

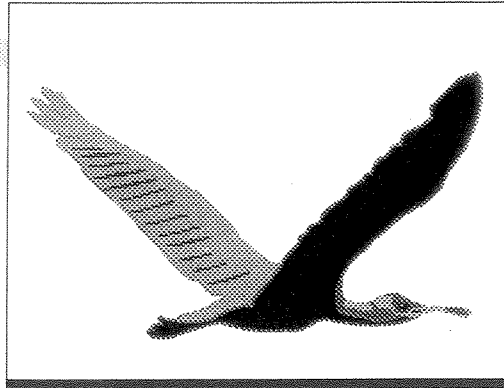
Galveston Bay Water Birds

Paradise for birds and birders

Since the earliest Texas explorers, coastal Texas in general and Galveston Bay in particular have been noted for a huge variety of waterbird species. John James Aububon wrote of the great numbers of wading birds, waterfowl, and forest birds seen during his 1849-1850 journey across southeast Texas.

Surrounding the marshes of Galveston Bay, vast coastal prairies were broken by rivers, creeks, and bayous which had associated *riparian* (riverbank) woodlands of great stature known as *gallery forests* (ribbon-like forests that extend from the river bank into adjacent savannah). These gallery forests, along with patches of brush habitat and undisturbed stretches of beach must have provided virtually unlimited nesting habitat for the approximately 23 species of herons, egrets, gulls, terns, and skimmers known to have nested on Galveston Bay shorelines since the advent of European settlement.

Seagrass beds and vast expanses of unbroken marsh provided seasonal habitat for great numbers of the approximately 31 species of migrant waterfowl known to regularly occur in Galveston Bay, along with the mottled duck and the fulvous



whistling-duck, which are Galveston Bay's only regularly nesting waterfowl. Smaller numbers of approximately ten species of fish-eating loons, grebes, pelicans, cormorants, and frigatebirds fed in open Bay habitats which had high levels of clear water during some seasons.

Beginning in the late 1850's, and accelerating during the early 1920's, dredging of navigation channels provided nesting habitat in the form of numerous small, isolated "spoil" islands. These man-made waterbird nesting habitats probably helped offset the simultaneous development of oil field roads, agriculture, highways, housing, and petrochemical plants in mainland forest and marsh habitat. However, as dredging of navigation channels and for fossil shell deposits increased, water quality and clarity deteriorated. Large marsh areas were lost or fragmented. Seagrass beds were reduced.

Droughts across the northern plains in the 1930's drastically reduced the numbers of waterfowl and migrant fish-eating birds which wintered on Galveston Bay.

Most of Texas' nesting waterbird species escaped the disastrous declines experienced in Florida and the east coast during the late 1890's and early 1900's, as hunting birds for fashionable feather plumes and the wholesale destruction of estuarine habitat by land developers had not yet arrived here. However, the brown pelican, a prominent Galveston Bay species until the 1950's, largely disappeared until recently, and intentional nest site destruction by fishermen and pesticide contamination have been implicated. Once these human-induced factors made the population vulnerable, Hurricane Carla also contributed to their decline.

Value to Galveston Bay

The waterbirds of Galveston Bay serve many important ecological, economic, and aesthetic functions. The laughing gull, herring gull, and ring-billed gull perform an important scavenging function, feeding with equal fervor at municipal

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landfills, debris-strewn beaches, and behind shrimp trawlers. White ibis and white-faced ibis probe deep in marsh muds to eat *benthic* (bottom mud-dwelling) worms and shellfishes in isolated tidal ponds. Thus, birds are efficient opportunistic feeders utilizing organisms which might otherwise be left to die and decompose. As upper level predators, waterbirds are important and highly visible indicators of the health of an ecosystem, and have been used to detect levels of chemical contaminants in the Bay food chain.

Tourism brings millions of dollars annually to the Galveston Bay area, and nature enthusiasts and birdwatchers are an important part of the tourism picture. Nature observation, including birdwatching, is the fastest growing participant sport in the nation, according to National Audubon Society statistics.

The Houston Audubon Society sanctuary at High Island drew 6,000 visitors from five foreign countries and 45 states during two months in 1995. Numerous informal tours are arranged by local individuals and nature clubs to see the nesting islands, waterfowl and shorebird concentrations, and to search for rare migrants. Hunters, primarily duck and goose hunters, spend hundreds of thousands of dollars annually in the Galveston Bay area for equipment, licenses, transportation, leases, food, lodging and guide services.

Most waterbird species nesting in Galveston Bay appear to be relatively stable or declining slightly since 1973, when the Texas Colonial Waterbird Survey began. During the 1973-1987 period, an estimated 39,000 to 71,700 pairs of 22 colonial waterbird species nested on at least 42 colony sites in the Bay system. Numerous brown pelicans returned to Galveston Bay in 1992, attempting unsuccessfully to nest at Little Pelican Island. Young pelicans have been raised successfully since the 1994 season. Galveston Bay's wintering waterfowl populations are largely dependent on conditions in the northern nesting grounds and other portions of the Texas coastal prairie, but water quality and the amount of large tracts of remaining marsh can be managed locally.

The waterbird species which show patterns of decline appear to be those which feed in *intertidal marsh* (marsh in the area between high and low tide), a declining habitat type. Those species include tricolored herons, snowy egrets, black skimmers, roseate spoonbills and great egrets. Some waterbird species have lost some of their most important colony sites to development and erosion, and are colonizing a number of smaller sites which may be increasingly subject to animal predation and disturbance from human activities, including boating and fishing.

Since the early 1980's, increasing levels of some chemical contaminants have been found in the eggs of skimmers and cormorants, which also may contribute to their decline.

The imported red fire ant is an insidious, exotic insect pest which attacks hatching eggs, nestlings, and adult birds. Its very high mound densities on some Galveston Bay islands impairs the nesting success of birds.

Federally-listed endangered or threatened bird species known to frequent Galveston Bay aquatic habitats include the brown pelican, piping plover, interior least tern (50 miles inland), bald eagle, and Arctic peregrine falcon.

Management and protection of water quality, nesting sites, and marsh, mudflat, and tidal flat feeding areas are the keys to maintaining current waterbird populations into the 21st century. Because nesting colony sites are particularly vulnerable to increased recreational use of the Bay, protection and public education efforts must be ongoing. While most of the native waterbirds of the Galveston Bay system do not appear to be in imminent danger, enough warning signs are present to warrant preservation efforts. It would be hard to imagine a Galveston Bay marsh or shoreline without its waterbirds.

This fact sheet is one of a series produced through a cooperative agreement between the Galveston Bay Foundation and the U.S. Fish and Wildlife Service. The information in this series was developed by authors from the Galveston Bay Foundation, National Marine Fisheries Service, Sea Grant College Program, Texas Natural Resource Conservation Commission, Texas Parks and Wildlife Department, Texas Water Development Board and the U.S. Fish and Wildlife Service.

The Galveston Bay Foundation is a nonprofit organization whose mission is to preserve and enhance the Bay for its multiple uses through education, conservation, research and advocacy. The mission of the U.S. Fish and Wildlife Service is to conserve, protect and enhance the nation's fish and wildlife and their habitats for the continuing benefit of the American people.

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