



*Dedicated to the preservation, education and history of our incredible national treasure - Midway Atoll*

## Laysan Ducks on Midway – A Sign of Success

*by Cindy Waddington*

It's been three years since Phase I of the Laysan duck translocation project, and the recent posting of duck crossing signs at Midway Atoll National Wildlife Refuge is a figurative and literal sign of the project's success! To underscore just how exciting this news is, one first must consider some background information on the Laysan duck.

The critically endangered Laysan duck (*Anas layanensis*), also known as the Laysan teal, was at one time widespread throughout the Hawaiian Island archipelago.

*Continued on page 2*



**USGS Biologists Michelle Reynolds & Jimmy Breeden with recently banded Laysan Duck along with Deputy Refuge Manager, Matt Brown.**



### Christmas Comes Early!

*by Christy Finlayson*

**T**he Board of Directors of the National Fish and Wildlife Foundation has approved a grant of \$100,000 to the Friends of Midway Atoll National Wildlife Refuge to support the Midway Atoll

Marine Debris Coastal Monitoring Project. This project is a multi-agency effort to determine the types and sources of marine debris and produce educational materials focusing on decreasing debris deposition. This grant was provided on the condition that funds are matched by a non-federal source - the Dow Chemical Company has provided \$100,000 towards this match. This award is contingent upon National Environmental Policy Act (NEPA) clearance from the National Oceanic and Atmospheric Administration.

Look for details about this project in upcoming editions of the Gooney Gazette II!

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However, this small (15-17-inch in length), dark brown duck with its prominent white eye-ring, orange legs and feet faced extinction, primarily due to the effects of introduced species. As a result, the species was reduced to one population on the island of Laysan in the Northwestern Hawaiian Islands.

Disease outbreaks, rabbit invasions, drought and habitat destruction are among the factors which caused great fluctuations in the Laysan duck population over the years (reducing the population to 11 in 1911). In 2004, there were about 576 Laysan ducks on Laysan thus giving this species the dubious distinction of being the rarest native waterfowl in the United States. Because of its limited dispersal, the Laysan teal does not migrate beyond this remote island. To improve the chances for survival of the species, a Laysan Duck Recovery Plan was hatched with the U.S. Fish and Wildlife Service and Dr. Michelle H. Reynolds, U.S. Geological Survey Wildlife Biologist, as Project Leader. The recovery plan would entail translocation—i.e., human-assisted movement of a species from one location to another.

After the consideration of various possible translocation sites in the Hawaiian Islands, Midway Atoll National Wildlife Refuge was

selected as the preferred site. Midway was determined to have the right combination of prerequisites

that Midway would be ready for its new residents. Nine freshwater seeps were excavated. Over a period of a couple of years, habitat restoration was the main focus of the volunteers at Midway. They removed *verbena* and other invasive weeds and planted native species including native bunch grass (*Eragrostis variabilis*) around the seeps that would serve as the release sites.



Photo: James H. Breeden Jr., USGS. 7-10-07

including its location within the presumed pre-historic range of the Laysan duck, the absence of rats and the logistical ability to support the personnel involved in the project. Preparations commenced to ensure

Meanwhile on the island of Laysan, monitoring of the Laysan duck population was ongoing to determine which lucky ducks would be traveling to Midway. In October 2004, 20 ducks were selected for the

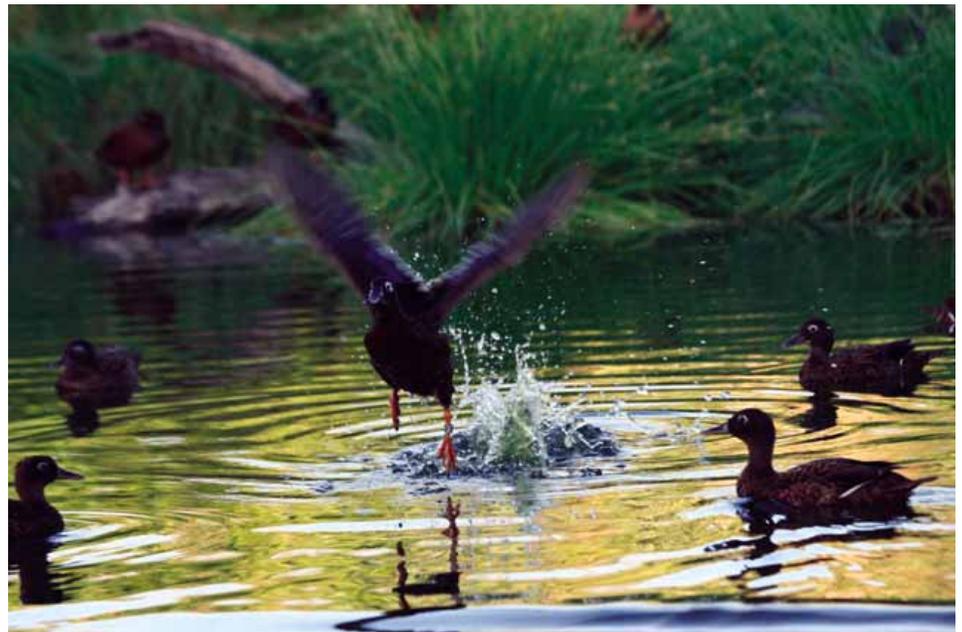


Photo: James H. Breeden Jr., USGS. 11-1-07

two day, 400 mile voyage to Midway. Upon arrival, the 20 ducks were housed in aviaries for a brief period while they adjusted to the local food supply of seeds, leaves and insects. It should be noted that brine flies—a staple in their diet on Laysan Island—are not found on Midway. Before their release, all the ducks were fitted with a radio transmitter (funding provided by the Friends of Midway Atoll) thereby enabling the biologists to closely monitor their activities. The first fatality was noted in December 2004 when a male duck died after being bitten on the head by a Laysan albatross.

Phase II of the translocation took place in October 2005 when a second group of 22 ducks was brought to Midway. Of this group, 16 took up residence on Eastern Island while the other 6 remained on Sand Island.

Soon after the first translocation, wildlife biologists were pleased to note that these juvenile Laysan ducks were very readily adapting to their new environment. John Klavitter, the refuge biologist and Leona Laniawe found the first nests. Dr. Michelle Reynolds, coordinator for the Laysan duck relocation project, stated that “successful breeding by four of the six translocated females was confirmed during their first year on Midway” and by December 2005, 11 ducklings had fledged. On Laysan, ducks do not typically breed successfully until they are two years old. Furthermore, the average clutch size has been larger on Midway than Laysan. This may be due to the relatively small duck population and the abundant habitat and food supply. Dr Reynolds notes that “the ducks are using a wide variety of vegetation types for nesting and foraging that are not available on Laysan.”



Photo: James H. Breeden Jr., USGS. 9-6-07



Photo: James H. Breeden Jr., USGS. 11-1-07

Dr.Reynolds, who was on Midway in October 2007 with field biologist Jimmy Breeden, indicates that “the adult population size is currently between 80-92 ducks and the breeding season (April to October) is ongoing with gravid hens, active broods and a nest under surveillance.” The original founding population of 42 ducks, after three breeding seasons, has increased to a current population of about 192.

Much has been learned during the past 3 years of monitoring the Laysan

ducks on Midway Atoll and the future survival of this species is looking brighter. It is a common sight to see Laysan ducks flying overhead at Midway—they regularly fly between Sand and Eastern Islands. The adaptability of the Laysan duck to new environments holds great promise for the translocation of another population to a predator-free island. Kudos go to members of the Laysan duck translocation team as well as the other individuals who played a role in this momentous chapter in the recovery of this critically endangered species.

## Green Sea Turtles Hatch on Sand Island

*by Pete Leary, the new guy!*



Before I give you the Turtle News, I'll tell you a little about myself.

I'm a new technician working on invasive species on Midway, mostly *Verbesina* of course. I got to Midway just after the 65<sup>th</sup> Commemoration fresh from Cleveland, Ohio, where I worked at the Rock and Roll Hall of Fame.

Prior to that I got my master's degree in Biochemistry and Molecular Biology from the University of North Dakota while doing nutrition research for the USDA.

I also was in the Navy for 6 years on a submarine, so the isolation of Midway doesn't seem so bad. I look forward to meeting any of you who get out here before my term is up in June 2008.

### *Now for the Turtle News!*

Turtle tracks were seen leading to a pit July 7, 2007 on the north beach of Sand Island by Steve Miller, a volunteer with the Dr. Don Potts coral reef group. Though green sea turtles are a common sight at Midway, there has never been a recorded turtle nest on Sand Island.

Most will nest at French Frigate Shoals. Turtles are also known to dig false nests, but it was monitored in case it was an active nest. Green sea turtles normally will hatch in about 66 days. The nest was dug up 90 days later.

We discovered egg shells about 3 feet below the beach surface. Out of 89 eggs found in the nest, 83 hatched, 5 were unfertilized and 1 was fertilized but not hatched. Young turtles have a high mortality rate, but any who survive should return to the same beach to nest. Don't hold your breath though, because it will be 20 to 50 years before these hatchlings will breed. Green sea turtles are a threatened species so it would be good to see them expanding their nesting range.



**Greg Schubert, Elise Christensen, and Barry Christensen counting turtle eggs.**

## Fuel Farm Update

*Article and photos by Matt Brown, Deputy Refuge Manager*

The “right-sizing” of the facilities on Midway took a big step forward this season with the addition of our new fuel farm and airport hanger.

Midway’s fuel farm was installed in the 1960s-1970s and although it was updated and repaired over the past 20 years, it was simply too costly to maintain, and much larger than what was required for our current needs. In addition to replacing the existing fuel farm tanks with smaller tanks, their location was also moved from the north side of Sand Island to the inner harbor. This move ensured that the new tanks could be installed on previously disturbed ground not used by Albatross (the concrete pad between the dump and the Seaplane Hanger), and could be filled without having to do major renovations to the old fuel pier.



As many of you are aware, the condition of the 1960s airport hanger (built when the Naval Station was supporting the Distant Early Warning line) has been declining throughout the years. The building is nearly completely abandoned and the cost of repairing or keeping the building in an operational condition exceeded the budget of the FAA and FWS. This current state of the building was clearly demonstrated during the Battle of Midway 65<sup>th</sup> Anniversary event when the rifle salute caused small pieces of the exterior wall to fall to the ground!



Starting this spring, work began to consolidate the FAA operations in a more cost effective building. The new building is being constructed on a paved area of the taxi-way that was constructed in the post-1960 era. No earth disturbance was necessary, so the environmental and cultural impacts are minimal. This new up-to-date facility will house our fire trucks and emergency response vehicles, while at the same time providing new office space for our airport manager and firemen. We plan to start using the new hanger in January.

## Lending a hand to Midway's Historic Resources

*Article and photos by Lou Ann Speulda-Drews  
Historian/Historical Archaeologist USFS*

What does a bird counter do all day when only four Black-footed Albatross have arrived at Midway Atoll? Intrepid volunteer and FOMA member Cindy Waddington found an outlet for her verbesina-pulling skills while working with architect Glenn Mason and me during a week of hands-on historic preservation.

Because there is no historic preservation specialist stationed on the atoll, my visits usually focus on gathering data, evaluating the condition of historic resources, and writing up recommendations for treatment. During this trip we also were able to make a little progress conserving Midway's historic resources, including painting, testing a paint stripper product, and pulling lots of weeds.

An example of improving a historic property is the work we accomplished at the ARMCO hut near Battery C and the cemetery. "What ARMCO hut?," you may ask. It's the one completely obscured by 6-foot tall verbesina. Our first task was to pull weeds to find the structure, and then pull weeds to clear a pathway, and finally pull more weeds so that it can be seen from the road.

Back in 2001, a Save America's Treasures grant facilitated the fabrication and installation of a new front



panel on the ARMCO hut. However, upon inspection, we discovered that the work had not been finished and the hut was deteriorating rapidly. Although not on our original agenda, we realized that this National Historic Landmark structure needed our help, NOW! We quickly made a plan, gathered supplies, and began repairs. We cleared sand away, replaced the concrete blocks at the front corners, and finished painting with a primer and top coat.

Unfortunately, corrosion was causing considerable deterioration to the top of the hut, where a large hole was developing and rusting connections to the new front was causing it to be very unstable. Lucky for us, Glenn Mason assisted with the work in 2001 and was very familiar with the structure. He was able to prepare a plan on the spot for repairing the roof and stabilizing the front. The plan called for welding bars to the front, covering the holes in the roof with steel and coating the whole top with a waterproofing product which was then covered up with sand. After discussing the project with Barry Christenson, Refuge manager and John Hanna, the Chugach crew completed the work after we had left.

Working as a team with the refuge staff, a volunteer, a contractor, and Chugach we achieved two goals: the ARMCO hut is preserved and the albatross nesting on top of the hut are safe from falling through the roof. We observed that what is good for historic resources is also good for the albatross.

If you would like to assist with stabilizing and conserving the historic resources on Midway Atoll NWR, please contact FWS historian, Lou Ann Speulda-Drews at 775-861-6335 or e-mail [louann\\_speulda-drews@fws.gov](mailto:louann_speulda-drews@fws.gov).



# Building Partnerships

## Invasive Plant Project Summary: 2006-2007

By Christy Finlayson



**O**n September 15<sup>th</sup>, 2007, FOMA wrapped up the first year of its *Verbesina Control and Eradication Program on Midway Atoll*. Combining a \$24,700 grant from the National Fish and Wildlife Foundation's Pulling Together Initiative with support from FOMA, Biological Conservation Assistance Program (BCAP), and the U.S. Fish and Wildlife Service, the objectives of this program are to support the USFWS in its efforts to combat the invasive plant *Verbesina encelioides*, or golden crownbeard, known on Midway Atoll simply as "Verbesina."

Donated funds and services were used to combat the invasive plant using several approaches:

- by enlisting volunteers to hand-pull Verbesina and replace it with native plants,
- with herbicide application, and
- by using outreach products to educate the public.

Ten volunteers were sent to Midway Atoll to pull Verbesina on approximately 45 acres and propagate and outplant over 16,000 native plants. Herbicide and associated protective equipment were provided to USFWS staff for application to and elimination of Verbesina stands. Educational products were created by volunteers and BCAP and distributed on-line, in printed media, and in community outreach programs.

**GOALS:** The goals of this project are to remove Verbesina from areas of critical habitat on Midway Atoll and restore a native ecosystem which will provide benefits for 17 species of nesting seabirds, for the endangered Laysan Duck, and possibly towards the breeding of the endangered Short-tailed albatross. Preventing the re-establishment of Verbesina and other potentially invasive species must also include the involvement and education of the public; thus, an educational brochure and teaching lesson were developed for use on the refuge and beyond in educating the public in general about invasive species.

### Did we accomplish our goals?

In the short term, yes, we began progress on a long-term collaborative effort to reduce Verbesina to manageable levels or eradicate it from Midway. However, long-term control and prevention is needed because this plant spreads rapidly.

*Continued on page 8*

*Cont. from page 7*



Native bunchgrass (*Eragrostis variabilis*) planted by volunteers by the pier on Eastern Isalnd in March 2007 is now well-established in this photo taken in September 2007. The small yellow flowers in the foreground belong to a native groundcover called puncture vine (*Tribulus cistoides*).

## What did we learn?

Good news and bad news...

Verbesina growth in areas where volunteers pulled plants returned at a faster rate than we anticipated. Although our efforts, on the whole, were successful, there were locations on the atoll where Verbesina, after 6 months, had grown to levels that were worse than before our volunteers did pulling. Thus, we learned that the effort must be more intensive, with more regular visits to areas where Verbesina has been removed to prevent re-establishment. A proportionally greater effort must also be made to re-establish native vegetation. In areas where native vegetation has become re-established and maintenance visits have been regular, habitat is returning to a predominately native community that is resistant to Verbesina growth.

To the outside observer, management may seem simple: mow it, spray it, pull it, and replace it.

This is easier said than done on Midway Atoll, where management decisions regarding Verbesina must involve consideration of Midway Atoll's other sensitive species:

- To avoid killing desirable native plants, herbicide must be carefully spot applied to individual plants, which is much more time-consuming compared to broadcast application.

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## Where is Verbesina from and Why is it a problem?

Verbesina is an annual flowering shrub native to tropical America that has become established as an aggressive weed in North India, the southwestern United States, and at Midway Atoll National Wildlife Refuge. On Midway, Verbesina is a widespread, aggressive weed that grows in dense, monotypic stands of up to 8 feet in height. Midway's soils are sandy and climate ideal for high Verbesina germination and growth rates.

At only 1600 acres and over 2,000,000 birds, there is a very high density of wildlife on Midway Atoll. With the exception of 5 species, all of Midway Atoll's seabirds nest on or in the ground in burrows. Seabirds do not build nests in existing stands of dense Verbesina; so, existing stands limit habitat available to nesting birds. The growth of new stands in areas where birds have already nested enclose and entrap albatross chicks within their growth, preventing their parents from locating them for feeding and/or preventing them from finding their way to the ocean when it is time to fledge; so, chicks die of starvation. Verbesina also serves as a home to aphids and scale insects and the ants that tend them. These ants may also prey on the eggs and chicks of ground-nesting birds. The scale insects are suspected in the transmission of a harmful virus from Verbesina to native vegetation.



**Verbesina has returned to areas cleared by volunteers near the "Rusty Bucket" on Sand Island. The yellow flowers in this photo are Verbesina.**

*Continued from page 8*

- Concentrating herbicide application in areas with lower bird density or when albatross are at sea in the late summer and early fall helps minimize herbicide exposure to birds. However, with increasing populations of Bonin petrels and Laysan ducks, this “bird window” has shortened in length..
- Weed control is easiest when albatross are at sea. However, mowing (one type of weed control) is difficult in areas honeycombed with the burrows of Bonin petrels and wedge-tailed shearwaters – collapsed burrows entomb chicks and adults. For the endangered Laysan duck, mowing also poses a risk.

Despite the concerns listed above, it is unacceptable to allow *Verbesina* stands to dominate the plant community on Midway Atoll. Birds do nest in areas with sparse *Verbesina* growth; however, sparse *Verbesina* growth almost always leads to dense, impenetrable stands. So, with so many sensitive species tightly packed into a small area, how do you prioritize when management focused on one species may be detrimental to other species? We learned that invasive species management is often complicated by many competing, but equally important interests.



**A combination of methods (pulling, spraying, mowing, and planting native plants) has been successful at maintaining the area in this photo (the former location of the Gooneyville Lodge”).**

ants that harm ground-nesting birds). We feel that by understanding potential secondary threats posed by *Verbesina* to Midway’s wildlife, we can garner more support for its eradication.

We have submitted a proposal for a third year of support and will continue to work with the USFWS to provide the most relevant assistance for the long-term success of this program. We believe that the most effective and relevant conservation projects result from a constant dialog with managers on the ground. With constant input from managers regarding successes, failures, and future needs, a project can more rapidly respond with changes. The third year will focus not only on management on the ground, but also on supporting efforts aimed at project continuation. As mentioned previously, any effort to control a rapidly growing, aggressive plant like *Verbesina* must be effective and consistent. Each year’s effort must maintain the previous year’s effort while making new progress. A delay in such an effort, even for a short period of time, is effort lost – thus it is crucial that we continue our effort on the ground, but also ensure the continuation of this program.

### What next?

One important result of this endeavor is the collaborations that have formed since news of the grant and this program has spread. We are currently managing the second year of this program. With additional support from National Geographic and the University of Maine, we are again supporting volunteers and are also conducting an analysis of secondary threats to wildlife for which *Verbesina* may be responsible. We are assessing the invertebrate community in *Verbesina*, with an emphasis on understanding if and how *Verbesina* may provide resources to invertebrates that are harmful to Midway’s wildlife (i.e., aggressive

**For more information about how you can help, please visit the FOMA website:  
<http://www.friendsofmidway.org/news/news.htm>.**

## Visitor Program News. . . .

### Interim Visitor Services Plan Approved

The Interim Visitor Services Plan for Midway Atoll National Wildlife Refuge, the Battle of Midway Memorial, and Papahānaumokuākea Marine National Monument's Midway Atoll Special Management Area was approved on May 23, 2007. It provides for a small visitor program, probably beginning in 2008.

The Fish and Wildlife Service is now working with a variety of entities who have expressed interest in bringing guided groups to Midway Atoll. If you are interested in sponsoring a group visit to Midway, please contact us at [midway@fws.gov](mailto:midway@fws.gov). We will also offer opportunities for individuals to come independent of guided tours in 2008. As our schedule of visitor opportunities is developed, we will post it on our website.

The approved plan and its appendices may be downloaded via the links below. We are now turning our attention to plan implementation, including hiring additional staff to support the visitor program. Thank you for your continued patience as we work to make Midway Atoll more available for visitation!

The website for the visitor services plan is...

<http://www.fws.gov/midway/VSP/MidwayVSPindex.html>

The person to contact re: booking a trip is

Barbara Maxfield.

[Barbara\\_Maxfield@fws.gov](mailto:Barbara_Maxfield@fws.gov)

808-792-9531



## Halloween Fun at Midway

Pictured is Nancy Wallander, dressed as a verbena plant (in full bloom) wife of Physician Assistant, Jim Cassell, who's dressed as an herbicide technician.

## Introducing Matt Brown

### New - Deputy Manager of Midway Atoll



Friends of Midway Atoll, are pleased to introduce Matt Brown, the new Deputy Manager of Midway Atoll.

Matt was formerly the Deputy Manager at Guam NWR. Matt joined the Midway team in September and jumped right in with both feet. Guam NWR does not have a friends group, and he is certainly looking forward to working with the amazing group of dedicated individuals who make up FOMA. Please feel free to contact him at:

[Matt\\_D\\_Brown@fws.gov](mailto:Matt_D_Brown@fws.gov)

808-674-8237 ext. 104

Laysan Duck Crossing Signs mentioned on page one story, by Cindy Waddington.



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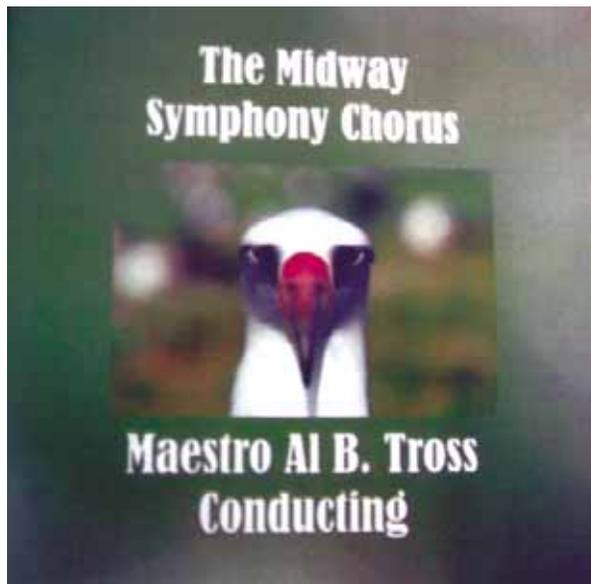
**Go Green!**

**Get the newsletter by email!**

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## Just in time for the Holidays, new products at the FOMA store!



For \$10, you can purchase a CD. "The Midway Symphony Chorus" with Maestro Al B. Tross conducting was recorded at Midway Atoll between Dec. 2006-Jan. 2007 by Rachel Neville and Keith Swindle. It features tracks such as: Eastern Island Cacophony, Stay Away From my Nest! (Black-footed Groul), The Bonins Return

and Night Outside Charlie Barracks. It is the next best thing to being at Midway!



For \$7, you can purchase a unique and practical Midway Atoll bandana. The design features flora and fauna of Midway Atoll including the monk seal, Laysan albatross and spinner dolphins and has a border design of native beach morning glory. It is 100% cotton and measures 22" x 22" and is available in green or rust.

**To Order Merchandise  
 Ellen Cashman at  
[ellcash@comcast.net](mailto:ellcash@comcast.net)  
 849 Dale Street,  
 North Andover, MA 01845**

Visit the FOMA website at:  
[www.friendsofmidway.org](http://www.friendsofmidway.org)

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