# 2020 KSHCP ANNUAL REPORT

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**EXECUTIVE SUMMARY**

The three listed seabird species in Hawai‘i: the Newell’s Shearwater (NESH; *Puffinus auricularis newelli*, Hawaiian name: ‘a‘o), the Hawaiian Petrel (HAPE; *Pterodroma sandwichensis*, Hawaiian name: ‘ua‘u), and the Hawai‘i distinct population segment (DPS) of the band-rumped storm-petrel (BANP; *Oceanodroma castro*, Hawaiian name: ‘akē‘akē, hereafter band-rumped storm-petrel) are threatened by attraction to artificial lights, which has been observed and documented on Kaua‘i for decades. The Kaua‘i Seabird Habitat Conservation Plan (KSHCP) was developed and finalized in 2020 to address light attraction impacts to the listed seabirds on the island of Kaua‘i. The KSHCP also addresses the impacts of lights on the Central North Pacific distinct population segment (DPS) of the green sea turtle (*Chelonia mydas*, Hawaiian name: honu, hereafter honu). This report documents and evaluates the activities conducted in the first year of the KSHCP (2020) by both the KSHCP participants, and their selected prime contractor, towards fulfilling the objectives of the KSHCP as approved by the regulatory agencies. The report focuses on the Kahuama’a seabird preserve management, mitigation, take, and compliance effectiveness monitoring, and summarizes the financial status of the HCP.

The Kahuama’a seabird preserve site was selected during the HCP process to create a fenced, predator-free seabird preserve in the northwest region of Kaua‘i. Due to a large landslide that occurred at the originally proposed site, an alternative preserve site was selected 102m away from the original site resulting in changed circumstances being initiated almost immediately upon the adoption of the HCP. The new site selected provides comparable area and habitat to the originally proposed site. In 2020, all fence materials were ordered and delivered, and the fence contractor was selected and staged in order to begin construction in 2021. Biological monitoring of forest bird, seabird and habitat at the preserve site commenced on schedule in late 2020 and all required surveys were completed during that time to provide an inventory of the flora and fauna present in the area. Intensive burrow searching indicated that seabirds do not appear to be nesting in the immediate project area, but with the deployment of social attraction infrastructure in 2021, it is expected they will find the site readily. Predator control was initiated along the Kalalau Rim with 20 live traps, and an additional 12 traps along the Alakai Swamp Trail. A total of three cats and 39 rats were removed in 2020 over 784 trap nights.

In addition to the creation of the Kahuama’a seabird preserve and associated predator control activities implemented by the prime contractor, participants in the KSHCP were required to minimize and document seabird take at their facilities. Most participants ensured that lighting at their facilities was reduced and modified in order to be in compliance with the guidelines set forth in the KSHCP. In some cases, lights were completely turned off at the properties for the duration of the season. For tourism-based properties, lighting was significantly decreased as a result of closed facilities and/or greatly reduced occupancy due to the COVID 19 pandemic. Based on the reports and photos provided, all participants have made significant efforts towards reducing light pollution and thus risk to listed seabirds, at their properties. Each Participant also conducted annual outreach and training for workers at their facilities that is specific to Covered Seabirds in order to help workers spot downed seabirds and know how to respond in a timely manner. Overall, outreach at each participant facility was adequate and professionally presented.

In addition to light reduction and training requirements, all covered facilities were required to control non-native predators to protect any downed birds on their properties. Of the 68 properties included in the KSHCP, only 16 of those properties conducted predator control, resulting in significant gaps in coverage of predator control. Of the remaining 16 properties that did conduct predator control, seven were deemed to be effective based on meeting the minimum number of trap nights and trap placement. In total, 201 feral cats and two dogs were removed from participant facilities during the 2020 seabird fallout season. Predator control efficacy varied largely between participants and their properties, related to effort, expertise and situational dependent variables such as proximity to known feral cat colonies and the efficacy of the contractor selected to conduct the work.

Compliance monitoring evaluates whether the actions described above are being properly implemented and is used to ensure that each enrolled Participant meets its obligation under this HCP and the individual PIPs. In total, four NESH

were found on participants' properties during the 2020 seabird fallout season. All were alive; one flew off from the site and the remaining three were brought to the Save our Shearwaters facility at the Kauai Humane Society for release after stabilization. An additional four NESH, three alive and one dead, were found during searches conducted as part of the KSHCP on neighboring properties. No HAPE or BANP were found during the 2020 season. One Honu nest was found and monitored.

Overall, the objectives of the KSHCP were partially, but not completely, met in 2020. Details and reasons for discrepancies are described in detail below.

# INTRODUCTION

Three listed seabird species breed seasonally in Hawai‘i: the Newell’s Shearwater (*Puffinus auricularis newelli*, Hawaiian name: ‘a‘o), the Hawaiian Petrel (*Pterodroma sandwichensis*, Hawaiian name: ‘ua‘u), and the Hawai‘i distinct population segment (DPS) of the band-rumped storm-petrel (*Oceanodroma castro*, Hawaiian name: ‘akē‘akē, hereafter band-rumped storm-petrel), making the island’s essential to the conservation of these species. These species are part of the unique natural and cultural heritage of Hawai‘i, and the island of Kaua‘i provides important breeding habitat for all three species. Protecting and managing that habitat to support viable population of these species is critical for their long-term survival.

Among the threats known to impact the listed seabird species is the attraction to artificial lights, which has been observed and documented on Kaua‘i for decades. The Kaua‘i Seabird Habitat Conservation Plan (KSHCP) was developed and adopted in Year 2020 to address the light attraction impacts to the listed seabirds on the island of Kaua‘i. The KSHCP also addresses the impacts of lights on the Central North Pacific distinct population segment (DPS) of the green sea turtle (*Chelonia mydas*, Hawaiian name: honu, hereafter honu). The proposed duration of the KSHCP is for 30 years and the geographic scope of the KSHCP coverage is the island of Kaua‘i.

Light attraction fallout on the island of Kaua‘i occurs in a widespread manner, with certain geographic areas having concentrated, higher amount of observed fallout. Seasonally, most fallout occurs in the autumn months, coinciding with the seabird fledgling season. Many different entities on Kaua‘i (resorts, businesses, and governmental agencies) have documented seabird fallout on their property and at their facilities resulting from the effects of light attraction. Light attraction on Kaua‘i is an island-wide problem that negatively impacts the listed seabird species and is collectively attributable to many different entities.

The KSHCP relies on a unique structure to best meet the need for an effective and efficient response to the widespread nature of light attraction impacts on Kaua‘i. The structure of the KSHCP enables multiple individual entities on Kaua‘i to apply for take authorization for light attraction impacts to the listed seabird species under one coordinated framework. This framework takes advantage of economies of scale and enables a pooling of resources to collectively achieve conservation goals. The requirements of the KSHCP, and the enrollment and approval process for listed species take authorization are defined in the KSHCP and consist of two parts: 1. the KSHCP document with associated appendices; and 2. material submitted by each applicant providing detailed descriptions of on-site minimization measures, covered activities, a monitoring plan and the amount of take authorization being requested.

In 2020, applicants to the KSHCP were each issued approved Incidental Take Permits (ITP) from the U. S. Fish & Wildlife Service (USFWS) and Incidental Take Licenses (ITL) from the State of Hawai‘i Department of Land and Natural Resources (DLNR). The mitigation and minimization measures contained in the KSHCP were developed to inform the preparation of individual applications for listed seabird take authorization permits. The KSHCP defines a set of actions to minimize and mitigate the effects of light attraction on the listed seabirds and to meet conservation goals. The KSHCP provides a suite of minimization actions and requires that each Applicant to the KSHCP implement all the measures that are applicable to their facility and operational needs. Minimization measures emphasize reducing the amount of light that shines upward and reducing the amount of light output or intensity, which have been shown to reduce the effects of light attraction. Under the KSHCP, the minimization measures include:

- Deactivation of unnecessary lights.
- Use of full cut-off light fixtures (or their functional equivalent).
- Shielding existing light fixtures.
- Angling lights downward.
- Lowering the light output or intensity.
- Use of motion sensor light fixtures.
- Decreasing the visibility of interior lights.

Under the KSHCP, mitigation actions are designed to provide a net benefit to the covered species as required by Hawaii law. Because some seabirds grounded by light attraction are found alive and deemed healthy, or are able to be rehabilitated, those birds will be released back into the wild. For seabirds that are found dead, those not found but assumed to have been impacted by light attraction, and for those birds that could not be released back into the wild, light attraction is considered by the agencies to have caused the incidental take of the affected birds. For impacts to those birds, approved mitigation consists of predator control and the creation of a fenced seabird preserve (known as the Kahuama'a Seabird Preserve) in the northwest region of Kaua'i. In this preserve, predators will be removed and seabirds will be lured to the site via social attraction, a well-established conservation technique for the creation of new seabird colonies; details of the progress of this activity are documented below. The absence of predators will enable the seabirds to breed more successfully and with higher reproduction rates than in areas outside the preserve, thereby providing a conservation benefit to the seabird populations. The preserve site is located in Kōke'e State Park along the Kalalau rim. Predator control will be conducted in the vicinity of the preserve to reduce the impacts of predation on seabirds breeding nearby.

The funding design of the KSHCP features a cost-sharing structure. Total costs of the KSHCP, including implementation, mitigation, monitoring, Adaptive Management as needed and reporting, is shared amongst the permit recipients according to the relative amounts of take authorized. Compliance and effectiveness monitoring has been conducted to ensure that authorized amounts of take are not exceeded and to enable the wildlife agencies to determine that mitigation actions are meeting conservation goals. The purpose of take monitoring is to determine when and where take of Covered Species occurs, and documents monitoring efforts. There are three types of monitoring addressed in the KSHCP: compliance, effectiveness, and take monitoring.

1. "Compliance monitoring" verifies implementation of the HCP terms and conditions by the individual Participants and the Prime Contractor. Annual reports and reporting requirements (as outlined in Section 6.6) were provided by each Participant and the Prime Contractor to document that the Participant has performed all of the required tasks and activities. (Actions on site to reduce/eliminate light attraction).
2. "Effectiveness monitoring" evaluates the success of the HCP to minimize and mitigate take of listed species to the maximum extent practicable; evaluating whether minimization measures are effective and sufficient; and the extent to which mitigation measures are successful.
3. "Take monitoring" determines when and where take of Covered Species occurs, and documents monitoring efforts.

The purpose of this report is to compile, document and evaluate the effectiveness of the activities conducted in Year 2020 by both the KSHCP participants, and their selected prime contractor towards fulfilling the objectives of the KSHCP as approved by the regulatory agencies. An additional purpose of this report is to describe compliance and effectiveness monitoring of mitigation at the Kahuama'a Seabird Preserve as required by KSHCP 6.6.2.4 and Table 6-1. The report is divided into six sections:

1. Kahuama'a seabird preserve management.
2. Summary of KSHCP participants' annual reports.
3. Mitigation effectiveness monitoring.
4. Take monitoring effectiveness.
5. Compliance monitoring and summary of changes.
6. Financial report.

The goal is to synthesize and summarize several hundred pages of information from lengthy reports into a succinct easy to read document that will allow the participants and agencies to evaluate the effectiveness of the first year of KSHCP implementation. Thus, for the sake of readability, tables and figures are used frequently in order to present information in a clear and easy to understand format.

# SEABIRD PRESERVE MANAGEMENT

The KSHCP conservation program, described in detail in *Appendix A: Kahuama'a Seabird Preserve Management Plan*, is comprised of several mitigation activities include establishment of a seabird social attraction site (SAS) and construction of a predator-proof fence (PPF) enclosing approximately 2ha of suitable seabird breeding habitat.

The specific mitigation activities associated with this component of the KSHCP include:

1. Construction and long-term maintenance of the 2ha predator proof fence enclosure.
2. Installation and long-term maintenance of social attraction equipment (speakers, solar panels, artificial burrows) within the enclosure.
3. Eradication of predators from within the enclosure and implementation of long-term predator control at the site.
4. Monitoring for predator incursions within the enclosure.
5. Barn owl control around the preserve and in the surrounding Kalalau Valley area.
6. Feral cat control at ingress points to the SAS and neighboring source colonies in the Kalalau Valley.
7. Invasive plant control and vegetation control within the 2ha PPF enclosure and along a 50m 'predator defense zone' outside the fence.
8. Monitoring of the Covered Seabirds and their burrows/artificial nest boxes, including the physical handling and banding of birds by trained, federally permitted staff.
9. Monitoring of other listed species (plants, forest birds, etc.) within the 2ha PPF enclosure; and
10. Downed seabird recovery, evaluation, rehabilitation, and release to sea.

The Participants' Committee, on behalf of all the individual Applicants, procured and entered into an agreement with Prime Contractor to perform the mitigation and project management measures outlined in the KSHCP. The Prime Contractor has conservation biology and project management experience and holds recovery permits necessary to conduct its work under Section 10(a)(I)(A) of the Endangered Species Act and/or Sections 13-124-4 and 13-124-6 of the Hawaii Administrative Rules. [1] The Prime Contractor also compiles data for the Annual Reports on mitigation progress. The following section reports on the efforts conducted in 2020 to execute the mitigation activities associated with the Kahuama'a Seabird Preserve

*Table 1 : Timeline of completed (2020) and future (2021 onwards) activities for the Kahuama'a Seabird Preserve Management.*

| | 2020 | | | | | 2021 | | | | | | | | | | | | 2022-2025 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | S | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D |
| **Infrastructure installation** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fence construction | | | | | | x | x | x | x | | | | | | | | | | | | | | | | | | | | |
| Install sound system | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | |
| Install artificial burrows | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Restoration** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weeding | | | | | | | | x | | x | | x | | | x | | x | x | | | | x | | x | | | x | | x |
| Out planting | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | |
| Botanical surveys | | | x | | | x | | | | x | | x | | | x | | x | x | | | | x | | x | | | x | | x |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Predator control** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rodent trapping inside the fence | | | | | | | | x | x | x | | | | | | | | | | | | | | | | | | | |
| Cat control inside fence | | | | | | | | x | x | x | | | | | | | | | | | | | | | | | | | |
| Cat control outside fence | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Barn owl control outside fence | | | | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Seabird monitoring** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acoustic surveys | x | x | x | x | | | | x | x | x | x | x | x | x | x | x | | | | x | x | x | x | x | x | x | x | x | |

## Administrative Summary

Pacific Rim Conservation (PRC) was selected as the prime contractor for the KSHCP and entered into contract with the Participants Committee on 12th June 2020. Pacific Rim Conservation's responsibilities include implementing the Management Plan for the Kahuama'a Seabird Preserve as well as other KSHCP duties, such as compiling data for the annual report.

Pacific Rim Conservation is a 501(c)3 nonprofit organization whose mission is to maintain and restore native bird diversity, populations, and ecosystems in Hawaii and the Pacific Region and is a 'boots on the ground' conservation organization. With more than 15 years' experience, PRC is an expert in listed seabird monitoring, project management and predator exclusion fence construction and holds current state and federal permits to conduct the work required under the HCP.

Dr. Lindsay Young, the Executive Director of PRC is responsible for overall supervision of the project and serves as the point of contact between the participants group and PRC. In August 2020, an interim Project Manager (Holly Naholowaa) and Biologist (Molly Monahan) were hired from within existing PRC staff to the mitigation project. The project manager's contact was completed at the end of 2020, and a new, permanent project manager will be advertised for and hired in 2021. The biologist hired has passed the probation period and will be the permanent project biologist and is currently being assisted in the field by a biological technician.

## Fence alignment and construction

The final fence alignment is shown below in figure 1. Since this deviates from the alignment presented in the final KSHCP, a discussion of the changed circumstances and adaptive management is presented below as it relates to the fence alignment.

*Changed circumstances and adaptive management*

On 1 July 2020, Pacific Rim Conservation (PRC), four members from the Hawaii Division of Forestry and Wildlife (DoFAW) and two fencing contractors (Pono Pacific and JBH Enterprises Ltd) visited the proposed Kahuma'a Seabird Preserve. A large landslide (~25m wide and 100m long) had occurred at the originally proposed site rendering it unsuitable as a project site moving forward. The group was able to assess another site 102m away during the same visit that had an existing ungulate fence for rare plants and could serve as a suitable alternative site. On 06 August 2020, a more detailed site visit was conducted with representatives from State Parks, Kauai DoFAW, DoFAW botanists and KESRP to determine the precise fence alignment, address botanical concerns and validate the area was suitable for seabirds. After the conclusion of the site visit on 06 August, a close to final fence alignment was identified with all parties mentioned above being in support of the new site moving forward. The following details outline the characteristics of the new site in comparison to the original site. In summary, the new site is larger, provides a comparable amount of habitat for seabirds and is likely less expensive to build as a result of the terrain.

*Table 2: Comparison of the original vs new KSHCP fencing sites*

| | **Original** | **New** |
|---|---|---|
| Length (m) | 640 | 873 |
| Area (acres) | 4.29 | 9.18 |
| % native habitat | 65% | 95% |
| Area of suitable seabird habitat (acres) | 4.29 | 4.10 |
| Steepest slope angle | 55° | 35° |
| Area of site on minimal slope (acres) | 2.8 | 8.18 |
| Area of site on steepest slopes | 1.49 | 1.0 |
| Cost/m | $1,424-$1,954/m | $239.60-$611.68/m |
| Cost of future maintenance | High | Low |


*Figure 1: Kahuama'a Seabird Preserve new location (yellow) with suitable seabird habitat in red*


*Figure 2: Kahuama'a Seabird Preserve new location (yellow) compared to previous location (green). Sites are 400 feet apart*


*Figure 3: Habitat and slope of original proposed KSHCP site (left) and landslide at the site (right)*

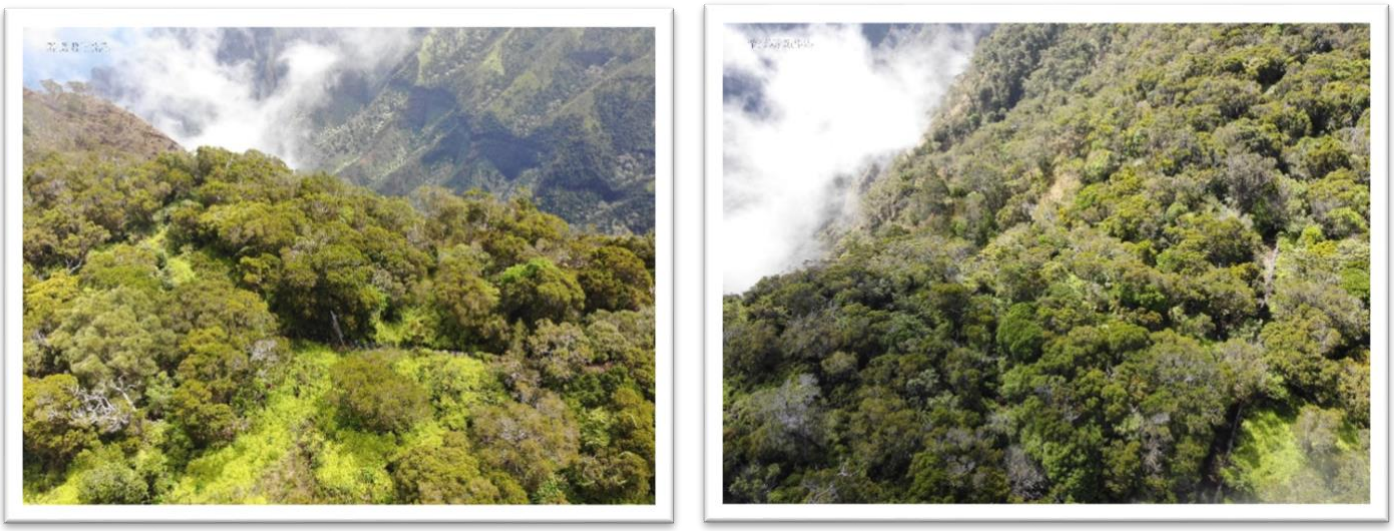

*Figure 4: Vegetation and habitat along eastern boundary of new site showing uluhe understory and Ohia canopy. Existing ungulate fence can be seen in left photo going through the uluhe.*

As a result, the participants submitted an official request on 11 September 2020 to DLNR to amend the Kauai Seabird Habitat Conservation Plan (KSHCP) to allow a change in the location of the mitigation site. This request was approved by DLNR on 21 September 2020 and the new alignment was officially adopted.

***Construction***

The predator exclusion fence design being used at Kahuama'a has three main elements: fence posts, mesh (including the underground skirt), and rolled hood. Posts will be spaced two meters (6.6 feet) apart, with one meter of the post set below ground and two meters protruding above ground. Marine grade (304) stainless steel mini chain link mesh with an aperture of 10 x 8 millimeters will be attached to the entire face of the base fence, and will also be used to form a skirt of horizontal mesh at ground level, to prevent predators from tunneling under the fencing. The mesh extends from the top of the posts to just below ground level, while the skirt extends 300 millimeters from the fence and is buried 5-10 cm (2-4 in) underground. The fence will be high enough (2m) that animals, including cats, cannot jump over it, has a curved hood to prevent animals from climbing over the top, small aperture mesh (10 x 8mm) to prevent animals from squeezing through,

and a skirt under the ground to prevent animals from digging underneath. A single door gate design was used for pedestrian gates instead of the double door gates at the public access Ka'ena Point fence (Young et al. 2012). All materials have been ordered and are currently staged at the site in anticipation of construction.

Two local fence contractors were approached and asked to provide cost estimates for construction of the fence at Kahuama'a. JBH Ltd., was selected as the fence contractor and the contract was finalized on 10 October 2020. JBH built the Nihoku fence at Kilauea Point and assisted Xcluder in constructing the Ka'ena Point predator fence and thus is familiar with the technology and specific needs of such a project. Clearing and construction of the fence started in January 2021 with an April 2021 anticipated completion date.

## Social attraction and biological monitoring

*Biological monitoring*

To facilitate effective, long term monitoring at the site, a geo-referenced monitoring grid was installed to conduct bird, vegetation, and rodent surveys. The grid consists of stations inside the fenced area 25m apart marked with a white PVC pole.

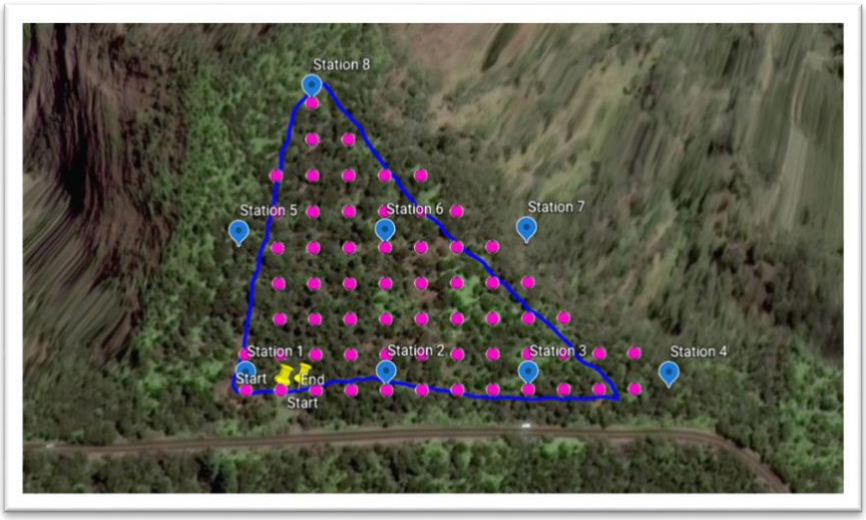


*Figure 5: Biological monitoring grid installed at the Kahuama'a Seabird Preserve*

**Seabird surveys**

Auditory surveys, burrow searching, and monitoring of natural burrows is a critical part of pre-construction surveying at the Kahuama'a Seabird Preserve to document species present and ensure that construction activities do not impact any nesting seabirds. Since access to the site was not secured until later December, auditory surveys were not done in 2020 as it was outside the seabird breeding season. Auditory surveys will start in 2021. Diurnal "cold searching" was conducted by Prime Contractor to actively search vegetation for burrow cavities with signs of seabirds (e.g., scent, feathers, guano, eggshells), or active burrows. Active breeding can be distinguished from ground activity, if breeding attempts in natural burrows are observed (such as copulation, digging out a burrow, entering the burrow with nesting material, sitting in the burrow, or an egg is laid).

Survey areas were organized into three transects covering each side of the fence line: one covering the 80 m long section of ungulate fence line facing east, one covering the 300 m long northeastern facing fence line, and one encompassing the 50 m section facing west. All transects were measured to match the length of the designated seabird habitat perimeter along the ungulate fence line. All three transects were further divided into perpendicular transects flagged 3 m apart, and staff walked these transects checking for seabird eggshells, guano, feathers, and scent. Participating staff were equipped with pink flagging tape to mark the burrow location in the event of a burrow being found, and location recorded on a

shared GPS. Two transects were created for the seabird burrow surveys inside the ungulate fence, covering a total area of .39 acres. Transects were spaced 5 m apart, running parallel to the north eastern side of the fence line. Two staff equipped with GPS and pink flagging walked each transect from east to west, checking under tree roots for seabird eggshells, guano, feathers, and scent.

The total seabird survey area covered was 14,172.1m$^2$, or 3.50 acres: a combined area of 10,614.88m$^2$ (2.62 acres) outside the ungulate fence, and 1583.48m$^2$, or .39 acres inside the fence line. No Newell's Shearwater and Hawaiian Petrel chicks, adults, or burrows were detected during Seabird Burrow Surveys conducted on October 6, 2020, and October 7, 2020.

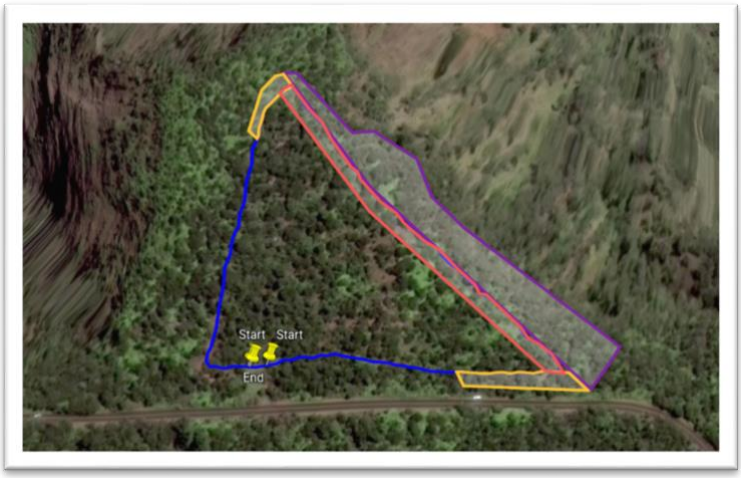


*Figure 6: Seabird survey area at Kahuama'a. The original ungulate fence line in blue, with the final enclosure fence line shown in yellow, and the seabird habitat bounded by the red and purple lines.*

**Forest bird surveys**

Several candidates and listed native forest birds and pueo may use the Preserve as territories during the breeding season Jan to Jun. Overall, the creation of the Preserve will provide a potential benefit to forest birds and pueo through removal of non-native habitat and control of non-native predators – both are identified as primary threats to native forest bird species in Hawai'i (VanderWerf 2012). At the same time, the construction of the fence presents the possibility of disturbance if nests are in the area. In order to determine the forest bird species present and to select the appropriate BMP during fence construction, forest bird surveys were conducted.

Forest bird spot counts were conducted in October 2020 using the variable circular plot (VCP) method, the standard method for surveying forest birds in the Hawaiian Islands (Vanderwerf and Dittmar, 2020). Seven survey points were used around the fence enclosure at 100 m intervals within and around the fence line shown in figure 5. A total of 4 transects were chosen based on locations of existing trails within the enclosure to minimize disturbance to native plant habitat. At each station, PRC staff stopped for 2-minutes to settle in, followed by an 8-minute count of all birds, where the species of each bird and horizontal distance to the staff member were recorded. Two measures of abundance were calculated for each species: 1) relative abundance, which was the number of detections divided by the number of points surveyed, and 2) frequency: which was the number of points at which the species was detected divided by the number of points surveyed (Vanderwerf and Dittmar, 2020).

No listed forest birds were found in the project area, but Apapane and Kauai Elepaio were common in the project area.

Rare plant surveys

An existing ungulate enclosure at Kahuama'a has been the site of rare plant conservation and out-planting efforts since 1997. As a result, hundreds of individual threatened and endangered plants exist in the enclosure. These plants are mainly restricted to the western side of the preserve and are not found within the seabird management area of the reserve. Due to the sensitive nature of the location data of these plants, DoFAW botanists conducted all rare plant surveys for this

project and flagged any plants that were near the seabird management area so that they can be avoided during management activities.

*Social attraction*

After fence installation on the predator proof enclosure is complete, the social attraction component of the project will be initiated to encourage the target species to the project site to breed. Social attraction is a well-established conservation strategy to encourage seabirds to breed in a predator-free location by the simulation of colony activity through the playback of calls. When combined with the installation of artificial burrows, the technique can result in high productivity within a small and easily managed/protected area.

Two speaker systems have been ordered from the New Zealand Department of Conservation and will be installed at the beginning of the 2021 breeding season (March/April). The systems consist of a waterproof mp3 player and inverter system contained in a waterproof pelican case, a solar panel, and a 12V marine battery connected to omnidirectional waterproof speakers.

*Figure 7: Example of sound system purchased for the Kahuama'a Seabird Preserve. Sound system pictured is currently in use at Kilauea Point National Wildlife Refuge on Kaua'i and has successfully attracted Newell's Shearwaters species to that site.*

One system will play a mix of Newell's Shearwater and Hawaiian Petrel calls; the second will play Band-rumped Storm-petrel calls. Digital recordings of colonies of all three species from Kaua'i will be played. Recordings will be of multiple birds (simulating a large colony) and using a complete set of typical colony sounds to attract the most birds. The speakers will turn on at sunset and continue to play species-specific calls until sunrise, drawing prospecting birds to the site to increase nesting probability within the predator free area. Broadcasting will be timed to begin with the first arrival and courtship dates (beginning of April) and run until at least September. Due to the timing of when the project was initiated in 2020, the sound system was not deployed as it didn't correspond with the seabird breeding season, but it is ready for deployment in early 2021.

In addition to the acoustic attraction system, 100 artificial burrows suitable for Hawaiian Petrels and Newell's Shearwater will be installed either during or immediately after the fence has been constructed. An integral part of best management

in a social attraction site is the provision of artificial burrows to optimize seabird habitat and expedite the process of establishing breeding at a new site - burrow excavation by a newly established breeding pair can take a year or more. Artificial burrows are used in almost all the successful social attraction sites documented in the literature. Not only does this increase the likelihood of earlier success at the social attraction site and increase the density of nesting pairs in an area, it also makes the monitoring of nests much easier and less likely to cause disturbance to burrows and birds. Since monitoring of nests and nesting success is an important part of mitigation for the KSHCP, artificial burrows are key in this project. The burrows have been constructed and are currently staged at the site waiting for the completion of fence construction.

*Figure 8: Photographs of completed artificial nest boxes to be used at Kahuamaa Seabird Preserve*

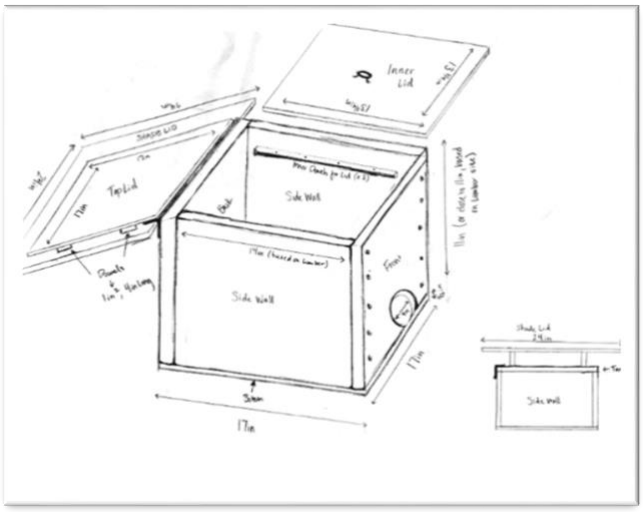


*Figure 9: Diagram of artificial burrow design used for Kahuma'a Seabird Preserve*

*Habitat restoration*

The Kahuama'a Seabird Preserve predator proof fence is expected to benefit native vegetation and rare plants currently being adversely affected by rats, pigs, goats and deer. The habitat at the site is dominated by native vegetation, but certain invasive plants are proliferating, especially within the understory. Seabird habitat suitability mapping exercises consistently identify native vegetation as a critical component for successful nesting. Conversely, habitat modification by invasive plant species has been correlated with a reduction in seabird breeding. The suite of invasive plant species that have been identified as significant seabird habitat modifiers (Table 3) are present at the Kahuama'a Seabird Preserve and are currently being targeted for removal.

*Table 3: seabird habitat modifying plant species targeted for removal at Kahuama'a*

| Common Name | Scientific Name | Priority |
|---|---|---|
| Strawberry guava | *Psidium cattleianum* | *1* |
| Himalayan (kahili) Ginger | *Hedychium gardnerianum* | *1* |
| Australian tree fern | *Sphaeropteris cooperi* | *1* |
| Blackberry | *Rubus argutus* | *2* |
| Banana poka | *Passiflora tarminiana* | *2* |
| Bush beard grass | *Schizachyrium condensatum, Andropogon spp.* | *2* |
| Koster's curse | *Clidemia hirta* | *2* |
| Daisy fleabane | *Erigeron karvinskianus* | *3* |
| Air plant | *Kalanchoe pinnata* | *3* |

This list will be expanded during the project if new and important invasive seabird habitat modifiers are discovered in the area.

While most of the vegetation work has focused on clearing trails for work, the priorities for 2021include:

- Eradication or effective suppression of seabird habitat modifiers, focusing on priority 1 & 2 species.
- Vegetation management during construction and operation of the fence (along fence line and around artificial burrows and speaker system)
- Monitoring of vegetation to ensure that habitat quality targets are being met across the site.

## Predator control and eradication

The breeding phenology and susceptibility of the Covered Seabirds to predation by barn owls and feral cats suggest that barn owl and feral cat control will result in an increase in the reproduction and numbers of seabirds breeding in Kalalau Valley outside of the 2ha Preserve site. Based on the above and the locations of breeding colonies within the Kalalau Valley (Section 5.4, Figure 5-1 and *Appendix A: Kahuama'a Seabird Preserve Management Plan*), efficacy estimates are conservative and assume that trapping along the rim of Kalalau Valley will achieve a 30% reduction in the number of shearwaters predated by feral cats. Thus, trapping locations were selected to follow the rim of Kalalau Valley in order to protect key seabird nesting populations in Kalalau Valley, and at a key ingress points into Kalalau Valley. Feral cats are using the roads and trails in the vicinity of the Kahuama'a Seabird Preserve as ingress points to prey upon nearby established colonies in the Kalalau Valley and Rim, Pihea (part of the Hono O Nā Pali NARS) and Honopū, expected source populations for the Kahuama'a Seabird Preserve.

*Site Description*

Kalalau Rim

The Kalalau rim is an extremely high cliff area which falls over a thousand meters into the Kalalau Valley. Due to the steepness and inaccessibility of the cliff, there are many rare, endemic plants which have survived undisturbed by humans, giving the Kalalau rim unique characteristics. The vegetation at the site is a subtype of 'Ōhi'a Lowland Mesic Forest, with 'uluhe fern (*Dicranopteris linearis*) comprising much of the ground cover (Williams, 2016 unpublished report). Kokee road follows the Kalalau rim and was selected as a logical location for trap placement.

Pihea/Alakai swamp trail

Feral cats are observed on the road to Pihea by Hawaii DLNR staff on a near-weekly basis, and DLNR camera data reflects significantly higher numbers of cats moving along trails and fence lines than along densely vegetated areas. The Alaka'i

Swamp Trail was chosen in consultation with Hallux Ecosystem Restoration and the Hawaii DLNR, who do the majority of predator control in the Alakai region. This area covers critical ingress points into listed seabird colonies and is not currently being managed for cats and thus fills a critical need in protecting key listed seabird populations.

*Methods*

Project staff set up 32 trapping stations, 12 along the southern end of Alakai Swamp Trail, and 20 along the southwest side of Kalalau Rim spaced approximately 100 m apart. The trapping stations consist of one or two Tomahawk live traps and a trail camera with detailed methods described below.

Cameras

Game cameras are paired with Tomahawk traps to monitor the trap itself as well as common use trails along which the traps sit. Cuddeback Cuddelink cameras are used in a chain to transmit pictures to a "home" camera where all images can be quickly and easily viewed in the field or by retrieving and replacing a single SD card. Camera data was used to evaluate the level of interaction with each trap by any given predator. Images of predators are saved on an external hard drive and images of cats, specifically are saved in a shared Google drive to determine effectiveness. Although Cuddeback Cameras offer a Cell version of their cameras to be used in areas skirting cell service availability, there is currently no cell service close enough to either trapline to warrant use of this type of camera.

Cat trapping

Detailed methods can be found in the appendix of the KSHCP, but in summary live Tomahawk traps were used for the duration of 2020 to accomplish cat trapping objectives. Tomahawk traps are walk-in live-capture traps that can either be baited (single-door) or un-baited/blind-set (double-door), capturing animals as they pass through the trap. The traps used at both sites are a combination of single door (36"x10"x9") and double door (36"x9"x9") Tomahawk traps. All Tomahawk Traps are either baited or have lures inside of them to attract attention of predators. Baits used included sardines in olive oil, dry or wet cat food, Tomahawk Shellfish Paste and fresh fish parts contained in a small tray in the rear of the trap. Lures used along these traplines include cat toys, metal lids, and pieces of foil. Traps are generally open five days per week for two weeks of the month for a total of ten trap nights per trap every month. For traps that are not monitored by real-time transmitting cameras (described below), they are manually checked every 24 hours. For traps with cameras attached, they are generally opened on a Monday and closed on Friday and their transmitting cameras are checked daily. When Traps are not active, they are baited and locked open to attract activity even when not in use.

Twelve live tomahawk cage traps were placed every 100m alongside the Alakai Swamp trail along the last 1.4 km of the trail about 1km from the trailhead on Camp 10 road, and well away from the high traffic part of the trail. Care was taken to locate traps off the trail where they were not visible to the public by covering them with specifically designed trap covers and/or heavy foliage so that the only visible part of the trap was the open door. An addition 20 traps were deployed along the western side of the road along Kalalau Rim extending about half a kilometer along the road from Pu'u O Kila lookout and half a kilometer surrounding the Kahuama'a Enclosure. Traps were placed 5-10m off of the road, and camouflaged using the same protocols described above.

Each trap along the Alakai Swamp Trail, and 13 of the 20 Kalalau Rim traps were accompanied by a Cuddelink Cuddeback camera, which transmits pictures in real time via cellular service, and pictures sent to PRC predator technicians to alert them to possible captures. These cameras are used for both camera trapping and monitoring purposes. The Cuddelink "Home" camera was located at the other end of the trail, near Pihea Junction, which allowed for traps to be checked without physically visiting each trap.

*Table 4: Trap location, type and total number of trap nights for predator control in 2020. Trap nights indicates the number of nights that traps were open and active. Numbers reflect traps deployed from November 2020 through January 2021.*

| Trap Line | Trap Type | Number Deployed | Total Trap Nights |
|---|---|---|---|
| Alakai Swamp Trail | Tomahawks | 12 | 196 |
| Kalalau Rim Trail | Tomahawks | 19 | 588 |

***Results***

Trapping:

A total of 39 rats were removed via live trap between the two sites: 36 Black Rats (*Rattus rattus*) and three Norway rats (*R. norvegicus)* ; all 39 rats were humanely dispatched.

Three cats were captured on Alakai Swamp trail between November 2020 and January 2021 resulting in a total catch rate of 0.004 cats/trap night. All three cats were captured in Tomahawk single door traps, two of which were captured in the same trap four days apart. Two cats were captured on nights that sardines in olive oil were used as bait. One of the cats was captured in a trap with a cat toy used as a lure. None of the cats were captured on game cameras before their capture. One cat captured on November 2nd escaped the tomahawk cage during handling. As required by the KSHCP, the other two cats were humanely dispatched.

Camera monitoring

Early in October and November, when trapping commenced, 10 traps along Alakai Swamp trail were located at the far northern end of the trail but traps were moved due to mounting evidence of significantly more cat use of the southern end of the trail as part of adaptive management in order to avoid tampering with trap activity.

Rats and mice have been observed on every game camera that is deployed on both Alakai Swamp Trail and Kalalau Rim. Black Rats make up the majority of game camera observations (65/ 70 distinct rodent observations on game cameras).

Cats were observed on game cameras on three separate occasions in January 2021. All observations were on Alakai Swamp Trail; one of these cats was captured and dispatched, but the remaining two were not captured. The other two observations were likely of the same, black cat. The two additional cats that were captured were not observed on any game cameras.

*Figure 10: Photographs of cats observed on two separate occasions along Alakai Swamp Trail.*

Pigs were only observed on a game camera once from November to January on Alakai Swamp Trail. Two individuals were observed on the same game camera approximately an hour and a half apart. While pigs are not part of the

Kahuama'a Seabird Management plan, their presence is recorded since they are known seabird predators

*Figure 11: Photographs of pigs observed on two separate occasions along Alakai Swamp Trail.*

Other animals such as dogs and black-tail deer have been observed on game cameras frequently. Dogs are very commonly observed on game cameras at both Alakai Swamp Trail and Kalalau Rim. Dogs have been observed inspecting, crawling into and sniffing traps that are baited. Black-tail deer have only been observed on game cameras on Kalalau Rim, specifically at the Kahuama'a site.

## Discussion

Protocols for effectiveness monitoring to evaluate progress and success are described in detail in *Appendix A: Kahuama'a Seabird Preserve Management Plan* for the KSHCP mitigation objectives. These objectives require three aspects of biological monitoring: monitoring of predator eradication/suppression, monitoring of vegetation (habitat) management, and monitoring of Covered Seabird response to management.

Biological monitoring of forest bird, seabird and habitat commenced on schedule in late 2020 and all required surveys were completed during that time to provide an inventory of the flora and fauna present in the area. Since access to the site was not secured until late November, seabird auditory surveys were not done in 2020 as it was outside the seabird breeding season, but the intensive burrow searching indicated that seabirds do not appear to be nesting in the immediate project area. Similarly, social attraction infrastructure was ordered and is ready to deploy at the start of the seabird breeding season and once fence construction is complete.

The results of predator control on Alakai Swamp trail and Kalalau Rim should act as a baseline for trapping and game-camera observations moving forward and especially for use after fence construction is completed. Data collected throughout the first months of the project can be used to adjust trap spacing and enhance rodent control in and around the Kahuama'a Seabird Preserve. No cats were detected on game cameras or captured in live traps along Kalalau Rim between November 2020 and January 2021, but there have been several cats observed along roadways and trails nearby. Continuance of trapping via live traps along Kalalau Rim and directly adjacent to Kahuama'a should suffice in controlling cats that enter the area. Alakai Swamp Trail has proven to be a high-use trail for cats in Kokee State Park. Seeing that this trail is a direct access to several seabird colonies that will serve as source colonies to Kahuama'a, trapping nights should increase along this trail. Rodent control, separate from cat control, can be implemented along both traplines to reserve live traps for cats. Goodnature A24s and snap traps will be deployed inside and outside the fence after fence construction.

Based on the activities to date, the activities of the Kahuama'a Seabird Preserve have partially met the objectives for predator control and suppression given the limited timeline for implementation in 2020. Cat control began in October 2020 and has been effective in removing multiple cats from the landscape along both the Kalalau Rim and Alakai Swamp area. Barn Owl control was not initiated in 2020 as the start of implementation of the project was not during the seabird

breeding season, and significant issues were encountered in obtaining appropriate firearm certifications and ammunition during the COVID-19 pandemic. These issues have since been resolved and owl control will begin March 2021 to correspond with the seabird breeding season. The predator eradication and interior enclosure predator control will likewise be initiated upon completion of the predator exclusion fence.

*Table 5: progress towards biological objectives stated in Table 7-4 of the KSHCP:*

| Biological Objective | Status |
|---|---|
| 2.A. Construct a predator-proof fence and install social attraction equipment (nest boxes, speakers) within the fenced area at mitigation site in Year 1 of KSHCP implementation. | Underway. Expected completion date: May 2021 |
| 2.B. Remove predators from within the fenced enclosure with monitoring confirmation of their absence, and activation of social attraction equipment by Year 2; predator eradication within fenced enclosure maintained for the life of project. | Underway. Expected completion date: July 2021 |
| 2.C. Ground activity by Covered Seabirds documented at the mitigation site by Year 4 of KSHCP implementation. | Not yet complete. |
| 2.D. Breeding activity by Covered Seabirds documented at the mitigation site by Years 5-7 of KSHCP implementation. | Not yet complete. |
| 2.E. Cumulative upward trend in Covered Seabird breeding documented at the mitigation site by Year 10 of KSHCP implementation. | Not yet complete. |
| 2.F. Continued cumulative upward trend in Covered Seabird breeding documented at the mitigation site by Year 20 of KSHCP implementation. | Not yet complete. |
| 2.G. Maintain high quality seabird habitat at the mitigation site by removing habitat modifying invasive plants in Year 1 and annually throughout the 30-year duration of the KSHCP. | Underway |
| 2.H. Protect nesting birds inside mitigation fence and in nearby source colonies by implementing predator control of 1) barn owls within the area surrounding the fenced enclosure and the Kalalau Valley, and 2) feral cats at ingress points to source colonies in the Kalalau Valley, beginning in year 1 and annually throughout the 30-year duration of the KSHCP. | Underway |
| 2.I. Annual protection of any honu nests adjacent to facilities via shielding or other measures to avoid light attraction take. | Completed |

# SUMMARY OF KSHCP PARTICIPANTS' ANNUAL REPORTS

A consolidated summary of each Participant's annual report is provided below. This includes sections on downed bird search effort, lighting and facilities, predator control, and training and outreach. For participants with multiple properties (Alexander & Baldwin, and the County of Kauai), they are grouped for the purpose of readability. The exceptions to this are State of Hawaii facilities which are presented individually.

## Alexander & Baldwin, Inc. (A&B)

*Downed Bird search effort*

Due to the large number (9) and diverse nature of the covered facilities owned by A&B, searching effort was variable and is presented by property type below. For the Pump 3 Irrigation Pumping Facility, Kalaheo Powerhouse, and Wainiha powerhouse (all of which are remote, unmanned facilities that are visited only periodically for operational and maintenance purposes), searches were to be conducted by in-house personnel twice nightly every night during the seabird fallout season from September 15 to December 15 whenever exterior lights were turned on at the facility. During the 2020 season, no searches were conducted at these sites because the facilities were dark for the entire season.

At the Port Allen Commercial properties, searches were conducted twice nightly every night during the seabird fallout season from September 15 to December 15. The first search was conducted three to four hours after sunset, and the second search was conducted one hour prior to sunrise. A science education non-profit was contracted to conduct searches at this facility. Since the Port Allen Solar Facility was sold on 09/30/2020, A&B deleted this facility from its permits, and no searches were conducted (during the two weeks of the seabird season prior to closing of the property sale, this facility, like other McBryde facilities, was completely dark at night).

For the Hokulei Shopping Village, Waipouli Town Center, The Shops at Kukuiula (TSAK), and Kukuiula Development (Plantation Core) Resort Area searches were conducted twice nightly every night during the seabird fallout season from September 15 to December 15 (one scheduled search was missed during the season at TSAK due to an employee absence). The first search was conducted three to four hours after sunset, and the second search was conducted one hour prior to sunrise. These searches were conducted by shopping center security personnel.

*Lighting and facilities*

Lighting at most A&B covered facilities had been previously modified in order to be in compliance with KSHCP guidelines. Additional modifications were made at some facilities prior to the 2020 seabird season, and a plan for further modifications at Port Allen and TSAK is under development. Changes that were implemented during, or just before the 2020 seabird season were installing temporary shielding on some non-compliant lights for the 2020 season at The Shops at Kukuiula Shopping Center to direct lighting downward. Prior to the start of the seabird season, adjustments were also made to walkway sconce lighting at the Port Allen Marina Center to further reduce the potential to impact seabirds. Changes included replacing existing bulbs in these fixtures with lower wattage LED lamps and shutting of power to alternating lights around the buildings.

*Predator control*

Due to the large number and diverse nature of the covered facilities owned by A&B, predator control effort was variable and site specific. The Pump 3 Irrigation Pumping Facility, Kalaheo and Wainiha Powerhouses are remote unmanned facilities only visited periodically by operations staff. Animal control efforts are initiated only if predators are observed during such visits and there is a potential for light attraction. Since no lighting was turned on during the 2020 season, and no predators were observed, no trapping was conducted at these three sites. Trapping at these facilities, if required, was to be conducted by McBryde staff in coordination with the predator control contractor. Dedicated traps were obtained for use at each facility for this purpose.

The remaining properties, Port Allen, Hokulei Shopping Village, Waipouli Town Center, The Shops at Kukuiula and the Kukuiula Development contracted out animal control activities. While these efforts were executed well and appear to have been successful in reducing the number of predators on the landscape, significant interference by cat colony feeders and feral cat advocacy groups was experienced and interfered with A&B's ability to conduct effective predator control. Below are the summaries presented from each of the properties describing the site-specific predator control efforts and challenges experienced.

Port Allen properties: Predator control efforts at A&B's Port Allen commercial properties were contracted out to a wildlife control contractor where for most of the season at least four predator traps were deployed on a nightly basis. There was evidence that someone was frequently releasing cats that had been trapped; the total number of predators removed would otherwise likely have been higher. Predator control "snapshot" surveys conducted before, during, and after the season indicated a substantial reduction in the presence of predators, from approximately 30 on-site and at least as many off-site near the properties at the beginning of the season to no on-site predators by the end of the season. Additionally, twice-nightly monitoring for the presence of predators on the properties indicated that a reduction in predator counts of nearly 96 percent was achieved over the course of the season, based upon average nightly predator counts observed during the last two weeks of the season as compared to those observed during the first two weeks of the season. Verbal communication with one of the cat colony operators revealed that they were trapping cats at other locations around the island and bringing them to Port Allen for release in an effort to create a de facto "cat sanctuary" at Port Allen. Moreover, individuals were found to be regularly trespassing onto A&B property (as well as onto neighboring properties) throughout the season, ignoring posted signs and verbal directions from A&B contractors, to feed cats. The frequency of individuals trespassing onto A&B properties at Port Allen to feed cats, coupled with the ongoing presence of off-site cat colonies being maintained on adjacent properties, warranted additional minimization measures beyond the predator control program originally developed for the properties. For a portion of the season, a contractor was hired for nighttime monitoring of the property specifically for the presence of trespassers feeding cats, with instructions to attempt to educate any trespassers sighted regarding the reasons for the prohibition of feeding seabird predators on the property. While the trespassers were largely able to evade the monitors, food left behind by the feeders was picked up and disposed of when found. Consideration will be given to implementing similar measures early on in the 2021 season in an effort to educate cat colony operators/feeders. Additionally, contact was made with the leader of a cat advocacy group who maintains colonies around Port Allen to advise them of the requirements of the KSHCP and the ongoing predator control program. This communication had the effect of prompting the group to attempt to re-locate their colonies further away from the harbor. As a result, A&B will likely incorporate communication with this group prior to the start of the season into its outreach program.

Hokulei Shopping Village - Predator control efforts at Hokulei Shopping Village were contracted out to a wildlife control contractor where at least four predator traps were deployed on a nightly basis. Predator control "snapshot" surveys conducted before, during, and after the season indicated a reduction in the presence of predators, from three on-site at the beginning of the season to one onsite predator by the end of the season. Additionally, twice-nightly monitoring for the presence of predators on the properties indicated that a reduction in predator counts of nearly 70 percent was achieved over the course of the season, based upon average nightly predator counts observed during the last two weeks of the season as compared to those observed during the first two weeks of the season. Individuals were found to be regularly trespassing onto A&B property throughout the season, ignoring posted signs and verbal directions from A&B contractors, to feed cats. The frequency of individuals trespassing onto A&B properties at Hokulei Shopping Village to feed cats warranted additional minimization measures beyond the predator control program originally developed for the property. For a portion of the season, a contractor was hired for nighttime monitoring of the property specifically for the presence of trespassers feeding cats, with instructions to attempt to educate any trespassers sighted regarding the reasons for the prohibition of feeding seabird predators on the property. While the trespassers were largely able to evade the monitors, food left behind by the feeders was picked up and disposed of when found.

Waipouli Town Center - Predator control efforts at Waipouli Town Center were contracted out to a wildlife control contractor and appear to have been effective. For most of the season, at least two predator traps were deployed at the

Waipouli Town Center on a nightly basis. Predator control "snapshot" surveys conducted before, during, and after the season indicated a reduction in the presence of predators, from 20 to 25 cats on or around the property at the beginning of the season to about ten predators (three on-site) by the end of the season. Additionally, twice-nightly monitoring for the presence of predators on the properties indicated that a reduction in predator counts of about 46 percent was achieved over the course of the season, based upon average nightly predator counts observed during the last two weeks of the season as compared to those observed during the first two weeks of the season. Early in the season, individuals were found to be trespassing onto A&B property, ignoring posted signs and verbal directions from A&B contractors, to feed cats. These cat feeders became belligerent when confronted, but feeding activity on the property appears to have tapered off thereafter. However, feeding of cats on adjacent properties appears to have continued throughout the season. It is well known that a large cat colony was established near this property in the past, and although it appears to have been mitigated at some point prior to the start of the season, there are indications that it is returning.

The Shops at Kukuiula (TSAK) - Predator control efforts at TSAK were contracted out to a wildlife control contractor and appear to have been effective. For most of the season, five predator traps were deployed at TSAK on a nightly basis. Predator control "snapshot" surveys conducted before, during, and after the season indicated a reduction in the presence of predators, from three cats on or around the property at the beginning of the season to none by the end of the season. Additionally, twice-nightly monitoring for the presence of predators on the properties indicated that a reduction in predator counts of about 54 percent was achieved over the course of the season, based upon average nightly predator counts observed during the last two weeks of the season as compared to those observed during the first two weeks of the season. Occasional feeding was observed, but did not appear to be a persistent problem as at other shopping centers.

Kukuiula Development - Predator control efforts at the Kukuiula Development have been ongoing prior to participation in the KSHCP, continued to be contracted out to a wildlife control contractor and appear to have been effective. For most of the season, four predator traps were deployed at the Plantation Core on a nightly basis. Predator control "snapshot" surveys conducted before, during, and after the season indicated little or no predator presence from the start of the season through the end, owing to the existing, longstanding predator control program (one cat was present in the pre-season survey, none in the post-season survey). While twice-nightly monitoring for the presence of predators on the properties indicated that a reduction in predator counts of about 48 percent was achieved over the course of the season, based upon average nightly predator counts observed during the last two weeks of the season as compared to those observed during the first two weeks of the season, this was based on a high of two cats spotted at the facility. During the vast majority of nightly surveys, no cats were seen.

*Training and outreach*

A total of 11 PowerPoint presentations were made for more than 50 staff members and contractors across all properties to educate staff members on the requirements of the HCP and on protocols related to searching, seabird biology and predator control. These were developed and initiated by a contractor (HT Harvey Associates). In addition, printed outreach materials were developed and distributed, including a weekly newsletter at the Kukuiula Development, and a tenant outreach letter and a tri-fold brochure to further educate tenants, employees, and visitors on the project at all facilities. Additionally, signs prohibiting the presence of loose predators and the feeding of predators were posted at all facilities.

*Changed circumstances*

The Port Allen Solar Facility was sold on 30th September 2020, thus is no longer included in the reporting. Aside from the transfer of the property, there were no changed circumstances.

## Kauai Coffee

*Downed Bird Search effort*

Searching was conducted throughout the seabird season by harvest crew (10-12 people) in the orchard, where staff was present in this area 24 hours a day. Implementation of the dedicated search routine documentation started from

December in the Factory area where 1-2 people searched the factory area for downed seabirds from 5-9am and again from 7-9pm.

*Lighting and facilities*

Outdoor Lighting has been modified to face downward. Shielding is installed where applicable. Night Harvest operations were delayed until 4 hours after sunset for three days through season's new moon periods in Sept-Dec. Minimum lighting required for safe practice 24-hour operations. For outdoor walking areas and open-air-portions of the plant a minimum illumination to comply with OSHA workplace safety guidelines would be 5 candle-feet.

*Predator control*

Predator control was conducted for 10 nights in December using a single trap. During those ten nights, eight cats were captured. Feral cats were only observed about the factor camps and the main office area of 46 acres. In future years, trapping will be conducted throughout the entire seabird season. One employee was regularly feeding a feral cat, so Kauai Coffee suggested they find a home for it prior to the predator control. Kauai Coffee also educated all its employees to no longer feed any predatory animals on site and the cat that was being fed was adopted by a facility employee.

*Training and outreach*

All individuals who participated in searches were provided training on seabird awareness, the seabird monitoring protocol, downed seabird response protocol, and KSHCP reporting procedures. A total of two PowerPoint presentations were made to 65 staff members and 24 office managers for a total of 89 staff. Training included a review of the fact sheet, KSHCP Downed Wildlife Protocol and Incident Documentation and Reporting Form

Printed outreach material included a seabird flyer on the information board in the factory, a flyer by the Orchard's Clock machine in the breakroom, one on the information board in the main office by the breakroom, and a "Do not feed feral cats" signs are on the wall in the several areas. The security and human resources department also keep the physical laminated copies and share the information to new employee during introduction. The digital presentation is saved in the central web portal for the employees to access anytime.

## Kauai County

*Downed Bird Search effort*

Searches were conducted once daily at all facilities at approximately 630am.

*Lighting and facilities*

During the decade leading up to the issuance of the ITP/ITL the County made significant changes (e.g., cut-off retrofitting, new lighting system, timers, motion sensors), totaling over $5.6 million, to the lighting at its facilities. Such changes were significant enough that there are no longer Category 5 (High-Intensity Stadium & Field Lighting) facilities, as defined in the County's PIP. As indicated in the County's PIP, all Category 2 (Minimal Lighting; e.g., bus stops) and Category 3 (Limited External Lighting; e.g., parking lot) facilities lighting will be phased out.

The County's Category 4 (e.g., courts and fields) and Category 5 (e.g., stadiums) facilities are off at night during the fledgling season. Due to the COVID-19 pandemic and related emergency proclamations and rules group sports were prohibited and County facilities were closed. Additionally, the high school football season was cancelled. Therefore, no nighttime football games were conducted.

The facilities listing included in the County's PIP will be updated periodically and submitted with its annual report. The County PIP includes 182 facilities, with 60 currently category 3 or above.

*Predator control*

From 11/16-12/31, a contractor conducted Predator Control and surveyed the target areas. The contractor worked two locations at a time Hanapepe Stadium, Hanapepe Baseyard, Lihue Transportation Baseyard & Lydgate Park. These sites were chosen based on previous predator sightings and known public feeding of nearby colonies. During the entire operation, the contractor set 85 traps, caught 14 cats, observed 3 other predators & observed 0 downed birds. The County's contractor has experienced significant issues with individuals tampering with the traps, such as cutting cables. The Contractor is working with the Kaua'i Police Department to identify and cite the individuals, but anticipates tampering will be a problem during predator control efforts. Feeding of cats on properties adjacent to County property continues and makes the enticement of predators into traps difficult.

*Training and outreach*

Conducted 3 separate online trainings reaching 1048, and five in person trainings reaching 28 individuals for a total of 1076 people trained. The County implemented its Protected Seabird Monitoring Policy and Procedure. All current County employees were provided a copy of, and signed, the policy and procedure. All new County employees were required to read and sign the policy and procedure as well as view the training video as a part of the new hire process.

## Lihue Airport

*Downed Bird Search effort*

Searches for downed seabirds were conducted twice each day at Lihue Airport as prescribed and outlined in the KSHCP and HDOT's Participant Inclusion Plan. Monitoring surveys were conducted nightly, within 3-4 hours after sundown and then again within 1 hour of sunrise, on consecutive days beginning on September 15th and concluding on December 15th. Lihue Airport is separated into two distinct search areas: the Aircraft Operations Area (AOA), a restricted area that requires security clearance and the public access areas, which consists of the terminals, parking areas, portions of the rental car facilities, and several roadways and access corridors which interconnect the various parts of the airport facility. The AOA is searched twice each day by USDA-Wildlife Services biologists as part of the airport wildlife hazard management program. H. T. Harvey and Associates biologists conducted the evening survey of the public access areas, and Airport Security conducted the morning survey of the public access areas during the hour before dawn. USDA-Wildlife Services performed 183 surveys comprised of early morning and evening searches of the AOA including all ramps, terminal aprons, and other searchable portions of the airfield. H. T. Harvey & Associates biologists conducted 92 searches of the public access areas on consecutive nights. Gaps in the early pre-dawn search record were identified on 9/16, 9/25, 9/26, 9/29, and 9/30. This was attributed to Airport Security personnel overlooking the requirement, intermittently, on five days during the initial two weeks of monitoring, to fill out the daily search log that was provided so that Airport Security could document their seabird surveillance separately from routine security rounds. This was addressed as soon as it was identified, whereas the security supervisor directed staff to review the requirements set forth in the training module and be sure to complete the supplemental form. No subsequent data gaps were identified and Airport Security successfully conducted 87 dedicated searches of the public area prior to dawn. Airport Security and Wildlife Services conducted additional searches [rounds] of the AOA and public access areas of the airport throughout the day from sunrise to 2 hours after sunset.

Lihue Airport Downed Seabird Monitoring Personnel included H. T. Harvey & Associates field biologists, USDA-Wildlife Services staff biologists, and airport security personnel. All of the individuals who participated in searches of Lihue Airport facilities were provided training on seabird awareness, the seabird monitoring protocol, downed seabird response protocol, and KSHCP reporting procedures.

Implementing the monitoring protocols at Lihue Airport was achieved by coordinating search and monitoring effort among H. T. Harvey & Associates field biologists, USDA-Wildlife Services staff, and Airport Security. The effectiveness of the monitoring program was enhanced by the training that was provided to each group of monitors prior to the beginning of the seabird fallout season and at times throughout the season to ensure continuity and adherence to fundamental procedures. We observed the effectiveness of the monitoring effort reflected in the coordination and thorough documentation of downed seabird incidents when they occurred. The gaps in coverage by Airport Security staff at public access areas during morning survey were due to mistakes in recording surveillance effort and this was corrected quickly.

Any new staff (i.e. security officers) being assigned responsibility for conducting morning seabird searches were required to review the training module in advance in order to become acquainted with the KSHCP protocols and procedures. Based on the degree of training and coordination among monitoring participants there is high confidence in the efficacy of the program. In addition to the dedicated twice daily searches that are performed, Wildlife Services and Airport Security conduct active wildlife surveillance at Lihue Airport, both inside the AOA and public access areas, throughout the day and night. This cumulative effort constitutes a robust monitoring program and based on observed performance in 2020, there are no proposed adjustments to the current protocols.

*Lighting and facilities*

In 2020, Lihue Airport implemented a portion of Phase 3 lighting upgrades. These upgrades consisted of replacing 18 high mast high pressure sodium floodlights in the Airside Ramp area with full cut-off, LED fixtures. This segment of the Phase 3 upgrades was performed at the main commercial terminal (10), cargo terminal (3), commuter terminal (2), and general aviation (3). See Addendum Sheet 1 for photographs of upgraded full cut-off shielded LED lamps.

*Predator control*

Cats were observed by downed seabird monitors in the public access areas of Lihue Airport on 69 of the surveys that were performed (75% presence) in 2020. Numbers of cats observed ranged from 0-12 and averaged 3.2 per day. Cats were most frequently observed in the vicinity of the rental car facilities, public parking lot, air cargo, UPS, and vicinity of Ahukini Road. The trapping effort at Lihue Airport operated for 16 days during the first two weeks of the seabird fallout season (from September 15-October 1), with 20 traps set per day, for a total of 320 trap days. A total of 4 cats were captured and removed from the Lihue Airport during this period yielding a capture success rate of 0.0125 cats/trap night, or 1 cat/80 trap days.

USDA-Wildlife Services staff conduct a year-round animal control program at Lihue Airport with an emphasis on free-roaming cats, but include dogs, pigs, and any other free-roaming animals that might present a threat to downed seabirds. Wildlife Services normally set and maintain traps for cats in the AOA and public access areas year-round. Tomahawk-style live traps are set for free-roaming cats as they are reported or observed. Historically, captured cats were delivered to the Kauai Humane Society. In late September, the Kauai Humane Society announced that it would no longer be accepting cats. On October 1, Wildlife Services placed a temporary hold on efforts to trap and remove cats at Lihue Airport as there was no way to handle the captured cats under the existing Cooperative Services Agreement (CSA) between USDA-Wildlife Services and HOT-A. During the first two weeks of the seabird fallout season when trapping occurred, 4 cats were captured and removed from Lihue Airport. The program to be implemented under the amended CSA calls for all seabird monitors and all other personnel to report to USDA-Wildlife Services any feral animals observed and for USDA-Wildlife Services to respond. Throughout the 2020 fallout season, H. T. Harvey biologists provided daily reports of predators that were observed in the public areas and conveyed this information to USDA-Wildlife Services, notwithstanding the temporary hold on trapping. Adhering to these procedures during the 2020 season demonstrated to the HDOT team and Wildlife Services that the procedures and resources are in place, and that once the amended CSA has been authorized and implemented, an effective predator control program will resume at Lihue Airport, as prescribed in the KSHCP. The CSA amendments were approved on November 24, 2020. Wildlife Services is working with the Airport District Manager to arrange the specific protocol for the removal of feral cats at Lihue Airport. After the protocol is developed, Wildlife Services staff will be trained and trapping will resume during the final week of February 2021. Please see Addendum Sheet 2 for additional summary information. Please note predator activity (and trap placement due to safety concerns) for Lihue Airport may not be in all areas such as runways and taxiways.

*Training and outreach*

All individuals who participated in searches of Lihue Airport facilities were provided training on seabird awareness, the seabird monitoring protocol, downed seabird response protocol, and KSHCP reporting procedures. A total of five PowerPoint presentations were made to 127 staff members across that included a review of the fact sheet, KSHCP Downed

Wildlife Protocol and Incident Documentation and Reporting Form. In addition, there was airport specific training orientation for staff responsible for performing downed seabird monitoring activities at Lihue Airport. These were developed and initiated by a contractor (H. T. Harvey & Associates).

## Kauai Marriott Resort

*Downed Bird Search effort*

Searches were conducted at least once a day for all built-upon areas, more frequently for other areas. Inspections were conducted throughout the day. During the seabird season, patrols made two rounds of the property in an 8-hour period (shift). Marriott's General Manager and Director of Safety & Security was responsible for overseeing the seabird protocols, bird searches and recovery, record keeping, and reporting. The entire staff was responsible for searching their respective work areas during work hours. There were approximately 80 - 160 daily employees during the 2020 fledging season. The Safety & Security officers, one Supervisor, and one Duty Engineer were also responsible for patrolling the property for downed seabirds, honu nest sites, and predators during the seabird season.

*Lighting and facilities*

There was significantly less lighting in 2020 than described in Kauai Marriott Resort's participant inclusion plan (PIP). In addition to the Seabird Fledging season lighting minimization measures described in Table 1 of Marriott's PIP, the following temporary accommodations were made in the 2020 season due to low occupancy of the Hotel: (1) Parking lights, item #6 Dukes Valet Parking (2 total 250w 22,000 lumen 4200k were turned off); (2) Indoor Lights Visible from Outside, item #10 Waialeale Lobby lights were turned off (11 total on three floors 9w 700 lumens 2700k); (3) between Sept. 15 and Oct. 15 the pool lights were off (30 bulbs total 13.5w 950 lumens 3000k); and (4) guest room occupancy was low so lighting from the rooms was also reduced. All outdoor lighting was angled downward, shielded, and fully cutoff except lights very low to the ground and shielded by vegetation. The following permanent changes were made to Kauai Marriot Resort's Seabird Fledging Season (SFS) Lighting Minimization Measures as described in its PIP Table 1: (1) Parking Lights, item #1 - 3 lights turned off for SFS, and the 5 remaining are redirected down and tinted for a 20% light block; (2) Indoor Lights Visible from Outdoors, item #3 Aupaka Column Downlights were revamped to a 9w 700 lumen 2700k BR30 bulb (previous bulb was 13.5w 950 lumen 3000k Par 38 bulb, 30 bulbs total); and (3) Indoor Lights Visible from Outdoors (items #1 & 2 Haupu Makai and Kilohana West stairwell lights), a chrome diffuser that magnified the lumens were removed from all 28 (19 plus 9) light fixtures. No lighting audit was done in 2020 as a result of COVID travel restrictions and significant reduction in lighting as a result of low guest occupancy.

*Predator control*

The resort implements actions to reduce the presence of free-roaming seabird predators such as cats and dogs at the facility by employing commercial pest control services to deploy and monitor cat traps daily. One to two traps were run each day for 60 days beginning before seabird season and continuing through October 20, 2020. Following that initial period, three traps were run for 61 days throughout the remainder of seabird fall out season by a contractor resulting in the removal of 15 cats from the property. In addition, resort staff are trained to search for and report predators, and there are signs within the resort prohibiting outdoor feeding of cats.

*Training and outreach*

More than 12 PowerPoint presentations were made to 179 staff members that included a review of the fact sheet, KSHCP Downed Wildlife Protocol and Incident Documentation and Reporting Form.

Marriott's PIP Item 12 states: "During the seabird fledging season Kauai Marriott Resort will: 1. Display SOS informational posters in break rooms and common staff areas; 2. Put it in our "Discovery Page" which is our daily hotel newsletter for all Employees; 3. Staff will attend the annual Worker Seabird Awareness Training; 4. Remind staff about seabirds during department stand up meeting (pre-shift meetings) to bring additional awareness; 5. Talk about it in our Monday, Wednesday, and Friday Managers weekly stand up meetings; 6. Invite a qualified biologist to speak at our staff meeting;

7. Display SOS informational posters in the lobby to promote guest awareness; 8. Have an informational flyer put into each room as awareness to for our guest, asking them to keep curtains closed during the season (pg. 32)."

Kaua'i Marriott Resort made the following temporary changes to their outreach activities during the 2020 seabird fledging season: (1) SOS informational posters were not displayed in break rooms and other common staff areas because COVID-19 restricted gatherings in those areas; (2) the "Discovery Page" which is Marriott's daily hotel newsletter for all Employees was suspended; (5) the Managers' stand up meetings were conducted daily; and (6) the resort biologist was unable to travel to Kauai to speak at a Kaua'i Marriott Resort staff meeting

## Nawiliwili Harbor

*Downed Bird Search effort*

Searches were conducted twice each day at Nawiliwili Harbor as outlined and prescribed in the KSHCP and HDOT's Participant Inclusion Plan by trained biologists from H. T. Harvey and Associates. These surveys were performed each night within 3-4 hours after sundown and then again within 1 hour of sunrise, on consecutive days beginning on September 15th and concluding on December 15th. H. T. Harvey & Associates provided training that enabled harbor security personnel to conduct dedicated seabird surveillance during the hour prior to sunrise. H. T. Harvey & Associates biologists conducted 90 searches on consecutive nights with the exception of October 13, when a notice by HDOT Harbors Division regarding elevated safety risk due to nighttime operations was misconstrued as meaning that the survey should be curtailed harbor-wide, and again, on December 6, due to staff illness. Harbor security performed 92 consecutive searches within an hour of dawn during 2020.

Downed Seabird Monitoring Personnel assigned to Nawiliwili Harbor included H. T. Harvey & Associates field biologists and harbor security personnel. In addition, HDOT, Matson, and Young Brothers personnel provided incidental observational capacity that increased the probability that birds not detected during the dedicated nighttime searches would be found by workers at the facility during the day. All of the individuals who participated in regular and routine searches of Nawiliwili Harbor facilities were presented with training and informational content on seabird awareness, response, rescue and KSHCP reporting procedures. Specific personnel responsible for conducting searches at Nawiliwili Harbor were Angela Awai and Monique Chow (H. T. Harvey & Associates field biologists) and several security personnel under the supervision of Ryan Campos (Allied Universal Security Services) and Robert Cecconi (HDOT Harbors Division).

Implementing the monitoring protocols at Nawiliwili Harbor was achieved by coordinating search and monitoring effort among H. T. Harvey & Associates field biologists, harbor security and HDOT. The effectiveness of the monitoring program was enhanced by the training that was provided to each group of monitors prior to the beginning of the seabird fallout season and continued outreach as needed throughout the season to ensure continuity and adherence to fundamental procedures. We monitored the effectiveness of the survey effort by tracking quality and timeliness of coordination, documentation and reporting of downed seabird incidents when they occurred and there were no circumstances that triggered midterm corrections or retraining with respect to the standard monitoring protocols and response procedures that were followed in 2020.

*Lighting and facilities*

Standard security and worker safety procedures at Nawiliwili Harbor require that high mast lights be turned on to full illuminance when active cargo operations are in progress (no cruise ships visited Nawiliwili Harbor during the 2020 seabird fallout season) and only at the specific pier where those operations are in progress. When nighttime operations are completed, the tall mast lights are reduced to a lower setting (roughly 15% of illumination capacity). In 2017, HDOT Harbors Division replaced the high-mast flood lights with new, full cut-off, downward-pointing LED fixtures. In 2020, HDOT Harbors Division personnel at Nawiliwili Harbor initiated steps proactively to further minimize light attraction exposure for seabirds by completely shutting off some high mast lights after cargo operations were completed in locations where this would not create a security concern because of adequate lighting from adjacent properties (along the fence line with small boat harbor). This approach, initially implemented to enhance minimization capacity during the seabird fallout

season, is now being used year-round to reduce facility lighting during non-operational periods and is considered progressive in terms of advancing biological goals and objectives.

*Predator control*

Harbors Division staff deployed 2 Tomahawk-style live traps at the harbor and checked and maintained these daily during September 1st till December 15th, 2020. H. T. Harvey & Associates biologists compiled observations of free-roaming cats during nightly monitoring activities and reported these to Harbors Division to help facilitate the daily and weekly trap placement distribution at Nawiliwili Harbor. A total of 10 cats were captured and removed from Nawiliwili Harbor during the Year 2020 monitoring season. No cats were captured and removed between November 10th and December 15th, 2020. No dogs or pigs were reported inside the harbor.

Cats were observed by downed seabird monitors at Nawiliwili Harbor on 28 of the surveys that were performed (30% frequency of occurrence) in 2020. Numbers of cats observed ranged from 0-4 and averaged 0.41 per day. Cats were most frequently observed in the vicinity of the north fence line adjacent to the public beach park, main entrance to Young Brothers, and near the Matson and Young Brothers warehouses. The trapping effort at Nawiliwili Harbor operated for 106 days with 2 traps set per day, for a total of 212 trap days. A total of 10 cats (includes 1 cat captured and removed on September 11, prior to the official start of the seabird fallout season, and not shown on the graph) were captured and removed from Nawiliwili Harbor, yielding an overall capture success rate of 0.047 cats/trap night, or 1 cat/21 trap days, amounting to roughly one cat captured and removed every 10-11 days. The frequency of occurrence for cats observed at Nawiliwili was 0.30 (n=28 days) and the average number of cats observed per day was 0.41 (n=38).

*Training and outreach*

A total of five PowerPoint presentations were made to 21 staff members working at Nawiliwili Harbor across that included a review of the Fact Sheet, KSHCP Downed Wildlife Protocol and Incident Documentation and Reporting Form. These were developed and initiated by a contractor (H. T. Harvey & Associates). Printed outreach material was posted in all visible staff areas for occupants of the harbor.

## Norwegian Cruise Lines (NCL)

*Downed Bird Search effort*

Seabird monitoring is continuous, 24/7 every day of the year. The onboard Environmental Officer is responsible for overseeing the seabird protocols, bird searches and recovery, record keeping, and reporting. All crewmembers are responsible for searching their respective duty stations for downed seabirds on a daily basis. There were approximately 150 daily crew members aboard the Pride of America during the 2020 fledging season (compared to 900 during normal operations). NCL maintained 100 percent, 24/7 search coverage on the ship with the reduced crew.

*Lighting and facilities*

The lighting deviated from the PIP in that the interior lights in the passenger cabins were NOT illuminated and that the inbound gangplank lighting, which is required by the U.S. Coast Guard (USCG) in accordance with 33 CRF §104.285 *Security measures for monitoring*, was illuminated during the shearwater fledging season. USCG requirements related to lighting and security is described in Item 4 of NCL's PIP (pg. 6).

*Predator control*

Biological Objective 1B relates to predator control and is not applicable on a seagoing vessel, thus NCL did not conduct predator control activities.

*Training and outreach*

A total of 11 PowerPoint presentations were made to 248 staff members that included a review of the fact sheet, KSHCP Downed Wildlife Protocol and Incident Documentation and Reporting Form. During the seabird season, The Pride of

America provides information on seabirds, and seabird protocols to its passengers in the "Free Style Daily," the ship's onboard daily newspaper". NCL did not conduct outreach activities as described in its PIP because there were no passengers onboard the Pride of America during the fledging season.

## Port Allen Harbor

*Search effort*

Searches were conducted twice each day at HDOT's Port Allen Harbor as outlined and prescribed in the KSHCP and HDOT's Participant Inclusion Plan. These surveys were performed each night within 3-4 hours after sundown and then again within 1 hour of sunrise, on consecutive days beginning on September 15th and concluding on December 15th. Port Allen Harbor is open to the public 24 hours per day with no on-site security presence. H. T. Harvey and Associates assigned trained field biologists to conduct the twice daily searches of Port Allen Harbor for a total of 184 searches on consecutive nights and mornings in 2020.

The downed seabird monitoring at Port Allen Harbor was assigned to two trained H. T. Harvey & Associates field biologists, Rick Foulks and Kevin Johnson, in 2020. Training included orientation to the searchable area and informational content that included seabird awareness, response, rescue and KSHCP reporting procedures, in addition to important characteristics and features of seabird fallout and those associated with the facility itself. In addition to the dedicated searchers, HDOT staff are present on site during normal daytime work hours and were also trained and capable of detecting downed seabirds and initiating the proper procedures for handling and reporting downed seabird incidents.

Implementing the monitoring protocols at Port Allen Harbor was achieved by closely coordinating monitoring activities with HDOT Harbors Division staff and H. T. Harvey & Associates field biologists. The effectiveness of the monitoring program was enhanced by the training that was provided to the monitors prior to the beginning of the seabird fallout season and continued outreach, as needed, throughout the season to ensure continuity and adherence to fundamental procedures. We monitored the effectiveness of the survey effort by tracking quality and timeliness of coordination, documentation, and reporting of survey data, and downed seabird incidents when they occurred. There were no circumstances that triggered midterm corrections or substantive retraining with respect to the standard monitoring protocols, response procedures, and reporting at Port Allen Harbor in 2020.

*Lighting and facilities*

In 2017, all wall mounted light fixtures were replaced with downward pointed, full cutoff LED light fixtures. The upgraded downward pointing wall mounted light fixtures are compliant with night sky protection strategy under HRS Section 201-8.5, but still produce glare off the painted side of the building. HDOT is in the design phase of a project to replace the exterior wall panels at the Port Allen Warehouse and will lower the height of the wall mounted lights as part of that project.

Standard security, worker, tenant, and public safety procedure at Port Allen Harbor requires that some facility lighting remain on at night. The lights in the parking lot and along the seaward side of the warehouse are programmed to be on from 18:30 to 20:30 each night to provide for the safety of workers and visitors disembarking from tour boats and departing from the pier and parking area. At 20:30, the wall mounted lights are reduced to 50% capacity (i.e., every other wall mounted light is turned off) and remain at this level until dawn each day. In 2020, prior to the approval of the KSHCP, agency officials and the ESRC recommended lowering the height of the wall mounted lights on the warehouse to reduce the amount of light that may be visible from offshore. HDOT Harbors Division is in the design phase of a project to Replace ACM Panels at Port Allen and is planning to lower the wall mounted lights as part of that project.

*Predator control*

Predator control activities at Port Allen Harbor consisted of recording the number and locations of any free-roaming animals (cats or dogs), with an emphasis on cats, and delivering those reports quickly and efficiently to HDOT Harbors Division personnel. Harbors Division staff deployed 1 Tomahawk-style live trap at the harbor and checked and maintained

the trap daily beginning on about September 1, 2020 and continuing through December 15, 2020 (same as Nawiliwili Harbor). H. T. Harvey & Associates biologists compiled observations of free-roaming cats and dogs and reported these to Harbors Division to help facilitate the daily and weekly trap placement distribution at Port Allen Harbor. Prior to 2020, HDOT Harbors Division personnel at Port Allen Harbor conducted occasional nuisance animal removal at the facility, but following implementation of the KSHCP, Harbors Division began an active daily predator control program that began September 1, 2020, and continued for the duration of the seabird fallout season. The announcement by Kauai Humane Society at the end of September that cats would no longer be accepted resulted in Harbors Division securing services from a licensed local animal control group to humanely remove any captured animals. No cats were captured and removed from Port Allen Harbor in 2020. However, Port Allen Harbor is adjacent to A&B properties, who also conduct predator control as part of the KSHCP, thus any cats seen on HDOT/Port Allen Property will have already passed through A&B properties where traps are located. One unleashed dog associated with a fisher on the pier was reported roaming freely on the pier on the evening of October 25. See Addendum Sheet 2 for additional summary information.

*Training and outreach*

A total of four PowerPoint presentations were made to 18 staff members providing administrative support or working at Port Allen Harbor that included a review of the Fact Sheet, KSHCP Downed Wildlife Protocol and Incident Documentation and Reporting Form. In addition, there was Port Allen specific training orientation for staff responsible for performing downed seabird monitoring activities at Port Allen Harbor. These were developed and initiated by a contractor (H. T. Harvey & Associates).

## Princeville Resort Kauai

*Downed Bird Search effort*

Princeville's Assistant Director of Engineering is responsible for overseeing the seabird protocols, bird searches and recovery, record keeping, and reporting during construction. Security personnel conduct searches twice daily in the early morning and after sundown along the search route provided. All construction workers and resort staff are responsible for searching their respective work areas for downed seabirds during work hours. There were approximately 100 - 150 daily construction workers and three resort staff during the 2020 fledging season (compared to 400 staff during normal operations).

*Lighting and facilities*

Due to COVID-19 There was significantly less lighting in 2020 than described in Princeville's PIP because the resort was closed to guests. The majority of outdoor lights were deactivated after April 1. During the fledging season, the approved limited lighting included 50% of the parking lot lights and safety lighting at the loading bay, guard shack, and along the public beach access walkway (See Attachment B: Photo Log). All outdoor lighting was angled downward, shielded, and fully cutoff.

*Predator control*

Predator searches were conducted daily by a contractor who moved 10 traps around the property as best served to catch predators. Ten traps were run for 91 days throughout the seabird fall out season by a contractor resulting in the removal of 12 cats from the property. Workers on-site helped the predator control company to better implement trapping by informing them of when and where predators were sighted. Resort and construction staff are trained to search for and report predators. Trained security personnel inspected the grounds of the hotel at least twice daily throughout the fledging season. There are signs within the resort prohibiting outdoor feeding of cats.

*Training and outreach*

Princeville resort conducted extensive training of construction staff as well as resort workers, who are retrained every year in early August. A total of 35 PowerPoint presentations were made to 268 workers during the 2020 fledging season.

The specific dates for the training are based on the hotel occupancy and other personnel issues but training always happens prior to the seabird season starting in September. Prior to the start of the fledging season, the construction crew and remaining resort staff completed annual seabird training in small groups in accordance with the governor's COVID-19 requirements. New workers are trained within their first day of work. Workers are provided a hard-hat sticker, which they must wear daily to indicate that they've completed the seabird training. Princeville did not conduct guest outreach activities as described in its PIP because there were no guests at the resort during the fledging season.

## Sheraton

*Downed Bir Search effort*

Security and Engineering during the day and by security during the night. The hotel is currently closed and the majority of the staff has been put on furlough. Because of this the Security team was left to search our property more than usual to cover our usual search effort.

*Lighting and facilities*

Unshielded down lights were removed in the courtyard to comply with comments left by the public review process.

*Predator control*

Aloha Termite Kauai is contracted to trap and remove feral cats once a month, year-round. They are also on call if something were to pop up and we need further assistance. No results were reported for the number of animals removed.

*Training and outreach*

Two PowerPoint presentations were made to 16 staff members that included a review of the fact sheet, KSHCP Downed Wildlife Protocol and Incident Documentation and Reporting Form. Posters and fliers posted around the property. Coloring books ordered and offered to arrival Owners. PM Security officer out on the front lawn for an hour to answer any questions guests or passersby may have about the birds or why our property was dark.

# MINIMIZATION COMPLIANCE SUMMARY

The purpose of this report is to summarize the results of compliance monitoring of implementation of minimization measures at participant facilities to enable the agencies to monitor compliance with minimization actions at participant facilities via review of Participant Annual reports (KSHCP 6.6.2.2(5) and 6.8.1). The agencies' effectiveness monitoring will identify if and when specific measures are effective or less effective and provides information on whether the proposed minimization or mitigation measures can or should be modified through Adaptive Management (see Section 6.9) or, whether the HCP itself should be considered for amendment.

To facilitate the agencies' effectiveness monitoring, this report summarizes methods used to minimize instances of light attraction, on-site predator control, and training and outreach to increase the likelihood of finding downed birds. The evaluation has been based on the information contained in Participant Reports. Although not required by the KSHCP, this report suggests evaluation criteria for the agencies regarding participants' minimization efforts. A separate discussion of the effectiveness of mitigation activities implemented at the Kahuama'a Seabird Preserve is provided above.

## Lighting and facilities minimization

Measures to avoid and minimize the impacts of light attraction on the Covered Species are an integral part of the KSHCP. The avoidance and minimization efforts outlined are detailed in *Appendix E: Guidelines for Adjusting Lighting at Facilities* and reflect the best available science on seabird friendly lighting. Briefly, these methods include:

- Deactivate non-essential lights
- Install full cut-off light fixtures
- Shield light fixtures
- Angle lights downward
- Place lights under eaves
- Shift lighting according to moon phase (during the fall-out period)
- Install motion sensors for motion-activated lighting
- Decrease lighting levels
- Decrease visibility of interior lights
- Use light-less technologies
- Plant vegetation around lights to reduce light visibility
- Lower height of lights
- Use longer light wavelengths

*Results*

Overall, the participants in the KSHCP ensured that lighting at their facilities was reduced and modified in compliance with the guidelines set forth in the KSHCP. In some cases, such as the Powerhouse and Irrigation facilities owned by A&B, lights were completely turned off at the properties for the duration of the season. For tourism-based properties (Marriott, Sheraton, Princeville and NCL), lighting was significantly decreased as a result of closed facilities and/or greatly reduced occupancy due to the COVID 19 pandemic. Based on the reports and photos provided, all participants, with the exception of Kauai County, have made significant efforts towards reducing light pollution and thus risk to listed seabirds, at their properties.

## Predator control

Seabirds that are downed at Participant facilities are vulnerable to direct mortality from predation by free-roaming dogs, cats, rats, and other predators. Downed seabirds that subsequently become predated are considered lethal take (see KSHCP Section 4.2.1). In order to receive incidental take authorization from the USFWS and DLNR, Participants are required to reduce the presence of predators at their facilities for the duration of the fallout season. The HCP requires that Participants "Conduct a predator trapping and removal program throughout the Covered Property immediately prior to

and throughout the fallout season . . . unless alternative methods are included in an approved PIP . . .."(KSHCP Section 5.3.2)

One possible method for the agencies to evaluate efficacy of predator control programs is first to evaluate whether participants met the minimum number of days of predator control (i.e. conducted trapping throughout the seabird fallout season) and secondarily on the number of traps placed relative to the size of the property. While the KSHCP does not provide explicit guidelines for trapping spacing at participant facilities and allowed for each participant to develop its own agency-approved predator control plan, best practice guidelines developed and published by the Pacific Invasive Initiative that are used Pacific-wide recommend a minimum of trap spacing of one trap every 500m (1640 feet) to as dense as one trap every 50m (164 feet). Thus, the minimum of one trap every 500m (one trap for every 15 acres, equivalent to 0.067 traps/acre) was used as a baseline for the minimum number of traps required based on the size of the property. Additionally, the number of animals caught per trap per night was calculated for each facility. This metric is a useful measure of animal abundance over time and can be used to track progress over many years in removing animals from the landscape; as trapping continues we expect the number of animals/trap night to decrease as they become less dense.

Below, this report compares Participants' predator control activities against the best practice guidelines of the Pacific Invasive Initiative. Of the 68 properties included in the KSHCP, 62 were required to do predator control. Only 16/62 of those properties conducted predator control across all Participants, resulting in significant gaps in coverage of predator control. Properties that did not conduct predator control include 47 out of 51 covered properties owned by Kauai County. Of the remaining 16 properties that did conduct predator control, nine were deemed to be effective based on meeting the minimum number of trap nights and trap placement. Table 5 below summarizes the predator control efforts made by each participant and property. Table 5 also identifies recommended changes based on the KSHCP guidelines and generally accepted predator control practices.

*Table 6: Summary of predator control effort and results by property*

| Participant | Location | Conducted predator control? | # nights | Predator/trap night | # traps/acre | Changes needed? |
|---|---|---|---|---|---|---|
| County Kaua'i | Hanapepe Stadium | Yes | 19 | 0.21 | 0.07 | Increase # nights |
| County of Kaua'i | Hanapepe Baseyard | Yes | 38 | 0.18 | 0.18 | Increase # nights |
| County of Kaua'i | Lihue Transportation Baseyard | Yes | 19 | 0.11 | 0.40 | Increase # nights |
| County of Kaua'i | Lydgate Park | Yes | 2 | 0.50 | 0.02 | Increase # nights |
| HDOT | Port Allen | Yes | 106 | 0 | 0.66 | No |
| Kaua'i Coffee | Factory and Fields- Kalaheo | Yes | 10 | 0.8 | 0 | Increase # nights |
| Kaua'i Marriott Resort | Kaua'i Marriott Resort | Yes | 61 | 0.08 | Not calculated | Increase # nights |
| Princeville Resort Kaua'i | Princeville Resort Kaua'i | Yes | 91 | 0.01 | 0.8 | No |
| A & B | Hokulei | Yes | 100 | 0.06 | 0.27 | No |
| A & B | Kukuiula Development | Yes | 100 | 0.07 | 0.26 | No |
| A & B | Port Allen Commercial | Yes | 100 | 0.18 | 0.33 | No |
| A & B | The Shops at Kukuiula | Yes | 100 | 0.03 | 0.49 | No |
| A & B | Waipouli Town Center | Yes | 100 | 0.08 | 0.47 | No |

| | | | | | | |
|---|---|---|---|---|---|---|
| HDOT | Nawiliwili Harbor | Yes | 106 | 0.047 | 0.125 | No |
| Sheraton | Sheraton Resort | Yes | 0 | 0 | 0 | Increase # nights |
| A & B | Kalaheo Powerhouse | No | 0 | 0 | 0 | N/A (not required) |
| A & B | Port Allen Solar Facility | No | 0 | 0 | 0 | N/A (not required) |
| A & B | Pump 3 Irrigation | No | 0 | 0 | 0 | N/A (not required) |
| A & B | Wainiha Powerhouse | No | 0 | 0 | 0 | N/A (not required) |
| County of Kaua'i | Remaining 47 properties | No | 0 | 0 | 0 | Increase # nights and # properties |
| NCL | NCL | No | N/A | N/A | N/A | N/A (not required) |
| HDOT | Lihue Airport | Yes | 16 | 0.0125 | 0.024 | Increase # nights |

In total, 201 feral cats and two dogs were removed from participant facilities during the 2020 seabird fallout season. Predator control efficacy varied largely between participant groups related to effort, expertise and situational dependent variables such as proximity to known feral cat colonies and the efficacy of the contractor selected to conduct the work. The following paragraph provides recommendations for participants on how to ensure their facility-based predator control programs can be improved to ensure they are in compliance with the KSHCP.

*Conclusions and recommendations*

All entities that participated in predator control appear to have sufficient trap coverage based on the size of their facility. Of the seven properties that did conduct predator control, but where it was not deemed sufficient, all but one did not meet the minimum number of trap nights, thus simply increasing the number of trap nights would bring the properties into compliance. For the Sheraton resort, predator control was not conducted as it is only initiated when predators are seen. Since predators can easily go undetected, even with trained observers present, the lack of visual evidence of predators should not be used as a guideline for whether to initiate trapping. Instead, trapping for these facilities should be conducted proactively throughout the seabird fallout season.

## Training and Outreach

An important step in reducing mortality of downed seabirds is quickly finding and recovering (i.e. capturing and turning birds in to the SOS facility for rehabilitation) them efficiently. This is most likely to occur when on-site staff and workers are properly able to identify Covered Seabirds, understand and fully implement the protocol for their detection and safe capture, and have a clear search strategy.

Under approved PIPs, each Participant conducted annual outreach and training for workers at their facilities that is specific to Covered Seabirds in order to help workers spot downed seabirds and know how to respond in a timely manner. The goal was to train workers who will be responsible for the monitoring of downed seabirds at facilities, and who may find a downed seabird incidentally while performing other duties. In 2020, 2068 staff and workers associated with the participant facilities were directly trained on monitoring and response of downed seabirds representing 2.8% of the population of Kauai (72,293 as of 2019). The quality of materials and information presented across all participant groups was high and participants should be commended for the amount of effort that was put into staff training.

In addition to training of workers and staff, each Participant was also required to produce and offer seabird outreach materials tailored to their customers, guests, or the public who may be present at their facilities during the seabird fallout season. These materials were meant to supplement efforts of Participant staff members by encouraging more

“eyes on the ground” to identify and recover downed seabirds. For tourism-based facilities (Marriott, Sheraton, Princeville and NCL) outreach to guests was significantly curtailed as a result of closed facilities and/or greatly reduced occupancy due to the COVID-19 pandemic. These changes are discussed in the summary report for each participant. Commercial properties (HDOT, Kauai County and Port Allen Commercial facilities) posted informational fliers in staff rooms and common areas around property to further reinforce training. Retail properties owned by A&B received a tri-fold brochure, a letter outlining seabird friendly lighting requirements and a weekly newsletter (Kukuiula Development only). Overall, outreach at each participant facility was adequate and professionally presented.

# TAKE MONITORING EFFECTIVENESS

Take monitoring is compares actual rates of take to requested amounts of take, based on each participant's approved Covered Seabird Monitoring Plan in its Participant Inclusion Plan (PIP). Methods for determining the amount of take of covered species ("take calculations") are set forth in KSHCP Section 6.2.2.1. Each Participant's ITP and ITL requires that the participant "calculate their annual lethal and non-lethal take using the methodology described in the KSHCP and with the discovery rate within their approved Participant Inclusion Plan." This summary of take monitoring first summarizes Participants' covered seabird monitoring, and then presents tables comparing Participants' actual rates of take to requested amounts.

The take calculation begins with finding downed birds. Protocols for recovery of downed seabirds set forth in KSHCP section 5.3.4.1. These general guidelines are summarized in KSHCP table 6-4 (repeated below as Table 7), but are also modified for those Participants who have different site-specific protocols in an agency-approved PIP.

*Table 7: Take monitoring components for Participants and KSHCP guidelines.*

| **Take monitoring component** | **KSHCP Guideline** |
|---|---|
| Detailed maps of the property indicating structures and property features (including all light sources); topography; any unsearchable areas; and the proposed search route | All searchable areas must be covered in defined search routes (attach map). Justify "unsearchable areas".[i] |
| Description of annual training for searchers | Must cover seabird identification, seabird handling, appropriate downed birds search methods, and response procedures. Recommend training to occur immediately prior to Sept 15 (start of fallout season).[i] |
| Time of Year of searches | Searching should occur twice nightly between Sep 15 and Dec 15.[i] |
| Frequency of searches | Minimum of twice nightly (or more frequently if possible); searching should be intensified during the peak of fallout (Oct 1 –15).[i] |
| Time of day of searches | The peak of fallout generally occurs around 2 hours after sunset – **searches should therefore commence 3-4 hours after sunset**. An additional search should take place within **1 hour before sunrise** to find birds that were grounded during the night.[i] |
| Search methods | Specify, e.g. vehicle versus walking; looking under and around objects as opposed to just patrolling; searching with flashlight, etc.[i] |
| Record keeping method | Downed Wildlife Form and photographs required for each bird found. |

| | |
|---|---|
| Presence of seabird predators on site (cats, dogs, mongoose) | Record any predators seen during searches and inform management taking actions to reduce predators at facilities, and what action(s) taken to remove predators from the area. Records should include the type and date of predators sighted, and the timing of response actions and outcome.ii |
| Number of searchers needed to cover area. | Depends on site conditions and safety considerations.[i] |

i See Section 5.3.4.1.
ii See Section 5.3.2.

*Honu Monitoring and Protection*

It is anticipated that take of honu will be avoided through monitoring and measures to protect turtle nests. These measures include avoid and minimize honu hatchling disorientation due to lighting at beachfront facilities by implementing best lighting practices as specified in PIPs, and protecting any nests at facilities via shielding as needed. Thus, participants with the potential to have honu on their property were required to determine the status of honu nests and to report on the monitoring and measures taken to avoid take of honu if nest(s) are found.

*Results*

All A&B and HDOT properties used independent contractors to conduct searches and performed the most effective searches based on the maps and data provided. It was difficult to evaluate the effectiveness of searching effort for all properties though as the raw search data sheets were not provided to confirm whether searches occurred on the dates/times they were reported and whether there were any deviations from the approved search routes.

*Table 8: Summary of results of take monitoring at Participant facilities*

| Owner | Property or Facility | # of birds found | Search routes provided | Training documents? | Search dates | Search times | Methods documented? | Take log submitted | Predator presence recorded on site | Changes needed |
|---|---|---|---|---|---|---|---|---|---|---|
| A & B | Hokulei Shopping Village | 0 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | N/A | yes | |
| A & B | Kalaheo Powerhouse | 0 | Yes | Yes | Sept 15 – Dec 15 (only on nights when facility is lighted) | 3-4 hrs after sunset, and 1 hr of sunrise or prior to departing facility | Yes | N/A | yes | |
| A & B | Kukuiula Development | 0 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | N/A | yes | |
| A & B | Port Allen Commercial | 1 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | yes | yes | |
| A & B | Port Allen Solar Facility | 0 | Yes | Yes | Sept 15 – Sept 30 (only on nights when facility is lighted) | 3-4 hrs after sunset, and 1 hr of sunrise or prior to departing facility | Yes | N/A | yes | As of September 30, no longer a participating facility. |
| A & B | Pump 3 Irrigation | 0 | Yes | Yes | Sept 15 – Dec 15 (only on nights when facility is lighted) | 3-4 hrs after sunset, and 1 hr of sunrise or prior to departing facility | Yes | N/A | yes | |
| A & B | The Shops a Kukuiula | 0 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | N/A | yes | |
| A & B | Wainiha Powerhouse | 0 | Yes | Yes | Sept 15 – Dec 15 (only on nights when facilities are lighted) | 3-4 hrs after sunset, and 1 hr of sunrise or prior to departing facility | Yes | N/A | yes | |
| A & B | Waipouli Town Center | 0 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | N/A | yes | |
| County of Kaua'i | Multiple | 0 | Yes | Yes | Sept 15 – Dec 15 | Once daily | Yes | N/A | yes | |
| HDOT | Lihue Airport | 2 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | yes | yes | |
| HDOT | Nawiliwili Harbor | 0 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | N/A | yes | |
| HDOT | Port Allen | 1 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | yes | yes | |
| Kaua'i Coffee | Kalaheo | 0 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | N/A | yes | |
| Kaua'i Marriott Resort | Kaua'i Marriott Resort | 0 | N/A | Yes | Sept 15 – Dec 15 | Continuous (min. twice per 8-hour shift) | Yes | N/A | yes | |
| NCL | NCL | 0 | Yes | Yes | Sept 15 – Dec 15 | Continuous searches throughout the day | Yes | N/A | no | |
| Princeville Resort Kaua'i | Princeville Resort Kaua'i | 0 | Yes | Yes | Sept 15 – Dec 15 | 3-4 hrs after sunset, and 1 hr of sunrise | Yes | N/A | yes | |
| Sheraton Kauai | Sheraton Kauai Resort | Honu nest | Yes | No | Sept 15 – Dec 15 | Twice daily-times unknown | No | No | Yes | Submit information for Honu nest |

# TAKE MONITORING AND SUMMARY OF CHANGES

This section will report on the outcomes and whether cumulatively, participants are in compliance with the KSHCP.

In total, four NESH were found on participants properties during the 2020 seabird fallout season. All were alive; one flew off from the site and the remaining three were brought to the Save our Shearwaters facility at the Kauai Humane Society for release after stabilization. An additional four NESH, three alive and one dead, were found during searches conducted as part of the KSHCP on neighboring properties. No HAPE or BANP were found during the 2020 season.

One Honu nest was reported at the Sheraton, but no further information was given in the annual report; the nest was reported to both DLNR and the USFWS.

*Table 9: Summary of all downed birds in 2020 under the KSHCP*

| Date | Time | Property | Species | Status |
|---|---|---|---|---|
| 10/13/2020 | 613 | Port Allen Marina Center | NESH | Alive, turned into SOS |
| 10-Oct-2020 | 20:10 | Lihue Airport | NESH | Alive, turned into SOS |
| 17-Oct-2020 | 6:50 | Lihue Airport | NESH | Alive, turned into SOS |
| 18-Oct-2020 | 06:20 | Port Allen Harbor | NESH | Alive- flew off |

*Table 10:* Total Permitted Seabird Take Calculated in Participants' PIPs over 30 years

| | Compliance monitoring | NESH | | HAPE | | BANP | |
|---|---|---|---|---|---|---|---|
| Property or Facility | Annual Report submitted on time? | Lethal | Non-lethal | Lethal | Non-lethal | Lethal | Non-lethal |
| A&B- Multiple | No | 104 | 80 | 3 | 3 | 1 | 1 |
| Kauai County-Multiple | No | 276 | 217 | 17 | 4 | 4 | 0 |
| HDOT-Lihue Airport | Yes | 22 | 43 | 3 | 6 | 1 | 2 |
| HDOT-Nawiliwili Harbor | Yes | 13 | 48 | 2 | 6 | 0 | 0 |
| HDOT-Port Allen | Yes | 13 | 48 | 2 | 6 | 0 | 0 |
| Kauai Coffee | Yes | 34 | 26 | 0 | 0 | 0 | 0 |
| Kaua'i Marriott Resort | Yes | 33 | 21.2 | 1 | 1 | 1 | 1 |
| NCL | Yes | 30 | 30 | 6 | 6 | 6 | 6 |
| Princeville Resort Kaua'i | Yes | 125 | 475.2 | 6 | 6 | 1 | 1 |
| Sheraton Kauai Resort | No | 81 | 64 | 1 | 0 | 3 | 1 |

*Table 11: Calculated seabird take for all Participants in 2020*

| | NESH | | HAPE | | BANP | |
|---|---|---|---|---|---|---|
| Property or Facility | Lethal | Non-lethal | Lethal | Non-lethal | Lethal | Non-lethal |
| A&B- Multiple | 1.12 | 0.88 | 0 | 0 | 0 | 0 |
| Kauai County-Multiple | 0 | 0 | 0 | 0 | 0 | 0 |
| HDOT-Lihue Airport | 0.67 | 2 | 0 | 0 | 0 | 0 |
| HDOT-Nawiliwili Harbor | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| HDOT-Port Allen | 1 | 1 | 0 | 0 | 0 | 0 |
| Kauai Coffee | 0 | 0 | 0 | 0 | 0 | 0 |
| Kaua'i Marriott Resort | 0 | 0 | 0 | 0 | 0 | 0 |
| NCL | 0 | 0 | 0 | 0 | 0 | 0 |
| Princeville Resort Kaua'i | 0 | 0 | 0 | 0 | 0 | 0 |
| Sheraton Kauai Resort | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total 2020 Participant Take** | 2.79 | 3.88 | 0 | 0 | 0 | 0 |
| Maximum Anticipated Total Fledgling Annual Take* | 30 | 45 | 2 | 2 | 1 | 1 |
| Cumulative Participant Fledgling Take Since May 2020 | 2.79 | 3.88 | 0 | 0 | 0 | 0 |
| Maximum Anticipated Total Fledgling 30-year Take* | 900 | 1350 | 60 | 60 | 30 | 30 |

* From KSHCP Table 4-1. Table 4-1 also separately describes maximum anticipated take of adults or sub-adults and eggs/chicks.

*Facility changes-*

There was one transfer of ownership that occurred in 2020: The Port Allen Solar Facility owned by A&B was sold on September 30, 2020 to Ka`ie`ie Waho Company LLC.

Additionally, in 2021 it is anticipated that the management of Kaua'i Marriott Resort will transition from Essex House Condominium Corporation (an affiliate of Marriott International, Inc.) to a Sonesta branded hotel. Although management will change, the property will continue to be owned by HPTMI Hawaii, Inc. after this transition.

No major facilities changes occurred in 2020, however, several are expected in 2021. Future changes that are anticipated in 2021 to A&B properties include:

- At Hokulei Shopping Village, a 14,820 square foot building pad (Pad 2) leased to Walgreens remains undeveloped. The pad will be developed at an unknown date in the future, either by Walgreens or another tenant, and such development will include additional lighting. When developed, lighting will be compliant with KSHCP requirements.
- At Waipouli Town Center, with the closure of the Foodland grocery store in 2020, and at least one other vacancy, significant changes to the tenant makeup at this property at this property are possible in the near future, which may alter the existing lighting. Any new lighting will comply with KSHCP requirements.
- The Shops at Kukuiula Shopping Center is planning extensive lighting improvements beginning in 2021.
- The Port Allen Marina Center is planning additional modifications to sconce lighting in 2021.

# FINANCIAL REPORT

*Table 12: KSHCP Operating account financial report*

| **Account Name:** | **Kaua'i Seabird Habitat Conservation Plan (KSHCP) Operating Account** | |
|---|---|---|
| **Account Partner:** | KSHCP Participants | |
| **Account Number:** | IM.A172 | |
| **Account expiration date** | 15-Jun-50 | |
| **Reporting period** | January 1, 2020 - December 31, 2020 | |
| | | |
| **ACCOUNT SUMMARY:** | | |
| Credits: | $687,970.84 | |
| Project Disbursements: | $359,899.17 | |
| Administrative Expenses: | $6,424.85 | |
| | | |
| **Cash Balance at End of Period:** | **$321,646.82** | |
| Remaining Project Obligations: | $0.00 | |
| **UNOBLIGATED ACCOUNT BALANCE:** | **$321,646.82** | |
| | | |
| **ACCOUNT DETAILS:** | | |
| | | |
| **I. Credits** | | |
| | Amount | Date Funds Deposited |
| Account Balance from Previous Period | $0.00 | |
| New Deposits | | 10/1/2019 |
| Essex House Condo | $27,034.00 | 7/14/2020 |
| NCL Corporation | $24,576.00 | 7/14/2020 |
| SOF XI Kauai PV Holdings | $102,399.00 | 7/14/2020 |
| Marriott Ownership | $66,355.00 | 7/14/2020 |
| A and B Properties | $85,196.00 | 7/14/2020 |
| County of Kaua'i | $268,747.00 | 7/24/2020 |
| Kauai Coffee Company | $27,853.00 | 9/15/2020 |
| State of Hawaii | $18,022.00 | 9/21/2020 |
| State of Hawaii | $66,355.00 | 9/21/2020 |
| Investment Activity | $1,433.84 | |
| | | |
| **Total Credits:** | **$687,970.84** | |
| **II. Expenses** | | |
| | | |
| Project Disbursements | $359,899.17 | |
| Deposit Fee | $3,000.00 | |
| Management Fee (greater of 2% or $1,000[1]) | $3,424.85 | |
| | | |
| Total Expenses: | $366,324.02 | |

*Table 43: KSHCP reserve account financial report*

| **Account Name:** | **Kaua'i Seabird Habitat Conservation Plan (KSHCP) Reserve Account** | |
|---|---|---|
| **Account Partner:** | KSHCP Participants | |
| **Account Number:** | IM.A172 | |
| **Account expiration date** | 15-Jun-50 | |
| **Reporting period** | January 1, 2020 - December 31, 2020 | |
| | | |
| **ACCOUNT SUMMARY:** | | |
| Credits: | $303,639.73 | |
| Project Disbursements: | $0.00 | |
| Administrative Expenses: | $4,503.20 | |
| | | |
| **Cash Balance at End of Period:** | **$299,136.53** | |
| | | |
| Remaining Project Obligations: | $0.00 | |
| **UNOBLIGATED ACCOUNT BALANCE:** | **$299,136.53** | |
| **I. Credits** | | |
| | Amount | Date funds deposited |
| | | |
| Account Balance from Previous Period | $0.00 | 10/1/2019 |
| New Deposits | | |
| Essex House Condo | $12,595.00 | 7/14/2020 |
| NCL Corporation | $11,450.00 | 7/14/2020 |
| SOF XI Kauai PV Holdings | $47,710.00 | 7/14/2020 |
| Marriott Ownership | $30,916.00 | 7/14/2020 |
| A and B Properties | $39,695.00 | 7/14/2020 |
| County of Kaua'i | $108,344.00 | 7/24/2020 |
| Kauai Coffee Company | $12,977.00 | 9/15/2020 |
| State of Hawaii | $8,397.00 | 9/21/2020 |
| State of Hawaii | $30,916.00 | 9/21/2020 |
| Investment Activity | $639.73 | |
| | | |
| **Total Credits:** | **$303,639.73** | |
| **II. Expenses** | | |
| | | |
| Project Disbursements | $0.00 | |
| Deposit Fee | $3,000.00 | |
| Management Fee (greater of 1% or $1,000[1]) | $1,503.20 | |
| | | |
| **Total Expenses:** | **$4,503.20** | |

To date, there are no anticipated changes in budget expenditures and the financial status of the KSHCP is on budget.