

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

## MARINE DEBRIS MONITORING PROJECT UPDATE

By Christy Finlayson and Seba Sheavly

Marine debris is a documented problem in the Papahānaumokuākea Marine National Monument, where there has been minimal assessment of debris found on beach areas, especially with regard to source identification. A baseline of information is needed to help focus attention on the primary types and sources of debris impacting these island communities. Developing and field testing a monitoring protocol for assessment of marine debris on the beaches of Midway Atoll will aid in developing initiatives and activities to address marine debris issues that are impacting the Monument ecosystem.

From derelict fishing gear to small pieces of plastic, marine debris is impacting protected wildlife. For example, it is believed that some of the debris in young albatross was actually picked up at sea by adults that mistake floating debris forms (e.g. bottle caps, tooth brushes, combs, cigarette lighters) for typical prey (e.g. fish, squid and krill) for which they are foraging. Discarded fishing nets and gear (floating offshore or on the beach) pose a serious threat to monk seals and sea turtles through entanglement. As management of the Monument is developed, an effort to address debris is vital to the long term development of resource management strategies.



*Decomposition of a Laysan albatross chick that did not fledge the previous season reveals debris in its digestive system. (Photo credit: Christy Finlayson)*

*Debris, cont pg. 4*

## Notice of 2008 Annual Meeting

FOMA's annual meeting will be held by conference call on Monday, May 19, 2008 beginning at 4:00 p.m. EST. It's the green and no cost solution!

The agenda will include approval of the 2007 Annual Meeting minutes, the election of Directors, the presentation of the 2008-2009 budget and committee reports.

If you would like to be a part of the Annual Meeting conference call, you will need to call Darlene for the call in phone number. She will have the phone number and required pass code one week prior to the meeting or after Monday, May 12.

Her number is (765) 935-4747.

A recap of the meeting will be published in the newsletter.

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## Midway 50 Years Later . . . .

by Elizabeth Rodrick,  
Land Conservation Manager,  
Washington Department of Fish  
and Wildlife, Olympia, WA.

My family lived at Midway Atoll for two years, 1957-58, during the Cold War Era at the beginning of the Naval Air Station Distant Early Warning Line operations. Approximately 4,000 naval personnel and their families lived on the atoll at that time. Today the full-time residents number less than 50 while the



*Photo credit this page: Avery Loy*

albatross are over 400,000 pair strong, a much-improved ratio of birds to humans.

While on Midway as a child of seven and eight, I reveled in the experience of living in a seabird colony. My older brother and I would watch the albies, then affectionately called goonies, for hours and search the “scavies” for red-tailed tropicbird feathers. The white “fairy” tern that laid its egg with a sticky substance and precariously incubated it on a bare branch fascinated me. We called the bonin petrels “bosun” birds because of their high-pitched call. The wedge-tailed shearwaters were the strangest creature with their eerie moaning at night. We only traveled to Eastern Island once to observe red-footed and brown boobies and frigate birds. We were told that the restrictions



on this island were to protect the birds, but I have since learned that there were “classified activities” in progress at that time.

The flights to Midway now arrive and leave after dark to avoid bird collisions, in contrast to the 1950’s when “Willy Victor” radar planes came and went several times a day. In 1957, when our plane circled the island I spied the white beaches and exclaimed, “look mommy, snow”! In December 2007, we arrived at night but the first morning I was thrilled again to see the white coral sand beaches gleaming in the sunshine. During my two weeks as an albatross counter I went swimming every chance I got. The crystal clear aqua blue water was just as beautiful as I remember and recalled fond memories of swim lessons from the Underwater Demolition Team, the handsome, virile men, now known as the Navy Seals. Other highlights of my recent stay included walking the old gym floor where I learned to twirl the baton and march in formation as a member of the Mid-Ettes Majorette Corps, bowling in the 1950’s alley using the same old rental shoes, surveying the Captain’s lawn - the site of our Easter egg hunt where the albies tried to incubate colored chicken eggs, and finally cel-

ebating Christmas Eve in the former enlisted men’s club where my parents partied fifty years ago.

Although I was only eight years old at the time, the island experience was the inspiration for my career as a wildlife biologist. Seabirds continue to fascinate me, especially because I understand more of their biology and behavior. In 1980, I took an educational leave from Washington Department of Fish and Wildlife to attend graduate school at the University of Washington where I intended to study burrowing seabirds. My thesis project was to adapt fiber optic technology, using a medical gastroenteroscope with a battery pack, to study the birds in their burrows with minimal disturbance. After one year of course work my boss told me that the state budget was in poor shape and that my vacant position was in jeopardy so I took his advice and returned to full-time employment. Several years later, I was able to complete my M.S. with help from WDFW by studying a rare species and writing a status report to classify the western gray squirrel as threatened in Washington State. So although I never got to study seabirds, they are still close to my heart.

While I would gladly participate in the albatross count again, I would stay as a tourist to spend more time swimming, snorkeling, visiting the historic sites and



observing the birds. I trust the memory of the effortless soaring and soulful eyes of the Laysan Albatross to call me back to the atoll someday soon.

## U.S. Fish and Wildlife Service Teams with Cornell Laboratory of Ornithology to Support Bird Watching

The U.S. Fish and Wildlife Service signed a Memorandum of Understanding (MOU) on February 20, 2008, with the Cornell Laboratory of Ornithology outlining efforts to work together to promote birding, habitat conservation and citizen science to a broad audience across the country. The Cornell Laboratory of Ornithology leads the nation in involving the public in bird watching, science and conservation.

The partnership with the Cornell Lab is yet another step forward in the Service's National Wildlife Refuge System Birding Initiative. Service Director H. Dale Hall launched the initiative in 2006 to raise awareness among birders of opportunities and conservation programs on units of the National Wildlife Refuge System and help them fully appreciate the importance of refuges in the lives of their favorite wildlife.

"Joining forces with the world-renowned Cornell Laboratory of Ornithology in support of birding, bird conservation and citizen science is a natural fit for both organizations," said Director Hall.

The initiative will help birders make the link between the birds they love to watch and the important habitats protected in the National Wildlife Refuge System. The Birding Initiative's 14-member Birding Team is exploring new ways to enhance birding on national wildlife refuges. The team is working on identify-

ing how refuges can improve the quality of bird watching experiences, as well as making information about the latest sightings more easily available to avid bird watchers.

The Refuge System has more than 2,500 miles of land and water trails that are often perfect places to see birds. Other outstanding viewing experiences are available from the scores of observation decks, viewing blinds and boardwalks built on national wildlife refuges.

"National wildlife refuges represent America's premier network of habitats where birds and other wildlife are being protected and nurtured," said John Fitzpatrick, Director of the Cornell Lab of Ornithology. "These are also remarkable spots for enjoying the global spectacles provided by our nation's bird populations. The Cornell Lab of Ornithology is thrilled to be partnering with the Fish and Wildlife Service to enhance opportunities for citizens of all ages to interact with birds at these magnificent places and to participate actively in their appreciation, study, and protection."

Discussions are underway regarding nest watch programs, urban bird celebrations, opportunities for refuge visitors to participate in citizen science projects, and the broader availability of eBird Tracker—an online, interactive network of computer kiosks where birders can record sightings, consult video field guides and check seasonal lists of birds.

Nearly 48 million Americans enjoy watching birds, according to the 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.



*Photo credit: Avery Loy  
Brown Noddy*

"Bird watching has never been more popular. With so many people across the country enjoying the wonders of birds, we are committed to providing them with great wildlife viewing opportunities at national wildlife refuges across the country," Hall said, noting that wildlife observation is one of the six priority public uses of the Refuge System.

More than half of all federal lands designated by the American Bird Conservancy as globally significant Important Bird Areas are on national wildlife refuges. Birding is big business, too. Birders spent roughly \$31 billion in 2006 on their wildlife watching experiences, including money for binoculars, field guides, bird food, bird houses, camping gear and such big-ticket items as boats, according to interpretation of figures in the 2006 National Survey.



*Debris, cont from pg. 1*

*Marine debris on the beaches of Midway Atoll (Photo credit: Barry Christenson)*

In December, FOMA was awarded a \$100,000 grant from the National Fish and Wildlife Foundation; this amount was matched by the Dow Chemical Company, providing FOMA a total of \$200,000 to study marine debris sources and amounts. Dow has been supporting marine debris prevention efforts for 20+ years in order to help build better education and outreach programs that address people's behaviors regarding litter. This project is a multi-agency effort with an industry partnership to help determine the types and sources of marine debris and develop an educational strategy to focus on decreasing debris deposition.

FOMA is working in partnership with the Monument co-trustee agencies to develop and field test such a protocol. This protocol and the baseline data that will be collected during the pilot phase at Midway Atoll will greatly enhance the knowledge necessary to most effectively address beach marine debris issues throughout the Monument system. Marine debris forms will be identified so that education and outreach efforts can be developed to target key stakeholders and user-groups that are associated with the behaviors that lead to the deposition of various forms of marine debris. Decreases in marine debris and its impacts can only be successfully accomplished by better waste management and preventing additional deposition.

The Midway Atoll Marine Debris project is being coordinated by Seba Sheavly, a marine debris researcher, who is also working with the Ocean Conservancy and the United Nations Environment Programme on global marine debris monitoring. In May, Lindsay Yates, and Christine Ribic, Ph.D., will travel to Midway Atoll to delineate sampling sites and work with volunteers to field test a beach sampling protocol. Lindsay Yates is the Marine Habitat Restoration Specialist with NOAA Fisheries Service, the Point of Contact for NOAA's Community-based Marine Debris Prevention and Removal Grants Program (Pacific Region), and Project Manager for the Honolulu Derelict Net Recycling Program. Christine Ribic, Ph.D., is the Leader of the US Geological Survey Wisconsin

sin Cooperative Wildlife Research Unit at the University of Wisconsin-Madison; she designed the National Marine Debris Monitoring Program that was recently completed and will be advising this project on statistical aspects of the monitoring program.

Plastic type and source determination will be conducted on samples of the debris collected. Headed by Dow Chemical's Kelly Polich, Sustainability Manager (Plastics), this will be accomplished, in part, by one of two methods used to determine the type of polymer/resin:

1. FTIR (Fourier Transform Infrared Spectrophotometer) - A material's absorbance of infrared light at different frequencies produces a unique "spectral fingerprint" based upon the frequencies at which the material absorbs infrared light and the intensity of those absorptions. The resulting spectral scan (absorbance or transmittance) is usually specific to a general class of material. An FTIR spectral analysis can easily identify classes of polymers such as Nylons, Polyesters, Polypropylenes, Polycarbonates, Acetyls, or Polyethylenes. Unknown spectral scans can be analyzed to determine the base material of the unknown by comparing their scan to spectral scans of known materials that are stored in a computer-based library.

2. DSC (Differential Scanning Calorimeter) - A DSC thermal scan can also be used to help identify certain types of materials by their melting points.

#### PROJECT SUMMARY

A research team will:

- Develop a protocol to monitor the types of debris being deposited on Midway Atoll National Wildlife Refuge (NWR);
- Develop baseline data on debris types, amounts, and deposition patterns for use in targeting debris sources; and
- Develop an education strategy for transferring this information to the public and promoting behavioral change in an effort to help reduce the potential sources of marine debris.

#### PROJECT OBJECTIVES

1. Develop a statistically sound and biologically relevant marine debris monitoring protocol for Midway Atoll National Wildlife Refuge that can serve as the basis for a long-term coastal monitoring program with-  
*see Debris, cont pg. 7*

## Fish and Wildlife Service Goes High-Tech to Combat Invasive Plants

### *Online training helps volunteers lend a hand*

As any home gardener knows all too well, invasive plants can quickly overwhelm an area if left unchecked. Compound that problem by millions of acres, and you get some idea of the challenge facing the U.S. Fish and Wildlife Service—the agency responsible for protecting habitat across the 97-million-acre National Wildlife Refuge System. Luckily there is help: volunteers.

In collaboration with the Center for Invasive Plant Management, the National Wildlife Refuge System has designed an online training course for volunteers and others interested in joining the army to help fight invasive plant species—one of the single greatest threats to the Refuge System .

The Refuge System has worked aggressively to combat invasive species, targeting more than 280,000 acres of refuge lands. Yet an estimated 1.72 million acres remain untreated. That's where the training and volunteers come in.

"We want volunteers to be able to engage their communities on the issue of invasives," said Jenny Ericson, national invasives volunteer coordinator for the Refuge System. "The online training provides practical tools on how to prevent and control invasive plants. Volunteers can be our greatest advocates in the fight against this major nationwide threat to wildlife and habitat."

The new invasive species Web site, [www.fws.gov/invasives/volunteersTrainingModule](http://www.fws.gov/invasives/volunteersTrainingModule), includes video, text and photos that provide background on the Refuge System and information about the science and management of invasive plants. The site also includes links to government and private Web sites dealing with the issue.

In 2003, the Refuge System joined The Nature Conservancy, the National Wildlife Refuge Association and the U.S. Geological Survey in training volunteers to use hand-held GPS devices to map invasive species on national wildlife refuges.

## NWRS Announces Scholarships Winners

**Six** young graduate students have been awarded 2007 National Wildlife Refuge System scholarships to conduct research in Florida, California and Montana. The Centennial Commission Scholarship Fund was initiated during the Refuge System Centennial in 2003, when Roy Disney, vice chairman of The Walt Disney Company, presented a \$100,000 gift to establish a scholarship program to encourage graduate students in conservation and environmental education.

Those named 2007 Scholars are:

Nicholas Osman, University of South Florida, will meet with refuge staff at Lake Wales Ridge National Wildlife Refuge in Florida to identify sites where he can survey a very specific kind of lizard – sand and bluetail mole skinks. He will look for connections among species, diet, genetics and habitat in an effort to aid ecosystem management decisions.

Nicole Athearn, University of California Davis, will research management techniques for target bird species in California's South Bay Salt Pond. She will use her findings to design management tools and models that could be applied to restoration efforts in Don Edwards San Francisco Bay National Wildlife Refuge.

Prairie Johnson, California State University Chico, will research understory plants along the Sacramento River. She wants to identify the best methods for introducing native understory species into restored forests.

Samantha Lantz, Florida Atlantic University, will study wading birds in Arthur R. Marshall Loxahatchee National Wildlife Refuge in Florida. She will look at food availability, a major factor limiting the success of avian populations.

Lisa Max, University of California Santa Barbara, will study ecosystem processes underlying Palmyra Atoll National Wildlife Refuge. Her work could contribute to management of wildlife resources at the refuge and coral reef communities elsewhere.

Megan O'Reilly, Montana State University, will study the relationships among willow vegetation, moose browsing and breeding landbirds in Red Rock Lakes National Wildlife Refuge. Her research will refine methods of assessing the condition of riparian vegetation and provide data about the impact of moose browsing on the overall health of ecosystems and landscapes.

## Recent Wildlife Happenings

by Cindy Waddington

The new year at Midway didn't start off with a bang but it did begin with some interesting and exciting wildlife sightings. On January 1, 2008, one of the bird counters was swimming at North Beach when he noticed a large dark object at the water's edge. Curious



but exercising caution, he got out of the water to take a closer look. He wasn't sure what it was...but it had a large fresh chunk missing from its body along with some other "cookie cutter" type chunks. Word spread fast and soon a crowd of residents and volunteers had gathered to have a look.

After some internet research, it was determined that this was a pygmy sperm whale. Refuge biologist John Klavitter was requested to do a necropsy during which he took samples of the teeth, skin and blubber and removed the stomach. The carcass was later buried and it is hoped that a couple of years from now, the skeleton of this cetacean can be used to further our understanding of this species.

The other New Year's Day excitement was caused by the sighting of two juvenile short-tailed albatrosses on Sand Island. There has been an adult short-tailed albatross on Eastern Island for a number of years and last year, a juvenile short-tailed albatross landed on Sand Island. The two juveniles were observed dancing. Later one of the juveniles was seen on Eastern Island dancing with the adult short-tailed albatross. Could this be the beginning of a new colony of short-tailed albatrosses? Stay tuned!



in the Monument System.

*Photo credit: Barry Christenson*

- 2.Design a data management and data archiving system to support the monitoring program and provide on-line access to its data to other interested parties worldwide.
- 3.Characterize and quantify marine debris types, sources, amounts, and temporal patterns on Midway Atoll.
- 4.Contribute to the scientific community's understanding of how to design marine debris monitoring protocols for these coastal ecosystems.
- 5.Contribute to the scientific community's understanding of marine debris deposition patterns.
- 6.Develop a strategy for handling/removing the marine debris collected on Midway Atoll.
- 7.Develop a draft education and outreach plan based on what is learned during this study to help address sources of marine debris found on Midway Atoll and within the waters of the Monument.

### **PROJECT TRANSFERABILITY**

Since 1984, 22 international marine debris conferences have recommended ‘standardization of data collection as one of their top two priorities.’ The process for developing this monitoring strategy will be very useful to other insular communities with similar geography and oceanographic conditions. Monitoring the debris that washes up onto the beaches at Midway Atoll will provide a snapshot of what is in the waters surrounding the Monument islands. The protocol developed for this project will have potential applicability to other islands within the Monument, as well as other areas in the Pacific Region. The training program developed for the protocol will be useful to these other programs. The results of this project will provide a regional perspective on the types and sources of marine debris that can be used in educational efforts for prevention and abatement of marine debris throughout the region. For more information, please contact: Christy Finlayson ([christy.finlayson@umit.maine.edu](mailto:christy.finlayson@umit.maine.edu))

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## How do I get Involved!

FOMA Members, would you like to become involved with the projects with which FOMA is currently involved OR discuss developing your own interests that support the FOMA Mission Statement?

### **FOMA MISSION STATEMENT**

To support Midway Atoll National Wildlife Refuge in its efforts to preserve, protect & restore the biological diversity and historic resources of Midway Atoll, while providing opportunity for wildlife-dependent recreation, education and scientific research. You may support the following through program development, grant-writing, providing funds, etc.:

- Develop educational materials about Midway Atoll's history or wildlife
- Write grants to support habitat restoration or the preservation of historical buildings
- Provide funds for general support or for a specific interest that you have
- Spread the word about FOMA's work by producing press releases or participating in events such as environmental fairs
- Encourage membership by networking with potentially interested parties

**Do you have other interests and ideas that you'd like to discuss?**  
**Please Contact: Darlene Moegerle at [darlenem@parallax.ws](mailto:darlenem@parallax.ws)**

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

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