

**PU‘U O HOKU RANCH / PI‘IHOLO RANCH / HALEAKALĀ RANCH
SAFE HARBOR AGREEMENT
ANNUAL REPORT**

JULY 1, 2018 – JUNE 30, 2019

MOLOKA‘I:

PU‘U O HOKU RANCH:

SIGHTINGS:

Weekly observations and monitoring were accomplished by state personnel throughout the year on Pu‘u O Hoku Ranch. This past year a total of twenty-six (26) banded birds and one (1) unbanded bird were sighted throughout the eastern section of Moloka‘i. Of the twenty-seven (27) birds, twenty-five (25) were recognized as Moloka‘i birds, one (1) was an original released bird, and one (1) was a previous bird that fledged before being banded. An island-wide nēnē survey was conducted on September 5, 2018, during which twenty-one (21) banded birds were recorded. Calculations from banded birds observed and recorded produced an estimated population of twenty-seven (27) birds at Pu‘u O Hoku Ranch.

NESTING:

Two (2) nests were located in the open-top release pen at Pu‘u O Hoku Ranch. Both nests were successful with each producing two (2) goslings resulting in four (4) birds fledging.

BANDING:

Four (4) goslings were successfully banded in the Pu‘u O Hoku Ranch open-top release pen before fledging.

PEN MAINTENANCE:

The fences and watering units were checked and maintained monthly. All wire on the corners of the iron roofing was replaced because of rotting. A new solar panel box was installed, and electrical clamps and wires were replaced. Waterlines and water troughs were checked weekly. Two (2) broken waterlines were replaced, and one (1) trough was changed.

HABITAT MANAGEMENT:

Five (5) acres of alien vegetation (Christmas berry, haole koa, and sour grass) was removed from the pen. Fifty-nine and a half (59.5) acres were mowed this year by DOFAW staff. Ranch personnel mowed an additional nine hundred (900) acres within the ranch. Additionally, six (6) acres along the fenceline was mowed and maintained.

TRAPPING:

Predator trapping using 16 live traps occurred monthly this year except for November when there were cattle in the pasture. A total of thirty-eight (38) mongoose and one (1) cat were removed through predator trapping.

DEATHS:

There were no deaths this season.

MAUI:**PI'IHOLO 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-seven (37) banded birds were sighted at the ranch. Thirty-four (34) were wild Maui nēnē and three (3) were from the original Olinda released birds. An island-wide annual nēnē survey was conducted on September 19, 2018. During this survey, eighteen (18) birds were seen at Pi'iholo Ranch.

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.

Seventeen (17) nests or nesting attempts were located within the Pi'iholo Ranch open-top release pen this year. Seven (7) of these nests were successful. Fifteen (15) 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 fourteen (14) nēnē were banded at the open-top release pen. This included thirteen (13) fledglings and one (1) adult. Two (2) birds fledged before being banded.

PEN MAINTENANCE:

The open-top pen's fence line was continuously checked and maintained throughout the year. The fenceline was sprayed with herbicide for weed control and trees were trimmed along the exterior boundary. The pond was cleaned and flushed twice a month, and the automatic waters were cleaned and maintained weekly. The water shutoff valve was replaced after it was leaking.

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 twenty-five and a half (25.5) acres was mowed this year to maintain nēnē short grass habitat. In addition, a quarter (0.25) acre of weeds was removed from the pen. One (1) pilo plant was planted inside 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. Year-round traplines were baited and checked at Pi‘iholo Ranch using 30 Tomahawk live traps, 30 Sherman traps, and 10 A24s.

This year at Pi‘iholo Ranch, forty-eight (48) mongoose, three (3) rats, and twelve (12) mice were removed through predator trapping. No avian predators were controlled this season on the ranch.

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 five (5) gosling deaths were attributed to abandonment and inclement weather factors.

HALEAKALĀ RANCH:**SIGHTINGS:**

Haleakalā Ranch was continuously surveyed and birds observed were recorded. Forty-seven (47) banded birds were recorded this season at the pen. Of these, thirty-six (36) were wild Maui birds, one (1) was an original Olinda released bird, and ten (10) were translocated birds. During the September 2018 survey, twenty-five (25) nēnē were seen, which included twenty-two (22) banded birds and three (3) unbanded birds.

NESTING:

Seven (7) nests were found in the open-top release pens this season. Two (2) nests were successful this season. Two (2) goslings successfully fledged from each nest, producing a total of four (4) fledglings from Haleakalā Ranch open-top release pen.

BANDING:

Four (4) fledglings were banded at Haleakalā 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.

HABITAT MANAGEMENT:

Twenty-six (26) acres were mowed in and around the pen to maintain short grass habitat. An additional seven and a quarter (7.25) acres of alien vegetation, including lantana, guava, Sacramento bur, abutilon, baconia, and glycine, was removed from the pen.

TRAPPING:

Predator trapping occurs year-round at Haleakalā Ranch open-top release pen. Thirty-four (34) Tomahawk live traps and seven (7) A24s traps are checked throughout each week. Two (2) mongoose, three (3) rats, and one (1) mouse were removed from the pen through predator trapping this year.

RELOCATIONS:

Three (3) nēnē were relocated to Haleakalā Ranch open-top release pen. All were injured birds that were captured, treated, and relocated to the pen. None of the birds bred at the pen.

DEATHS:

Four (4) nēnē died this year at the pen. This included three (3) adults and one (1) gosling. One (1) of the adults died from a wing injury. The other two (2) adults were found dead of unknown causes. The gosling was found dead tangled in the vegetation.

TABLES:

NĒNĒ NESTING SUMMARY FOR 2018 - 2019 BREEDING SEASON AT PU‘U O HOKU RANCH - MOLOKA‘I

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

**NĒNĒ NESTING SUMMARY FOR 2018 – 2019 BREEDING SEASON AT
PI‘IHOLO RANCH – MAUI**

Total Number of Nests located in Open-top Pen = 17
Total Number of Nests Successful = 7
Total Number of Nests Abandoned = 8
Total Number of Nests Depredated = 1
Total Number of Nests Failed due to weather = 1
Total Number of Renests = 5

Total Number of Known Eggs = 45
Total Number of Known Eggs Salvaged = 22
Total Number of Eggs Destroyed Naturally = 1
Total Number of Known Eggs Depredated = 2
Total Number of Known Eggs Hatched = 20

Total Number of Known Goslings = 20
Total Number of Goslings Died from Weather = 4
Total Number of Goslings Died from Abandonment = 1

Number of Nēnē Fledged from Pi‘iholo pen = 15

NĒNĒ NESTING SUMMARY FOR 2018 – 2019 BREEDING SEASON AT HALEAKALĀ RANCH

Total Number of Nests Located in Open-top Pen = 7
Total Number of Nests Successful = 2
Total Number of Nests Abandoned = 0
Total Number of Nests Depredated = 3
Total Number of Nests Hatched but Unsuccessful = 2
Total Number of Renests = 3

Total Number of Known Eggs = 18
Total Number of Known Eggs Depredated = 7
Total Number of Eggs Salvaged = 3
Total Number of Eggs Hatched = 8

Total Number of Goslings = 8
Total Number of Goslings Depredated = 3
Total Number of Goslings Died in Vegetation = 1

Number of Fledglings Fledged from Pen = 4