

GOONEY GAZETTE II

Friends of Midway Atoll NWR

Summer 2016 Edition



GOONEY GAZETTE II

FEATURES

10

Midway Love

By Rachel Neville and Wieteke Holthuijzen

Hawai'i artist Caren Loebel-Fried and FOMA proudly unveil new art inspired by Midway Atoll.

12

65 and Counting... Wisdom Returns!

By Ann Bell

Wisdom, a Laysan Albatross at least 65 years old, laid an egg November 28, 2015, at Midway Atoll NWR. Now, many months later, she is mother to a new chick named Kūkini, making Wisdom the world's oldest breeding bird in the wild.

16

Midway Murals Restored

By Ann Bell and Lou Ann Speulda-Drews

Pacific Aviation Museum Pearl Harbor moves forward with stabilizing all the murals from the Midway Atoll Theatre with the help of volunteers from the Kaneohe Bay Navy Information Operations Detachment.

COLUMNS & DEPARTMENTS

3 Note from the FOMA President

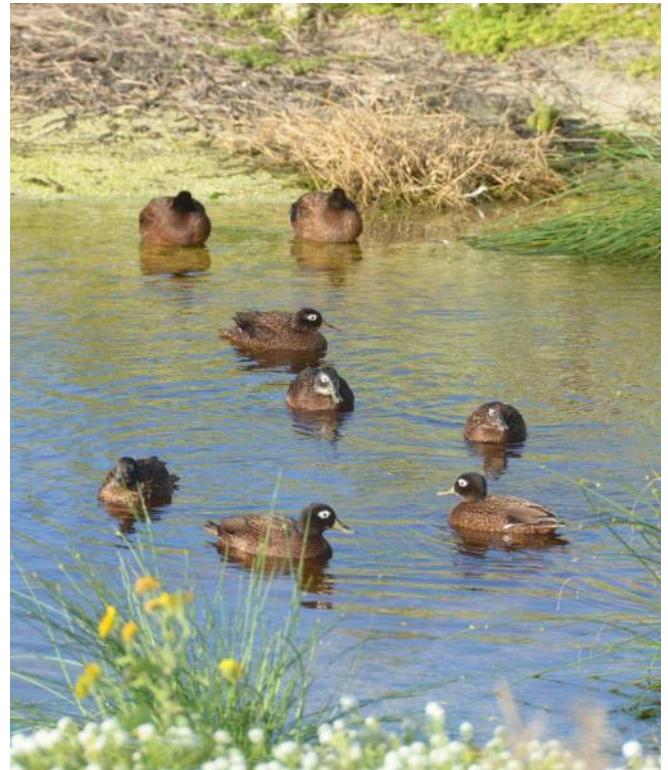
4 Refuge Manager's Corner

6 Awards and Recognitions

9 Photos: Then and Now

23 Blast from the Past: Stories from Midway

24 Updates from FOMA



Laysan Ducks on Midway Atoll NWR by Rob Shallenberger



Friends of Midway Atoll NWR (FOMA)

Battle of Midway National Memorial

Our 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."

FRONT COVER: One of the most familiar and loved sights of Midway Atoll NWR / Battle of Midway National Memorial: an adult Laysan Albatross (*Phoebastria immutabilis*) tending to its chick. Rebounding from a severe population decline in the 1990s and early 2000s, Laysan Albatross are among the few albatross species in the world that are relatively stable. Nearly 70% of the world's Laysan Albatross breed on Midway each year; learn more about this species, and many more, in this edition of the Gooney Gazette II. Photo by Rob Shallenberger.

Friends of Midway Atoll NWR

OFFICERS

President: Wayne Sentman

Vice President: Rachel Neville

Treasurer: Linda Watters

Secretary: Michael Logan

DIRECTORS

Fern Duvall

Robert C. Fields

Wieteke Holthuijzen

Peggy Miniclier

Gary Nielsen

Teya Penniman

Rob Shallenberger

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.

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

CONTACT US

Join us online at

www.FriendsOfMidway.org

Find us on Facebook

"Friends Of Midway Atoll NWR"

Email our President

Wayne Sentman

naturefinder@mac.com

Drop us a note

6506 SE Clackamas Road

Milwaukie, OR 97267-4217



Left and top right: Wayne Sentman / SFWS. Bottom right: National Geographic.

FROM THE PRESIDENT

Dear Friends: I hope you all enjoy reading the 2016 Summer edition of the Gooney Gazette II. As this edition reaches you, it will be just a few weeks after we have celebrated the 74th anniversary of the Battle of Midway. At this time, the U.S. Fish and Wildlife Service (USFWS) is exploring ways to celebrate the upcoming 75th Battle of Midway Anniversary both with a small service out on Midway Atoll NWR and a "virtual" event that should be viewable by audiences across the country. As soon as we have more information to share we will be sure to let you know ways that you may participate in next year's events.

Since the start of the year, FOMA has held two public events (in Honolulu, O'ahu and Volcano, Hawai'i) attended by over 200 people. These events showcased the artwork created by FOMA member and Hawai'i artist Caren Loebel-Fried highlighting the uniqueness of the natural and military history of Midway Atoll. For those of you that could not join us, but would like to purchase some of the "swag" that was available as a result of that art, please visit our new "online store" by clicking [here](http://www.friendsofmidway.org/merchandise/) (or visit <http://www.friendsofmidway.org/merchandise/>).

As we near the end of June, this year's cohort of albatross chicks on Midway Atoll NWR are beginning to fledge out to sea. All have benefitted from the many years of habitat restoration, and the more recent lead remediation work that has been carried out by USFWS staff, contractors, and volunteers.

I know you will enjoy the stories found inside these pages. Also, please share this Gooney Gazette II with all that you think might be interested in the work you all are helping to accomplish out at Midway Atoll NWR.

Sincerely,

Wayne Sentman, FOMA President (Midway Atoll 1999–2002)

MEET BOB PEYTON

Midway Atoll NWR welcomes a new Refuge Manager.



Black-footed Albatross by Rob Shallenberger

BOB'S BIO

Robert Peyton, a career Service employee with over 30 years of Federal employment, 27 of them with the U.S. Fish and Wildlife Service, entered on duty at Midway Atoll NWR on January 24, 2016.

Bob looks forward to once again living in the Pacific Islands, having served as a Sergeant in the U.S. Marine Corps for 4 years at Kaneohe Marine Corp Air Station. Bob has worked for the U.S. Fish and Wildlife Service since 1989, including assignments as a Wildlife Biologist at the Arthur R. Marshall Loxahatchee National Wildlife Refuge in Boynton Beach, Florida; Fisheries Biologist at both the Leadville National Fish Hatchery in Leadville, Colorado, and Garrison Dam National Fish Hatchery in Riverdale, North Dakota; Deputy Project Leader and Project Leader at the Moosehorn National Wildlife Refuge in Baring, Maine. Bob has a Bachelor of Science in Fish & Wildlife Management and Fisheries Management from New Mexico State University, Las Cruces, New Mexico.

Between 2007 and 2015, Bob served as the Assistant Refuge Supervisor, Youth Coordinator, and Heavy Equipment Coordinator for Region I in Portland, Oregon. In that capacity, he had programmatic oversight responsibility for the entire Region, including Midway Atoll NWR. In 2012, Bob was detailed to the Pacific Islands for several months, including significant time in Papahānaumokuākea Marine National Monument, giving him firsthand experience with the Monuments partners, programs, projects, and operations. Bob has also developed an extensive network within the Service that he will bring to bear on Midway issues.

REFUGE MANAGER'S CORNER

Although it has only been four months since I took over the reins from Dan Clark, I volunteered to take on this position with great honor and respect for Midway Atoll National Wildlife Refuge. Over the last eight years, I have had the distinct pleasure of working with the last three managers, physically working on the island supporting various operations, and supported Midway from a Regional and National level.

Relations and partnerships are built on trust and communications. Although I've been briefed on the history and issues of Midway, there is nothing more eye-opening than actually being here on the ground living it. During past visits there was always something new and exciting and as you well know, there is never a dull moment. This seems to be a common theme of all those that have visited Midway.. I also feel there isn't a soul who has ever visited Midway that does not have a desire to preserve its profoundly rich history, cultural significance and wildlife resources. I feel very strongly about honoring all three so we may pass it on to future generations.

I look forward to working with all of Midway's partners, stakeholders, friends, and family to build a brighter, stronger more resilient future for Midway Atoll NWR / Battle of Midway National Memorial.

Bob can be reached at: bob_peyton@fws.gov or 808-954-4818.

Bringing the Refuge to the People

Making connections between the public and nature.

By Ann Bell (USFWS)

Over the course of the spring semester an important stewardship connection has been made by students at both Punahou and Kamehameha schools in Hawai'i. Kamehameha students met with Papahānaumokuākea Marine National Monument staff and FWS Volunteer Barbara Mayer to prepare for a virtual field trip to Midway Atoll NWR. But first the students had to apply and were interviewed for volunteer positions on Midway and then they simulated a Laysan Albatross chick survey. These activities culminated in a live video chat with FWS Midway Volunteers Aisha Rickli-Rahman and Kamehameha graduate Keeley Hassett that included a bird-banding demonstration. The exciting news is that these students paid their experience forward by hosting a live video session with their same level grade class at Punahou with a focus on Laysan Albatrosses and marine debris. On May 12th, 2016, the classes met to finish off their respective school years with a beach cleanup.

Albatross Barf Creates a Synergy of Positive Action!

The distribution of albatross boluses to teachers is not an entirely new concept; however, with the growing popularity of social media, and due to the 1,000 boluses received last year from Midway Atoll National Wildlife Refuge the popularity of the program motivated the Service to evaluate its effectiveness.

Based on teachers who received boluses between fall 2015 and spring 2016, 5,000 participants were reached. These participants have also gone on to spend over 7,700 hours on activities related to the bolus dissection, such as participating in beach clean ups and in one case, seeking for legislators to ban Styrofoam. For example, check-out: <http://bit.ly/1WFxfwr>.

The almost daily bolus requests have led to the establishment of a web page at http://www.fws.gov/refuge/Midway_Atoll/Community/Bolus.html and a Google Docs form that is automatically entered in to an Excel file. This form will be hosted on a new page within the Midway Atoll Refuge website once Midway's bolus stock has been resupplied by this year's fledging albatrosses.

This past winter, University Researcher Dr. David Hyrenbach expressed interest in having students calculate the diversity and

FWS Volunteers Aisha Ricki-Rahman (left) and Keeley Hassett (right) answer students' questions and band a Laysan Albatross during a live video connection from Midway Atoll NWR to Kamehameha School's fourth-grade class on O'ahu. Photo credit: USFWS.



Students in Hawai'i participated in a beach clean-up and hands-on learning experience about plastic ingestion by seabirds, specifically via albatross species on Midway Atoll NWR, which in turn instilled a sense of pride and duty towards protecting their natural resources. Photo credit: USFWS.

quantity of plastics. Upon further collaborative planning, the Bolus Distribution Program is now developing a Citizen Scientist project in Hawai'i. Thanks to FWS employee Amy Olliffe, the Service received a Connecting Kids with Nature FWS Region I grant to fund the initial step in making this a reality.

Whatever it takes!

Midway's Ann Humphrey is celebrated as Volunteer of the Year—an award most deserved!

By Tracey Adams (NWRA) and Wieteke Holthuijzen (FOMA)

Ann Humphrey's enthusiasm for and commitment to Midway Atoll National Wildlife Refuge has earned her the 2016 Volunteer of the Year Award from the National Wildlife Refuge Association (NWRA).

Because of its remote location at the northwest end of the Papahānaumokuākea Marine National Monument (about 1,300 miles northwest of Honolulu, Hawai'i), volunteering at Midway requires a move to the island for the duration of one's volunteer service tour. Since 2007, Humphrey has completed four service tours of various lengths. Between March 2014 and August 2015, she gave more than 3,700 hours of volunteer service to the refuge.

Humphrey has excelled at improving Midway's volunteer program. In 2014, she proactively identified existing volunteer program deficiencies and opportunities, and then worked with refuge management to modify the existing program. At Humphrey's suggestion, the program was modified to include hiring volunteers to serve six-month tours, in contrast to the original system which had volunteers serve between two weeks and one month. This revision has led to the development of long-term committed volunteers who grow to be technically

savvy and help further achieve the refuge's mission.

A key turning point in the program was Humphrey's development of a new system to advertise for, recruit, interview, and select the best candidates to volunteer on Midway Atoll. Under her direction, the resulting 20-person volunteer corps has provided more than 26,500 hours of service to Midway Atoll since March 2014. This has saved the government hundreds of thousands of dollars in professional services and ensured the refuge's conservation mission remains fulfilled.

In the absence of a wildlife biologist on staff, Humphrey assumed the lead in biological data collection and protocol development and refining. She revised and improved the written Laysan and Black-footed Albatross data collection and Laysan Duck captive care protocols by working with international experts. Humphrey's success in biological resource management recently earned her a full-time position. She competed for and was offered the Midway Atoll National Wildlife Refuge biological science technician position in September 2015. Now as a U.S. Fish and Wildlife Service employee, Humphrey continues to advance the Refuge System's conservation efforts.

As a volunteer who had the good fortune to work with Ann Humphrey on Midway, I was inspired by her sense of curiosity and wonder about all natural life. Moreover, as I continued to work with her, she instilled a sense of respect, duty, hard work, and deep-rooted passion in everyone around her. On behalf of FOMA, we heartily congratulate Ann Humphrey! You are an integral part of this Refuge and Midway Atoll NWR is very lucky to have someone as committed and compassionate as you.

Photo credits: top: Hob Osterlund / USFWS; bottom left: USFWS.





ON THE ROAD TO RECOVERY

Tristram's Storm-petrel chicks documented at Midway Atoll National Wildlife Refuge.

By Ann Bell and Amy Olliffe (USFWS)

Tristram's Storm-petrels (*Oceanodroma tristrami*), a seabird species formerly extirpated from Midway Atoll, are now rearing chicks at Midway Atoll National Wildlife Refuge, part of Papahānaumokuākea Marine National Monument. This is the first documented evidence of the species successfully nesting on the Refuge. At the start of February 2016, adults were heard calling in flight. Further investigation by U.S. Fish and Wildlife Volunteer David Dow observed adults entering and exiting 12 different burrows. Seabird researchers Dan Rapp and Sarah Youngren with Conservation Metrics Inc. used a wireless infrared burrow camera in the active area, and detected the presence of three healthy chicks on March 22, 2016. The confirmed chick count increased to four for the Refuge after a nest was discovered on Eastern Island on April 24, 2016.

“Now that Midway Atoll Refuge is completely rat-free, these chicks are safe from the threat of rats preying on their eggs or newly hatched chicks,” noted Refuge Manager, Robert Peyton. “Broadcasting calls through a social attraction station positioned in habitat we restored with plantings of kāwelu (native bunch grass; *Eragrostis variabilis*) have been part of our on-going management practices for years. To be able to know that work paid

off to help this vulnerable species survive is very encouraging.”

Tristram's Storm-petrels breed in the Northwestern Hawaiian Islands and similar latitude islands of the Japanese archipelago. They are active in breeding colonies only at night, and nest in the ground in difficult-to-detect burrows. At sea, this relatively small 2.5-ounce solid black bird is also rarely observed, and thus the distance of their foraging range from the nest site is wholly unknown. The International Union for Conservation of Nature (IUCN) status of this species is Near Threatened, due to their limited breeding range. Because of their cryptic nature, they are exceedingly hard to study, hampering global population estimates and the assessment of the conservation status of the species.

Tristram's Storm-petrels were thought to breed on Midway Atoll NWR prior to rat introduction (1943) and adults have been observed on Midway since that time. In 1996, a petrel with a brood patch was documented on Sand Island at Midway Atoll NWR, but no egg or chick was ever documented. Between 1980–1981, a male adult in breeding condition was found, but no egg or chick documented. From 2006–2013, a social attraction station with bird calls was used during the winter and spring months.

Tristram's Storm-petrels may have nested throughout the Hawaiian archipelago prior to the introduction of non-native mammals and habitat degradation. With this recent discovery, Tristram's Storm-petrels now nest throughout the entire Northwestern Hawaiian Islands within Papahānaumokuākea Marine National Monument. These well-protected sites constitute the most important breeding areas for this species left on earth. However, continued expansion of this colony on Midway Atoll NWR may be slow and difficult until invasive house mice are removed. Tristram's Storm-petrels are the smallest and likely most sensitive of Midway's native petrel species and are far more vulnerable to mice than Bonin Petrels (*Pterodroma hypoleuca*) or Wedge-tailed Shearwaters (*Puffinus pacificus*).



Photo credits: top: adult Tristram's Storm-petrel, photo by USFWS; bottom left: Tristram's Storm-petrel chick on Tern Island in Hawaiian Islands National Wildlife Refuge, photo by USFWS.

THE EXPLOSION OF THE DECADE... AND RISING!



The Papahānaumokuākea Marine National Monument's sandy islands make excellent nesting habitat for 99% of the world's entire population of Bonin Petrels.

By Ann Bell (USFWS) and Wieteke Holthuijzen (FOMA)

Since rats were eradicated from Midway Atoll NWR in 1995, seabird populations have indeed responded. Over the last decade, the most notable species increase is evident via the cloud swarms of Bonin Petrels (*Pterodroma hypoleuca*) present in the evening sky as they come in from the sea to make landfall near their carefully dug-out burrow. During the course of the last century, the Bonin Petrel population of Midway Atoll fluctuated wildly. During the 1930s, it was estimated there were over 500,000 petrels. Then, following the accidental introduction of rats in 1943, the population plummeted to fewer than 5,000 in the 1980s. Following the rat eradication, Bonin Petrels on the Refuge increased to 135,000 breeding pairs (based on a 2008 study). The prediction of a steep steady climb seems right on course. However, despite a large breeding population, little is known about this species.

BONIN PETREL FACTS

- Life span: >15 years
- Wingspan: 63-71 cm (25-28 in)
- Breeding ecology: 1 egg/clutch, 1 egg/year; burrowing seabird, philopatric, chicks hatch in March and fledge by June
- Breeds in the Northwestern Hawaiian Islands, Volcano and Bonin Islands; fossils on Moloka'i, O'ahu, and Kaua'i

Bonin Petrels
Sand Island, Midway Atoll

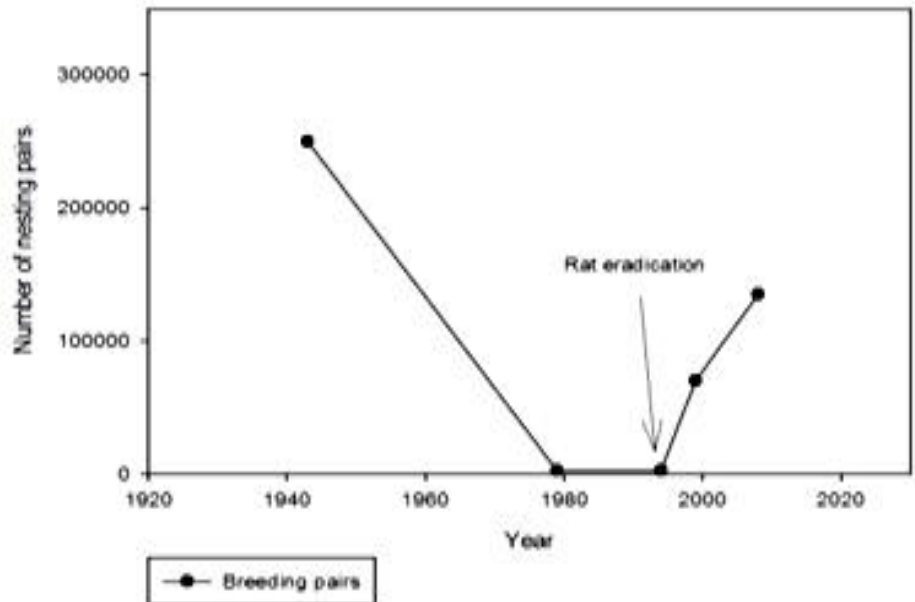


Photo credit: Bonin Petrels by Rob Shallenberger.

MIDWAY... THEN AND NOW



Southwest Sand Island, Midway Atoll NWR: prior to invasive species removal



Southwest Sand Island, Midway Atoll NWR: after invasive species removal and native species outplanting.



Decades of propagating and outplanting plant species such as Kāwelu (*Eragrostis variabilis*—a beautiful native bunch grass) and 'Āweoweo (*Chenopodium oahuense*) in concert with suppression, removal, and systematic treatment of invasive non-native plant species has allowed nature to create prime nesting seabird habitat on much of Midway Atoll NWR, as well as Kure Atoll and Laysan Island (part of the Papahānaumokuākea Marine National Monument). Native plants provide shade and shelter; moreover, acres of low-growing native plants and open space have increased desirable nest sites and safe landing and take-off areas where fields of corn-stalk high introduced Golden Crown-beard (*Verbesina encelioides*) once dominated. The reproductive success rate for Black-footed and Laysan Albatross has almost doubled in study plots on both Sand and Eastern Islands on Midway Atoll NWR. In addition to controlling some of the most invasive plant species, toxic lead-based paint removal from buildings and surrounding soil at Midway Atoll NWR is saving hundreds of chicks from poisoning each year.

Photographic summary of Golden Crown-beard removal efforts on Eastern Island, Midway Atoll NWR over time. Top: June 6, 2008; middle: November 4, 2011; bottom: February 4, 2014. Photo credits: Forest and Kim Starr, Starr Environmental, Inc. and Daniel Clark / USFWS.



Left: Clipper House on September 30, 2000. Right: Clipper House on May 27, 2016. A poignant reminder of what we have accomplished guided by Naupaka's (*Scaevola taccada*) ability to conquer; the Clipper House is a great permanent marker for showing yesterday and today's dune height and acres restored (USFWS).

MIDWAY LOVE

Artist Caren Loebel-Fried and FOMA
unveil new Midway art.

By Rachel Neville and Wieteke Holthuijzen (FOMA)

The magic of Midway Atoll is how it brings people from all backgrounds together. Those already familiar with the atoll through its military history gain an appreciation for the perseverance and beauty of its native prolific bird and diverse marine life. Those introduced to the atoll through its wildlife feel more intimately connected with the men and women who lived, fought, and died there during World War II and after. As we all know (and feel), it is a very special place. This was indeed apparent on February 18, 2016 in Honolulu, Hawai'i and on March 3, 2016 in Volcano, Hawai'i when FOMA held two art unveiling events to celebrate the history and wildlife of Midway Atoll National Wildlife Refuge / Battle of Midway National Memorial.

Caren Loebel-Fried, an artist specializing in block prints, had created a print celebrating all the elements that make Midway a meaningful place for so many people, brought together with a loving pair of Laysan Albatross. She generously offered to donate two signed giclée prints for FOMA to auction off as a fundraiser.

The print itself is extraordinary in its detail. The helmet featured in the middle left of the piece is based on the actual helmet worn by Col. John F. Miniclier USMC, a Battle of Midway veteran who was stationed in the radio tower when Midway was being bombed by Japanese planes in 1942. As an aside, Col. Miniclier is also the father of FOMA Board Member Peggy Miniclier. The hands holding Kāwelu (native bunchgrass; *Eragrostis variabilis*) symbolize the current ecological restoration efforts at Midway. A traditional Hawaiian sailing canoe is featured in the top right corner to recognize the importance of the Northwest Hawaiian Islands (Papahānaumokuākea) to Hawaiian history and the practice of traditional navigation.

Inspired by Caren's generous offer, FOMA held two events to bring people together to celebrate this special place. Caren also allowed FOMA to use her art on items such as t-shirts, water bottles, and canvas bags, all of which were very popular at both events. In Honolulu, FOMA President Wayne Sentman gave a photographic tour of the human and natural history of the atoll with his excellent collection of photos from every chapter of Midway's history. In Volcano, FOMA Board Member, biologist, and former Midway Atoll NWR Refuge Manager Rob Shallenberger gave a talk that



focused on albatross biology. Both of these introductory talks were followed by Caren Loebel-Fried, who discussed her inspiration for her art.

Both events were full, and there was standing room only at the Volcano event. There were at least 100 people at each event and with donations and items from the sale FOMA generated more than \$3,000! Many thanks to all who were able to attend the events, mahalo to the Volcano Art Center for allowing FOMA to use their facilities for free and of course mahalo nui loa (many thanks) to Caren Loebel-Fried for generously donating her artwork and her time to help organize the events and design FOMA's new product line. Find out more about Caren Loebel-Fried at www.carenloebelfried.com or the Volcano Art Center at <http://volcanoartcenter.org>.

If you want a little "Magic Of Midway" for yourself, stay tuned! FOMA is working out a new system, but will soon be emailing you a catalog with the invitation to order your own Midway merchandise! All purchases support ecological restoration and historical preservation efforts on Midway Atoll NWR.



ORDER YOUR MIDWAY GEAR NOW!

Featuring artwork by Caren Loebel-Fried, choose from a variety of authentic Midway gear, including t-shirts, water bottles, reusable shopping bags, and posters! Order soon, as some items are available in limited quantities.

ORDER HERE

<http://www.friendsofmidway.org/merchandise/>

PHOTOS

Top: Celebrating the unveiling of Caren Loebel-Fried's *Midway* piece at the Honolulu event on February 18th. Photo credit: Wayne Sentman.

Middle Right: It's finally here—new Midway gear! T-shirts, water bottles, tote bags, and posters galore!

Middle Left: At the unveiling event at Volcano, there was standing room only! FOMA Board Member Rob Shallenberger gave a talk that focused on albatross biology; this was followed by Caren Loebel-Fried, who discussed her inspiration for her art. Photo credit: Jesse Tunis.

Bottom Left: Artist Caren Loebel-Fried speaks about her experience on Midway and her inspiration for her artwork at the Volcano unveiling event. Photo credit: Teya Penniman.



65 and counting...

At least 65 years old, Wisdom hatches another healthy chick at Midway Atoll National Wildlife Refuge!

By Ann Bell (USFWS)

The oldest known breeding, banded bird in the wild, a Laysan Albatross named Wisdom – at least 65 years old – is a mother again at Midway Atoll National Wildlife Refuge, part of Papahānaumokuākea Marine National Monument. The chick was observed still coming out of its shell on February 1, 2016 and days later was named Kūkini, which is a Hawaiian word for messenger. Wisdom’s mate had been on the nest since January 20, 2016 when he took over incubation duties while Wisdom headed out to sea. Shortly after Wisdom arrived, Wisdom’s mate (Akeakamai, a Hawaiian word that means a love of wisdom, seeker after knowledge, philosopher, scientist, scholar) was on the march towards the shoreline and immediately took flight in search of food.

“Wisdom is an iconic symbol of inspiration and hope,” noted Robert Peyton, Refuge Manager. “From a scientific perspective, albatrosses are a critical indicator species for the world’s oceans that sustain millions of human beings as well. In the case of Wisdom, she is breaking longevity records of previously banded birds by at least a decade. With over a million albatross on Midway Atoll NWR alone, this shows just how much is left to learn about the natural world around us.”

Wisdom has raised at least eight chicks since 2006, and as many as 40 in her lifetime. Just as astonishing, she has likely flown over three million miles since she was first tagged on Midway Atoll in 1956.

“That is up to six trips from the Earth to the Moon and back again,” noted Bruce Peterjohn, Chief of the Patuxent Wildlife Research Center’s National Bird Banding Laboratory. “What is also miraculous is that biologist Chandler Robbins, who banded her as a breeding adult in 1956 on Midway Atoll, sighted her 46 years later near the same nesting location.” Today, at the age of 97, Robbins still comes to work on occasion, doing what he loves to do.

Wisdom’s chick is not the only bird in town! Albatrosses arrive on Midway Atoll NWR in late November by the hundreds of thousands. In December 2015, U.S. Fish and Wildlife Service volunteers counted 470,000 active nests across the entire atoll—since each nest represents two adults, the total breeding population at Midway is 940,000. A low estimate of Midway’s overall population, this number does not account for the non-breeders present in the colony, resting, searching for a mate, and practicing their courtship display skills.

These numbers indicate Midway Atoll NWR is responsible for maintaining healthy nesting habitat for the world’s largest albatross nesting colony. While side-stepping around nests on every square foot of available island surface, a team of Service volunteers and staff monitor 13 species of birds and accomplish hands-on management of nesting habitat by out-planting native plants while suppressing aggressive and invasive plant species that once displaced nesting habitat over 40% of the atoll.

In the photo below (taken April 30th, 2016), Kūkini’s legs are now strong enough to stand and the chick is stretching in preparation for flight.



More of Kūkini...

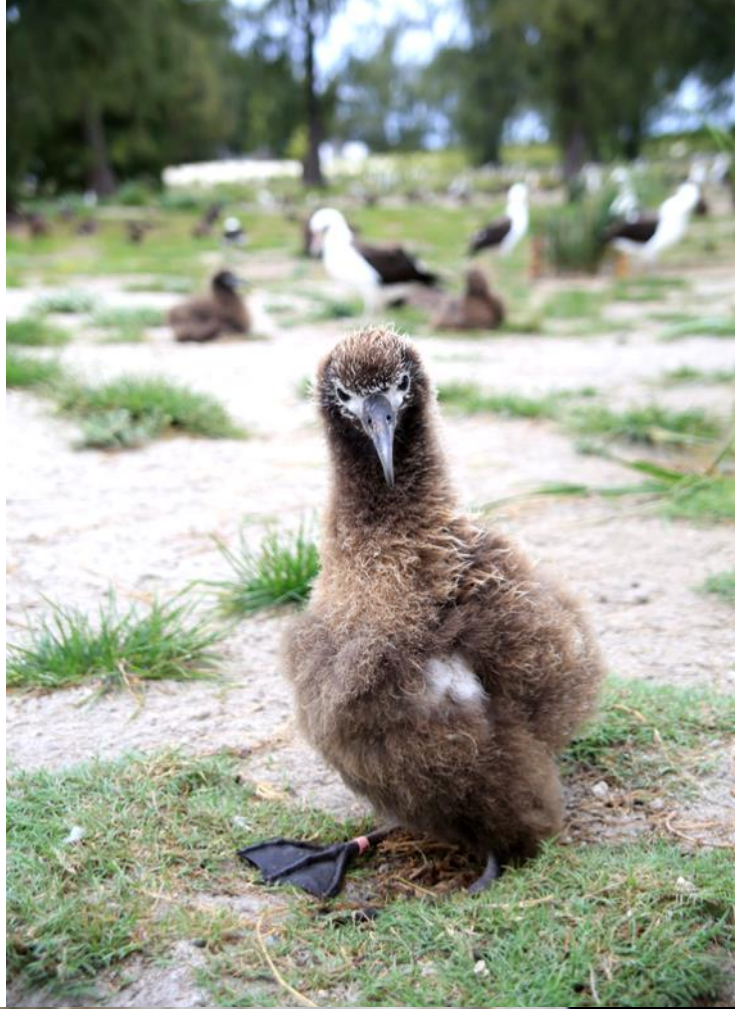
Previous page | Top: On November 19, 2015, Wisdom returned to Midway Atoll NWR and was observed with her mate on November 21, 2015 Photo credit: Kiah Walker / USFWS. **Bottom left:** Photo credit: USFWS.

Current page | Right: Kūkini at 3 months old—appears to be well-fed and is still going strong! Photo credit: USFWS. **Bottom:** Now that Kūkini is old enough, USFWS Refuge staff and volunteers put a temporary plastic band on the chick's leg to keep track of the chick; this band will eventually be replaced with a permanent adult band when Kūkini is about 4 months old. Photo credit: USFWS

Did you know?

Midway Atoll NWR itself boasts the largest nesting colonies of Laysan and Black-footed Albatrosses in the world, while Papahānaumokuākea Marine National Monument as a whole is home to 97% of the world's Laysan Albatross and almost 80% of Black-footed Albatross.

In addition to albatross species, millions of seabirds, migratory birds, and terrestrial birds representing more than 20 different species, including Great Frigatebirds, Red-footed Boobies, Brown Noddies, and Sooty Terns depend on the highly productive waters of Midway Atoll NWR and the Papahānaumokuākea Marine National Monument for breeding and foraging year-round—a testament to the importance of these resources.





USEFWS

SPOTLIGHT ON CHANDLER ROBBINS

The Man Who Banded Wisdom

When I started banding albatrosses in 1956, we knew they could live a long time, at least 25 years, maybe 30; but we did not realize the aluminum bands we were using would be so corroded by sand and salt water that most would fall off in 20 years.

We started adding replacement bands when we recaptured old birds, but most of the rebanded birds were not recaptured so we lost their identification. Fortunately I recaptured Wisdom twice and other banders rebanded her two other times, so for the first time we had her nearly complete record. I was really excited when I caught her in 2002 and found she was still alive and nesting.

Wisdom and I have been having a personal race in recent years to see which of us will return each year. Last winter, Wisdom disappeared at sea before her egg hatched, so I thought I was the winner, but she came back to Midway again this winter and successfully hatched her egg so we are still tied, me at 97 years and she at least 65.



MEET WISDOM - THE OLDEST KNOWN - ALBATROSS



- 1956 Biologist Chandler Robbins bands Wisdom
- 1959 Hawaii becomes a state
- 1969 Moon landing
- 1976 Bicentennial of the U.S.
- 1981 MTV premieres
- 1997 First Harry Potter book released
- 2007 iPhone debuts
- 2016 Centennial of the Migratory Bird Treaty

EVERY BIRD SHOULD LIVE THIS LONG
PROTECT THEIR HABITAT — PROTECT BIRDS

[HTTP://WWW.FWS.GOV/BIRDS/MBTREATY100/](http://www.fws.gov/birds/mbtreaty100/)



Wisdom Prevails!

By Ann Bell (USFWS)

In 1956, Midway Atoll was a bustling U.S. Naval Air Station supporting thousands of military personnel their families and contractors. It was a time when Sand Island had far more paved surfaces and human beings than it did nesting seabirds. Due to the intense military activity, there was also a focus to document the albatross population when a bird biologist by the name of Chandler Robbins banded Wisdom while she was sitting on a nest. We will never know how old she was at the time, but she had to be at least 5 years old to be reproducing.

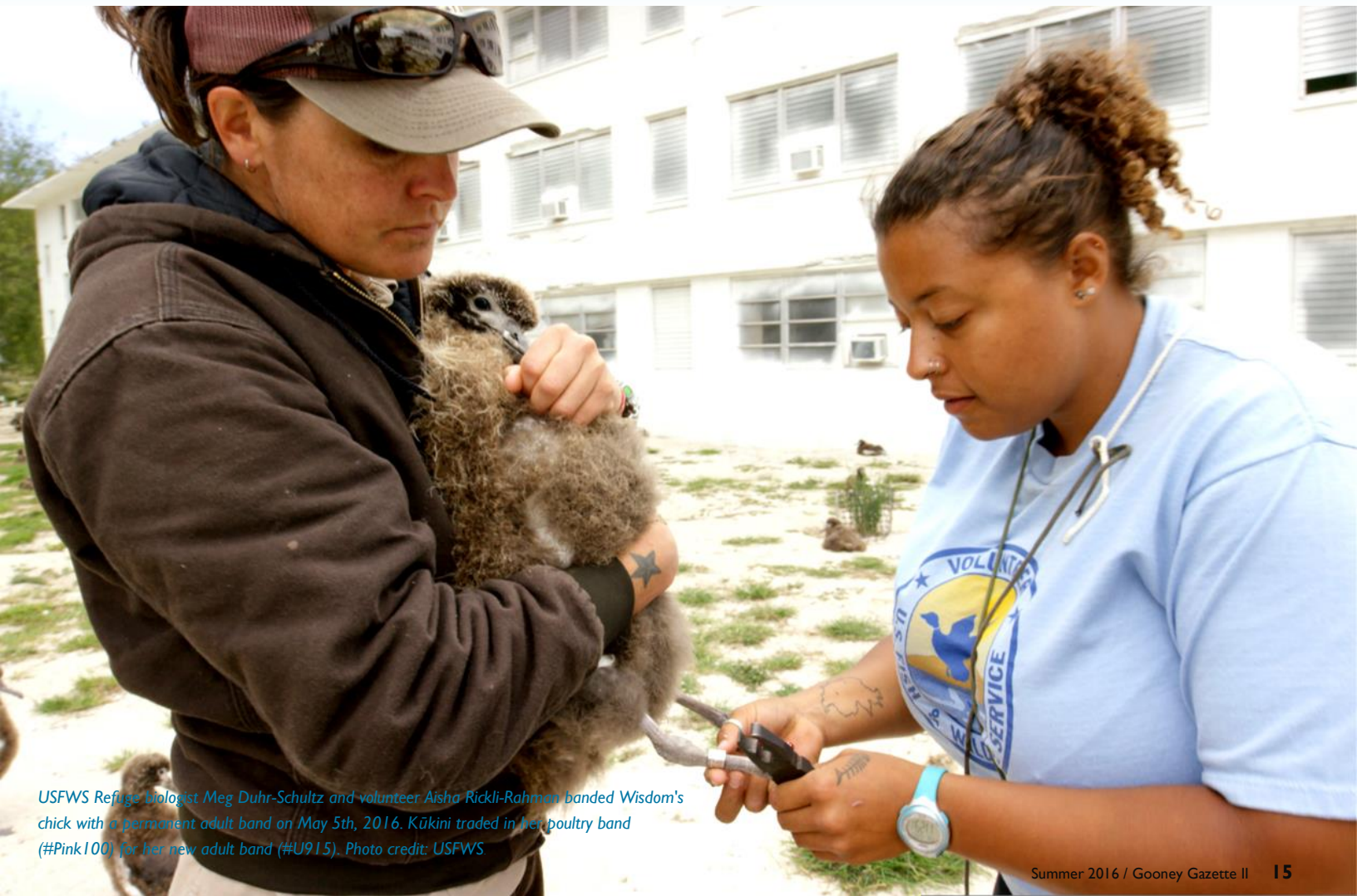
Seven years after the ownership of Midway Atoll changes from a Naval Air Facility to a National Wildlife Refuge, Robbins returns to Midway to record sighted birds with bands and continue to band albatross. After returning home to Maryland, he began to trace back the band numbers he had sighted and discovered he banded this exact bird near the same nest site where he banded her some 46 years earlier on December 10, 1956.

Fast forward to five years later in 2006 when the U.S. Fish and Wildlife Service staff on Midway emailed Robbins to inquire about an approximate location of the old bird that Robbins sighted in 2002. Albatross have strong nest site fidelity instincts; once they find a mate and nest on the same island where they were reared they become fixated on their exact nest location and rarely veer too far from where they nested before. Robbins relayed the information to refuge staff on Midway Atoll that the bird was nesting behind the old Navy Bravo Barracks. Volunteers were sent to do a search and upon finding her. Refuge Biologist John Klavitter removed the metal band

that Robbins had given her in 2002 to make room for the new red Z333 auxiliary band. Inspired by New Zealand's "Grandma" who at time was the oldest known albatross in the world, Klavitter appropriately named Midway's oldest albatross, "Wisdom."

And where can you find both of these legends today? At the age of 97, Chandler Robbins is working as an emeritus researcher at the U.S. Geological Survey Bird Banding Laboratory in Patuxent, Maryland doing what he loves to do. Wisdom is foraging the North Pacific seas, but occasionally comes home to feed her growing chick, Kūkini, meaning "messenger."

Wisdom has become an iconic image that inspires hope in the human spirit and elevates awareness that seabirds are a key indicator species of the health of the Pacific Ocean. This past fall when Wisdom returned to Midway on November 19, 2015 she resonated with millions of non-traditional audiences. The news print of the Midway Atoll Fish and Wildlife story went viral, being picked up by over 300 newspapers across the world, including ESPN talk radio shows, BBC, Al Jazeera, ABC, NBC, CNN, and more. When the National Wildlife Refuge System Facebook administrator noted the initial viral spread, he created a FWS Facebook post on Monday November 30, 2015. This single post prompted a fast moving epic number of reaches (second highest in FWS Refuge Facebook post history) including exponentially increasing a record-number of Facebook likes and shares.



USFWS Refuge Biologist Meg Duhr-Schultz and volunteer Aisha Rickli-Rahman banded Wisdom's chick with a permanent adult band on May 5th, 2016. Kūkini traded in her poultry band (#Pink100) for her new adult band (#U915). Photo credit: USFWS

Midway Murals Restored

By Ann Bell and Lou Ann Speulda-Drews
(USFWS)

Back in July 2013, the U.S. Fish and Wildlife Service took on a major historic preservation effort by removing and restoring the six wall-sized original paintings that formerly hung in a World War II-era theater on Midway Atoll National Wildlife Refuge. Partnering with the Pacific Aviation Museum Pearl Harbor, the USFWS agreed to lend the murals for at least four years, thereby allowing the murals to receive proper preservation treatments and making them available for the general public to enjoy for the first time in their history.

Now, nearly three years later, Pacific Aviation Museum Pearl Harbor has moved forward to stabilize all of the murals. They found an enthusiastic and dedicated crew of volunteers to aid with this important work, specifically, the Navy Information Operations Detachment crew (NIOD, Kaneohe Bay), also known as the “Crow’s Nest.” Armed with cotton balls and brushes, these volunteers helped studiously for well over a month to clean the murals inch by inch. In addition, the volunteers built the framework that was formerly completely termite-ridden. Within a month, the murals will be hung on the new framework and will soon be available for viewing to the public.

Alice Garrett, along with Midway Atoll NWR Refuge Manager Bob Peyton and Historian Lou Ann Speulda-Drews, assured funding was made available quickly through a cooperative contract. Speulda-Drews coordinated much of the work on the ground, spending time in Honolulu to provide support and encouragement as well as attending meetings and documenting the process.

The 8’x12’ murals depict scenes symbolic of U.S. involvement in World War II and covered the walls in the theatre on the atoll. They were painted by Victor Nels Solander, 123rd U.S. Naval Construction Battalion, whose Seabee unit was stationed on Midway from June 1, 1944 to December 16, 1945. Solander was awarded a \$100.00 war bond and his work received many accolades at the time.

Although these murals are not on the National Register of Historic Places, they have both artistic and historic value and carry great symbolism to veterans and anyone who has been fortunate enough to walk into the historic theatre on Midway Atoll. In the post-WWII era, the theatre was the

At the Pacific Aviation Museum Pearl Harbor, a volunteer from the Navy Information Operations Detachment crew (NIOD, Kaneohe Bay) cleans one of Solander’s murals that features a gleaming torpedo being carefully loaded into a submarine. Photo credit: USFWS



“The history of World War II is written not just in words but in images. And that includes artwork that was painted in the far-flung outposts of the war. These need to be preserved for future generations.”

- Burl Burlingame

entertainment mecca for thousands of military members and their families once stationed there. The USFWS is proud to lead this effort, but it would not have been possible without the skill of Defense Base Services, Inc., who removed and crated the murals, and the support and commitment of Pacific Aviation Museum Pearl Harbor. “The history of World War II is written not just in words but in images. And that includes artwork that was painted in the far-flung outposts of the war. These need to be preserved for future generations,” notes Pacific Aviation Museum Pearl Harbor historian, Burl Burlingame. The murals will enhance the museum’s current Battle of Midway exhibits; the murals will be officially open for view to the public on June 3, 2016.

The Friends of Midway Atoll would like to commend the U.S. Fish and Wildlife Service for their commitment to preserving the history of Midway Atoll NWR and the Battle of Midway National Monument. Moreover, we would like to extend a huge thank you to the Pacific Aviation Museum Pearl Harbor and all the Navy volunteers who helped complete this important mural restoration project: Eric Ellenz, Courtney Evers, Allie Kent, Melanie Johnson, Sara Schmitt, Lacey Pierson, Serge Bretous, Jame Kightlinger, Brian Madariaga, Zack Adams, Aaron Arnold, Michelle Reimers, Arnold Hori, and Darlene Laster. Thank you! Mahalo!



MORE OF MIDWAY'S MURALS

Top: These murals originally decorated the walls of the World War II era theatre on Midway Atoll. Photo credit: Joseph Van Os.

Right: Navy Information Operations Detachment crew (NIOD, Kaneohe Bay) help to restore the Midway murals, inch by inch, at the Pacific Aviation Museum Pearl Harbor. Photo credit: USFWS.



PAINTING HISTORY

Solander's murals from Midway capture a unique aspect of American history.

By Burl Burlingame (Historian, Pacific Aviation Museum Pearl Harbor)

The history of World War II is written not just in words, but in images. That includes artwork that was painted in the far-flung outposts of the war, using materials borrowed, scrounged and occasionally liberated, painted on the walls and ceilings of temporary structures, built just for the duration. The comforting images painted in these outposts reminded soldiers and sailors of their home life, of their dreams, and of the mission at hand.

These artworks offer a valuable insight as to what existed during the conflict, as well as being examples of popular folk art of the era. Virtually none still exist, lost to time and the elements.

The six murals hanging here were painted during World War II, and decorated the Navy Theater at Midway Atoll. The theater was built by the 123rd Naval Construction Battalion — the unit famous as the can-do “Seabees” — and the insignia of the 123rd NCB were three horses racing neck and neck, a symbol of the urgency of war. The murals were painted by Victor Nels Solander of A Company, 2nd Platoon, a Missoula, Montana native who joined the Seabees in his 30s and returned home after the war.

The murals depict scenes lifted out of the widely scattered reaches of the Pacific War:

- a gleaming, golden torpedo being carefully loaded into a submarine
- an amphibious invasion of a South Pacific island, with Army soldiers dashing out of Navy LCVP landing craft into a hail of gunfire
- a South Dakota-class battleship steaming along under leaden skies
- a bustling carrier deck filled with SBD Dauntless dive bombers being prepared to sortie
- a Seabee motorized crane painted in Navy gray, lifting a load of pierced-steel planking (PSP) runway deckings
- an ELCO PT boat dashing at high speed on a calm sea. During the 1960s, somebody added the letters PT109 to the mural, honoring President John F. Kennedy's wartime service

Using whatever military paints he could scrounge, Solander painted the 8'x12' murals on the canvas-like back of Masonite board, in turn attached

to thin plywood. Over the six decades since the war, the plywood was chewed up by termites and the cardboard-like Masonite turned brittle. When the war ended, the 123rd NCB ceased to exist, subsumed into another construction brigade, and their quickly built structures across the Pacific crumbled over the years. As the Seabee-built Theater at Midway began to deteriorate, the staff at Midway National Wildlife Refuge / Battle of Midway National Memorial took responsibility for moving the murals for safekeeping and public visibility.

The U.S. Fish and Wildlife Service and their non-profit association, Friends of Midway Atoll National Wildlife Refuge, were anxious to preserve the murals from the crumbling theater, and turned to the expertise of Pacific Aviation Museum Pearl Harbor's curatorial department. After careful removal and shipping to Pearl Harbor, the USFWS loaned the murals to the museum for stabilization and display.

Stabilization included removal of rotted wood, and the flimsy pieces that remained were attached to steel structural forms and treated for insects. The painting surfaces were carefully cleaned by hand and coated with a benign preservative.

Other Points of Interest

The Navy Theater on Midway Atoll was originally built as a gymnasium with large windows, but during construction the role was altered to theater, and the holes intended for windows were filled with Solander's murals.

As for the artist, Nels Solander, he did not have much time to enjoy his creations. The end of the war found Solander and the 123rd NCB on Calicoan Island near Samar in the Philippines, a tropical paradise largely untouched by the war.

The end came quickly. “Remember the night when we came home from the movies and got the word that the Japanese wanted to surrender?” recalled the 123rd's yearbook. “We did not think of new duty that night. Down over the air strip rockets were bursting in air and in our own Ship's Service the beer was free. This was the beginning of the end for the three horses. For the first time we began to believe that we might get home some day ...”

Who was Nels Solander?

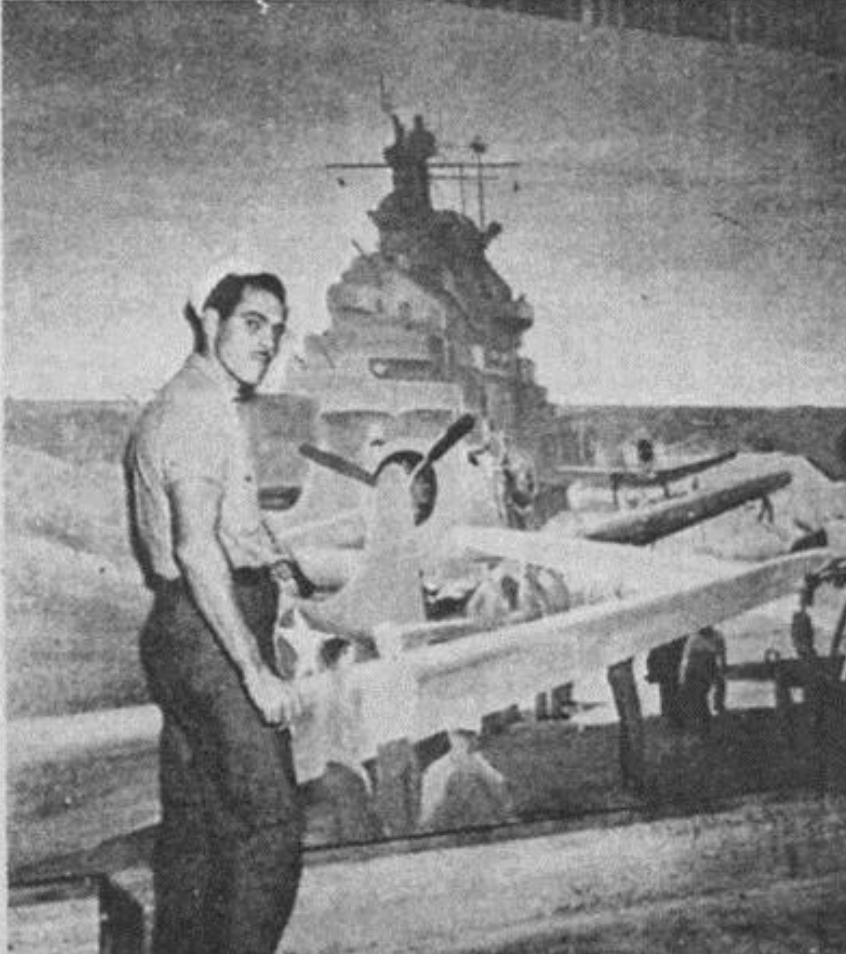
Victor Nils Solander was born on October 14, 1912, in Missoula, Montana. Not much information is available about his youth, except that he had five siblings. He would have been 30 years old in 1942, too old to serve in an active duty role. However, the Seabees took older, experienced men for the largely non-combat roles. Consequently, Solander served with the 123rd USNCB (Naval Construction Battalion).

After being commissioned at Peary in the summer of 1943, the 123rd USNCB received additional training at Endicott, Parks, and Hueneme, shipping out in March 1944. In April, the Battalion was at Moanalua Ridge, Pearl Harbor. On April 1, 1944, part of the outfit was working at Midway Atoll and by June 1, 1944, the entire 123rd was stationed on that atoll. Sometime during December 1944, the Battalion left Midway Atoll and returned to Barber's Point, Oahu, then shipped out for the Philippines April 26, 1945, arriving at Samar on May 20, 1945. The 123rd was in Samar in September after the war ended.

Fifty men were left to finish projects on Midway Atoll instead of shipping to Oahu in December 1944. Solander may have been one of the men that stayed on Midway to complete the murals.

Solander died on October 7th, 1994.

Information credit: Burl Burlingame / Pacific Aviation Museum Pearl Harbor



On June 3, 2016, the Pacific Aviation Museum Pearl Harbor unveiled the restored Midway Murals to the public! Special honorary congratulations go to Sue Schulmiester, Midway on-island DBSI crew, Bob Peyton, Lou Ann Speulda-Drews, Anan Raymond, and Nick Valentine who worked for years on the project and most recently Alice Garrett with support from Kim Trust, Kevin Forester, and again Lou Ann Speulda-Drews, who stepped up to the plate again to make sure the murals went up in time for the 74th Battle of Midway Anniversary. Board Member Rachel Neville spoke on behalf of FOMA at the event; FOMA provided funds to stabilize the first two murals and provided food for the reception. Photo credit: Pacific Aviation Museum Pearl Harbor (USFWS Ann Bell pictured above).

A LOOK AT MIDWAY...

52 YEARS AGO

Memories from a not-too-distant past on the atoll.

By Bob Fields, FOMA Board Member

Edward J. (Ed) O'Neill was a biologist and refuge manager in the National Wildlife Refuge System for over 30 years, in addition to his work with other state and federal agencies, making up his 40-year career. Ed was a biologist at Klamath Basin Refuge Complex when I arrived there as Project Leader in 1974. He was instrumental in introducing me to the people I needed to meet and work with to make a large, complex assortment of 5 Refuges work smoothly.

Ed retired in 1982 and shortly began to put together the story of his career in the wildlife profession. In 1999, he published his memoirs in a book entitled *From Behind The Blue Goose Sign* published by Graphic Press in Klamath Falls, Oregon. It is an interesting read and contains much about the National Wildlife Refuge System and the people within it. The following information about Ed's trip to Midway is taken from the book (pages 340-353).

In the winter of 1964 Ed was tapped for an 85-day detail to work on Midway. He was accompanied by Chandler Robbins, Chief of Migratory Non-Game Bird Studies, at the Patuxent Wildlife Research Center, in Laurel, Maryland. Also on the trip was Gene Kridler, an early Administrator of the Refuges in Hawaii and the Pacific Islands. As a side note, on an earlier trip to Midway in 1956, Chandler Robbins placed a leg band on an albatross which is still returning annually to Midway to nest—we all know her now as Wisdom!

Midway was not yet part of the National Wildlife Refuge System in 1964. It was established as an overlay refuge on the Midway Naval Air Facility in 1988. In 1997 the Navy relinquished all control of Midway and it became the full responsibility of the Fish and Wildlife Service (FWS). An article in the January 8, 1965 issue of the Honolulu Advertiser News noted a unique problem that the Navy was having with albatross (gooney birds) at Midway and was presented as follows:

"After an eight year stand-off, the Navy finally is ready to move against the gooney birds on Midway Island."

The Navy called it an "Anti-Hazard Program" and it would start the following Monday; in plain words, to be disposed (gooney-napped, in other words).

Biologists from the Fish and Wildlife Service and the Interior Department studied the gooney problem eight years before making recommendations on how to keep them from flying into aircraft. The Navy says it is only a

miracle that no fatalities have occurred as a result of more than 2,100 "strikes" involving the clumsy birds and airplanes since 1958. Lest birdlovers get alarmed, the Navy emphasized that it was not going to wipe out the gooney birds. Only "selected birds nesting near the runways [would] be collected for humane disposal", [said] the Navy."

Below are excerpts from Ed's book about his time on Midway:

"At my time the two square mile island had been a Naval airport for 29 years and no one could honestly doubt the seriousness and potential problem of the gooney bird strike or that through the years the Navy hadn't acted in good faith trying about everything practical, impractical, and the scientific suggested.

"The birds weren't buying change. Some 30,000 nesting birds were eliminated in a 1958 Navy endeavor. The news aroused the ire of bird enthusiasts far and wide with loads of incoming mail to Washington. Flares, dummy "scarecrow" figures, harassment of all kinds, even leveling to eliminate land thermals and updrafts, all failed.

"In 1957, the then Bureau of Sport Fisheries and Wildlife (FWS) was called upon to assist in some sort of management investigation. Five years later it was decided a systematic, detailed removal of only paired birds would be tried before covering over their nesting sites.

"In reality, the 8-12 foot wingspan gooney had been involved in as much as \$27,000 in aircraft damage yearly. The 3,000 servicemen and their families on Midway were quite tolerant. After all, since this is a territorial possession of the U.S., the captain has full jurisdiction of laws regarding the birds too. By island law, sailors were liable to court martial for molesting any of the wildlife.

"How to proceed? Studies and knowledge gathered by a number of people assigned to study the birds found the females would come ashore, claim a nesting site, lay the first egg and leave on a feeding foray while the male stood guard and incubated. At that stage the birds on the nest were seized and treated with carbon monoxide from covered dump trucks with the engine exhaust piped in. Five trucks and 20 pick-up men were assigned. In time, the bird's mate would return and occupy the nest. By systematically working the runway apron and selecting remaining nesters it was believed the area could be paved over thus restricting nesters some distance from the active runway aprons next nesting season. We were supposed to just supervise the elimination as outlined.

“Equipped with heavy gauntlet gloves, workers grabbed each bird at the nest and deftly thrust it through a small door to be gassed. We assisted and monitored the operation from January 10 to the 30th. In the first six days, 4,600 gooneys were disposed of. An estimated 17,500 was the final tally at the end of the 20-day operation.

“On January 14th, the rains came, the garbage [bins] were now full of birds for disposal, but heavy seas prevented safe passage through the narrow breached opening in the coral reef and access to open water. Most birds were transported about 15 to 18 miles out and dumped. The currents could be a surprise. Twice dead birds managed to float back to Midway’s sandy beach.

“On January 17th, it was decided to dispose of one pile of dead birds by wetting with gasoline and burning. Chief Brown said the sanitation and pest control people on the base were raising objection to the smell and flies.

“Next morning one pile of dead was torched and by early afternoon the smoldering pile was extinguished because the stifling odor was drifting towards living quarters. They had just smoldered mostly.

“January 19th, the storms passed and disposal was in full operation again. I accompanied the garbage crew seaward to dispose of the five-day-old load of dead birds. It was no small task, getting the carcasses pried loose and free from the bay doors. We were all about exhausted down to the last man aboard working in the hot sun.

“One night, three gooneys were shoved into the hallway of our barracks. There they clicked bills, whistled and carried on until we went and ousted them. The next night, 215 birds were found clubbed to death near the entrance of the enlisted mens’ quarters. One young recruit was suspected, forthwith cited and shipped back to Honolulu.

While on Midway, Ed and his colleagues were involved with collecting many skinned specimens, eggs, insects, and other material for the National Museum, universities, etc., including live Great Frigatebirds for Vanderbilt University flight studies. After the disposal phase of their assignment was completed Ed, Robbins and Kridler began other biological work.

“At this point, we turned in earnest to Robbins’ research work with the birds in established study areas. The next 30 days we banded and read albatross bands in all the study areas. With headlamps we even recorded and banded at night! Using a short pole equipped with a wire hook we even caught scampering birds that tried to avoid us. In one study area, my notes indicated we recorded 864 bands and banded 356 new Laysan Albatross in one day.

“On February 11th, we banded our first Red-footed Booby, a bird with a mighty powerful grip and serrated bill. He started upwind towards me so I grabbed one wing and gently swung him around to grasp the neck. Whoops! He grabbed me first and it took the combined effort of Robbins and Kridler to pry the rascal loose. I carry the mark to this day.

The biologists also took a 1,000 mile voyage aboard Coast Guard buoy-tender *Plaintree* throughout the Northwest Hawaiian Islands, collecting data on habitat conditions, counting birds, sea turtles and monk seals. Summing up his observations and opinions, Ed concluded the chapter on Midway in the following manner:

“The Service has no regular access except through the aid of the Navy or Coast Guard. There are definite human hazards present. Parties with yachts or large boats can ‘discover’ some of these islands and party or disrupt the wildlife virtually undetected or opposed. The status of the islands, at the time we were there, was questionable due to the provisions of the Hawaiian Statehood Act, which placed discretion of their transfer under the U.S. Bureau of the Budget. The birdlife and vegetation are unique and limited, not to mention fragile. So critical is habitat and space on the nine islands stair-stepped across the Pacific and adhered to so tenaciously by the birds, one island could never supplant another. Albatross prefer only four islands. The nesting order among seven major species has year-round nesting with seasonal synchronized arrival and departure for 2.5 million terns, albatross and others. The balance is critical, almost delicate. Joyce Kilmer wrote that only God could make a tree. I say, only God could make the order and uniqueness of these islands.”

Ed’s time at Midway and the Northwestern Hawaiian Islands (part of the Papahānaumokuākea Marine National Monument) made a profound impact on him. He frequently would talk about this experience. He was a keen observer and a good record keeper. Other chapters in his book relate experience at other National Wildlife Refuges and other agencies wildlife lands. We can be grateful for the work he and others did in those early years. We can also be justly proud of the work that was done to make Midway a National Wildlife Refuge and for the modern management techniques in place so that disposal of albatross as reported by Ed and others no longer takes place.

Photo descriptions

Previous page: two Laysan Albatrosses displaying courtship behavior, possibly on Midway Atoll, Pacific Ocean Biological Survey Program, 1961-1973. Photo credit: Smithsonian Institution Archives.

Current page photo description: a Black-footed Albatross with egg on Midway Atoll, Pacific Ocean Biological Survey Program, 1961-1973. Photo credit: Smithsonian Institution Archives.



TROUBLE IN PARADISE?

Photo by George Shuklin



Scientists document non-native mice attacking nesting albatrosses at Midway Atoll National Wildlife Refuge.

By U.S. Fish and Wildlife Service

Among the more than 480,000 nests of the world's largest albatross colony, U.S. Fish and Wildlife Service biologists and volunteers recently discovered house mice attacking adult nesting Laysan and Black-footed albatrosses at Midway Atoll National Wildlife Refuge, part of Papahānaumokuākea Marine National Monument. Mice attacks have been documented at other islands, on other seabirds, but never at Midway on the large, adult albatrosses. An albatross stands almost three feet tall with a wingspan of more than six feet and has a deeply ingrained drive to steadfastly incubate its egg through adversity. This evolutionary strategy is successful for withstanding fierce North Pacific winter weather and aggressive neighboring birds, but leaves the albatross extremely vulnerable to non-native, predatory rodents. As Midway's albatrosses faithfully incubate, many are now being bitten and preyed upon by non-native mice during the night – causing debilitating injuries and often death.

This phenomenon was first observed at the end of December 2015 when Refuge scientists and volunteers found open wounds on the backs, necks, and heads of nesting albatrosses in a small area on Sand Island, Midway Atoll NWR. Using automatic cameras, live traps, and laboratory examination of bite marks on mortally wounded birds, scientists rapidly identified the cause of the injuries as attacking non-native house mice. Since then, more than 300 nesting adult albatrosses are known to have been attacked and the mouse aggression has spread to two additional areas in the seabird colony. Forty-eight bitten birds are known to have died and at least forty-six nests have been abandoned. Death is believed to come from infection in the open wounds, as well as severe stress to the birds as mice chew at them persistently throughout the night. "Wisdom," the world's oldest known wild bird, is nesting roughly three-quarters of a mile away, far from the mice-attack zones.

"The Service is working against the clock to determine how many birds have been attacked, what the rate of spread is, and how to stop the attacks," reported Bob Peyton, Manager of Midway Atoll National Wildlife Refuge. "Albatrosses lay only one egg a season and those eggs are hatching now. Our short-term objective is to eliminate mouse predation on the albatrosses before other mice learn this behavior and attack and kill more adults and chicks."

House mice (*Mus musculus*) are not native to Midway Atoll NWR and were inadvertently introduced to the atoll decades ago. Mice coexisted amongst the millions of seabirds that nest on the ground, in burrows, and in trees at Midway without obvious conflict most years. Refuge managers and scientists are uncertain what created the current dramatic and grisly change in mouse behavior but ground-nesting seabirds have not evolved behaviors to protect themselves from rodent predation.

"I have been working in the Pacific for over 25 years and this is an entirely new and debilitating phenomenon that I haven't witnessed before," noted Dr. Thierry Work a Wildlife Disease Specialist from the U.S. Geological Survey Wildlife Health Center.

Refuge managers are working with a team of rodent control and wildlife experts to develop and deploy strategies to suppress mouse population levels in order to stop the attacks or minimize their incidence. Now, with thousands of albatross chicks on Midway, the Service and partners are determined to preserve and maintain suitable predator-free habitat where albatross parents can adequately protect and raise their chicks.



Photo by USFWS

Dr. Thierry Work, a Wildlife Disease Specialist from the U.S. Geological Survey Wildlife Health Center, conducts a necropsy on an adult Laysan Albatross to determine the cause of its death.

BLAST FROM THE PAST

Per Dianne McClintock: "We were [on Midway Atoll] in 1969 during the Nixon/Thieu conference. My mother, Judy Sides, AKA artist, Dy'ans, painted the Laysan Albatross in oil and it was presented to President Nixon. She was also put in charge of redecorating the Officer's Club in honor of this visit."



NAVAL AIDE TO THE PRESIDENT

September 16, 1969

Dear Judy,

I was absolutely speechless when I opened the package that Al gave me at Midway last Wednesday night and saw the beautiful oil painting. It certainly wasn't necessary for you to get anything for me, but it was so thoughtful and I do appreciate it -- thank you very much.

My surprise stop with Governor Reagan was a quick one, but it brought back memories of all the very nice people we met on our last trip there. I was sorry to miss a lot of those that had been transferred and I'm sorry that we caught you by surprise and missed you. Al and I had a real nice chat, however. He said that you all would be headed this way soon. I'll look forward to seeing you in D. C.

My family and I have just moved into a new home and the painting, with its beautiful frame, was such an impressive addition to this home.

Thank you again and best wishes,

Sincerely,

Chuck Larson

Mrs. Judith Sides
U. S. Naval Station
FPO San Francisco 96614



THE WHITE HOUSE
WASHINGTON

July 1, 1969

PERSONAL

Dear Mrs. Sides:

It was very kind and generous of you to give Commander Larson your handsome painting of the Laysan Albatross for me. It has been delivered safely to me here at the White House and will serve as a reminder of our fruitful meeting with President Thieu.

I also want to express my gratitude to you and Lieutenant Sides for your efforts in making the Officers Club such a pleasant setting for our Conference. Your hospitality was very beneficial to the success of our visit.

With my best wishes,

Sincerely,

Richard Nixon

Mrs. Judith Ann Sides
United States Naval Station
Midway Island



PROJECTS AND PROPOSALS

FOMA is busy on several fronts, from basic communications operations to big projects. In May, FOMA co-presented a proposal to USFWS staff on Midway Atoll NWR to analyze possibilities for renewable energy systems. For this proposal, we worked very closely with Jake Freeman and David Sellers from Hawaii Off-Grid architecture and engineering (HIOFFGRID.com; photo above shows Freeman [left] and Sellers [right] on Palmyra Atoll NWR; photo by Jay Freis / Nature Conservancy). Both Freeman and Sellers have substantial experience in sustainable energy production; most recently, they completed a \$1.2 million project on Palmyra Atoll NWR (about 1,000 miles south of Hawaii) which will reduce the use of fossil fuels on the atoll by 95%. Remote and isolated, Palmyra Atoll shares many of the same challenges as Midway Atoll. Whereas Palmyra Atoll NWR previously transported approximately 27,000 gallons of fuel annually to power the atoll, Midway Atoll NWR currently transports and uses more than 100,000 gallons of non-renewable fossil fuels annually to provide power to Midway Atoll infrastructure and transportation vehicles, maintain the Henderson Airfield, and refuel planes arriving to and departing from the atoll. Together, FOMA and Freeman and Sellers created a proposal to develop and design a renewable energy system based on data collected from the atoll by assessing current infrastructure and energy demands. The ultimate goal of this project is to support and expand renewable energy installations on Midway, thereby increasing self-sufficiency, reducing reliance upon non-renewable energy sources, decreasing USFWS capital expenditure on fuel purchase and transportation, and curbing greenhouse gas emissions. As one of the most expensive Refuges in the National Wildlife Refuge System, Midway Atoll also represents a huge opportunity to free-up funds currently allocated towards expensive fuel purchases and transportation and instead investing funds towards meaningful, on-the-ground work to protect and preserve Midway Atoll. We look forward to receiving feedback on the proposal and working with the USFWS to create more sustainable operations on Midway Atoll.

ONLINE STORE AND MIDWAY MERCHANDISE

In addition, FOMA worked hard for several months to plan and execute two public artwork unveiling events, showcasing Hawai'i artist Caren Loebel-Fried's newest work: *Midway*. Several FOMA Board members and officers were present at these events, sharing their experience and knowledge of Midway Atoll, and, in the process, sharing the story of the atoll and their passion with others. FOMA continues to collaborate with Caren by developing a new line of Midway Atoll merchandise and creating an online store. If you were

FOMA UPDATE

A brief overview of what we're working on: proposals, an online store, advocacy, and more!

unable to attend the Midway unveiling events, check out our prototype online store at: <http://goo.gl/forms/HGZOPhKZut>. At this time, our online store is essentially an (e)mail order form; by the end of 2016, we hope to have an official online store on our updated website with an expanded array of Midway merchandise. In the meantime, order your new Midway Atoll gear! All profits go to supporting on-the-ground work on Midway Atoll NWR! Also, consider adopting an albatross—a great gift for friends or family! Back in 2015, FOMA teamed up with the Oceanic Society to create an “Adopt-an-Albatross” program where funds go towards counteracting the impacts of marine plastic pollution on Laysan Albatross and Black-footed Albatross populations on Midway and Kure Atolls via habitat restoration and research. For more information, visit: <http://www.oceanicsociety.org/adopt/adopt-an-albatross>.

ADVOCACY

FOMA also took on advocacy work this year, notably writing to President Barack Obama about expanding the Papahānaumokuākea Marine National Monument (northwest of the Main Hawaiian Islands) to 200 nautical miles. Spanning over 140,000 square miles (an area larger than all the country's National Parks combined), this Marine National Monument is the largest contiguous fully protected conservation area under the U.S. flag, and one of the largest marine conservation areas in the world. The extensive coral reefs, islands, and atolls found throughout Papahānaumokuākea are home to over 7,000 marine species, one quarter of which are found only in the Hawaiian Archipelago. Midway Atoll NWR itself boasts the largest nesting colonies of Laysan and Black-footed albatrosses in the world, while Papahānaumokuā-kea as a whole is home to 97% of the world's Laysan Albatross and almost 80% of Black-footed Albatross. Part of the larger grassroots movement “Expand Papahānaumokuākea,” FOMA thoroughly supports this expansion. But why expand the monument? Consider this: the myriad of seamounts and underwater banks found just beyond the current boundaries of Papahānaumokuākea feature a wide variety of habitats and geographic features, ranging from massive (Please go to p. 25)

Native Hawaiian Proposal for Papahānaumokuākea Marine National Monument Expansion



(Continued from p. 24) underwater caves and crevices to major coral reef ecosystems with a variety of intermingled marine habitats that together support rich and unique biodiversity.

MORE FOMA UPDATES—COMMUNICATIONS

You may have noticed increased communications from FOMA. At the end of 2015, FOMA began the transition to a new database system to keep track of FOMA members and supporters (contacts on our email list). We are in the process of learning how the new system works, but along with our updated website, we are working to send out regular updates, blog posts, and more to our members and supporters. For daily updates, information, and stories about Midway Atoll NWR, be sure to “Like” and follow our page on Facebook (“Friends of Midway Atoll NWR”).

NEW REFUGE MANAGER, NEW GOALS

As FOMA bids a reluctant farewell to Midway Atoll NWR’s previous Refuge Manager Daniel Clark and Deputy Refuge Manager Bret Wolfe, we also warmly welcome the new Refuge Manager, Bob Peyton. Having worked in the Papahānaumokuākea Marine National Monument prior to his placement on Midway Atoll NWR, Bob brings a wealth of experience and knowledge. As Bob settles into day-to-day business on the atoll, FOMA continues to strengthen its relationship with the Refuge and determine how to best support ecological restoration and historical preservation

projects. Currently, FOMA’s highest priority is working with Bob to determine priority projects on Midway Atoll NWR where FOMA can assist. Recently, FOMA purchased a much-needed shadehouse for native plant propagation, measuring about 21 meters wide by 30 meters long. FOMA seeks to invest in similar projects that directly address needed infrastructure, equipment, or support on the atoll that pertains to the protection and preservation of its significant historical, natural, and cultural resources. We are also working with the Refuge to determine strategies to further support and bolster the Midway Atoll NWR’s volunteer program. In the process, we have started conversations with Bob to create an additional volunteer position that would function as a dual FOMA/USFWS volunteer. Although the position description is in a draft form, we hope that this new position will include ecological restoration work or more specialized biology-related work (such as Laysan Duck support) as well as outreach, education, and communications work that complements existing partnerships with USFWS (in the form of photography/photojournalism, news updates, blog posts, education/outreach to schools in Hawai’i and US mainland, and more). We look forward to collaborating closely with Midway Atoll’s USFWS staff and assisting their work through fundraising and sharing the story of Midway with our members and supporters.

Have other ideas for projects, collaborations, and partnerships? Inquire with us at FriendsMidway@gmail.com.



Albatross bolus in hand (left); collected boluses in a marine debris basket (right).
Photo credit: Angela Hansen / USFWS.

Midway Memories: Baby Birds, Boluses, and Boat Trips

By Angela Hansen, past Midway Atoll NWR Volunteer

Ruffling feathers

The North wind shifts the landscape

And wings fill the sky

One year ago I was on Midway Atoll NWR and I often find myself thinking back on my time there. At 3 months in, my biking muscles had gotten strong, my hiking boots were feeling really comfortably worn-in, my hand and face tan was already setting in...

I threw my all into collecting albatross boluses for school programs. It was light work, it got me out in the Refuge off the beaten path, and I got to meet so many more albatrosses. I found lots of plastic figurines around nest cups as I systematically walked grid patterns through the colony

collecting hundreds of boluses. I would even spend hours doing this on the weekend and after work because it was so fun!

Every time I got to go on the boat to Spit or Eastern Islands I was thrilled. For me wandering over the fields of blooming Nohu (*Tribulus cistoides*) was magical. On a warm day the wonderful fragrance of the delicate yellow flowers wafts over the landscape. It is intoxicating! I enjoyed every second while I collected boluses, surveyed for Monk Seals, or checked seeps.

Oh Midway, how I wish I could come and visit for the weekend! The two things I miss most are the people you grow to love, and the beach that for 6 months takes your breath away every single day, rain or shine.

LEND A HAND

Volunteer Opportunities with FOMA and USFWS



BECOME A FOMA VOLUNTEER

FOMA is a volunteer-run non-profit organization; this means that our Board Members and Officers all complete their responsibilities on their own time without any compensation—simply because of our passion for Midway Atoll. As such, our overhead is greatly reduced, resulting in more funds available to historical preservation and ecological restoration projects on Midway Atoll.

General FOMA Volunteer Needs

- IT support for website updates and maintenance
- FOMA website updates/content additions (photos, blog posts, etc.)
- communications support, including Facebook posts, regular updates to FOMA members and subscribers, and blog posts to FOMA website
- advocacy support (identifying avenues for advocacy and lobbying, issues that FOMA can advocate for, etc.)
- education/outreach support (classroom presentations, relaying research about general Pacific marine and terrestrial ecology as well as Midway Atoll NWR ecology to public as relevant, etc.)
- FOMA website background writers (history, birds, plants, interviews with Midway residents from the past, etc.)
- review and scan historical documents from USFWS (as relevant to Midway Atoll) and put on website if appropriate
- proposal writers
- database updates—checking contacts for which we do not have a valid email address (about 120 constituents)

If you are interested in helping FOMA with any of these tasks, please inquire with us at FriendsMidway@gmail.com.



Photo credit:
Anna Vallery/USFWS

BECOME A USFWS VOLUNTEER OR ADVOCATE

- Check out all the opportunities at: http://www.fws.gov/refuge/Midway_Atoll. Spend up to 6 months on the atoll as a Refuge Biology Volunteer by helping with seabird monitoring and habitat restoration efforts. Or, serve as the Memorial and Maintenance Volunteer for up to 6 months and help with conservation and maintenance of historic structures and properties. Not ready for a 6-month commitment? Apply as an Annual Nesting Albatross counter and spend 3 weeks over the winter time (it's still warm!) to help to count all the albatross across the atoll.
- Not able to volunteer on Midway Atoll NWR? The saying goes that the "pen is mightier than the sword," so consider advocating for Midway! Talk to your state representatives and senators about supporting the National Wildlife Refuge System (Midway Atoll is one of 563 National Wildlife Refuges across the nation). 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.



Former Midway Atoll NWR Volunteer Anna Vallery prepares native Bunchgrass / Kāwelu cuttings for habitat restoration. Two curious Laysan Albatrosses wander over to watch her and "play" with some of the cuttings. Photo credit: USFWS.

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



Photo by 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/> and follow the instructions to purchase 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*