

Gooney Gazette II

Wiekeke Holthuijzen/USFWS

A Warm Welcome from Wayne Sentman



USFWS



Wayne Sentman/USFWS

Dear Friends,

As the newly elected President of FOMA it is with great excitement that I present the Winter 2015 edition of the Gooney Gazette II. We are thrilled to share this summary of current news from Midway Atoll National Wildlife Refuge / Battle of Midway National Memorial.

The stories shared here relate the tremendous efforts put forth by USFWS volunteers and employees to both preserve the illustrious history of Midway and concurrently achieve conservation gains for the unique fauna, who are now the most numerous “residents” of Midway. All accomplished during a prolonged era of stagnant budgets and downsizing, it is a true testament to the dedication and ingenuity of the current managers and volunteers who take their place in a long line of “stewards” who have and continue to work diligently to preserve and protect this tiny coral atoll.

As you know, spending time on Midway Atoll is a transformative experience, inspiring a lifelong connection to these beautiful aquamarine islands of the Pacific. In 1999, the Friends of Midway Atoll National Wildlife Refuge was established, and with your support over the last 16 years, we have been bound together by one mission: *“To support Midway Atoll National Wildlife Refuge / Battle of Midway National Memorial in its efforts to preserve, protect, and restore the biological diversity and historic resources of Midway Atoll, while providing opportunity for wildlife-dependent recreation, education, cultural experiences, and scientific research.”*

Wayne Sentman

Midway 1999–2002, FOMA President

Special points of interest:

- This past winter, a record number of Laysan and Black-footed Albatross nesting at Midway Atoll NWR were recorded during the annual albatross census—nearly 1.4 million albatross in total!
- Midway has a brand new shadehouse for native plant propagation—funded in part by FOMA!
- FOMA is about to launch a brand new website... stay tuned for details!

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Record-Breaking Number of Breeding Albatross on Midway

By Ann Bell, USFWS Visitor Services Manager, Pacific Islands Refuges and Monuments Office

In the beginning of January, Midway Atoll NWR proudly released the results from the recent annual nesting albatross census, again confirming the refuge as the largest nesting albatross colony in the world. Nineteen volunteers systematically covered the entire surface of the atoll's three small islands counting active nest sites from each of two species (Laysan and Black-footed Albatross) from December 11, 2014 through January 2, 2015. Their final count resulted in over 1.39 million individual birds, assuming two adults per nest, for both albatross species combined.

This year (hatch year 2015) far surpassed any previous documented year for nesting Laysan albatross on Midway Atoll with 666,044 pairs recorded. The current year count for Laysan Albatross represents a 52% increase over the average number for the period from hatch years 2010 to 2014. Black-footed Albatross nesting pairs came in at 28,610 for the atoll, also a new record, up just over 18% from the 2010-2014 average. The previous high year for Laysan albatross was 2006 with 487,527 while for black-footed the previous high was 28,581 in 2011.

The reference "hatch year 2015" defines the albatross breeding season from the time eggs were laid in November 2014, hatched in January 2015, and expected to leave Midway Atoll by July 2015.

As noted by Refuge Manager Dan Clark, "Our management actions here ensure adequate nesting sites that are free of non-native predators and other invasive species so the overall success of both species' is more secured into the future."

To conduct the census, the three islands at Midway Atoll are divided into manageable sectors. The volunteers walk together in a systematic manner to ensure all nesting birds are counted. An albatross sitting on an egg in a nest is counted once and represents a breeding pair. Albatrosses present but not on an egg may be immature, unpaired, or just resting individuals. These birds are not included in this census.

The numbers of nesting albatrosses on Midway Atoll fluctuate from year to year. In any given year approximately 25% of the breeding population may take a year off nesting to replenish energy reserves and complete feather molting. Sexually mature albatrosses are presumed to make nesting decisions each year based on a number of complicated and interwoven factors such as ocean conditions, their body condition and need to molt, and environmental conditions that may affect food availability for the rest of the season.

"In the 1920s, the entire Laysan albatross



Dan Clark/USFWS

population in the Northwestern Hawaiian Islands, where most of them historically nest, was estimated to be fewer than 20,000 birds owing to illegal egg poachers and feather hunters," noted Deputy Refuge Manager Bret Wolfe. "We'll be closely analyzing and comparing our data with those collected at other nesting sites within Papahānaumokuākea Marine National Monument like Kure Atoll State Wildlife Sanctuary, to determine if this year's numbers are an anomaly or part of a larger trend."

An undertaking of this magnitude relies on the dedication of many volunteers who donate their time during the holiday season and share in the cost of the associated logistics. The Refuge's non-profit support organization, Friends of Midway Atoll National Wildlife Refuge, also contributes funding to help the Refuge host this annual count.



Dan Clark/USFWS



Laysan Ducks next to a newly installed guzzler at Midway Atoll NWR. Photo credit: Megan Dalton/USFWS.

Lucky Ducks: Guzzlers Go in the Ground

By Megan Dalton, USFWS Volunteer at Midway Atoll NWR

Midway's Laysan Ducks (*Anas laysanensis*) have a few new places to dabble in. Three out of six water guzzler structures purchased by FOMA were installed on Sand Island in mid-October; these are in addition to the four guzzlers already in place on Sand and Eastern Islands, also purchased by FOMA. The structures consist of a large tub capable of holding 500 gallons, which is placed in the ground, and a roof and gutter above to catch rainwater. They are commonly used on the mainland as watering holes for big game animals and will serve as additional fresh water sources for Midway's endangered Laysan Ducks.

Access to fresh water is especially important for ducklings, particularly in drought years. Although adult ducks are able to drink brackish water due to the presence of fully functioning salt glands below the eye, young

ducklings have not yet developed this capability and are vulnerable to dehydration.

The guzzlers were placed in the locations of three former wetlands (Parade, Communications, and Sunrise) that were filled in in an effort to manage the large avian botulism outbreak in 2013. Avian botulism is a paralytic disease caused by ingestion of a toxin produced by the bacteria, *Clostridium botulinum*. This bacteria is widespread in soil and requires warm temperatures, a protein source, and an anaerobic (no oxygen) environment in order to become active and produce toxin. Outbreaks of this disease have occurred in the wetlands every year since 2008 and have killed and sickened hundreds of ducks. Intensive management efforts and time are required to prevent outbreaks from intensifying further and it is thought that the guzzlers may prove to be easier to manage,

maintain, and clean than the former artificial wetlands.

Additionally, the areas around the new guzzler locations will be targeted for Laysan Duck habitat creation and enhancement, including the development of loafing and foraging habitat. Outplantings of native Bunchgrass/Kāwelu (*Eragrostis variabilis*), Button Sedge/Mau'u 'aki'aki (*Fimbristylis cymosa*), and 'Alena (*Boerhavia repens*) have already occurred.

The remaining three guzzlers are scheduled to be installed next summer after the Bonin Petrels (*Pterodroma hypoleuca*) and albatrosses have fledged. Several big thank you's go out to all who made this possible: FOMA, for the purchase of the guzzlers; DBSI staff, for the quick and excellent installations; Dr. Michelle Reynolds of USGS, for guidance and encouragement; and USFWS staff and volunteers, for project support, placement criteria ideas, and site prep work.

“Access to fresh water is especially important for ducklings, particularly in drought years.”



USFWS Volunteer Megan Dalton fills one of the newly installed guzzlers with water. Photo credit: Bret Wolfe/USFWS.

The Art of Midway

By Caren Loebel-Fried—artist, author, and illustrator

I had the honor of creating a piece of art that celebrates and supports Midway Atoll National Wildlife Refuge, the Battle of Midway Memorial, and the deep Hawaiian roots throughout Papahānaumokuākea, the Northwestern Hawaiian Islands. My biggest challenge was to evoke the unique essence of Midway Atoll, and include as much of its variety as possible. But alas, how can the “Magic of Midway” be represented in one piece of art?

I arrived on the Atoll in early winter to the sights and sounds of thousands of Laysan albatrosses sitting on nests and dancing in courtship. Every night, the clacking, honking, and rapid fire bill-clapping of the albatrosses was the soundtrack to my dreams. I was mesmerized by their loving attention to one another and to their egg. I knew the “stars” of the piece would be a nesting Laysan Albatross pair, and I would want to reveal a private, intimate moment amid the cacophony all around them.

In order to give the art a feeling of place, I needed to experience as much of Midway and its wildlife as possible. So, I spent every waking hour of my stay exploring Sand, Spit, and Eastern Islands, as well as the waters inside and just outside the atoll. I sketched, photographed, and videoed the different birds, their behavior and flight. I studied the movement of the ocean, the wind, the light, the colors, and textures. I dissected an albatross bolus to learn what they consumed. Fascinated by their soaring, I observed a dissection of a deceased

albatross in order to see the structure of the wings, bones, and muscles.

So many amazing creatures live or breed on the Atoll, and the human stories of heroism, tragedy, and survival during the Battle of Midway are too numerous to tell in one piece of art. I worked closely with Dan Clark and Bret Wolfe, the Refuge Manager and Deputy Manager, and Ann Bell, Visitor Services Manager, choosing the elements that would appear in the art and their placement. The albatrosses would be within a frame of many panels filled with images representing the decisive WWII battle fought off Midway, other seabirds who depend on Midway for nesting habitat, an ancient Hawaiian Voyaging Canoe sailing by on its way down the island chain, and several endemic and native plants. Other panels would include coral, fish, a Hawaiian Monk Seal, *ʻĪlioholoikauaua*, and a Green Sea Turtle, *Honu*, all from the sea around the atoll.

I also wanted to highlight some of the work that USFWS is doing to help the wildlife on Midway. I envisioned a Laysan Duck, from the original group of ducks translocated from Laysan, reaching up to nibble on Bunchgrass, *Kāwelu*, seeds in the main panel. The Bunchgrass, used as nesting material by albatrosses, would be shown out-planted by human hands.

While working on the art back home in Volcano, I emailed scientists and staff on Midway, Honolulu staff, and former Midway folks with questions, requests for photos, and asked them to review my sketches for



Dan Clark/USFWS

accuracy. My work would not have been possible without their incredible support and help.

My ultimate goal was to create a piece that could be enjoyed as fine art, and also be printed on everyday items. By purchasing Midway merchandise, funds are raised for FOMA in support of the work that USFWS is doing on Midway. With this art, I also hope to share a glimmer of the magic of this special place that I am so lucky to have had the opportunity to experience and help.

Caren Loebel-Fried's Midway-inspired art will be available for purchase soon—stay tuned for news from FOMA!

Marine Debris, From You and Me

By Wayne Sentman, FOMA President

As anyone who has spent time on Midway Atoll is all too familiar, plastic marine pollution is a [global problem](#). Midway Atoll National Wildlife Refuge and the albatross found there, continue to serve as the poster child for the impacts of the North Pacific Garbage patch, one of the 5 major “gyres,” or accumulation points of oceanic plastic pollution.

Being attuned to this issue you may have noticed more information coming to light about the challenges all living beings face due to the ubiquitous nature of plastics in our oceans, and increasingly in our food chains. As plastic pollution breaks down it does not “go away,” but simply

becomes microplastic that other living things eat. Currently, ingested plastic has been identified as a probable source that [carries and transfers](#) organic pollutants directly into fish that people eat. [Other recent studies](#) have also shown that table salt (distilled from sea water) may have high levels of microplastic in it. In some samples as many as 250 particles of plastic were found in each pound of sea salt.

While researchers are not fully aware of the implications of eating so much plastic on the north Pacific albatross populations, it is becoming increasingly understood that “as go the albatross, so go humans.” As we continue to ignore our global “misuse” of single-use plastic, and lack of proper disposal of these items, we are seeing that

as a global community we are only adding to an already vexing problem. Perhaps as the issue becomes more of a public health issue, as we discover more and more ways that we are ingesting plastic, we will better appreciate the warning Midway’s albatross have been providing us [since 1966](#).

To learn what you can do to reduce your plastic footprint check out the wonderful suggestions found [here](#). And please, remember to support FOMA. It is through our membership fees and donations that we can continue to support refuge initiatives on Midway Atoll aimed at mitigating the impacts plastic pollution may be having on albatross populations breeding there.



Dan Clark/USFWS

Above: Artist Caren Loebel-Fried sketches the behavior of an incubating Laysan Albatross at Midway Atoll. **Below:** Caren at her studio at home in Volcano, Hawai'i, carefully carving the block print for her Midway piece. She learned the art of block printing from her mom. Growing up on the New Jersey shore, she spent summers on the beach, with the ocean sights, sprays, sounds, smells, and the seabirds circling above, she watched her mother carve blocks and played with the curls of wood that fell from her block into the sand. **Left:** The finished piece—and it perfectly captures the "Magic of Midway!"



Ann Bell/USFWS



Left: © 2009 Rebecca R Jackrel, www.RebeccaJackrel.com

Right: "Disposable Lighters"

© 2010 El Ten Eleven, <http://elevenelevenjournal.com/>



From the Field: Volunteer Life and Times on Midway

By Kristina McComber, USFWS Volunteer at Midway Atoll NWR

I'm Kristina and I've been volunteering on Midway since late September. Every day this atoll has a way of reminding me that this is a totally unique place that has no comparison on any other speck of land on this planet. The makeup of its primate and avian inhabitants, the color of blue the lagoon achieves, the staggering array of fish under the water's surface, the sunbathing turtles and seals, the intense conglomeration of plastic and metal debris, the history of the landscape and infrastructure, the shameless curiosity of the Laysan Ducks, and the bloodied beak of an albatross that was recently in a brawl now gently preening the neck of his mate... It cannot be duplicated or rivaled. As someone who has worked on

several remote seabird islands, Midway is particularly striking in its potential for habitat restoration due to its extensive infrastructure. Here, we have the ability to restore habitat by actually growing and raising native plants! Without roads, carts, hoses, ample fresh water, a greenhouse, a beautiful new shadehouse (funded by FOMA!), and a climate-controlled room for seed storage, we couldn't put forth the large scale effort necessary to plant back Midway to its native state. Instead of throwing up my hands and saying, "We just don't have the ability to restore!", here, we can marvel at the restoration sites around the island and continue working on more restoration, helped along by the unique opportunity that Midway, the former military base, can offer its wildlife—a very satisfying feeling!



Current Midway Atoll NWR FWS Volunteers (from left, Kiah Walker, Naira de Gracia, Aisha Rickli-Rahman, Kristina McComber, and Keeley Hassett) complete the loading of Sustainable Coastline Hawai'i's marine debris shipping container. Photo credit: Bret Wolfe/USFWS.

Going Green on Midway: Composting Takes Off!

“Almost 90% of materials currently disposed at Midway Atoll NWR’s Dump could be composted.”

By Wieteke Holthuijzen, FOMA Board Member and past USFWS Volunteer at Midway Atoll NWR

Before coming to Midway Atoll NWR, I had a blended background, splitting my time between tackling sustainability initiatives, projects, and grants at the University of Idaho’s Sustainability Center and spending my summers doing field work and running around after birds. As soon as I came to Midway, one of my first thoughts was: where does all the waste go? My inner sustainability junkie went into full throttle and I soon found myself jumping into Midway’s Dump and sorting through and categorizing nearly a half ton of waste.

But why care about waste? Consider this: the production and consumption of food, consumer goods, and other products generates a substantial volume of material, most of which is ultimately discarded and requires collection, re-use, recycling, composting, or disposal. Waste management is especially difficult for remote communities. Due to Midway’s location and logistical

difficulties in terms of processing, packaging, and transporting materials to and from the atoll, a specialized and progressive approach to waste minimization and responsible resource is both economically sensible and environmentally responsible. Thus—the need for a waste characterization study arose.

The results were quite astonishing (and the data was, of course, quite stinky to go through). After collecting, categorizing, and weighing more than 971 pounds of “waste,” I finally sat down to do the numbers. What came out was this: together, food waste and paper/paper products accounted for nearly 90% of Midway’s waste stream. So, rather than “throw away” 90% of Midway’s waste, why not compost it and use it as a much needed soil amendment for native plant propagation?

Answer: we started composting. With limited resources, time, and staff, composting operations are limited but they have begun! Essentially, food waste and compostable paper products are

collected and treated with Effective Microorganisms (EM)—a natural-occurring blend of microbes that kickstart the decomposition process. After that, the compostable materials mature in a windrow (an elongated pile turned to assist with moisture retention, temperature regulation, and aeration). Armed with basic tools—a pitch fork, temperature probe, and pH strips—volunteers are taking huge strides as stewards for Midway, not just protecting wildlife but ensuring a sustainable habitat for all.

Currently, it is estimated that Midway Atoll NWR disposes upwards of 25 tons per year at the dump. However, the potential exists to use over 20 tons as high quality compost that would support native plant propagation and habitat management efforts. The composting program is in its infancy but Midway is on its path to a “greener” future. FOMA hopes to support sustainability initiatives on Midway Atoll NWR—and maybe someday, this Refuge will be completely self-sustaining in terms of energy production and waste management!



FOMA Funds Shadehouse for Habitat Restoration Efforts

By Linda Watters, FOMA Treasurer, and Bret Wolfe, Deputy Refuge Manager At Midway Atoll NWR

In May 2015, the Friends of Midway Atoll National Wildlife Refuge purchased a wide-span shadehouse kit for the Refuge for the purpose of expanding the on-island native plant propagation program. The kit was purchased from Fernland Agencies Horticultural and Nursery Supplies in Queensland Australia, at a total cost of \$13,070.00. This included the cost of shipping the materials from Australia to Honolulu, Hawaii. The shadehouse measures 21 meters wide by approximately 29.2 meters long, with the outer walls 2.5 meters high rising to 3.5 meters in the center. The covering is a lightweight black premium commercial grade knitted shade cloth for the roof and walls, with hinged swing doorways on each end of the structure.

The Refuge received the shipment of the shadehouse components on the September resupply ship. Since the shipment came from Australia, there was an additional cost of about \$1,500.00 to clear the shipment through customs; however, even with clearing US customs, the cost of the shadehouse and shipping was still worthwhile for the size and

type of structure, even in comparison to US-made models.

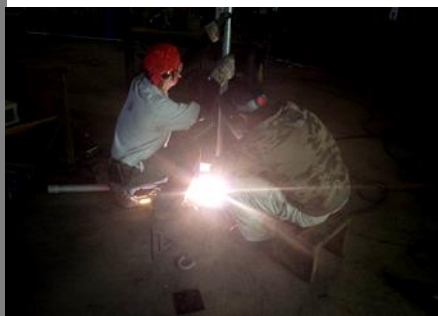
The Refuge staff decided that the best location for the shadehouse was between the Transportation Building and the Seaplane Hangar. This location was most suitable because anchoring into an existing concrete pad prevented displacing any nesting habitat. The location is centrally located and will be convenient for staff and volunteers to access. It is also located near a water main, so connecting to water will be simple.

Defense Bases Services, Inc., erected the structure over two consecutive weekends, at a cost of \$7,092.80. DBSI's lead facilities mechanic, Moo, devised an alternative solution that made the installation easier and more secure. Instead of digging holes and pouring concrete to secure the vertical poles, the poles were cut to length and steel plates were welded to the bottoms. These plates were then secured to the concrete using anchoring bolts. Not only did this preclude having to use any of the limited supply of concrete, but the entire shadehouse can be easily disassembled and moved, if desired.



For water drains in the shadehouse, Aei'2 and Moo dug three holes through the concrete and filled them with coarse gravel. Photo credit: Bret Wolfe/USFWS.

The next step will be for DBSI to connect water for the sprinkler system. The Refuge will also be purchasing tables and other accessories to outfit the shadehouse and will reuse some greenhouse supplies recently removed from Laysan Island to keep costs down. The shadehouse should be operational by December.



Counterclockwise from left: (top left) Anchai and Hatsanai weld steel plates onto the bottom of the poles; (center left) after carefully laying out the locations, the first step was to secure the 27 vertical poles onto the concrete pad with anchor bolts; (bottom left) the shade house has a door on each end so a cart can be driven through to pick up and transport plants; (right) now that the shadehouse is in place, the Refuge will build propagating tables inside and install a sprinkler system with the help of DBSI. Photo credits: Bret Wolfe/USFWS.



The newly installed Battle of Midway artwork at the Navy Memorial on Midway Atoll National Wildlife Refuge; (from left) Carlos Garcia, Bob Armbruster, and Tom Sole. Photo credit: Bret Wolfe/USFWS.

U.S. Fish and Wildlife Service and American Battle Monument Commission Restore Midway's Memorials

By Bret Wolfe, Deputy Refuge Manager at Midway Atoll NWR

2015 was an exciting year for Midway's partnership with the American Battle Monument Commission (ABMC). In August, ABMC's Tom Sole travelled to Midway with Bob Armbruster, Carlos Garcia, and Mike Gangloff to install the newly created artwork for the Navy Memorial and a new granite memorial marker. Bob Armbruster is an internationally recognized expert in the restoration of historic architectural concrete, exposed aggregate concrete, and mosaic concrete artworks. Bob and Carlos modelled the new artwork on the existing water-damaged painting of the Navy Memorial podium. The artwork, based on a series of paintings by famed aviation artist R.G. Smith, depicts a snapshot of the Battle of Midway capturing the heroic actions of U.S. naval pilots flying their Douglas SBD Dive Bombers during the pivotal few minutes that changed the course of the battle. The artwork, consisting of three concrete mosaic panels, was produced in The Armbruster Company's studio in Northbrook, IL and—considering the quality of the materials—should last for many decades.

ABMC is now working with refuge staff to develop a plan for restoration of the Navy Memorial structures and grounds. The Navy Memorial is located on the site of the former Naval Air Station administration building next

to the current location of the Bowling Alley at the intersection of Peters and Nimitz Avenues. The first memorial at this site was a bronze marker installed soon after December 7, 1941 near the Administration Building that was then standing at the location. The current memorial podium was built in 1962, by which point the Administration Building had been removed, to commemorate the 20-year anniversary of the Battle of Midway. The two 5-inch guns were also moved to the location around this time. Leading up to the famous battle, these World War I vintage naval guns were salvaged off decommissioned battleships and emplaced to support the defenses on Sand Island. Over the years, other plaques and memorial markers were added around the site. Around 1972, the large wooden albatross carving was installed at the site linking the military history with the islands wildlife inhabitants. The "Giant Gooney" stood as a central attraction at the memorial for over 40 years before termite damage took its toll necessitating its removal.

Restoration work will include stripping and repainting the podium, cleaning the brass plaques and refurbishing the pedestals, repairing and replacing the concrete sidewalks, cleaning and painting the 5-inch guns and anchor, and installing a fence around the podium. When the Navy Memorial was built, very few Bonin petrels were found on Midway. But since the eradication of rats in

the 1990s, the population of these ground-burrowing seabirds has been steadily increasing back to their historical numbers. Fencing will be buried surrounding the structures to prevent the petrels from digging under the structures and undermining their stability. Grass block pavers will also be used to create a solid area for seating during memorial events. The project should be completed in time to commemorate the 75th anniversary of the Battle of Midway.

The new granite marker was created by Rock of Ages quarry in Graniteville, VT. Mike Gangloff, a contractor who has worked with ABMC at the Punchbowl Memorial in Honolulu, prepared the marker for mounting and supervised the installation. The marker's location overlooking the Inner Harbor was chosen to commemorate the crews of the fifteen submarines lost during World War II whose last port-of-call was Midway. Men lost while in service to the U.S. Submarine Force are considered to be "On Eternal Patrol."

Special thanks to Midway volunteer Gary Nielsen, and Kriangkrai Sriprasert and Apiwat Juethong of Defense Base Services, Inc., who were instrumental in preparing the sites and helping with the actual installations.

For more information on the Navy Memorial at Midway Atoll NWR / Battle of Midway National Memorial, please visit: <https://www.abmc.gov/cemeteries-memorials/pacific/midway-memorial-marker#VkuXbberSzcz>.

Memories from the Past: Reflections on the Battle of Midway from WWII Veteran, Colonel John F. Miniclier

By John F. Miniclier, Colonel, USMC (Ret.)

I was born July 23rd, 1921 in Duluth, Minnesota. On August 4th, 1940, I enlisted as a Private in the Marine Corps and trained in boot camp at San Diego. I was in the 6th Defense Battalion. I sailed on the USS Wharton. I arrived on Sand Island, Midway Atoll on September 19th, 1941 as a Private First Class. This promotion resulted in a slight increase in pay from the original twenty-one dollars a month. We lived in tents; then after December 7th, 1941 we moved into position, and I lived along the beach in a Quonset hut buried in the sand. Wildlife was abundant, including the now extinct Laysan Rail. We stood watch as the albatross flew overhead.

In May 1942 I was assigned to a searchlight position on top of the Power Plant Command Center. The position held a good view of Sand and Eastern Island. During the Battle of Midway, June 4th, 1942, I was on a 30-foot wooden tower, which was direction control for the searchlight. I saw our airplanes take off

from Eastern Island for the battle. I counted incoming enemy airplanes and called in the numbers to HQ. One of our airplanes was shot down. The pilot bailed out but was machine-gunned in his parachute by an enemy aircraft.

Lt. Commander John Ford USNR, a famous movie director, lived with us Marines quartered between the decks of the Power Plant for ten days. He directed "The Battle of Midway" documentary film that included authentic footage of the battle.

I departed Midway Atoll May 1943 as a Sergeant. In 1944 under the V-12 college program, I attended University of Notre Dame, and later Colgate University. On April 3rd, 1946, I was commissioned as a 2nd Lieutenant. On April 4th, 1946, I married Margaret Creel. I was promoted on August 17th, 1949 to 1st Lieutenant, on July 15th, 1952 to Captain, and on January 7th, 1957 to Major. I graduated from University of Minnesota in 1961. On July 1st, 1963, I was promoted to Lieutenant Colonel, and on October 1st, 1968 to Colonel.

During active duty I served in China, Japan, the floating Battalion in the Mediterranean, Okinawa, Vietnam, and at stations in the United States. I retired from the USMC on May 1st, 1975.

My wife and I have four children: John, born on Guam, a retired Lieutenant Colonel, Army Corps of Engineers; Margaret, born in US Naval Hospital San Diego, a Nurse Practitioner in California; Gordon, born in North Carolina at Camp Lejeune, a Dentist in Virginia; and Paul, born in Virginia at Fort Belvoir, a former US Navy Diver, now a lawyer in New Orleans. There have been many highlights in my life. One of the most recent was being a guest of the U.S. Fish and Wildlife Service on June 4th, 2012 at the Battle of Midway National Memorial on Midway Atoll for the 70th Anniversary of the Battle of Midway.

Want to learn more? Col. Miniclier shares his experiences during the Battle of Midway in this video, compiled by FOMA: <https://www.youtube.com/watch?v=GAmD00QHE4Q>.



Left: The newly installed ABMC granite marker overlooking sunrise and the Inner Harbor at Midway Atoll National Wildlife Refuge/Battle of Midway National Memorial. Photo credit: Dan Clark/USFWS. **Top right:** Close-up of the mosaic artwork shows how the artists used colored glass imbedded in the concrete to create the imagery for the new Navy Memorial. Photo credit: Bret Wolfe/USFWS. **Bottom right:** Col. Miniclier shares his experiences during WWII at the 70th anniversary of the Battle of Midway at Midway Atoll. Photo credit: Pete Leary/USFWS.



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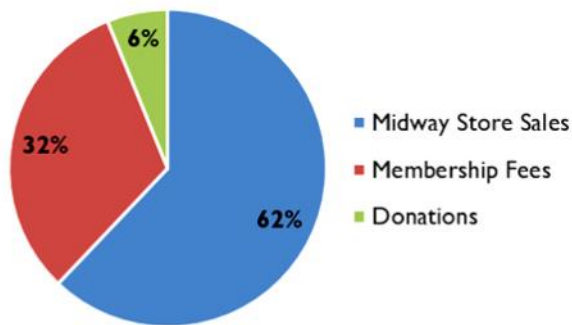
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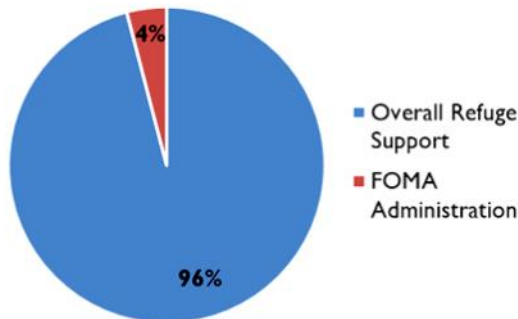
Email our President:
 Wayne Sentman
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Drop us a note:
 6506 SE Clackamas Road
 Milwaukie, OR 97267-4217

Fiscal Year 2015 Revenue



Fiscal Year 2015 Expenditures



A total of \$29,005 or 96% of expenditures went directly to helping Midway Atoll NWR in the areas of habitat restoration, wildlife monitoring, and historical preservation. Major projects funded by FOMA include a shadehouse for native plant propagation (\$13,070), professional compilation of a video of historical accounts from veterans of the Battle of Midway by (\$1,800), and meals for Albatross Census Volunteers (\$2,940).

F O M A

Who we are and why your support matters

VISION

Friends of Midway Atoll National Wildlife Refuge plays a pivotal role in the conservation and restoration of Midway's natural and historic resources through financial and volunteer support, dynamic outreach and education, effective advocacy in the support of Refuge programs, assistance in the development of an inspirational visitor program, and productive collaboration with diverse partners.

MISSION

Founded in 1999, the Friends of Midway Atoll National Wildlife Refuge is a 501(c)(3) nonprofit organization whose mission is: "To support Midway Atoll National Wildlife Refuge / Battle of Midway National Memorial in its efforts to preserve, protect, and restore the biological diversity and historic resources of Midway Atoll, while providing opportunity for wildlife-dependent recreation, education, cultural experiences, and scientific research."

VALUES

- Focus on highest priority actions
- Be a voice for our members
- Share science-based information
- Operate with integrity
- Be accountable with our actions and resources

Get
Involved!

- Join FOMA to support essential conservation and historical preservation efforts on Midway Atoll NWR and Battle of Midway National Memorial.
- Become a Midway Atoll NWR Volunteer! Check out all the opportunities at: http://www.fws.gov/refuge/Midway_Atoll/.
- Talk to your state representatives and senators about supporting the National Wildlife Refuge System. Currently, the Refuge System is funded at \$474 million. However, with an operations and maintenance backlog of \$3.5 billion and counting, the Refuge System is vastly underfunded. To learn more, visit www.RefugeAssociation.org and www.FundRefuges.org.
- Share your passion with others!

FOMA Memberships Make Perfect Holiday Gifts!

Winter is the time for reflection, a time of giving. Consider renewing your membership to FOMA—every dollar counts and helps to preserve Midway Atoll National Wildlife Refuge and Battle of Midway National Memorial.

Looking for a meaningful gift for the holidays? Buy a membership for a friend, family member, or loved one! Remember, sharing is caring! Pass along your love and passion for Midway this holiday season.

Joining is easy. Simply visit our [website](#), select your contribution level, and proceed through PayPal to complete your transaction. Or print, fill out, and send the membership form on the next page along with your membership fee.

Why give to FOMA? From a small, core group of 4 members in 1999, the membership of FOMA has grown to over 460 members across the

nation, past and present.

Over the past 16 years, FOMA has contributed greatly to the conservation and protection of Midway's unique biological, historical, and cultural resources. FOMA has aided needed efforts on the ground and in the field, including more than \$10,000 to support the translocation of the world's most endangered duck, the Laysan Duck (*Anas laysanensis*), to new refugia on Midway Atoll NWR. FOMA continues to support volunteer efforts, which are crucial to ongoing wildlife monitoring and habitat management work, by purchasing bikes for transportation and meals for the Laysan and Black-footed Albatross census counters each winter.

FOMA is part of a network of



Wieteke Holthuijzen/USFWS

non-profit "Friends" organizations that support NWRs just like Midway Atoll NWR. These organizations are vital to supporting the continued management of operations of the nation's most expansive system of protected lands and waters, which covers over 568 million acres. Contribute to our nation's greatest legacy: conservation.

Your membership supports crucial ecological conservation and historic preservation of Midway Atoll NWR's unique resources—*join or renew today!*



Wieteke Holthuijzen/USFWS

Friends of Midway Atoll NWR MEMBERSHIP APPLICATION

Please fill out this application and mail (with check) to:
Friends of Midway Atoll NWR
6506 SE Clackamas Road
Milwaukie, OR 97267-4217

Or visit our website at <http://www.friendsofmidway.org/membership/membership.htm> and follow the instructions to apply for or renew your membership.

Name _____

Address _____

City _____

State/Province _____

Zip _____

Country _____

Email _____

Phone _____

Membership Level:

- WWII Veteran.....**Honorary**
- Veteran.....\$20.00
- Student.....\$25.00
- Individual.....\$35.00
- Family.....\$50.00
- Contributor.....\$100.00
- Supporter.....\$250.00 or more
- Life.....\$1,500.00
- Donation.....\$_____

- New Membership
- Membership Renewal
- Donation



*All contributions are tax deductible.
Please make checks payable to:
FOMA or Friends of Midway Atoll NWR*