

PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT  
Agency Report to the Reserve Advisory Council  
219 day deployment  
August 2018 – April 2019



**DLNR/DOFAW Winter 2018 Field Camp (Deployed for 219 days)**

DLNR/DOFAW RCUH Camp Leader: Andy Sullivan-Haskins

DLNR/DOFAW RCUH Field Assistants: Saxony Charlot, Michelle Smith, Reed Stevens, Zach Pezzillo

DLNR/DOFAW RCUH Habitat Restoration Support: Samantha Al-Bayer, Olivia Dickert, Soren George-Nichol

**Logistics**

- The Winter 2018/2019 team was replaced by the Summer 2019 team on March 26<sup>th</sup>, 2019.
- One winter team member remained on island for the summer field season.
- The M/V Imua returned to Honolulu on April 2<sup>nd</sup>.

## Midway Atoll

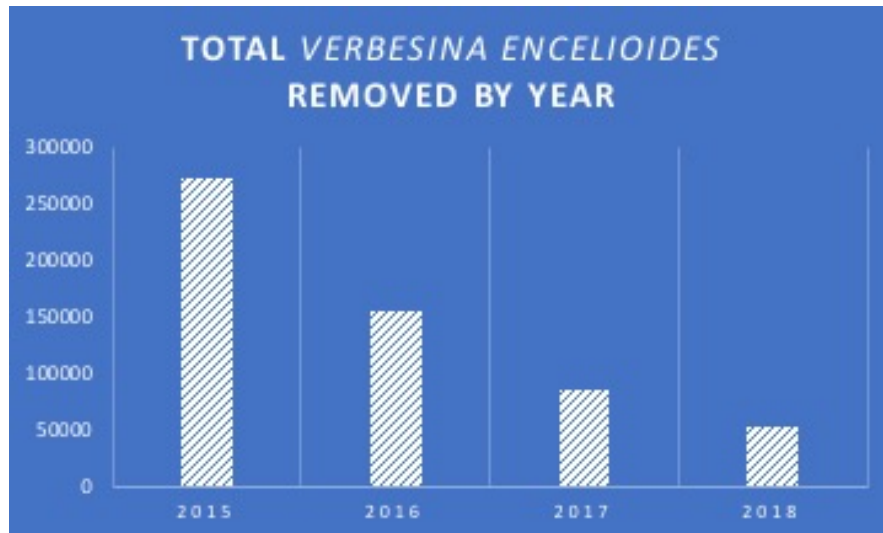
- The M/V *Imua* arrived at Midway Atoll on March 26<sup>th</sup>. Upon arrival the Kure team shared an Oli with Midway personnel before departing the ship. All Kure personnel were provided with bicycles for transportation. Midway Biologist Kelly Goodale gave all members of the Kure team an introductory briefing/orientation for Midway at the Midway visitor's center attached to the USFWS offices.
- On March 26<sup>th</sup>, Kure personnel assisted the KUPU team in removing wild poinsettia (*Euphorbia cyano-*spora**) by hand pulling the thick monotypic stands.
- On March 27<sup>th</sup>, The Kure team assisted USFWS/KUPU in outplanting at "Hale honu" where dunes are being encouraged to grow. The team outplanted flats of 'aki'aki grass, 'ena'ena, and approx. 340 kawelu.
- The M/V *Imua* departed on March 28<sup>th</sup>.



## Habitat Restoration

- (Treatment totals Sept 2018 – March 2019) - With a team of 8 the winter team was able to complete 5 full-island restoration treatments and 2 partial island restoration treatments covering a grand total of 1042.7 acres. Restoration areas continue to be thoroughly searched every 4-6 weeks by transecting through the thick vegetation. While transecting, targeted species are removed both chemically and manually, GPS waypoints are taken for drop seed specimen as well as for seed bank sites, and all flowers, seed heads, and seeds are removed for disposal. Data continues to be recorded for each restoration area's treatment and is providing valuable and detailed information regarding seasonality and population densities of targeted species.
- 5320.31 hours were dedicated to habitat restoration.
- 28,753 non-seeding *Verbesina encelioides* were removed throughout the season.
- 83 individual plants were observed to have developed seeds.
- 69 individual plants were observed to have dropped seed.
- Throughout the field season all *Cenchrus echinatus* and *Elenisine indica* seed heads were collected during habitat restoration efforts. There has been a significant decline in the overall presence of these targeted grass species with restoration areas being visited every 4-6 weeks.
- The majority of *Verbesina encelioides* observed this season were sprouts and immature plants.

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### Laysan Duck (*Anas Laysanensis*)

- 819.37 hours were dedicated to Laysan Duck monitoring and maintaining healthy wetland habitat.
- Daily seep and guzzler checks were conducted throughout the season in an effort to identify and mitigate potential sources of avian botulism. During checks, duck sightings were recorded and listed by sex, age, and location.
- High-count surveys were conducted weekly starting on Jan 24<sup>th</sup> – These high-count surveys were conducted in conjunction with the interior shore bird count as an attempt to try some various methods; making the LADU surveys more efficient while covering more of the island. A continued concern for adding new water sources to the island for the expanding LADU population is that consistently monitoring the far reaches of the island may be difficult. This survey method could ensure a more comprehensive survey can be efficiently conducted on a weekly basis. These weekly surveys are designed to give a snap-shot of LADU populations just before and during breeding/botulism season *\*note, the use of the term "botulism season" is used only to describe the recent observations of botulism events in late February and March 2016, 2017, and 2019.*
- Beginning in January, dead albatross and dead albatross chicks were collected twice weekly from areas prone to flooding like the abandoned runway and runway turnarounds. These temporary wetlands attract foraging ducks making it a priority that we remove any potential sources of botulism from the area.

- Two ducks that were found dead on Kure in February and submitted to Dr. Thierry Work tested positive for avian botulism type C.
- Three sick Laysan ducks were successfully treated for avian botulism type C and released.
- The current population of Laysan ducks has doubled over the past year and is currently estimated to be >60.

### **Mosquitos (*Culex quinquefasciatus*)**

- 82.95 hours were dedicated to Mosquito monitoring.
- Mosquito checks were conducted twice weekly throughout the season.
- Water sources are treated monthly with Vectolex (*Bacillus sphaericus*) larvicide.
- Mosquito larvae were last detected in June 2018 and May 2019.

### **Big-Headed Ants (*Pheidole megacephala*)**

- 287.91 hours were dedicated to BHA monitoring.
- A full-island BHA survey of over 936 points was conducted from October 22<sup>nd</sup> - October 26<sup>th</sup>, 2018.
- BHA were discovered in 4 of the 936 vials examined upon retrieval.
- Additional mini surveys were conducted using a smaller grid at the locations where BHA were initially discovered.
- Areas where BHA were discovered were treated with AMDRO fire ant bait.
- Mini-surveys were conducted at each of the original sites every month after the application of AMDRO and until there were no BHA observed for three consecutive months.
- At the time of the winter team's departure there were no BHA detected at any of the sites.



### **Avian Ticks (*Carios capensis*)**

- In March, the presence of avian ticks increased significantly on Green Island. Ticks were observed in high concentrations practically everywhere on the island with less being observed on the beach. Ticks could be observed climbing onto personnel almost instantly if the individual became stationary.
- Albatross were observed with engorged ticks all over their legs and feet.
- It is believed that the increased presence of so many ticks caused many adult albatrosses to abandon their nests early and has had a staggering effect on chick survival.
- While it is unclear what kind of effect the presence of such a large number of avian ticks



will have on Kure's other ground nesting seabirds, increased loss and low survival rates are anticipated.

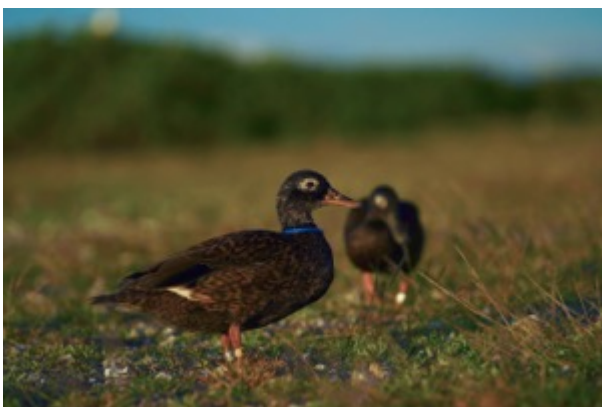
### Southern Green Stink Bug (*Nezara viridula*)

- A single adult stink bug was first observed on Kure Atoll during the BHA survey conducted October 22<sup>nd</sup>-26<sup>th</sup> 2018. It is unclear how the stink bugs arrived on Kure and what effects they could have on the native vegetation.
- Over the course of the season all 5 stages of stink bug development were observed on Kure. The majority of adults, nymphs, and eggs were observed on pōpolo (*Solanum nelsonii*). Stink bugs were also observed on kawelu and naupaka.



### Entanglements/Disentanglements

- On October 18<sup>th</sup>, a founder female Laysan duck (YX) was observed with a 4cm blue plastic ring around its neck.
- On October 28<sup>th</sup>, an adult female Hawaiian monk seal (KN02) was observed with 1.5" rope wrapped tightly around its mid-section. The entanglement was cut free with the use of loppers. NOAA permit#16632
- On January 26<sup>th</sup>, a Laysan duck was observed with a 4cm ring of yellow plastic around its neck. The duck was captured and the entanglement was removed.
- On February 9<sup>th</sup>, a juvenile male Hawaiian monk seal was observed with an entanglement around its neck. The gray nylon fishing net was observed to be cutting into the seals skin. Safety scissors were used to cut the entanglement free. NOAA permit #16632



### Hawaiian Monk Seals (*Neomonachus schauinslandi*)

- 171.75 hours were dedicated to monitoring Hawaiian monk seals.
- Weekly surveys were conducted on Green island by DLNR/DOFAW staff. Survey objectives are to record survival factors for injured seals, identify pregnant females, monitor any pupping, and the record the physical condition and resights of juvenile seals.

### NOAA marine debris operations on Kure Atoll

- The NOAA marine debris team arrived off-shore of Kure before sunrise on October 14<sup>th</sup>. The team operated with three rigid inflatable boats and a team of 10 people. The first boat arrived at the pier at approximately 0900 and all three had arrived by 0915. Operations were completed by 1800. Two U.S.F.W.S. personnel were deployed to the island on the first boat and spent the day taking a tour of the island. The team removed supersacks (4) containing accumulation from their marine debris plots that were set up during S18'. They also removed everything from the pier, the tsunami fishing boat and the large pile on north point.
  - The total weight removed from the island was **9,355lbs** (*approximately 6,000lbs from the md cove, 2,000lbs from the pier shed, and 1,355lbs from north point. \*Note - The tsunami boat's weight was not included in the 9,355lb total but is estimated to be approximately 1,000lbs).*)
- As part of the NOAA marine debris operations, Kure DLNR/DOFAW field personnel escorted 2 - U.S.F.W.S. visitors on a tour of the island. Sites visited included: Camp, Monument, Brad's pit seep, Kipukawai seep, The Runway, The West Runway Turnaround (site of the ongoing "Project Runway"), The Landfill/Scrap metal dump (Site of the 2015 PCB remediation project) and northeast point.



### Native Plant Propagation and Outplanting

- 374.07 hours were dedicated to native plant propagation and outplanting.
- Kure personnel continue to experiment with native plant species propagation techniques and outplanting locations as part of the overall habitat restoration program.
- Goals include: Increasing Kure's native plant species diversity by filling niche roles and planting appropriate native species that can out compete non-native target species, dune stabilization, and species that promote healthy wetlands.
- Kure's key restoration plants include kāwelu, pōpolo, pōhuehue and naupaka.
- Promising native reintroductions include 'ānaunau, 'ōhelo kai, and naio.

