

**Midway Atoll National Wildlife Refuge
Battle of Midway National Memorial**



Activity Report for August 2015

Submitted by Wildlife Specialist Meg Duhr-Schultz and Deputy Manager Bret Wolfe
All Photos by Meg Duhr-Schultz unless otherwise noted.

The American Battle Monument Commission (ABMC) travelled to Midway to install the new Battle of Midway artwork in the Navy Memorial and to erect the marker overlooking the Inner Harbor. The artwork is a concrete mosaic that will stand up for many years in Midway's weather and require very little maintenance. We will continue to work with ABMC to plan and execute the full renovation of the Navy Memorial site. The Harbor Marker is installed in a suitable location to honor the submariners who were lost in World War II. For many, Midway was the last U.S. soil they visited.

The ABMC Marker Overlooking the Inner Harbor. Photo: B. Wolfe/USFWS



DBSI was able to repair the historic cross at Cross Point on Sand Island. It had been damaged by weather and termites and finally fell over in a storm. The new installation will allow the cross to be lowered down for maintenance. It should last many years. Photo: B. Wolfe/USFWS



Laysan Ducks –August 2015 was the most severe botulism outbreak since the disease was first detected at Midway in 2008 and consumed the majority of staff and volunteer time this month. For the month of August, botulism response including daily and twice daily seep checks, vegetation clearing for carcass detection, and captive care sick ducks required at least 500 hours of staff/crew/contractor time.



Midway volunteers Abbie Anderson and David Dow tube feed a Laysan duck sick with botulism.

David Dow conducts a seep check for sick or dead Laysan ducks on Eastern Island.





A Laysan duck in captive care

The significant amount of white around his head indicates this is an older duck.

For the most of August we were feeding nine white tern chicks that had been displaced from their nests during tree removal work to make way for lead-based paint abatement. We have been following a new standard operating procedure for tern chick rearing that we developed in consultation with 'Oahu resident and subject matter expert, Carolyn Blackburn. Chicks were fed locally-caught fish by hand up to five times per day and regularly given seabird vitamins in case our fish were not meeting their full developmental nutrition needs. There has been careful consideration of placement and socialization and so far, these new methods have shown dramatic increases in chick survival and fledging. **As of August 31, we had 100% survival and fledging success for the uninjured birds in our care.**



Abbie Anderson and White tern Record Feeding Data





USFWS Volunteer David Dow separates freshly caught Hawaiian anchovy for feeding to white tern.

Standard refuge mass propagation of bunchgrass (*Eragrostis variabilis*) continued by our contracted workforce. 1530 pots of bunchgrass were outplanted and 1220 new pots made from cuttings. To supplement our propagation of bunchgrass, we have been experimenting with methods to propagate other native plant species by seed and cuttings including Popolo (*Solanum nelsonii*), 'Ilima (*Sida fallax*), Aveveo (*Chenopodium oahuenses*), Button sedge (*Fimbristylis cymosa*), AkiAki grass (*Sporobolus virginicus*), and Tree heliotrope (*Tournefortia argentea*). Transplant survival and growth is good so far.

(From Left) DBSI contractors Koh and Yai help FWS volunteer Abbie pot button sedge in the greenhouse.





Wildlife Refuge Specialist Meg Duhr-Schultz repairs a fence around an 'Ilima (Sida fallax).



The NOAA Coral Reef Ecosystem Division had nine people on Midway from August 11 to September 8 conducting an atoll-wide marine debris cleanup. B. Wolfe/USFWS