

# The Birds of Midway Islands

by G. CAUSEY WHITTOW

TO THE PILOT of the MAC (Military Airlift Command) C-141 that flies in from Honolulu every Tuesday and Saturday, Midway emerges from the empty vastness of the Pacific Ocean as a circular coral atoll with two rather large islands — Sand and Eastern — and a number of sandspits. It owes its name to its geographical position, midway across the North Pacific between the United States and China. But it owes its fame to the World War II battle of the same name, which was the turning point of the war in the Pacific. To the biologist, however, Midway is famous for yet another reason — its birds.

Midway Island is the breeding ground for hundreds of thousands of albatrosses. This is apparent as soon as one steps out of the aircraft; masters of the wind, the albatrosses course up and down the long runway, one wing tip skimming the surface of the ground. Reaching the end of the runway, the birds rise, turn, and glide back along the airstrip, the entire maneuver achieved without a single wing beat. The "goonies," as they are affectionately known on Midway, do this endlessly, riding the trade-winds with an accomplished grace. If the wind drops, however,

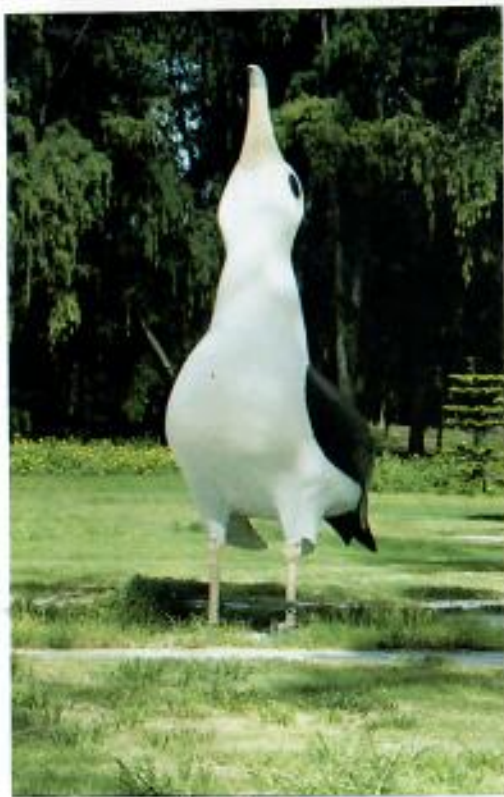
the albatrosses have to make long take-off runs before becoming airborne, and their landings, without the braking effect of the wind, are aeronautical disasters.

Many people are surprised to find

*HARDLY LARGER THAN ITS AIRSTRIP, Sand Island serves as a base for both sea birds and modern aircraft. Sand Island and smaller Eastern Island (top of the picture) are known as Midway, famous for the World War II naval battle that marked the turning point in the Pacific theater.*



All photographs by the author



*REALLY GOONEY, the only known statue of an albatross in the world can be found on Midway. The depicted Laysan albatross (left) is shown in the "sky-pointing" posture, a characteristic part of the courtship dance. A real-life Laysan albatross (above) feeds its chick by regurgitation. On Sand Island (below) both Laysan and black-footed albatrosses dot an open grassy space.*





albatrosses on Midway, since they are usually associated with the southern hemisphere. In fact, nine of the thirteen species of albatrosses occur only in southern latitudes. The white, sun-washed sands of subtropical Midway seem a far cry from the cold southern oceans where strong westerly winds blow continuously right round the world. Long before the last ice age, the ancestors of the two species of albatrosses that are common on Midway today crossed the equator and remained to breed. But they betray their southern ancestry by laying their eggs and rearing their young during those months corresponding to the southern summer. There were probably adaptive advantages in keeping to this schedule, for it means that they incubate their eggs and raise their chicks when conditions on Midway are coolest, and temperatures are closest to spring and summer in the habitats of their southern-hemisphere relatives.

#### Hybrid Given Cold Shoulder

Of the two species of albatrosses that call Midway their home from November to August, the larger, but less abundant, is the black-footed albatross (*Diomedea nigripes*), which weighs 7 to 8 pounds and has a wingspan of 6 to 7 feet. A sooty brown bird with a white patch at the base of the tail, the black-footed albatross has a characteristic crouching walk. The Laysan albatross (*D. immutabilis*) is only slightly smaller, but it is predominantly white with a black back, tail, and upper surfaces of the wings.

7 to 8 pounds=3.2 to 3.6 kilograms  
6 to 7 feet=1.8 to 2.1 meters

Albatrosses are long-lived birds. The Hawaiian species may live to be 40 years of age, and the young birds do not breed until they are five to nine years old.

The courtship display of the albatrosses is legendary, an elaborate, bizarre ritual of bill-clacking, shrill whistles, and drones, accompanying a circular dance executed in a plodding manner. Day and night at Midway, the air is filled with their whistles, rising repeatedly to hysterical crescendos. There are slight differences in the displays of the two species; however, a hybrid bird seen annually on Midway was not able to duplicate the ritual of either species exactly and was shunned by both.

#### Keeping Cool

Both species lay a single egg in a nest that consists of a depression in the ground surrounded by a rim of packed sand. The egg is incubated for 65 days. A few days after laying the egg, the female albatross trades duty with the male, who incubates the egg continuously for 18 to 22 days before being relieved.

Although the albatrosses select the coolest part of the year at Midway for breeding purposes, it is still hot by the standards of their southern cousins. The adult birds incubating their eggs, and later, the chicks patiently awaiting their next meal, display obvious signs of heat stress during the day. The chicks manifest their discomfort in a novel way. They rock on their heels, lifting their large webbed feet well off the ground. This not only avoids contact with the hot surface of the ground but also allows

cooling air to circulate around both surfaces of their feet. At the same time, the chicks turn their backs to the sun so that their feet are in the shade of their bodies.

The chicks are fed by the parents for four to five months and, when the fledglings leave in June or July, they circumnavigate the North Pacific. They have a remarkable homing ability; a Laysan albatross released in Washington State returned to Midway, where it was collected, in a little over ten days, covering a distance of 3,200 miles.

#### **Lunch = Fish, Plastic and Pumice**

The nesting parents travel hundreds of miles from Midway in order to feed. The black-footed albatross, in particular, often follows ships to feed on their offal and the fish stirred up by the propellers. Along with their food, they ingest a variety of small pieces of plastic and other objects floating in the water. It is not clear why they consume this nonnutritive matter. Long before the invention of plastics, albatrosses were known to eat small pieces of pumice—the natural flotsam and jetsam of a preplastic age. The albatrosses' nesting grounds are littered with regurgitated plastics, pumice stones, and countless numbers of indigestible squid beaks.

Albatrosses have been much maligned by people for centuries. Seafarers considered them to be the spirits of sailors lost at sea and the harbingers of gales and fogs. Their nickname, "gooney-birds," is derived from the old English word for a

3,200 miles = 5,150 kilometers

stupid person. The characteristic flat-footed plodding walk and fearlessness of people may have contributed to this image. The North

*IT PAYS TO BE A BRAT, for a masked-booby chick. Though masked-boobies lay two eggs, both of which hatch, the parents generally lavish all their attention on the most demanding of the chicks. After losing its fluffy white down, the chick will resemble its parents standing beside it.*





Pacific albatrosses in particular have suffered at the hands of people. At the end of the last century, the birds were slaughtered for their feathers, which were used in the millinery trade and in the manufacture of mattresses and pillows. Much of the exploitation was carried out by the Japanese, and the magnitude of the destruction on Laysan Island, ap-

proximately 450 miles from Midway, led President Theodore Roosevelt to declare many of these northwestern Hawaiian islands a wildlife refuge, in 1909.

On Midway, the potential hazard of albatrosses to military jet aircraft using the long runway on Sand Island resulted in the slaughter of tens

450 miles = 724 kilometers





A NESTING FRIGATE BIRD sits on top of its nest of twigs on Eastern Island. Notorious pirates, frigates will not only force other birds to give up their catch, but if hungry will steal an egg or chick from another nest.

of thousands of Laysan albatrosses in order to discourage the birds from using the area of the runways. This was considerably less successful than leveling the dunes near the runway; the albatrosses were riding the updrafts created by the dunes, directly into the path of the planes. On Eastern Island, the erection of 400-foot-high antennas in the 1950s and 1960s took an incredible toll of albatrosses until the antennas were demolished in 1967, as other forms of military communication across the Pacific made the antennas obsolete.

The Laysan and black-footed albatrosses are not the only albatross species to have taken up residence on Midway. A solitary short-tailed albatross (*Diomedea albatrus*) is an annual visitor to Sand Island. On the island

400 feet = 122 meters

of Torishima, near Japan, more than 100 of these rare birds maintain a small breeding colony, the residue of a population once numbering in the hundreds of thousands before they were decimated by Japanese feather hunters.

#### Island Gone to the Birds

Nor are albatrosses the only birds to be seen on Midway. White fairy terns (*Gygis alba*) flit among the tall casuarina trees while black noddies (*Anous tenuirostris*) actually build their untidy nests in the trees. On the ground, red-tailed tropic birds (*Phaethon rubricauda*) incubate their eggs and tend their chicks in the shade of a variety of bushes. Below ground, Bonin petrels (*Pterodroma hypoleuca*) lay their single egg in the darkness of a deep burrow. They are never seen during the day—arriving from their open ocean feeding grounds after dark and leaving before sunrise—but at night the air is filled with their throaty cries. Unfortunately, the Bonin petrels are subjected to severe predation by rats, inadvertently introduced to Midway by people, and their days may be numbered. Later in the year, the underground lairs of the Bonin petrels are occupied by wedge-tailed shearwaters (*Puffinus pacificus chlororhynchus*).

Other species of sea birds may be seen at Midway together with a number of migratory shore birds. In addition, there are some unexpected species which, like the rats, have human neglect to thank for their presence on Midway. Notable among these are the canary (*Serinus canaria*)



and the Indian mynah (*Acridotheres tristis*). The latter is suspected of preying on the eggs of some sea birds.

No one lives on Eastern Island any longer — except the birds, including several species that do not breed on Sand Island. The sinister-looking great frigate bird (*Fregata minor*) nests close to the red-footed booby (*Sula sula*)—a surprisingly homey relationship considering that, when airborne, the frigates mercilessly rob the boobies of their catch of fish. Those most successful of tropical terns, the sooty terns (*Sterna fuscata*), carpet the ground with their eggs and chicks during their short breeding season and, at one end of the island, several pairs of masked boobies (*Sula dactylatra*) may be tending their chicks. The adult male and female masked boobies are identical in appearance, but they are easily distinguished once they open their mouths; the male then gives vent to a thin whistle, while the female produces a distinctly more robust squawk. Although the masked booby lays two eggs and both eggs hatch, only one of the two chicks usually survives. This is because the adults respond to and feed only the more importunate of the two—a clear case of survival of the fittest.

#### A Natural Laboratory

Besides the birds, an occasional Hawaiian monk seal may haul out on the beach slopes of Eastern Island, to sleep away the day amid the tangled rusting remains of the antennas that once towered over the island. Now an endangered species, the Hawaiian monk seal used to breed on the

beaches of Midway, but the continuous presence of people on Sand Island has made their appearance there a rare event.

Only a few hundred naval personnel live on Sand Island, a far cry from the thousands that once crowded the island. An air of dereliction now prevails; houses stand empty and the school, which once rang with the voices of children, is strangely quiet. It is a time to reflect on the varied roles that Midway has played since it was discovered by Captain N. C. Brooks in 1859; first as a cable relay station, later as a refueling stop for Pan American Airways and, more recently, as a U.S. Naval Air Station.

But, regardless of the human use to which Midway has been put, biologists, notably Harvey I. Fisher, have continued to take advantage of a unique opportunity to study the two most abundant species of albatrosses. During the breeding season, incubating albatrosses dot lawns, backyards, and even roads and runways. At our temporary laboratory, set up in the former school, albatrosses were nesting literally just outside the door. There is nowhere else in the world where albatrosses may be studied with such ease. □

#### RELATED READING:

- Whittow, G. Causey. "Tern Island." *Sea Frontiers*, vol. 24, no. 3 (1978): 150-158.
- Bauer, Erwin A. "Hawaiian Islands National Wildlife Refuge." *Sea Frontiers*, vol. 18, no. 6 (1972): 346-356.
- Owte, Oscar T. "Count-Down for Gooneys?" *Sea Frontiers*, vol. 6, no. 2 (1960): 100-109.

# Sea Frontiers®

International Oceanographic Foundation

Volume 28, Number 3

May-June 1982





# Sea Frontiers®



VOLUME 28, No. 3  
MAY-JUNE 1982

F. G. Walton Smith  
*Editor in Chief*

Jean Bradfish  
*Executive Editor*

E. May Smith  
*Managing Editor*

Faith Schaefer  
*Associate Editor*

Evelyn Aderhold  
*Editorial Assistant*

Susan M. Markley  
Robert J. Riggio  
Susan M. Sogard  
*Researchers*



SEA FRONTIERS  
(ISSN 0026-9593)  
is published bimonthly.  
Copyright © 1982 by The  
International Oceanographic  
Foundation, 2979  
Rickenbacker Causeway,  
Virginia Key, Miami,  
Florida 33149. All  
rights reserved. Second-  
class postage paid at  
Miami, Florida.

- 130 The Unicorn that Goes to Sea  
*by F. G. Walton Smith*
- 136 What Is Sea Level? *by Edwin J. C. Sobey*
- 143 The Successful Submarine that Failed  
*by George Schaux*
- 148 Protection from Shark Bite: A Suit of Mail  
*by Jeremiah S. Sullivan*
- 153 Catalina's Life-Saving Marine Laboratory  
*by Anne Wagner*
- 156 Up from the Deep *by Alex Kerstitch*
- 158 Waikiki Roughwater Swim *by James F. Schlaiss*
- 162 The Australian Institute of Marine Science  
*by J. S. Bunt*
- 171 The Birds of Midway Islands  
*by G. Causey Whitlow*
- 178 Life in a Boat Channel *by Scott Johnson*
- 184 Science of the Sea in Books
- 188 About the Authors
- 191 Gifts from the Sea

The IOF is grateful for the assistance provided by numerous scientists of the University of Miami, NOAA, and other scientific institutions and organizations around the world.