

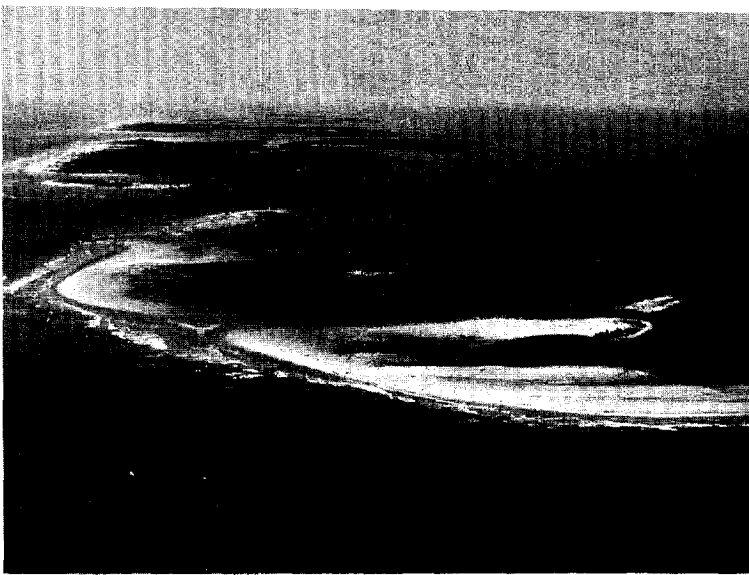
# GULF ISLAND NATIONAL WILDLIFE REFUGES



Sandwich and royal terns nesting on Breton Refuge.

THE GULF ISLAND NATIONAL WILDLIFE REFUGES consist of a number of islands lying offshore from the States of Louisiana and Mississippi, in the sparkling blue waters of the Gulf of Mexico. They were set aside chiefly for the protection of migratory waterfowl and a variety of colonial nesting birds and are administered by the Bureau of Sport Fisheries and Wildlife, in the U.S. Department of the Interior. Supervised from a single office in Biloxi, Miss., there are three units: Breton National Wildlife Refuge in St. Bernard and Plaquemines Parishes, La., and Horn Island and Petit Bois National Wildlife Refuges in Jackson County, Miss.

These island refuges play an important part in the national wildlife conservation effort. They guarantee that many wild birds will have a place to spend the winter, and that many others will have a place to nest and rear their young. They offer miles of sandy beaches where sea turtles lay their eggs. Their undisturbed shorelines are vital to many kinds of salt-water fish that feed and spawn in adjacent waters. Were the islands not afforded protection through being refuges, unique wildlife and scenic values would be seriously threatened or irretrievably lost, as has happened on so much of the shorelines of the Gulf of Mexico.



Portion of the Chandeleur Islands, Breton Refuge.



Interior ponds on Horn Island.

## BRETON NATIONAL WILDLIFE REFUGE

Breton National Wildlife Refuge was established in 1904. It is in two parts: Breton Island proper, and the long, crescentic chain of the Chandeleur Islands. This refuge, off the northeastern part of the great Mississippi River Delta, contains 7,512 acres.

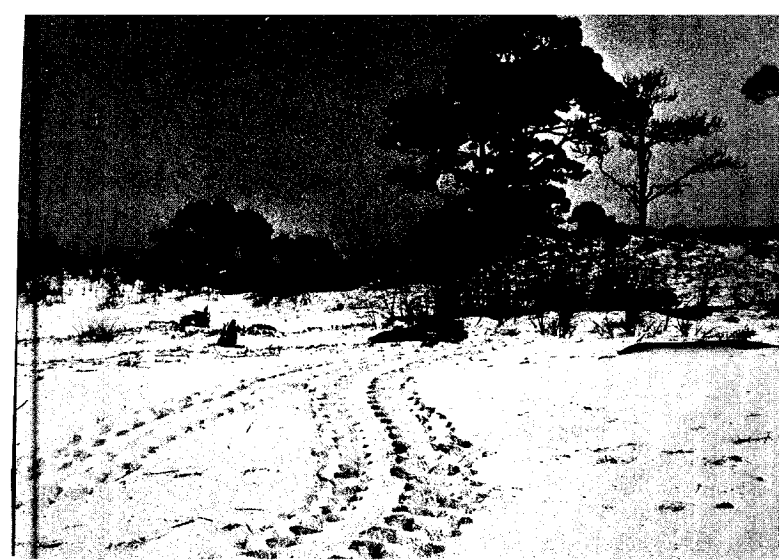
Breton Island is actually two adjacent islands, with a combined length of 5 miles and a width of less than 1 mile. The islands are about 12 miles from the Mississippi Delta. They are partly covered by a low growth of black mangrove and black rush, and have shallow salt-water marshes on the mainland side. In winter, waterfowl use the shallows near the islands, and in summer the beaches have nesting colonies of royal terns, Sandwich terns, and black skimmers. An oil company has drilled a number of wells in the bed of the sea about the islands, and has constructed an oil collection station on the northern island.

The Chandeleur Islands make up the greatest part of the Breton Refuge. They are a series of barrier islands forming a crescent 35 miles long, but averaging less than a mile in width. Their northern end is almost 25 miles from the Mississippi coast, from which they are mainly visited. They are low, with a fine sandy beach along the Gulf side, and fall off on the Chandeleur Sound side into a maze of ponds and inlets and marshes. Their vegetation is similar to that of Breton

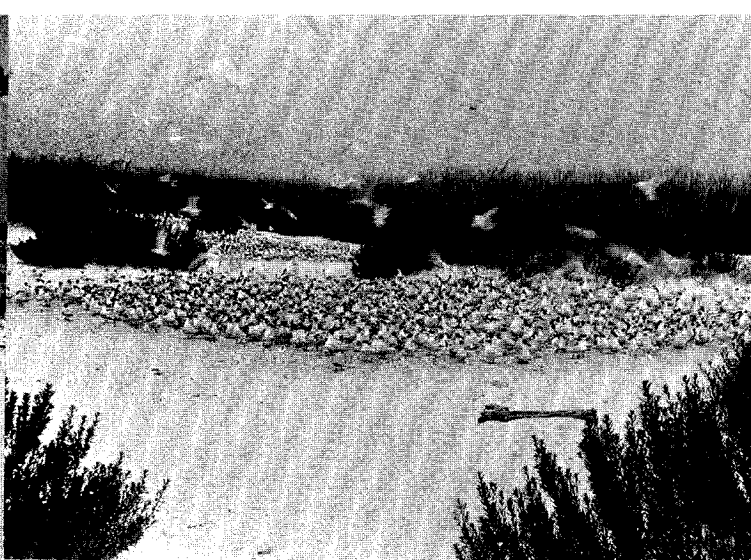
Island. Shoals along the Sound side provide excellent wintering habitat for redhead ducks. The redheads find an abundance of food here and when the weather is rough they can rest on the interior ponds. In summer, colonies of laughing gulls, royal, Sandwich, and Caspian terns, and black skimmers are found on the beaches, and common and snowy egrets nest in the mangroves. The islands are particularly favored by sea turtles looking for a place to deposit their eggs. Despite the islands' distance from the mainland, they are frequently visited by boat in spring and summer by fishermen and picnickers. During the late fall and winter months they are closed to human use to give maximum protection to waterfowl.

## HORN ISLAND NATIONAL WILDLIFE REFUGE

Horn Island National Wildlife Refuge consists of 2,419 acres, or about two-thirds of the island. The remaining acreage is in private hands. The refuge was established in 1958. The entire island is about 13 miles long and three-fourths of a mile wide, lying on an east-west axis 9 miles from the Mississippi mainland. It has a wide sand beach on both sides, backed by low dunes on the Gulf side. The interior of the island consists of a series of brackish ponds, lagoons, and marshes, surrounded by marsh vegetation and separated one from another by extensive growths of slash pine, yaupon, wax myrtle, button bush, rosemary, etc.



Sea turtle "crawl" on Horn Island.



Nesting terns on Petit Bois Island.

The interior waters are used by wintering blue and snow geese and ducks of several species, and shallow waters adjoining the island accommodate large numbers of redheads and lesser scaups at the same time. During the spring and summer, nesting willets, snowy plovers, and least terns are found on or near the beaches. Common and snowy egrets and green, great blue, and Louisiana herons nest about the ponds and lagoons.

The Bureau of Sport Fisheries and Wildlife has installed more than 7 miles of sand fence on the island, to promote the formation of dunes that will protect the interior of the island from severe storms. Such storms have a considerable effect on the island; in 1960, they shortened the island by about half a mile on the east end while lengthening the opposite end by about a quarter of a mile. Unusually severe storms have occurred four times in the present century, in 1906, 1916, 1947, and again in 1960. The 1906 hurricane blew away a lighthouse at the east end of the island, including the lighthouse keeper and his family.

The Bureau maintains a patrol cabin on the island. Persons visiting the refuge during the time it is open to the public should be on watch for signs delimiting areas used by nesting birds and turtles, and not enter such areas. The refuge is closed to the public during the fall and winter months for protection of wintering waterfowl.

## PETIT BOIS NATIONAL WILDLIFE REFUGE

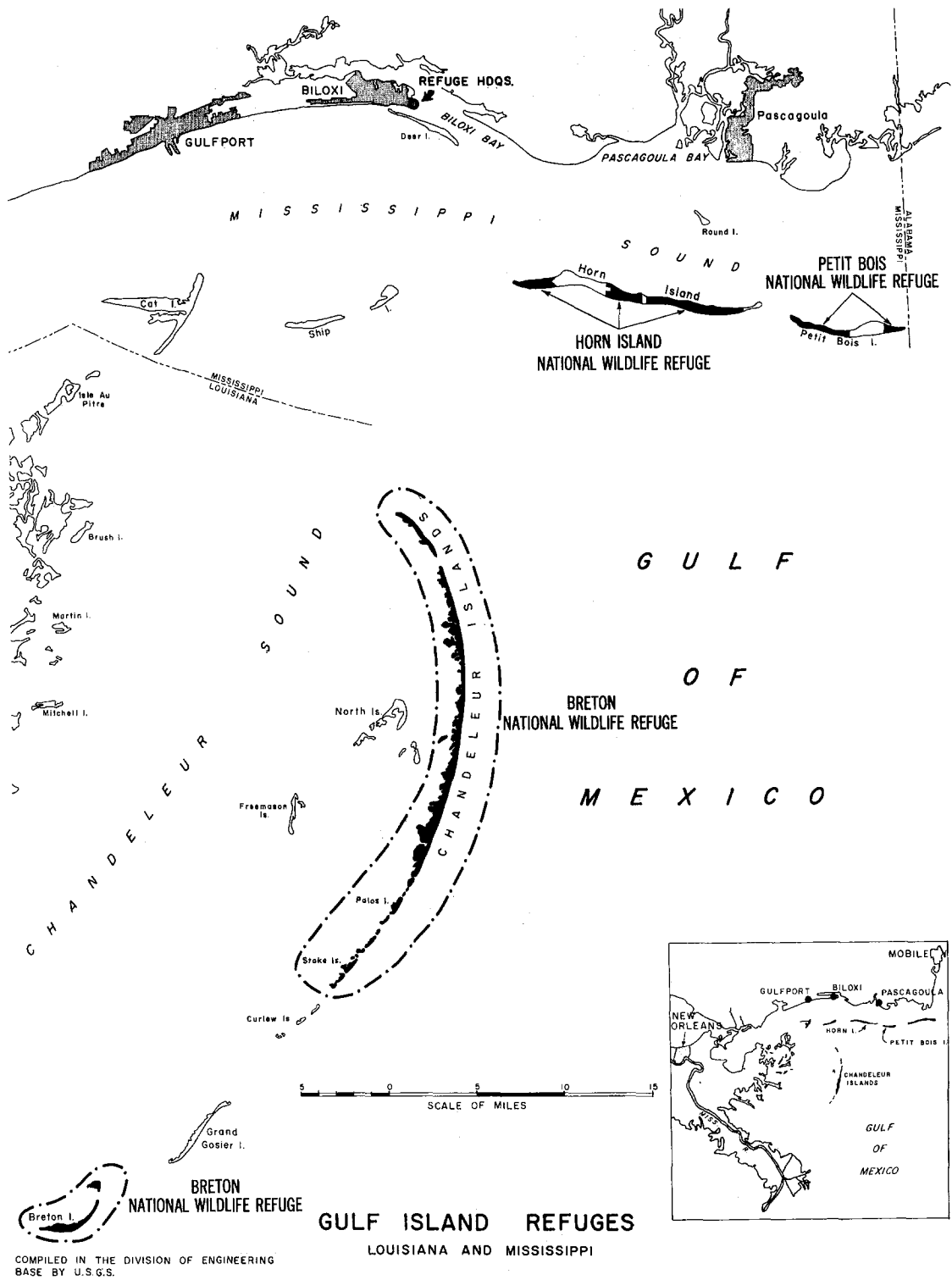
Petit Bois (locally pronounced "Petty Boy") National Wildlife Refuge was established in 1913 on Petit Bois Island which lies about 10 miles off the Mississippi mainland and just east of Horn Island. A little more than half the island, 748 acres, is contained in the refuge. Petit Bois Island is about 7 miles long by one-half to three-fourths of a mile wide, and is very similar to Horn Island, from which it differs mainly in having far fewer pine trees and less interior water area. Its beaches are also of value to nesting birds, especially laughing gulls and Sandwich and royal terns, and many ducks spend the winter on the brackish ponds. Redheads then are especially abundant in adjacent shallow waters.

As on Horn Island, the refuge areas are posted in order that visitors will not molest nesting birds and turtles. The refuge is closed to public use during fall and winter.

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Fishing from the beaches of these refuges is popular. Among the more common kinds of fish taken are sea trout, or weakfish; silver trout; common mullet; cobia, or lemon fish; Spanish and king mackerel; bonita; and channel bass, or redfish.

Additional information about the refuges may be obtained by addressing the Refuge Manager, Box 165, Biloxi, Miss., 39533, or the Regional Director, Bureau of Sport Fisheries and Wildlife, 809 Peachtree-Seventh Building, Atlanta, Ga. 30323.



# UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

Refuge Leaflet 521 • December 1965

U.S. GOVERNMENT PRINTING OFFICE : 1966 OF-205-589



For sale by the Superintendent of Documents, U.S. Government Printing Office  
Washington, D.C., 20402 - Price 5 cents

## GULF ISLAND NATIONAL WILDLIFE REFUGES

**Location** Offshore Gulf Coasts of Mississippi and eastern Louisiana.

**Description** Active management in 1958 under present title. Three units, with 10,679 acres, are: Breton NWR (Louisiana) - 7,512 acres, includes the Chandeleur and Breton Islands, established in 1904. Petit Bois NWR (Mississippi) - 748 acres, established in 1913. Horn Island NWR (Mississippi) - 2,419 acres, established in 1958. Barrier islands lying 8 to 16 miles off the mainland, they consist of beaches, dunes, grass flats, small marsh areas, ponds, lagoons, and on higher elevations on Horn Island, pine trees. The average elevation is four feet above mean sea level.

**Personnel** Permanent: Refuge Manager, Clerk, Maintenance man. Temporary: 1-3.

**Objectives** Protection for wintering migratory waterfowl, colonial nesting birds, and sea turtle nest sites. Used primarily by diving ducks, the islands afford protection during inclement weather to the thousands of ducks that feed in the shoal waters adjacent to the areas.

**Management** Improvement of natural marsh areas by chemical and mechanical methods, introduction of more desirable waterfowl foods, low level diking on sand flats for water retention, establishment and stabilization of protective dunes on Gulf beaches and controlled burning of grass flats.

The main management problem involves the transportation of personnel, equipment, and supplies from the mainland to the islands and from point to point on the areas. It is approximately ninety miles from one end of the refuge to the other by water, in an area that is notorious for sudden squalls and rough water. Specialized equipment, needed for safety and mobility, is expensive to purchase and maintain. Travel is time consuming and often dangerous.

**Public Use** Limited by inaccessibility. The greatest majority of public use, for fishing, swimming, boating, sunbathing and beachcombing, is done off the refuge below the mean high tide refuge boundary line. On-refuge visits for birdwatching, photography, scientific study and similar activities generally number less than 200 visitor-use days per year.

**Annual O&M** \$35,000 to \$40,000.

**Problems** (1) Portions of both Horn and Petit Bois Islands are in private ownership, curtailing some management operations. (2) Political interests within the State desire the refuge lands on Horn for private housing development. (3) All of the areas, as well as the headquarters site on Point Cadet in Biloxi, are subject to repeated hurricane damage.

July 1966

# MISSISSIPPI FLYWAY





Breton National Wildlife Refuge, consisting of Breton Island and the Chandeleur chain of islands, was established in 1904 and is the oldest of the three areas under administration of the Gulf Island National Wildlife Refuges. This small island of black mangrove and oyster grass is one of the Chandeleur group. Shoal grasses, the principal food of diving ducks, can be seen in the shallow water adjacent to the island.



Breton National Wildlife Refuge extends for sixty miles along the eastern coast of Louisiana and contains approximately 7,500 acres. Horn Island and Petit Bois Refuges in comparison are only one third and one tenth this size respectively. Hurricanes, storms, and even high tides are constantly changing the shape and profile of the islands, producing new cuts and filling in old ones. This view is of the Chandeleur Islands looking south.



Breton Island, with Kerr-McGee Industries Production Island (natural gas gathering station) at far right. Island ponds and lagoons are used by puddle ducks and provide sanctuary to diving ducks and other birds during inclement weather. The sand beaches, as seen here at the left and top right, are extensively used by colonial birds for nesting and resting sites. In this particular area they are a favorite of nesting black skimmers.



Horn Island National Wildlife Refuge, consisting of slightly more than 2,400 acres, was established in 1958. Situated approximately ten miles off the mainland south of Pascagoula, Mississippi. Portions of the island are in private ownership, and this, coupled with its proximity to growing population centers has made it the focal point for attempts to acquire it for real estate development.



A typical major nesting colony of royal and cabot terns. as seen toward the southern end of the Chandeleurs. Nesting generally commences from mid-April to early May, but adverse weather conditions can delay the activity until June. High spring tides often destroy the nests and eggs of birds that select lower elevations of the beach.



"Nests" of these royal and cabot terns are generally no more than a shallow depression in the sand on the open beach. Although all of the eggs seem to be identical in appearance, and scattered about in a haphazard manner, the birds apparently have no difficulty in identifying their own nest. Surface temperatures of the sand often exceed 120 degrees and shading of the eggs is as much a part of incubation as is maintaining warmth at night.



Horn Island has the highest elevations of all the areas and is the only one that supports the growth of trees. This scene is typical of a cross section of the center of the island, showing a stand of slash pine in association with rosemary, saw palmetto and groundsel-tree. Scattered live oaks can be found on the eastern end of the island. Close observation will reveal the nesting nighthawk in the foreground (just above the words "one that").



A typical cross section of Petit Bois Refuge, Jackson County, Mississippi. Smallest of the three refuges, with approximately 750 acres, it was established in 1913. Portions of the island are in private ownership. Lower in elevation than Horn, habitat on Petit Bois (locally pronounced "Petty Boy") consists primarily of sand beaches, low dunes, grass flats, ponds and marsh areas. The beaches are heavily used by nesting colonial birds.



An adult bird can be seen leaving one of several osprey nests on Horn Island. In addition to a number of species of birds there are raccoons, swamp rabbits, cottontail rabbits, wild hogs, nutria and alligators on the island. Rabbits, raccoons and nutria are present on all of the islands, somehow managing to survive repeated hurricanes.



A sooty tern warily eyes the photographer as she protects her nest against intrusion. Broken shells and debris washed up on the beaches provide excellent camouflage for the otherwise unprotected egg. Depredation by raccoons, snakes, and even other species of shorebirds such as laughing gulls, is generally held to a minimum just by the sheer number of nesting birds in a colony.



Tractor? Bulldozer? Tank? Not quite but pretty close. These are the tracks, commonly called a "crawl", of a sea turtle looking for a place to deposit her eggs. Arriving in July or August they are rarely seen, leaving only this sign as testimony to their visit. Horn Island is a preferred nesting location.



Two young least terns, well rehearsed by mamma, freeze, flatten out and attempt to blend with their surroundings. In cases where nests are scattered often the only way the young can be detected is through the action of the parents, who become increasingly vocal as the nest is approached.



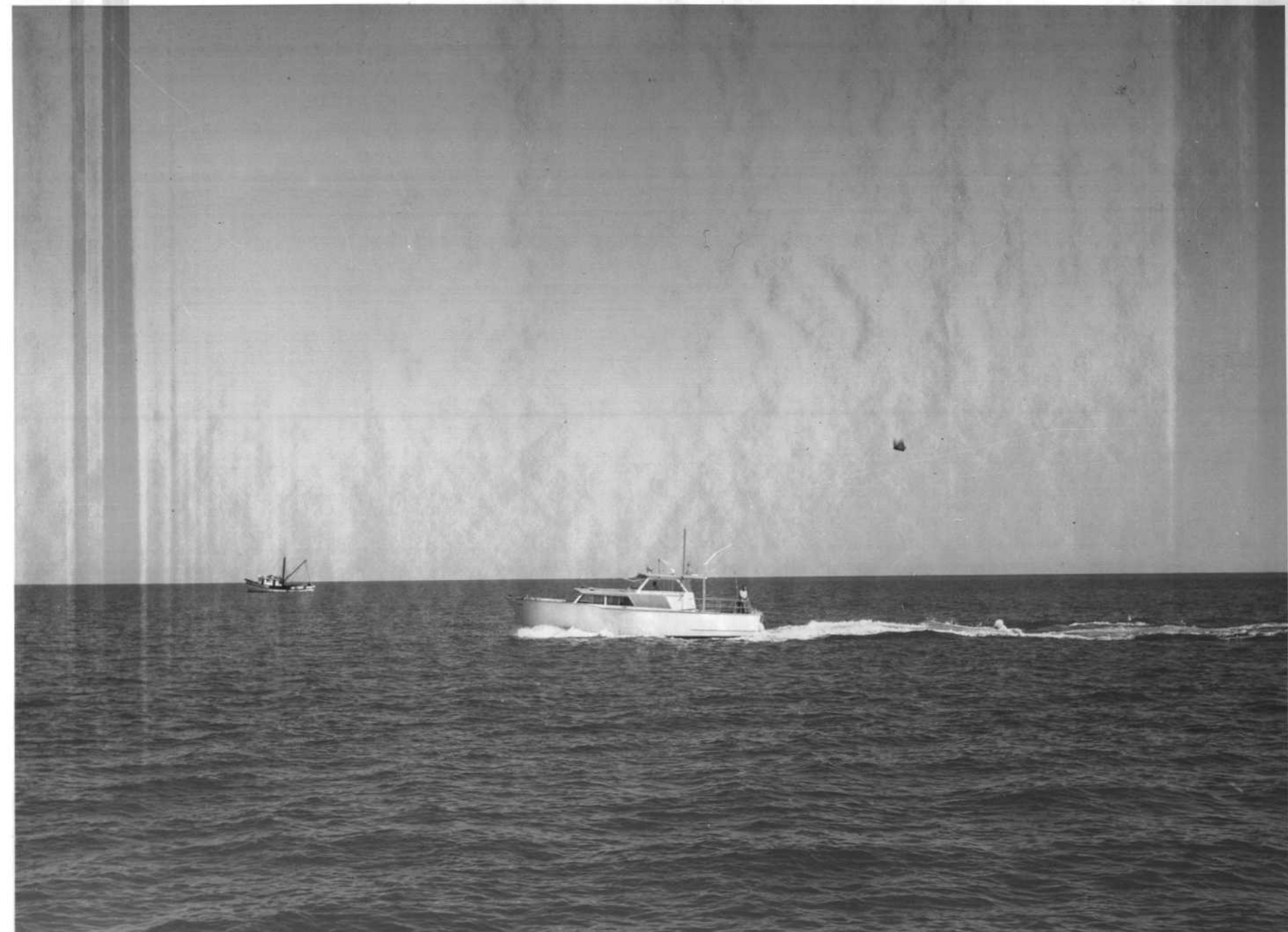
A recently hatched skimmer, almost indistinguishable from his background, shows his displeasure at being disturbed. In this region of the gulf coast where housing developments, motels, resorts, public beaches and industrial sites are rapidly dwindling the natural coastline the island refuges remain one of the last vestiges of suitable nesting habitat for many species of shorebirds.



Erosion of the island, through normal wave and wind action, is an ever constant problem. This view of Horn, with rotting stumps and dead or dying trees attesting to the recession of the shoreline, is typical of most of the island. Over the years the added punishment of several severe hurricanes have speeded up the process in many locations, with a general tendency to erode the eastern end and build up the western end of the island.



The build up and stabilization of barrier dunes on the south shore of Horn Island is an important management function. Sand fencing was erected between existing dunes. Sea oats and similar dune stabilizing vegetation are planted to reduce wind and water erosion. Seven and a half miles of this type of fencing has been erected on Horn Island, much of it subsequently lost during hurricanes Hilda and Betsy in 1964 and 1965.



Specialized equipment is necessary to maintain and patrol the refuges. The "Skimmer," a forty one foot, twin diesel powered cruiser sleeps four and has a range of 200 or more miles. Capable of handling all but the roughest weather it provides safety and mobility, as well as a base for operations while working on the more distant areas of Breton. Auxilliary equipment includes radios, depth recorders and short range radar.



An LCM is used to haul equipment and supplies from the mainland to the islands. Although slow, it is ideally suited for operation in the shallow waters adjacent to the islands. Movement of personnel, supplies and equipment on the islands themselves constitutes a problem in the soft sand. Crawler tractors have to be used to assist regular highway equipment from point to point. Shifting sand on the beaches make it impossible to provide a hard surfaced roadway.



Refuge headquarters are located on 6.10 acres of fee land and 16.8 acres of submerged land at the southeastern tip of Biloxi, Mississippi. Known locally as Point Cadet, the area was originally the site of a Coast Guard amphibious air station and later was used for an air-sea rescue unit of nearby Keesler Air Force Base. The land was transferred to the Bureau of Sport Fisheries and Wildlife in April, 1965. U.S. Highway 90 is in the background.



A sub-headquarters, consisting of a crew cabin and an equipment shed, is located in the center of Horn Island. The cabin provides living quarters for as many as eight people and greatly reduces the amount of time formerly spent in transporting personnel back and forth to the island on a daily basis, a one hour trip in each direction.



Fishing, especially in the vicinity of the Chandeleurs, probably attracts more people to the waters around the islands than any other form of recreation. Because of the expanse of water and the time involved in reaching the better fishing locations many persons fly out in light aircraft. The amphibious planes land in the shoals and the wheeled ones utilize the harder beaches next to the water. This particular one chose a tidal flat in the Chandeleurs.



Shallow water extends for a considerable distance from the beach, permitting the fishermen to partially seek out his quarry, but also preventing any larger boats from getting close to the shore. The general procedure is to tow several small skiffs behind a larger craft and utilize them for actually getting ashore. The shoal waters, with depths of two to three feet, extend out for a distance of a half to three quarters of a mile in most areas.



With an increasing number of small boats and larger motors more and more people are utilizing the beaches on the west end of Horn for swimming and picnicing. Because of the possibility of sudden squalls and rough water there is some danger involved in the trip out there and back, but those hardy souls willing to take the risk find an abundance of elbow room, wide clean beaches and generally crystal clear water.