

# HAWAII'S SEABIRDS

## TURTLES and SEALS



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# HAWAII'S

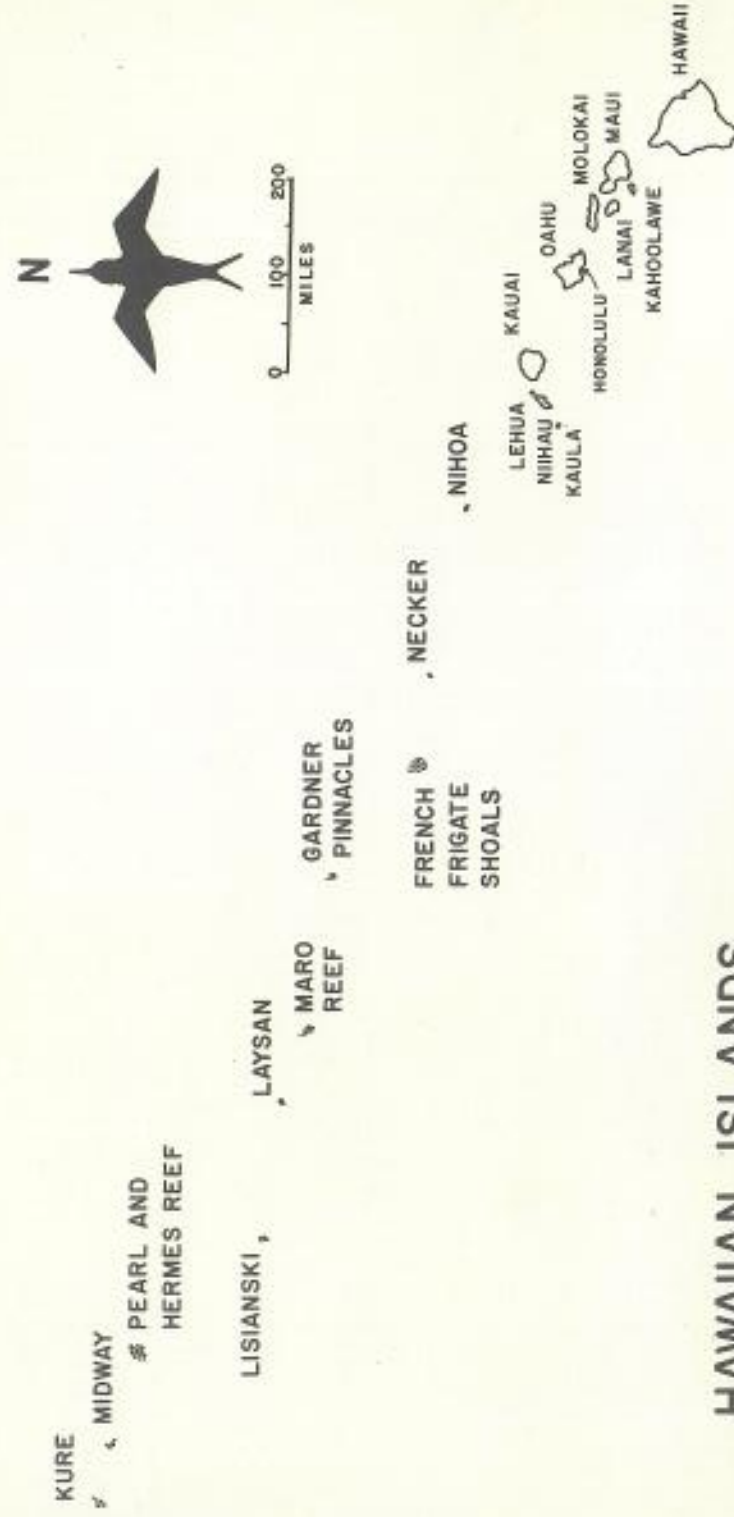
## SEABIRDS

### TURTLES & SEALS



Complete Guide With **69** FULL COLOR VIEWS  
BY GEORGE H. BALAZS





HAWAIIAN ISLANDS  
NORTH PACIFIC OCEAN

# HAWAIIAN

## SEABIRDS, TURTLES, AND SEALS

The seabirds, turtles and seals found in the Hawaiian Islands are among the most fascinating and beautiful wildlife in the world. Millions of seabirds regularly gather in colonies to lay eggs and raise their young. Huge marine turtles crawl from the ocean and deposit eggs in nests scooped out in the warm soil. Rare monk seals, found nowhere else on earth, haul out on white coral sand beaches and give birth to black velvet pups.

Those not fully acquainted with the chain of Hawaiian Islands may well ask, "Where does such an abundance of wildlife exist?" The answer is the Northwestern or "Leeward" Hawaiian Islands as they are often called. This isolated series of small volcanic islands, as well as reefs and shoals, extends for some 1200 miles to the northwest of Kauai. Compared to the inhabited main islands of Hawaii, the Leewards are mere specks of land set like gems in the vast blue Pacific. Their areas range in size from only a few acres to two square miles. Nevertheless, these small islands and adjacent seas play an essential role in the life of numerous creatures. Here one can find the breeding grounds of native Hawaiian seabirds, turtles and seals.

Since 1909 most of the Leeward chain has been designated a wildlife sanctuary. This action was taken because poachers were killing hundreds of thousands of seabirds for feathers used in making fashionable hats. Other abuses also occurred and it is indeed fortunate that a sanctuary was established. Today, the sanctuary is known as the Hawaiian Islands National Wildlife Refuge and it is recognized as one of the world's outstanding nature preserves. The purpose of the Refuge is simply to keep the area undisturbed and unexploited so that native species can breed and thrive. Such a

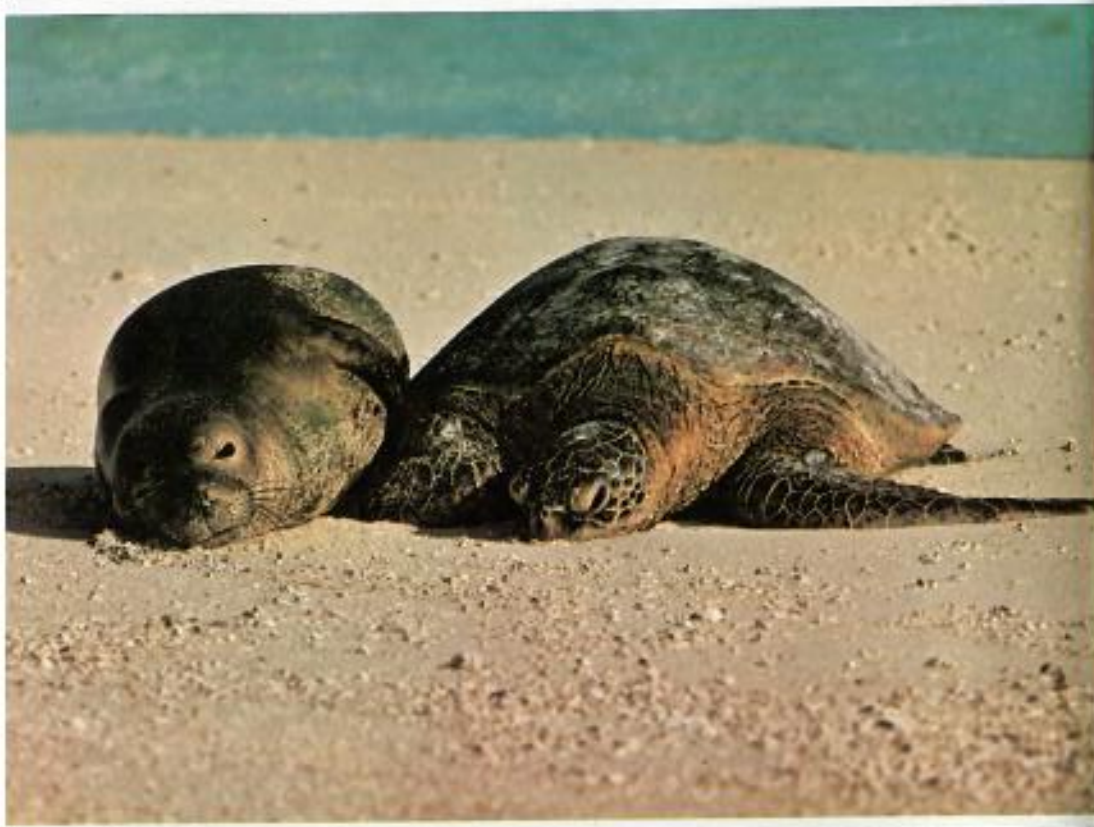




conservation measure will help to insure a rich wildlife heritage for future generations. The National Wildlife Refuge starts with Nihoa, an island with sheer lava rock cliffs, then extends for 900 miles through the low, sandy islets at Pearl and Hermes Reef. The only human habitation for this distance is a small 20 man Coast Guard navigation station on Tern Island at French Frigate Shoals. Midway and Kure are also in the Leeward chain, but are not part of the Hawaiian Islands National Wildlife Refuge. Midway is well known as the site of a decisive World War II battle and a large naval air station still exists there. Many seabirds continue to nest at Midway, but man's activities are often in conflict. Kure is the very last island in the chain and is also the site of a Coast Guard navigation station.

In the inhabited main Hawaiian Islands familiar to most people, civilization has taken a heavy toll on many species of wildlife. Seabirds, however, can often be seen soaring on the trade-winds and nesting occurs on a few of the rocky offshore islets. Turtles may also occasionally be seen, but only in their ocean habitat. Turtle nesting on beaches of the inhabited islands is now an exceptionally rare event. Unfortunately, seals are seldom found around the inhabited main islands.

Few people will ever have the opportunity to visit the remote Refuge islands of the Leewards and see first hand the spectacular wildlife. The following pages will therefore provide a unique look at many of the animal inhabitants.



# SEABIRDS



Seabirds include a large number of different species that live entirely from the ocean. Special salt excreting glands make it possible for these well adapted birds to drink sea water and shed the excess salt in tears. The food of seabirds consists primarily of fish and squid which they catch while flying close to the ocean's surface or, in some cases, by actually diving down into the water. Also, one group obtains most of its food by stealing fish from other birds. Some Hawaiian seabirds spend the greater portion of their life wandering over the far reaches of the North Pacific. Others live and search for food close to the island chain. All, however, must return to land for breeding purposes. At the breeding grounds of the Refuge islands, efficient use of the small land areas is necessary so everyone can find room to nest. This is accomplished by staggered breeding seasons and by using all of the available space. For example, some birds nest in tunnels burrowed underground, others lay eggs right on the surface, and still others build nests off the ground in shrubs. Most seabirds only lay a single egg each season. Both sexes take part in the parental duties of caring for the egg and later, feeding the chick. Usually the young bird leaves the island of birth shortly after learning to fly. Several years later, when sexually mature, it will return. Some seabirds live for a long time, with ages of 30 to 40 years having been reported.

Besides enriching the environment, flocks of seabirds are valuable to man for helping to locate schools of fish.



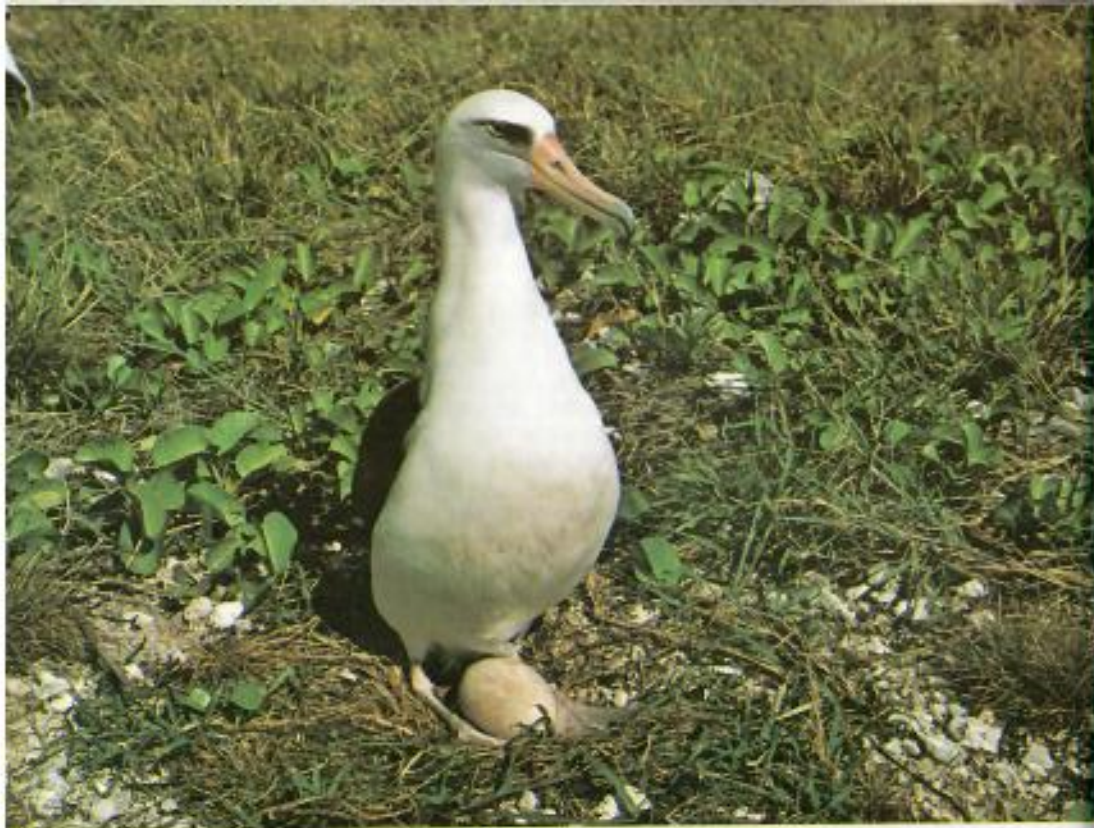
**LAYSAN ALBATROSS**

**MOLI**

*Diomedea immutabilis*

Albatrosses, or "gooney" birds as they are affectionately called, are large seabirds with wingspans of six to seven feet that permit effortless, gliding flight over the open ocean. During breeding, elaborate courtship dances, such as shown above, are carried out with a lifetime mate. Of the three species that occur in the North Pacific, the Laysan Albatross is the most abundant. Its breeding population is in excess of a half





Egg laying starts in November and, after a 64 day incubation period, the Laysan Albatross chick is reared for over five months.

Albatrosses have sharp, powerful bills that are used to seize large squid at the ocean's surface.



In order for the albatross chick to be fed, it must first stimulate the parent by vigorously nibbling at each side of its bill. When this has been successfully carried out, the parent opens its bill and leans forward so the chick can reach in crosswise to receive regurgitated pieces of squid.



#### BLACK-FOOTED ALBATROSS

*Diomedea nigripes*

Another species of North Pacific gooney that is almost totally dependent on the Leeward islands is the Black-footed Albatross. This seabird is slightly larger than the Laysan and its chick only requires about four months of parental care after hatching.





Keeping cool is a problem for the downy albatross chick as it sits in the intense



**SHORT-TAILED ALBATROSS**

*Diomedes albatrus*

This is the third species of gooney found in the North Pacific. Unfortunately, there are now only about 100 of these magnificent seabirds left. At one time they numbered over five million, but the ancestral breeding island of Torishima near Japan was continually exploited by feather hunters. In recent years a few of these rare albatrosses have been seen in the Leeward chain and hopefully they may breed there in the future.

This industrious medium sized seabird nests in an underground tunnel dug with its bill and webbed feet. Some of the Refuge islands are honeycombed with tunnels and great care must be taken by humans not to cave them in. Shearwaters are often called "moaning" birds because of their vocal moaning and groaning which is common during the nighttime hours.

**WEDGE-TAILED SHEARWATER**

'UA'U KANI

*Puffinus pacificus chlororhynchus*







The single egg of the Wedge-tailed Shearwater is laid during June. The young chick, which has a very fuzzy grayish down, spends most of its time in the cool underground nest. The parents feed the chick regurgitated fish and squid until November, at which time it is left to fend for itself.

This attractive seabird is smaller than the Wedge-tailed Shearwater, but similar in appearance. The single egg is laid right on the ground under a shrub or near a rock.

**CHRISTMAS SHEARWATER**

*Puffinus nativitatis*



**SOOTY TERN**

'EWA 'EWA

*Sterna fuscata subuensis*

Sooties are the most abundant of the Hawaiian seabirds with Laysan Island alone hosting a nesting colony of over one million of these small graceful terns. Sometimes this species is called the Wideawake Tern because of its continuous screaming and squawking. The single tan and speckled egg is laid on the ground. Shading it from the hot daytime sun is as important as keeping it warm during the cool nights. Hatching takes place in 30 days and for the first week of life the downy chick is watched over almost continuously. Later it is left alone while both parents are out at sea in search of food. In two months time the Sooty grows to adult size and acquires its juvenile plumage.







**GRAY-BACKED TERN**

PAKALAKALA

*Sterna lunata*

This tern is similar in appearance and behavior to the Sooty, but not nearly as abundant. Nesting takes place on the ground with the egg frequently laid under a shrub or close to a rock for protection.

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Common or Brown Noddy Terns as they are sometimes called have a pleasant sounding, low pitched voice as well as webbed feet that allow swimming on the ocean's surface. Nesting takes place throughout most of the year either on the ground or on rock ledges. Chicks may be colored grayish black or white, however both later develop exactly the same plumage. The reason for two different initial colorations is unknown.

**COMMON NODDY**

NOIO KOHA

*Anous stolidus pleskus*



A grayish black Common Noddy chick waits patiently for one of its parents to return with the evening meal.

This species of tern is very similar in appearance to the Common Noddy. However, the White-capped Noddy builds a large nest of twigs and leaves in shrubs, trees or rocky cliffs. The name noddy comes from the birds' characteristic nodding behavior while on land.

**WHITE-CAPPED NODDY**

NOIO

*Anous tenuirostris*







#### WHITE TERN

MANU O KU

*Gygis alba rothschildi*

This beautiful snow white tern is frequently called the Love or Fairy Tern. Often it will hover directly overhead when approached by humans. A single egg is laid on precipitous rock ledges or on the branches of shrubs or trees. No nest is constructed and the chick must cling tightly to the hatching site to keep from being swept away by the wind. The adults catch small fish and squid at the ocean's surface and hold them crosswise in their bluish black beaks. Later they are carefully fed one at a time to the chick.



#### MASKED BOOBY

A

*Sula dactylops personata*

This is the largest of three native boobies that breed in the Hawaiian Islands. Like most seabirds, both sexes are nearly identical in appearance. However, the Masked Booby male can be easily identified by its high pitched whistling voice. In contrast, the female emits a lower pitched loud squawk. Two eggs are laid right on the ground, but only one chick is successfully raised. Rapid fluttering of the throat and shading by a parent helps to keep the booby chick cool on hot days.







### BROWN BOOBY

A

*Sula leucogaster plumis*

This is a less abundant species of booby that lays a pair of white eggs in a nest of twigs built on the ground. Like the Masked Booby, if both eggs hatch, one of the chicks will be more aggressive and therefore obtain most of the food provided by the parents. This natural selection process helps to insure that the strongest grow to adulthood and reproduce.



Boobies are excellent flyers; they frequently catch fish by folding their wings and diving down into the ocean from great heights. All booby chicks obtain food by reaching their sharp pointed bills down into the parents' throats to retrieve partially digested fish.



### RED-FOOTED BOOBY

A

*Sula sula rubripes*

This species always builds a nest of twigs and vines off the ground in shrubs. Often the same shrub will contain several nests close to one another. Red-footed Boobies only lay a single egg. Like all boobies, incubation takes place by the parent positioning its webbed feet right over the egg.







**RED-TAILED TROPICBIRD**

KŌA'ŪLA

*Fleethen rubricauda rubricauda*

This species is noted for its beautiful long red tailfeather and bright red bill. During aerial courtship displays, the birds at times drift with the wind and appear to be flying backward. Although graceful in the sky, walking on land is very difficult due to the position of the short legs toward the back of the body. Tropicbirds like to nest under vegetation or in rock crevices where a single egg is laid. When approached too closely, the tropicbird chick aggressively defends its hatching site with loud screams. Feeding takes place by the parent placing its own bill down into the chick's throat and transferring fish and squid.



**GREAT FRIGATEBIRD**

ŪWA

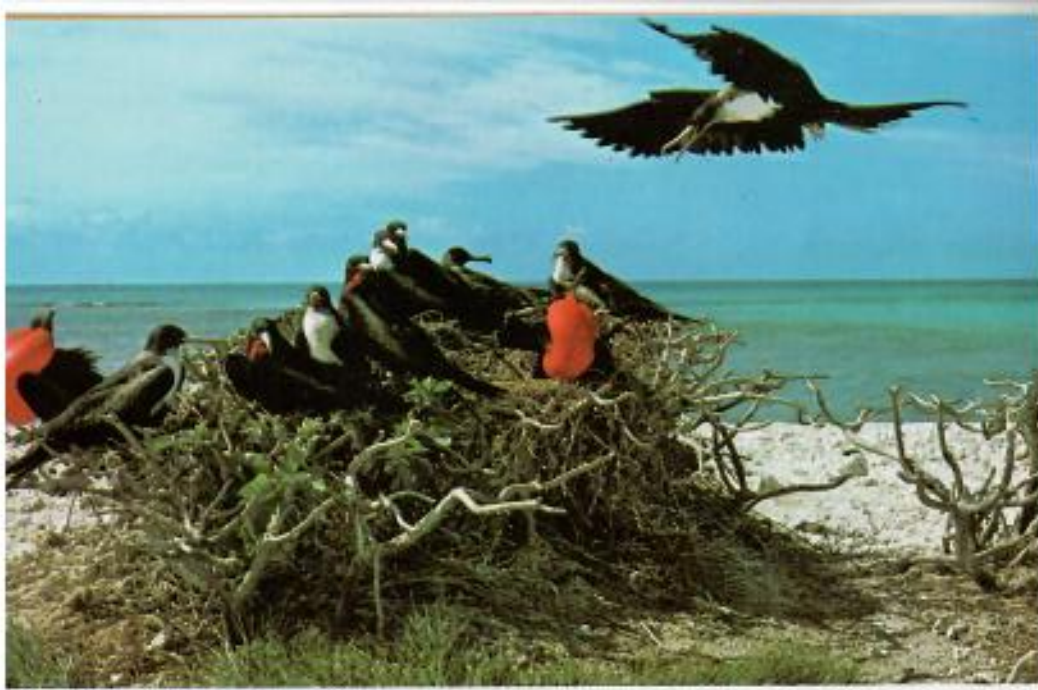
*Fregata minor palmerstoni*

Adult male and female frigatebirds are easily distinguished because the male is all black with a crimson throat pouch. This is often inflated like a balloon for courtship purposes. The female is also black, but has white feathers about the breast and throat. The frigatebird is frequently called the "man-o-war" bird because of its pirate-like habit of stealing fish caught by boobies. With a seven foot wingspan, frigatebirds are able to outmaneuver boobies and harass them into releasing a portion of their daily catch.





# MARINE TURTLES



Marine turtles are air breathing reptiles that have become highly adapted for life in the sea. Powerful flipper-like limbs and a streamlined body make it possible for these gentle creatures to swim rapidly through the water. Nesting takes place on land where the female comes ashore at night several times during each breeding season to bury a clutch of leathery eggs. After two months of unattended incubation, the small hatchlings dig to the surface and scamper quickly into the sea. Very little is known about the growth, survival and travels of young marine turtles after they leave the natal beach. The adults, however, are known to carry out periodic migrations, often over long distances, between resident feeding areas and beaches where reproduction takes place. The nesting beach is believed to be the same site where the turtle itself was originally hatched.

Man is the turtles' greatest enemy and serious declines have occurred in most populations around the world because of exploitation for meat, shell and soup stock.



Frigatebirds construct their nests in shrubs or sometimes in piles of sticks that have been gathered together. The chick takes from four to five months to acquire the juvenile plumage which is characterized by a white and brownish colored head. Unlike most other seabirds, the parents will continue to feed the juvenile at the hatching site for several months after it has learned to fly.



## HAWAIIAN GREEN TURTLE

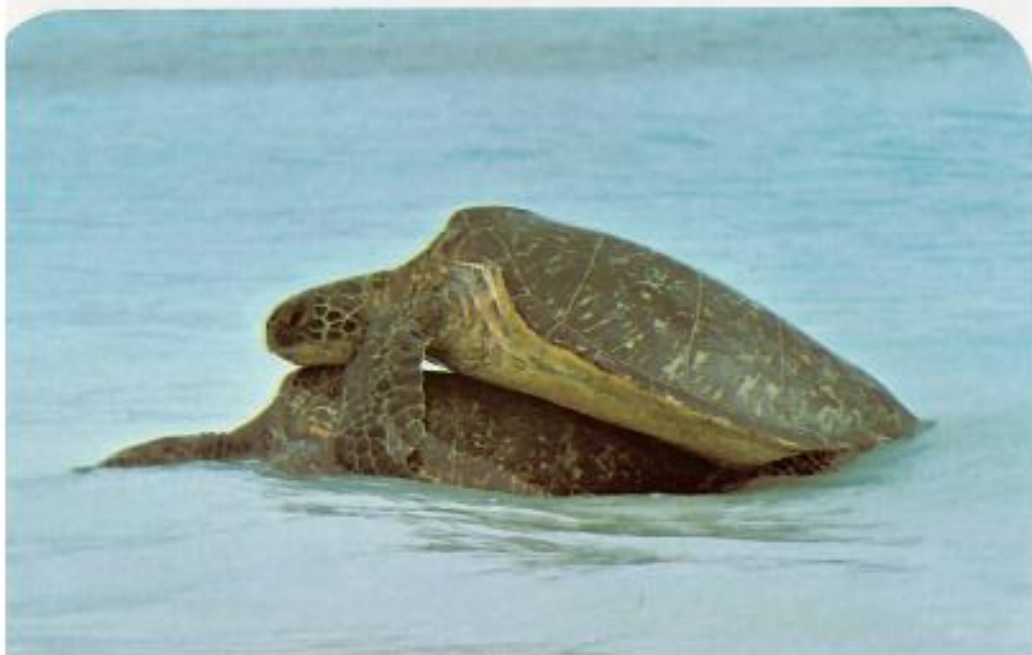
HONU

*Chelonia mydas agassizii*

This is the most abundant of the two species of marine turtles native to the Hawaiian chain. Green turtles are primarily vegetarians that feed on marine plants growing in shallow coastal waters. The turtle's common name comes from the color of the fat found inside







The Refuge islands are essential to the life cycle of the Hawaiian green turtle. Starting in March, adults from all parts of the chain travel to the breeding grounds of French Frigate Shoals. In these waters, amorous males actively seek the attention of females. Successful males use their flippers to clasp the female's shell during mating.

The adult male is easy to identify because of its long, prehensile tail which extends beyond the hind flippers. The female's tail barely reaches beyond the end of the shell.



Between mid-May and August female Hawaiian green turtles lay their eggs on the small islets at French Frigate Shoals. After crawling from the ocean, a nesting site is selected and excavation first takes place using the front flippers. The hind flippers then take over and, working alternately, carefully scoop out a chamber to receive the eggs. When completed, about 105 eggs are deposited into this expertly constructed cavity.

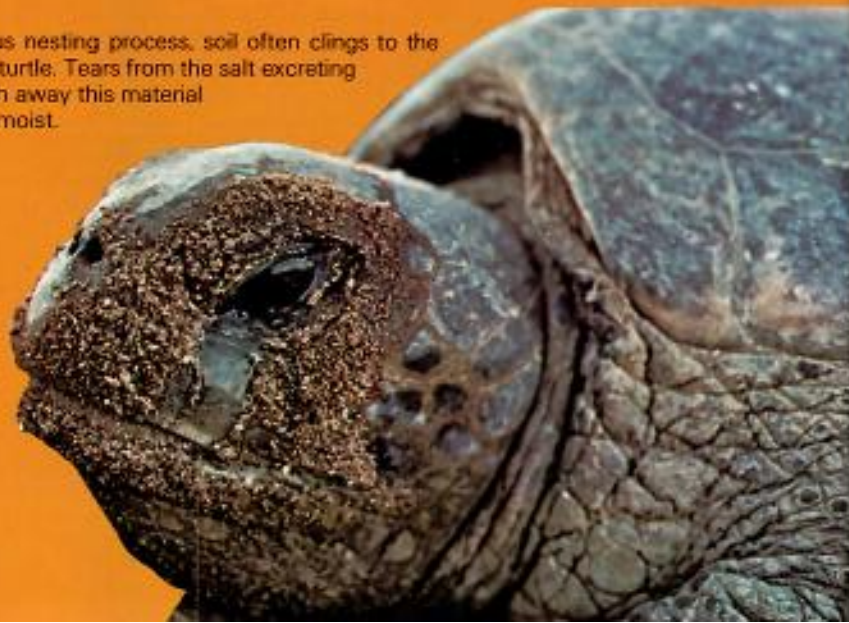






The turtle's clutch of eggs is covered over using the hind flippers and, later, with the front flippers which violently throw soil about. Often the entire nesting procedure lasts until after the sun has started to rise.

During the laborious nesting process, soil often clings to the face of the mother turtle. Tears from the salt excreting glands help to wash away this material and keep the eyes moist.



Newly hatched Hawaiian green turtles only weigh one ounce. When sexually mature, they will weigh between 200 and 375 pounds. No one really knows how many years it takes to reach adulthood or how old the turtles live to be. Unlike many breeding sites in other areas of the world, the seabirds at French Frigate Shoals do not prey on hatchling turtles. However, some do get eaten by beach crabs and reef fish.







Except for the female during nesting, most marine turtles never again return to land after leaving the natal beach. However, a special exception exists for Hawaiian green turtles. On the undisturbed Refuge islands, both males and females regularly crawl up on the beaches where they bask peacefully in the sun for hours at a time.







### HAWKSBILL TURTLE

'EA

*Eretmochelys imbricata*

This is the second species of native Hawaiian marine turtle, but its range is confined to waters around the main islands. The population is now very small and only four individual nestings have been reported in the past 10 years. Three of these occurred on the Island of Hawaii and one on Oahu. The hawksbill is easily distinguished from the green turtle by its pointed hawk-like beak. In the juvenile, the horny plates of the shell clearly overlap one another. This characteristic often disappears in the adult. Hawksbills feed on crabs and other bottom dwelling marine invertebrates. Their specialized beak is used to probe into coral and rock crevices in search of food. The photos shown here are of hawksbill turtles on display at Sea Life Park and the Waikiki Aquarium.



# MONK SEALS

Only two species of these rare marine mammals remain in the world. One inhabits remote areas of the Mediterranean Sea, and the other lives in the Leeward chain of the Hawaiian Islands. A third species formerly existed in the Caribbean, but was forced into extinction during the early 1950's by increased human use of the seal's habitat. The nature of monk seals is such that they are unable to adapt to the continued presence and activities of man.

Although residing in warm seas, monk seals nevertheless still possess a thick layer of blubber like the seals found in cold climates. The food of monk seals consists of eels, small octopus and reef fish which are captured at night. During the daytime, resting takes place on isolated and undisturbed beaches and rock ledges.



### HAWAIIAN MONK SEAL

ILIO HOLO | KAUAAU

*Monachus schauinslandi*

Between March and July, mother Hawaiian monk seals haul out on beaches of the Refuge islands to give birth to a single, fully developed black pup. In preparation for this event, the mother becomes extremely obese and may weigh over 800 pounds. Extra fat reserves are necessary to produce milk for the hungry pup and also to sustain the mother's own body. During the nursing period,





When the pup is a few days old, the mother takes it into the ocean for the first swim. Only the shallow protected waters close to shore are used. This is to prevent the inexperienced pup from being swept away by strong currents and exposed to deep waters inhabited by sharks. Several swimming lessons a day are carried out for the duration of the nursing period.







With a continuous supply of rich milk, the pup grows rapidly and its coat changes from black to silver gray. By the time five weeks have passed, the pup has increased from a birth weight of 35 pounds to a butterball of 140 pounds. During this period, the mother's reserves are depleted and she becomes very thin. Weaning takes place by her sudden and permanent departure from the island. From that day on, the young seal is on its own.



Life is hard during the seal's first year and considerable weight is lost. The coat gradually changes to tan and then to brown. After long periods in the





Molting periodically takes place throughout the monk seal's life. The older drab brown coat is shed in pieces and the new silver gray hair is exposed.

#### ABOUT THE AUTHOR

George H. Balazs is a research biologist with the Hawaii Institute of Marine Biology. He received a B.S. and M.S. degree from the University of Hawaii. Supported in part by the U.S. Fish and Wildlife Service, he has studied the green turtles at French Frigate Shoals in the Hawaiian Islands National Wildlife Refuge. He has published a number of scientific and popular articles dealing with the ecology and conservation of green turtles. Long periods of isolated field work have brought him in close contact with all the creatures that are dependent on the Refuge. Photos were taken by the author.



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