

**FINDINGS AND RECOMMENDATIONS
REGARDING THE PROPOSED ISSUANCE OF AN ENDANGERED SPECIES ACT
SECTION 10(a)(1)(B) INCIDENTAL TAKE PERMIT IN ASSOCIATION WITH
CASTLE & COOKE, LLC, METEOROLOGICAL TOWER PROJECT
HABITAT CONSERVATION PLAN
LANAI, MAUI COUNTY, HAWAII**

I. DESCRIPTION OF THE PROPOSED ACTION

The U.S. Fish and Wildlife Service (Service) proposes to issue an Incidental Take Permit (ITP) to Castle & Cooke Resorts, LLC (Castle & Cooke), under the authority of section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (ESA). The term of the ITP would begin on the date of permit issuance and expire on March 1, 2010. Section 10(a)(1)(B) of the ESA allows the Service to issue an ITP to a non-Federal entity for incidental take of federally listed species, provided certain criteria are met. “Incidental take” is defined as take that is, “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.” Incidental Take Permit issuance criteria are prescribed in Title 50 Code of Federal Regulations (CFR) 17.22(b), 50 CFR 17.32(b)(2), and section 10(a)(1)(B) of the ESA. Castle & Cooke is requesting an ITP for incidental take that may occur as a result of the construction and operation of seven meteorological towers on the island of Lanai, Maui County, Hawaii.

Castle & Cooke has applied to the Service for an ITP that authorizes incidental take of four listed species, three of which are birds: the endangered Hawaiian petrel (*Pterodroma sandwichensis*), the endangered Hawaiian stilt (*Himantopus mexicanus knudseni*), and the threatened Newell’s (Townsend’s) shearwater (*Puffinus auricularis newelli*). The fourth species is a mammal, the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*). These species may potentially collide with the meteorological towers or their supporting guy wires, resulting in injury or mortality. If Castle & Cooke’s application meets the ITP issuance criteria under section 10(a)(2)(B) of the ESA, the Service will issue an ITP for the above listed species.

The Castle and Cooke meteorological tower project consists of the installation and operation of seven 50-meter (m) tall [165 feet (ft)] meteorological towers on the island of Lanai. The tower footprints are bounded by open lands currently owned and managed by Castle & Cooke (Tax Map Key 2-4-9-002:001). The meteorological towers and their associated monitoring plots are located within a combined footprint area of approximately 4.6 hectares (ha) [11.4 acres (ac)]. Six of the towers have been erected and the installation of the seventh is pending. The towers collect data on wind patterns to assess the suitability of the wind regime at the tower sites to sustain wind-turbine facilities for electrical energy production. The duration of the project is proposed to be a maximum of two years, which is based on the length of time needed to gather sufficient meteorological data.

In accordance with the requirements of the ESA, Castle & Cooke has submitted a conservation plan, entitled “Final Habitat Conservation Plan for the Construction and

Operation of the Lanai Meteorological Towers, Lanai, Hawaii”(HCP), to the Service as part of their application for an ITP. The HCP was developed by Castle & Cooke and their consultant. The Service determined that the Castle & Cooke meteorological tower HCP qualified for an environmental assessment (EA) under the National Environmental Policy Act (NEPA), as provided by the Department of Interior Manual (516 DM2, Appendix 1 and 516 DM 6, Appendix 1). An EA was completed by the Service. The Service’s analysis and findings as to whether the HCP meets the ITP issuance criteria described in section 10(a)(2)(B) of the ESA are presented below.

Castle & Cooke plans to offset the potential impacts to covered species by implementing avoidance and minimization measures (detailed in Chapter 4 of the HCP) and by mitigation (detailed in Chapter 5 of the HCP) and adaptive management. As part of the mitigation actions to be implemented (detailed in Appendix 7 of the HCP), Castle & Cooke is funding habitat restoration efforts within habitat that, once restored, will provide improved habitat for three of the covered species (the Hawaiian petrel, Newell’s shearwater, and the Hawaiian hoary bat). The habitat restoration will occur within the central summit of the island known as the “Lanaihale”. In addition, Castle & Cooke is funding a predator control program at a site where Hawaiian stilts are known to nest, and expanding the predator control program already being implemented by the Hawaii Division of Forestry and Wildlife (DOFAW) within the active Hawaiian petrel colony on Lanai.

In a Biological Opinion (BiOp) dated September 5, 2008 (reference #2008-F-0320), the Service analyzed the effects of issuing the ITP on these four listed species. The BiOp concluded that activities conducted in compliance with the HCP are not likely to jeopardize the continued existence of the Hawaiian petrel, Hawaiian stilt, Newell’s shearwater, or Hawaiian hoary bat. Implementation of the HCP’s conservation strategy is expected to adequately offset impacts and result in net conservation benefits for each species. The incidental take authorization would be effective upon issuance of the permit.

Documents used in preparation of this statement of findings and recommendations include: the draft and final Habitat Conservation Plan for the Construction and Operation of the Lanai Meteorological Towers, Lanai, Hawaii (TTEC 2008); the associated draft and final Environmental Assessments (Service 2008a, 2008b); and the Service’s BiOp #2008-F-0320 (Service 2008c). All of these documents are incorporated by reference as described in 40 CFR §1508.13.

II. ANALYSIS OF EFFECTS

The Service has determined that the impacts likely to result to the covered species from the proposed action will be minimized and mitigated to the maximum extent practicable by measures described in the HCP and the associated ITP. The effects of the proposed action on the covered species are fully analyzed in the HCP and the Service’s BioOp. A summary of the analysis is provided below.

Hawaiian Petrel

The Hawaiian petrel was listed in 1967 (Service 1983). The species was once common in the main Hawaiian Islands prior to the arrival of humans, but now mostly exist in small populations, with the exception of the main breeding colony located in Haleakala National Park on East Maui. Predation by alien mammals and downing due to urban lighting are considered the primary threats to the recovery of this species (Service 1983).

Based on data from both visual surveys and marine ornithological radar studies within the project area, the Hawaiian petrel is the species that is most likely to impact the meteorological towers within the project term (survey results are presented in Appendices 3 and 4 of the HCP). The probabilities of a Hawaiian petrel colliding with each meteorological tower were estimated by adjusting the exposure rates by a collision avoidance factor ranging from 99 to 95 percent, resulting in an estimate that between 5 and 25 petrels could collide with a tower during the two-year project term. While there are collision avoidance data available for other seabird species that support the use of an avoidance rate adjustment greater than 95 percent (Desholm *et al.* 2006), the ability of Hawaiian petrels to avoid collisions with objects such as meteorological towers has not been documented. The HCP limits the impacts to petrels by establishing a maximum take limit of 14 petrels that will be authorized under the ITP, and the meteorological towers will be removed if that limit is reached.

In order to reduce the risk of impacts to any of the covered species, Castle & Cooke marked the guy wires on all of the meteorological towers with a combination of bird diverters and white flagging. Such devices are known to reduce the likelihood of bird or bat strikes in other situations (APLIC 2004, Swift 2004). While the use of these devices should increase the visibility of the meteorological towers, the effectiveness at reducing collisions is unknown. Because of the uncertainty concerning the level of take that is expected to occur, Castle & Cooke proposed multiple levels of mitigation and an adaptive management program that is intended to result in a net conservation benefit to all four ESA-listed species. Castle & Cooke agreed to a tiered approach such that if the "Tier 1" take limit of seven petrels is reached before the incidental take permit expires, a higher, "Tier 2" take limit of 14 petrels would be authorized, along with additional mitigation requirements to account for greater than anticipated Tier1 take levels. In addition, our analysis of impacts assumed that up to seven eggs and/or chicks will be taken as a result of the injury or mortality of breeding adults. As of August 31, 2008, Castle & Cooke has been operating six of the seven meteorological towers for approximately five of the eight months that Hawaiian petrels are present on Lanai each year and no evidence of any collisions has been documented during the monitoring surveys conducted.

The HCP establishes monitoring and adaptive management procedures to reduce the risk that the take limit is exceeded. Plots will be monitored using protocols that will ensure that any birds or bats that collide with the towers have a high probability of being detected and account for undetected take by adjusting for searcher efficiency and carcass removal rates.

Castle & Cooke will fund a project-specific mitigation plan that will be integrated into the on-going interagency seabird conservation project and the watershed enhancement program on Lanai. This collaboration ensures that a coordinated and cost effective program will be implemented by the DOFAW through a Memorandum of Agreement (MOA) with Castle & Cooke. The mitigation plan includes two components that address the primary threats to this species that were identified in the Hawaiian petrel recovery plan (Service 1983): predation and habitat destruction. Implementation of the mitigation will provide immediate- and mid-term benefits (two years) for the Hawaiian petrel by increasing adult and juvenile survival, nest success, and suitable nesting habitat required for the long-term productivity of this species (minimum of eight years, potentially longer). Subsequent monitoring of the mitigation measures implemented will allow the agencies to assess the effectiveness of the mitigation methods. The monitoring results will be used to enhance the effectiveness of the management activities here and at other seabird colonies throughout Hawaii. This could result in a greater net benefit to bird and bat populations beyond the initial net benefit to the birds and bats on Lanai.

Newell's Shearwater

The Newell's shearwater was listed in 1975 because of a severe reduction in population due to loss and degradation of available nesting habitat (Service 1983). Currently, 80 percent of the world's population nests on the island of Kauai. Predation by alien mammals and downing due to urban lighting are considered the primary threats to the recovery of this species.

No Newell's shearwaters were observed during the 2007 audio-visual surveys or confirmed during the ornithological radar surveys on Lanai and it is not known whether they breed on Lanai. Therefore, the potential for project impacts to Newell's shearwater is expected to be low. Any impacts to the population on Lanai by HCP-covered activities will be minimized by establishing a take limit in the HCP such that the meteorological towers would be removed if the take of two shearwater is reached. Monitoring and adaptive management procedures are in place to reduce the risk that the take limit will be exceeded. The potential benefits of improving at least 1.2 ha (3 ac) of shearwater nesting habitat and increasing the level of predator control being conducted, which would increase the nest success and adult survival of any that do nest on Lanai, are expected to outweigh the take of up to two Newell's shearwater, should it occur.

Hawaiian Stilt

The Hawaiian stilt was listed as an endangered species on October 13, 1970 (Service 1970). The primary threats to the Hawaiian stilt include the loss of wetland habitat, predation by introduced mammals, invasion of wetlands by alien plants and fish, disease, and environmental contaminants (Service 2005a). Although Hawaiian stilts are known to occur at the Lanai City Wastewater Treatment Plant (WWTP), they are believed to have a low potential for occurrence at the meteorological tower sites (closest meteorological tower to the WWTP is 8.0 kilometers (km) [5 miles (mi)]).

Only one stilt was recorded during 485 radar sampling sessions (0.005 stilts/hour) during 2007 (at 200 m [656 ft] above ground level), and no stilts were observed during spring and fall avian point count surveys. There are no wetland habitats near the meteorological tower sites that could attract stilts, nor are there any flight paths known that indicate stilts would be flying near the towers. Therefore, the potential for project impacts to Hawaiian stilt is expected to be low. Any impacts to the stilt population on Lanai have been limited in the HCP by establishing a take limit such that the meteorological towers would be removed if the take of two stilts is reached. Monitoring and adaptive management procedures are in place to reduce the risk that the take limit is exceeded for this species. Conducting predator control at the Lanai City WWPT addresses one of the primary threats identified in the waterbird recovery plan (Service 2005a) and predator control efforts have been found to more than triple the reproductive success of Hawaiian stilts (Gassmann-Duvall 1994). The potential benefits of increased nest success and decreased adult mortality are expected to outweigh the take of up to two Hawaiian stilts, should it occur.

Hawaiian Hoary Bat

The Hawaiian hoary bat was listed in 1970 (Service 1998). While detailed information is lacking, threats are assumed to be the same as those that threaten many bat species in general: habitat loss (availability of roost sites), mortality of breeding age adults coupled with slow reproductive rate, vehicle and structure collisions, pesticides, predation, and lack of prey availability. Observations on Lanai have been limited, and the species is believed to occur in highest numbers on the islands of Kauai and Hawaii, which are also the only locations where breeding has been documented.

Only one bat sighting was recorded during 485 ornithological radar sampling sessions (0.005 bats/hour) at the meteorological tower sites, but other isolated sightings have occurred. Therefore, the potential for project impacts to Hawaiian hoary bats is expected to be low. Any impacts to the Lanai Hawaiian hoary bat population have been limited in the HCP by establishing a take limit such that the meteorological towers would be removed if take of two bats is reached. Monitoring and adaptive management procedures are in place to reduce the risk that the take limit is exceeded for this species. The potential benefits of improving at least 1.2 ha of bat habitat within the Lanaihale and increasing the level of predator control being conducted within the Hawaiian petrel colony is expected to outweigh the take of up to two bats, should it occur. The restoration of native vegetation within the Lanaihale also has the potential to increase the availability of native insects which may be important to the bats.

III. PUBLIC COMMENT

The draft HCP and draft EA were made available for public review during a 30-day public comment period between July 8, 2008, and August 7, 2008 (73 FR 39025). The notice and supporting documents were mailed to agencies and private organizations with interest in the proposed action. The Service received five comment letters during the public comment period. A summary of the comments contained in those letters and our responses are presented below.

Comment 1: The public review process was unproductive and inappropriately conducted since six of the seven meteorological towers were constructed prior to the public review process.

Response to Comment 1: Castle & Cooke was issued a State Conservation District Use Permit to install the towers prior to the completion of the HCP, and the State's process did not trigger the NEPA process. Castle & Cooke was advised that any take of federally-listed species that occurs prior to obtaining an ITP would be at their own risk as such take would be a violation of the ESA.

Comment 2: Impacts to the Hawaiian petrel are not analyzed sufficiently and/or mitigation proposed by Castle & Cooke is not sufficient.

Response to Comment 2: The Service has determined that issuance of the ITP is not likely to jeopardize the continued existence of the Hawaiian petrel based on the analysis in our BiOp. In addition, studies presented in support of the application and the HCP, as well as consultation with state and Federal biologists and outside experts, support the conclusion that the risk to listed species is low. Where there is uncertainty concerning the level of take that is expected to occur, Castle & Cooke has proposed multiple levels of mitigation and an adaptive management program that will ensure that the mitigation provided will, at a minimum, offset the authorized take and was designed to result in a net conservation benefit to all four listed species.

The best available data for the Hawaiian petrel population was used to calculate the estimated restoration acreage. The National Park Service has provided some additional data on the Hawaiian petrel population that the Service (or Castle & Cooke) did not have during HCP development, but since the primary variable used in determining the size of the restoration areas was the density of burrows within the accessible portions of the Lanai petrel colony, the additional data would not result in a larger restoration area. The loss of up to 14 adult or subadult petrels and the associated indirect take of eggs and chicks represents a relatively small percentage of the 1,000+ petrels estimated to be on Lanai, and even if this is a 50 percent overestimate, the impacts to the population would be relatively small. Moreover, the mitigation program is intended to provide a net benefit to the covered species through the combination of predator control and habitat restoration not just by habitat restoration alone. The combination of predator control and habitat restoration addresses two of the primary threats to the species as identified in the recovery plan (Service 1983) and will provide immediate- and mid-term benefits (two years) for the Hawaiian petrel by increasing adult and juvenile survival, nest success, and suitable nesting habitat required for the long-term productivity of this species (minimum of eight years, potentially longer). Subsequent monitoring of the mitigation measures implemented will allow the agencies to assess the effectiveness of the mitigation methods. The monitoring results will be used to enhance the effectiveness of the management activities here and at other seabird colonies throughout Hawaii. This could result in a greater net benefit to bird and bat populations beyond the initial net benefit to the birds and bats on Lanai.

Comment 3: The mitigation program can be improved. Four suggestions were made by commenters to improve the mitigation provided by Castle & Cooke by: (1) continuing the predator control program within the Hawaiian petrel colony beyond the two-year commitment; (2) conducting a rodent control program; (3) using Hawaiian petrel recordings to attract petrels to the restoration area; and (4) basing the benefit of the predator control program on the number of predators captured rather than the trapping effort.

Response to Comment 3: Castle & Cooke's mitigation program is being integrated into the on-going interagency seabird conservation project and the watershed enhancement program on Lanai. DOFAW, which is implementing the program, will be continually assessing the threats to the petrel colony and will continue to use an adaptive management process to implement actions using the funds provided by Castle & Cooke to address those threats and to improve the likelihood that petrels will use the restored area by continuing predator control, implementing a rodent control program, or using recorded calls. Once the funding provided by Castle & Cooke has been expended, DOFAW will continue the program as staffing and funding allow. The benefits of predator control efforts to the covered species are evaluated by the anticipated increase in nest success and reduction in mortality rather than on the number of predators trapped because even one predator can predate multiple nests, yet removing many predators can have no effect if there is constant replacement. In addition, the success of the predator control program will be evaluated by performing necropsies on euthanized cats to determine the presence or absence of seabird remains in stomach contents.

Comment 4: Castle & Cooke should be required to use un-guyed meteorological towers rather than the guyed towers used to reduce the potential for bird or bat collisions.

Response to Comment 4: HCP applicants are required to minimize and mitigate impacts to listed species to the maximum extent possible and ensure that their actions do not appreciably reduce the likelihood of the survival and recovery of an endangered or threatened species in the wild by reducing the reproduction, numbers, or distribution of such species. While the Service agrees that un-guyed towers would provide less of a collision hazard, we have determined that the combination of marking the guy wires to increase visibility, establishing take limits, limiting the risk of exceeding take limits by adjusting for search efficiency and scavenger removal, and implementing a combination of predator control and habitat restoration is more than sufficient to conclude that ITP issuance does not jeopardize the continued existence of the species.

Comment 5: Additional information was requested on the flagging and bird diverters used to increase the visibility of the guy wires supporting the meteorological towers.

Response to Comment 5: In response to this comment, the following discussion was added to Section 2.1 of the EA:

The polyvinyl tape fitted to the guy wires has proven effective in minimizing petrel collisions with fencing and other structures at the Lanai colony when wrapped along the length of the fencing (USFWS and DOFAW, pers. comm., 2007). The method of attaching flagging to the

guy wires required modification since wrapping the wires along their length would interfere with the wind data collection.

Bird diverters, coiled lengths of solid polyvinyl chloride (PVC) tubing, were added between the taped sections.

Comment 6: Information was requested regarding the electromagnetic wavelengths emitted by the meteorological towers.

Response to Comment 6: The meteorological towers transmit data for a short period of time at frequencies of about 800 MHz to 1.9 GHz (Adams, AWS Truewind, LLC, pers. comm., 2008). The echolocation range at which Hawaiian hoary bats have been recorded is between 20 kHz and 75 kHz (Gorresen, pers. comm. 2008). There have been no effects of electromagnetic radiation within the frequencies of the data transmission documented on bats so no impacts are expected.

Comment 7: The number of Pacific golden plovers seen during surveys was requested.

Response to Comment 7: A total of 14 plovers were observed during the fall survey and none were observed during the spring survey.

Comment 8: Additional information regarding the Wildlife Education and Observation Program was requested.

Response to Comment 8: In response to this comment, the following discussion was added to Section 3.4.3.1 of the EA:

Castle & Cooke will also implement a wildlife education and observation program for all staff members who will be at the project area on a regular basis. This will enable staff to identify the listed native species that may occur in the area and understand the appropriate steps to be taken when a downed bird or bat is discovered. This program includes a handout that shows a photograph of each of the listed species and the protocol to follow when a downed bird or bat is found.

Comment 9: Vegetation disturbance at meteorological towers could include more than “exotic” species.

Response to Comment 9: Site-specific botanical surveys were conducted, and some native plant species were detected on the project site. However, while there are differences between sites, the dominant vegetation at all sites is non-native and no occurrences of any listed plant species were detected at any of the sites. The survey results are presented in Appendix 5 of the HCP.

Comment 10: Additional information on how the siting locations for the meteorological towers were determined was requested.

Response to Comment 10: In response to this comment, the following discussion was added to Section 2.2 of the EA:

In addition to considering topography, cultural and biological resources, and access by existing roads, minor adjustments to these locations were implemented in the field, if necessary, to avoid unexpected installation issues.

Comment 11: The Tax Map Key (TMK) was requested.

Response to Comment 11: In response to this comment, the following discussion was added to Section 2.1 of the EA:

The Tax Map Key is 2-4-9-002:001

In addition to the Federal review process, the Hawaii Department of Land and Natural Resources (DLNR) completed the State's HCP public review process by conducting a 60-day comment period between March 8 and May 7, 2008, and held a public hearing on Lanai to accept input on the draft HCP on April 11, 2008. No comments were received.

IV. INCIDENTAL TAKE PERMIT CRITERIA – ANALYSIS AND FINDINGS

Section 10(a)(2)(A) of the ESA specifically mandates that “no permit may be issued by the Secretary authorizing any taking referred to in paragraph (1)(B) unless the Permittee therefore submits to the Secretary a conservation plan that specifies—(i) the impact which will likely result from such taking; (ii) what steps the Permittee will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps; (iii) what alternative actions to such taking the Permittee considered and the reasons why such alternatives are not being utilized; and (iv) such other measures as the Secretary may require as being necessary or appropriate for the purposes of the plan.”

Section 10(a)(2)(B) of the ESA mandates that the Secretary shall issue a permit if he finds “..after opportunity for public comment, with respect to a permit application and the related conservation plan that – (i) the taking will be incidental; (ii) the Permittee will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (iii) the Permittee will assure that adequate funding for the plan will be provided; (iv) the taking will not appreciably reduce the likelihood of survival and recovery of species in the wild; and (v) the measures, if any, required under subparagraph (A)(iv) will be met; and he has received such other assurances as he may require that the plan will be implemented...”

With regard to the specific project, permit action, and section 10(a)(2)(B) requirements, the Service makes the following findings:

1. The taking will be incidental.

The take of covered species within the project area will be incidental to the otherwise lawful construction and operation of seven meteorological towers, as well as monitoring activities to detect take, estimate carcass removal by scavengers and searcher efficiency.

2. The Permittee will, to the maximum extent practicable, minimize and mitigate the impacts of taking listed species.

The Service finds that the HCP minimizes and mitigates the impacts of take of the covered species from the meteorological towers, as well as implementation activities, to the maximum extent practicable. The HCP also represents the most practicable alternative to minimize and mitigate the impacts to the covered species. Under the provisions of the HCP, the impacts of take will be minimized, mitigated, and monitored through the following measures.

Castle & Cooke will reduce the risk of collisions as much as practicable by marking guy wires with high-visibility flagging, bird diverters, PVC tubing, or other suitable marking devices designed to reduce bird strikes while not interfering with wind data collection. Impacts have been limited in the HCP by establishing a take limit such that the meteorological towers would be removed if the following take limits are reached: 14 Hawaiian petrels, 2 Newell's shearwaters, 2 Hawaiian stilts, or 2 Hawaiian hoary bats. Monitoring and adaptive management procedures are in place to reduce the risk that the take limit will be exceeded.

The proposed mitigation and adaptive management measures included in the HCP are incorporated herein. The summary of the mitigation program listed below includes the full range of measures that have been identified to provide mitigation for any of the potential take scenarios (*i.e.*, Tiers 1 and 2). Castle & Cooke will fund a project-specific mitigation plan that will be integrated into the on-going interagency seabird conservation project and the watershed enhancement program on Lanai. This collaboration ensures that a coordinated and cost effective program will be implemented by DOFAW. The mitigation plan includes two primary components: predator control and habitat restoration. The combination of these two mitigation measures will provide immediate and long-term benefits for each covered species by increasing adult and juvenile survival, nest success, and suitable nesting habitat required for the long-term productivity of these species.

To make the finding that the conservation measures proposed by Castle & Cooke minimize and mitigate the taking of the covered species to the maximum extent practicable, the Service must evaluate whether the proposed conservation measures are commensurate with the level of take anticipated. The level of take authorized for Hawaiian petrels represents a small percentage of the species' total population, estimated at 20,000 with a breeding population of 4,500 to 5,000 pairs (Spear *et al.* 1995, Ainley *et al.* 1997). The petrel recovery plan (Service 1983) identifies management strategies that include colony protection and management to increase productivity and survival by addressing the primary threat of

predation. Based on the proposed minimization, mitigation, and adaptive measures to offset take, and anticipated overall net conservation benefit to the Hawaiian petrel, it is the Service's biological opinion that issuance of the ITP for the proposed meteorological tower project is not likely to appreciably reduce the likelihood of the survival and recovery of this species in the wild. The low detection rates of Newell's shearwater, Hawaiian stilt, and the Hawaiian hoary bat at the meteorological tower sites prevents any modeling of the potential risk for impacts. However, the lack of observations indicates that the potential for collisions by any of these three species with the meteorological towers over the two-year project duration is very low. A limit of two of each of these species has been established in the HCP such that the towers will be removed if that level is reached for any species. The habitat restoration conducted in the Lanaihale will increase the abundance of native vegetation, and is expected to increase nesting habitat available to Newell's shearwater should they nest on Lanai, as well as increase the of availability native insects to bats. The increase in predator control within the Lanaihale is anticipated to increase the reproductive success of any Newell's shearwater that may nest there and will likely benefit bats as well, although predation has not been identified as one of the species' primary threats. The implementation of a predator control program at the Lanai City WWTP is anticipated to both decrease mortality and increase the reproductive success of the stilts that forage and nest there.

The monitoring, reporting, and adaptive management built into the HCP will reduce the potential for any of the take limits established in the HCP to be reached, and ensure that the predator control and habitat restoration efforts achieve the anticipated benefits to each of the covered species.

In consideration of all the above factors, the Service finds that: (a) the proposed mitigation under the HCP is commensurate with anticipated impacts of covered activities on the covered listed species; (b) the HCP is consistent with the long-term survival and recovery of the covered listed species; and (c) the HCP minimizes and mitigates the effects of take of the covered listed species caused by covered activities to the maximum extent practicable. These findings are based on the fact that impacts of covered activities are likely to be low or minimal, and the benefits to the covered listed species are likely to be demonstrable, especially compared to existing conditions or conditions expected to occur absent implementation of the HCP under the preferred alternative.

3. The Permittee will ensure adequate funding for the HCP and procedures to deal with unforeseen circumstances will be provided.

The Service finds that Castle & Cooke has ensured adequate funding for the HCP and that it provides procedures to address unforeseen circumstances. Castle & Cooke will provide assurances of funding for all costs associated with HCP implementation for each take scenario (Tiers 1 and 2) as described in Section 6.7 of the HCP. A minimum non-refundable endowment of \$252,203 for the Tier 1 mitigation will be disbursed to DOFAW by Castle & Cooke in two payments. The first payment (\$143,138) was provided to DOFAW in February 2008 for Year 1 of Tier 1 and the remainder of Tier 1 costs (\$109,065) will be paid within 10 working days of the permittee's receipt of the approved ITP and the State issued Incidental

Take License (ITL). The DOFAW will provide a letter to Castle & Cooke and the Service acknowledging the receipt of the funding and committing its use for seabird and bat habitat restoration and predator control. If Tier 2 mitigation is deemed necessary based on monitoring results, additional funds will be provided. Castle & Cooke will provide financial assurances for the Tier 2 funds and the estimated costs for post-construction monitoring at the towers over the 2-year period (\$150,000). These funds will be assured through a financial instrument such as a bond, letter of credit or other similar mechanism as approved by the DLNR and the Service. This financial assurance for the mitigation and monitoring costs, not delegated to DOFAW via check, will be approximately \$203,135 and will be in place prior to the effective date of the ITL and ITP. Tier 2 mitigation funds will be released 20 days after reaching the Tier 1 take limit for the Hawaiian petrel.

Pursuant to the Service's "No Surprises" regulations [50 CFR 17.22(b)(5) and 17.32(b)(5)], the HCP includes procedures to deal with unforeseen circumstances. In the event of unforeseen circumstances affecting the covered species, Castle & Cooke would not be required to provide additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed upon for the species covered by the HCP without their consent; provided that proper implementation of the HCP has occurred.

4. The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

The ESA's legislative history established the intent of Congress that this issuance criterion is identical to finding of "not likely to jeopardize under section 7(a)(2) (see 50 CFR 402.02). As a result, approval of Castle & Cooke's permit application has also been reviewed by the Service under section 7 of the ESA. The BiOp concluded that the approval of Castle & Cooke's permit application is not likely to jeopardize the continued existence of the endangered Hawaiian petrel, Hawaiian stilt, and Hawaiian hoary bat, and the threatened Newell's shearwater. This conclusion was based on the following factors:

The proposed project will not jeopardize the Hawaiian petrel because the level of take authorized for Hawaiian petrels represents a small percentage of the species' total population, estimated at 20,000, with a breeding population of 4,500 to 5,000 pairs (Spear *et al.* 1995, Ainley *et al.* 1997). The loss of up to 14 adult or subadult petrels and the associated indirect take of eggs and chicks represents a relatively small percentage of the 1,000+ petrels estimated to be on Lanai, and even if this is a 50 percent overestimate, the impacts to the population would be relatively small. The strategies identified in the petrel recovery plan include colony protection and management to increase productivity and survival by addressing the primary threat of predation. Based on the proposed minimization, mitigation, and adaptive measures to offset take, and anticipated overall net conservation benefit to the Hawaiian petrel, it is the Service's biological opinion that issuance of the ITP for the proposed meteorological tower project is not likely to jeopardize the continued existence of the species.

The proposed project will not jeopardize the Newell's shearwater because the lack of observations of this species at the project site indicates that the potential for collisions by this species with the meteorological towers over the two-year project duration is very low, and a limit of two has been established in the HCP such that the towers will be removed if that level is reached. The habitat restoration implemented under the HCP will increase the abundance of native vegetation, and is expected to increase nesting habitat available to Newell's shearwater should they nest on Lanai. The increase in predator control will likely increase the reproductive success of any Newell's shearwater that may nest there.

The proposed project will not jeopardize the Hawaiian stilt because the lack of observations of this species at the project site indicates that the potential for collisions by this species with the meteorological towers over the two-year project duration is very low, and a limit of two has been established in the HCP such that the towers will be removed if that level is reached. The implementation of a predator control program under the HCP at the Lanai City WWTP is anticipated to both decrease mortality and increase the reproductive success of the stilts that forage and nest there.

The proposed project will not jeopardize the Hawaiian hoary bat because the lack of observations of this species at the project site indicates that the potential for collisions by bats with the meteorological towers over the two-year project duration is very low, and a limit of two has been established in the HCP such that the towers will be removed if that level is reached. The habitat restoration conducted under the HCP in the Lanaihale will increase the abundance of native vegetation, and is expected to increase native roosting and foraging habitat available to hoary bats, as well as increase the availability of native insects that they feed upon. The increase in predator control within the Lanaihale may increase the reproductive success of any bats that may breed there, although predation has not been identified as one of the species' primary threats.

5. Other measures, required by the Director of the Service as necessary or appropriate for purposes of the HCP, will be met.

The Lanai Meteorological Tower HCP incorporates all other elements determined by the Service to be necessary for approval of the HCP and issuance of the ITP.

6. The Service has received the necessary assurances that the HCP will be implemented.

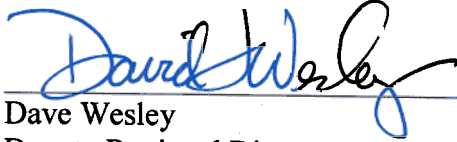
The MOA between Castle & Cooke and DOFAW, and the potential for the Service to revoke the ITP will assure that the HCP will be implemented.

V. GENERAL CRITERIA AND DISQUALIFYING FACTORS

The Service has no evidence that the permit application should be denied on the basis of the criteria and conditions set forth in 50 CFR §13.21(b)-(c).

VI. RECOMMENDATION ON PERMIT ISSUANCE

Based on the foregoing findings with respect to the proposed action, I recommend approval of the issuance of permit #TE194350-0 to Castle & Cooke for the incidental taking of the covered species in accordance with the HCP for the Lanai meteorological tower project.



Dave Wesley
Deputy Regional Director
U.S. Fish and Wildlife Service, Region 1

9/26/08
Date

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