



MIDWAY ATOLL National Wildlife Refuge

GOONEY GAZETTE II

FOMA-FRIENDS OF MIDWAY ATOLL FALL 2005

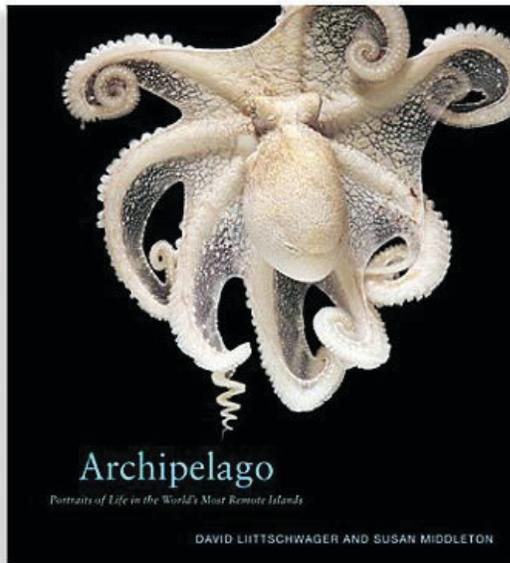
Dedicated to the preservation, education and history of our incredible national treasure - Midway Atoll

Archipelago is Here!

After 2 years of work by Susan Middleton and David Liittschwager (and 2 years of anticipation by all of us!), National Geographic Society has published a beautiful new coffee table book on the Northwestern Hawaiian Islands entitled *Archipelago Portraits of Life in the World's Most Remote Island Sanctuary*. Susan and David have generously provided several copies of the book to the Friends of Midway Atoll. We are pleased to make those copies available to you in exchange for a donation to the Friends group.

Some of you may have met Susan and David as they worked on Midway for several months. They have long studied America's endangered plants and animals. Previously published books include *Remains of a Rainbow: Rare Plants and Animals of Hawai'i*, *Witness: Endangered Species of North America*, and *Here Today: Portraits of Our Vanishing Species*. An Emmy-award winning National Geographic television special entitled "America's Endangered Species: Don't Say Goodbye" was based on their work.

This 11"x12", 280-page, hard-cover book includes 350 images. The Midway Atoll chapter is 46 pages, and includes photos of both terrestrial and marine creatures.



Each chapter includes text describing their experiences on the islands and the work underway to protect wildlife and their habitats. It is sure to bring back fond memories for anyone who has visited Midway, and also offers a glimpse of the other Northwestern Hawaiian Islands that are unseen by visitors.

The book documents Susan and David's travels to Midway Atoll National Wildlife Refuge, Kure Atoll State Wildlife Sanctuary,

Hawaiian Islands National Wildlife Refuge, and aboard the NOAA ship *Hi'ialakai* in the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve, carefully documenting the wildlife treasures they found. Their images capture the story of seabirds from nesting to fledging, rare creatures such as the Triton's trumpet, and little-known sea life with exotic names like the Spanish dancer nudibranch.

A limited number of copies are available for \$45 which includes postage. Books autographed by Susan Middleton and David Liittschwager are \$55. To order from Friends of

Midway Atoll, please see the information below. The book can also be purchased retail for \$65 through National Geographic Society (visit their store www.nationalgeographic.com).

For those of you in Honolulu, an exhibit of Susan and David's photographs is on display at the Bishop Museum from October 15 to December 18. In 2006, a similar exhibit will open in Washington, DC, in National Geographic's Explorer's Hall.

To order make your check payable to
FOMA and mail to: Mr. Robert Fields
1030 NW 176th Avenue
Beaverton, OR 97006



Susan Middleton - Eastern Island April 2002 photos by Michael Logan



Friends Of Midway Atoll Newsletter © Nov 2005

"The Big-Headed Ant: Far From Home"

By: Todd and Christy Finlayson

In a miombo woodland in northern Mozambique, several feet above a small herd of grazing zebra, a group of plant-sucking insects (*Hilda patruelis*) feeds on the fruits of a fig tree (*Ficus sur*). These little insects are not alone. They have a watchful bodyguard. A small, dark brown ant with a big head - a very big head - serves as protector against predators and parasites of these insects. The ant is *Pheidole megacephala*, the big-headed ant. In return for its services as protector, the ant enjoys the benefits of *Hilda*'s honeydew, an excretion rich in sugars and amino acids. The ants are multitaskers, however, and also aid the fig tree by protecting the wasps that pollinate it. This is done by driving off a different species of wasp that parasitizes the pollinator wasp. While the relationships may be confusing to the outsider, *P. megacephala*, with its large head and impressive mandibles, plays an important role in a healthy African ecosystem.

Although the big-headed ant is at home in its native African habitats, it has also become a world traveler. Thought to have been a stow-away in ships as early as the 1700s, probably clinging to forest and agricultural goods and/or the soils that accompanied these products, this ant is now found throughout tropical and temperate parts of the world. Successful biological invaders are generally very good competitors, have few limits on their diet, have few if any natural predators to control their populations, and have high reproductive and growth rates. The big-headed ant is no exception. It has been very successful in its new habitats. As has been the case in its native African habitats, *P. megacephala* plays an important ecological role in its adopted homes. The result, however, is often not a healthy ecosystem but rather, a damaged one.

On the opposite side of the globe from northern Mozambique sits Midway Atoll. Not more than a guano-squirt away from a young Laysan albatross chick, a group of scale insects feed on the stems of golden crown-beard (*Verbesina*



Pheidole megacephala

*Photo image credit compliments of:
Ant Image Database (Japan)*

encelioides). These little insects are also not alone and have a watchful bodyguard. Again, *P. megacephala* tends a plant-sucking insect the ecological counterparts in Africa. Unfortunately, on Midway Atoll, the relationship does not necessarily reflect a healthy ecosystem.

Pheidole megacephala arrived in the Hawaiian Islands in the 19th century and is now abundant on all of the main islands except Kaho'olawe. The loss of nearly all endemic arthropod species within the range of the big-headed ant's colonies has been documented in Hawaii since the early 1900s. The ant often dominates new ranges and kills off or otherwise displaces most native invertebrate fauna. It is, therefore, a serious threat to biodiversity and has been identified by the World

Conservation Union as one of the 100 worst invasive species worldwide.

The potential effects of the big-headed ant on Midway Atoll are not fully understood but can be inferred by looking at events on other Pacific Islands. The big-headed ant's ability to overrun a small atoll like Midway is demonstrated on Kure Atoll, just 91 km northwest of Midway. According to recent surveys, big-headed ants have been found in some areas of Kure Atoll at densities of 26,500 ants per square meter! It is thought that the paucity of native insects on Kure Atoll may be attributable to the overwhelming presence of the big-headed ant.

In addition to the devastating effects on insect populations, the big-headed ant may indirectly harm native plant species by bolstering populations of insects harmful to them. The scale insects protected by *P. megacephala* are often numerous on invasive *Verbesina*, but also consume native plants, such as *Scaevola*. Additionally, the honeydew excreted by these insects can harbor sooty moulds on leaf surfaces, disrupting photosynthesis.

Midway Atoll is well-known for its multitude of nesting seabirds. Little is known about the effects of *P. megacephala* on avian health or nesting success, but there is evidence that these ants are harmful to birds. of native vegetation (nesting cover) by the aforementioned scale insect. In addition, according to the USFWS, researchers believe big-headed ants have caused mortality of nestling Laysan finches.

The implications for the loss of resident insects, damage to native plants, and potential harm to birds on Midway Atoll are not well understood. Nevertheless, they merit concern and biologists on Midway Atoll have instituted an ant control program. While the big-headed ant is an impressive insect with an interesting natural history and travelogue, its presence on Midway Atoll does not paint the same ecological picture as does its presence in its native African habitats.

Busy Times for Midway Atoll National Wildlife Refuge!

by Barry Christenson,
Refuge Manager

Construction season, a continuing endangered species recovery project, and a new support services contract at Midway Atoll converged to make September and October busy months in the life of Midway's refuge staff. With help from other Fish and Wildlife Service and U.S. Geological Survey employees and numerous contractors, many changes are occurring in the midst of the Pacific.

New Operations Contract

A new contract for base operations support services became effective on October 1, the first day of the U.S. government's fiscal year. The 1-year contract includes options to extend the contract for 4 additional years. The contract was awarded to Chugach Industries Inc. of Anchorage, Alaska.

The support services contract covers operation of the basic infrastructure of Sand Island and Henderson Airfield, including the generation and distribution of electricity; operating the water system; disposing of waste; managing and maintaining facilities and equipment; providing food, housing, and medical services; operating the airfield and fuel farm, and maintaining historic structures. We are now in a 3-month transition period, after which Chugach should be fully staffed to meet its contract commitments.

Construction Projects

More visible on the ground are all the construction projects underway. As usual, we schedule most of our construction projects while the albatross are at sea to enhance our efficiency and minimize disturbance of nesting birds to the extent possible.

A new large reverse osmosis water system is now up and running, providing water for domestic use. The project also included replacing the water distribution system to buildings. The old water system is still in place, but is used for such purposes as fire suppression and greenhouse watering.



Two new 450-kilowatt generators are now in place, along with two new switch gears.

One of these generators generally meets the island's electrical needs, but the second one automatically kicks on when needed. We still have the larger Caterpillar generator and one working Fairbanks Morse generator as backups. Next year, we will be working on replacing the electrical distribution system.

We also did some work in the fuel farm to restore the cathodic protection system. An inspection of one of the 40-year-old fuel farm tanks led to some repairs, but revealed significant deterioration of the tank's roof and that the tank liner needs to be replaced. Hopefully, we will be able to replace the fuel farm with smaller tanks (300,000 gallon total capacity rather than the existing 2.1 million gallon total) within a few years.

New Purchases

We also have some new equipment for refuge management purposes: a 50-ton wheeled crane is already on island to offload equipment and supplies from barges. A new bulldozer will be delivered next year to help with habitat work and building cleanup projects.

Most of the parts for a new radio system have arrived on island, and we hope to install them this winter. We also purchased fiber-optics cable for a new data and voice communications system. The cable will be

stored until sufficient funding is available to complete the project.

Department of Transportation Airport Capital Improvement funds allowed us to purchase a new 1,500-gallon fire truck for airfield operations, a new operations truck, and airport-grade fire extinguishers. We also awarded a contract for an Airport Master Plan, which will direct future expenditures from this fund. These activities benefit the airfield not only by reducing operational costs, but also by increasing airfield safety.

New Ducks!



Stand by for more information in the near future, but 22 Laysan Ducks have now arrived at Midway from Laysan Island in the Hawaiian Islands National Wildlife Refuge. These birds will join the 19 ducks moved here last year, plus the 9 or 10 offspring they produced this year. Most of the birds will probably be released on Eastern Island this year, thanks to the hard work of both staff and volunteers to create new habitat for the ducks on that island.

All in all, it has been a very busy time here on Midway! And soon we will be welcoming hundreds of thousands of Black-footed and Laysan Albatrosses back to the island. Though we can't say it has been quiet without them, we will welcome the return of their clacks, squeals, and moos!

Officers:**DARLENE MOEGERLE**

Richmond, IN.

*President***ELLEN CASHMAN**

North Andover, MA

*Vice President***ROBERT C. FIELDS**

Beaverton, OR

*Secretary-Treasurer***Directors:****Christy Finlayson**

Orono, ME

Molly Krival

Sanibel, FL

Michael Logan

Marietta, GA

Avery Loy

Ridgefield, WA

Beth Sweeney

Queensbury, NY

Cindy Waddington

Honolulu, HI

NEWSLETTER**DELIVERY**

Send us your email address and we will send you the Newsletter in living color! Plus with email you get it much faster! A PDF (portable document file) can be opened easily for those with high speed access, dial up takes a few minutes to load. Also we welcome any input you have. It's your newsletter!

Email is always faster! -
avery.loy@malloryco.com
kathleen.loy@malloryco.com
 Rest assured-your email is never shared with anyone!
 Never!

Visit the FOMA website at:
www.friendsofmidway.org
 Or contact Ellen Cashman at
ellicash@comcast.net or
 849 Dale Street,
 North Andover, MA 01845.

President's Report by Darlene Moegerle-

We have an active board, one that is committed to supporting the refuge in every way possible. Your board meets monthly via a conference call on the third Monday of each month. As you may have noticed from the roster in the newsletter, the directors are located across the country; from Florida to Maine, Hawaii to Massachusetts, Washington and Oregon to Indiana. An agenda is sent by e-mail a week before each meeting as is the Treasurer's report. The minutes are e-mailed to each member shortly after each conference call. While this form of "meeting" may seem unwieldy, we have made it work for over 6 years.

This year we lost two of our most faithful and diligent members. Dorothy and George Hoffmann are charter members of FOMA and have been instrumental in the growth and influence of our group. With many other interests and demands on their time, they decided to resign from their active participation as board members. George was our first Membership Chairman, second President and Chairman of the History Committee. Dorothy was our first and only Treasurer up until her retirement in September. George and Dorothy's commitment and wise counsel will be missed by the board. We thank them again and wish them well.

The vacancies been filled by two active and energetic FOMA members, Christy Finlaysan of Maine and Cindy Waddington of Hawaii. You have seen Cindy's picture in the Summer newsletter and will be hearing more about Christy as we apply for grants and other funding to support biological research and maintenance on Midway

With your financial support, we began 2005 by paying for meals of the volunteers who went to Midway for the Christmas bird count. This count is important in tracking the trends in population of the various bird species who call Midway home.

In the summer, FOMA donated \$10,000 to the Laysan Duck project. This money was used for banding the birds, providing habitat improvement and monitoring of the population.

For those of you who have been to Midway, you will be glad to know that we bought 10 new "horses". For the uninitiated, bicycles have been called "horses" since early Navy days on Midway. With the funds from your memberships and proceeds from the FOMA Gift Shop we were able to buy 10 new Schwinn bicycles and equip each with a sturdy basket. We hear that these have been much appreciated by the volunteers and staff.

We do operate a Gift Shop on island with help of FOMA volunteer, Greg Schubert. The gift shop is available whenever a plane or ship arrives. With a wide variety of tee-shirt styles and sizes, mugs, posters and postcards, visitors have been pleased with the merchandise and souvenirs that are for sale. The Gift Shop and purchases through our web site continue to be a positive income stream for our treasury.

Thanks to you, our members and friends, FOMA continues to grow in number and prominence. It is our hope that we will continue to provide assistance to the U.S. Fish and Wildlife Service in their "...efforts to preserve, protect and restore the biological diversity and historical resources of Midway Atoll while providing opportunity for wildlife-dependent recreation, education and scientific research."

LOGO APPAREL AND MUGS CONTACT ELLEN TO ORDER!

To Order Merchandise Contact: Ellen Cashman at ellicash@comcast.net
 849 Dale Street, North Andover, MA 01845