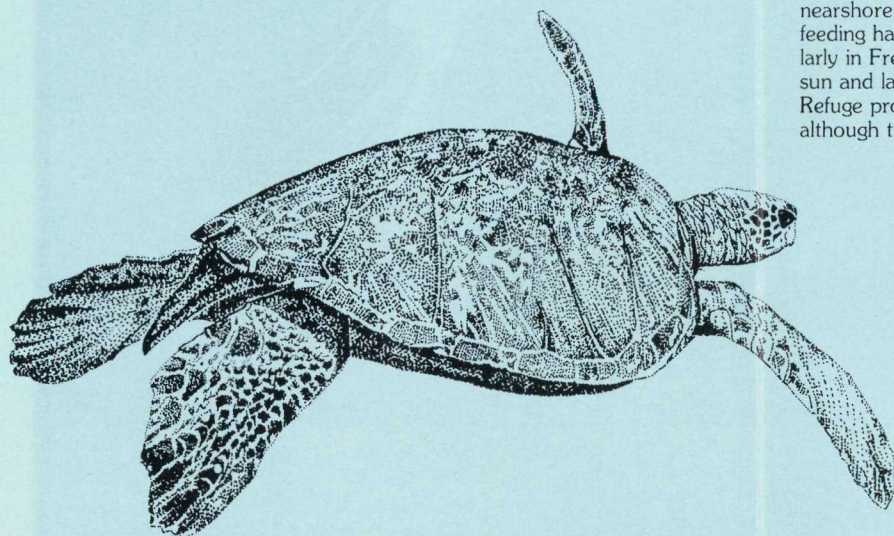


THE REMOTE ISLAND REFUGES

Some Facts About Remote Pacific Islands and Wildlife

- Over 5 million seabirds (18 species) nest on less than 2,000 acres on the northwestern Hawaiian Islands.
- Many seabirds roam the Pacific Ocean for several years before returning to remote islands to nest.
- Frigatebirds fly continuously when at sea. Their feathers won't repel water like some other seabirds. To supplement the fish they catch, frigatebirds frighten boobies and shearwaters and take their food. Hawaiians called them Iwa, which means "thief".
- Albatrosses don't nest until they are about seven years old. They will choose their mates and nest together each year for life. They may live over 30 years.
- 250,000 acres of submerged reefs surrounding 1,800 land acres of the remote Hawaiian Islands NWR provide habitat for fish and other life which in turn feed millions of seabirds.
- Green Sea Turtles that nest on Pacific islands may roam several hundred miles in search of feeding areas.
- As an experiment albatrosses were flown blindfolded to Alaska, San Francisco, Los Angeles, Australia and other points. Upon release they flew back to Midway Island (1,500 miles west of Honolulu) within 10 days.



Remote Island NWRs—Tiny Wildlife Oases in the Vast Pacific Ocean

Mere dots in the vast ocean, the remote mid-Pacific islands host breeding monk seals, turtles and millions of seabirds. They nest on rocky islands and islets among coral atolls.

The marine environment on the remote island refuges is largely undisturbed by commercial exploitation and consequently many species are unusually abundant. The relatively pristine nature of the nearshore waters and the importance of this habitat to seals, turtles and seabirds led to the inclusion of large bodies of protected lagoon and nearshore waters into the boundaries of various remote island refuges.

There are more than 14 million seabirds of 18 species on the Hawaiian Islands NWR alone. Sooty Terns are the most abundant nesters on the remote islands. Also common are albatrosses, shearwaters, petrels, tropicbirds, frigatebirds, boobies, and noddies.

The terrestrial habitat of the Hawaiian Islands National Wildlife Refuge is shared by endemic land birds on the small islands of Nihoa and Laysan. The Nihoa finch and Laysan finch are representatives of the unique Hawaiian honey creeper subfamily that includes several more species in the main Hawaiian Islands. The Nihoa millerbird is an endemic representative of an old world warbler family confined in distribution to this 168 acre island. A close relative formerly found on Laysan Island is now extinct, as is a flightless rail and honeycreeper that inhabited the same island. All three birds were indirect victims of a short but devastating period of human exploitation for guano and feathers which was stopped early in this century when this refuge was established. One additional species, the Laysan duck, barely survived this period and has made a significant comeback.

The Hawaiian monk seal is another endangered species confined in distribution to the Hawaiian Islands NWR. Beaches and rocky shelves on several islands provide space to haul out and rear their pups, while nearshore waters within and adjacent to the Refuge provide critical feeding habitat. These seals share the beaches of sandy islets, particularly in French Frigate Shoals, with green sea turtles that bask in the sun and lay their eggs in sand pits during the summer months. The Refuge provides the primary breeding habitat for the green sea turtles, although the species ranges widely into the main Hawaiian Islands.

Managing Remote Islands for Wildlife.

The remote island refuges are manipulated only where it is necessary to control predators, exotic plants or other factors adversely affecting the habitat or resident wildlife. Public access is severely restricted because of the history of abuse and slow recovery of these vulnerable areas when disturbed. Even research activities are closely scrutinized to minimize unnecessary disturbance and are confined largely to projects likely to yield important management data. A refuge field station is operated at Tern Island in the French Frigate Shoals, Hawaiian Islands NWR.

Remote Island Refuges

Hawaiian Islands NWR—This Refuge, the oldest and largest in the complex was designated in 1909 by President Theodore Roosevelt. The Hawaiian Islands NWR includes all the emergent rocky islands, sandy islets and major atoll lagoons between Nihoa Island and Pearl and Hermes Reef in the northwestern portion of the Hawaiian Archipelago. In total, nearly 1,800 acres of emergent land and over 250,000 acres of submerged land are included. Remnants of prehistoric occupation by early Polynesians are also protected on Nihoa and Necker Islands.

Johnston Atoll NWR—This Refuge is located 825 miles southwest of Honolulu. The Refuge is managed cooperatively with the Defense Nuclear Agency. Twelve species of seabirds breed on four islands within the atoll. The reef community in the lagoon supports diverse marine life including green sea turtles. The atoll was first protected as a federal bird refuge in 1926, although it has been used extensively as a military installation since 1939.

Jarvis Island NWR—Jarvis is part of the Line Islands Archipelago and is located just below the equator, 1,300 miles south of Honolulu. The island is about 1,100 acres in size. The Refuge also includes 36,419 acres of adjacent submerged lands. Like Baker and Howland, the island is believed to have been discovered by European sailors early in the 18th century and was also exploited for its guano resources. Eight species of migratory seabirds are known to nest on Jarvis Island. Feral cats were at one time found on all three of the equatorial refuges where they preyed heavily on nesting seabirds. Cats were successfully eradicated from Baker in 1964 and Jarvis in 1983. All three islands were designated as National Wildlife Refuges in 1974.



Red-tailed Tropicbird

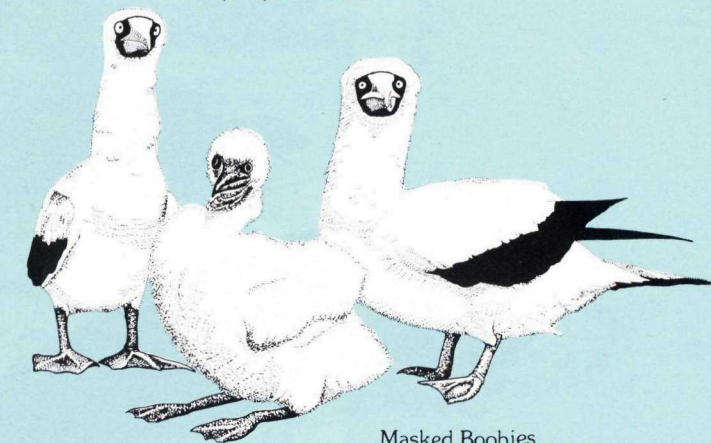
For more information:

U.S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 5302
P.O. Box 50167
Honolulu, Hawaii 96850
(808) 541-1201

Baker Island NWR—This island lies just north of the equator approximately 1,600 miles southwest of Honolulu. The 340-acre island is surrounded by 31,397 acres of submerged land included in the Refuge. Like the Hawaiian Islands NWR, Baker Island has a history of commercial guano harvest late in the 18th century and was occupied by American forces during World War II. The island supports four migratory seabird species.

Howland Island NWR—This island is located within 200 miles of Baker Island in the central Pacific. Both islands are vegetated by grasses, prostrate vines and low-growing shrubs. Howland contains 400 acres of emergent land and 32,150 acres of submerged land within the three mile limit of the Refuge. Guano harvest operations ceased in 1878. This island enjoyed some fame this century when an airstrip was built in 1937 for Amelia Earhart's ill-fated flight. Today Howland Island NWR supports eight species of migratory seabirds.

Rose Atoll NWR—The atoll is the easternmost emergent land in the Samoan Archipelago and is among the smallest of all atolls in the world. Two small islets, less than 20 acres in total size, are protected by a square reef, dominated by coralline algae. The largest of the two islets supports a dense forest of *Pisonia* and *Tournefortia* trees, and these trees provide cover and nest sites for 12 species of migratory seabirds. Threatened green sea turtles frequently nest on the two islets and feed in the central lagoon. Among the diverse marine fauna in the lagoon are numerous fish species and a population of giant clams. The Refuge, which includes the islets, the entire lagoon and surrounding reef, was established in 1974. It is managed cooperatively by the U.S. Fish and Wildlife Service and the American Samoa Government. At 14½ degrees south latitude it is the southernmost refuge in the National Wildlife System.



Masked Boobies



U.S. Department of the Interior
Fish and Wildlife Service

RF12510

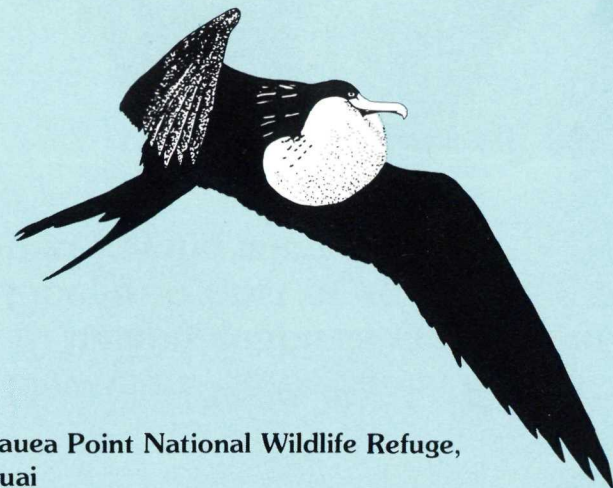
September 1985



HAWAIIAN AND PACIFIC ISLANDS

NATIONAL WILDLIFE REFUGES





Kilauea Point National Wildlife Refuge, Kauai

Thousands of visitors come to Kilauea Point each year to view its seabirds and marine mammals, to photograph and enjoy the spectacular scenery and the historic old lighthouse. The lighthouse was built in 1913 and placed on the National Register of Historic Places in 1979.

The exhibits at Kilauea Point NWR describe some of the wildlife and habitats of the five wetlands refuges and the six remote island refuges. These refuges and their significance are briefly described in this leaflet.

Directions: Located 1 mile north on a paved road from Kilauea and Kuhio Highway on the north coast of Kauai, Hawaii.

A Variety of Seabirds

Large colonies of wedge-tailed shearwaters and red-footed boobies nest at Kilauea Point. You may also see other seabird species such as the Laysan albatross, the great frigatebird, and the red-tailed tropicbird.



Visitor Hours

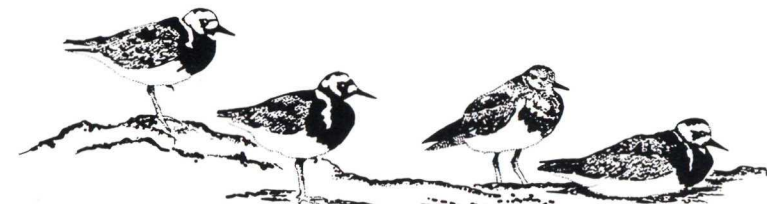
Kilauea Point NWR is open to the public Sunday through Friday, 12 pm to 4 pm. These hours will be expanded as staff and volunteers become available.

A selection of natural history books is offered at the lighthouse visitor center by the Kilauea Point Natural History Association.

THE WETLAND REFUGES

Some Interesting Facts About Hawaiian Waterbirds and Wetlands

- The Hawaiian coot, Hawaiian stilt, Hawaiian gallinule and Hawaiian duck are found only on the main Hawaiian Islands—they don't migrate to the mainland.
- The native birds are joined from September to April by pintails, shovelers and other waterfowl that migrate thousands of miles from Canada, Alaska or Russia.
- Shorebirds like plover, tattler, turnstones and sanderlings also make the same annual migration from the mainland that waterfowl do.



Ruddy Turnstones

Mainland Migrants and Other Residents also Benefit from Hawaiian Wetlands.

More than two dozen species of ducks and geese occasionally migrate to Hawaiian wetlands for the fall to spring seasons. The most common species are pintails and northern shovelers that breed in North America.

Black-crowned night herons are common residents of the Hawaiian Islands. They feed on fish and invertebrates but may also take young waterbirds.

A diverse group of migratory shore birds also winters in Hawaii. They visit wetland refuges where suitable mudflats or shallow water habitats are available. Pacific golden plovers, sanderlings, wandering tattlers and ruddy turnstones are most common.

Habitat Loss and Predators Endanger the Waterbirds

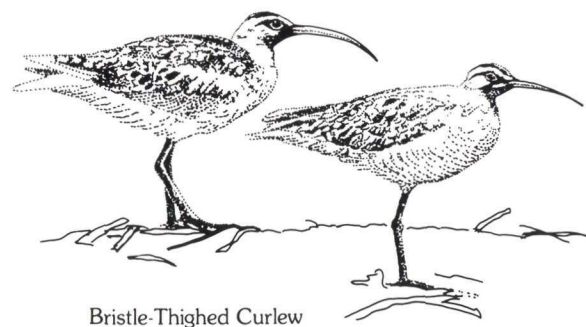
Formerly more common and more widely distributed, these species have experienced population decline due to continuing loss of habitat, introduced predators and, to some extent, harvest by man. Although celebrated in legends of early Hawaiians, these species were collected for feathers and food, and more recently were hunted for sport until protected prior to World War II. Housing and resorts continue to expand into existing or potential marsh habitat in the Hawaiian Islands. The natural variety of habitats and quality of water and food supply was greater in the past before the wetlands were converted to other uses.

Habitats are Acquired and Managed to Enhance Waterbird Use

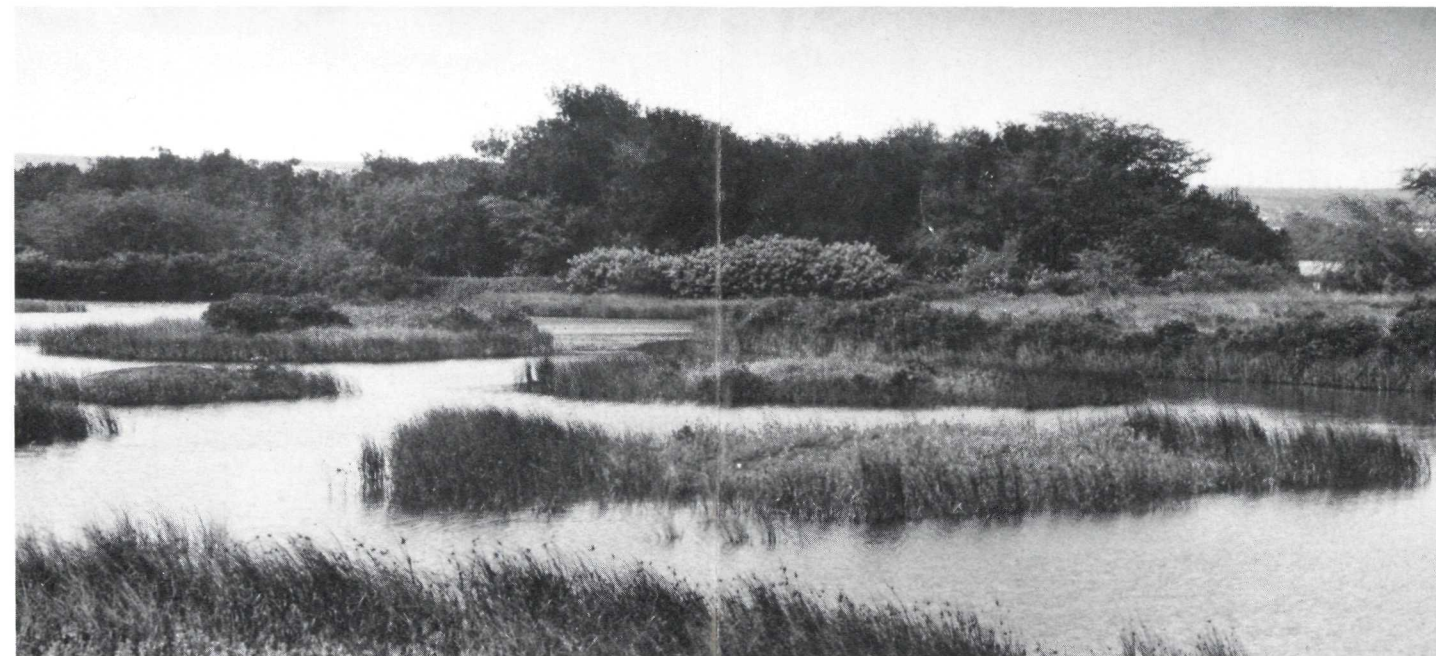
All birds using the Hawaiian wetlands need appropriate foods and freedom from disturbance. The endangered waterbirds that only nest in Hawaii also need protection from predators.

A dependable water supply is necessary to support the waterbirds. Controlling water levels in various ponds can create conditions favorable for certain plants, insects and other organisms which in turn are food for the birds.

Creating artificial islands in refuge ponds separates bird nesting areas from dogs, cats and mongoose. Mammal-proof fences afford protection from feral dogs.



Bristle-Thighed Curlew



Facts and Figures of Wetland Refuges

Hanalei NWR (Kauai)—This Refuge established in 1972 includes 917 acres of the lush Hanalei valley. Taro is commercially farmed on a portion of the Refuge by permittees. A by-product of this farming is good habitat for all four endangered waterbirds. A new water system replacing the historic hand-dug irrigation ditches has permitted the acreage of taro and other wetlands to increase. The Refuge is not open to the public. An interpretive overlook on the state highway north of the Refuge explains the Refuge values and affords a spectacular view.

Huleia NWR (Kauai)—In 1973 approximately 240 acres of wooded slopes and bottom lands along the Huleia River were purchased to provide additional waterbird habitat. The Refuge includes lands formerly in taro and rice that will be modified extensively to attract endemic waterbirds to new breeding and feeding areas. The Refuge lies adjacent to the famous Menehune Fish Pond, a registered national historic landmark. The Refuge is not open to the public. It can be seen from the Menehune overlook along the road.

Kakahaia NWR (Molokai)—This Refuge, established in 1976, includes a remnant inland freshwater fish pond along the south coast of Molokai. This pond was expanded in 1983 to enhance habitat for stilts and coots. The county of Maui operates a small beach park on refuge lands across the coast highway that is open to the public.

James Campbell NWR (Oahu)—This Refuge was established in 1977 through the lease of 142 acres of land in two major parcels from the James Campbell Estate. The Refuge includes the spring-fed Punamano Pond and a series of remnant cane wash water settling basins known collectively as Kii Unit. Prior to the closing of the Kahuku Sugar Mill in 1971, these settling basins provided important habitat for stilts, coots, and gallinules. This habitat is being restored and enhanced through major modifications to the impoundments and water system to provide manageable nesting and feeding areas. The Refuge is open to the public on certain weekends and at other times by special permit.

Pearl Harbor NWR (Oahu)—This 40-acre Refuge was established in 1977 on Navy lands in an effort to compensate for loss of stilt feeding habitat when a reef runway was added to the Honolulu International Airport. The Honouliuli Unit was constructed at the site of remnant salt evaporation ponds through the excavation of new ponds with several nesting islets. Similar habitat was created for the Waiawa Unit at the northwest side of Waiawa Peninsula. These units were created primarily for Hawaiian Stilt, but other resident and migratory birds use them also. The Refuge is open by special permit only.

Public Uses are Limited by Size of Refuges

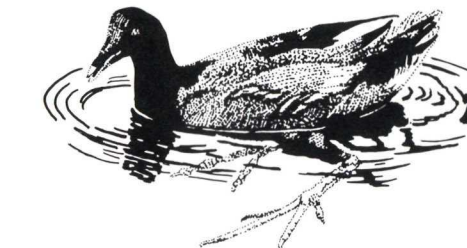
Public use of wetland refuges is limited because the areas are small and human visitors can disturb the endangered birds.

Four Endangered Waterbirds are Found on the Wetland Refuges

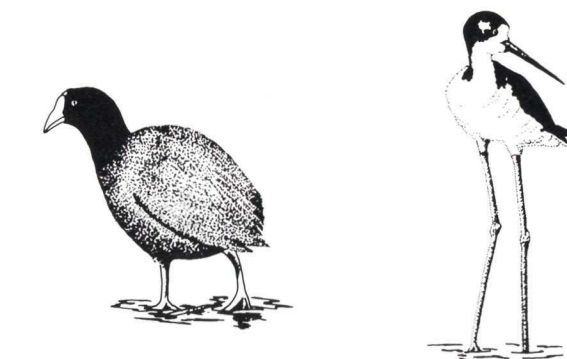
Wetland refuges on the main islands support four endangered waterbirds that are unique to Hawaii.



Hawaiian Duck or Koloa Maoli—is similar to though smaller than the common mallard. **Koloa Maoli** are most common on Kauai where they inhabit natural and artificial ponds, streams, ditches and marshes.



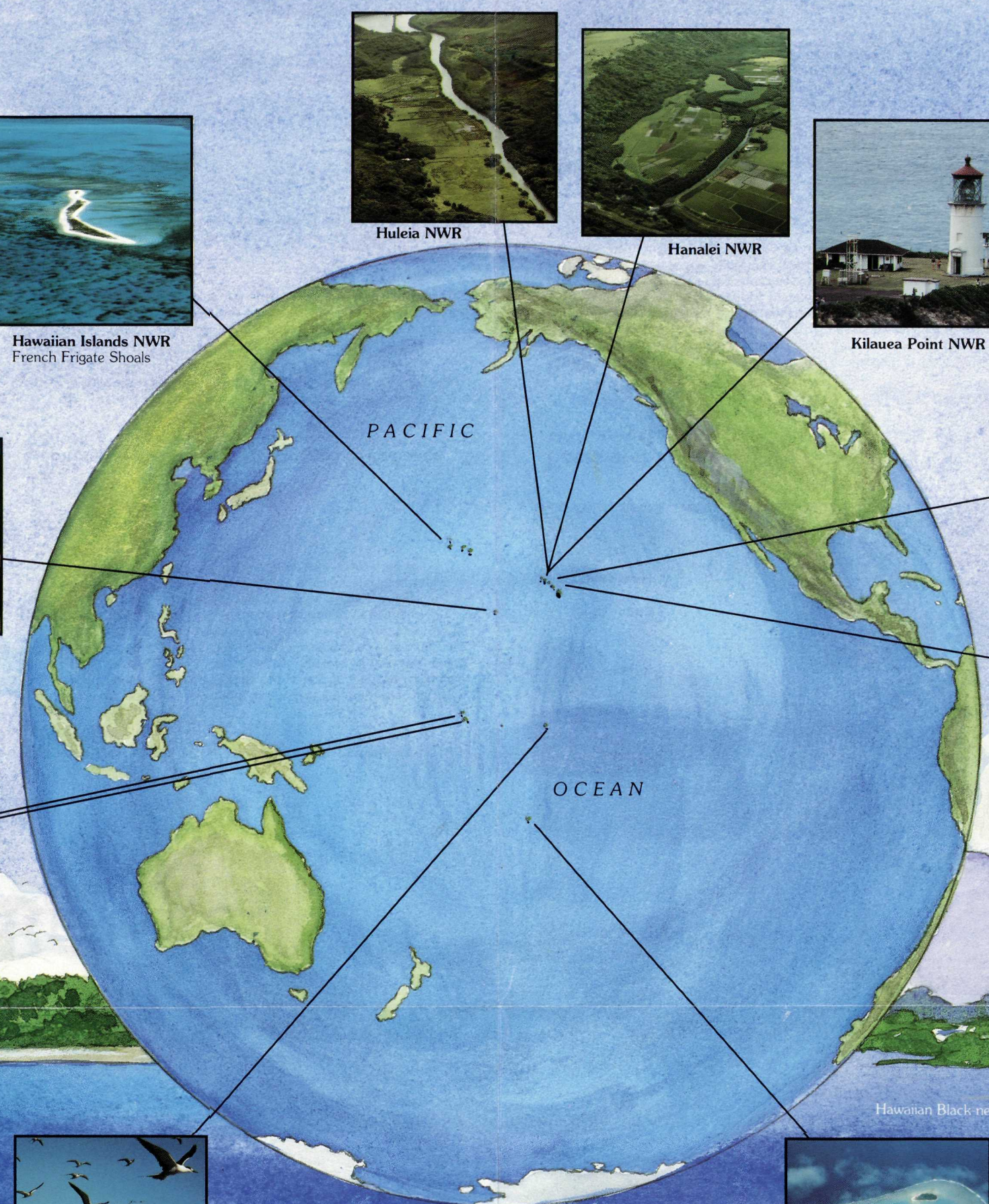
Common Moorhen (Hawaiian Gallinule)—is related to the coot and is found in similar habitats. It is distinguished by its bright red bill and forehead. Its Hawaiian name is 'Alaé Ula.



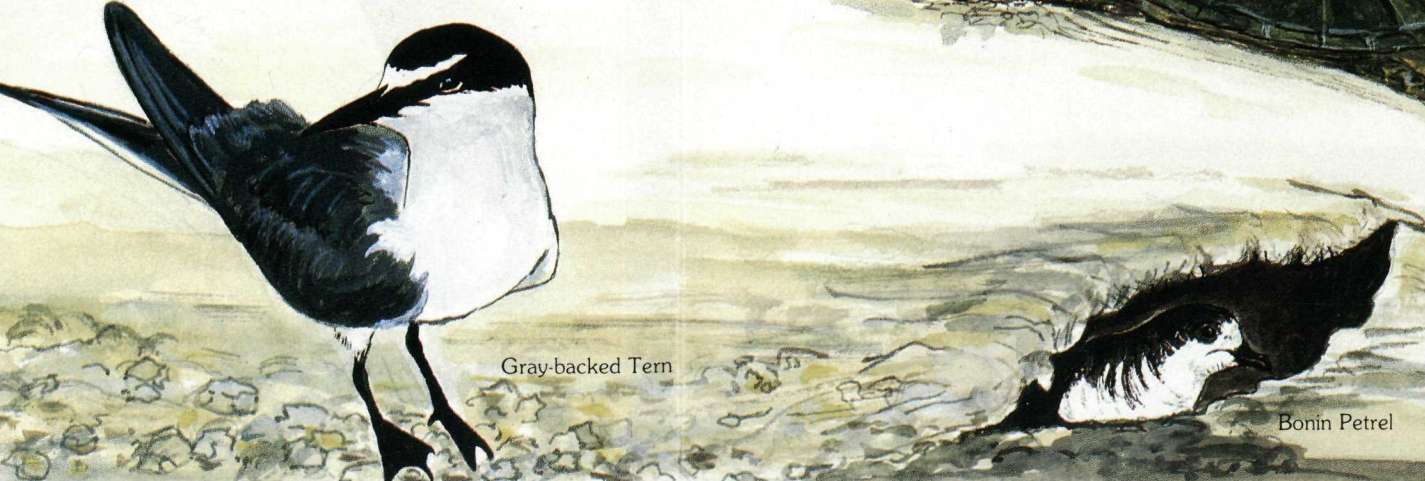
American (Hawaiian) Coots—are easily recognized by their white bill and forehead. They prefer to nest in fresh or brackish ponds on floating nests built from aquatic vegetation. Their Hawaiian name is 'Alaé Ké oké o.

Black-necked (Hawaiian) Stilt—a 16-inch tall wading bird that nests on mud flats and on islands in ponds or marshes. Its Hawaiian name is **Aé o**.

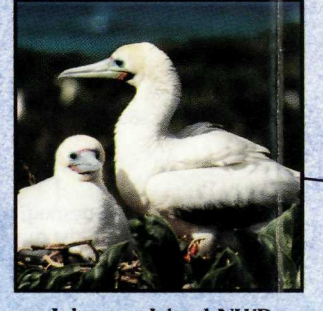
HAWAIIAN AND PACIFIC ISLANDS NATIONAL WILDLIFE REFUGES



Hawaiian Monk Seals, Green Sea Turtles and 10 million seabirds come from all over the Pacific Ocean to nest or rear young on the remote, mid-Pacific islands.



Hawaiian Islands NWR
French Frigate Shoals



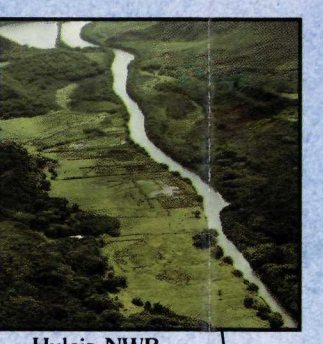
Johnston Island NWR
Red-footed Boobies



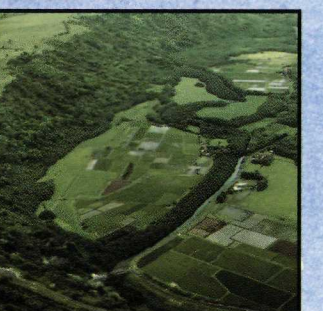
Baker Island NWR
Howland Island NWR



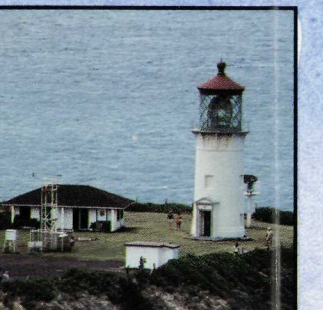
Jarvis Island NWR
Sooty Tern Colony



Huleia NWR



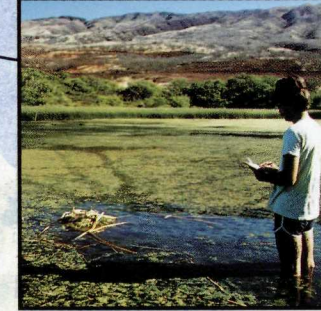
Hanalei NWR



Kilauea Point NWR



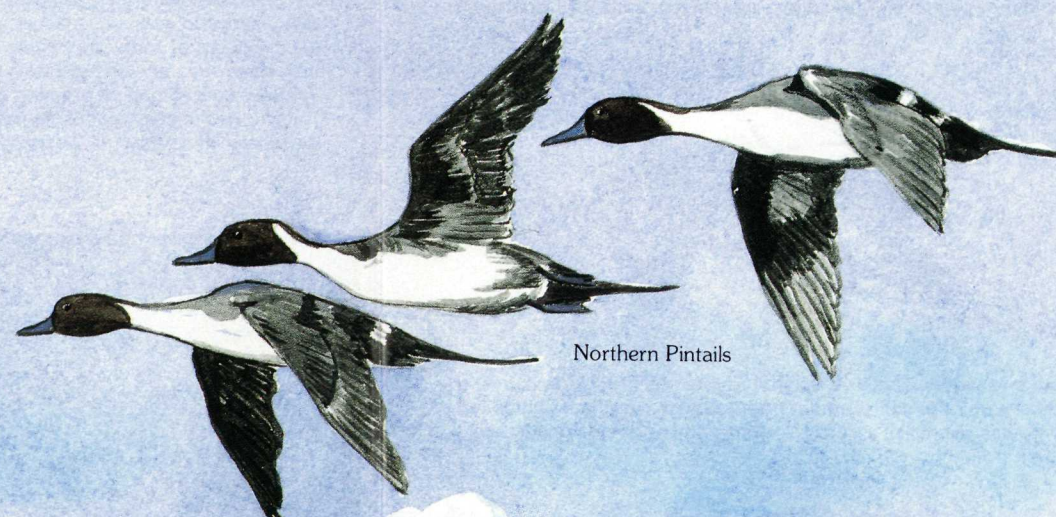
James Campbell and
Pearl Harbor NWRs



Kakahaia NWR



Rose Atoll NWR



Marshes and ponds on the main Hawaiian Islands support endangered resident waterbirds and migrating waterfowl and shorebirds from the North American mainland and other continents.



Hawaiian Black-necked Stilt



Pacific Golden Plover



Sanderlings



Wandering Tattler



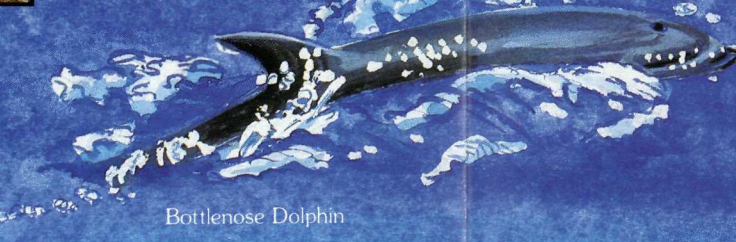
Common Moorhen
(Hawaiian Gallinule)



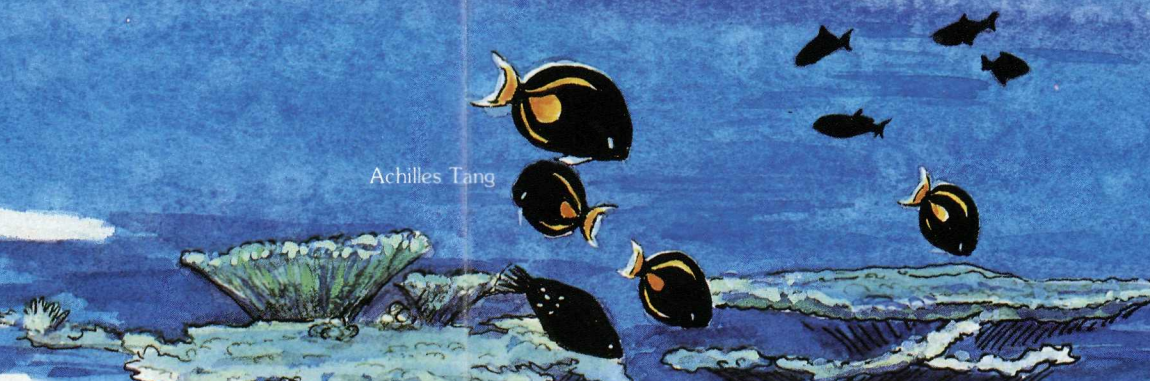
Hawaiian Coot



Hawaiian Duck
(Koloa Maoli)



Bottlenose Dolphin



Achilles Tang



Table Acropora Coral



Taro Plants



Black-crowned Night Heron