



DLNR/DOFAW Kure Atoll Wildlife Sanctuary
 Papahānaumokuākea Marine National Monument

Atoll Update for RAC Meeting
 10 October 2019

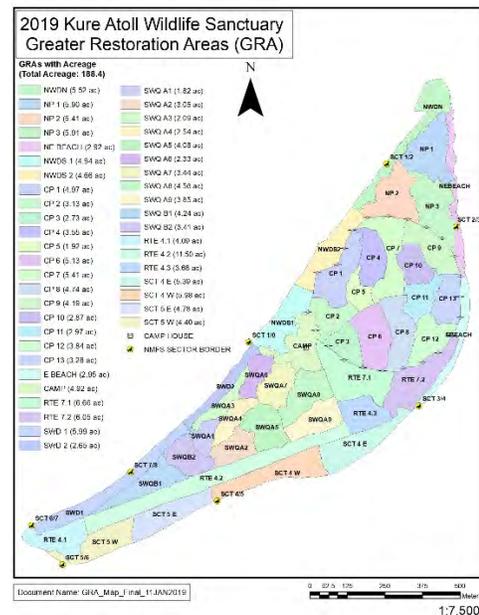
Field crews: The Kure summer 2019 field camp led by Naomi Worcester and Matt Saunter has returned from a 168-day deployment (20 March – 3 September). A winter field team of 2 led by Andy Sullivan-Haskins replaced the summer field team of 8. The crew swap was accomplished on 29 August with the use of the M/V Imua.

- **Ongoing habitat restoration** includes removing invasive plants from the 188-acre vegetated portion of Kure’s Green island on a 4-8 week visitation schedule. The seed bank appears to be rapidly diminishing since complete island treatments started in September 2014 (Table 1). In summer 2019 management areas were remapped to streamline restoration activities (Fig 1).

Table 1. Number of *Verbesina encelioides* plants removed from Green Island during the peak of the growing season.

| | |
|-------------|--------|
| Spring 2016 | 81,556 |
| Spring 2017 | 35,087 |
| Spring 2018 | 16,937 |
| Spring 2019 | 12,357 |

Figure 1. Greater Restoration Area Map



- **Native plant propagation** is conducted in an on-site shade house. Over 800 plants were out-planted this summer. In addition to establishment of important restoration species such as Kawelu (*Eragrostis variabilis*) and Naupaka (*Scaevola taccada*), successes with ‘Ānaunau (*Lepidium bidentatum* var. *owaihiense*), Naio (*Myoporum sandwicense*), Nanea (*Vigna marina*) and Pōpolo (*Solanum nelsonii*) have recently

been documented. A Pōpolo (*S. nelsonii*) census was conducted recording the distribution of over 130 mature plants. This species has been extirpated from Kure until its successful reintroduction in 2015.

- **Collection of albatross boluses** continued as part of educational and research projects. From 2008 to 2018, minimally 1,720 boluses from Kure have been sent to educators across the US and to other countries. Due to low reproductive success rates this summer Kure field teams were only able to collect 60 LAAL, 59 BFAL, and 10 species-uncertain boluses for education and outreach.
- **The Runway Reclamation project** has shown some initial success in remediating the flooding problem on hard pack areas and recruiting nesting albatross, noddies, and terns. This is a long-term project to attract species such as Black-footed albatross away from the beaches and up onto higher protected ground. A Canycom BFP602 tracked-carrier equipped with a hydraulic dump was transported to Kure to facilitate these activities. Over 25,000 lbs. of sand for revegetation plots was transferred to the runway this summer.



- The **Laysan teal (*Anas laysanensis*) population** is estimated to be 58 adults (Aug 2019) including 10 founding ducks translocated from Midway in 2014. Botulism prevention measures include daily water source checks and removal of protein sources from hard pack areas (Runway, turnarounds, roads) where we suspect outbreaks have originated in the past after rain events. Although we have lost some LADU in recent years, the last severe botulism event was in Spring 2017. Out of the 25 broods documented this summer, no successful recruitment has been observed for 2019.
- **Over 9,000 lbs. of marine debris** was removed from Kure's beaches over the summer. 2 full-island entanglement collections were conducted. A 2020 State funded marine debris cruise is in planning.



- **2019 Hawaiian monk seal reproductive results:** 13 weaned pups, 1 died/disappeared. NMFS staff deployed on Kure from 2 June – 21 August. DLNR assisted NMFS with ship offload/onload as well as camp set-up and break down.



- **Low nesting success for Albatross** observed for 2019. Possibly correlated with an unprecedented amount of avian ticks (*Ornithodoros capensis*), resulting in almost complete nest abandonment and reduced nestling success on the interior of Green Island. Black-footed albatross primarily nest on the periphery of the island and showed greater success.
 - Laysan albatross Island Totals – 39,335 Nests/1,282 Chicks – 3% Survival
 - Black-footed albatross Island Totals – 3,429 Nests/1,343 Chicks – 39% Survival
- **Seabird species increasing in abundance and distribution** including Gray-backed terns (*Onychoprion lunatus*), Christmas shearwaters (*Puffinus nativitatis*), Masked and Brown boobies (*Sula dactylatra* and *Sula leucogaster*).
- **Big-headed ant (*Pheidole megacephala*, BHA) eradication program** continues. Island wide surveys are conducted annually and general monitoring is ongoing. Small infestations are found and treated during surveys. Big-headed ants were last documented in November 2018.
- **Southern house mosquito (*Culex quinquefasciatus*) eradication program** continues since the introduction in 2016. Water sources are checked 2-3 times per week. VectoLex larvicide (*Bacillus sphaericus*, Bs) treatments of water sources are currently on a bi-weekly schedule to maintain control. It is uncertain whether mosquitoes are able to reach Kure from nearby Midway where they are established.
- **Stink Bug - A New Invasive Species Introduction**
First observed on Kure Feb 1, 2019. Thought to be Southern green stink bug (*Nezara viridula*). Now appears to be wide spread on Green Island. No effective control method has been established. Adverse impacts of stink bugs have not been noted. Samples collected and submitted to Bishop Museum and Dept. of Agriculture for identification. Biosecurity continues to be a top priority to and from the island.
- **Unprecedented amounts of avian ticks (*Ornithodoros capensis*)** were documented this season. Field camp members sustained tick bites daily. Preventative measures were taken to reduce exposure. Tick presence diminished throughout the summer season and during summer drought conditions.
- **Cultural Practice** - Oli is exchanged upon Hōlaniku group arrivals and departures. Huli 'ia continues to be observed and recorded. Opportunistic collection of hulu is a

standard practice however very few feathers were collected this season due to Mōli nesting failure.

- **Enforcement** - All “no landing” signage was maintained including the reinstatement of an east-facing sign which came down in 2014. 26-28 July, an unpermitted sailing vessel identified as “Cytherea” was documented outside Kure’s reef. The U.S. Coast Guard was notified at the time of the incident and a detailed report with photos was provided to NOAA-Office of Law Enforcement.

