal is the establishment of three protected self-sustaining populations of *A. menziesii* from the single degraded Kapolei population. Populations of *A. menziesii* have been successfully established at the following sites: 1) Diamond Head State Park; 2) Koko Crater Botanical Garden; 3) Honouliuli Refuge, part of the U.S. Fish and Wildlife Service (USFWS) O‘ahu National Wildlife Refuge Complex; 4) Pouhala Marsh on City and County property in Waipahu; and 5) Ewa Villages Golf Course in close proximity to the project site. From an original founder population of 93 plants on the project site in 2002, outplanting efforts have resulted in establishment of 344 mature *A. menziesii* plant individuals throughout the five off-site mitigation areas and an additional 39 mature *A. menziesii* plant individuals on the on-site contingency reserve area (CRA) (Table 20). Numerous adult plants died in the CRA during this reporting year due to natural senescence. There is no way to prevent this from happening; however, time will be spent adding plants to the CRA to capture more genetic representation. Outplanting of thousands of common native species has taken place over the past few reporting periods. The idea was to add additional plants to the habitat to reduce the incoming light to reduce weed pressure. The hope was that this would increase seedling success. Unfortunately, there has been no seedling recruitment at this site for many years.

A Division of Forestry and Wildlife (DOFAW) horticulturist and botanist are working to ensure successful natural regeneration of outplanted individuals. Current monitoring data indicate that a total of 141 seedlings from outplanted individuals are currently in the managed sites. The goal in the next fiscal year is to increase the survival of seedlings from natural generation through weed management, establish new mitigation areas, education, outreach, and site maintenance.

Table 20. Status of *A.menziesii* plant populations.

| | Koko Head | CRA | Honouliuli Reserve | Ewa Villages | Pouhala Marsh | Diamond Head | Total |
|---------------------------------|------------------|------------|---------------------------|---------------------|----------------------|---------------------|--------------|
| Mature | 66 | 39 | 73 | 63 | 71 | 71 | 383 |
| % Genetic Representation | 58% | 35% | 54% | 56% | 66% | 58% | 100% |
| Seedlings | 0 | 0 | 128 | 0 | 0 | 13 | 141 |

Issues:

Seedling recruitment continues to be a challenge for all sites and is likely due to competition and low quality soil conditions.

Staff Recommendations:

DOFAW is working on securing a new mitigation site where soil conditions are suitable for the species. In addition, continuation of maintaining, monitoring and increasing outplantings are recommended. It is also recommended that the cause of low recruitment at the existing site be investigated more closely.

II. SUMMARY OF SAFE HARBOR AGREEMENTS AND ASSOCIATED INCIDENTAL TAKE LICENSES

Safe Harbor Agreement for Pu‘u o Hōkū Ranch, Moloka‘i. Approved 2001.

ITL Licensee: Pu‘u o Hōkū Ranch, Limited

Project: Reintroduce Nēnē (*Branta sandvicensis*) to Pu‘u o Hōkū Ranch, Moloka‘i.

ITL Duration: September 4, 2001 – September 3, 2008²²

Take Authorization: Incidental take of Nēnē on lands owned or otherwise controlled by Pu‘u o Hōkū Ranch, Limited.

Baseline Condition²³: No wild Nēnē on Pu‘u o Hōkū Ranch property or documented use of suitable habitat. At the time of agreement execution, there was no wild Nēnē on Moloka‘i.

Status of ITL: This SHA allows Pu‘u o Hōkū Ranch (Ranch) to reintroduce Nēnē on their property, construct a release pen, provide habitat for Nēnē grazing and breeding, and control predators in the release pen and breeding areas. A total of 74 birds were translocated to the Ranch from 2002-2005. Table 20 provides survey data over the past 13 years for the original 74 birds translocated to the Ranch. The percentage of the original 74 birds that were re-sighted is a factor of survey effort, and may not necessarily be a measure of translocation success.

Table 21. Record of Nēnē translocated to Pu‘u o Hōkū Ranch from 2002-2015, including fate and re-sighting information.

| Year | No. of Birds Translocated | No. of Known Fatalities | No. of Birds Sighted | Percentage (%) of Translocated Birds (minus known fatalities) Sighted |
|-------------|----------------------------------|--------------------------------|-----------------------------|--|
| 2015 | 0 | 0 ²⁴ | 4 | 5 |
| 2014 | 0 | 0 | 6 | 9 |
| 2013 | 0 | 0 | 6 | 9 |
| 2012 | 0 | 0 | 6 | 9 |
| 2011 | 0 | 0 | 7 | 11 |
| 2010 | 0 | 0 | 8 | 13 |
| 2009 | 0 | 0 | 18 | 28 |
| 2008 | 0 | 1 | 33 | 52 |
| 2007 | 0 | 0 | 38 | 58 |
| 2006 | 0 | 5 | 29 | 45 |
| 2005 | 11 | 2 | 47 | 67 |
| 2004 | 8 | 1 | 42 | 69 |

²² DOFAW is currently in discussion with Pu‘u o Hōkū Ranch to enter into a new agreement in the next Fiscal Year.

²³ Baseline Conditions describe endangered or threatened species population estimates and distribution, or the habitat characteristics that sustain seasonal or permanent use by such species. Safe Harbor Agreements must achieve a net conservation benefit above Baseline Conditions.

²⁴ Five adult Moloka‘i-born Nēnē mortalities occurred in the open top release pen during this reporting period (two from trauma and three due to predation events).

| Year | No. of Birds Translocated | No. of Known Fatalities | No. of Birds Sighted | Percentage (%) of Translocated Birds (minus known fatalities) Sighted |
|------|---------------------------|-------------------------|----------------------|---|
| 2003 | 41 | 1 | 54 | 100 |
| 2002 | 14 | 0 | 14 | 100 |

Observations from surveys throughout the reporting period resulted in a total of 54 banded birds and six unknown birds were seen. Annual data and survey observations indicate an estimated population of 78 individual Nēnē, including those from the original translocation efforts.



Nēnē, official bird of the State of Hawai'i, resting in the foreground.

During the August – April nesting season, a total of two nests were recorded within the open-top release pen at the Pu'u o Hōkū Ranch. Of the two nests, one was abandoned and one was depredated. Neither nest was successful in producing any goslings.

Three acres within the open-top release pen were maintained monthly and an additional 303 acres within the Pu'u o Hōkū Ranch was mowed during this reporting period. A total of 63 mongooses and one cat were removed around the open-top release pen at the Pu'u o Hōkū Ranch. No rats or dogs were trapped this year.

Issues:

The original SHA expired in 2008 and DOFAW is working closely with the landowner to enter into a new agreement.

**Programmatic Safe Harbor Agreement for Nēnē on the Island of Moloka‘i, Hawai‘i.
Approved 2003.**

ITL Licensee: DOFAW to issue Certificates of Inclusion under authority of §195D-22, HRS, to landowners signing Cooperative Agreements.

Project: Encourage private landowner management activities to benefit Nēnē and provide regulatory assurances if Nēnē occupy or breed on their property.

ITL Duration: April 7, 2003 – April 6, 2053

Take Authorization: Any Nēnē or Nēnē habitat above Baseline Conditions, as defined in respective landowner Cooperative Agreements

Baseline Condition: Not Applicable

Status of ITL: During the reporting period and to date, there are no landowners enrolled under this SHA; however discussions with interested landowners are ongoing.

Issues:

No enrolled landowners in this Agreement.

Staff Recommendations:

Continue to conduct outreach and provide information about the program to interested landowners.

Safe Harbor Agreement for the Introduction of Nēnē to Pi‘iholo Ranch, Maui. Approved 2004.

ITL Licensee: Pi‘iholo Ranch, LLC

Project: Establish a Nēnē population on Pi‘iholo Ranch.

ITL Duration: September 21, 2004 – September 20, 2054

Take Authorization: Incidental take of Nēnē on lands owned or otherwise controlled by Pi‘iholo Ranch, LLC.



Pi‘iholo Ranch on Maui.

Baseline Condition: Following Nēnē reintroduction efforts on Maui that began at Haleakalā National Park in 1962, DOFAW began establishing a population in west Maui through a reintroduction program at Hana‘ula in 1995. However, prior to the development of the SHA, there had been no known Nēnē sightings at Pi‘iholo Ranch premises by DOFAW staff or Ranch personnel. Therefore the baseline condition was determined to be zero.

Status of ITL: Under this SHA, Pi‘iholo Ranch is maintaining or improving approximately 600 acres of Nēnē habitat for a period of 10 years. In cooperation with DOFAW, Pi‘iholo Ranch is undertaking the following activities: (1) construction of a Nēnē release pen; (2) predator control activities around Nēnē nesting and breeding sites; and (3) out-planting native plant species known to be Nēnē food sources.

Nēnē monitoring was performed on a weekly basis by Ranch and DOFAW personnel throughout the reporting period. A total of 48 birds were released to the Ranch from 2005-2008. There were no additional birds released from the Maui Bird Conservation Center after 2008. A total of 10 of the original released birds were sighted on Pi‘iholo Ranch during the reporting period. Observational survey monitoring for Nēnē on Pi‘iholo Ranch throughout the reporting period resulted in a population estimate of 34 birds. Table 21 provides survey data over the past 10 years for the original 48 birds released to the Ranch. The percentage of the original 48 birds that were re-sighted is a factor of survey effort and does not account for any unknown mortality or emigration from the ranch, and may not necessarily be a measure of release success.

Table 22. Record of Nēnē translocated to Pi‘iholo Ranch from 2005-2015, including fate and re-sighting information.

| Year | No. of Birds Translocated | No. of Known Fatalities | No. of Birds Sighted | Percentage (%) of Translocated Birds (minus known fatalities) Sighted |
|------|---------------------------|-------------------------|----------------------|---|
| 2015 | 0 | 0 | 10 | 23 |
| 2014 | 0 | 0 | 10 | 23 |
| 2013 | 0 | 0 | 11 | 25 |
| 2012 | 0 | 0 | 11 | 25 |
| 2011 | 0 | 1 | 16 | 36 |

| Year | No. of Birds Translocated | No. of Known Fatalities | No. of Birds Sighted | Percentage (%) of Translocated Birds (minus known fatalities) Sighted |
|-------------|----------------------------------|--------------------------------|-----------------------------|--|
| 2010 | 0 | 0 | 23 | 51 |
| 2009 | 0 | 1 | 26 | 58 |
| 2008 | 10 | 0 | 30 | 65 |
| 2007 | 25 | 2 | 26 | 72 |
| 2006 | 8 | 0 | 12 | 92 |
| 2005 | 5 | 0 | 5 | 100 |

Annual data and survey observations indicate an estimated population of 34 individual Nēnē at Pi‘iholo Ranch, including those from the original translocation efforts. Additionally, six birds (two adults and four goslings) were relocated to the Pi‘iholo Ranch pen from the HC&S field during this reporting period as a measure to increase gosling survival.

Five nests were observed in the open-top release pen at Pi‘iholo Ranch during the reporting period. None of the nests were successful in producing any fledglings. Three nests were abandoned, two nests hatched a total of three goslings but none fledged. All three goslings were found dead after a storm event.

At Pi‘iholo, a total of 10.5 acres were mowed annually both in and around the open-top release pen. Predator control efforts resulted in a total of 14 mongooses and three rats trapped and removed around the open-top release pen at Pi‘iholo Ranch. No cats or dogs were trapped during the reporting period.

Issues:

The SHA expired in September of 2014 and the landowner has requested an extension with modifications to the agreement. DOFAW staff is working to finalize the amendment and extend the SHA.

Staff Recommendations:

Continue to work with the landowner to secure a long term agreement.

Safe Harbor Agreement for the Reintroduction of Nēnē to Haleakalā Ranch, Island of Maui. Approved 2012.

ITL Licensee: Haleakalā Ranch Company

Project: Establish a Nēnē population on Haleakalā Ranch, Maui.

ITL Duration: May 22, 2012 – May 21, 2062

Take Authorization: Incidental take of Nēnē on lands owned or otherwise controlled by Haleakalā Ranch.

Baseline Condition: There had been no Nēnē sightings at Haleakalā Ranch by DOFAW staff or ranch personnel, prior to execution of the SHA. Therefore the baseline condition was determined to be zero.

Status of ITL: Haleakalā Ranch is creating or improving approximately 1,600 acres of Nēnē habitat for a period of 10 years. In cooperation with DOFAW, Haleakalā Ranch is undertaking the following activities: (1) construction of a Nēnē release pen; (2) predator control activities around Nēnē nesting and breeding sites; and (3) maintenance of access roads leading to the Nēnē release pen.

DOFAW conducted weekly monitoring during the reporting period at Haleakalā Ranch. Data and observations indicate an estimated population of 63 individual birds. Table 22 provides survey data over the past 5 years for the original 45 birds translocated to the Ranch. Eight Nēnē (four adults and 4 goslings) were translocated to Haleakalā Ranch from Kauaʻi during this reporting period. The percentage of the original 37 birds that were re-sighted is a factor of survey effort, and may not necessarily be a measure of translocation success.

Table 22. Record of Nēnē translocated to Haleakala Ranch from 2010-2015, including fate and re-sighting information.

| Year | No. of Birds Translocated | No. of Known Fatalities | No. of Birds Sighted | Percentage (%) of Translocated Birds (minus known fatalities) Sighted |
|------|---------------------------|-------------------------|----------------------|---|
| 2015 | 8 | 1 | 25 | 64 |
| 2014 | 0 | 2 | 23 | 84 |
| 2013 | 7 | 1 | 31 | 91 |
| 2012 | 20 | 2 | 30 | 100 |
| 2011 | 10 | 0 | 10 | 100 |

A total of 45 birds were translocated to Haleakalā Ranch between 2011 – 2015. Annual data and survey observations indicate an estimated population of 63 individual Nēnē at Haleakalā Ranch, including those from the original translocation efforts and released birds. During this reporting

period, one mortality was reported outside of the property at a golf resort from the original birds translocated to the Haleakalā Ranch pen.

In FY 2015, two nests were found inside the Haleakalā Ranch open-top release pen and one nest was found outside the pen but on Haleakalā Ranch property. The two nests inside the pen were successful with six goslings which successfully fledged. The nest outside of the pen was destroyed from being trampled by cattle.

Table 23. Documented incidental take at the Haleakalā Ranch site during the reporting period.

| Common Name | Observed Date | Condition Notes | ITL Covered Species (Yes/No) |
|---------------------|----------------------|--------------------------|-------------------------------------|
| Hawaiian Goose Nest | 12/8/14 | Nest trampled by cattle. | Yes |

Satellite transmitters are being placed on selected Nēnē from Kaua‘i prior to release at Haleakalā Ranch. The satellite transmitters will be used to track Nēnē movement and habitat use on Maui to better inform management approaches. Currently, three Kaua‘i translocated birds have active transmitters and no new satellite telemeters were placed on birds this year.

The two-acre pen was mowed monthly and an additional 23 acres around the open-top release pen were mowed this reporting period. Predator control efforts resulted in a total of four mongooses, 12 rats, and five mice trapped and removed around the open-top release pen. No cats or dogs were trapped during the reporting period.

Safe Harbor Agreement and Habitat Management Plan for the Koloa Maoli or Hawaiian Duck (*Anas wyvilliana*) and the Nēnē or Hawaiian Goose (*Branta sandvicensis*) on Umikoa Ranch, Island of Hawai‘i. Approved 2001.



Koloa Maoli or Hawaiian Duck, endemic to the Hawaiian Islands.

ITL Licensee: Umikoa Ranch

Project: Establish a Koloa and Nēnē population on privately owned lands of Umikoa Ranch in the Hamakua District of Hawai‘i island.

ITL Duration: December 5, 2001 – December 4, 2100

Take Authorization: Incidental take of Nēnē and Koloa, including their progeny, on lands owned or otherwise controlled by Umikoa Ranch, provided that such take is above established baseline conditions.

Baseline Condition: The Baseline Conditions for Koloa and Nēnē were determined from monthly biological surveys conducted between January and October 2000. During this time there were five existing ponds ranging from 0.12 to 0.30 acres, providing approximately one acre of open water habitat, in addition to 5 acres of adjacent upland habitat. Surveys indicated that the Umikoa wetland area was frequented by a single pair of wild Koloa. Therefore, the baseline for Koloa was determined to be two individuals, 1 acre of open water habitat, and 5 acres of adjacent upland habitat. The baseline for Nēnē was determined to be zero.

Status of ITL: Umikoa Ranch is creating or managing up to two acres of wetland ponds and 150 acres of riparian and associated upland habitat. Ten individual ponds, totaling 2.01 acres and an additional 151.3 acres of ponds and upland habitat have been fenced, and are being managed to support Koloa and Nēnē conservation efforts. DOFAW will continue to work with Umikoa Ranch in the next fiscal year.

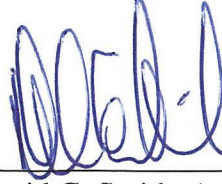
Issues:

DOFAW staff has been in discussions with the land manager to arrange an annual site visit but due to scheduling issues and staffing constraints has been unable to secure a visit this fiscal year.

Staff Recommendations:

DOFAW staff plans to conduct a site visit this year, and will report to the ESRC with an update at a following meeting.

Respectfully Submitted,



David G. Smith, Acting Administrator
Division of Forestry and Wildlife

Attachment I: Table 1: Status of Mitigation and Funding for all HCP/ITL Holders

Attachment I

Status of Mitigation and Funding for all HCP/ITL Holders

| | | | | Key | |
|--|----------|---|--|-------------------------------------|---|
| | | | | On track | Behind |
| Abutilon | | | | | |
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| <i>Abutilon menziesii</i> | 1 | Outplanting to Establish Self-Sustaining Populations | Five locations on Oahu | Current, all paid to DOFAW | Short term goals met, long term goals not yet met; success criteria challenging |
| Kenai Industrial Park | | | | | |
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| <i>Achyranthes splendens</i> var. <i>rotundata</i> | 1 | Seed Storage, Propagation, and Outplanting | Kalaeloa Unit of the Pearl Harbor National Wildlife Refuge, Oahu | Procured by AKC Leasing Corporation | Planting plan reviewed and approved by DFOAW, In compliance; ongoing |
| KWPI | | | | | |
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| Hawaiian Petrel & Newell's Shearwater | Baseline | Predator Exclusion & Social Attraction (joint w/ KWP II) | Makamaka'ole, West Maui | Procured by SunEdison | In compliance; ongoing. Both HAPE and NESH observed in enclosures during FY15. Unclear if nesting activity has occurred. |
| Hawaiian Petrel | Higher | Proposed Funding to NFWF to be used for a project on Lana'ihale | Lana'ihale, Lana'i | N/A | USFWS has approved the minor amendment and mitigation. DOFAW has yet to approve. Baseline tier not yet exceeded, therefore still in compliance. |
| Nene | Baseline | Construction of Nene Release Pen | Haleakala Ranch, East Maui | Current, all paid to DOFAW | In compliance; ongoing. |
| Hawaiian hoary bat | Baseline | Research Funding | N/A | Current, all paid to DOFAW | In compliance; complete. |
| Hawaiian hoary bat | Higher | Currently in discussion w/ agencies | N/A | None | Plan proposed, not yet approved by agencies. Minor amendment proposal submitted. |

| KWP II | | | | | |
|---------------------------------------|--------------------|---|--------------------------------|-------------------------------|---|
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| Hawaiian Petrel & Newell's Shearwater | 1 | Predator Exclusion & Social Attraction (joint w/ KWP I) | Makamaka'ole, West Maui | Procured by SunEdison | In compliance; ongoing. Both HAPE and NESH observed in enclosures during FY15. Unclear if nesting activity has occurred. |
| Nene | 1 | Construction of Nene Release Pen | Undetermined | Cost not yet determined | Should commence by 2016. Currently in discussions with Maui Branch staff to develop predator control project. |
| Hawaiian hoary bat | 1 | Restoration of 340 Acres of Habitat (Tier 1 & 2) | Kahikinui Forest Reserve, Maui | Current, all paid to DOFAW | In compliance; implementation began at the beginning of FY2015. Fence (2.8 miles) installed in July 2014 and marked with poly tape, 11 aerial control missions removed 649 goats and 18 pigs (estimated 5-10 goats remain), 13,000 native tree seedlings planted. |
| Hawaiian hoary bat | 2 | Restoration of 340 Acres of Habitat (Tier 1 & 2) | Kahikinui Forest Reserve, Maui | Current, all paid to DOFAW | In compliance; implementation began at the beginning of FY2015. Fence (2.8 miles) installed in July 2014 and marked with poly tape, 11 aerial control missions removed 649 goats and 18 pigs (estimated 5-10 goats remain), 13,000 native tree seedlings planted. |
| Hawaiian hoary bat | 3 – to be proposed | Not yet developed | N/A | Final cost not yet determined | Plan not yet developed, major amendment in progress. |

| Kahuku | | | | | |
|---------------------------------------|-------------|--------------------------------------|---------------------------|----------------------------|--|
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| Hawaiian Petrel & Newell's Shearwater | 1 | Predator Control in Seabird Colonies | Multiple locations, Kauai | Current, all paid to DOFAW | In compliance; ongoing. |
| Stilt, coot, moorhen, koloa | 1 | Hamakua Marsh Wetland Restoration | Kailua, Oahu | Current, all paid to DOFAW | In compliance; complete. |
| Hawaiian hoary bat | 1 | Ungulate-Proof Fence Construction | Kahikinui, Maui | Current, all paid to DOFAW | In compliance; implementation began at the beginning of FY2015. Fence has been constructed, all ungulates removed, and 28,354 native seedlings planted within the fenced unit. |
| Pueo | 1 | Contribution to Research | N/A | Current, all paid to DOFAW | DOFAW currently developing project scope of work combining pueo funds from multiple wind farms |

| Kawailoa | | | | | |
|------------------------------|-------------|--|---------------------------|--|--|
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| Shearwater | 1 | Seabird Colony Monitoring | Multiple locations, Kauai | Current, all paid to DOFAW | In compliance; complete. |
| Stilt, coot, moorhen, koloea | 1 | U'koa Pond Restoration | Haleiwa, Oahu | Procured by SunEdison | Applicant has proposed discontinuing work at U'koa and has not yet proposed an alternate site or permit amendment. However, no take of waterbirds has been observed. |
| Hawaiian hoary bat | 1 | U'koa Pond Restoration | Haleiwa, Oahu | Procured by SunEdison | There are complications with a clause in the landowner agreement that have prevented mitigation from moving forward at U'koa Pond. SunEdison has considered proposing relocating to a new site, but must get the landowner agreement straightened out first. |
| Hawaiian hoary bat | 2 | In development | Not yet proposed | N/A | Originally proposed for a parcel in the Ko'olaus, however landowner is the same as U'koa and therefore the same issue with the agreement halted forward progress. SunEdison has submitted several proposals to the agencies, but so far none have been approved. |
| Hawaiian hoary bat | 3 | In development | None proposed | None proposed | Tier 3 take has been reached, but no mitigation has been proposed for this Tier. |
| Pueo | 1 | Pueo Rehabilitation & Research Funding | Hawaii & Oahu | Current, all paid to DOFAW and Hawaii Wildlife Rehabilitation Center | DOFAW currently developing project scope of work combining pueo funds from multiple wind farms |

| Auwahi | | | | | |
|--------------------|-------------|--|--------------------------------|-----------------------|---|
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| Petrel | 1 | Burrow Monitoring | Kahikinui Forest Reserve, Maui | Procured by Sempra | In compliance; ongoing |
| Nene | 1 | Contribution to Nene Pen and Pedator Fence | Haleakala National Park, Maui | Procured by Sempra | In compliance; complete |
| Hawaiian hoary bat | 1 | Restoration of 130 Acres of Habitat | Waihou Mitigation Area, Maui | Procured by Sempra | In compliance; complete |

| | | | | | |
|-------------------------|---|---------------------------------|---|--------------------|------------------------|
| Hawaiian hoary bat | 2 | Telemetry & Acoustic Monitoring | Waihou Mitigation Area, Maui | Procured by Sempra | In compliance; ongoing |
| Blackburn's sphinx moth | 1 | Dryland Forest Restoration | Auwahi Forest Restoration Project, Maui | Procured by Sempra | In compliance; ongoing |

| Cyanotech | | | | | |
|------------------|------|---|--------------------|--|---|
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| Hawaiian stilt | 1 | Predator Control at Opaepa Pond or other wetland site | North Kona, Hawaii | Cyanotech is working with the private land owner to fund predator control efforts since 2006 | Cyanotech is close to securing an agreement with the landowner for mitigation work at Opaepa'ula. |

| DKIST (ATST) | | | | | |
|---------------------|------|--|---|-------------------|--------------------------------|
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| Hawaiian petrel | 1 | Monitoring, Fence Construction, & Predator Control | Adjacent to Haleakalā National Park, Maui | Procured by DKIST | In compliance; ongoing |

| Kauai Lagoons | | | | | |
|--|------|---------------------------------|--|------------------------------------|--------------------------------|
| Species | Tier | Project | Location | Payment Status | Mitigation Milestones & Status |
| Hawaiian Petrels & Newell's Shearwater | 1 | \$10,000 Annual Funding to NFWF | N/A | Current, ongoing payments to NFWF | In compliance; ongoing |
| Stilt, coot, moorhen, koloa | 1 | Monitoring and Predator Control | Kauai Lagoons, Kauai | Current, procured by Kauai Lagoons | In compliance; ongoing |
| Nene | 1 | Monitoring and Predator Control | Kauai Lagoons, Kauai and a nene translocation site TBD in 2016 | Current, all paid to DOFAW | In compliance; ongoing |