FINDINGS AND RECOMMENDATIONS REGARDING THE PROPOSED ISSUANCE OF AN ENDANGERED SPECIES ACT SECTION 10(a)(1)(B) INCIDENTAL TAKE PERMIT FOR THE KAUAI LAGOONS HABITAT CONSERVATION PLAN FOR NEW CONSTRUCTION AND CONTINUED OPERATION OF THE KAUAI LAGOONS RESORT AND GOLF COURSE, KAUAI, KAUAI COUNTY, HAWAII

The U.S. Fish and Wildlife Service (Service) proposes to issue an Incidental Take Permit (Permit) to Kauai Lagoons, LLC (Kauai Lagoons) under the authority of section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (Act or ESA). The Permit would have a term of 30 years.

The following documents were used in preparation of this statement of findings and recommendations and are incorporated by reference as described in 40 CFR §1508.13 (2011): (1) Kauai Lagoons' Final Habitat Conservation Plan (HCP) for the Operation and New Construction at Kauai Lagoons Resort and Golf Course, Kauai, Hawaii (the Project) (Ebbin Moser & Skaggs LLP 2012); (2) the Service's Final Environmental Assessment for the Project (Service 2012a) pursuant to the National Environmental Policy Act; and (3) the Service's Biological Opinion on the proposed Permit action (Service 2012b). The decision record for these findings and recommendations is on file at the Service's Pacific Islands Fish and Wildlife Office in Honolulu, Hawaii.

I. Description of the Proposed Action

The Project consists of the ongoing operation of the Kauai Lagoons Resort, as well as the construction of new resort facilities. The resort was built in the 1980s, encompasses approximately 600 acres, and was originally developed with two golf courses, a golf and racquet club facility, a network of man-made navigable lagoons, a restaurant, commercial development, and associated parking areas. Kauai Lagoons intends to develop additional facilities at the resort that include construction of 707 condominium units, 65 single family residential lots, a central operations building, a new golf clubhouse, other additional infrastructure, and conversion of the two existing 18-hole golf courses into a 27-hole golf course. New construction will result in additional artificial lights within the Kauai Lagoons property. A portion of these construction activities have already been completed; these actions were addressed through a Memorandum of Understanding (MOU) between the Service and Kauai Lagoons. New construction activities will occur on approximately 230 acres of the 600-acre Kauai Lagoons property.

Under the proposed Permit action, Kauai Lagoons will receive incidental take coverage for eight species that are endemic to Hawaii and may be adversely affected by the Project. These species include the federally endangered Hawaiian goose (*Branta sandvicensis*), Hawaiian moorhen (*Gallinula chloropus sandvicensis*), Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus knudseni*), and Hawaiian petrel (*Pterodroma sandwichensis*), and the threatened Newell's shearwater (*Puffinus auricularis newelli*), and a candidate for listing, the band-rumped

storm-petrel (*Oceanodroma castro*). The above species are hereafter referred to as the "Covered Species."

Kauai Lagoons seeks to avoid and minimize the take of Covered Species to the maximum extent practicable, but because take may be unavoidable, Kauai Lagoons will mitigate for such take by implementing conservation actions to benefit the recovery of the Covered Species. Kauai Lagoons' proposed mitigation measures were selected in collaboration with the Service, the Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW), and the State of Hawaii Endangered Species Recovery Committee. For four of the Hawaiian waterbird species, which include the Hawaiian stilt, Hawaiian moorhen, Hawaiian coot, and the Hawaiian duck, Kauai Lagoons will provide onsite habitat enhancement and predator control, which will provide appropriate breeding and foraging habitat for these species. For Hawaiian seabird species, including the Hawaiian petrel, Newell's shearwater, and the band-rumped storm-petrel, Kauai Lagoons will mitigate for unavoidable take by helping to fund implementation of the conservation program under the Kauai Seabird HCP (KSHCP), an island-wide plan to pool mitigation efforts to provide a greater benefit for seabirds on Kauai. Although the KSHCP is not currently finalized, Kauai Lagoons will pay whatever cost per bird is identified as providing an adequate benefit in the final document.

For the Hawaiian goose, Kauai Lagoons initially proposed to conduct onsite habitat enhancement and predator control, which has been documented to greatly increase the breeding success of Hawaiian geese at Kauai Lagoons Resort. However, due to ongoing concerns that the large population of Hawaiian geese at Kauai Lagoons Resort constitutes a threat to the safe operation of aircrafts at the adjacent Lihue Airport, the Governor of Hawaii issued an emergency proclamation that requires the Hawaii Division of Forestry and Wildlife (DOFAW) to translocate all Hawaiian geese from Kauai Lagoons Resort to sites on other islands over the next five years. To ensure that mitigation actions are consistent with this translocation plan, Kauai Lagoons will continue to provide habitat and predator control onsite while Hawaiian geese remain. As Hawaiian geese are translocated off the property, Kauai Lagoons will transition predator control efforts to Hawaiian waterbirds. Kauai Lagoons will also provide $85,000 to the Hawaii Department of Land and Natural Resources Endangered Species Fund to be used for predator control and conservation actions at the translocation sites.

The HCP establishes Covered Species impact avoidance and minimization measures, and mitigation and adaptive management procedures to avoid exceeding the take limit authorized by the Permit for each Covered Species. Avoidance and minimization measures, mitigation and adaptive management procedures, and the effects of the proposed Permit action on the Covered Species are analyzed in depth in the HCP and the Service's Biological Opinion on this proposed permit action, both of which are herein incorporated by reference.

II. Analysis of Effects

The analysis of the likely Project impacts to Covered Species is based on the best scientific information available including the results of onsite surveys, information from species biologists, and long-term monitoring data from Kauai Lagoons.

Activities that may affect the Hawaiian goose and Hawaiian waterbirds include the ongoing operation of facilities and golf courses, maintenance of property grounds, and the construction of new facilities and infrastructure. Construction is not anticipated to affect Hawaiian seabirds due to the incorporation of avoidance and minimization measures; however, the increased lighting associated with new facilities may result in take of listed seabirds after buildings are constructed.

Although measures in the HCP and the associated ITP describe how Kauai Lagoons seeks to avoid and minimize the risk of take of Covered Species to the greatest extent practicable, some take may be unavoidable. The HCP analyzes two types of take involving injury and mortality of Covered Species: direct take (direct loss of individuals due to Project activities) and indirect take (loss of dependent eggs or chicks resulting from the loss of a breeding adult from Project activities).

Hawaiian Goose

Species Background

The Hawaiian goose was federally listed as endangered under the Endangered Species Protection Act on March 11, 1967 (Service 2004, p. 3). Although Hawaiian geese are capable of inter-island flight, they do not migrate from the archipelago. The Hawaiian goose was once widely distributed among the main Hawaiian Islands; the fossil record indicates the prehistoric (prior to 1778) range of the Hawaiian goose was much greater than what was observed after colonization by Europeans (Banko et al. 1999). After nearly becoming extinct in the 1940s and 1950s, the population has slowly been rebuilt through captive-breeding programs. As of 2009, wild populations of the Hawaiian goose exist on the islands of Hawaii (457 individuals), Maui (416 individuals), Molokai (165 individuals) and Kauai (850 to 900 individuals) (Service and NRCS 2010).

The current threats to Hawaiian goose recovery are: (1) predation by introduced mammals (especially mongooses, cats, rats, dogs, and feral pigs); (2) insufficient nutritional resources due to habitat degradation; (3) limited availability of suitable habitat due to habitat loss, fragmentation, and degradation; and (4) human-caused disturbance (including habituation to humans) and mortality (especially death due to car collisions). Additional factors that may be affecting Hawaiian goose recovery but require further research include: (1) behavioral problems associated with small population sizes, captive-bred birds, and loss of genetic diversity; and (2) avian disease and parasites (Service 2004; Marshall, pers. comm. 2010).

The Service published a Draft Revised Recovery Plan for the species in 2004, and completed a 5-year Review in 2011. The overall goal of the Service's "Draft Revised Recovery Plan for the Nene or Hawaiian Goose *(Branta sandvicensis)*" is to remove the Hawaiian goose from the Federal List of Endangered and Threatened Wildlife and Plants (delisting). The plan establishes a framework for recovery actions to ensure the long-term survival of the Hawaiian goose and to control or reduce the threats to the species to the extent that it is no longer in danger of extinction and warrants delisting. The interim goal is to accomplish increases in population sizes and geographic distribution of Hawaiian geese with control of threats sufficient to consider reclassification or downlisting of this endangered species to threatened status. To reach the recovery criteria for downlisting the species, there must be multiple self-sustaining Hawaiian goose populations on Hawaii, Maui Nui (Maui, Molokai, Lanai, and Kahoolawe), and Kauai, for at least 15 years. To delist the species, all populations of Hawaiian geese must all have a stable or increasing trend for an additional 15 years (i.e., total of 30 years). Additionally, the threats to the species must be reduced to allow for the long-term viability of these populations, and sufficient suitable habitat must be identified, protected, and managed in perpetuity on each of these islands such that the species no longer meets the definition of endangered or threatened under the Act (Service 2004, p. 49-52).

With the exception of Kauai, most wild populations of Hawaiian geese are not self-sustaining (Marshall, pers. comm. 2010). The Service defines "self-sustaining" as maintaining or increasing established population levels without additional releases of captive-bred Hawaiian geese, although habitat manipulation, such as predator control or pasture management, may need to be continued. Downlisting may be considered separately for a subset of the Hawaiian goose population if that population subset is shown to meet the definition of a distinct population segment and satisfy additional recovery criteria set forth by the Service (Service 2004, p. v). Consideration for delisting can occur once all of the downlisting criteria have been met, and all population levels have shown a stable or increasing trend (from downlisting levels) for a minimum of 15 additional years after recovery goals have been met (Service 2004, p. iv).

Captive releases previously had been an important part of the Hawaiian goose recovery strategy; however, the Service determined that releases of captive-bred Hawaiian geese must occur only at appropriate locations (i.e., sites chosen in relation to suitability of habitat in general, and uses of surrounding areas), and in conjunction with predator control, monitoring, and habitat maintenance (Marshall, pers. comm. 2010). In order for Hawaiian goose populations to survive, they must have relatively predator-free breeding areas and sufficient food resources; human-caused disturbance and mortality must be minimized and genetic and behavioral diversity maximized. At the same time, Hawaiian geese are highly adaptable, successfully utilizing a gradient of habitats, ranging from highly altered to completely natural, which bodes well for the recovery of the species (Service 2004, p. 47).

Hawaiian geese have been present at Kauai Lagoons property since the late 1990s. The population and nesting activity has increased on the property significantly in the ensuing 10 years. Five nests were recorded on the property in 1999. Ten years later, 66 nests

were documented on the property, which produced 103 goslings. Hawaiian geese are site tenacious; therefore, adults and goslings reared at Kauai Lagoons Resort return each year to breed. By 2010, numbers had grown to 90 nests and over 400 Hawaiian geese (DOFAW 2012). The high productivity at Kauai Lagoons Resort is due to ongoing predator control efforts, specific habitat enhancement efforts for Hawaiian geese, abundant food resources, and low-elevation prime breeding habitat. The Kauai Lagoons Resort Hawaiian goose population is now the most abundant and prolific in the State, representing approximately 22 percent of the species' population (DOFAW 2012, p. 21).

Kauai Lagoons Resort is located immediately adjacent to Lihue Airport, the primary airport for the island of Kauai. The close proximity of nesting and roosting Hawaiian geese poses a threat to human safety due to the increased risk of collision between the geese and aircraft. The presence of the large numbers of Hawaiian geese at Kauai Lagoons Resort is considered to be a risk to aviation safety because of their large body size, flocking behavior, and low, slow flight pattern. Although no collisions between Hawaiian geese and aircrafts have occurred, the birds are frequently observed near the runways and flying across the runways as they transit to foraging and breeding sites (Ebbin Moser & Skaggs, LLP 2012).

Due to human safety concerns over potential aircraft-bird collisions, the Service and DOFAW have been working on several approaches to reduce the number of Hawaiian geese at Kauai Lagoons Resort. Translocations of goslings and/or small family groups have been ongoing for several years; however, to date, most translocations remained on Kauai. The long-term plan to reduce the Hawaiian goose population on Kauai Lagoons Resort has been under discussion for two years. Parties involved include the Federal Aviation Administration (FAA), DOFAW, Kauai Lagoons, Hawaii Department of Transportation-Airports Division (HDOT), U.S. Department of Agriculture - Wildlife Services (WS) and the Service. The issue as to which agency was responsible was never resolved, and hence, who would fund and implement a translocation program. Currently, hazing of Hawaiian geese is conducted at Lihue Airport via a Letter of Agent between the Service and WS.

To resolve the dispute, the Governor of the State of Hawaii signed a proclamation on April 14, 2011, that exempts Hawaiian geese at Kauai Lagoons Resort from State endangered species laws so that DOFAW may quickly reduce the Hawaiian goose population at Kauai Lagoons Resort. Per the Governor's Proclamation, all Hawaiian geese at Kauai Lagoons Resort will be translocated to other islands over a five year period (April 2011 through April 2016). The Proclamation directed DOFAW, to develop a five-year Hawaiian goose Action Plan which will, to the extent practicable, translocate Hawaiian geese to suitable or protected habitat on other islands in addition to Kauai. In May 2011, 10 Hawaiian geese were moved from Kauai Lagoons Resort to the slopes of Haleakala on Maui as the first phase of implementing the Proclamation. Several large-scale translocation efforts have occurred since that time, and will continue to occur in the immediate future (DOFAW 2012, p. 6).

DOFAW is conducting the translocation under 50 C.F.R. §17.21(c)(3)(iv), which allows State employees to take listed species which 'constitute a demonstrable but non-immediate threat to human safety.' However, it is anticipated that some actions, such as hazing, will be needed after the completion of the Governor's Proclamation (2016) to prevent the recurrence of a resident Hawaiian goose population at Kauai Lagoons Resort. At that time, FAA or HDOT will be required to address ongoing levels of take associated with hazing and/or translocating Hawaiian geese.

Anticipated Take

Activities that may affect the Hawaiian goose at Kauai Lagoons Resort include new construction and operations of the resort and golf courses. The HCP indicates a total of 17 Hawaiian geese or dependent young and eggs are likely to be killed or injured, directly or indirectly, by construction activities and operation of Kauai Lagoons Resort over the 30-year term of the proposed action.

This estimate is based on the reduced Hawaiian goose population size due to the ongoing activities by DOFAW to translocate the Kauai Lagoons Resort Hawaiian goose population to other islands. Kauai Lagoons' requested take of 17 individuals over the 30-year Permit term represents approximately 0.9 percent of the range-wide population and 1.9 percent of the current Kauai population. If DOFAW succeeds in translocating the Kauai Lagoons Resort Hawaiian goose population to other islands, the take of 17 birds will be 3.4 percent of the remaining Kauai population over 30 years. Take estimates are discussed and analyzed in the HCP (Ebbin Moser & Skaggs LLP 2012) and the Service's Biological Opinion (Service 2012b).

This assessment of the HCP's fatality, injury, and indirect take estimates is based on the best available information regarding the expected take of the Hawaiian goose. Site-specific data gathered by Kauai Lagoons supports the results presented in the HCP.

Mitigation

Take of Hawaiian geese caused by the operation and construction of Kauai Lagoons Resort will be offset by the HCP mitigation program. Kauai Lagoons will continue to maintain Hawaiian goose habitat and predator control so long as geese are present at the site. As the geese are moved to other islands, these management efforts will phase out or be re-focused toward the other covered waterbird species. Additional mitigation funds will be provided to DOFAW to assist with management and predator control at translocation sites to ensure long-term protection for translocated pairs.

Anticipated Benefits of Mitigation

For the period of time between when the Permit is issued and the end of the Governor's Proclamation in April 2016, it is anticipated that some Hawaiian geese will continue to persist at Kauai Lagoons Resort. Therefore, Kauai Lagoons will continue to manage habitat and conduct predator control for the benefit of breeding Hawaiian geese. These

methods have proved very effective at promoting reproductive success. Although the number of breeding pairs at Kauai Lagoons Resort during this time is unknown, it is expected that mitigation will result in 75 percent hatch success and 75 percent fledge success (average of 2 to 3 goslings fledged per nest).

After April 2016, it is anticipated that few or no Hawaiian geese will be present at Kauai Lagoons Resort. Therefore, predator control efforts will be re-focused to protect listed waterbird species. After this time, Kauai Lagoons will stop enhancing or promoting Hawaiian goose breeding at the site.

The Service and DOFAW have determined that it is no longer appropriate to conduct onsite mitigation for Hawaiian geese due to airport safety concerns. Therefore, Kauai Lagoons will conduct off-site mitigation to ensure the long-term survival of the Hawaiian geese that are translocated off of Kauai. Kauai Lagoons shall contribute $85,000 to DOFAW for five years of predator control, monitoring, and management of translocated geese at sites across the Hawaiian Islands. Hawaiian geese are particularly vulnerable to predation during nesting and before the goslings fledge. The translocated Hawaiian geese will be subject to high predation of eggs and goslings by cats, rats, and mongoose. Mitigation for project-related take will be provided through increased Hawaiian goose reproductive success and survival at managed pen sites. The mitigation is expected to result in the hatching success of up to 20 nests per year that would be unsuccessful outside of a managed pen, resulting in an average of 50 to 75 goslings fledged per year of pen management. This management activity will increase the survival and reproductive success of the Hawaiian goose population, and therefore will help offset Kauai Lagoons' take of 17 Hawaiian geese.

Proposed mitigation will offset all take to compensate for project impacts by increasing the survival and reproductive success of Hawaiian geese at translocation sites. Therefore, the State's Hawaiian goose population will not be lower as a result of project implementation, than it would have been in the absence of the project.

Summary of Effects of the Action on the Hawaiian Goose

The HCP indicates a total of 17 Hawaiian geese or dependent young or eggs are likely to be killed or injured, directly or indirectly, by construction activities and operation of Kauai Lagoons Resort over the 30-year term of the proposed action. This impact, if not mitigated, is likely to reduce the Kauai Hawaiian goose population between 1.9 and 3.4 percent, depending on the success of the State's translocation program. Kauai Lagoons proposes to implement predator control onsite while Hawaiian geese remain, as well as provide funds for the conservation and protection of translocated individuals on other islands, sufficient to offset the impacts of requested take.

Although Kauai Lagoons Resort is currently used by Hawaiian geese for breeding, loafing, and foraging, the ongoing operations and construction on the property potentially result in injury and mortality, as discussed above. While long-term monitoring has shown that habitat enhancement and predator control onsite significantly promotes the

successful breeding at Kauai Lagoons Resort, due to the threat that the Hawaiian goose population poses to the safe operation of aircraft at the adjacent Lihue Airport, the Service has determined that Kauai Lagoons Resort is no longer an appropriate recovery location for the species. Therefore, although the property may continue to attract Hawaiian geese, conservation actions for the species will be focused in more appropriate, native ecosystem locations.

Hawaiian Stilt

Species Background

The Hawaiian stilt was listed as an endangered species on October 13, 1970 (Service 1970), pursuant to the Endangered Species Preservation Act of 1966. Hawaiian stilts were historically known from all of the major Hawaiian Islands, except Lanai and Kahoolawe (Service 2005a, p. 25). Stilts are now found on all of the main Hawaiian Islands except Kahoolawe. No historical estimate of Hawaiian stilt population size is available, but by the early 1940s, the statewide population was estimated to be between 200 and 1,000 birds (Service 2005a, p. 25). Currently, the population of Hawaiian stilts is considered to be stable to increasing (Service 2005a, p. 28) and is estimated to be between 1,200 and 1,600 birds. DOFAW's biannual waterbird surveys detected between 500 and 2,000 individuals between 1986 and 2006. Because Hawaiian stilts readily disperse between islands they are considered a homogeneous meta-population (Service 2005a, p. 28).

Threats are addressed as a combined assessment for four species of Hawaiian waterbirds: the Hawaiian stilt, Hawaiian coot, Hawaiian moorhen, and the Hawaiian duck. We are evaluating the threats on these four species of waterbirds jointly because they share common issues. The Hawaiian duck section also includes a unique threat of hybridization to that species.

The primary causes of the decline of the Hawaiian waterbirds are the loss of wetland habitat, predation by introduced animals, hunting in the late 1800s and early 1900s, disease, and environmental contaminants. A significant amount of Hawaii's wetlands have been lost due to human activities, including filling and draining for agriculture, houses, hotels, and golf courses. The Service estimates that 22,475 acres (9,095 hectares) of wetlands existed within the coastal plains of Hawaii in the 1780s. In 1990, the Service estimated that only 15,474 acres (6,262 hectares) remained, which is a decrease of 31 percent (Service 2005a, p. 45). Introduced predators are considered a primary factor limiting Hawaiian waterbird populations. Small Indian mongoose (*Herpestes auropunctatus*), feral cats (*Felis catus*), and feral dogs (*Canis lupus familiaris*) are all presently found within wetlands and pose a serious threat to Hawaiian waterbird reproductive success.

Preventing wetland loss, managing existing wetland habitat, and predator control at primary nesting sites are necessary actions to increase Hawaiian waterbird populations. As described in the Second Draft of the Revised Recovery Plan for Hawaiian Waterbirds,

recovery of the Hawaiian waterbirds focuses on the following objectives: (1) increasing population numbers to a statewide baseline level; (2) establishing multiple, viable breeding populations throughout each species' historical range; and (3) establishing a network of wetlands on the main islands that are protected and managed for waterbirds (Service 2005a, p. 71-72).

The most prevalent disease affecting Hawaiian waterbirds is avian botulism. Avian botulism is caused by a toxin produced by a widespread bacterium (*Clostridium botulinum*). Normally dormant, these spores release toxins only when certain conditions occur, including warm temperatures and stagnant waters. Birds usually acquire the disease by eating invertebrates containing the toxin. Typical signs of botulism in birds include weakness, lethargy, and inability to hold up the head or to fly (Work 2008, pers. comm.). Botulism can occur in any area with standing fresh or brackish water frequented by waterbirds. Avian botulism outbreaks are common in Hawaii and are a significant cause of waterbird mortality (Pratt and Brisbin 2002, p. 36). The first outbreak in Hawaii occurred on Oahu at Kaelepulu pond, which is also known as Enchanted Lake, in Kailua in 1952. Since then, avian botulism outbreaks have been documented at Hanalei NWR on Kauai, Aimakapa pond at Kaloko-Honokahau National Historical Park on Hawaii, Ohiapilo pond on Molokai, and at Kealia NWR on Maui (Pratt and Brisbin 2002, p. 36). An outbreak at Hanalei National Wildlife Refuge on Kauai had a total of 304 sick or dead birds with suspected or confirmed avian botulism type C found from December 5, 2011 through April 4, 2012. Of those, 82 percent are endangered species (55 percent Hawaiian duck, 18 percent Hawaiian coot, 4 percent Hawaiian moorhen, 4 percent Hawaiian stilt, <1 percent Hawaiian goose) and 18 percent are native non-endangered, migratory, or feral or introduced birds.

A variety of conservation measures have been implemented to protect Hawaii's endangered waterbirds. Efforts directly benefitting the Hawaiian waterbirds include a long-term hunting ban, protection of habitat through establishment and management of Federal and State refuges and sanctuaries, and predator control. Actions that inform conservation of the species include a biannual waterbird survey conducted by DOFAW since the mid-1950s, population monitoring, and research (Service 2005a, p. 58-64).

There is little usage of habitat present on the Kauai Lagoons property by Hawaiian stilts. This is primarily due to the lack of suitable foraging and nesting habitat. Over the past three years, between one and three pairs of stilt have been documented on the site. In all three years one pair successfully nested in an abandoned golf course sand trap. During the 2008-2009 nesting season the one pair that nested produced four chicks, which all successfully fledged. Stilt have not usually been observed in areas that place them at risk from golf play.

Anticipated Take

The HCP indicates a total of 38 Hawaiian stilts or dependent young or eggs are likely to be killed or injured, directly or indirectly, by ongoing operation of Kauai Lagoons Resort over the 30-year term of the proposed action. Kauai Lagoons' average annual take of

1.27 individuals (mortality or non-lethal injury) represents approximately 0.09 percent of the range-wide population. Take estimates are discussed and analyzed in the HCP (Ebbin Moser & Skaggs LLP 2012) and the Service's Biological Opinion (Service 2012b).

The Service concurs with this assessment of impact because the HCP's fatality, injury, and indirect take estimates are based on the best available information regarding the expected take of the Hawaiian stilt. Site-specific data gathered by Kauai Lagoons supports the results presented in the HCP.

Mitigation

Kauai Lagoons will continue to manage habitat and conduct predator control onsite for the benefit of breeding Hawaiian waterbirds over the life of the 30-year permit. These methods have proved very effective at protecting Hawaiian waterbirds and promoting foraging and reproductive success. In addition to previously utilized techniques, they will also control cattle egrets, which are known to prey on eggs and young chicks. After April 2016 and the translocation efforts by DOFAW it is anticipated that few or no Hawaiian geese will be present at Kauai Lagoons Resort. At that time, all predator control efforts at Kauai Lagoons Resort will be focused on areas where Hawaiian waterbirds are known to occur and nest.

Anticipated Benefits of Mitigation

These mitigation actions are anticipated to result in the hatching success of up to one Hawaiian stilt nest per year that would otherwise be unsuccessful, resulting in an average of two to three chicks fledged annually. These management activities will increase the survival and reproductive success of the Hawaiian stilt population throughout the life of the 30-year permit term, and therefore more than offset Kauai Lagoons' take of Hawaiian stilt.

Hawaiian Coot

Species Background

The Hawaiian coot was listed as an endangered species on October 13, 1970 (Service 1970), pursuant to the Endangered Species Preservation Act of 1966. The original recovery plan was approved in 1978, and revised in 1985. The first draft of the second revision was released on May 1999, followed by the second draft of the second revision in May 2005. The Hawaiian coot was considered a subspecies of the American coot (*Fulica americana*), but is now considered a distinct species (Service 2005a, p. 11). Adults have a black head, a slate gray body with white undertail feathers, and a prominent white frontal shield and bill; feet are lobed rather than webbed and are greenish-gray.

Hawaiian coots historically occurred on all of the main Hawaiian Islands except Lanai and Kahoolawe. Coots have typically been most numerous on Oahu, Maui, and Kauai

(Service 2005a, p. 12). Population estimates prior to the 1950s are not available; however, estimates from the late 1950s and early 1960s indicated a population of fewer than 1,000 birds. Hawaiian coots currently inhabit all of the main Hawaiian Islands except Kahoolawe. An estimate of the island-wide population, based on biannual waterbird counts conducted by DOFAW, suggests that the population is stable and is estimated at between 1,000 and 1,500 individuals.

Hawaiian coots are generalists and feed on land, grazing on grass adjacent to wetlands, or in the water. They have been observed grazing from the surface of the water, or foraging by diving to obtain food resources. Food items include seeds and leaves, snails, crustaceans, insects, tadpoles, and small fish. The species will travel long distances, including between islands, when local food sources are depleted.

Threats to the Hawaiian coots are the same as described above for the Hawaiian stilt.

The number of Hawaiian coots present on the property varies on a seasonal and annual basis, likely due to precipitation. In the past twenty years, the numbers of coots onsite have varied between fewer than a dozen birds to upwards of 350 birds. During the 2008-2009 nesting season, Kauai Lagoons documented a range of between two and 84 coots on the property. The low numbers recorded likely represent an inverse relationship to the amount of rain that fell on Kauai and other areas at the end of the year. Hawaiian coots loaf and forage on a number of the golf course holes, and are also regularly seen swimming in all lakes, ponds and water features within the property. At times when coot numbers are high, they are at risk from golf play.

Hawaiian coots have been documented in relatively high numbers at Kauai Lagoons Resort. While breeding at the site is relatively rare or undocumented, Kauai Lagoons Resort appears to provide important habitat at certain times of the year. Yearly observations indicate that the site may be of particular importance in dry years, when appropriate habitat in other locations is too dry to support Hawaiian coots.

Anticipated Take

The HCP indicates a total of 290 Hawaiian coots or dependent young or eggs are likely to be killed or injured, directly or indirectly, by ongoing operation of Kauai Lagoons Resort over the 30-year term of the proposed action. Kauai Lagoons' average annual take of 9.7 individuals (3.7 mortality and 6 non-lethal injury) represents approximately 0.48 percent of the range-wide population. Take estimates are discussed and analyzed in the HCP (Ebbin Moser & Skaggs LLP 2012) and the Service's Biological Opinion (Service 2012b).

The Service concurs with this assessment of impact because the HCP's fatality, injury, and indirect take estimates are based on the best available information regarding the expected take of the Hawaiian coot. Site-specific data gathered by Kauai Lagoons supports the results presented in the HCP.

Mitigation

Mitigation for unavoidable take of Hawaiian coots is the same as described above for Hawaiian stilts.

Anticipated Benefits of Mitigation

Mitigation is expected to result in the hatching success of up to 4 nests per year that would otherwise be unsuccessful, resulting in an average of 8 chicks fledged annually. Additionally, mitigation will protect Hawaiian coot habitat for loafing and foraging. These management activities will increase the survival and reproductive success of the Hawaiian coot population throughout the life of the 30-year permit term, and therefore offset Kauai Lagoons' take of Hawaiian coots.

Hawaiian Moorhen

Species Background

The Hawaiian moorhen was listed as an endangered species in 1967 (Service 1970), pursuant to the Endangered Species Preservation Act of 1966. The Hawaiian moorhen is an endemic subspecies of the common moorhen (*Gallinula chloropus*). It is a dark gray bird with a black head and neck, and white feathers on their flanks and on their undertail coverts. No historical population estimates are available for the endemic Hawaiian moorhen. Because they are such secretive birds, it is difficult to conduct population surveys for this species. It is believed that they were common on the main Hawaiian Islands, except Lanai and Kahoolawe, in the 1800s but radically declined by the mid-1900s. Surveys from the 1950s through the 1960s estimated only 57 individuals. Currently, Hawaiian moorhen inhabit the islands of Kauai and Oahu (Service 2005a, p. 19).

Island-wide population estimates, based on biannual waterbird counts conducted by DOFAW, suggests that the population is increasing, but count numbers are variable. DOFAW's biannual waterbird surveys detected between 80 and 450 individuals between 1986 and 2006. However, these survey numbers are thought to be underestimates because of the moorhen's cryptic behavior. Hawaiian moorhens nest year-round but appear to have two active seasons from November through February and May through August (Service 2005a, p. 23). It is believed that the timing of nesting is related to water levels and late succession wetland vegetation.

Threats to the Hawaiian moorhen are the same as described above for the Hawaiian stilt.

Hawaiian moorhen are relatively abundant at Kauai Lagoons Resort. Determining exactly how many birds use resources on the property is challenging due to their innate secrecy. High numbers recorded on the property have approached approximately 50 birds. This species nests on the property in small numbers. It has been estimated that

there may be up to 10 nests a year on the site (Alan P. Silva, pers. comm. 2010). During the 2008-2009 season Kauai Lagoons recorded four separate Hawaiian moorhen pairs with young chicks. Hawaiian moorhen are most often seen in or close to the main lagoon, the boat dock lagoon and the irrigation pond located on the northwestern corner of the site. Nests are typically documented adjacent to the more remote ponds on the site that have dense shoreline vegetation such as the irrigation pond. Hawaiian moorhen have not been documented to nest in the water features within the golf course. Additionally, they are seldom seen on the golf holes themselves, so they are not often at risk from golf play.

Hawaiian moorhen are generally a cryptic species; therefore, it is difficult to ascertain how important Kauai Lagoons Resort is for breeding and foraging habitat. However, the continued predator control efforts and provision of a year-round water source have provided protection and habitat for numerous waterbirds. Hawaiian moorhen use of the site will likely remain the same or increase as pairs find suitable nest sites in the more secluded areas of the property.

Anticipated Take

The HCP indicates a total of 70 Hawaiian moorhen or dependent young and eggs are likely to be killed or injured, directly or indirectly, by construction activities and operation of Kauai Lagoons Resort over the 30-year term of the proposed action. There are no current estimates of the Kauai population, but it is thought that more than 50 percent of the species population is found on that island. It is therefore difficult to determine what proportion of the population may be affected by Kauai Lagoons' construction and operation. In a worst case situation, the average annual take of 2.3 Hawaiian moorhen (1.3 mortalities, 1 injury) may represent 0.81 percent of the range-wide population. Take estimates are discussed and analyzed in the HCP (Ebbin Moser & Skaggs LLP 2012) and the Service's Biological Opinion (Service 2012b).

The Service concurs with this assessment of impact because the HCP's fatality, injury, and indirect take estimates are based on the best available information regarding the expected take of the Hawaiian moorhen. Site-specific data gathered by Kauai Lagoons supports the results presented in the HCP.

Mitigation

Mitigation for unavoidable take of Hawaiian moorhen is the same as described above for Hawaiian stilts.

Anticipated Benefits of Mitigation

Mitigation is expected to result in the hatching success of up to 10 nests per year that would otherwise be unsuccessful, resulting in an average of 20 to 30 chicks fledged annually. These management activities will increase the survival and reproductive

success of the Hawaiian moorhen population throughout the life of the 30-year permit term, and therefore offset Kauai Lagoons' take of Hawaiian moorhen.

Hawaiian Duck

Species Background

The Hawaiian duck was listed as an endangered species in 1967 (Service 1970), pursuant to the Endangered Species Preservation Act of 1966. The Hawaiian duck is one of two extant native duck species (Family: Anatidae) found in Hawaii and is closely related to the well-known, but non-native mallard. Historically, Hawaiian ducks occurred on all the main Hawaiian Islands except for Lanai and Kahoolawe. There are no population estimates prior to 1940, but in the 1800s they were fairly common in natural and farmed wetland habitats (Service 2005a, p. 4). In 1949, an estimated 500 Hawaiian ducks remained on Kauai, and about 30 on Oahu. They were considered an occasional visitor to the island of Hawaii, and were presumed to be extirpated on Maui and Molokai (Service 2005a, p. 5). By 1960, they were presumed extirpated from Oahu. From the 1950s through the early 1990s Hawaiian ducks were reintroduced to Oahu, Maui and Hawaii through a captive propagation and release program.

The Hawaiian duck population is estimated to be approximately 2,000 individuals, but this is a best guess, with 80 percent of individuals occurring on Kauai (Engilis et al. 2002, p. 11). State biannual waterbird survey data count numbers range from 300 to 500 individuals. Because of the remoteness and inaccessibility of some habitats, the State waterbird counts are likely an underestimate. Hawaiian ducks occur in a wide variety of natural and artificial wetland habitats including freshwater marshes, flooded grasslands, coastal ponds, streams, montane pools, forest swamplands, taro, lotus, shrimp, and fish ponds, irrigation ditches, reservoirs, and mouths of larger streams (Service 2005a, p. 10).

Threats to the Hawaiian duck are the same as described above for the Hawaiian stilt. However, the most important current threat to the Hawaiian duck is hybridization with non-native mallards (Service 2005a, p. 11). This is especially problematic on Oahu where most of the individuals are hybrids. In addition, feral pigs (*Sus scrofa*) and goats (*Capra hircus*) significantly reduce the suitability of nesting habitat for Hawaiian ducks along montane streams. In addition to the overall conservation needs outlined in the Hawaiian stilt section, recovery of the Hawaiian duck would include removing the threat of hybridization to Hawaiian duck populations on Kauai, Niihau, Oahu, and Hawaii; and reestablishing Hawaiian duck populations on Maui and Molokai (Service 2005a, p. 73).

Hawaiian ducks are relatively abundant at Kauai Lagoons Resort. During the course of the 2008-2009 season, Kauai Lagoons recorded a range of 2 to 60 ducks on the property. During that season, Kauai Lagoons observed three Hawaiian Duck nests. It is estimated that between two and 10 pair nest on the property per year. Hawaiian ducks have been recorded nesting at the irrigation pond, one of the lagoons, and in the "triangle" parcel between the runways. Survival of the ducklings appears to be very low (less than 10 percent). Potential causes of the relatively low survival rate of ducklings have not been

identified, though predation by cattle egrets and fish are likely to be the principal non-metabolic threats that the young birds face. Since Hawaiian ducks are almost never seen on the golf holes, it is unlikely that golf play represents a significant threat to this species. The Kauai Lagoons property does support breeding and foraging Hawaiian ducks in relatively high numbers. Hawaiian ducks generally nest in higher elevations or mountainous habitats; however, the presumed lack of mammalian predators to date, and consistent water source has resulted in Kauai Lagoons Resort being a significant habitat for ducks in southeastern Kauai. Although duckling survival is poor, it is still higher than at other, unprotected locations on the island.

Anticipated Take

The HCP indicates a total of 36 Hawaiian ducks or dependent young or eggs are likely to be killed or injured, directly or indirectly, by construction activities and operation of Kauai Lagoons Resort over the 30-year term of the proposed action. Kauai Lagoons' average annual take of 1.2 individuals (mortality or non-lethal injury) represents approximately 0.06 percent of the range-wide population. Take estimates are discussed and analyzed in the HCP (Ebbin Moser & Skaggs LLP 2012) and the Service's Biological Opinion (Service 2012b).

The Service concurs with this assessment of impact because the HCP's fatality, injury, and indirect take estimates are based on the best available information regarding the expected take of the Hawaiian duck. Site-specific data gathered by Kauai Lagoons supports the results presented in the HCP.

Mitigation

Mitigation for unavoidable take of Hawaiian duck is the same as described above for Hawaiian stilts.

Anticipated Benefits of Mitigation

Mitigation is expected to result in the hatching success of up to 10 nests that would otherwise be unsuccessful, resulting in an average of 1 to 2 ducklings fledged annually. These management activities will increase the survival and reproductive success of the Hawaiian duck population throughout the life of the 30-year permit term, and therefore offset Kauai Lagoons' take of Hawaiian ducks.

Newell's Shearwater

Species Background

The Newell's shearwater was listed as an endangered species 1975 (Service 1983), pursuant to the Endangered Species Preservation Act of 1966. *The Hawaiian Dark-rumped Petrel and Newell's Manx Shearwater Recovery Plan* was published in 1983 (Service 1983). Newell's shearwater was once abundant on all of the main Hawaiian

Islands. In 1995 the population estimate, based on at-sea surveys was 84,000 birds (Spear et al. 1995, p. 624), with approximately 90 percent of the population nesting on the island of Kauai. Newell's shearwater also breeds on several other of the main Hawaiian islands where they nest in mountainous terrain between elevations of 500 and 2,300 feet.

Recent ornithological radar surveys, combined with returns of downed birds to the SOS program, show an apparent decline of 75 percent in Newell's shearwater between 1993 and 2009 (Day et al. 2003, Holmes et al. 2009), resulting in a current population estimate of 21,000, with 18,900 on Kauai. Significant range reductions as well as an overall decline in distribution are documented, and at least three colonies documented as being active between 1980 and 1994 are now abandoned (Holmes et al. 2009). As with other long-lived species with low reproductive rates, population modeling has documented that the survival rate of breeding age adults has the biggest impact on the population (Griesemer and Holmes 2010).

During the last 150 years, 75 percent of the forests on the main islands of the Hawaiian archipelago have been converted to agricultural, military, commercial or residential land uses, leading to a depletion of available nesting habitat for this species. The introductions of the mongoose (*Herpestes auropunctatus*), black rat (*Rattus rattus*), and Norway rat (*Rattus norvegicus*) have also played a primary role in the reduction of ground-nesting seabirds. Predation by feral cats (*Felis domesticus*) and barn owls (*Tyto alba*) has been observed. In addition, feral pigs (*Sus scrofa)* are known to collapse burrows as well as consume or prey upon shearwaters.

Another major threat is the species' attraction to light. Increasing urbanization and the accompanying artificial lights have resulted in substantial problems for fledgling Newell's shearwaters during their first flight to the ocean from their nesting grounds. When attracted to man-made lights, fledglings become confused and may suffer temporary night blindness. They often fly into utility wires, poles, trees, and buildings and fall to the ground. Since 1979 the Kauai District of DOFAW has supported the Save Our Shearwaters (SOS) program to collect "downed" Newell's shearwaters and Hawaiian petrels (*i.e.*, birds that have either collided with structures or fallen out, or have been injured or killed due to exhaustion caused by light attraction). According to SOS files, over 33,000 seabirds have been recovered to date (DOFAW 2008). The majority of the birds are Newell's shearwaters, which nest in greater numbers on Kauai than Hawaiian petrels. The lower number of Hawaiian petrels recovered is thought to be a function of their population size on Kauai, not due to differences in behavior or ability to detect structures in the dark.

The DLNR has been conducting auditory surveys for new areas containing nesting Newell's shearwater through their Kauai Endangered Seabird Recovery Project (KESRP) and is developing colony ranking criteria to identify where the goals of the action plan can be most successful. The minimum conditions necessary to effectively implement colony management that would be expected to achieve a measureable increase in seabird survival and/or reproduction include species presence, access to the areas occupied by

breeding seabirds, and landowner authorization and commitment to maintain the managed area in way that is consistent with seabird conservation. To date, only two known nesting colonies occupied by Newell's shearwater (Hono o Na Pali Natural Area Reserve (NAR) and Upper Limahuli Valley) are currently suitable for immediate implementation of management actions focused on increasing seabird survival and reproduction. The State has developed a management plan for the Hono o Na Pali NAR that includes feral ungulate control, but little progress has been made due to the lack of funding. A 400-acre portion of the privately-owned Upper Limahuli Preserve has been fenced to create an ungulate-free area known to contain nesting Newell's shearwaters.

While some efforts to protect existing nesting colonies of Newell's shearwater have been implemented on Kauai, they have been limited to constructing ungulate fencing around remaining areas of relatively intact habitat (Wainiha Valley, Upper Limahuli Valley, etc.). Habitat degradation due to feral ungulates is recognized as the primary threat to native ecosystems in Hawaii and the conservation and restoration of such areas is unsuccessful in the presence of ungulates (Hawaii Conservation Alliance 2005, p. 1). The only active control of cats and/or rats within an area occupied by nesting Newell's shearwaters on Kauai (on private property in Upper Limahuli Valley) began in 2009. Funding for the program is currently through the Kauai Island Utility Cooperative (KIUC) short-term HCP for up to the next five years. Long-term funding is anticipated to be obtained through an Island-wide HCP currently under development.

Efforts to reduce the level of light attraction and power line collisions began in the 1980s when KIUC (and its predecessor Kauai Electric) began replacing unshielded street lights with full-cutoff (shielded) lights across the island as part of its normal maintenance program. All of the over 3,500 streetlights operated by KIUC are now shielded, as are the lights at the facilities it operates. In 2002 KIUC prepared an assessment of the power line segments originally identified by Ainley et al. (1995) as causing the most collisions (David et al. 2002). In 2007, KIUC began reconfiguring the lines along one of the "hotspot" areas along Kealia Beach by temporarily changing the uppermost electrical circuit from a vertical to a horizontal arrangement which eliminated three of four wire layers in the circuit and reduced the height by about 10 feet. KIUC has been coordinating with the Federal Highways Administration and Hawaii Department of Transportation to plan for the undergrounding of the lines along another hotspot segment near the Wailua River but the implementation has been delayed while issues related to the potential impacts of the project to cultural resources are being resolved.

Although Newell's shearwaters do not nest on the Kauai Lagoons property, they may fly over the project site when traversing between the ocean and mountainous breeding colonies. Fledgling seabirds may also fly over the project site and become disoriented by lights when attempting to reach the ocean. To date, there is very little nighttime activity on the Kauai Lagoons property, as only two new buildings associated with the current and planned development projects are complete and occupied. The SOS Program did report that one downed Newell's shearwater was found on the property during the 2009 fledging season. Additionally, downed Newell's shearwaters have been recorded in relatively high numbers at the adjacent Marriott hotel property. As a result, it is possible

that following build-out and occupation of the new buildings at Kauai Lagoons Resort, downed Newell's shearwaters could occur there. Although Kauai Lagoons Resort is not within a primary route used by Newell's shearwaters accessing nesting sites, seabird passage rates are high in the project area.

Newell's shearwaters nest in the mountains and feed at sea. Survival and reproductive success depend on an unobstructed and unlighted flight between the breeding colony and the ocean. Although Kauai Lagoons shall implement conversation measures designed to avoid and minimize impact to Newell's shearwaters flying overhead, lights from the property may still impact some birds' ability to successfully fly between the breeding colony and the ocean.

Anticipated Take

The HCP indicates a total of 27 Newell's shearwater fledglings are likely to be killed or injured, directly or indirectly, by operation of Kauai Lagoons Resort over the 30-year term of the proposed action. The authorization of take due to death or injury to 27 fledglings represents 1.2 percent of the 2,173 Newell's shearwater that are estimated to fledge annually on Kauai. It is estimated that 0.3 percent of Newell's shearwaters survive from fledgling to breeding (Ainley et al. 2001; p. 116). Therefore approximately 8.99 of those 27 fledglings would have survived until adulthood if not impacted by lighting at Kauai Lagoons Resort. Take estimates are discussed and analyzed in the HCP (Ebbin Moser & Skaggs LLP 2012) and the Service's Biological Opinion (Service 2012b).

The Service concurs with this assessment of impact because the HCP's fatality, injury, and indirect take estimates are based on the best available information regarding the expected take of the Newell's shearwater. Site-specific data gathered by Kauai Lagoons supports the results presented in the HCP.

Mitigation

To mitigate for unavoidable take of Hawaiian seabirds, Kauai Lagoons will make a financial contribution to the mitigation program being created by the Kauai Seabird Habitat Conservation Plan (KSHCP) currently being developed by DOFAW and the Service. The exact amount of that financial contribution is currently unknown because the KSHCP has not been finalized, but Kauai Lagoons commits to pay the per-bird per-year amount that is established by the KSHCP and approved by DOFAW and the Service. The KSHCP intends to pool mitigation payments from numerous applicants, and utilize that money to support SOS and perform habitat management and predator control work in several seabird breeding colonies on Kauai. The KSHCP is expected to be finalized and approved by late 2012, in advance of Kauai Lagoons' need to mitigate for potential take which will not arise until the fall of 2015.

If the KSHCP program is not available, Kauai Lagoons would instead contribute $10,000 (or whatever amount is determined by Kauai Lagoons and approved by DOFAW and the Service at that time as providing adequate mitigation) per fledgling seabird take per year

to a dedicated escrow account, and Kauai Lagoons would then apply such funds to a seabird-benefitting mitigation project determined in consultation with and subject to the approval of DOFAW and the Service. Kauai Lagoons shall provide the funds necessary to complete the required mitigation and ensure that the proposed mitigation plan is carried out.

Anticipated Benefits of Mitigation

To mitigate for unavoidable take of Hawaiian seabirds, Kauai Lagoons will provide funds to KSHCP, a joint effort between the Service and DOFAW to address ongoing take of seabirds across the island of Kauai. The intent of this HCP is to combine mitigation funds to conduct effective recovery actions at seabird colonies, such as habitat management and predator control. The colonies where management will be implemented are known to be used by Newell's shearwater and the Hawaiian petrel for nesting, and band-rumped storm-petrels have been heard calling. Therefore, implementation of the colony management under KSHCP is anticipated to reduce predation on all three Covered Species of seabirds, and thus reduce adult and chick mortality due to cat and rat predation and increase reproductive success. Habitat improvements, such as invasive plant species control, will increase habitat availability for future nesting opportunities. The benefit of the mitigation measures proposed to be implemented in KSHCP cannot be estimated accurately due to uncertainty in the effectiveness of proposed measures. Therefore, the program will rely on adaptive management to ensure that all authorized take is adequately outset through increasing survival and reproductive success of the three covered seabird species.

Although the KSHCP is still in development, it is planned to be finalized in advance of Kauai Lagoons' construction projects, which will initiate the need to mitigate for their anticipated take. Because KSHCP is still in development, it is currently unknown what cost per bird will be required. The cost per bird will be determined by the cost of implementing the necessary recovery actions that will adequately offset the take of all KSHCP applicants.

Hawaiian Petrel

Species Background

The Hawaiian petrel was listed as endangered on March 11, 1967 (USFWS 1983). Hawaiian petrels were abundant and widely distributed before humans inhabited the Hawaiian Islands; with petrel bones observed in archaeological sites throughout the State. Today Hawaiian petrels nest on at least five islands: Hawaii, Maui, Kauai, Lanai, and Molokai (Simons and Hodges 1998). Based on pelagic observations, the total population including juveniles and subadults was estimated at 20,000 with a breeding population of 4,500 to 5,000 pairs in 1995 (Spear et al. 1995, p. 629). There have been no total population estimates made since then. Kauai populations are difficult to assess, and Day and Cooper (1995, p. iv) estimated there were between 1,400 and 7,000 individuals on

that island in 1993. Ainley et al. (1997a, p. 28) estimated that there were 1,600 breeding pairs of Hawaiian petrel on Kauai.

Like other procellariiformes, Hawaiian petrels are highly philopatric, returning to the same burrow and mate each year (Simons 1985 pp. 233-234). Beginning in mid-February to early-March, after a winter absence from Hawaii lands, breeding and non-breeding birds visit their nests regularly at night. After a period of social activity and burrow maintenance they return to sea until late April, when they return to the colony site and egg-laying commences. From mid-March to mid-April, birds visit their burrows briefly at night on several occasions. Then breeding birds return to sea until late April or early May, when they return to lay and incubate their eggs (Simons 1985).

The recovery goals for the Hawaiian petrel include: (1) protect and enhance existing colonies; (2) create new colonies; (3) mitigate new and existing threats by (a) implementing prioritized management actions, and (b) undertaking research and outreach to support those actions. Actions identified to accomplish these goals for Hawaiian petrel include conducting surveys for existing colonies, controlling threats at the highest priority colonies, and minimizing and monitoring terrestrial threats away from the colonies (light attraction, power line collisions).

Threats to the Hawaiian petrel are the same as described above for the Newell's shearwater.

As with Newell's shearwaters, Hawaiian petrels do not nest on the Kauai Lagoons property, but they may fly over the project site when traversing between the ocean and mountainous breeding colonies. Fledgling seabirds may also fly over the project site and become disoriented by lights when attempting to reach the ocean. To date there have not been any downed Hawaiian petrels recorded on the Resort property. It is possible that following build-out and occupation of the new buildings at Kauai Lagoons Resort could result in downed Hawaiian petrels. Although Kauai Lagoons Resort is not within a primary route used by Hawaiian petrels accessing nesting sites, seabird passage rates are high in the project area.

Hawaiian petrels nest in the mountains and feed at sea. Survival and reproductive success depend on an unobstructed and unlighted flight between the breeding colony and the ocean. Although Kauai Lagoons shall implement conservation measures designed to avoid and minimize impacts to Hawaiian petrels flying overhead, lights from the property may still impact some birds' ability to successfully fly between the breeding colony and the ocean.

Anticipated Take

The HCP indicates a total of one Hawaiian petrel fledgling is likely to be killed or injured, directly or indirectly, by operation of Kauai Lagoons Resort over the 30-year term of the proposed action. The authorization of take due to the death or injury to one Hawaiian petrel represents 0.01percent of the 20,000 birds estimated in the population.

Take estimates are discussed and analyzed in the HCP (Ebbin Moser & Skaggs LLP 2012) and the Service's Biological Opinion (Service 2012b).

The Service concurs with this assessment of impact because the HCP's fatality, injury, and indirect take estimates are based on the best available information regarding the expected take of the Hawaiian petrel. Site-specific data gathered by Kauai Lagoons supports the results presented in the HCP.

Mitigation

Mitigation for the unavoidable take of one Hawaiian petrel is the same as described above for the Newell's shearwater.

Anticipated Benefits of Mitigation

Anticipated benefits of the Hawaiian petrel mitigation are the same as described above for the Newell's shearwater.

Band-Rumped Storm-Petrel

Species Background

The band-rumped storm-petrel (Hawaii Distinct Population Segment) is a candidate for listing under the ESA. The species' status is a continuing candidate, with listing petitions received by the Service on May 8, 1989, and May 11, 2004. The definition of "species" in section 3(15) of the ESA includes any distinct population segment(s) of any species of vertebrate fish or wildlife that interbreed when mature. For a vertebrate population to be listed under the ESA as a distinct population segment, three elements are considered: (1) the discreteness of the population segment in relation to the remainder of the species to which it belongs; (2) the significance of the population segment to the species to which it belongs; and (3) the populations segment's conservation status in relation to the ESA's standards for listing (Service 1996). The available information indicates that distinct populations of band-rumped storm-petrels are definable and that the distinct population segment of band-rumped storm-petrel in the Hawaiian Islands is discrete in relation to the remainder of the species as a whole. The population segment is distinct based on geographic and distributional isolation from other band-rumped storm-petrel populations in Japan, the Galapagos Islands, and the Atlantic Ocean. A population also can be considered "discrete" if it is delimited by international boundaries across which exist differences in management control of the species. The Hawaiian Islands population of the band-rumped storm-petrel is the only population within U.S. borders or under U.S. jurisdiction.

The band-rumped storm-petrel probably was common on all of the main Hawaiian Islands when aboriginal Polynesians arrived about 1,500 years ago (Berger 1972, pp. 25-26; Harrison et al. 1990, p. 47). As evidenced by abundant storm-petrel bones found in middens on the island of Hawaii (Harrison et al. 1990, p. 47) and in excavation sites on

Oahu and Molokai (Olson and James 1982, p. 33), band-rumped storm-petrels once were very numerous and nested in sufficiently accessible sites, including coastal areas, to be used as a source of food and possibly feathers (Harrison et al. 1990, p. 48). In Hawaii, band-rumped storm-petrels are currently known to nest only in remote cliff locations on Kauai and Lehua Islet, and in high-elevation lava fields on Hawaii (Wood et al. 2002, Hu, pers. comm. 2005, VanderWerf et al. 2007). Given the current scarcity of breeding colonies in Hawaii and their remote, inaccessible locations compared to prehistoric population levels, the band-rumped storm-petrel was significantly reduced in numbers and range following settlement of the Hawaiian Islands by aboriginal Polynesians. This likely was the beginning of a decline in the band-rumped storm-petrel population that has continued to the low numbers found today in the Hawaiian Islands. Wood et al. (2002) estimated that there were 171-221 nesting pairs of band-rumped storm-petrel on Kauai in 2002. Band-rumped storm-petrels nests are placed in crevices, holes, and protected ledges along cliff faces, where a single egg is laid (Slotterback 2002, pp. 12-14).

Threats to the band-rumped storm-petrel are the same as described above for Newell's shearwaters.

Band-rumped storm-petrels follow the same nesting pattern as the Newell's shearwater. To date there have not been any downed band-rumped storm-petrels recorded at Kauai Lagoons Resort. It is possible that following build-out and occupation of the new buildings at Kauai Lagoons Resort, downed band-rumped storm-petrels could occur.

Band-rumped storm-petrels nest in the mountains and feed at sea. Survival and reproductive success depend on an unobstructed and unlighted flight between the breeding colony and the ocean. Although Kauai Lagoons shall implement conservation measures designed to avoid and minimize impacts to band-rumped storm-petrels flying overhead, lights from the property may still impact some birds' ability to successfully fly between the breeding colony and the ocean.

Anticipated Take

The HCP indicates a total of one band-rumped storm-petrel fledgling is likely to be killed or injured, directly or indirectly, by operation of Kauai Lagoons Resort over the 30-year term of the proposed action. The authorization of take due to the death or injury to one band-rumped storm-petrel represents as high as 5.8 percent of the total population estimate of 171-221 breeding pairs on the island (Wood et al. 2002). Take estimates are discussed and analyzed in the HCP (Ebbin Moser & Skaggs LLP 2012) and the Service's Biological Opinion (Service 2012b).

The Service concurs with this assessment of impact because the HCP's fatality, injury, and indirect take estimates are based on the best available information regarding the expected take of the band-rumped storm-petrel. Site-specific data gathered by Kauai Lagoons supports the results presented in the HCP.

Mitigation

Mitigation for the unavoidable take of one band-rumped storm-petrel is the same as described above for the Newell's shearwater.

Anticipated Benefits of Mitigation

Anticipated benefits of the band-rumped storm-petrel mitigation are the same as described above for the Newell's shearwater.

III. Public Comment

The Service determined this ITP action qualifies 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). The EA was made available for public review through publication of a Notice of Availability in the *Federal Register* on July 12, 2011 (76 *FR* 40927 - 40929). The notice and supporting documents were mailed to agencies and private organizations with interest in the proposed action. Publication of the notice initiated a 45-day comment period. The State of Hawaii conducted a public review period on an earlier draft of the HCP as part of their review process, and Kauai Lagoons addressed these comments received prior to the Service's public review process.

The Service received two comments during the public review period from: National Park Service[1], and the Hawaii Department of Transportation (HDOT). An additional comment letter was received from the Federal Aviation Administration (FAA) after the public review period closed, but these comments were considered. Because some similar topics were submitted by both HDOT and FAA, all substantive comments related to the HCP or EA have been summarized in tabular format by topic rather than by commenter:

- **Comment #1 (HDOT-Airports Division, 8/26/11, pp. 1-2)**: *We are concerned about the growing population of Hawaiian geese adjacent to the Lihue Airport. Geese are serious threats to aircraft.* Comment noted. The HCP thoroughly discusses the airport agencies' concerns. See, for example, Sections 1.2, 1.5.6, 3.9.1, 3.10, and 4.4.1.5.

- **Comment #2 (HDOT-Airports Division, 8/26/11, pp. 1-2)**: *The overview section should mention the long standing concerns that the Hawaii Department of Transportation-Airport Division (HDOTA), the Federal Aviation Administration (FAA), and the U.S. Department of Agriculture Wildlife Services (USDA-WS) have had with the presence of endangered species populations at Kauai Lagoons, adjacent to the Lihue Airport.* The HCP thoroughly discusses the airport agencies' concerns. See, for example, Sections 1.2, 1.5.6, 3.9.1, 3.10, and 4.4.1.5.

[1] The comment letter from the National Park Service states "The National Park Service hereby submits a negative reply and has no comments on the plan at this time." Therefore, no response to this comment is required.

- **Comment #3 (HDOT-Airports Division, 8/26/11, item 1.4):** *At the October 2009 meeting, USDA-WS did not share the consensus of those who may have indicated that the Kauai Lagoons HCP would only address Kauai Lagoons resort construction and operation impacts. From our perspective the outcome from the meeting did not settle what course of action HDOTA and FAA would take to address the hazards to aviation caused by the large Hawaiian goose population on Kauai Lagoons property.* Section 1.2 has been revised to state that a consensus was reached between Kauai Lagoons, DOFAW and the Service regarding the scope of the HCP.

- **Comment #4 (HDOT-Airports Division, 8/26/11, item 4.1; FAA, 9/7/11, comment 2):** *The biological goals should be changed to reflect a goal of reducing and eventually eliminating a nesting population of Hawaiian geese at Kauai Lagoons, and to not accommodate Hawaiian geese breeding through habitat management.* It is not a biological goal of the HCP to eliminate Hawaiian geese from the property – reduction of the Hawaiian goose population and eventual elimination of Hawaiian geese from the Resort is a goal of the DOFAW translocation program being implemented pursuant to Governor Abercrombie's Proclamation. Kauai Lagoons will facilitate and cooperate with DOFAW's translocation efforts, but will also allow breeding of any remaining geese on the property during and after completion of DOFAW's translocation efforts. However, the HCP stipulates that Kauai Lagoons will do nothing that may further promote Hawaiian goose breeding. The biological goals (Section 4.1) have been modified to reflect this approach.

- **Comment #5 (HDOT-Airports Division, 8/26/11, items 4.1, 4.4.1.1, 4.4.1.2; FAA, 9/7/11, comment 2):** *USDA-WS opposes any onsite habitat management and maintenance for all wildlife that are a known risk or hazard to aircraft.* See response to Comment #4, above. Also, Kauai Lagoons does not seek to, and has no authority to, eliminate endangered species from its property. To the extent that the airport agencies (through the Wildlife Hazard Management Plan required by FAA regulations, and the Endangered Species Act Section 7 consultation process that the FAA is required to conduct with the Service as part of approving any Wildlife Hazard Management Plan), DOFAW and/or the Service choose to reduce or eliminate the populations of any endangered species at Kauai Lagoons Resort, Kauai Lagoons will cooperate with such efforts.

- **Comment #6 (HDOT-Airports Division, 8/26/11, item 4.4.1.6):** *The Kauai Hawaiian Goose Action Plan could take years to develop while the threat to aviation would continue. DOFAW and the Service already have the authority and expertise to mitigate the threat caused by Hawaiian geese to Lihue Airport and they should immediately begin reducing the population and encouraging them elsewhere.* As described in Section 3.9.1 and elsewhere in the HCP, in 2011 DOFAW began implementing a Hawaiian goose translocation, pursuant to Governor Abercrombie's April 14, 2011 Proclamation, to move Hawaiian geese

from Kauai Lagoons Resort to off-island locations. As a result, it is no longer necessary for Kauai Lagoons to develop, or fund the development of, a Kauai Hawaiian Goose Action Plan, as DOFAW has already prepared such a plan in order to implement the Proclamation.

- **Comment #7 (HDOT-Airports Division, 8/26/11, item 4.4.1.7):** *In our opinion Kauai Lagoons has already fulfilled the conditions of 195D requiring a net benefit to Hawaiian geese and should be allowed their incidental take permit without additional enhancement and protection.* Fulfillment of the 195D requirement is part of the State process; therefore, the Service has no authority to determine whether Kauai Lagoons has met their requirements. However, for the Federal HCP process, mitigation for unavoidable take of listed species must occur during the requested permit term. Past actions that resulted in a benefit to species cannot be used as mitigation for future take.

- **Comment #8 (HDOT-Airports Division, 8/26/11, item 5.3):** *We disagree with the rationale that reducing Hawaiian geese population by not enhancing habitat is somehow not scientific or systematic. We proposed Alternate #3 be adopted and that any enhancement of endangered species habitat be done away from Lihue Airport.* DOFAW's Hawaiian goose translocation project, pursuant to Governor Abercrombie's April 14, 2011 Proclamation, is a more appropriate and systematic program for addressing the aircraft safety issue then the passive approach described in Alternative 3. We understand that the airport agencies strongly support DOFAW's new translocation program.

- **Comment #9 (HDOT-Airports Division, 8/26/11, item 6.3.2):** *The list of "Changed Circumstances" should include future aircraft-wildlife incidents at Lihue Airport.* In an HCP, a "changed circumstance" is a reasonably foreseeable event that could affect the species (at the population level) during the term of the HCP, and thus result in agreed-upon changes to the HCP's conservation measures for the species notwithstanding the so-called "no surprises" assurances provided by State and Federal law to HCPs. Future interactions between aircrafts and wildlife do not constitute a "changed circumstance" as that term is used in the HCP process. The Service is concerned about the safety of aircraft and passengers and as such is committed to working with the FAA and the State when aircraft-wildlife incidents occur at Lihue Airport.

- **Comment #10 (FAA 2/4/11, p. 1; HDOT-Airports Division, 8/26/11, pp. 1-2):** *The FAA has maintained its position in pursuing certificated airports having a wildlife problem to assess wildlife through a Wildlife Hazard Assessment and to development and implement a Wildlife Hazard Management Plan (WHMP) to manage and control wildlife on and near airports. There have been wildlife-aircraft incidents at Lihue Airport. FAA regulations require airport operators to take immediate action to alleviate wildlife hazards at airports. Lihue Airport must establish a Wildlife Hazard Management Plan.* Consistent with the comment, Sections 1.5.6 and 3.10 of the HCP describe in detail the FAA's

mandatory certification requirements pertaining to wildlife hazards at airports. HDOT-Airports Division is required by the FAA's regulations to prepare a Wildlife Hazard Management Plan (WHMP) for the Lihue Airport, and the FAA is required by section 7 of the Endangered Species Act to initiate formal consultation with the USFWS concerning such a WHMP. DOFAW and the Service note that despite these mandatory requirements, a WHMP has not been finalized or implemented and the FAA has to date declined to initiate the required related ESA section 7 consultation process.

- **Comment #11 (HDOT-Airports Division, 8/26/11, re Implementing Agreement):** *The scope of any document/agreement related to the Kauai Lagoons HCP must be expanded to specifically address efforts to mitigate the aviation safety hazards.* Please refer to the response to Comment 10, above. HDOT-Airports Division is required by Federal law and FAA regulations to address wildlife threats to aviation safety. It is not within the scope of the Kauai Lagoons action or HCP to address aviation safety hazards. Kauai Lagoons has committed in the HCP to facilitate and cooperate with any airport agency efforts in that regard. However, the Service is committed to continuing to work with the FAA, DOFAW, and other State agencies to minimize wildlife caused aviation hazards.

- **Comment #12 (HDOT-Airports Division, 8/26/11, re HCP, p. 2):** *The official name of the airport is Lihue Airport, not Lihue International Airport.* Comment noted, and the HCP has been changed accordingly.

- **Comment #13 (HDOT-Airports Division, 8/26/11, re HCP, p. 2):** *The HCP must refocus its efforts on the relocation of Hawaiian geese away from Lihue Airport. The HCP must also incorporate hazing/harassing strategies to prevent/discourage the return of translocated Hawaiian geese.* Please refer to the Responses to Comments 4 and 6, above, regarding DOFAW's new translocation project. Any future hazing or harassing of Hawaiian geese due to aviation safety concerns should be addressed through the Wildlife Hazard Management Plan which HDOT-Airports Division is required to prepare, finalize and implement pursuant to FAA regulations.

- **Comment #14 (HDOT-Airports Division, 8/26/11, re HCP, item 1.5):** *The Regulatory Framework section should discuss FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports.* Section 1.5.5 of the HCP does address this FAA Advisory Circular.

- **Comment #15 (HDOT-Airports Division, 8/26/11, re HCP, item 1.5.2.1)**: *Please add references to certain Hawaii aviation statutes.* The two statutes referenced by the comment are simply general grants of authority to HDOT – Airports Division concerning aeronautics and airports, and are not relevant to the HCP issues, so the references were not added.

- **Comment #16 (HDOT-Airports Division, 8/26/11, re HCP, items 3.10, 4.4.1.5, 4.4.1.6, 6.4):** *The summary of the August 2010 meetings failed to clearly express the issue of fiscal responsibility of any Hawaiian geese translocation actions.* Translocation of Hawaiian geese from the Kauai Lagoons resort to other locations is not part of the HCP. As explained in the Final HCP, DOFAW is now performing such translocations as a separate project pursuant to Governor Abercrombie's April 14, 2011 Proclamation, using state funds. To mitigate un-avoidable take of Hawaiian geese, Kauai Lagoons is providing $85,000 to DOFAW for continued predator control and management of Hawaiian geese populations at translocation sites on other islands.

- **Comment #17 (FAA, 9/7/11, Comment 1):** *The HCP should also cite Governor Abercrombie's April 14, 2011 Proclamation declaring the presence of Hawaiian geese adjacent to the Lihue Airport as a threat to public health and safety requiring immediate action.* The Final HCP thoroughly discusses the Proclamation. See, for example, Section 3.9.1.

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 Permit 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 requires 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:

> "..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…"

In accordance with 16 U.S.C. § 1539(a)(2)(B), the Service makes the following findings:

1. The taking of federally listed species will be incidental.

The take of Covered Species within the Kauai Lagoons Project area will be incidental to the otherwise lawful construction of new facilities and ongoing operations of the Kauai Lagoons Resort.

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

The Service finds that implementation of the HCP is likely to minimize and mitigate the impacts of take of the Covered Species from the construction and operation of the resort and golf courses to the maximum extent practicable. The Service also finds the HCP represents the most practicable alternative to minimize and mitigate take impacts to the Covered Species.

Under the provisions of the HCP, Kauai Lagoons is likely to sufficiently reduce the risk of take of the Covered Species due to: (1) appropriate changes in facility design; (2) restrictions on construction activities; (3) reduced amounts of lighting; (4) pre-construction surveys for Covered Species that trigger avoidance activities; (5) appropriate restrictions on golf operations; (6) enforcement of onsite vehicular speed limits; and (7) a year-round impact monitoring plan.

Kauai Lagoons proposes to offset Project-related take impacts and provide a net conservation benefit in accordance with Hawaii State law to the Covered Species through the implementation of the HCP mitigation measures. These mitigation measures were selected in collaboration with biologists from the Service, DOFAW, Kauai Lagoons' consultants, and with members of the Endangered Species Recovery Committee. The Applicant is proposing mitigation measures that include: (1) onsite management and predator control for Hawaiian geese in the short-term; (2) funds for DOFAW to provide predator control and support for Hawaiian geese translocation sites on other islands; (3) onsite habitat enhancement, predator control, and management for covered Hawaiian waterbirds; and (4) payment into the KSHCP to conduct seabird colony predator control and management. The HCP incorporates adaptive management provisions to allow for modifications to the mitigation and monitoring measures as knowledge is gained during project implementation.

3. The Permittee will ensure adequate funding for implementation of the HCP and provide procedures for dealing with unforeseen circumstances.

Kauai Lagoons warrants that it has, and will expend, the funds identified in Chapter 6 of the HCP, as such funds may be necessary to fulfill its obligations under the HCP. If such funding is not sufficient to provide the necessary conservation, Kauai Lagoons shall nonetheless be responsible for ensuring that the necessary mitigation is completed. Kauai Lagoons shall secure a funding assurance of $153,667.00 in a form approved by the Service and the Hawaii Department of Land and Natural Resources within 60 days from the date of the issuance of the ITP. Kauai Lagoons shall promptly notify the Service of any material change in their financial ability to fulfill the obligations outlined in the HCP.

Pursuant to the Service's "No Surprises" regulations [50 CFR 17.22(b)(5) and 17.32(b)(5)], the HCP includes reasonable and appropriate procedures to address

unforeseen circumstances. In the event of unforeseen circumstances affecting the Covered Species, Kauai Lagoons will 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 Covered Species without the consent of Kauai Lagoons and 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 federally listed species in the wild.

The proposed action to issue an ITP to Kauai Lagoons was reviewed by the Service pursuant to the requirements section 7(a)(2) of the ESA. The Service's Biological Opinion concluded that approval of Kauai Lagoons' Permit application is not likely to jeopardize the continued existence of the federally endangered Hawaiian goose, Hawaiian stilt, Hawaiian coot, Hawaiian moorhen, Hawaiian duck, Hawaiian petrel, and the threatened Newell's shearwater, and a candidate for listing, the band-rumped storm-petrel. This conclusion was based on consideration of the following factors:

Activities that may affect the Hawaiian goose at Kauai Lagoons Resort include new construction and operations of the resort and golf courses. Hawaiian geese are prevalent at Kauai Lagoons Resort and are known to loaf, forage, and breed throughout the property. In the near future (now through April 2016), DOFAW is conducting a translocation effort to move all Hawaiian geese at Kauai Lagoons Resort to sites on other islands, pursuant to the Governor's Proclamation. Although the goal of this effort is to eliminate Hawaiian geese at Kauai Lagoons Resort, take estimates and associate mitigation is based on the assumption that low levels of Hawaiian geese may persist at Kauai Lagoons Resort after the completion of the translocation. Based on these estimates, it is anticipated that no more than 17 Hawaiian geese will be taken, directly or indirectly, over the 30-year permit term. Mitigation for take of the Hawaiian goose will include habitat management and predator control while birds remain on the property, as well as funds to DOFAW for use in long-term management, monitoring, and predator control at translocation sites on other islands ($85,000). Both forms of mitigation are likely to be successful as these methods have been known to promote highly successful breeding.

Activities that may affect Hawaiian waterbirds at Kauai Lagoons Resort include ongoing operations of the resort and golf courses. Due to the incorporation of avoidance and minimization measures, no take of Hawaiian waterbirds from new construction activities is anticipated. Hawaiian waterbirds are present at Kauai Lagoons Resort and are known to loaf, forage, and breed on the property. Current levels of Hawaiian waterbird populations are anticipated to persist at Kauai Lagoons Resort throughout the life of the 30-year permit term. Mitigation for take of Hawaiian waterbirds will include habitat management and predator control onsite.

The HCP indicates a total of 38 Hawaiian stilts (mortality or non-lethal injury), 70 Hawaiian moorhen (40 mortality, 30 non-lethal injury), 290 Hawaiian coots (110

mortality, 180 non-lethal injury), and 36 Hawaiian ducks (mortality or non-lethal injury) are likely to be taken, directly or indirectly, by operations at Kauai Lagoons Resort over the 30-year term of the proposed action. Kauai Lagoons will continue to manage habitat and conduct predator control for the benefit of breeding Hawaiian waterbirds. These methods have proved very effective at protecting Hawaiian waterbirds and promoting foraging and reproductive success. In addition to previously utilized techniques, they will also control cattle egrets, which are known to prey on eggs and young chicks/ducklings. After April 2016 it is anticipated that only a few Hawaiian geese will be present at Kauai Lagoons Resort. At that time, all predator control efforts at Kauai Lagoons Resort will be focused on areas where Hawaiian waterbirds are known to occur and nest. These management activities will increase the survival and reproductive success of the Hawaiian waterbirds population throughout the life of the 30-year permit term, and therefore more than offset Kauai Lagoons' take of Hawaiian waterbirds.

Activities that may affect Hawaiian seabirds at Kauai Lagoons Resort include operations of the resort and the use of nighttime lighting. Due to the incorporation of avoidance and minimization measures, no take of Hawaiian seabirds from construction activities is anticipated. While Hawaiian seabirds do not nest at Kauai Lagoons Resort, they may fly over the property when traversing between breeding colonies and the ocean.

The HCP indicates a maximum of 27 Newell's shearwaters (mortality or non-lethal injury), one Hawaiian petrel (mortality or non-lethal injury), and one band-rumped storm-petrel (mortality or non-lethal injury) are likely to be taken, directly or indirectly, by operations of Kauai Lagoons Resort over the 30-year term of the proposed action.

To mitigate for unavoidable take of Hawaiian seabirds, Kauai Lagoons will provide funds to implement the KSHCP, a joint effort between the Service and DOFAW to address ongoing take of seabirds across the island of Kauai. The intent of the KSHCP is to pool mitigation funds from KSHCP participants that need incidental take authorization to conduct effective recovery actions at seabird colonies, such as habitat management and predator control. The colonies where management will be implemented are known to be used by the Newell's shearwater and the Hawaiian petrel for nesting, and band-rumped storm-petrels have been heard calling at these sites, and may breed there. Therefore, implementation of the colony management under KSHCP is anticipated to reduce predation on all three Covered Species and, and thus reduce adult and chick mortality due to cat and rat predation and increase reproductive success. Habitat improvements, such as invasive plant species control, at the mitigation areas will increase habitat availability for future nesting opportunities by the covered seabirds. Although the KSHCP is still in development, it is planned to be finalized in advance of Kauai Lagoons' construction projects, which will initiate the need to mitigate for their anticipated take.

If the KSHCP program is not available, Kauai Lagoons would instead contribute $10,000 (or whatever amount is determined by Kauai Lagoons and approved by DOFAW and the Service at that time as providing adequate mitigation) per fledgling seabird take per year to a dedicated escrow account, and Kauai Lagoons would then apply such funds to a seabird-benefitting mitigation project determined in consultation with and subject to the

approval of DOFAW and the Service. Kauai Lagoons will provide the funds necessary to complete the required mitigation and ensure that the proposed mitigation plan is carried out.

Cumulative Effects

Kauai Lagoons Resort is situated on private lands in Lihue, Kauai, and is adjacent to the Lihue Airport. Hawaiian geese at the site are being translocated to other islands pursuant to the Governor's Proclamation. DOFAW will continue to translocate Hawaiian geese from the site until the end of the effective period of the Proclamation in April 2016. As the Kauai Lagoons Resort Hawaiian goose population is moved, new birds from other areas on Kauai may be attracted to the site. After 2016, HDOT – Airports Division will address long-term concerns regarding the hazing of Hawaiian geese away from sensitive areas where they could pose a threat to the safe operation of Lihue Airport. Pursuant to the ESA, these impacts would be assessed in a biological opinion under section 7 of the ESA or mitigated to the maximum extent practicable via development and implementation of a Habitat Conservation Plan.

Although there are no proposed development projects within the area affected by the proposed Permit action, it is reasonable to assume that development on Kauai will continue to increase. Increased development may increase the density of mammalian predators adversely affecting the Covered Species. Development may also increase lighting levels and transmission/communication lines in the area, resulting in additional take impacts to listed seabird species. Areas of mowed grass and standing water maintained in association with new developments are likely to attract the Hawaiian goose to areas where it will be exposed to vehicle strike and increased predation. Pursuant to the ESA, these impacts would be assessed in biological opinions under section 7 of the ESA if such effects are likely to be caused by proposed Federal actions or mitigated to the maximum extent practicable via development and implementation of Habitat Conservation Plans.

Based on the proposed minimization, mitigation, and adaptive management measures under the HCP to offset take of the Covered Species, it is the Service's biological opinion that the Permit issuance for the proposed Kauai Lagoons project is not likely to jeopardize the continued existence of the Covered Species.

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

The HCP incorporates all other elements determined by the Service to be necessary for approval of the HCP and issuance of the Permit.

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

The Implementing Agreement between Kauai Lagoons and the Service will help to 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. Recommendations on Permit Issuance

Based on the foregoing findings with respect to the proposed action, I recommend approval of the issuance of Permit number TE75220A-0 to Kauai Lagoons for the incidental taking of the Covered Species in accordance with the Kauai Lagoons HCP.

Nov. 9, 2012
Date

Deputy Regional Director
U.S. Fish and Wildlife Service
Region 1, Portland, Oregon

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