

**PUU O HOKU RANCH / PIIHOLO RANCH / HALEAKALA RANCH
SAFE HARBOR AGREEMENT
ANNUAL REPORT**

JULY 1, 2017 – JUNE 30, 2018

MOLOKAI:

PUU O HOKU RANCH:

SIGHTINGS:

Weekly observations and monitoring were accomplished by State personnel throughout the year on Puu O Hoku Ranch. This past year a total of twenty-seven (27) banded birds and one (1) unbanded bird were sighted throughout the eastern section of Molokai. Of the twenty-eight (28) birds, twenty-six (26) were recognized as Molokai birds, one (1) was an original released bird, and one (1) was a previous bird that fledged before being banded. An island-wide nene survey was conducted on August 10, 2017, where eleven (11) banded birds and one (1) unbanded bird were recorded. Calculations from banded birds observed and recorded produced an estimated population of twenty-eight (28) birds at Puu O Hoku Ranch.

NESTING:

Five (5) nests were located in the open-top release pen at Puu O Hoku Ranch. One (1) nest was abandoned, and three (3) nests were depredated. One (1) nest was successful and produced two (2) fledglings.

BANDING:

Two (2) goslings were successfully banded in the Puu O Hoku Ranch open-top release pen before fledging.

PEN MAINTENANCE:

The fences and watering units were checked and maintained monthly. Any electric fence line breaks were fixed immediately. Eighty (80) feet of protective iron roofing around the fenceline was repaired, and approximately 20-25 feet of rotten inner fence was removed. Two (2) broken waterlines and five (5) water troughs were repaired this year.

HABITAT MANAGEMENT:

The three (3) acres within the Puu O Hoku Ranch open-top release pen and a half (0.5) acre around the pen were maintained continuously throughout the year. A total of approximately sixty-two (62) acres were mowed this year by DOFAW staff. Ranch personnel mowed an additional eight hundred (800) acres within the ranch. Additionally, three and a half (3.50) acres of alien vegetation (haole koa, sour grass, lantana, and Christmas berry) were removed from the release pen by State personnel.

TRAPPING:

Predator trapping occurred during ten (10) months this year. No predator trapping occurred the other two (2) months due to cattle being in the pasture. A total of fifty (50) mongoose and five (5) cats were removed through predator trapping.

DEATHS:

One (1) adult female nene was found dead in the open-top release pen. While incubating her nest, she was depredated by a cat.

MAUI:**PIIHOLO RANCH:****SIGHTINGS:**

Observations of banded and unbanded birds were recorded at Pi'iholo Ranch to monitor movements, distribution, and survival of nēnē. This year thirty-one (31) banded birds were sighted at the ranch. Twenty-four (24) were wild Maui nēnē, three (3) were translocated nene from the Kauai translocation project, and four (4) were from the original Olinda released birds. An island-wide annual nene survey was conducted on August 23, 2017. During this survey, no birds were seen at Pi'iholo Ranch. Based on the sighting data, the estimated population for Pi'iholo Ranch is thirty-four (34) nēnē.

NESTING:

During nesting season, records were kept on mated pairs and the gravid levels of females found at the ranch. Nests found on the ranch were marked using GPS and checked weekly to determine their status. Nesting activities, nest outcomes, hatching, and fledgling success were recorded for the nesting season.

Fifteen (15) nests or nesting attempts were located within the Piiholo Ranch open-top release pen this year. However, only three (3) of these nests were successful. The other nests failed due to abandonment or depredation. From these three (3) successful nests, three (3) nēnē fledged from Pi'iholo Ranch open-top release pen this season.

BANDING:

Staff attempted to band as many unringed nēnē as possible found at Pi'iholo Ranch. Banding information is recorded and a database is kept for bird bands sighted at the ranch.

This year five (5) nēnē were banded at the open-top release pen. This included three (3) adults that were recaptured and rebanded with either a new state or federal band. Additionally, two (2) fledglings were banded; one (1) juvenile fledged before being banded.

PEN MAINTENANCE:

The open-top pen's fence line was continuously checked and maintained throughout the

year. The pond was cleaned and flushed twice a month, and the automatic waters were cleaned and maintained weekly.

The electric fence box was replaced this year, and it was checked monthly to ensure it was functioning properly. Approximately, thirteen (13) feet of perimeter fence was repaired this year to patch holes. Seven hundred (700) feet of metal roofing was installed on top of the existing boundary fence running along the bottom portion and buried in the ground. These metal panels will protect the fence from corrosion and weed eater damage that will minimize the creation of holes and breaches by predators.

Two (2) closed top pens were installed in pen A to protect goslings from aggression from other families. The kennels are 10 feet x 10 feet with netting placed over the top and wire mesh along the bottom to prevent predators from entering.

HABITAT MANAGMENT:

Short grass habitat was maintained at the open-top release pen. The one (1) acre open-top pen was mowed once a week and the area around the outside of the pen was maintained as needed. A total of thirty-eight (38) acres was mowed this year to maintain nēnē short grass habitat. In addition, a half (0.5) acre of weeds (Christmas berry and Sacramento bur) was removed from the pen.

TRAPPING:

Predator traps are used to control rats, mongoose, feral cats, and dogs that may pose a threat to nēnē and their nesting sites. Shooting is also used to control avian predators (cattle egrets). Year-round traplines were established at Pi'iholo Ranch using Tomahawk live traps, Sherman traps, and A24s.

This year at Pi'iholo Ranch, twenty-five (25) mongoose, three (3) rats, and two (2) mice were removed through predator trapping. No avian predators were controlled this season on the ranch.

RELOCATIONS:

Two (2) adult nene were relocated to Pi'iholo Ranch open-top release pen. Both were birds that suffered leg injuries. Once they were healed of their injuries, they were released in the pen.

DEATHS:

The only nēnē deaths that occurred this season at Pi'iholo Ranch were those of goslings due to failed/unsuccessful nests. A total of eighteen (18) gosling deaths were attributed to depredation, abandonment, trauma, inclement weather factors, emaciation, and unknown causes.

HALEAKALA RANCH:

SIGHTINGS:

Haleakala Ranch was continuously surveyed and birds observed were recorded. Forty-two (42) banded birds were recorded this season at the pen. Of these forty-two (42) birds, twenty-five (25) were wild Maui birds and four (4) were original Olinda released birds. Thirteen birds were from translocations: eleven (11) from the Kauai translocation, one (1) was a Big Island translocated bird, and one (1) was a Molokai translocated bird. During the August 23, 2017 annual island wide nene survey, four (4) nene were seen at Haleakala Ranch's open-top release pen. The estimated population for Haleakala Ranch is fifty (51) nene.

NESTING:

Nine (9) nests were found in the open-top release pens this season. Only one (1) nest was successful this season and produced one (1) fledgling.

BANDING:

No birds were banded at Haleakala Ranch this year.

PEN MAINTENANCE:

The fenceline and electric fence were checked monthly and repaired as needed. A half (0.5) acre of fence line was sprayed with herbicide every three (3) months.

The water unit was checked and maintained monthly. The pond was drained once a month and refilled with clean water. Metal screening was placed over the gutter system entry to collect debris to prevent the lines from clogging.

HABITAT MANAGEMENT:

Ten and a quarter (10.25) acres were mowed in and around the pen to maintain short grass habitat. An additional two and a quarter (2.25) acre of alien vegetation, including lantana, guava, Sacramento bur, abutilon, and milkweed, was removed from the pen.

TRAPPING:

Predator trapping occurs year-round at Haleakala Ranch open-top release pen. Thirty (30) Tomahawk live traps, eight (8) A24s, and two (2) Sherman traps are checked weekly. Three (3) mongoose, one (1) rat, and one (1) mouse were removed from the pen through predator trapping this year.

RELOCATIONS:

Five (5) nene were relocated to Haleakala Ranch open-top release pen. Two (2) were injured birds that were released at the pen after being treated. The other two (2) were nuisance birds that were frequenting schools and posed a safety hazard.

DEATHS:

Sixteen (16) goslings died at the pen this nesting season before fledging. Fifteen (15) were depredated, and one (1) died from inclement weather.

TABLES:

RECORD OF ORIGINAL NENE RELEASED AT PU'U O HOKU RANCH – MOLOKAI:

<u>Year</u> <u>Sighted</u>	<u>No. Of Birds</u> <u>Released</u>	<u>Total Birds</u> <u>Released</u>	<u>No. Of Birds</u> <u>Died</u>	<u>No. Of Birds</u> <u>Sighted</u>	<u>% of Birds</u> <u>Released</u>
2018	0	74	0	1	2
2017	0	74	0	1	2
2016	0	74	0	2	3
2015	0	74	0	4	6
2014	0	74	0	6	9
2013	0	74	0	6	9
2012	0	74	0	6	9
2011	0	74	0	7	11
2010	0	74	0	8	13
2009	0	74	0	18	28
2008	0	74	1	33	52
2007	0	74	0	38	59
2006	0	74	5	29	45
2005	11	74	2	47	67
2004	8	63	1	42	69
2003	41	55	1	55	100
2002	14	14	0	14	100

RECORD OF ORIGINAL NENE RELEASED AT PIIHOLO RANCH:

<u>Year</u> <u>Sighted</u>	<u>No. Of Birds</u> <u>Released</u>	<u>Total Birds</u> <u>Released</u>	<u>No. Of Birds</u> <u>Died</u>	<u>No. Of Birds</u> <u>Sighted</u>	<u>% of Birds</u> <u>Released</u>
2018	0	48	0	4	9
2017	0	48	0	4	9
2016	0	48	0	9	21
2015	0	48	0	10	23
2014	0	48	0	10	23
2013	0	48	0	11	25
2012	0	48	0	11	25
2011	0	48	1	16	36
2010	0	48	0	23	51
2009	0	48	1	26	58
2008	10	48	0	30	65
2007	25	38	2	26	72
2006	8	13	0	12	92
2005	5	5	0	5	100

RECORD OF NENE TRANSLOCATED TO HALEAKALA RANCH:

<u>Year</u> <u>Sighted</u>	<u>No. Of Birds</u> <u>Translocated</u>	<u>Total Birds</u> <u>Translocated</u>	<u>No. Of Birds</u> <u>Died</u>	<u>No. Of Birds</u> <u>Sighted</u>	<u>% of Birds</u> <u>Translocated</u>
2018	0	53	0	16	34
2017	0	53	0	19	40
2016	8	53	0	28	60
2015	8	45	1	25	64
2014	0	37	2	27	84
2013	7	37	1	31	91
2012	20	30	2	30	100
2011	10	10	0	10	100

NENE NESTING SUMMARY FOR 2017 - 2018 BREEDING SEASON AT PU'U O HOKU RANCH - MOLOKAI

Total Number of Nests Located in Open-top pen	=	5
Total Number of Nests Successful	=	1
Total Number of Nests Abandoned	=	1
Total Number of Nests Depredated	=	3
Total Number of Renests	=	0
Total Number of Known Eggs	=	12
Total Number of Eggs Salvaged	=	2
Total Number of Eggs Depredated	=	3
Total Number of Eggs Hatched	=	7
Total Number of Goslings	=	6
Total Number of Goslings Died Before Fledged	=	4
Number of Fledglings Fledged from Pen	=	2

**NENE NESTING SUMMARY FOR 2017 – 2018 BREEDING SEASON AT
PIIHOLO RANCH – MAUI**

Total Number of Nests located in Open-top Pen = 15
Total Number of Nests Successful = 3
Total Number of Nests Abandoned = 2
Total Number of Nests Depredated = 10
Total Number of Renests = 4

Total Number of Known Eggs = 41
Total Number of Known Eggs Salvaged = 6
Total Number of Known Eggs Depredated = 14
Total Number of Known Eggs Hatched = 21

Total Number of Known Goslings = 21
Total Number of Goslings Died before Fledged = 18
Total Number of Goslings Depredated = 5
Total Number of Goslings Died from Weather = 8
Total Number of Goslings Died from Emaciation = 2
Total Number of Goslings Died from Injury = 2
Total Number of Goslings Died from Abandonment = 1

Number of Nēnē Fledged from Pi'iholo pen = 3

NENE NESTING SUMMARY FOR 2017 – 2018 BREEDING SEASON AT HALEAKALA RANCH

Total Number of Nests Located in Open-top Pen = 9
Total Number of Nests Successful = 1
Total Number of Nests Abandoned = 0
Total Number of Nests Depredated = 1
Total Number of Nests Hatched but Unsuccessful = 7
Total Number of Renests = 1

Total Number of Known Eggs = 19
Total Number of Known Eggs Depredated = 0
Total Number of Eggs Salvaged = 2
Total Number of Eggs Hatched = 17

Total Number of Goslings = 17
Total Number of Goslings Died Before Fledged = 16
Total Number of goslings Depredated = 15
Total Number of Goslings Died from Weather = 1

Number of Fledglings Fledged from Pen = 1