
Hōkūala Habitat Conservation Plan Annual Report: July 1, 2016 – June 30, 2017



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JULY 18 2017 – Revised April 23, 2018

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Outline of the Document

In the first section of this report we present updates on compliance with all of the terms and conditions included in the HCP (Ebin, Moser + Skaggs LLP, and Rana Biological Consulting, Inc. 2009). This section includes the specific reference to each topic in the HCP for clarity. In the second section of the document, which begins on page 13. We have presented more detailed information and data associated with each of the topics addressed in the first section of the document.

Introduction and Background

In 2012, the U.S. Fish and Wildlife Service (USFWS) and the Hawaii Department of Land and Natural Resources (DLNR)/Division of Forestry and Wildlife (DOFAW) approved the Habitat Conservation Plan (HCP) prepared by Kauai Lagoons LLC and issued to Kauai Lagoons an Incidental Take Permit and Incidental Take License, respectively. The effective date of those incidental take authorizations was November 9, 2012. On January 1, 2016 the former Marriott Vacation Resort known as Kauai Lagoons was transferred to Tower Kauai Lagoons Land LLC and renamed Hōkūala Resort.

Section 4.5 of the HCP requires that the permit holder produces and submits an annual HCP compliance and monitoring report to both agencies by September 30 of each year. Per DOFAW's request annual reports will be submitted by August 1 of each year and cover July 1 to the following June 30.

HCP Sections and Specific Obligations

One-Time Obligations

Nēnē Mitigation Payment (HCP Section 4.4.1.6)

Requirement: A one-time payment of \$85,000 to the DLNR Endangered Species Trust Fund. DLNR is to use these funds to control predators and/or manage Nēnē at a translocation site.

Status: Completed (May 2012)

Ongoing Obligations

Financial Assurances (Section 6.4)

Requirement: Post a bond or letter of credit in the amount of \$153,667. Under Section 7.2 of the HCP Implementing Agreement, the bond term must be two years, and a Continuation Certificate must be sent to DLNR with a copy to USFWS at least six months prior to expiration of the bond.

Status: Completed (Bond provided to agencies in December 2012; Continuation Certificate provided to agencies in January 2014), a new bond issued to the new owners dated July 1, 2015 was provided to the agencies after it's issue. That bond expired on June 30th, 2017. The term of the bond is a revolving two years, and is automatically renewed. The current bond has been issued and its term is from July 1, 2017 through June 30, 2019. A renewed certificate of bonding dated July 14, 2017 was supplied to the agencies on the same day that we received it.

Training (“Endangered Species Awareness Program”) (Section 4.2.1.1)

Requirement: All new employees hired by the resort operators and any contractors conducting construction activity on the property go through the training program detailed in the HCP.

Status: The training module was updated for the Season, Reginald David, retrained the entire staff, and all contractors conducting work on the property after the new owners took over. Following those training sessions either Reginald David, or one of the biological monitors gave all new employees hired by resort operations or golf course operator as well as any new contractors conducting work on the property as they were brought on staff, or contracted to conduct any construction activity on the site. The entire staff and new contractors completed training and or retraining in May 2017.

Construction Contract Provisions (Section 4.2.1.2)

Requirement: Develop provisions and restrictions to avoid and minimize take of Covered Species, and insert into all new construction contracts.

Status: New construction was initiated in January of 2016, all construction contracts contained provisions and restrictions to avoid and minimize take of Covered Species. Construction continues on the property and all new construction contracts awarded during this reporting period include these clauses.

Pre-Construction Surveys (Section 4.2.1.3)

Requirement: A biological monitor must survey any new mass grading areas immediately prior to mass grading.

Status: No new grading or mass grading occurred during the reporting period.

Biological Monitor (Section 4.2.1.4)

Requirement: Designate two biological monitors.

Status: In compliance. The two monitors designated in the HCP (Alan Silva and Reginald David) remain the designated monitors. Al Silva worked full time for the entire year.

Construction Monitor (Section 4.2.1.5)

Requirement: Use one or more construction monitors during periods of active grading or earth moving.

Status: There was no active grading or earth moving during the reporting period. Hōkūala has two full time monitors and one casual monitor plus the overseeing biologist Reginald David monitoring construction activities on the property.

Fencing (Section 4.2.1.6)

Requirement: Where feasible, erect and maintain solid fencing around discrete construction areas, to prevent Covered Species from walking into such areas.

Status: Please see the attached “Hōkūala Nēnē and Endangered Waterbird Monitoring Report 2016-2017” (Appendix A), in which we describe the three specific fencing and exclusion areas created during the last reporting period to restrict ingress into construction and roadways by the Covered Species. These structures have all been maintained and/or replaced and modified as they have proven to be very effective in reducing mortality by vehicles and construction activities.

Best Management Practices (Section 4.2.1.7)

Requirement: Implement the specific BMPs contained in Section 4.2.1.7 (e.g., speed limits, signage, trash receptacles).

Status: In compliance.

Roadways (Section 4.2.2.1)

Requirement: Post permanent speed limit and Covered Species warning signs, and speed bumps as necessary.

Status: Done - in compliance. The posted speed limit on the property was reduced from 15 MPH to 14 MPH during the reporting period. Additional speed bumps were installed as emerging problem areas were identified. Additional endangered Species warning signs were erected as species densities changed and usage patterns changed on the property. This has been a dynamic process due in no small part to DOFAWs removal over 500 Nēnē from the property. Nēnē were the dominant species on the property controlling the most desirable foraging and nesting habitat in and around the golf course, with the significant reduction in their numbers other listed waterbird species have rapidly moved into the now vacant desirable habitat.

Lighting (Section 4.2.2.2)

Requirement: Ensure that lighting associated with construction of new structures is bird friendly; as new buildings near completion, qualified biologist to inspect lighting after dark to ensure light attraction has been minimized to the maximum extent practicable; analyze onsite seabird fallout monitoring data on an ongoing basis to determine if particular areas within the resort attract downed birds on a regular basis, and if so then take steps to redesign, reconfigure or eliminate potential light attraction sources.

Status: In compliance. During the reporting period no new lights or lighting fixtures were installed on the property.

Grounds Management and Maintenance (Section 4.2.2.3)

Requirement: Grounds management crews must go through the training described in Section 4.2.1.1, and must coordinate with the biological monitors as needed.

Status: All employees have received training and during the season communicated effectively and proactively with the biological monitors over potential issues with endangered avian species.

Rules, Education for Resort Owners and Renters (Section 4.2.2.4)

Requirement: Covenants, Conditions and Restrictions (CC&Rs) will address issues such as trash receptacles, trash disposal, landscape design, etc.; endangered species information and education tools will be developed to educate owners and visitors regarding endangered species issues, restrictions, and special seasonal protocols.

Status: In compliance.

Golf Operations (Section 4.2.2.5)

Requirement: Golf course Starters and Marshalls must attend additional training from the Biological Monitors in addition to the standard training described in 4.2.1.1; morning briefings for golf course personnel will include updates on Covered Species presence; the Starter will inform each golfer about the potential presence of Covered Species and appropriate precautions; an educational kiosk will be established at the Starter location; golf carts will contain a placard replicating information from the kiosk; warning signs will be posted if a Covered Species establishes a nest within the golf course; golf course to establish a local rule for golf play allowing movement of a ball away from nest areas.

Status: Done and in compliance, this task has become much simpler since DOFAW initiated removal of Nēnē from the property.

Maintenance of On-Site Nesting Areas (Section 4.4.1.2)

Requirement: Previously enhanced nesting areas shall not be maintained, and supplemental grain feeders shall not be provided on lagoon islands; limited areas of the resort grounds will be managed and maintained as determined and directed by DOFAW and USFWS.

Status: In compliance.

Emergency Response Protocol (Section 4.4.1.4)

Requirement: Implement the protocol contained in HCP, Appendix I.

Status: In compliance.

Facilitate DOFAW removal of Nēnē (Section 4.4.1.5)

Requirement: As appropriate, lend support to DOFAW efforts to capture and translocate Nēnē.

Status: In compliance. DOFAW's Nēnē capture and translocation efforts ended on March 20, 2016. Hōkūala continues to provide regular access and golf carts to DOFAW staff for their use in DOFAW's Nēnē and waterbird surveys.

Predator Control (Section 4.42)

Requirement: Deploy 10 live traps during the period September 15 to March 15 in areas of the property frequented by waterbird Covered Species; check live traps every 48 hours and deliver trapped cats to Kauai Humane Society; deploy rodent bait stations in same areas during this same timeframe; control cattle egrets and feral chickens.

Status: Live traps were deployed throughout the year and moved to new areas in response to cat sightings or activity. A total of 44 cats and one dog were removed from the property this season. Additionally, 3,126 feral chickens and 42 Cattle Egrets were removed using air rifles. All bird control activities were conducted under a state Wildlife Depredation Permit, and/or under a federal Migratory Bird Depredation permit for more a more detailed description please see Section 2 (Page 18).

Seabird Mitigation Payments (Section 4.4.3; HCP Amendment of September 2013)

Requirement: Contribute \$10,000 annually to the Listed Hawaiian Seabird Conservation Account administered by the National Fish and Wildlife Foundation. The 2013 payment shall be made by November 1, 2013, and subsequent payments shall be made by September 15 of each year.

Status: The 2015 – 2016 payment was sent to NFWF on July 29, 2015. Payment was send on September 1, 2016 for the 2016-2017 period.

Nēnē Monitoring During Nesting Season (Section 4.5.3)

Requirement: Biological monitors to monitor Nēnē nesting activity and nesting success on a daily basis starting September 15 and ending on March 31 each year. Monitoring data to be collected includes band numbers, pair bonds, nest location, eggs laid, eggs hatched, goslings fledged, and reported mortalities. In addition, perform monthly monitoring during the remainder of the year (April through August), recording the number of Nēnē on the property and observed band numbers.

Status: Please refer to Section 2 (Pages 12 through 17).

Waterbird Monitoring (Section 4.5.4)

Requirement: As part of the comprehensive Nēnē monitoring efforts, the biological monitors will also record information about all observed covered waterbird species on a weekly basis between September 15 and March 31 each year, and on a monthly basis from April through August each year. To include observations regarding waterbird numbers, nest locations, eggs laid, eggs hatched, goslings fledged, and reported mortalities.

Status: We have surpassed the requirement and survey on close to a weekly basis year around. Please refer to Section 2, starting on (Page 17).

Seabird Monitoring (Section 4.5.5)

Requirement: Kauai Lagoons security staff will record all downed seabirds recovered on the property; biological monitors will evaluate security staff search efficiency and carcass removal rates; biological monitors will record the results of their own additional searches performed during the expected peak of the seabird fallout season

Status: Both security personnel and the onsite biological monitor were re-trained in seabird search and handling techniques prior to the start of the fallout season. Security personnel conducted searches on an ongoing daily basis as part of their usual patrols of the grounds and buildings. The full time biological monitor searched the buildings and perimeters surrounding the buildings every morning for downed seabirds during the September 15 – December 15 fallout season.

Searcher efficiency trials using seabird carcasses were conducted on the property by the Hōkūāla biologist. He placed two dead WTSN carcasses secured from the SOS Program, on the site on the night of October 1, 2016. One bird was placed close to the fitness center in the Marriott Kauai Lagoons-Kalanipu'u (a location where we have previously recovered a downed seabird). The second bird was tucked in behind a planter box in front of the golf course clubhouse. Resort security personnel found the bird placed close to the fitness center at 5:00 am the following morning, and one of the golf cart attendants found the bird placed next to the club house at 6:00 am the following morning when he started his work day.

Incidental Take Reporting

Following a meeting between Hōkūāla's biologist Reginald David and Adam Greisemer of the USFWS and Glenn Metzler of DOFAW-Honolulu on July 6, 2017 it was decided that we will report annual Incidental Take in two ways – the state permit reporting is to run on the state fiscal calendar, namely July 1 through June 30 each year. On the other hand the federal permit reporting will be reported on an annual basis. In this year's report we have presented the Incidental Take to the state for the period between July 1, 2016 and June 30, 2017, inclusive. The federal reported take covers the period December 9, 2016 through June 30, 2017.

Based on a review of records, and discussions with Hōkūāla the USFWS, and DOFAW have prepared a spreadsheet documenting all reported instances of downed, injured or dead birds at Kauai Lagoons since inception of the HCP. The following is a summary of the information contained in the spreadsheet pertaining to the current reporting period.

State Incidental Take Reporting

Between July 1, 2016 and June 30, 2017 Hōkūāla experienced the direct incidental take of one Hawaiian Coot, two Common Gallinules, three Hawaiian Ducks and one fledgling Newell's Shearwater (Table 1). The Hawaiian Coot was killed by golf ball strikes. Vehicles hit both the two Common Gallinules killed during this period. The three Hawaiian Ducks killed were all hit by vehicles, two on roadways and one when an employee backed over it as they were parking their car in the dark. All of the birds hit by vehicles were hit between bridge 2 and along Holokawelu Road between the western end of the permanent gallinule fencing and Marriott Kauai Lagoons-Kalanipu'u depicted in Figure 1.

Additionally, two Hawaiian Ducks were killed by an owl, most likely a Barn Owl (*Tyto alba*) right at dusk on the lawn west of Marriott Kauai Lagoons-Kalanipu'u. There had been a pair that took up partial residence on the property, just before this reporting period. They have not been seen since the duck predation incidence on the property.

Table 1 – State Reporting Period Take and Cause of Take July 1, 2016 – June 30, 2017

<i>Take Date</i>	<i>Common Name</i>	<i>Outcome Dead or Alive</i>	<i>Indirect Take*</i>
8/4/16	Hawaiian Duck	Probable vehicle hit (Dead)	
10/26/16	Newell's Shearwater	Fallout (Released alive)	
12/7/16	Common Gallinule	Vehicle hit (Dead)	
1/2/17	Hawaiian Coot	Possible golf ball hit (Dead)	
3/14/17	Hawaiian Duck	Vehicle hit (Dead)	1.225
4/9/17	Common Gallinule	Vehicle hit (Dead)	0.65
5/3/17	Hawaiian Duck	Vehicle hit (Dead)	1.225

* Indirect take is defined as the loss of parental care due to mortality during the breeding season resulting in the indicated additional take calculated as the probability that if the adult had not been killed that the nest would have produced the number of adults indicated.

Federal Incidental Take Reporting

This data set is a subset of that reported in The State Reporting Period in the previous section – and does not represent additional take under either permit.

Between December 9, 2016 and June 30, 2017 Hōkūala experienced the direct incidental take of one Hawaiian Coot, one Common Gallinule and two Hawaiian Ducks, as well as one fledgling Newell's Shearwater that was a fallout bird, and was released the same day that it was recovered by the SOS program (Table 2).

Table 2 – Federal Reporting Period Take and Cause of Take December 9, 2016 – June 30, 2017

<i>Take Date</i>	<i>Common Name</i>	<i>Outcome Dead or Alive</i>	<i>Indirect Take*</i>
10/26/16	Newell's Shearwater	Fallout (Released alive)	
1/2/17	Hawaiian Coot	Possible golf ball hit (Dead)	
3/14/17	Hawaiian Duck	Vehicle hit (Dead)	1.225
4/9/17	Common Gallinule	Vehicle hit (Dead)	0.65
5/3/17	Hawaiian Duck	Vehicle hit (Dead)	1.225

* Indirect take is defined as the loss of parental care due to mortality during the breeding season resulting in the indicated additional take calculated as the probability that if the adult had not been killed that the nest would have produced the number of adults indicated.



Figure 1 – Location of all of the vehicular bird deaths during the 2016-1017 season. The yellow downward pointed arrows delineates the area

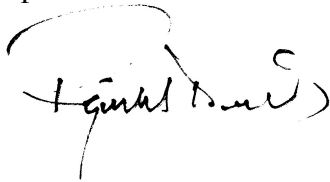
From the effective date of the state and federal take authorizations, through June 30, 2017, total direct incidental take under the HCP is presented in (Table 3).

Table 3 –Hōkūala Direct Take From Permit Inception Through June 30, 2017.

<i>Species</i>	<i>Scientific Name</i>	<i>Number</i>
Hawaiian Goose (Nēnē)	<i>Branta sandvicensis</i>	2
Common (Hawaiian) Gallinule	<i>Gallinula galeata sandvicensis</i>	8
Hawaiian Coot	<i>Fulica alai</i>	12
Hawaiian Duck	<i>Anas Wyvilliana</i>	5
Black-necked (Hawaiian) Stilt	<i>Himantopus mexicanus knudseni</i>	0
Newell's Shearwater	<i>Puffinus newelli</i>	3
Hawaiian Petrel	<i>Pterodroma sandwichensis</i>	0
Band-rumped Storm-Petrel	<i>Oceanodroma castro</i>	0

Certification (Implementation Agreement, Section 8.3)

I certify that, to the best of my knowledge, after appropriate inquiries of relevant persons involved in the preparation of this report, the information submitted is true, accurate, and complete



Reginald David
Biological Consultant
Rana Biological Consulting

July 31, 2017 – Revised April 23, 2018
Date

Section 2

In this section we present detailed information on the activities associated with managing the Nene and waterbirds on the property, including, nesting, production, recruitment and banding as well as predator control, mortalities

Nēnē Nesting Observations

Between July 1, 2016 and June 30, 2017 the Nēnē (*Branta sandvicensis*) nesting season resulted in 14 Nēnē nests, from 14 different pairs, on Hōkūala property during the season (Figures 1, 2 and 3). One nest was found after the season on Island 2 between pins 16-02 and 16-03 on June 6, 2017 (Figure 1). The season began in late September 2016. Gravid females were observed and the first nest was located on October 16, 2016. Subsequent nests were found through December 17, 2016. Nēnē pairs were monitored daily from October through April and data was compiled into an excel database. This monitoring data includes: Nēnē pairs (bands when present), nests viability and gosling survivability, DOFAW Nēnē translocations and banding, avian mortalities, waterbird surveys, trapping summary. All but one of the nests that produced goslings, were located while eggs were still in them.

The 13 Nēnē nests found produced 37 eggs, an additional nest was found on Island 2 after the end of the season, which contained one dead egg and the shell fragments of two others that had hatched. Including this nest to the 13 found nests gave us a total of 14 nests, which contained 39 egg of which 32 hatched for an average hatch rate of 80 percent. Of these 32 hatchlings, 21 survived to fledge, a hatchling survival rate of 65 percent (Table 4). One additional egg was dropped in the middle of an open field and did not survive for obvious reasons

Table 4 – Nēnē Egg Production and Survivorship at Hōkūala July 1, 2016 – June 30, 2017

<i>Eggs Laid</i>	<i>Eggs Hatched</i>	<i>Hatch Rate</i>	<i>Goslings Fledged</i>	<i>Hatchling Survival Rate</i>
39	32	82%	21	65.25

In the 2016-2017 nesting season, 71 percent of nests were successful, hatching at least one gosling (Table 5). Three nests failed to hatch, one had one egg that was a walnut sized infertile egg, one, which had one egg in it, was abandoned and another that failed had two eggs that were crushed. This pair was likely first time nesters (they were unbanded so we cant be totally sure of their age), one egg was infertile. Individual egg fates were also recorded. Failed eggs were collected and measurements were taken and viability was determined for each egg by examining the contents of the egg.

Details on the nests, timing, bird band numbers and locations of the nests are detailed in Table 6. A visual representation of the nest locations is depicted in (Figures 1, 2 and 3). Please note that the one nest found after the season on Island 2 was located between pins 16-02 and 16-03 on June 6, 2017 (Figure 1)

Table 5 – Nēnē Nest and Egg Fates July 1, 2015 – June 30, 2016

<i>Nest Fates</i>			<i>Egg Fates</i>		
		<i>Percentage</i>			<i>Percentage</i>
Hatched	11	78.57%	Hatched	32	82.05%
Abandoned	1	7.14%	Abandoned	1	2.56%
Disappeared	0	-	Disappeared	0	-
Predated	0	-	Predated	0	-
Smashed	0	-	Smashed	2	5.13%
Flooded	0	-	Flooded	0	-
Failed to Hatched	1	7.14%	Failed to Hatched	3	7.69%
All Runt Eggs	1	7.14%	Runt Eggs	1	2.56%
Re-nests	0	-	Unknown	0	-
Total Nests	14	100.00%	Total Eggs	39	100.00%



Figure 2 Nēnē and Koloa Nests Southern Third of the Property



Figure 3 Nēnē Nests Central Third of the Property

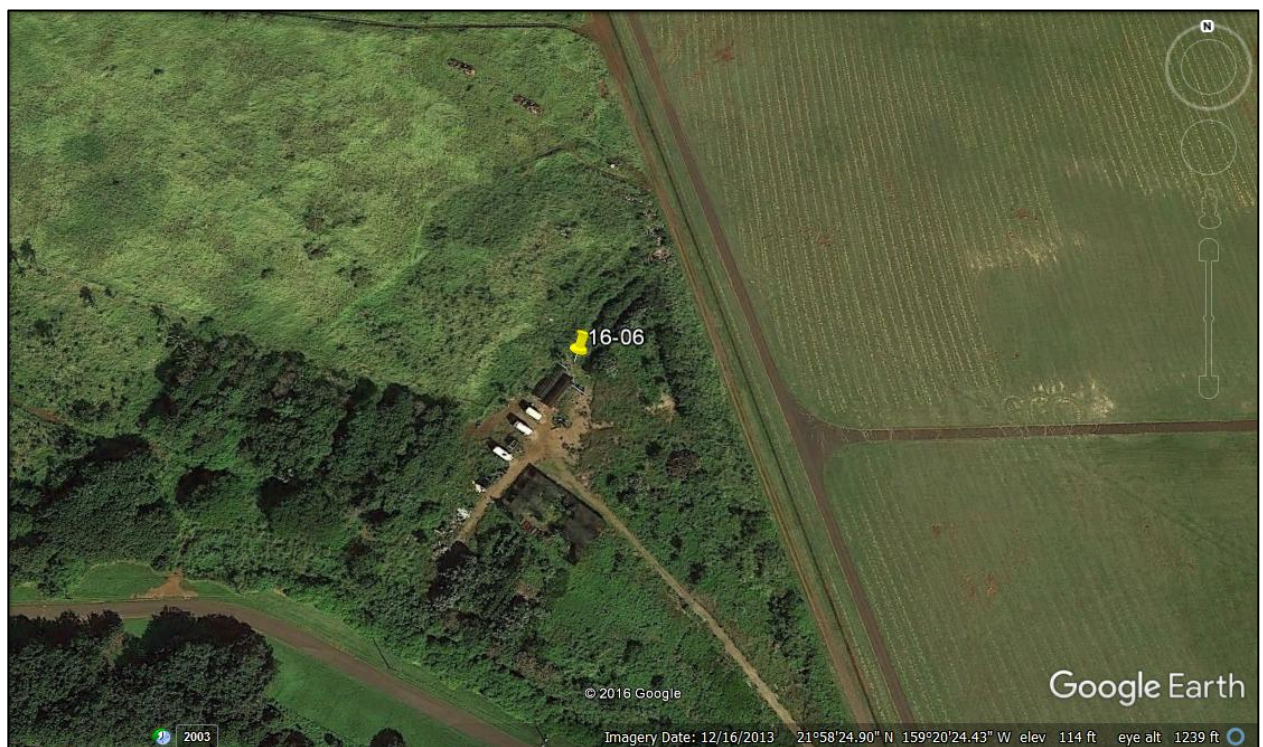


Figure 4 - Nēnē Nest northern Third of the Property

Table 6 - 2016-2017 Hōkūala Nene Nesting Season

<i>Date Found</i>	<i>Nest #</i>	<i>Pair ID</i>	<i>UTM</i>	<i>Eggs / hatched</i>	<i>Survey Fledged</i>	<i>Nest Location</i>
9-12-16	16-01	bHZA♂-bHTC♀	0464408-2428601	4/4	3	Behind west end of rock wall west of bridge 2
11-07-16	16-02	bHRN♂-bHRP♀	0464252-2428455	4/4	2	Island 2, east, under tin roof
11-17-16	16-03	bHRH♂-bHRE♀	0464227-2428455	2/2	2	Island 2, west end, under hedge
11-28-16	16-04	y632♂-y944♀	0464738-2428753	1/0	0	Island 5, west end. Egg is walnut sized, will not hatch
11-28-16	16-05	bAYN♂-bHYK♀	0464769-2428739	4/4	2	Island 5, east end. Under overhanging dead tree branch
11-28-16	16-06	bHYZ♂-b999♀	046486-2429952	4/4	4	NE end of nursery, back of Quonset plant house
11-29-16	16-07	bAYT♂-bJER♀	046447-2428981	2/2	1	100' west of bridge 2, in naupaka, next to ironwood tree
12-06-16	16-08	bHRU♂-bJEU♀	046406-2428981	4/4	3	NW corner, 800 parking lot, corner naupaka
12-06-16	16-09	unb♂-unb♀	046460-2418981	1/0	0	In naupaka, 100'E of bridge 2, coral path, probably from unb pair, #16-10
12-13-16	16-10	unb♂-unb♀	046453-2428705	2/0	0-both crushed	In monstera, West of B2, between bridge & monkey pod tree
12-16-16	16-11	bHRJ♂-bHRK♀	046486-2428695	3/4	0	Island 7, in bay, left side bank, 1 infertile egg 1-17-17
12-17-16	16-12	bJCX♂-bJCT♀	0464399-2428610	2/2	2	Construction road, West end of rock wall, near 16-01
12-17-16	16-13	Fed♂-rSF♀	0464087-2429040	2/1	0	Behind 800 office, along #18 fairway, koa & be still brush
1-2-17	No #	Unk pair	0464488-2428564	1/0	0	Found by BI in open field on Kalanipu'u flat area, no pair near
6/6/17	No#	Unk pair	Island 2	3/2	0	Island 2, between pins 16-02 and 16-03 found after the breeding season

In addition to the 14 pairs (28 individuals) that nested on-site, and their 20 surviving goslings, an additional 32 Nēnē utilized the property. During the course of the season, biologist from DOFAW with the assistance of Hōkūāla biologists banded a total of 34 Nene, of which 21 were hatch year goslings and one bird was a re-band the list of banded birds present on the property this past season including the birds that DOFAW banded or re-banded is presented in (Table 7).

Table 7 – Band Codes for Nēnē at Hōkūāla 2016-2017

<i>Band Code</i>	<i>Band Code</i>	<i>Band Code</i>	<i>Band Code</i>	<i>Band Code</i>	<i>Band Code</i>
b784♀	bHRA♀	bHYK♀	bJCZ♂	bJEY♀	bKEE♂
b838♂	bHRE♂	bHYP♂	bJEA♂	bJEZ♀	bKEH♂
b999♀	bHRH♀	bHYZ♀	bJEC♀	bJHA♂	
bAHY♂	bHRJ♂	bHZA♀	bJEE♂	bJHC♀	y157♂
bAUK♀	bHRK♀	bHZC♀	bJEH♂	bJHE♂	
bAYN♂	bHRN♂	bJAH♀	bJEJ♀	bJHH♀	rSF♀
bAYT♂	bHRP♀	bJCE♀	bJEK♂	bJHM♀	rST♂
bCZC♀	bHRU♂	bJCH♀	bJEN♂	bJRC♂	
bCNJ♂	bHRY♂	bJCR♀	bJEP♂	bKCY♀	
bCZC♀	bHRZ♂	bJCT♀	bJER♀	bKCZ♀	
bEUR♂	bHTX♂	bJCX♀	bJEU♀	bKEA♂	
bHJA♂	bHTZ♂	bJCY♀	bJEX♂	bKEC♀	

Given that the bird make up of the site has changed significantly over the past several years as a result of DLNR-DOFAW removal of over 500 Nēnē from the property – comparing metrics from the onset of the program to the last two season is difficult. The flock of Nēnē that were present on the site prior to the removal of animals was a mature flock consisting over all age groups of birds, some as old as 22 years old. Those Nēnē were the dominant bird species on the property, and pretty much controlled where and how many other waterbirds were present on the site. As the Nēnē were removed from the property the densities of each species has changed dramatically. For instance, at the start of the program there were very few Common Gallinules in and around the golf course – they were pretty much restricted to the dense vegetation on a couple of ponds – since the diminution of Nēnē numbers has occurred this species is now the one with which we have the most problems, as they are all over the place and in areas where a mere five years ago we never saw them. Looking at the mortality of this specific species on the site it was not an issue five years ago, and is currently the biggest issue.

Nēnē Translocation

During this reporting period the Hawaii Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) did not conduct any translocation activity on the property.

Waterbird Surveys

Native waterbirds on Hōkūala property include resident endemic and indigenous species as well as native non-breeding migratory waterfowl and shorebirds. The resident endemic waterbird species recorded on the property include all of the resident endemic species found on the Island of Kauaʻi namely, Hawaiian Duck (*Anas Wyvilliana*), Common (Hawaiian) Gallinule (*Gallinula galeata sandvicensis*), Hawaiian Coot (*Fulica alai*) and Black-necked (Hawaiian) Stilt (*Himantopus mexicanus knudseni*). The lone resident indigenous species is Black-crowned Night-Heron (*Nycticorax nycticorax hoactli*). Regularly recorded indigenous migratory shorebird species include Ruddy Turnstone (*Arenaria interpres*), Sanderling (*Calidris alba*) and Wandering Tattler (*Tringa incana*). A small number of extralimital swans, ducks and geese have been recorded on the property over the years; none of these species were recorded on the property during this reporting period.

Waterbird and shorebird surveys were conducted were conducted monthly to bimonthly. Surveys were conducted using a golf cart and by foot. A synopsis of the data collected over thirty-five separate counts is presented in (Table 9).

The most significant change over past year is the increase in the numbers of Common Gallinules and Hawaiian Stilts, and even more encouraging has been a large increase in nesting of both of these species over the previous reporting period. Hawaiian Stilts nested for the first time this reporting season.

Waterbird Nesting

This reporting period was very different than previous years, for the first time we had Hawaiian Stilts nest on the property there were three nests. Over the past 10 years we have had three confirmed Hawaiian Coot nests on the property, during this reporting period there were approximately 30 nests. Common Gallinule nesting increased significantly to approximately 50 nests. Another significant change this reporting period was that Hawaiian Coots, and Common Gallinules, nested in every water feature on the property (Figures 5, 6, 7, 8, 9 and 10). Hawaiian Stilt nesting was restricted to the Mokihana 3, pond (Figures 6 and 7).

Table 8– Hōkūala Waterbird Surveys Counts July 1, 2016 – June 30, 2017

<i>Common Name</i>	<i>Scientific Name</i>	<i>Adult</i> ¹	<i>Juvenile</i> ²	<i>Total</i> ³	<i>Averag</i> ⁴	<i>High</i> ⁵	<i>Low</i> ⁶
Hawaiian Duck	<i>Anas wyvilliana</i>	1279	157	1436	41	78	15
Common (Hawaiian) Gallinule	<i>Gallinula galeata sandvicensis</i>	1493	331	1824	52	69	19
Hawaiian Coot	<i>Fulica alai</i>	2530	80	2610	75	101	33
Hawaiian Stilt	<i>Himantopus mexicanus knudseni</i>	85	14	99	3	8	0
Pacific Golden-Plover	<i>Pluvialis fulva</i>	5786		5786	165	262	0
Ruddy Turnstone	<i>Arenaria interpres</i>	531		531	15	56	0
Wandering Tattler	<i>Tringa incana</i>	3		3	.01	3	0
Black Crowned Night Heron	<i>Nycticorax nycticorax hoactli</i>			689	20	38	4

Note 1. The total number of adult birds recorded on 35 waterbird counts

Note 2. The total number of juvenile birds recorded on 35 waterbird counts

Note 3. The total number of the sum of adult and juvenile birds recorded on 35 waterbird counts

Note 4. The average number of birds recorded each waterbird count = total divided by 35

Note 5. The highest individual count recorded on any count

Note 6. The lowest individual count recorded on any count



Figure 5 – Hōkūala overview of water features

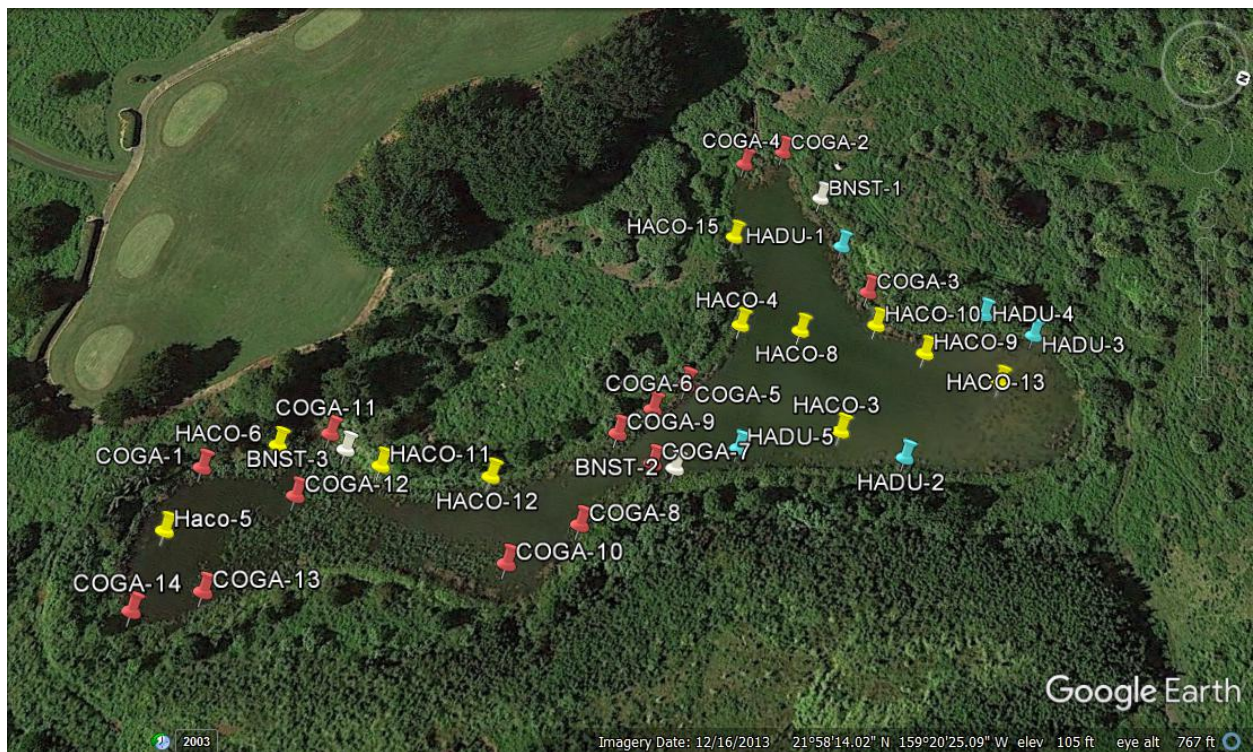


Figure 6 – Mokihana 3 Pond Showing Location of HACO, COGA, HADU and BNST Nests

Mokihana 3 Pond Depicted in Figure 5 does not currently actually look like the satellite image used for the nest map. It is located in the now fallow Mokihana golf course which is not maintained, the pond actually looks like the following image (Figure 7).



Figure 7 – Mokihana 3 Pond as it Currently Appears Photo 7/20/17



Figure 8– Irrigation Pond and Waikaha 8 Pond Showing Location of HACO, COGA and HADU Nests



Figure 9 – Lagoon Showing Location of HACO, COGA and HADU Nests



Figure 10 – Kalanipu'u Pond and Islands Showing Location of COGA, and HADU HACO and COGA Nests

Take

A total of five listed avian mortalities were recorded on site this season between July 2016 and June 30, 2017. A species breakdown and total is represented below (Table 9). All carcasses were stored in the refrigerator at Hōkūala and collected by DOFAW staff, most within less than 24 hours after the incidence

Table 9 – Hōkūala Take July 1, 2016 – June 30, 2017

<i>Common Name</i>	<i>Number</i>
Hawaiian Duck	2
Hawaiian Coot	1
Common (Hawaiian) Gallinule	1
Newell's Shearwater	1 – Non-Lethal

Predation

We have had no mortalities due to mammalian predators during this reporting period. We did have two Hawaiian Ducks which were predated by Barn Owls (*Tyto alba*) on successive days in August 2016, the owls were taking the ducks right at dusk when they were in the middle of a large open field a long way from cover. There were two Barn Owls that appeared to be going to set up a territory on the northern part of the property, which is currently fallow; they were not seen after the end of August.

Trapping and Predator Control Efforts

Invasive mammalian species removal and predator trapping was carried out throughout the season. Traps were removed during the months the majority of goslings were present in order to prevent any trap related injuries. Intense cat trapping began at the beginning of the nesting season and 44 cats were removed from the property and transported the Kauai Humane Society. Feral chickens were shot on a daily basis with a pellet gun, at the end of the season a total of 3,126 chickens had been removed from the property. During the season, lethal action was taken against Cattle Egrets (*Bulbcus ibis*) on Hōkūala property, under a federal Migratory Bird Depredation Permit. This permit was issued on February 26, 2016. In accordance with the depredation permit, non-lethal action was also used to discourage egrets colonizing the property. Cattle Egret. In addition one dog was also removed from the property. All invasive species removal is covered under Wildlife Control Permit: WCP 15-26 and Migratory Bird Depredation Permit number: MB86226B-0 as care taken to protect listed endangered species. Predator control effort and results are presented in Table 10.

Table 10 - Trapping and Predator Removal Totals From Hōkūala July 1, 2016 – June 30, 2017

<i>Description</i>	<i>Metric</i>
Trapping Days	220
Have-a-Heart cage traps	
Cats removed	44
Dogs removed	1
Chickens shot	3,126
Cattle Egrets Removed	42

Roadways, speed limits and endangered species signage

As previously mentioned the posted speed limit on the Resort property is 14 MPH (Figure 11). We have a series of different endangered species signs some of which are semi-permanent and others that are temporary and are moved to different locations as needed (Figures 12, 13 and 14). Additionally there are several endangered species informational signs posted in areas that are accessed by guests and golfers using the facilities (Figure 16). Bird locations and bird activity and densities are dynamic on this property, as circumstances and emerging areas where potential issues are identified immediate short-term solutions such as the sandwich boards recently deployed in the middle of Holokawelu Road (Figure 13 and 14), or the moving or deployment of temporary warning signs is implemented. The Resort is currently looking at developing long-term solutions to the changing scenarios. Among the potential ideas being explored are installing metal sleeves in the center line of the roadways into which specific warning signs can be dropped when needed. The intersection immediately Nāwiliwili side of Bridge 2 and Holokawelu Road will be converted to a three way stop intersection (Figure 17 and 18). They are also looking at the potential of installing a large sign at the entrance to the property stating that those entering the property are entering a Wildlife Conservation Area.



Figure 11 – Posted Speed Limit Hōkūala Resort



Figure 12 – Nēnē Crossing Sign Semi-permanent



Figure 13 – Wildlife Warning and Do Not Feed Signs Portable



Figure 14 – Sandwich Board Portable sign in the Middle of Holokawelu Road with Wildlife Monitors



Figure 15 – Detail Of Sandwich Board Portable Sign With Changeable Insert

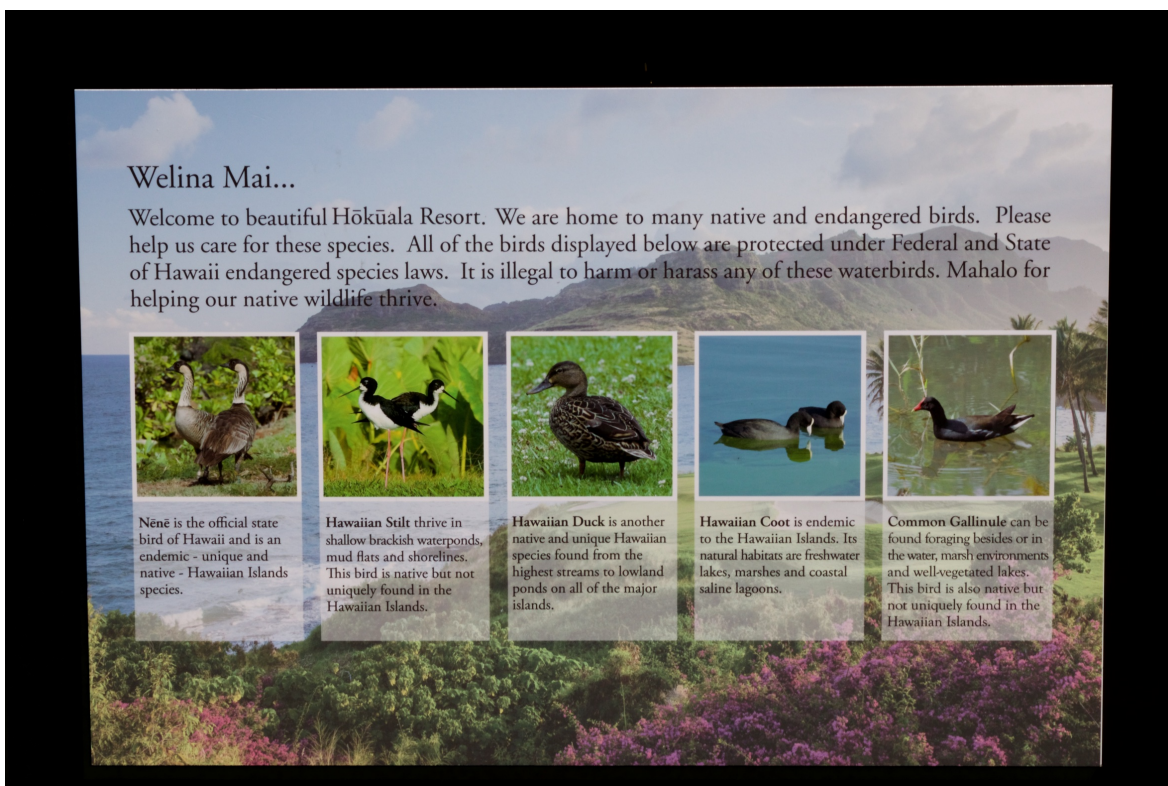


Figure 16 – Typical Endangered Waterbird Informational Sign



Figure 17 – Bridge 2 Intersections With Holokawelu Road Will Be Changed To A Three Way Stop Intersection

Protective Fencing

In the fourth quarter of 2015, we began reporting Hawaiian Coot and Common Gallinule mortalities along Holokawelu Way between the Marriott Kauai Lagoons- Kalanipu'u Resort and the Hōkūāla Resort construction area. To minimize this novel situation, we installed two-foot high fencing along the lagoon - road interface zone. Once the fence was installed, Common Gallinules were observed on the habitat side of the fence during the majority of the day (Figures 18 and 19).

A second series of fencing was constructed in February 2016. Modifications were made for this section of fencing, changing the type and style. Individual fence units of 2'x25' are free standing and placed end to end along the boundary between the lagoon and the construction road. Units were made to be able to be moved around easily to accommodate the changing scenery of the construction site, and the bird's behavior. This section of fencing covers approximately 650 feet, spanning from the water pumping station to the construction entrance gate (Figures 18 and 20). During this reporting period, all of these fences were upgraded, replaced or improved as needed. Additionally, the space between new construction office trailers and the ground was blocked using wooden lathe fencing so that no birds could get under the trailers, or nest under them.



Figure 18 – Bridge 2 Intersections With Holokawelu Road, as well as the semi permemenat gallinule fence and the portable fencing. Yellow down pointed arrows representthe location of the semi-permmenat fencing, and the hollow white traingle represent the movable seciton of bird fencing.



Figure 19 – Common Gallinule Fence and Speed Limit Sign



Figure 20 – Portable Bird Control Fence

Construction Monitoring

New construction began on the Hōkūala property in January 2016. Timbers Resorts began construction of three buildings on the south end of the property that all had pre-existing concrete foundations. That construction was still ongoing during this reporting period. One and a half wildlife construction monitors were employed and at least one of them was on site daily during all construction activities, later increased to seven days a week to ensure that Nēnē did not make nests on the weekends under and around construction buildings and material stock piles. The monitors also responded to all wildlife related issues and diligently worked to prescribe and implement any prescribed minimization measures. Construction and biological monitors have the authority to stop any and all activity if they perceive it to be hazardous to the Covered Species.

Endangered Species Awareness Training

Endangered Species Awareness training was given to all personnel on the site, regardless of job, company, or position. Training was presented as a PowerPoint presentation, there are three iterations developed for specific target audiences and hard copies of the training modules were distributed to all who attended the courses. Information packets translated into Spanish were available for Spanish-speaking contractors. The training course includes information on all eight listed avian species covered in our State and Federal incidental take license and incidental take permit. In the training sessions the specific Covered Species protocols, restrictions were discussed in depth, as were potential disciplinary action if the protocols and procedures are not followed. A log is kept of all of the individuals that receive training is maintained and all construction works are required to undergo the training and display a uniquely numbered Endangered Species Awareness Training sticker on their hardhats.

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