

PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT

Agency Report to the Reserve Advisory Council

April 2018 – September 2018

Agency: State of Hawaii, DLNR/DOFAW

Report prepared by: Matthew Saunter, Naomi Worcester

Date: 11 October 2018



DLNR Summer 2018 Field Camp (8 people deployed for 160 days)

Field Camp Leaders: Matthew Saunter, Naomi Worcester

Personnel: Allison Beck, Brett Higgins, Kelleigh Downs, Leah Kerschner, Morgan Walter & Vladimir Omega

Logistics:

- The Fall 2018 Kure crew swap took place on 3 September.
- The M/V Imua deployed its LCM Alewa and completed the cargo and personnel transfer in 2 runs. The Imua was underway by 1400 HST and arrived at Midway Atoll that same day just before sunset.
- Word was received regarding Hurricane Olivia's approach to the Main Hawaiian Islands while underway to Nihoa. Fortunately, the Makani Olu was able to recover the personnel that were dropped off by the Imua on the way up.
- Due to the closing of Honolulu Harbor the Imua was assigned to a pier at Ford Island on 10 September.
- After Olivia had passed the boat was offloaded on 14 September.



Wildlife Management:

Laysan Duck translocation population management

532.15 hours were spent monitoring Laysan ducks and maintaining quality habitat.

- Habitat maintenance at the seeps and guzzlers continues. This includes weeding, sediment removal, providing shade, cleaning and replenishing water sources as necessary.
- Several mini duck ponds were placed in strategic locations to provide water and promote foraging range of broods during dry conditions this summer.
- Water source checks were conducted 3 times per week minimally. During these checks, duck sightings were recorded and used to obtain a minimum population estimate.
- 41 unique broods were documented during the 2018-breeding season, which ran April – August.
- With this year's recruitment the Laysan Teal population has more than doubled! As of 4 September, the population is estimated to consist of about 70 individuals.
- Since January 2018, seabird carcasses have been removed regularly from locations prone to flooding (e.g. the runway and turnarounds) as a means to limit conditions for botulism.
- Two fresh Laysan duck carcasses were transported to Dr. Thierry Work at the USGS Honolulu Lab for necropsy.



Seabird monitoring

- 18.0 hours were spent conducting Christmas shearwater (*Puffinus nativitatis*) surveys
- 295.25 hours - Albatross chick count conducted June 4 - 8.
 - 1,226 Black-footed albatross chicks counted (2749 nests counted in Dec 2017) – 45% survival
 - 8,061 Laysan albatross chicks counted (27,714 nests counted in Dec 2017) – 29% survival
 - 0 Short-tailed albatross chicks counted (1 nest counted in Dec 2017)
- 72.75 hours were spent monitoring and banding Masked and Brown boobies.



Short-Eared Owl

- A Short-eared owl was documented on Kure during the winter and was identified by Peter Pyle as a Pueo.
- A Short-eared owl, possibly the same individual, was documented on 8 May.
- 223 Tristram's storm-petrels were reported as depredated from winter 2017 through August 2018.
- The current team on Kure is reporting recent sightings of a Short-eared owl.



Hawaiian Monk Seal (HMS)

72.0 hours were spent monitoring Hawaiian monk seals.

- 11 weaned pups recorded for 2018
- Weekly surveys are conducted on Green Island by DLNR staff during times when NMFS is not present. Survey objectives are to record survival factors, pregnant females, pupping, and the physical condition of young animals. Weekly reports are sent to NMFS.
- 1 NMFS personnel was present on Kure from 26 April through 3 September. DLNR supported and assisted NMFS activities including all weaned pup tagging events.
- DLNR personnel assisted NMFS in conducting a necropsy on VK12 PW/F. The specimen was found washed up on the beach with green netting wrapped around neck.
- NMFS conducted 1 disentanglement of KN02 A/F found with hard plastic ring around neck.



Pest Management and Monitoring:

Mosquito (*Culex quinquefasciatus*) Eradication

37.25 hours were devoted to mosquito monitoring and eradication efforts.

- Water source checks for mosquito presence were conducted a twice per week.

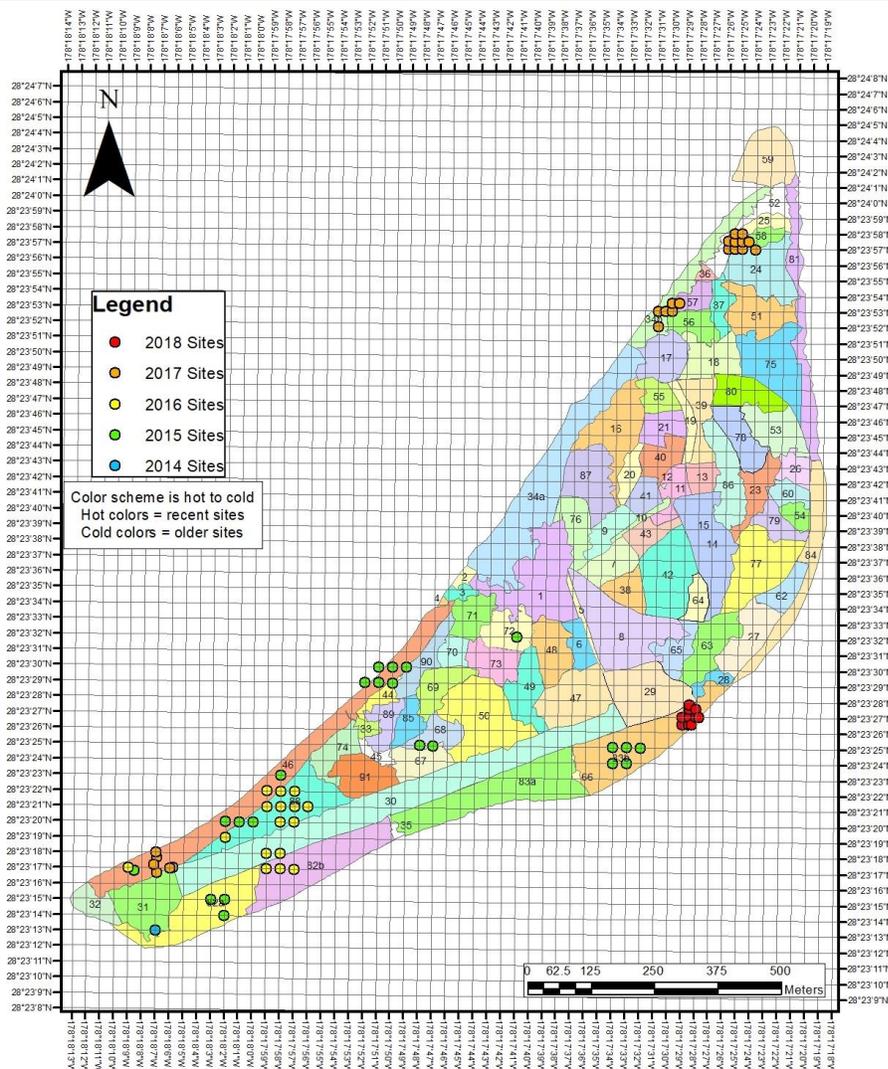
- Presence was confirmed once on 13 June after discovering a mosquito pupa. Prior to that, mosquitoes had not been documented since November 21, 2017. Upon detection water sources were treated with VectoLex (*Bacillus sphaericus*) larvicide. No mosquitos have been detected since.
- Teams are constantly on the lookout for any mosquito-breeding habitat while in the field.

Big-headed Ant (*Pheidole megacephala*) Eradication

269.5 hours were spent monitoring Green Island for Big-headed ants (BHA).

- Full island monitoring for Big-headed ant presence was conducted 17-20 July.
- Out of 782 monitoring stations deployed, BHA were detected at 2 locations on the SE side of Green Island.
- A follow up survey was conducted at a tighter interval to determine the extent of the infestation (see map). This treatment area was determined to be about 1 acre and was treated with Amdro ant bait at a rate of 2lb/acre.
- Subsequent monitoring of the sites has yielded no BHA presence indicating that the treatment was most likely effective.
- Monitoring is conducted semi-annually. Next full-island monitoring is to take place this winter.

Post-Treatment Confirmed BHA Sites



Black Rat (*Rattus rattus*) Monitoring

- Rat presence was not observed during the full-island BHA monitoring when attractants were deployed.
- There has been no confirmed rat presence since the capture of a Black rat in August 2016.

Cattle egret (*Bubulcus ibis*) Monitoring

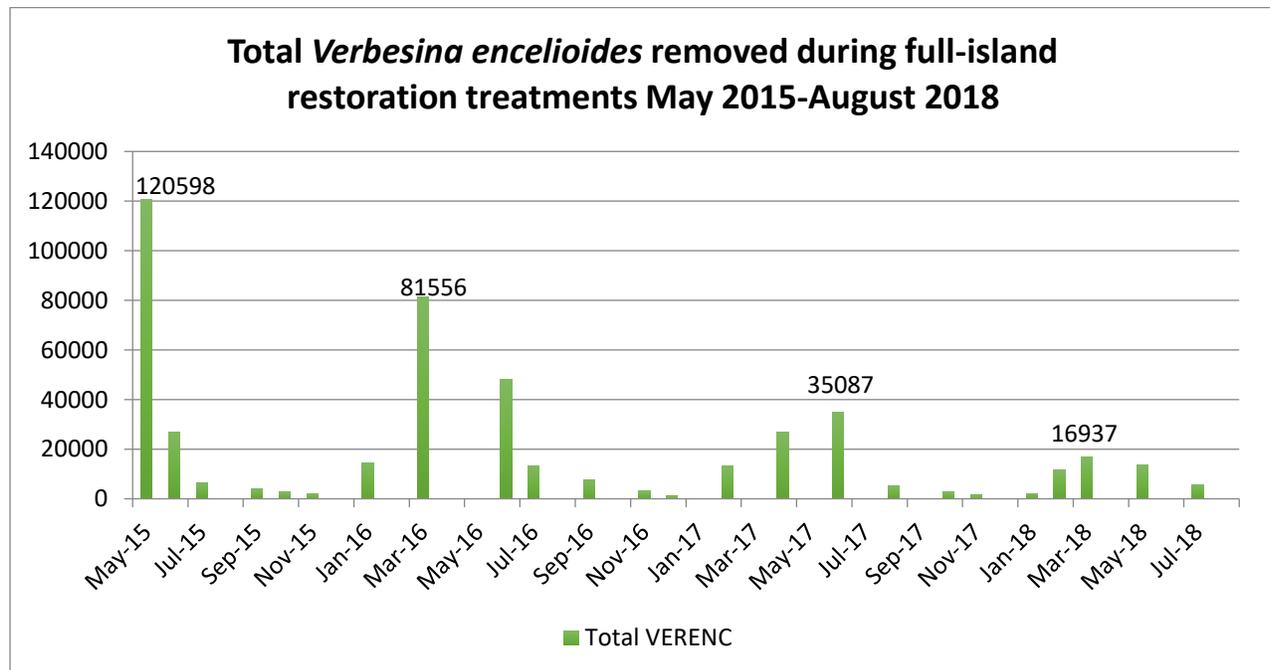
- Cattle egrets are periodically observed on Kure but have not been able to become established.
- 4 individuals were documented on 22 May, this was the one and only account made during the summer season.
- Winter team has reported 2 Cattle egrets and continues to monitor for nesting behavior.

Habitat Restoration and Management:

Invasive Plant Removal

3383.55 hours were devoted to invasive plant management.

- Little recruitment was seen in most invasive plants species this season allowing teams to stay on top of restoration efforts.
- Data shows a steady decline in *Verbesina encelioides* (VERENC) population on Kure. The graph below shows the total number of VERENC plants that were removed during each full-island restoration treatment.
- Seeds from mature *Cenchrus echinatus* were collected and destroyed throughout the season.
- GPS data is collected for all target plant species. GPS-units are used as a tool to improve detection during removal efforts.
- Tests are being conducted to determine the viability of the *Verbesina* seed bank on Kure.



Native Plant Establishment

178.96 hours were devoted to native plant outplanting and propagation

- 1,397 plants were propagated in Kure's nursery & 105 plants were transplanted within the nursery
- 431 plants were installed, comprised of 11 different species
- Due to dry conditions increased effort was placed in sowing seeds of native species in the field:
 - 1 quart Mau'u 'aki'aki (*Fimbristylis cymosa*)

- 1,610 seeds 'Anaunau (*Lepidium bidentatum*)
- 10 gallons Pacific Island thintail (*Lepturus repens*)
- 40 seeds 'Ohelo kai (*Lycium sandwicense*)
- 1 gallon 'Ena'ena (*Pseudognaphalium sandwicense* var. *sandwicense*)
- 1 quart 'Anunu (*Sicyos maximowiczii*)
- 100 seeds 'Ilima (*Sida fallax*)
- 21,150 seeds Pōpolo (*Solanum nelsonii*)



Reclaiming Kure Atoll's Runway for Seabird Habitat

65.0 hours were devoted to native plant outplanting in project area

- 268 native plants were installed in plots created on the otherwise compact runway.
- 5 gallons of *Lepturus repens* & 200 *Solanum nelsonii* seeds were distributed.
- Outplantings installed by the previous season were monitored and are taking well.
- The goal of this project is to expedite the recovery of suitable seabird nesting habitat as well as mitigate flooding on the runway.



Marine Debris

57.75 hours were spent collecting, hauling and storing marine debris.

- Marine debris and entanglement hazards are collected daily during other objectives and stored at secure collection points around the island for future pick up.

- 10 super-sacks containing approximately 5,000 lbs. of marine debris were removed at the beginning of the season during the 11 April crew swap.
- DLNR crew collected an estimate of 2,330 lbs. (dry weight) of derelict nets and entanglement hazards between March and August.
- There is an abundance of marine debris on Kure that has been collected and is slated for removal.
- NOAA Marine Debris Project personnel are scheduled to be at Kure on 14 October.



Facilities Maintenance

- Regular upkeep is carried out by DLNR personnel to maintain the integrity of structures, water purification system, water collection systems and photovoltaic systems.
- Materials to set up an 8x10' Weatherport was transported to Kure and assembled.
- A new console radio was installed in the main facility



Weather & Storm Preparedness

- Precautions were taken for Hurricane Hector, which passed less than 300 miles South of Kure on 13 August. Storm shutters were secured over the main facility windows. All items that could have potentially become airborne in strong winds were secured. No significant damage was observed to the facilities however storm surge resulted in erosion and loss of Brown nobby nests along south-facing beaches.
- On 30 August the remnants of Hurricane Lane brought 0.75 inches of rain to Kure.
- Precipitation for season:
 - April - 0.83" rain

- May - 0.35" rain
- June - 0.75" rain
- July - 1.23" rain
- August - 1.19" rain



Hawaiian Culture

- Oli were exchanged upon arrival and departure from Kure and Midway Atolls.
- Participated in awa ceremony with Midway team on outbound leg.
- Recently deceased specimens were collected, processed and preserved for feather and bone salvage:
 - 1.5 - A/F 'Iwa, Great Frigatebird carcasses
 - 3 - A/M 'Iwa, Great Frigatebird carcasses
 - 7 - A/UNK Mōlī, Laysan albatross carcasses
 - 3 – Sets of Mōlī, Laysan albatross wing bones
 - 2 – A/UNK 'Ā, Red-footed booby carcasses
 - 3.5 - JUV/UNK Koa'e 'ula, Red-tailed tropicbird carcasses
 - 160 – Koa'e 'ula, Red-tailed tropicbird tail feathers



Outreach and Education

- 346 Laysan and Black-footed albatross boluses & 5 Laysan albatross stomach contents were collected, processed, and transported back to Honolulu to be used for research and educational purposes.
- 7 Blogs were composed by DLNR field crewmember Morgan Walter and posted on the Kure Atoll Conservancy website.
 - 18 April – “Buckets”
 - 19 April – “Summer 2018 Crew Bios”
 - 21 April – “Kure Arrival”
 - 16 May – “Daily Waltz”
 - 19 June – “One Tross, Two Tross, Black Tross...”
 - 13 July – “VK10”
 - 3 September – “Bittersweet”

