

PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT

Agency Report to the Reserve Advisory Council

March 2017 – September 2017

Agency: State of Hawaii, DLNR/DOFAW

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Agency Accomplishments & Recent Activities

Fall 2017 crew swap on August 30



The summer 2017 field crew was replaced by the 2017-18 winter team. 1 of the 6 personnel from the summer team remained on-island to serve another tour bringing the winter team size up to 8. The M/V Kahana was utilized to conduct this crew swap. The winter team departed Honolulu on 23 August arriving at Kure 30 August. The summer team returned to Honolulu via inbound flight from Midway on 5 September. The summer team was deployed for a total of 172 days.

Wildlife Management:

Laysan Duck translocation population management

378 hours were spent monitoring Laysan ducks and maintaining wetland 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. Ponds were checked, cleaned and replenished as regularly.
- One fresh carcass of a founding duck was frozen and transported to Dr. Thierry Work at the USGS Honolulu Lab. Laboratory results point to Botulism type C as cause of death.
- Regular water source checks were conducted ranging from twice per day to once per week depending on observations of the population.
- The current population is estimated to consist of 30 individuals.
- Although 30 broods were documented this season very few ducklings survived. DLNR is looking into ways to improve survivorship and recruitment.



Seabird and shorebird monitoring

- 99 hours were spent monitoring and banding boobies.
 - It is already a record year for Brown (92 successful chicks) and Masked boobies (29 successful chicks), many nests are still active.
- 18.5 hours were spent conducting Christmas shearwater (*Puffinus nativitatis*) surveys
- 36.5 hours were devoted towards conducting shorebird surveys, usually in conjunction with Hawaiian monk seal surveys.
- 194 hours - Albatross chick count completed by 5 people June 5 - 9.
 - Laysan – **20,922 chicks** (35,360 nests counted Dec 2016)
 - Black-footed – **1,669 chicks** (3,381 nests counted Dec 2016)
 - Short-tailed – **0 chicks** (1 nest counted Dec 2016)



Hawaiian Monk Seals (HMS)

307.5 hours were spent monitoring Hawaiian monk seals.

- 23 Mom/pup pairs in 2017 and 20 weaned pups (3 died/disappeared)
- Weekly surveys were conducted on Green Island by DLNR staff prior to NMFS arrival and after NMFS departure. Survey objectives are to record survival factors, pregnant females, pupping, and the physical condition of young animals. Weekly reports were sent to NMFS.
- 2 NMFS personnel were present on Kure from 25 May through 17 August. DLNR supported and assisted NMFS activities.

- 1 seal (Lele-aka, VH24 S3/Female) was returned to Kure from Ke Kai Ola Rehabilitation facility and released on 28 May.
- DLNR staff assisted with 1 of 2 disentanglements that took place this season and the necropsy of 1 pup.
- DLNR assisted NMFS with tagging weaned pups.



Pest Management and Monitoring:

Mosquito (*Culex quinquefasciatus*) Eradication

53.5 hours were devoted to mosquito monitoring and eradication efforts.

- Weekly water source checks for mosquito presence were conducted. Mosquito presence is still being documented.
- Upon detection and after significant rain events water sources are being treated with VectoLex (*Bacillus sphaericus*) larvicide.
- Teams are constantly on the lookout for any mosquito-breeding habitat while in the field.
- Mosquitoes appeared to be absent on Kure from 10 May through 30 August, however reports from the current team indicate that mosquitoes are being documented once again.

Big-headed Ant (*Pheidole megacephala*) Eradication

166 hours were spent monitoring Green Island for Big-Headed ants (BHA).

- Full island monitoring was conducted by 6 people on 9-11 May.
- BHA were detected at 3 adjacent monitoring locations on the SW side of Green Island.
- The sites were treated with Amdro ant bait. Subsequent monitoring of the confirmed sites yielded no ant presence.
- Monitoring is conducted semi-annually. Next full-island monitoring is to take place this winter.

Black Rat (*Rattus rattus*) Monitoring

12.5 hours were devoted to monitoring traps for any indication of rats.

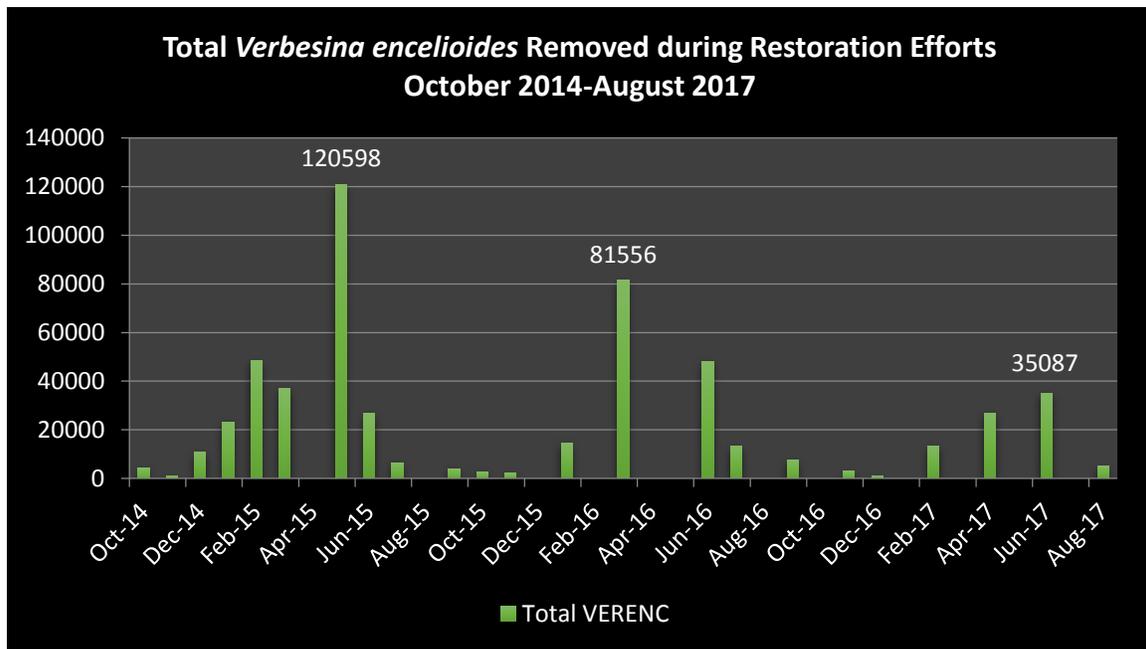
- There has been no confirmed rat presence since the capture of a Black rat in August 2016.
- As a precaution 34 traps were monitored and maintained throughout the season in the field. At the close of the season rat supplies that were sent to Kure in response to the August rat capture were prepared and returned to Midway.
- DLNR retained the in-use traps in case there is a recurrence of rat activity.

Habitat Restoration and Management:

Invasive Plant Removal

- 3,173.8 hours were devoted to invasive plant management.

- According to *Verbesina encelioides* reproductive data collected during field work, individual plants and reintroduction of seeds has been greatly reduced correlating to an overall reduction in the *Verbesina* seedbank (see figure below).
- The landscape of Kure has undergone a dramatic transformation since eradication program for *Verbesina* and control of other invasive species began (refer to before-and-after photos below).



Before



Monotypic stands of mature *Verbesina* plants introducing countless amounts of seeds into an area that is now some of Kure’s best seabird and duck habitat.

After



Healthy low-growing native plant assemblages suitable to support thousands of seabirds.

Native Plant Establishment

- 1,668 plants were propagated in Kure's nursery
- 1,293 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:
 - 6-gallons Kāwelu (*Eragrostis variabilis*)
 - 50-gallons *Lepturus repens*
 - 11,610 seeds Pōpolo (*Solanum nelsonii*)
 - 3-gallons 'Ena'ena (*Pseudognaphalium sandwicense* var. *sandwicense*)

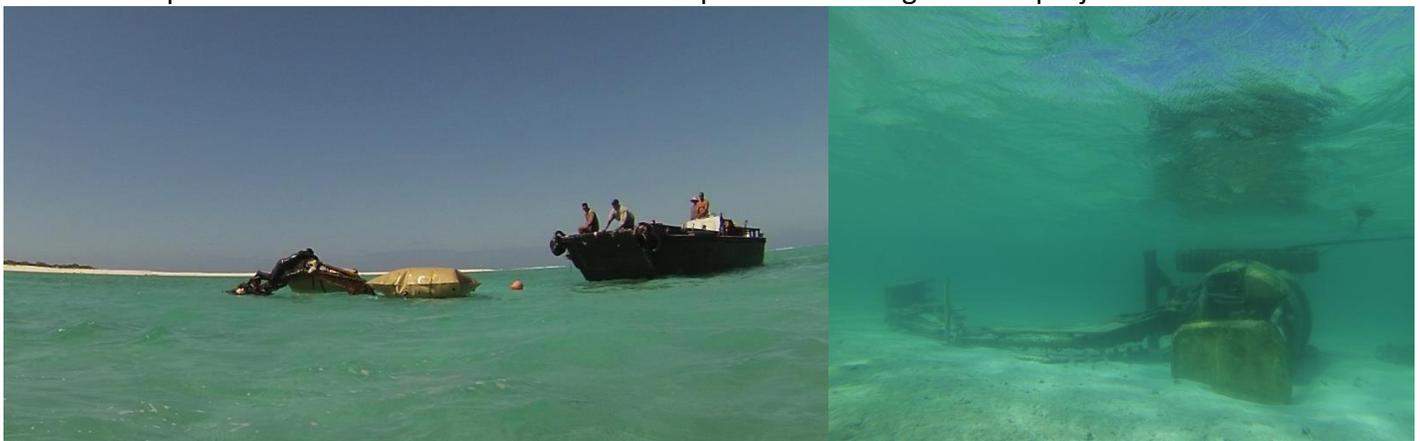
Facilities Maintenance

- 8 new batteries were purchased with OHA's assistance and used to update one of Kure's photovoltaic systems. These batteries were transported and installed this season.
- A new Davis Weather Instruments Vantage Pro2 weather station was installed on the main facility.
- Regular upkeep is carried out by DLNR personnel to maintain the integrity of structures, water purification system, water collection systems and photovoltaic systems.



Excavator Recovery

- The excavator that was deposited in the lagoon off the capsized LCM in September 2016 was removed this season.
- Operations commenced on 24 June and ceased at the close of the following day.
- M/V Kahana was used as the platform for this trip with their LCM, the Alewa.
- DLNR personnel documented and oversaw all operations throughout the project.



Marine Debris

266 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.
- 17 supersacks containing approximately 10,000 lbs. of marine debris were removed on the State-funded March Kahana trip. Combined with Midway an approximated 100,000 lbs. of debris was removed from the monument.
- 4 satellite buoys washed up on Kure's shores. Buoys were documented and photographed (see photo below).
- On 25 and 27 August, prior to the summer team's departure, a devoted effort was made to recover all debris located at collection points around the island and bring it back to camp to be stored securely over the winter.
- An approximated 4,660 lbs. of marine debris was collected this season between March and August (photo below).



Outreach and Education

- 360 albatross boluses & 12 stomach contents were collected, processed, and transported back to Honolulu to be used for research and educational purposes.
- A reporter and photographer from Civil Beat were escorted around Kure during the 30 August crew swap operations.

