

GEOGRAPHY

Study Areas

There are approximately 35 to 40 miles of waterfront encircling the City of Biloxi. Included in this is the sand beach area which stretches from the Gulfport city limits to the eastern tip of Biloxi. North of that are the bay shore areas along the Back Bay of Biloxi reaching westward to the Popp's Ferry area and beyond along the southern shore of Big Lake. Also included as waterfront is the rivershore along the Tchouticabouffa, the north bay shoreline of the newly annexed part of Biloxi, and Deer Island's shoreline.

The sand beaches along the Mississippi Sound are included generally as part of the study but fall under the concurrent jurisdictions of the city, the county, the state and the federal court order. For these reasons the uses that are allowed on the undeveloped beachfront area are already very restricted and discussion of these areas is somewhat limited. A special Harrison County study committee will make specific proposals for the sand beach later this year.

Along the front beach, there are but a few areas south of Highway 90 where redevelopment could take place. These are the several small portions of developed land south of the highway that are sandwiched between the sand beaches. Included in these areas are the West Beach area which contains many of the resort hotels, souvenir shops, entertainment areas and tourist attractions, and the Central Beach area adjacent to Biloxi's downtown which includes several condominium properties, restaurants, office buildings, marinas and hotels.

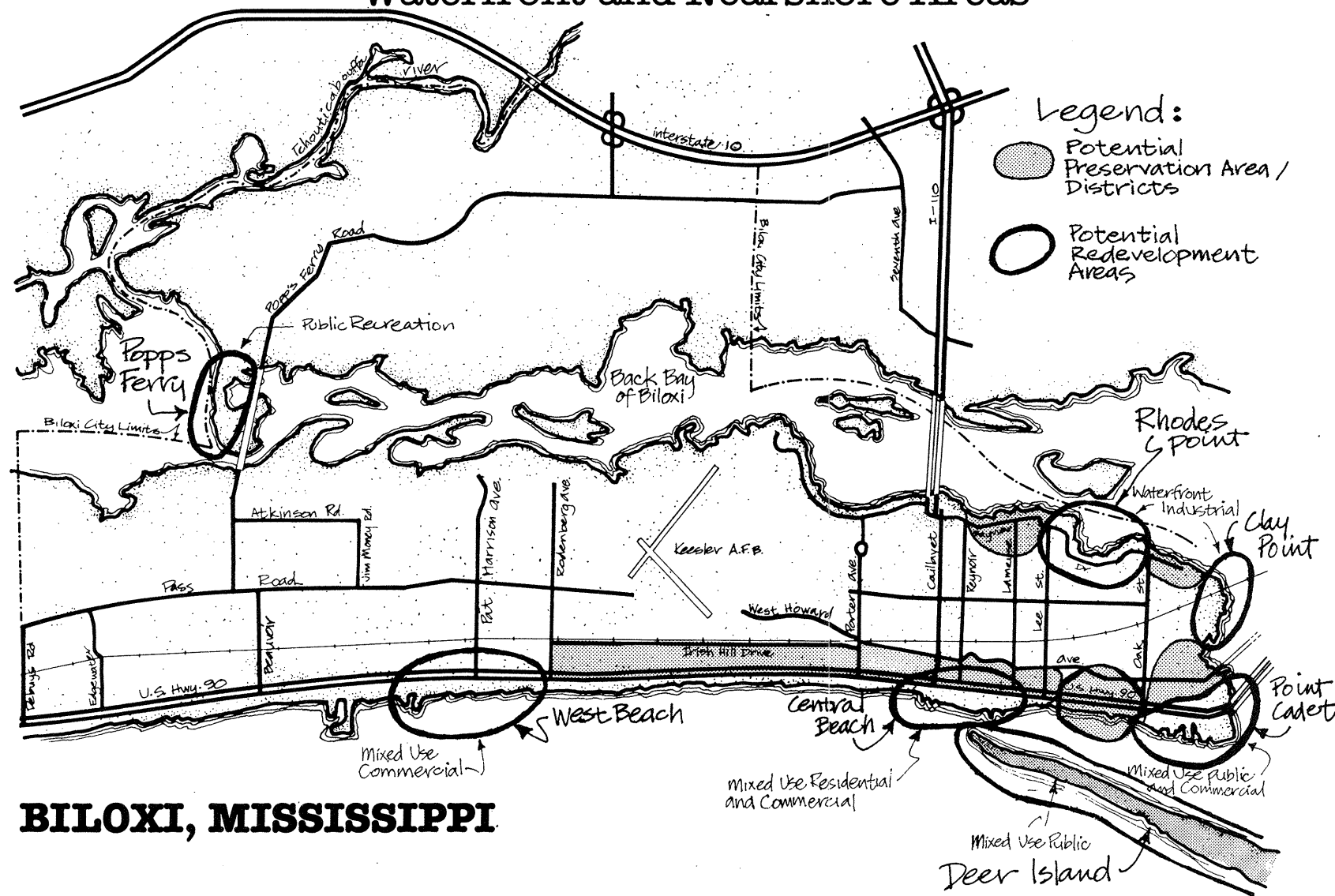
The area at the very eastern end of Biloxi which has served as the heart of the seafood industry for about a century—Point Cadet—provides one of the most opportune locations for waterfront redevelopment. For these reasons it's included as a focal area in our study. In addition, the Point Cadet area currently includes a number of state and local public facilities that attract not only the local population, but tourists during the spring, summer and fall seasons.

The Rhodes Point area on Back Bay is included as a focal area mainly because of the existence of the natural harbor that lies east of it and the nearby properties that are owned jointly by the Biloxi Port Commission and the City of Biloxi. There is an existing canal and some industrial facilities that would support further development of this particular area as a waterside industrial park. A base of 20 acres of publicly-owned land exists there, while a large parcel of undeveloped private land lies immediately south of the natural harbor.

The Clay Point area on Biloxi's eastern end was also studied from the standpoint of full development and utilization of industrial sites within the area. Clay Point's waterfrontage seems especially suited for the location of large-scale marine-related industries and as a potential regional site for seafood research and development. The Harrison County Development Commission established a 100 acre industrial park at Clay Point in 1967, but it is still underdeveloped as a result of large portions of the park falling into speculators' hands in the 1970s.

Although there are considerable waterfront properties on either side of the Bay's northern and southern shores, most of

Potential Preservation/Redevelopment Uses Waterfront and Nearshore Areas



BILOXI, MISSISSIPPI

these areas, especially in west Biloxi, have developed as residential and are not targeted for significant waterfront redevelopment. However, the needs of local residents in these areas for recreational facilities (piers, boat launches and fishing areas) are considered as part of the overall long-range plan. In particular, the Popp's Ferry Causeway area is a prime location for boat ramps and fishing piers. The Popp's Ferry area which links the North Bay area with the Biloxi Peninsula is treated in some detail because of the vacant property that exists along its causeway and its potential for recreational development.

Deer Island, because of its interrelationships with the Biloxi mainland, especially the Central Beach and Point Cadet, is discussed to a considerable extent. Proposals focus on the barrier island's importance as a recreational site, a marine education and research site, an environmental sanctuary for flora and fauna, as storm protection for Point Cadet marinas, and improved public access.

Natural Environment

A considerable amount of environmental research went into Biloxi's 1979 **Comprehensive Plan** by the Bisso-Fairley-Vogt Joint Venture. The following is summarized from the plan's comments on Biloxi's natural environment, and supplemented with recent news reports.

Land - The City of Biloxi lies predominantly in a physiographic region known as the Gulf Coast Flatwoods. It's soils are fairly sandy and are poorly drained and under-

lain by a layer of loamy subsoil. Geologically, Biloxi is part of the Pamlico formation. In its natural state, such as on Deer Island, this landform is capped by dunes and recent beach deposits. The shorelines of Biloxi, Gulfport, Long Beach and Pass Christian are all built of this type material. As one goes farther inland, the topography is low and flat and drainage can become a problem.

Landforms in the Biloxi area, like all others throughout the world, go through various types of natural processes which change their formation. Erosion is the most damaging of these processes to the Biloxi area, especially to its beachfront.

Air and Water Quality - Biloxi is in an air-quality monitoring area which includes the coastal portions of Mississippi, Alabama and the panhandle of Florida. This monitoring area has been classified by the Environmental Protection Agency as Priority 1 for particulates and sulfur oxides. These pollutants are not entirely generated in the Biloxi area. Some are blown in by air currents from other larger industrial areas.

Particulates are the most prevalent air pollutant. They exist in the form of small particles suspended in the air and are generated by a number of human activities including construction and repair, transportation and manufacturing. Particulates aggravate diseases such as bronchitis, emphysema and cardiovascular diseases.

Sulfur oxides are common air pollutants generally created by combustion of fuel. They also increase the incidence of bronchitis, respiratory diseases, and general deterioration of health.

The ill-effects of these pollutants should be decreased as federal standards and mon-

itoring proceed toward full implementation of air quality laws.

Water exists in three characteristic forms: fresh, brackish and saline. Fresh water, as the name implies, is fresh, lacking mineral content. In the Biloxi area fresh water streams include the Biloxi River and the Tchouticabouffa River, which both flow into Back Bay. Brackish water exists in estuaries and is formed by the interaction of both fresh and salt water. The Back Bay of Biloxi, Big Lake, Keegan's Bayou, Biloxi Bay and the Mississippi Sound are bodies of brackish water. Salt (saline) water exists in the outer Mississippi Sound and to a greater extent past the islands into the Gulf of Mexico.

The importance of water quality to Biloxi is fairly obvious. Water bodies provide public water supplies, shellfish harvesting areas, recreational areas and a habitat for fish and wildlife. Water quality for surface water is monitored along these categories.

The quality of water of public supplies for domestic and industrial uses must be of the highest quality. For these reasons the city uses a number of treatment techniques from those sources of water that feed in from the bay, rivers and sound.

A high quality of water in shellfish harvesting areas must also be maintained, since shellfish serve as a food source. The quality of water in these areas is affected by a number of different factors, among them: oxygen content, salinity, acidity, temperature, and the amount of bacteria and toxic substances.

Concerning recreational activities, water quality must be maintained for such uses as swimming, boating and water skiing. Under the fish and wildlife category, waters in this

classification are intended for fishing and propagation of fish and aquatic life and wildlife.

State water quality experts explain that the major problem on the Gulf Coast is the overall pollution of the Mississippi Sound and its estuaries, particularly the high bacterial levels in the major swimming areas along the Coast. This problem has developed over time by rapid urban and resort development with inadequate facilities for the treatment of sewage that has accompanied growth especially in the unincorporated areas. Implementation of the wastewater plans in each of the Mississippi Coast's three counties through the new wastewater management authorities will help to improve the overall quality of water.

Recent news reports state that improvements made to the Biloxi municipal sewage treatment facilities have substantially improved the water quality along the Mississippi Sound. But the major problem that must be now solved is the poor water quality that results in Back Bay and Biloxi Bay from the use of septic tanks on the northern shore in the unincorporated area.

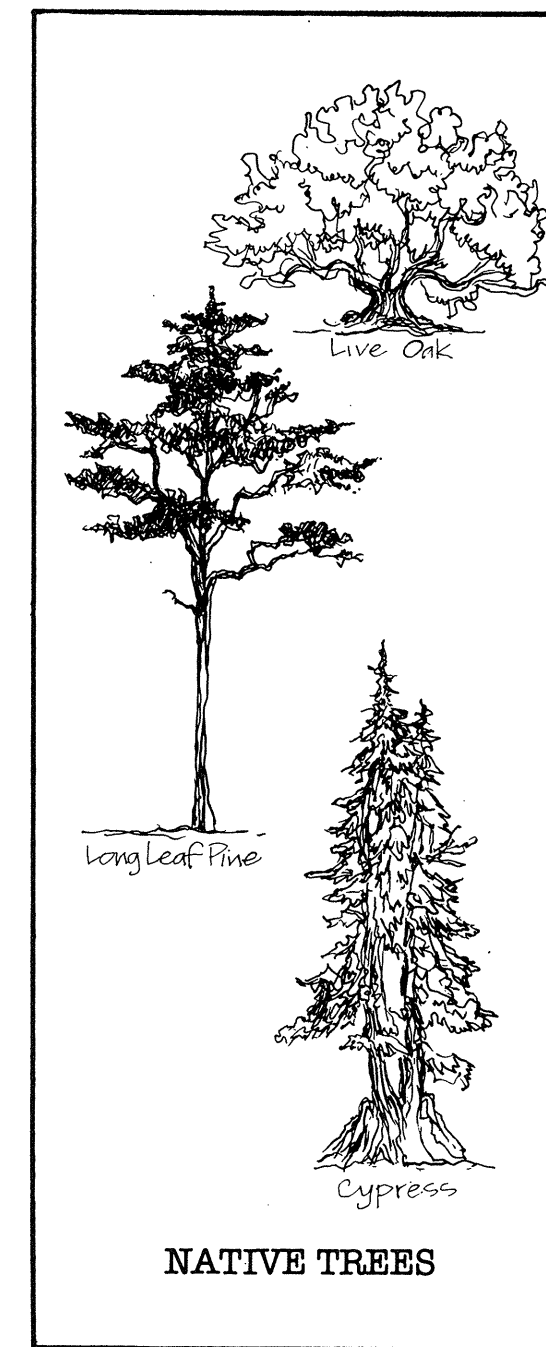
Vegetation - With the urbanization that has taken place along the Coast, most of the land vegetation that exists has been cultivated by man. The following are examples of the types of native flora that can be found in Biloxi.

- 1) Grasses: Bermuda, St. Augustine and Centipede;
- 2) Shrubbery: Yaupon, Waxmyrtle, Palmetto and Pyracantha;
- 3) Native trees include evergreen: Magnolia, Live Oak, Laurel Oak, Long-leaf Pine, Loblolly Pine, Slash Pine, Spruce Pine, Holly, Dogwood, Palmetto, Wax Myrtle; and deciduous: Sweet Gum, Bald Cypress, American Beech, Black Tupelo, Yellow Poplar, White Oak, Water Oak, Red Oak, Florida Maple, Sycamore, Silver Maple, and Hackberry.

In dealing with the waterfront, aquatic plants need to be considered as they serve as a food source for fish and aquatic animals. Over 300 species of aquatic plants can be found in nearby waterfront areas. Basically, these plants can be found in several types of wetlands which include: 1) salt, 2) brackish, 3) intermediate, and 4) freshwater marshes.

The poorly-drained, sandy soils of the Gulf Coast area have not lent themselves to agricultural production other than for small-scale gardening and truck farming. The cultivation of fruit and nut trees (notably pears and pecans) as well as the cultivation of tung trees for oil have developed as somewhat important agricultural products during the early 20th century. Silviculture has always been important to the coastal economy as so many forest and woodlands exist along the upland terrain. Due to Biloxi's urban development, concentrations of woodlands do not exist in abundance within the City of Biloxi, although individual trees from most of the dominant forest types are evident throughout the area.

The most serious environmental problem concerning natural vegetation is the loss of salt marshes to development and industrial purposes. It is estimated that approximately 25 to 30% of the natural marshes that once existed in the Biloxi area have been filled for development purposes.



NATIVE TREES

Wildlife - A diverse variety of species of insects, reptiles, birds, fish and mammals exist in the Gulf Coast region. Due to the sub-tropical climate of the Gulf Coast there are literally thousands of species of insects which run the gamut from microscopic to such large insects as grasshoppers, beetles, moths and roaches. Native reptiles include the American alligator, the salt marsh snake, the cottonmouth moccasin, the Atlantic loggerhead turtle and the Mississippi diamondback terrapin.

A very large assortment of coastal waterfowl and birds exist in the Biloxi area. Examples of these include: loons, pelicans, storks, herons, egrets, ducks, geese, vultures, kites, hawks, eagles, osprey, falcon, bob white quail, turkey, cranes, rails, coots, woodcock, skimmers, pigeons, doves, owls, swallows, larks, flycatchers, woodpeckers, night hawks, crows, wrens, thrushers, warblers, meadow larks, finches, and sparrows.

Since the seafood industry plays an important role in the development of Biloxi, shellfish and finfish are especially important. Shellfish harvested in large numbers include oysters, blue crabs, stone crabs, and white, brown and pink shrimp. Finfish found along the Biloxi waterfront include mullet ("Biloxi Bacon"), speckled trout, redfish, white trout, gafftop and hardhead catfish, flounder, sheepshead, and croaker.

The most noted varieties of fresh water fish include bass, bream, crappie and blue and channel catfish.