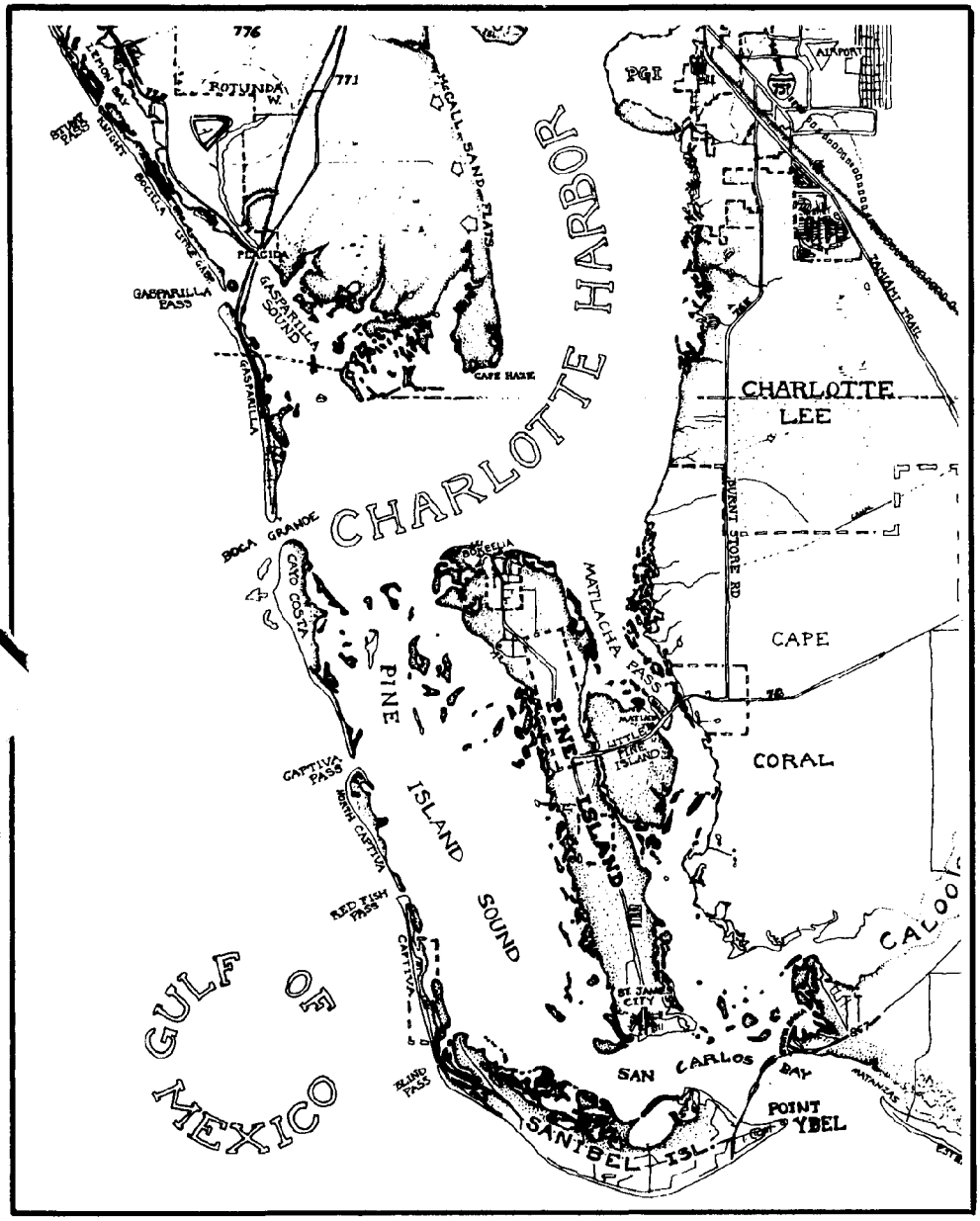
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PRESERVING THE HERITAGE OF GASPARILLA ISLAND



An Approach to Conservation of the Economic, Cultural, Historical, and Natural Resources of the Island.

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PRESERVING THE HERITAGE OF GASPARILLA ISLAND

An Approach to Conservation of the Economic, Cultural, Historical, and Natural Resources of the Island

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by
John Clark

Prepared by

The Conservation Foundation
1717 Massachusetts Avenue, N.W.
Washington, D.C. 20036

for

Gasparilla Island Conservation and Improvement Association, Inc.
P. O. Box 441, Boca Grande, Florida

The Conservation Foundation

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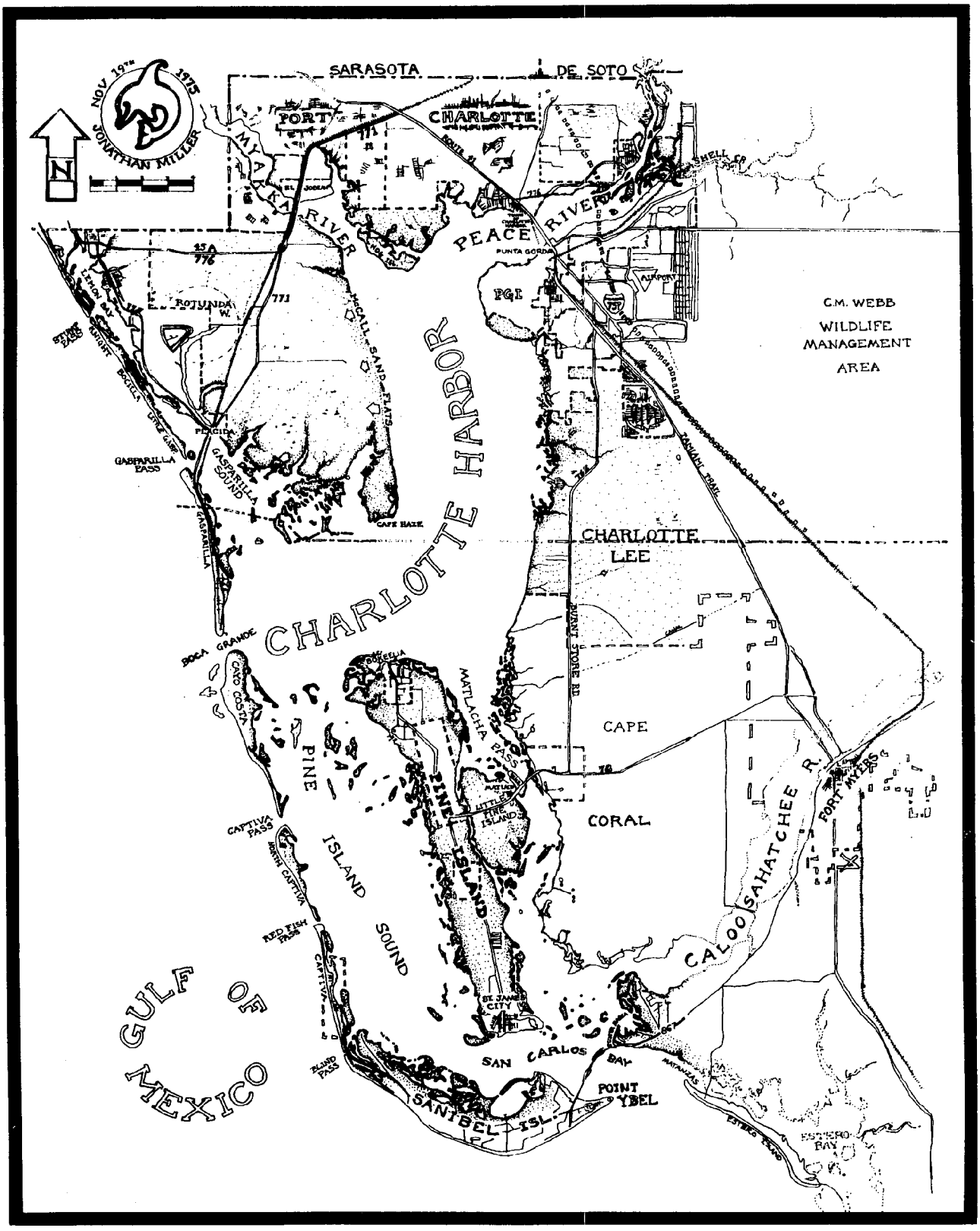
This study was supported by the citizens of Gasparilla represented by the Gasparilla Island Conservation and Improvement Association (GICIA), Mr. H.L.T. Koren, President.

The basic natural systems survey of the island was done by a consultant team administered by The Naturalists of Sarasota, Florida. Included in the study team were Julie Morris, Jonathan Miller, William Byle, Jr., and John Morrill, with assistance from Steve Cox of the U.S. Soil Conservation Service, Ft. Myers, and Tom Missimer of Missimer and Associates, Cape Coral. We are grateful to David Tackney of Stanley Hole Associates, Naples, for advice and counsel on beach processes. J.B. McCourtney, Sarasota, provided the photographs. The team was generously assisted by Carl Futch and other island citizens to numerous to list. For their help we are all grateful.

We benefited greatly from the support and guidance of others on the GICIA study team: Jack Whelan and Harry Adley of Adley Associates, planners; and Charles Siemon and Fred Bosselman of Ross, Hardies, O'Keefe, Babcock and Parsons, legal advisors; James Nicholas, economist; and Shepley Cleaves, policy analyst.

Taber Hand assisted in the preparation of this report. Robert J. McCoy helped in the editing. The manuscript was prepared by Laura O'Sullivan and Joyce Bouvier. Colleagues John Banta and Jeffrey Zinn provided ideas and encouragement. William K. Reilly, President of The Conservation Foundation, guided our efforts.

John Clark
March 16, 1978


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CHARLOTTE
LEE
BOCA GRANDE
CAYO COSTA
PINE ISLAND SOUND
MATLACHA PASS
BURNT STORE RD
CAPE
CORAL
CALOOSAHATCHEE R.
FORT MYERS
CAPTIVA PASS
NORTH CAPTIVA
RED FISH PASS
CAPTIVA
BLIND PASS
SAN CARLOS BAY
POINT YBEL
SANIBEL ISL.
MATANZAS
ESTERO BAY
GULF OF MEXICO

EPILOGUE

On March 17, 1978, following the completion and submission of this report, the Lee County Commission denied three zoning petitions for multi-family projects near Boca Grande village on the south end of Gasparilla Island. This unusual action, taken at a public hearing, signaled the desire of the Commissioners to forestall high-density land uses on Gasparilla in recognition of the island's special character and the overwhelming consensus of the islanders in favor of conserving their natural and cultural heritage.

The Lee County Commission's action guaranteed that time and opportunity will now be available for the formulation of a sensitive plan for island growth, to be undertaken in cooperation with neighboring Charlotte County, which has jurisdiction for the north end of Gasparilla, where intense multi-family development is still a threat. Under saturation density (full buildout) the total population of the island could increase from the present 1,200 (the approximate number of residents during peak season) to over 15,000. The land conversions, structures, and related activities would obliterate the character of Gasparilla and much of its heritage.

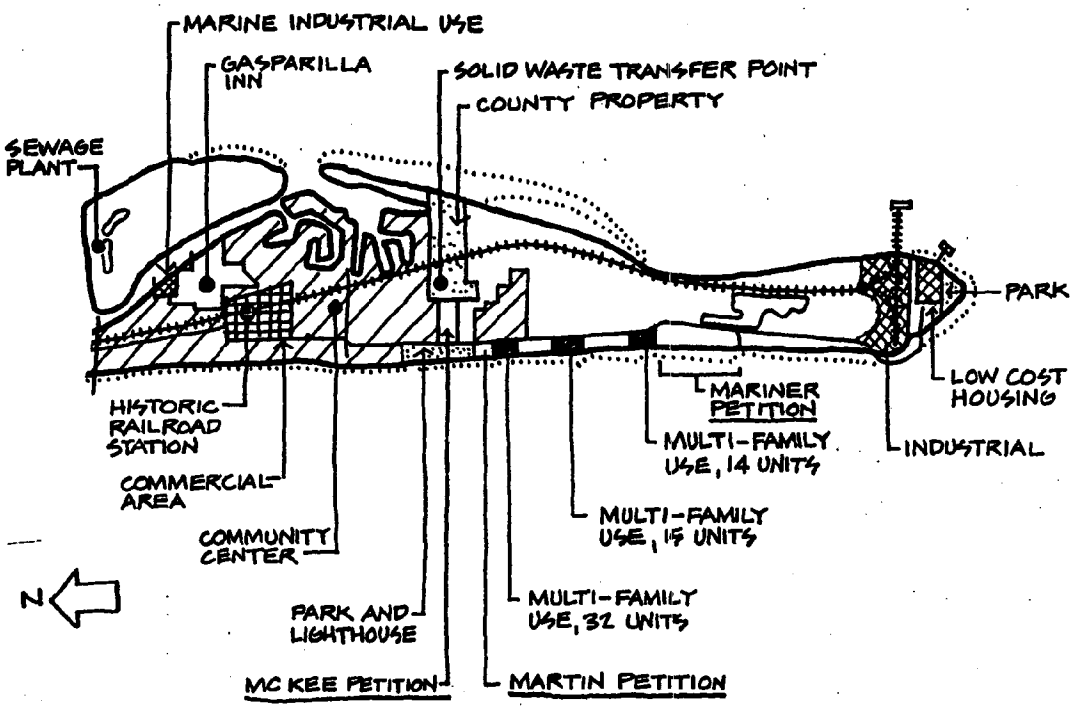
The Conservation Foundation was part of a study team organized by the Gasparilla Island Conservation and Improvement Association immediately after the Commissioners tabled the petitions for further study on November 15, 1977, because of citizen opposition. The Foundation's role was to survey the natural systems and cultural resources of the island and to make recommendations for conservation. Two initial findings about the epople of Gasparilla set the direction of our study: (1) perceptions of the need for growth control differed widely, and (2) a guiding vision for the future of the island had not yet materialized. This prompted us to first look for a consensus view on growth and conservation matters and on the future hopes of the islanders by which to facilitate our work and to guide our planning recommendations.

The vehicle for the needed consensus was found in heritage conservation. Regardless of other differences, the people were of a single mind on conservation of the special character of the island and their way of life. Virtually the entire population could agree to the principle that Gasparilla's natural and cultural heritage should be conserved and that community and economic growth should be subordinated to this goal. Also, the idea of heritage conservation provided a spirit and vision by which the islanders could design a pattern for their future. The concept served as a rallying point to unite differing factions and to enable the islanders to work together toward a common destiny.

Gasparilla's success in gaining control over its future is the result of the determined efforts of hundreds of citizens and off-island supporters, supplemented by the effective professional assistance of our colleagues in planning, economics, law, and policy. While the heritage conservation approach appears to have been one important ingredient of success, we cannot say how important. However, we believe that it has sufficient promise to merit testing elsewhere.

John Clark
March 24, 1978

SOUTH END OF GASPARILLA ISLAND: BOCA GRANDE VILLAGE, GENERAL FEATURES, THREE CONTESTED PETITIONS.



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INTRODUCTION

This progress report briefly summarizes the findings of The Conservation Foundation staff and project consultant team. A detailed account of collected data is reported in "Survey of the Natural Systems of Gasparilla Island, Florida" (February 8, 1978) by The Naturalists. While our understanding of island resources and their conservation is drawn largely from the consultant's report, The Conservation Foundation is responsible for the content of this progress statement. The report discusses heritage only; planning and economic studies are reported separately by other groups. It is only the opener for a larger job that lies ahead. John Clark, the author of this report, was project director for The Conservation Foundation.

Gasparilla is one of a chain of barrier islands extending along the Gulf of Mexico coast of Florida from Anclote Key in Pasco County south to Cape Romano in Collier County. In the Gasparilla vicinity, five islands of the barrier chain enclose a large coastal water body dominated by Charlotte Harbor and bounded by the Lee and Charlotte County mainlands. The Charlotte Harbor system of mainland, rivers, estuaries, barrier islands, and inlets represents a unified coastal ecosystem. The Peace and Myakka Rivers are the major source of fresh water to Charlotte Harbor and therefore provide the dominant estuarine influence. Ecologically, Gasparilla is part of the region's integral system of environments and processes in which each part interacts with all the other parts [1]. A given natural process in one part of the system will produce a response in every other part of the system.

The future of Gasparilla Island is inextricably bound to the future of the whole Charlotte Harbor region. Economically, Gasparilla is bound to the mainland system of commerce and service and must hope to influence outside forces to achieve its own goals for the future.

In conducting our analysis we found that it was not feasible to address the question of natural systems apart from other factors. The inseparable connections between ecology, ambience, economy, and history of Gasparilla Island strongly suggest that planning for this special place is a special task that should be done separately from mainland planning. Moreover, it should incorporate all current national and state initiatives in land and resource planning, and should reflect appr appreciation for heritage.

Our discussions with many citizens of Gasparilla revealed a broad consensus for conserving the traditional way of life and the heritage resources of the island. Thus our analysis embodies a heritage concept

which includes all components of the island's heritage--natural resources, cultural traditions, historical structures, recent architecture, and so forth--as parts of an overall system. Such a concept provides a central base, a core, around which development, restoration, conservation, and economic revitalization can be planned. Heritage conservation, then, is the integrating element of our report to the people of Gasparilla.

William K. Reilly
President
The Conservation Foundation
March 16, 1978

CULTURAL AND HISTORICAL HERITAGE

For a small island, Gasparilla has an important historical and cultural heritage. A sense of heritage strongly influences the residents of Boca Grande, the island's settlement. It enriches their lives, and attracts visitors. This social heritage is closely linked to Gasparilla's heritage of attractive and productive natural resources and its economic base. Most simply, the heritage of Gasparilla's people flows directly from the island's rich base of water-oriented resources.

Early History

It is likely that the Calusa Indians were the first seasonal residents of Gasparilla. In pre-Columbian times, they sought the manatees, fish, turtles, and shellfish that inhabited the Charlotte Harbor and Gasparilla Sound estuaries. Several structures thought to be small Indian mounds remain in the island's bayside mangrove areas.

The romantic history of Gasparilla (Table 1) started with an infamous band of pirates led by José and Leon Gaspar. Apparently they first settled on the island in the late 1700's, probably near Old South Bayou. The group, known as the Brotherhood, called the island "Gasparilla," meaning "little Gaspar." The hazardous entrance to Charlotte Harbor and the remoteness of Gasparilla Island would certainly have provided an ideal hiding place for the Brotherhood between forays for wealth and women. Reportedly, the pirate terror of the Brotherhood reigned until the

Table 1. Historic Events of Significance on Gasparilla Island.

1539	Boca Grande noted in Portuguese Chronicles
1770's - 1820's	José Gaspar and his Brotherhood of pirates used Gasparilla as a home base
1875-1880	Lighthouse constructed
1880's	Phosphate discovered in Peace River
1890's	Tarpon fishing from rowboats began in Boca Grande Pass, attracted many prominent visitors
1897	Gilchrist filed for Boca Grande subdivision
1909	Railroad completed to bring phosphate to island
1912	Gasparilla Inn opened
1925-1930	First seawalls and groins constructed on beachfront
1927	Coast Guard Range Light built
1926	Gasparilla Inn golf course constructed
1944	Severe hurricane breached island; considerable beach loss
1958	Causeway/bridge opened to mainland
1959	Last passenger train ran, passenger service to Boca Grande ended
1962	Pines killed in severe freeze
1963	Island high school closed. Students bused to Punta Gorda
1970-1972	Boca Grande Isles filled
1971	GICIA formed
1972-1973	Lake Gasparilla dredged and adjacent lands filled in island's Charlotte County section.
1971	Off-island municipal water arrived
1975	On-island dump closed; garbage and trash taken off island for disposal

1820's, when José Gaspar was finally captured in a Federal anti-piracy campaign; he wrapped himself in anchor chain, and plunged into the sea.

In the mid-1800's commerce in phosphate began, using deepwater access to reship phosphate mined and barged from the interior to the docks at Boca Grande. Early in the 20th Century a railroad was built down to Boca Grande to carry the phosphate to the ships. This railroad and the port are still operating today, but marginally, since the railroad has petitioned to suspend its service to Boca Grande.

Commercial fishing from Gasparilla has been an important pursuit for more than 100 years. The fish and shellfish resources of Gasparilla Sound, Charlotte Harbor, and Pine Island Sound are among the richest in the State of Florida and today support an active and diverse commercial fishery.

Around the turn of the century Gasparilla began to attract winter residents and tarpon aficionados from the North Central and Northeast states. By the 1920's, the island was playing seasonal host to many of the nation's most prominent families as well as luring the nation's most prominent fishermen. Winter residency and sport fishing have continued as Gasparilla Island's economic mainstay.

Many of the structures and cultural remnants of this rich heritage remain intact or are restorable. It appears quite possible to develop a unified preservation program for Gasparilla's heritage stockpile. Some examples follow.

The Port

Gasparilla is the principal deepwater port of the Charlotte Harbor

region. The port was an ideal anchorage for large three- and four-masted schooners that picked up barge-loads of phosphate from the interior for transport around the world. A pilot service was established in the 1890's to guide the ships through the hazardous shoals and currents. Dock, customs office, and lighthouse were basic necessities for the commercial operations. When it became practicable, the phosphate was taken by rail to the port, avoiding the need to barge it out for reloading on the ships. More than one hundred years after its inception the port is still operating tenuously as the hub of industrial activity on the island.

The Lighthouse

The woodframe lighthouse structures on the southern tip of the island were built in 1875 to aid navigation using the port and navigating the channel to Punta Gorda (Figure 1). These classic landmarks are proposed for restoration as a museum in recognition of Gasparilla's maritime heritage. In addition, a symbolic range-light structure is maintained on the beach adjacent to the county beach further north.

Railroad and Ferry

Construction of the Gasparilla route of the Charlotte Harbor and Northern Railroad began in 1905. It was this railroad, now the Seaboard Coastline Railroad, that allowed Boca Grande to develop into a mecca for the prominent, bringing many of the nation's leading families to the island. The depot served also as the office for the



Gasparilla's historic lighthouse, proposed for an island museum.

railroad. Nearby was the terminal area for family-owned rail coaches. Today the depot is slated for restoration and commercial use by a private owner.

In the 1930's, ferry service via the Saugerties and the Catherine was active in bringing automobiles and people to the island. The present bridge, opened in 1958, brought an end to the ferries, but they continue in the memory of island dwellers.

Gasparilla Inn

Encouraged by the new rail accessibility, industrialist Peter Bradley (phosphate) decided to promote Boca Grande as a resort and built what is now called the Gasparilla Inn (architect Carl Albert). Opened in 1912 as the Boca Grande, the hotel remains today a center of island activity. In the 1920's it hosted in high style the duPonts, Crowinshields, Astors, Cabots, Eastmans, Wanamakers, and many other prominent families. People still enjoy the hotel's special, though somewhat more casual, atmosphere.

Much of the architecture that housed and served the prominent is still intact. Plans are being made by islanders to restore certain of these historical landmarks before disrepair or redevelopment makes restoration impossible.

Gasparilla Village

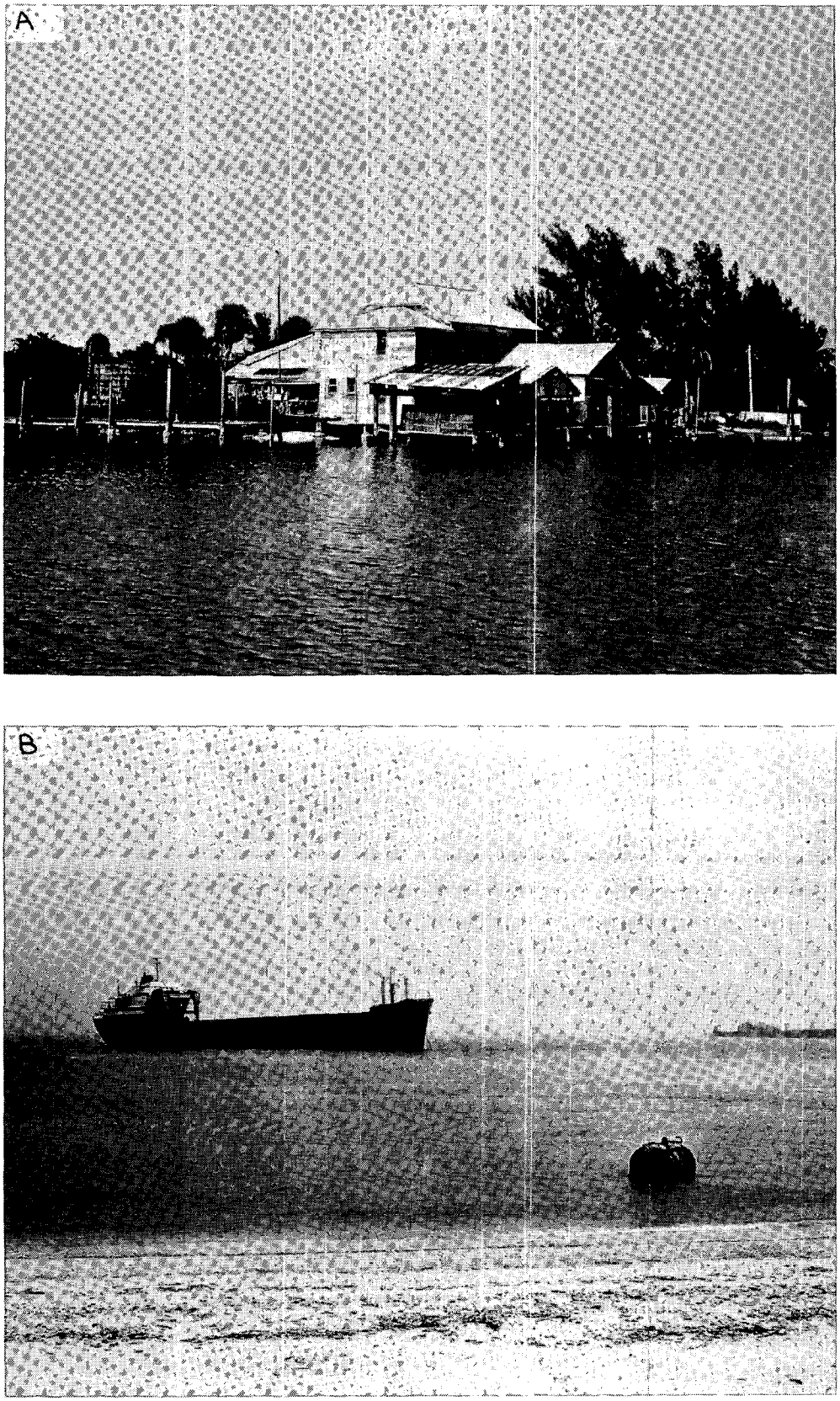
In the last century, a seasonal fishing camp was located in the "Lock-joint" area. This led to a permanent small fishing community, Gasparilla Village, at the north end of the island near the highway

bridge landfall. This village was near the presently proposed marina site. There is a possibility of recreating the village in conjunction with the new marina.

The Small-Boat Harbor

Around the turn of the century Gasparilla's boat harbor became the main staging area for the now globally famous tarpon fishery of Boca Grande Pass. Snook, trout, redfish, and shark also attracted sport fishermen from afar. Before modernization, anglers stayed in a floating hotel hauled into the area for the spring and summer tarpon season or camped on the shores of Gasparilla and nearby islands. At Boca Grande fishing events of the past merge with those of today to provide a heritage abundant with tales of famous events such as the great shark of Colonel John Jacob Astor. The Colonel hooked a 20-foot shark which would neither give up nor yield line to the reel. Bordering on fatigue and spotting the shark within gun range, the Colonel shot the shark and hauled it ashore. When the shark was gutted, a right hand with a diamond ring was found in its stomach, the remains of a man who was known to have recently been lost overboard while sailing on a small steamer.

While modern fishing craft have replaced the oar-propelled guide-boats of yesterday, the Pass is still recognized as the "tarpon fishing capital of the world." Its traditions will live if the tarpon habitat is protected and the harbor is maintained and improved. The preservation of existing structures would conserve the heritage and colorfulness of the harbor front (Figure 2A).



The Whidden Fish House (A) and a modern phosphate ship (B) bespeak the maritime heritage of Gasparilla.

NATURAL HERITAGE

Gasparilla's ecological system supports a special diversity of plants and animals and an attractive blend of natural amenities. The condition of the island's ecological system is largely determined by its water systems. Hydrology broadly affects the island vegetation, its wildlife ecology, estuarine ecology, geology, and, generally, the way the island is perceived by its residents.

The major subsystems, or ecological zones, are: beaches and dunes, hammocks and savannahs, wetlands and interior waters, and mangroves and estuarine waters (Table 2). Each of these is discussed below as having different functions, values, and suitabilities for development. Therefore, each is a separate element for planning.

Beaches and Dunes

The beachfront is a continuous entity extending from the dune ridges several miles offshore to where depths reach 30 to 50 feet. For this report the Gasparilla beachfront is divided into five sections: North Beach (Charlotte County), Middle Beach (Lee County), Townshore Beach (19th to 1st streets), Golden Beach, and Lighthouse Point Beach (Laff-a-lot Restaurant to Belcher Pier). The total inventory of island beaches and dunes is presently 90 acres. Their status is outlined in Figure 3.

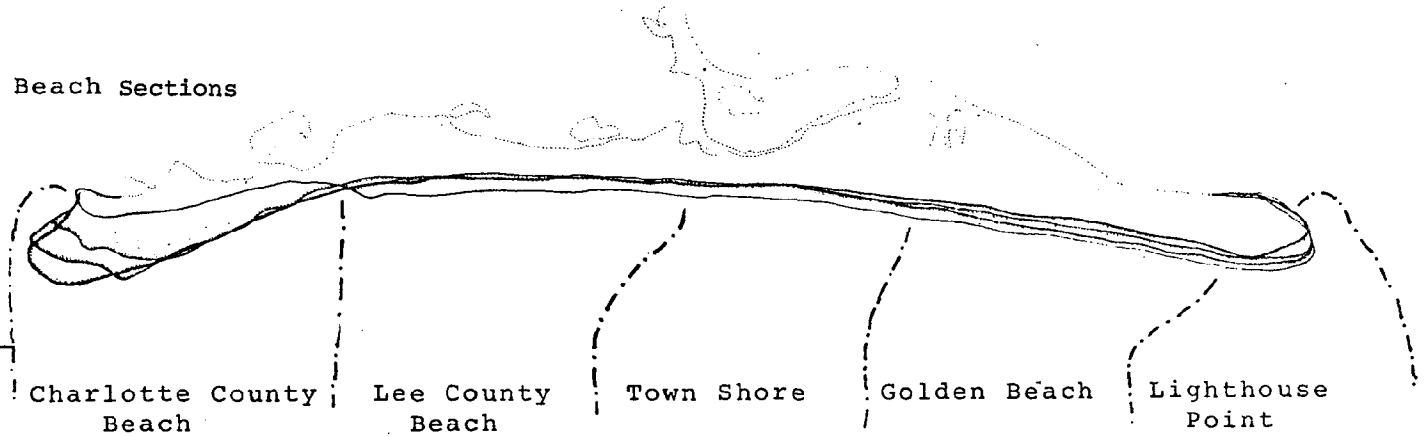
The beachfront in its natural form exists in a state of dynamic tension. It continually shifts in response to waves, winds, and tide

Table 2. Inventory of Natural Vegetation 1944-1977 (in acres)

	Acreage in each Unit		
	1944	1977	Difference
Swales-Marshes	66.88	13.12	- 53.76
Lakes and Lagoons	49.60	85.44	+ 35.84
Beaches and Dunes	92.80	89.92	- 2.88
Savannah	201.92	70.72	-131.20
Hammock	165.12	109.08	- 56.04
Mangroves	363.84	247.14	-116.70
Exotic	45.44	86.0	+ 40.56
Cleared and/or Filled	64.96	318.12	+253.16
Residential, Commercial, Industrial	300.48	365.80	+ 65.32

*Acres calculated using a compensating polar planimeter. Figures can be expected to be accurate to ± 10 percent.

Figure 3. Summary of Beach Sections



ASPECT	Charlotte County Beach	Lee County Beach	Town Shore	Golden Beach	Lighthouse Point
Erosion Accretion History	Considerable accretion	Chronic erosion	Severe erosion presently "stabilized"	Considerable chronic erosion	Severe erosion may be halted
Coastline Vegetation	Natural dune and beach vegetation; uplands cleared	Natural dune vegetation	Virtually no dune or pioneer vegetation	Situation fair; numerous roads alter natural vegetation	Some natural; most altered
Dune	Roads and foot paths	Foot paths, one road	No functional dunes	Situation growing worse due to vehicle traffic and construction	Remaining dunes are affected by vehicle traffic
Interference in Coastal Processes	Gasparilla Pass altered, effect unknown	Moderate interference; situation appears to be deteriorating	Natural system displaced	Some groins and seawalls	Groins, seawalls, wharves
Access	Unofficial use	Some footpaths	Street right-of-ways	Lee County Park, and unofficial use	Lee County Park (improved)
Beach Condition	Good	Fair, declining	Little or no usable beach	Varies, some very good beach left	One good section of beach remains
Development status	Undeveloped	Residential and platted lots	Residential estate	Condominium and platted lots and park	Industrial, residential, historical

and continually adjusts back to equilibrium. Each part of the beach is capable of receiving, storing, and giving sand, depending on which of the several constantly changing forces is dominant at the moment. This will hold the slope or profile intact through balancing the sand reserves held in various storage components--dune ridge, dry beach, wet beach, submerged offshore bar, and so forth. When storm waves carve away a beach they are taking sand out of storage. In the optimum natural state, however, there is enough sand storage capacity in the beach berm or dune ridge to replace the sand lost to storms and, consequently, the effects are temporary, with the dune or berm gradually building up again. A developed or disturbed beach may have only a small remnant area available to store sand to protect the shore during storms.

If the dune ridges are bulldozed away or the shore bulkheaded (Figure 4), the reserve sand in storage will be reduced to a level no longer capable of replacing sand losses from severe storms. The beach system then becomes unstable, slumps in places, and attempts to re-establish its old equilibrium profile, or "angle of repose." But with less sand the equilibrium angle of repose can be established only at a position inland of the previous beach profile. When this occurs the beach cuts back into the land. The natural forces at work are immense, and the power of man to hold the beach at a higher than natural angle of repose to protect property is limited. Structural solutions are often ineffective and only temporary [2].

Gasparilla is suffering some long-term consequences of beach change that must be considered in relation to locating and designing Gulf-front

homes. In recent years, the developed southern end has lost considerable beach; the central part has lost some beach; and the undeveloped northern part has gained beach. The following are key danger signals to remember:

- One part of the old county road is now completely submerged in the Gulf within the Golden Beach section where new Gulf-front development is planned (See Figure 5).
- The beach has receded up to 200 feet inland in the past 33 years; at this rate the beach would recede up to another 400 feet during the economic life of homes that are now being built 100 feet from the beach in the Golden Beach section.*
- In parts of the Golden Beach section, no structure now built west of the present road can be considered safe from the advancing sea.
- Seawalls and groins are temporary defenses which may be overcome by hurricanes and storm surges.
- Seawalls and groins deplete the beach; the more they proliferate the more the beach will yield to the sea.

Gasparilla's beaches not only protect the shore, they are very valuable scenic, recreational, and ecological resources. To protect

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*According to David Tackney of Stanley Hole Associates the beach at the south end of the Golden Beach section has eroded back 700 feet in 30 years.



Typical beach slope and width along seawalled Gulf shores of Gasparilla Island.

these public values, the beachfront must be thoughtfully managed. While the bayside beaches, or estuarine beaches, are less dynamic and their values and problems less obvious, they should be considered in planning for island development (for example, wave reflections from seawalls may be causing shore erosion and shoaling in the boat harbor).

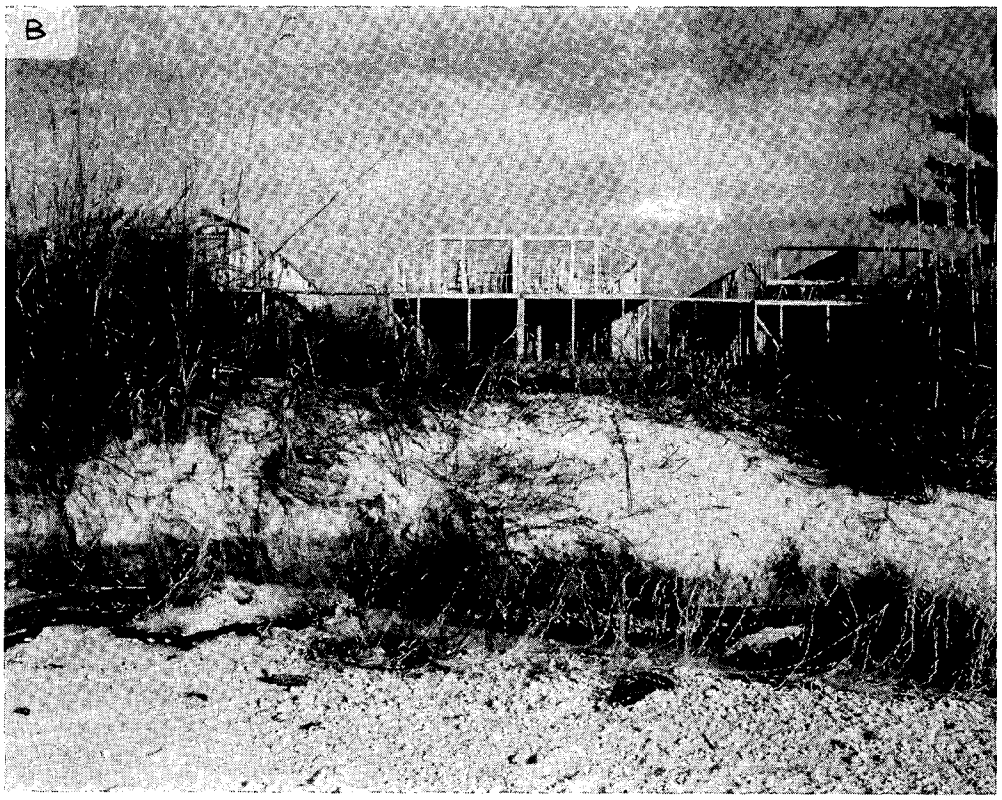
Uplands: Hammocks and Savannahs

The natural uplands, or high ground areas, of Gasparilla consist of savannahs (open prairie-like grass-scrublands) and hammocks (canopied forests). Typical savannah plants are grasses and small shrubs. Typical hammock trees are cabbage palm, gumbo limbo, live oak, and strangler fig (Table 3).

The island's greatest diversity of plant and animal species is found in the hammocks. Moisture and shelter are provided by the canopied forest; humus litter collects on the forest floor. All sounds are muted, making maritime forests unique to visit. Savannahs interspersed among hammocks provide additional wildlife habitat and open space. Conserving the hammock-savannah uplands is absolutely necessary if Gasparilla's wildlife, scenic, and open space heritage is to be retained.

In the last 33 years, over half of the hammocks and savannahs on Gasparilla have been replaced by development or lost to poor management practices; 187 acres have been lost, and 179 acres of upland remain undisturbed. All remaining hammocks are threatened by development plans. All have to some extent been invaded by exotics. Australian





In the Golden Beach section, the old county road runs close behind the Sea Grape project (A) and less than a mile south emerges on the beach at the Turtleback project. Further south it disappears into the Gulf.

Table 3. Hammock Species of Gasparilla Island

Scientific Name	Common Name
Ardisia escallonoides	Marlberry
Baccharis halimifolia	Saltbush
Bumelia celastring	Saffron Plum
Bumelia reclinata	Buckthorn
Bursera simaruba	Gumbo Limbo
Caesalpinia crista	Gray Nicker
*Cereus gracilis**	Prickly apple
Chiococca alba	Snowberry
Chrysobalanus icaco	Cocoplum
Cocoloba uvifera	Sea Grape
Conocarpus erecta	Buttonwood
Dalbergia escatophyllum	
Donocaea viscosa	Varnish Leaf
*Ernodea littoralis** *var. littoralis*	Golden Creeper
Eugenia axillaris	White Stopper
Eugenia foetida	Spanish Stopper
Forestiera segregata	Florida Privet
Ficus aurea	Strangler Fig
Jacquinia keyensis	Joewood
Lantana involucrata	Lantana
Lycium carolinianum	Christmas Berry
Maytenus phyllanthoides	Mayten
Myrica cerifera	Wax Myrtle
Myrsine quianensis	Myrsine
Opuntia	Prickly Pear
Pithcelobium ungis-cati	Cat's Claw
Psychodria nervosa	Wild Coffee
Quercus virginiana	Live Oak
Randia aculeata	Randia
Sabal palmetto	Cabbage Palm
Schinus terebinthifolius	Brazilian Pepper
Smilax sp.	Greenbriars
Sophora tomentosa	Necklace Pod
Suriana maritima	Bay Cedar
Toxicodendron radicans	Poison Ivy
Yucca sp.	Yucca
*Zamia integrifolia**	Coontie
Zanthoxylum clava herculis	Hercules Club
Zanthoxylum fagara	Wild Lime

* Endangered species in Florida listing.

pine and Brazilian pepper are found where hammocks have been cut or partially cleared. Disturbance to these lands has degraded the scenic quality of the island, and caused a depletion or disappearance of birds and other dependent wildlife.

Interior Wetlands and Water Bodies

Gasparilla Island has limited, but ecologically important, wetlands and artificial lakes. The most important of the interior wetlands occur in the swales on the south end of the island. The interior lakes are all brackish and have been created or significantly altered by development. Six artificial lakes may have contaminated the island's freshwater lens by allowing salt water to intrude into the groundwater system.

In 33 years Gasparilla has lost 54 acres of interior wetlands. Today only 13 acres remain. In constrast, almost 36 acres of artificial lake and lagoon surface have been created in the past 30 years.

Wetlands and interior waters provide hydrologic benefits, open-space vistas, water-surface amenities, and aquatic habitat for birds and wildlife. Wetlands function to collect, store, and purify fresh water and recharge the water table. Moreover, the shallower and older lakes with vegetated shorelines support considerable populations of waterfowl as rookery and migration rest areas.

Most artificial lakes are too steep-sided and too deep to maintain good water quality. If development occurs around the lakes without precautions, they become contaminated and noxious, due to over-fertilization by pollution and overgrowth of algae (Figure 6).

quality of water in which they live is protected. This requires assurance that damaging pollution will not occur from future sources, such as: storm runoff, sewage effluent (Figure 13), or industrial contamination from the port or other sources.

Hammocks and Savannahs

If the island's heritage is to be preserved, much of the 179 acres of natural vegetation remaining should be retained for their amenity and wildlife value. On Gasparilla most of the loss of natural upland forests and grasslands is the result of clearing and filling for residences and golf courses. The trend can and should be reversed through restoration of any upland that is not used for structures, by grading it down to the appropriate height above the water table (using the resulting fill to elevate structures) and by replanting it.

The amount of such acreage to be preserved to give the minimum habitat appropriate for conservation of Gasparilla's wildlife heritage and the manner by which it would be preserved should both be decided before further hammock and savannah land is committed to development, as should the needs for restoration of critical land damaged in the past. Other Florida communities have recently begun to appreciate the value of natural hammocks; for example, Monroe County now has a specific ordinance to conserve its remaining hammocks--not tree-by-tree, but by intact forest units [3].

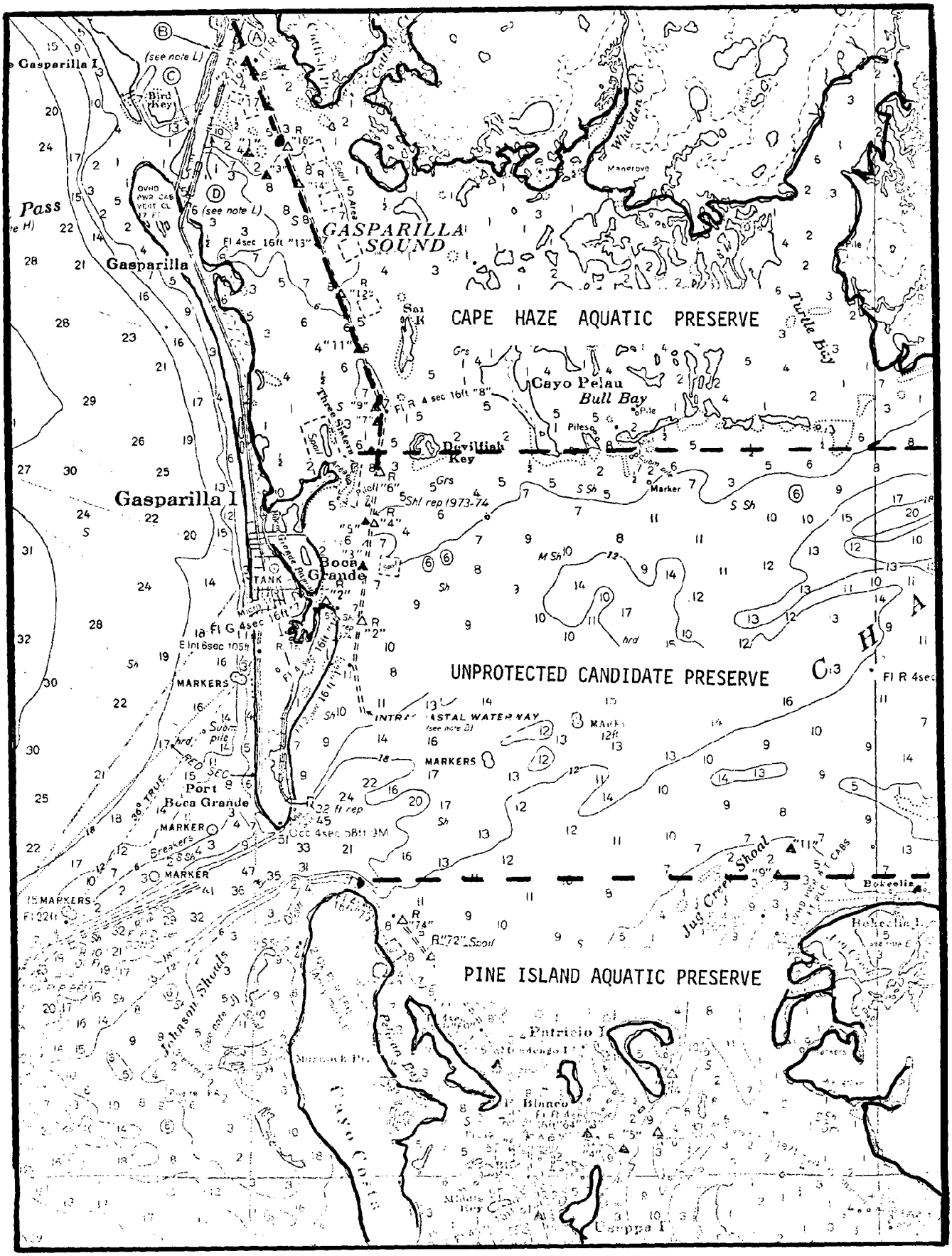


Figure 12. Preserve status in the Charlotte Harbor area.

It would be particularly desirable to complete systematic planning and to consider the need for protection of wetlands and private property on the beachfront before committing this parcel to development of any kind. It is also important to ensure that use of the parcel does not endanger the life and property of other island residents[10].

Conservation of Tarpon and Other Aquatic Resources

It is surprising that the State aquatic preserve system does not extend to Gasparilla Island and to the submerged lands of Charlotte Harbor that lie in and back of Boca Grande Pass. This estuarine system produces the fish and shellfish that enrich the commercial and sportfisheries of the area. For example, it is known that the food source which brings the tarpon back to Boca Grande year after year comes from the bottoms of Charlotte Harbor inside the pass in the now unprotected area. Protection of this resource should be an important part of the planning for Gasparilla Island.

A first step would be to request that the State Department of Natural Resources make the unprotected areas into an Aquatic Preserve (Figure 12). This would provide appropriate controls on any damaging dredge and fill and related activities. In addition, all mangrove fringe areas should be protected in the island plan as an important part of the estuarine system and as required by state and federal law and policy.

Another very important part of planning for the island is water quality. The aquatic resources described will prosper only if the

This 12.6 acre tract of Gulf front property in the Golden Beach section includes part of a three and a half acre parcel of wetlands which is a most valuable element of the Island's heritage of mangrove and internal wetlands. These wetlands occur in a depression between the County road and the dunefront and are characterized by several wetland plant species that are standard wetlands identifiers (e.g., see Chapter 17-4 of Rule of Florida D.E.R.). The wetland parcel is up to 135 feet wide (where the property width is only 220 some feet). The dominant plant community is a combination of Borrichia frutescens (sea oxeye) and Distichlis spicata (salt grass). Other wetland plants include Avicennia germinans (black mangrove), Conocarpus erecta (buttonwood) and Typha domingensis (cattail).

The wetland described is historically part of an estuarine water body of Charlotte Harbor now called Old South Bayou. It was cut off from the bayou by the County road in the 1950's but continues as a viable and productive wetland connected to the Island's surface water table. It is brackish because of salt water intrusion. This type of wetland may come under the jurisdiction of the State Department of Environmental Regulation (Chapter 17-4), or the Corps of Engineers (Section 404 of the 1972 Water Act), or other related authority and would require a permit for filling. To plan rationally for the future use and conservation of wetland resources on the island it appears necessary to have State and Federal opinions before proceeding.

Pending Development Permits

The County Commission has delayed action on three recent permit applications relating to development in the Golden Beach section. This appears to be a wise action and one that, if continued, will allow time for a much needed special plan for the Lee County portion of Gasparilla Island before precipitous development occurs. One of the three applications appears to pose a particularly strong threat to the integrity of Gasparilla's natural and economic resource system. This is a proposal for multi-family structures in the extremely hazardous Gulf beach area opposite old South Bayou (a 12.6 acre rezone petition).

It should be noted that along this part of the beach in the Golden Beach Section:

- There has been up to 200 feet of erosion of the beach in the past 30 years. [9]
- The asphalt of the old County road (replaced in the 1950's) is now awash on the beach.
- Fallen trees may be seen along the beach to the south of the parcel where the sea is swallowing up the forested uplands.
- The strip of land between the beach and Old South Bayou, including the road, is so narrow that if weakened an extreme hurricane would likely cut through this strip all the way to the Bayou, severing the road and cutting off the southern tip of the island.

A major justification for such a project, as cited by David Tackney [7], is that there is inadequate wave energy and direction in the Boca Grande Pass area to replace, by natural processes, the sand lost from the southern end of Gasparilla. Tackney states that the beach at the south end of the Golden Beach Section has receded 700 feet inland in the past 30 years. Apparently, the sand moves both south and north from the center of Gasparilla causing erosion there. This sand builds up on the north end causing accretion but is taken away from the south end by erosion processes that are related to inlet water flow dynamics [8]. There appears to be no way to correct this situation other than beach sand replenishment with retaining structures. Whether the great public expense (shared by County, State, and Federal budgets) for such a project may be justified by expected benefits is a matter for investigation. In the meantime, shore development should be placed well behind the anticipated future beach recession line--the new beach ordinance is a beginning.

If the Corps project were approved it would require that Lee County provide for adequate public access to the beach along the project area, including parking lot acreage and public accessways. These provisions could be comfortably fitted into a heritage plan for the island as previously described <u>but only</u> if sufficient undeveloped beach is available. If the Golden Beach Section is further developed at this time, there may be insufficient beachfront area left in the southern part of the island to provide the acreage for public facilities required to gain valuable federal and state shore protection assistance.

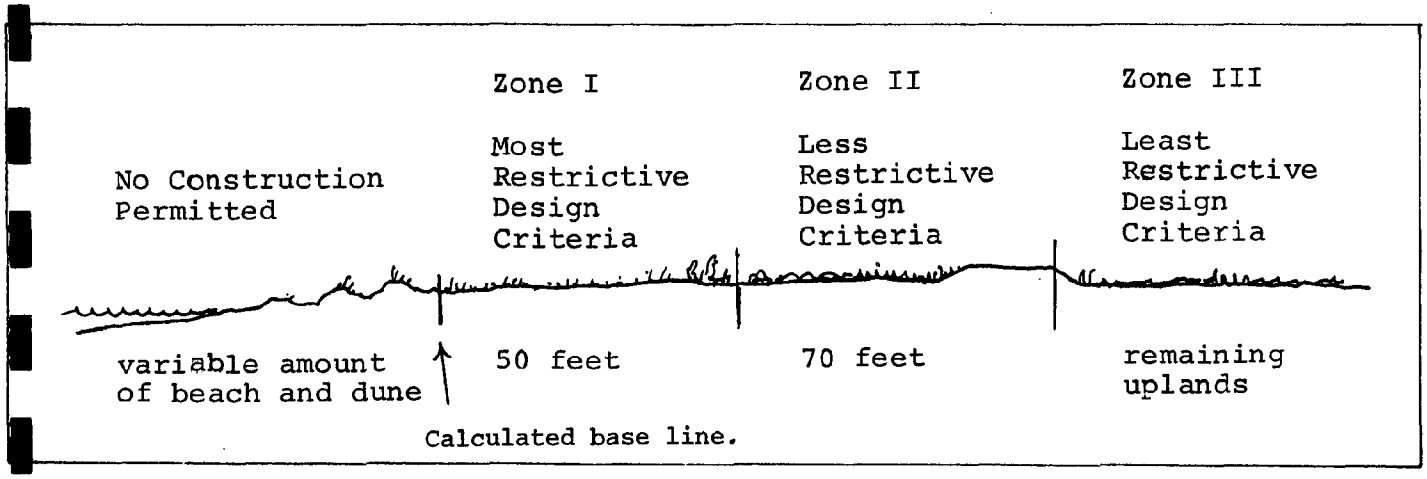


Figure 11. Simplified Diagram of Gasparilla Island's Coastal Construction Code

ISSUES AND OPTIONS

Although this report is limited to a reconnaissance survey of island resources and some general considerations for their conservation, several specific issues emerged during our study that should be highlighted.

Beachfront Protection

Urgent among matters affecting the beachfront are (1) an authorized Federal Beach Restoration Project that awaits funding, and (2) development proposals for both ends of the island.

If the Restoration Project were given high priority and became implemented, it could serve as the focal point for shore protection considerations by Lee County planners or a possible bi-County planning unit. While the new Lee County beach ordinance provides a positive response to state setback requirements, it falls short of a complete beachfront management plan for Gasparilla. The Restoration Project would replenish the beaches and provide needed shore structures to hold the new sandfill. However, local government would have to prohibit excavation of the sandfill and dune ridges, prevent the construction of counteracting private beach groins, provide ample parking and public access to the beach, enforce and strengthen the existing beach ordinance (Figure 11), and take other appropriate actions. To do otherwise is to seriously endanger life and property along the beachfront and to reduce the feasibility of the federal restoration project.

Table 6. Potential Resource-Oriented Recreation on Gasparilla

	Learning			Action		
	Natural	Educational	Heritage	Simple Active	Extractive	Motorized
Archaeological, Historical	Explore the remains of old settlements, fish camps, indian sites	Visit interpretive facilities (museums, signs & guid-guided tours)	Explore Boca Grande by foot or bicycle (using self-guided tour book)	Walking or bicycling around Boca Grande	Not Compatible	Not Compatible
Nature Study	Explore Live Oak Key & estuarine savannah (using local nature guide book)	Experience interpretive trails, other facilities (signs, guided tours)	Explore vegetational recolonization of old sites	Bird watching, exploring nature trails	Not Compatible	Scenic views from vehicles explore estua by motor-boat
Beach Use	Visit range light & north end dunes	Using interpretive aids, learn about coastal processes	Investigate fate of old railroad, visit lighthouse & range light	Swimming, jogging, beach combing, snorkeling, sunbathing, wading	Shell collecting, fishing, coquina gather-gathering	Not Compatible
Saltwater Activities (Gateway Function)	Explore Charlotte Harbor & vicinity (with or without guide)	Learn about estuaries with guide-boat trips for groups	Visit Indian mounds, Pineland, Useppa, Cabbage Key, etc. by boat	Sailing, canoeing, kayaking	Tarpon and other fishing, shellfishing (with or without guides)	Power boating water skiing
Bicycling	The role of bicycling on Gasparilla would be to provide an alternative to the use of automobiles and to connect the various recreation sites and other facilities into a network of popular places.					

beach. But the need for recreational opportunity is not for typical beach outings but is of another kind. A basic state report on recreation recently released suggests that what is most needed for this region is opportunity for nature study and for educational pursuits rather than public or commercial beach recreation. A summary of the background data is given in Table 5 where the local area needs are identified as part of a ranking system for all state needs.

If the concept of Heritage Planning is used for Gasparilla, the community's obligation to provide for regional recreational needs can be guided along a path that would reinforce Gasparilla's heritage and would contribute to its economic revitalization. Gasparilla would be a popular visiting place for those interested in the culture, history, and natural environment of the island. Hiking and bicycling, which would be popular alternative means of transport for visitors, can be facilitated by use of the railroad right-of-way as a pathway and connecting link to the island's attractions if it should be abandoned by the Seaboard Coastal Railroad. Creation of a lighthouse museum and the restoration of the railroad depot and other historical structures could serve as attractants to a largely retired regional population. Shops and services, strategically located, could provide a much strengthened economic base for islanders (Table 6).

This could be accomplished in a way that will not seriously compromise the traditional style of island life. Yet to fulfill the promise of a Heritage approach, action must be taken now to reprogram land use, resource use, and public facilities on the island.

Table 5. Relative Index for Southwest Florida Outdoor Recreational Needs that should be met by the Florida Division of Recreation and Parks (Source: Reference 6).

Activity	Relative Need Index	Local Priority Ranking	State Priority Ranking	Southwest Florida Projected 1990 Needs
Nature Study	114.9	1st	3rd	200 miles of trails
Archeological/ Historical Site Visiting	19.3	2nd	21st	15 sites
Freshwater Swimming	17.6	3rd	24th	6,000 linear feet
Picnicking	6.8	4th	39th	2,367 tables
Horseback Riding	3.4	5th	50th	18 miles of trails

POTENTIAL RECREATIONAL DEMAND

As Gasparilla citizens consider planning for the future, the recreationally related external demands that may be put on island resources should be considered. Therefore some information on the regional context of Gasparilla and possible recreation demands will be useful. There will certainly be increasing pressures from the outside in the future. Consider the following statistics regarding Sarasota, Charlotte, and Lee Counties, where pressures to meet the needs of a rapidly expanding population are accelerating: [5]

- The area's population has grown 540 percent between 1950-1975.
- 1.6 million tourists visited the area in 1975.
- Present build-out of planned and proposed area projects covers 568 square miles, represents over 960,000 dwellings with units with a population potential of 2.2 million people.
- More than 29,186 pleasure boats were registered in the region in 1975.

Much of this profile suggests that there will be heavy future pressure on Gasparilla for recreational activity by the growing three-county population, particularly by the new Charlotte County residents who would find Gasparilla Island the closest sea coast opportunity. The island has only one small and terribly overcrowded

The federal study that Mr. Carter ordered will be completed in early spring, and it is probable that a special barrier islands conservation program for the nation will be announced in a few months. But even without federal prompting, many states and communities have accepted a special trusteeship for islands and island people--for example, Franklin County, Florida, has established specific growth management policies for St. George Island.

In a parallel effort, the Carter administration has recognized another urgent national need; the conservation of heritage. In this program federal help will be provided to local citizens for programs that combine conservation of cultural, historical, and natural resources. On January 23, 1978, Cecil Andrus, the Secretary of the Interior, announced:

> The Federal member of this partnership will be a new agency called the Heritage Conservation and Recreation Service....This agency will incorporate natural and historic preservation activities now handled by the Natural Landmarks program and the Office of Archeology and Historic Preservation of the National Park Service, with the recreation responsibilities of the Bureau of Outdoor Recreation. Additionally a new emphasis will be placed on the cooperative protection of natural resources....I am asking the Governors of all the States to join us by participating in Heritage Programs at the State level, with heavy emphasis on voluntary public participation through conservation groups, historical societies, community and cultural organizations and local governments. Thousands of such organizations are already in existence, most of them pursuing their own objectives on a local scale.

This new program emphasizes and fosters programs to conserve whole resource elements such as Gasparilla Island. It should be explored as a source of help.

THE BARRIER ISLAND HERITAGE

Gasparilla is a barrier island, one of a class of coastal landforms that have similar values and vulnerabilities wherever they occur along U.S. shores from Texas to New England. The general failure of coastal communities to perceive the barrier islands as a special landform has led to serious loss of island resources and to jeopardy of human life and property. The new federal administration has pinpointed this problem: In response to the Presidential directive of May 23, 1977, the Interior Department is making an intensive search for new ways to conserve island resources and to protect island property and populations. Recognizing the value of barrier islands to the nation as a whole, President Carter stated:

> ...These long chains of relatively flat, sandy formations offer a rich diversity of recreational opportunities, often near our large population centers. They provide habitat and food for hundreds of species of coastal birds, fish, shellfish, reptiles and mammals; and they enclose and protect important bays and estuaries from the destruction of hurricanes and oceanic storms....
>
> Most of the barrier islands are privately owned. They are targets of intense real-estate and development activity. The development of these resources has often been encouraged by federally permitted or subsidized roads, bridges, and sewers, with the result that millions of people have been subjected to the hazards of hurricanes, and to property losses from the erosion and other physical changes that are characteristic to barrier formations. These hazards and losses have, in turn, invited substantial federal spending for seawalls ... and beach restoration projects that perpetuate more settlement and then more federal investment, while causing the continuous loss of valuable and unique resources.

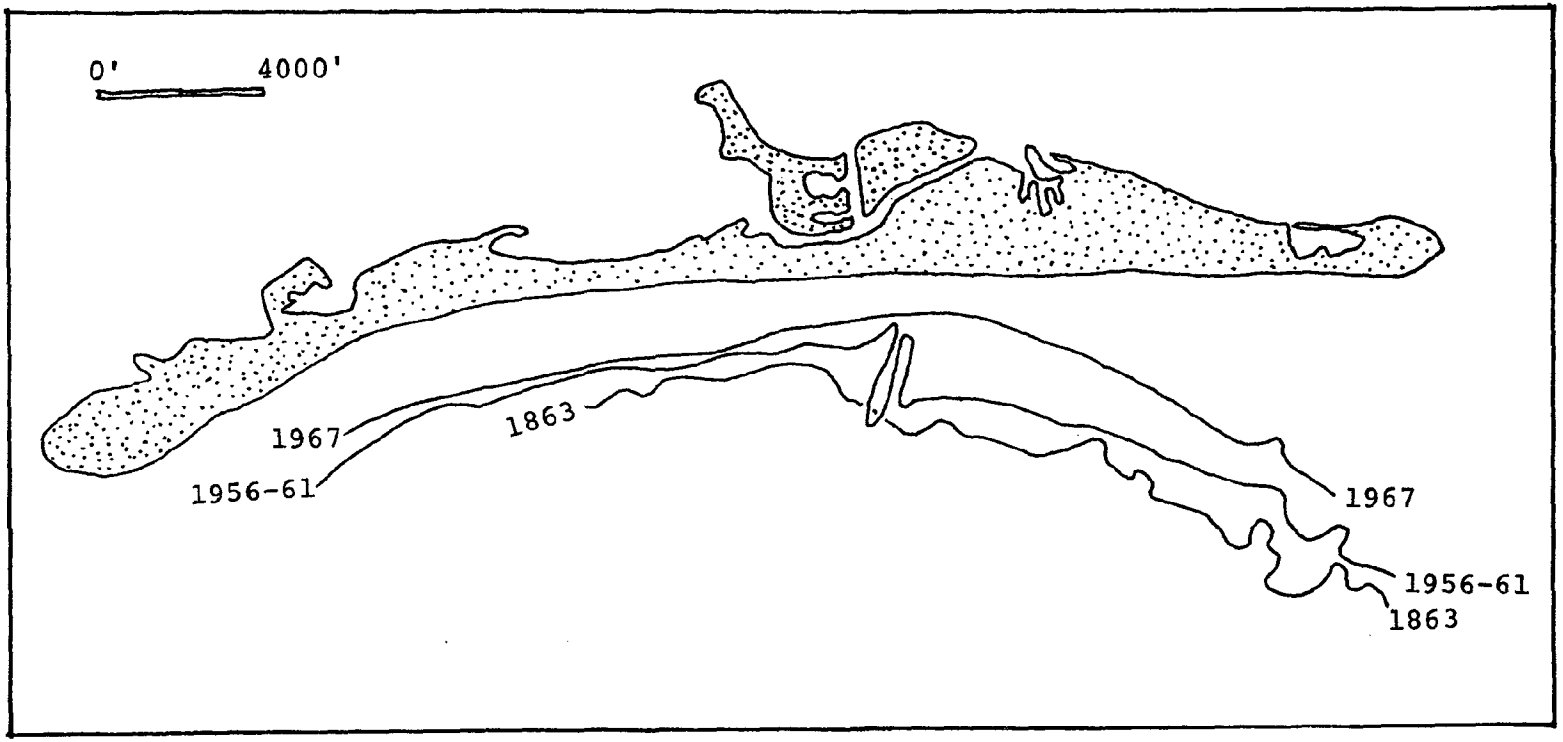


Figure 10. Advance in the 18 foot Offshore Contour toward Gasparilla Island since 1863.

The existing gradual erosion and recession of the Gasparilla beachfront increases the hurricane hazard. Present recession of the beach tells only part of the story. Offshore, the bottom has been progressively deepening and increasing the steepness of its profile--"winding the spring" one might say. This effect greatly intensifies the hurricane damage potential from shore slumping and beach recession. (See Figure 10) The progressive advance shoreward of the 18-foot contour line is the result of the slowly rising sea level, the natural beach system's regular sediment transport processes, the impact of major storms, the lack of natural replacement of sand lost to the Boca Grande Pass outer bars, and offshore geology.

The proper planning response is to prevent structures from being built in hazardous places, to properly engineer them for safety, and to take measures to protect and stabilize the beachfront.

Table 4. Storm tides: statistically expected frequency of occurrence, Gasparilla Island, Florida.

Tide Height Above Mean Sea Level	Return Period; Statistical Frequency of Occurrence
4.8 feet	10 years
5 feet	11 years
6 feet	17 years
7 feet	23 years
7.4 feet	25 years
8 feet	32 years
9 feet	45 years
10 feet	72 years
11 feet	84 years
11.6 feet	100 years

Source: NOAA, National Weather Service.

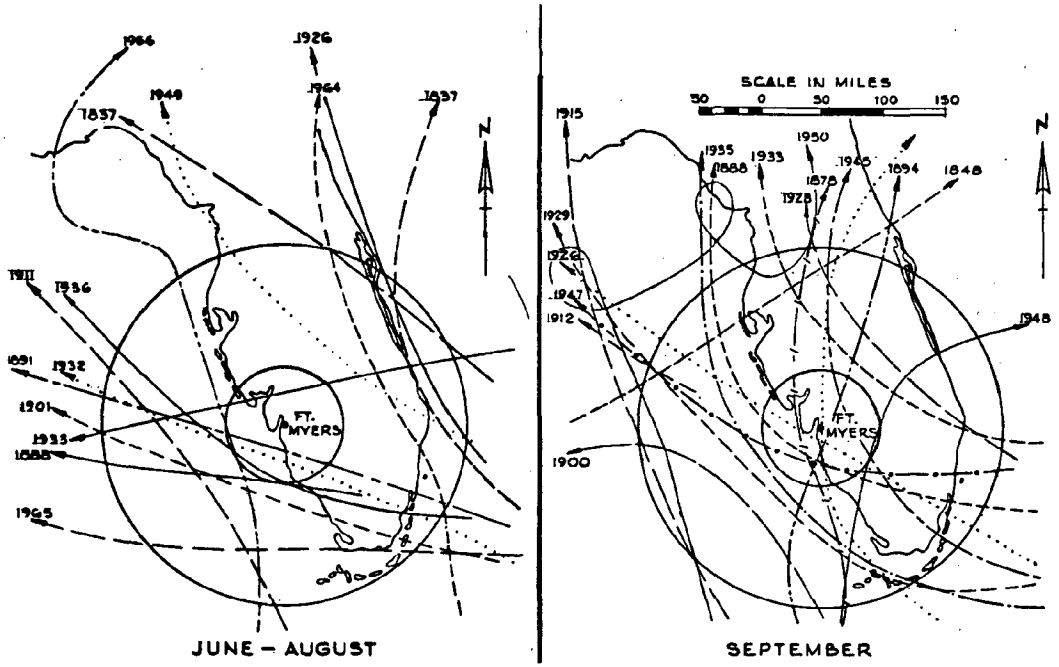


Figure 9. Paths of tropical storms of hurricane intensity that have passed within approximately 50-mile to 150-mile radii of Lee County, from 1830 to 1966 inclusive. (From U.S. Army Corps of Engineers - Reference 4)

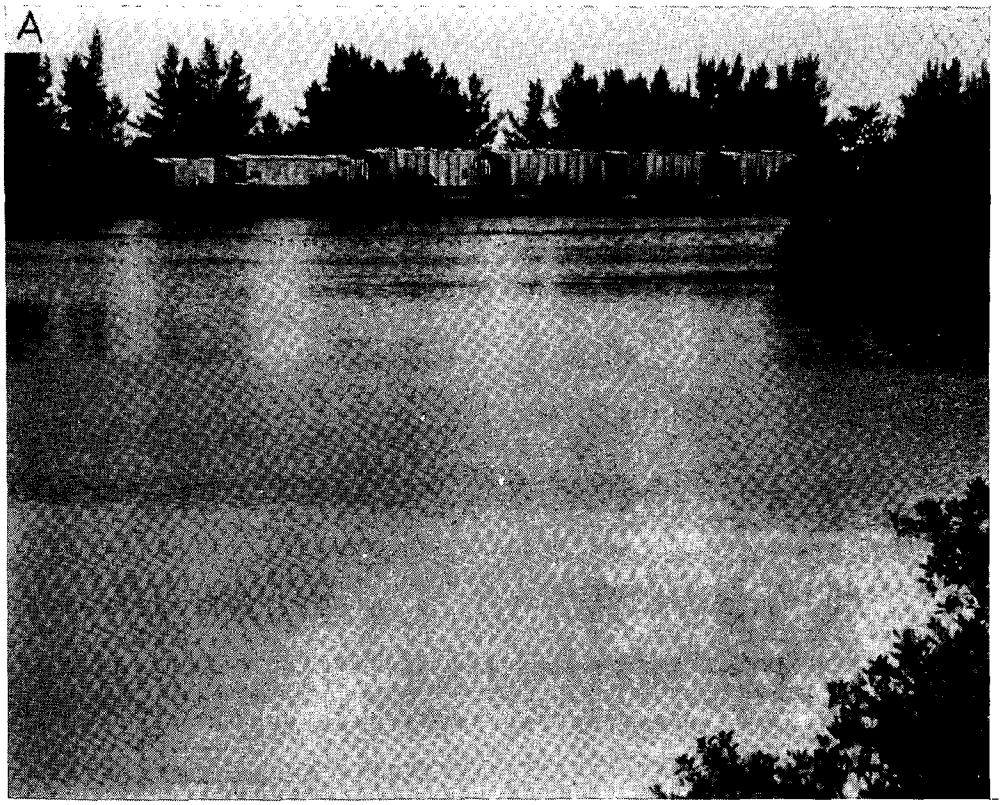
NATURAL HAZARDS

The Gulf of Mexico threatens as well as blesses Gasparilla. The Gulf is the major source of natural hazards that face the island. The most important of these are hurricanes and tropical storms. For any given season there is a 50 percent probability of a tropical storm or hurricane passing through the Gulf (Figure 9). Major storms that approach the Gasparilla area from seaward are capable of producing extreme storm tides because of the configuration of the shallow continental shelf area off the island. Any large storm passing over Gasparilla would cause the island to be overwashed with storm waves, resulting in extreme flooding, with severe property damage, deep erosion, and loss of beachfront areas. The "100-year storm," the guideline for the National Flood Insurance Program, would flood the island with a 10-12 foot storm surge (Table 4). The beachfront damage from the huge accompanying waves would eliminate many Gulf-front homes on the south end of the island and the property on which they stand.

The situation is aggravated by the low elevation of the island--approximately 6 feet above sea level--whereas the twenty-five year flood level is 7.5 feet and the 100-year flood level is 11.6 feet. Many structures on the south end of Gasparilla are now regularly flooded during moderate storms.

beaches, etc.--will give the Gasparilla community an opportunity to conserve and cultivate the diverse and valuable wildlife resource.

Tarpon and other fish: The brackish mangrove belt is an important habitat for juvenile stages of tarpon. Charlotte Harbor estuary and fishing grounds off Boca Grande Pass nourish fish, crabs, and shrimp on which the sport fish species feed. The island has been recognized as the "tarpon fishing capital of the world" since Theodore Roosevelt fished in its waters many years ago. Sport fishing provides about $500,000 of income to Gasparilla citizens each year. Dredging and bay fill in or near Boca Grande Pass would seriously threaten the tarpon stock and other resources, including the commercial species which provide substantial income to islanders. Protection of fish resources should be a key element of growth and development management on the island. In addition, a high priority should be given to restoration of harbor facilities for guide fishermen and commercial fishermen.



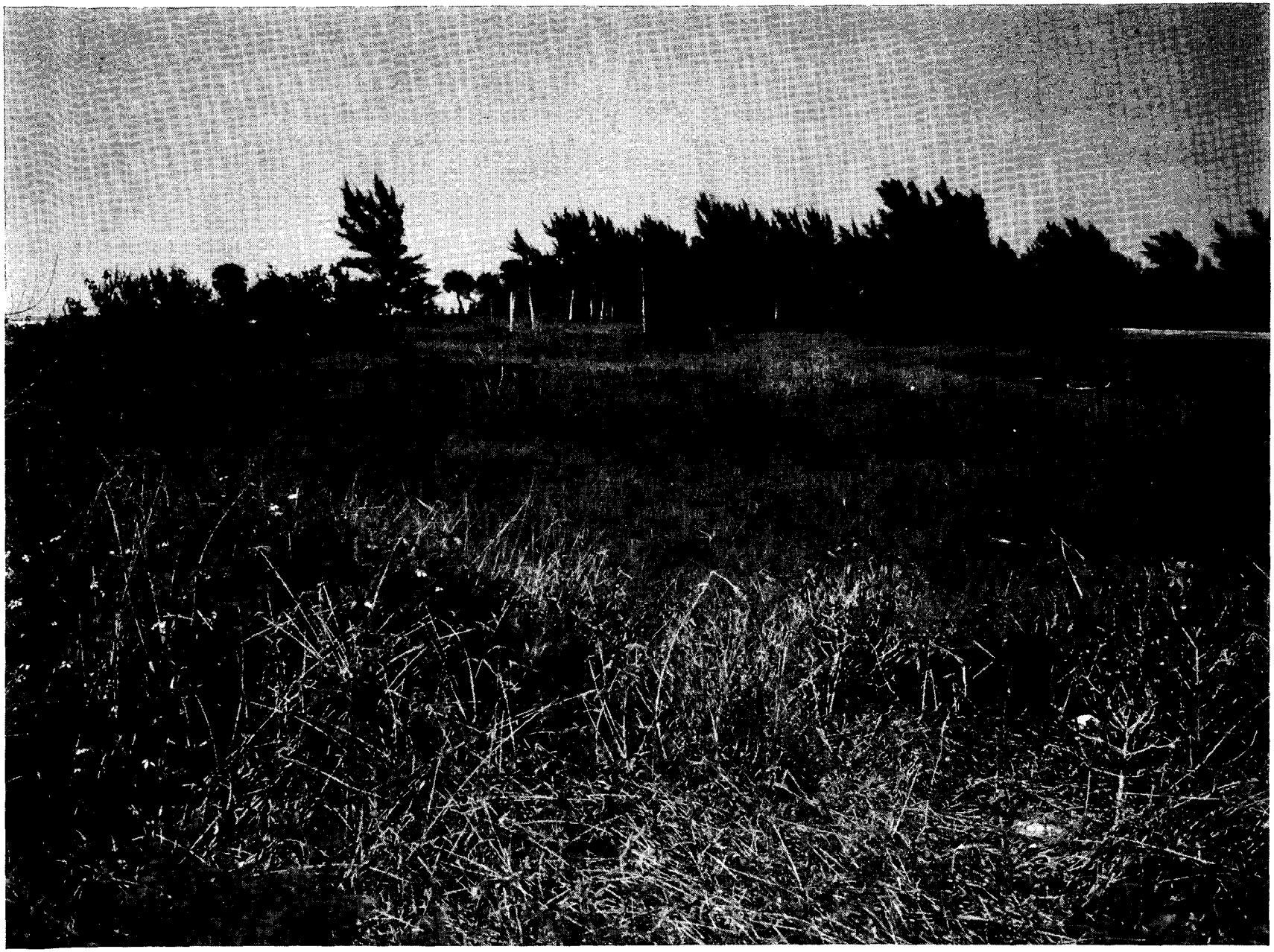


The Old South Bayou (A) and the Old Grouper Hole (B) are remnants of biologically productive lagoons that were once open to the sea.

Special Natural Resources

Groundwater: Upland sands form the surface water table aquifer in which rainwater is stored. The natural communities of the uplands depend on this freshwater "lens." Prior to 1971 water needs were met by this lens along with cisterns and importation by tank cars. Today the aquifer has become increasingly contaminated with salt water and it is unsuitable as a supply source. Construction practices, such as the excavation of artificial lakes, have seriously damaged the island's groundwater resource. On an island where water is scarce, this resource should be conserved by using aquifer recharge practices together with appropriate land management practices. This would enable the island to regain a healthy freshwater lens to support vegetation and save water. For example, stormwater runoff should be used to recharge the aquifer. The perimeters of the artificial lakes could be sealed with impervious clay dikes, as well as planted along their fringes with appropriate vegetation.

Wildlife: The abundance of wildlife on Gasparilla is an important part of the island heritage and should be conserved. Several officially endangered plant and animal species inhabit the local area. This requires that both the species and their habitats be protected. The island is an important nesting habitat for bald eagles and loggerhead turtles. Roseate spoonbills, pelicans, gopher tortoises, and manatees also inhabit the island's ecological zones. Uncontrolled development will extend the present trend towards loss of wildlife. Proper management and restoration of specific habitat areas--wetlands, lagoons,

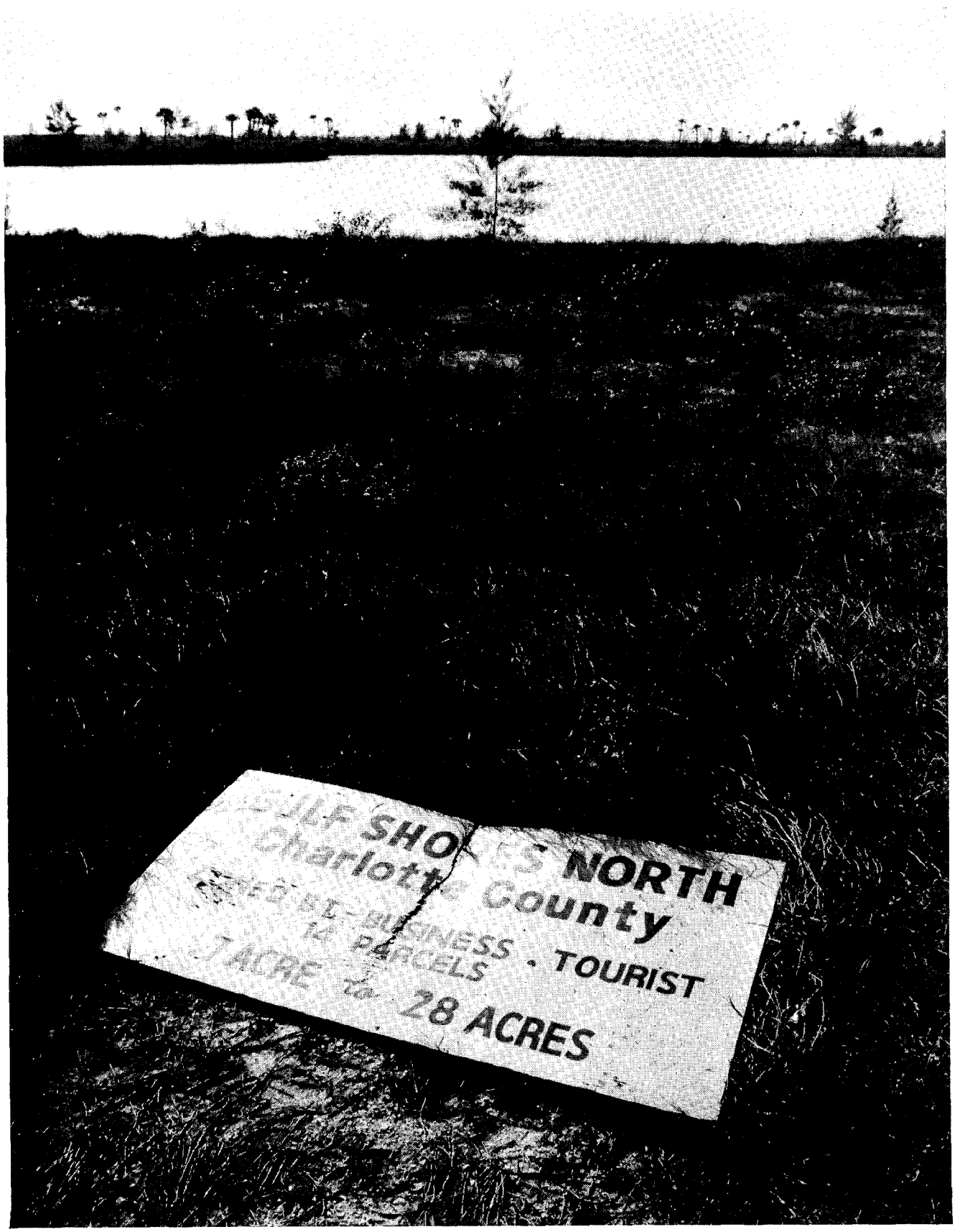


A view of the wetland swale type ecologic zone on Gasparilla Island (Golden Beach section).

Mangrove communities are extremely sensitive to activities that alter their hydrogeologic regime. Balance is essential. For example, tarpon depend on the mangrove-based food chain as well as on the physical condition of their habitat (depth, bottom condition, water quality). On Gasparilla, the mangrove wetlands system has been detrimentally affected by mosquito ditching, land filling, and boat wake erosion.

Conservation of the estuarine environs of Gasparilla Island, which includes the waters from Gasparilla Sound to the northern end of Pine Island Sound, must be considered in relation to development on Gasparilla. These waters support the commercial and recreational fisheries. Their degradation would have serious economic consequences. Certain island lagoons which were essential parts of the estuarine system have been cut off (Figure 8). It is important to control activities such as navigational dredging, which would cause the grass-beds and bottoms to silt up, or which would change channel configuration and water flows that presently appear optimum for tarpon and other species. It is particularly important to avoid any filling of estuarine water bottoms which serve to support the tarpon food chain and biological links to other seafood resources.

While this estuarine system is large, encompassing all of Charlotte Harbor, the area closest to the island is of the highest priority concern. All steps to protect and restore the integrity and quality of the estuarine waters and bottoms should be taken.



Gasparilla Lake is the largest enclosed water body on Gasparilla Island.

Future excavations should be closely controlled. There are definite specifications available [1]. The present lakes should be graded to further slope the edges and encourage vegetative cover. When time is opportune, some should be partially refilled to make them shallower.

Conservation of wetlands is mandatory under state policy and federal regulations and therefore must be addressed in any development planning strategy for Gasparilla. In the survey for this report, an intensive study of the island's interior wetlands was not undertaken, but the 13 acres observed do appear to fit the protected category. The two principal wetland swales are: (1) the "railroad wetlands swale" (9-10 acres) south of town and east of the railroad behind the Golden Beach Unit 3 project; and (2) the "dune-wetlands swale," (3±4 acres) between the beach dune and the road at Golden Beach opposite the Old South Bayou (See Figure 7).

Mangrove and Estuarine Waters

The mangrove forest is often the single most important contributor to the biological productivity of South Florida estuarine environments, and thus is a likely key to Gasparilla's rich seafood heritage. (Gasparilla Sound is said to have the greatest abundance and diversity of fish in the Charlotte Harbor region.) In addition, mangroves function to remove toxic elements from water, mitigate storm impact on coastlines, accrete land, provide habitat, and serve many other values. For these reasons, mangrove wetlands are conserved by federal and state law. Generally, they are completely protected from any significant alteration by development that is not in the public interest.

Key to Plate 9.

1. Intracoastal Waterway - loss of benthic habitat
2. Seaboard Coastline Railroad Trestle - Pass obstruction
3. Auto Causeway - Pass obstruction
4. Live Oak Key - Cove circulation
5. Mosquito ditching - reduction of mangrove habitat
6. Dump - contamination of tidal wetlands
7. Loomis Cut - loss of mangrove habitat
8. Loomis Cut - shoreline erosion, loss of benthos silting
9. Loomis Cut - loss of mangrove habitat and productivity
10. Railroad Grade - tidal wetland alteration
11. Hoagen Key Spoil - loss of mangrove habitat, bethos silting
12. Loomis Flats - propellor trails, benthic habitat destruction
13. Three Sisters Spoil - benthic habitat deterioration
14. Treasure Lake - loss of mangrove habitat, water quality threat
15. Hole In The Wall Pass - altered circulation
16. Boca Grande Isles - loss of mangrove and benthic habitat
17. Golf Course and Polishing Pond Outfall - tidal water quality
18. Golf Course Seawall - loss and deterioration of benthos
19. Golf Course Fill - loss of mangrove and benthic habitat
20. Boca Grande Bayou Cut - mangrove habitat, water quality
21. Urban Development - urban runoff
22. Yacht Basin Complex - wetland habitat destruction
23. Spoil Mound - loss of mangrove habitat
24. Dump - runoff water quality
25. Railroad Grade - wetland alteration
26. Railroad Levee Across Bayou Pass - circulation loss
27. Old South Bayou - loss of mangrove habitat and productivity
28. Railroad Grade and Beach - loss of mangrove habitat
29. Port - water quality threat

PLATE 9B ESTUARINE ALTERATIONS (South End Gasparilla Is.)

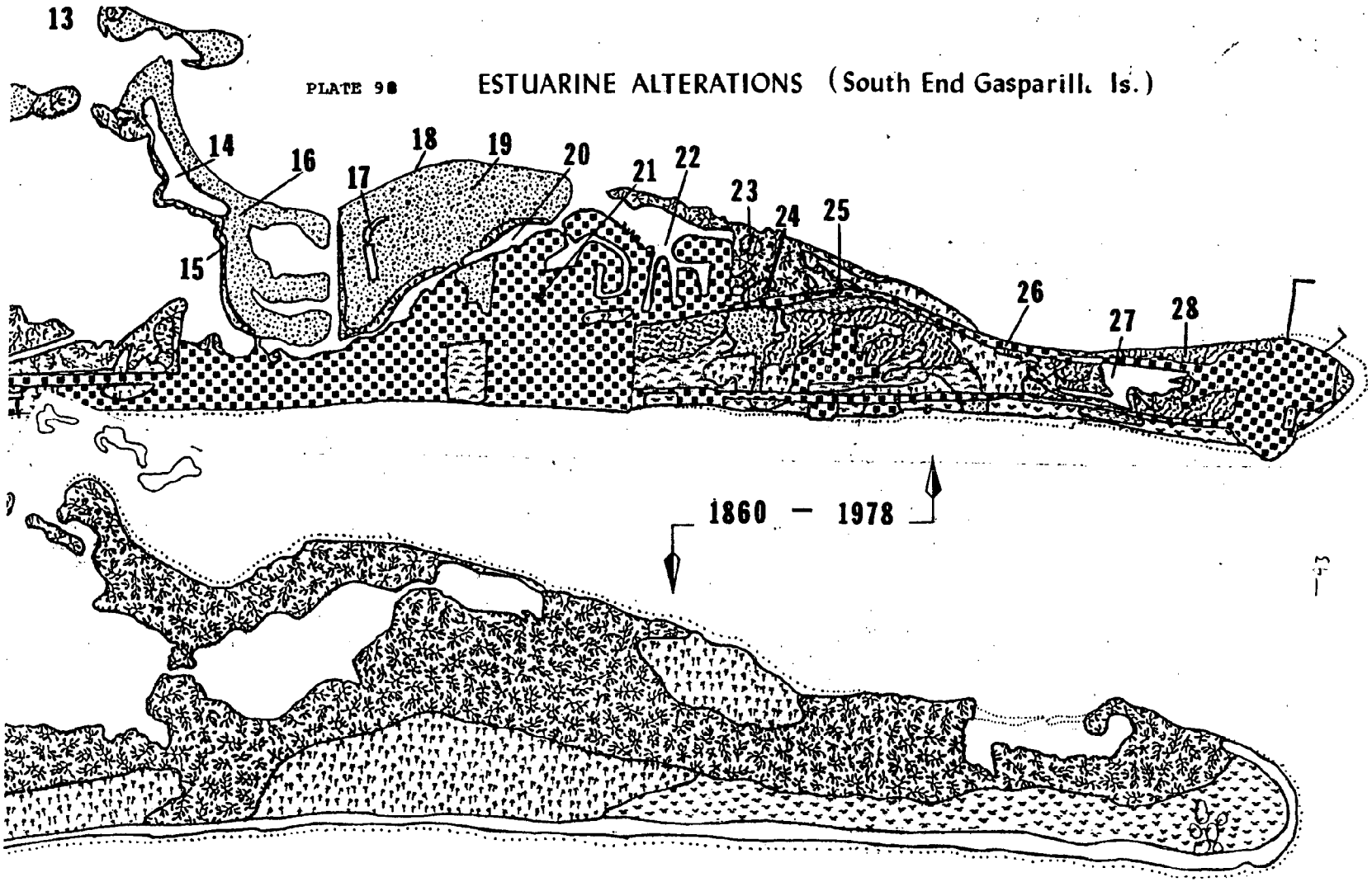
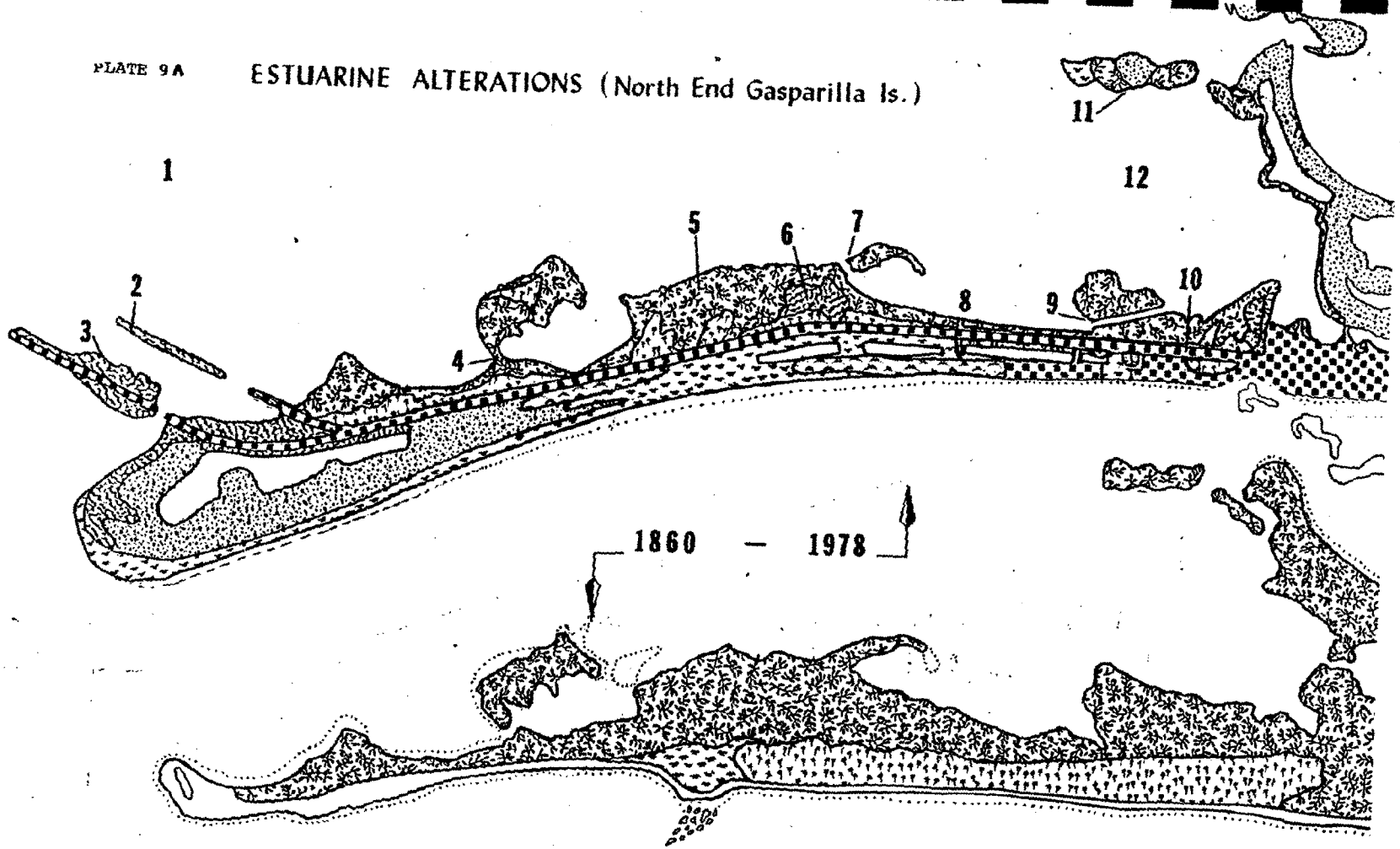


PLATE 9A ESTUARINE ALTERATIONS (North End Gasparilla Is.)



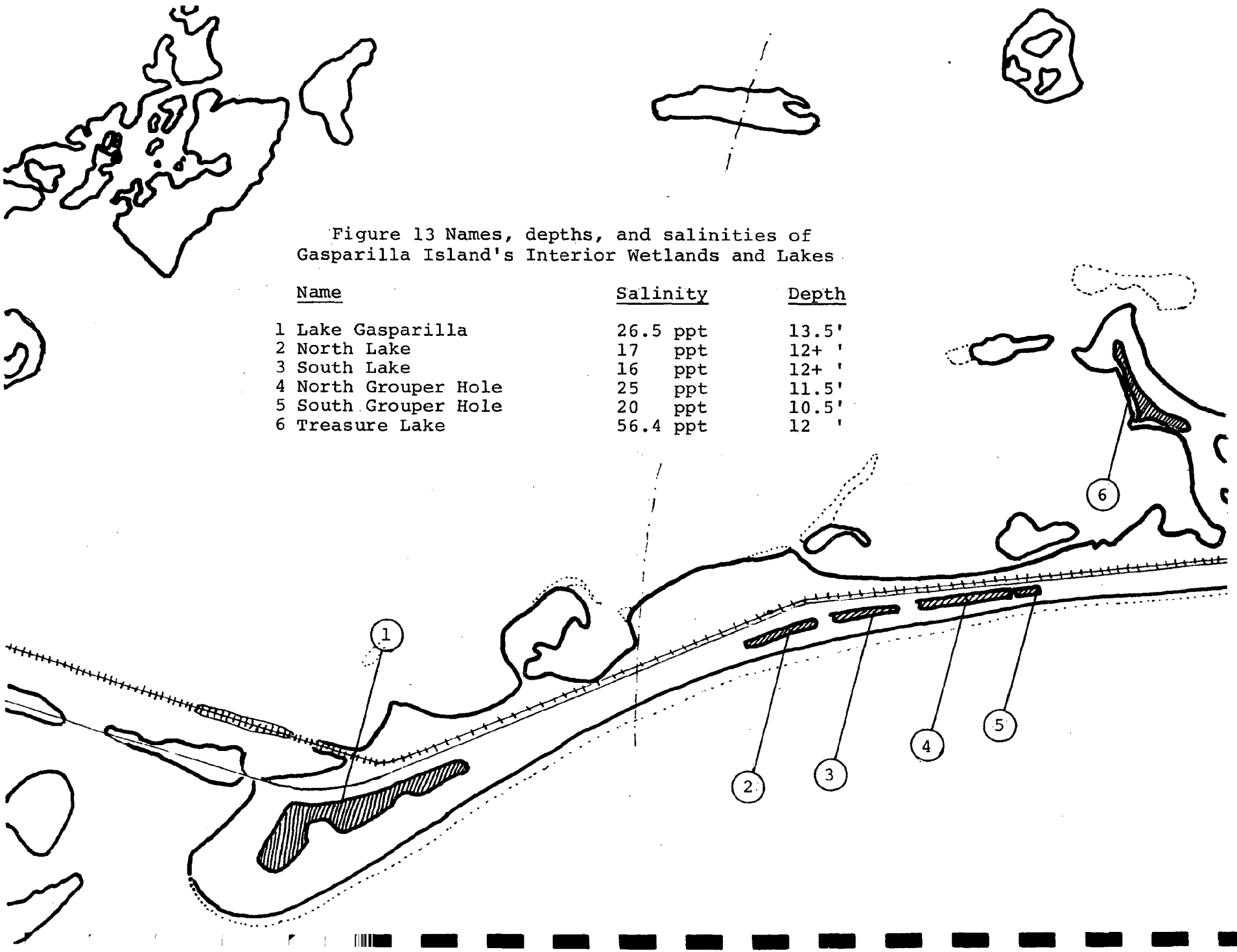


Figure 13 Names, depths, and salinities of Gasparilla Island's Interior Wetlands and Lakes

	Name	Salinity	Depth
1	Lake Gasparilla	26.5 ppt	13.5'
2	North Lake	17 ppt	12+ '
3	South Lake	16 ppt	12+ '
4	North Grouper Hole	25 ppt	11.5'
5	South Grouper Hole	20 ppt	10.5'
6	Treasure Lake	56.4 ppt	12 '

GASPARILLA INVENTORY: INTERIOR WETLANDS

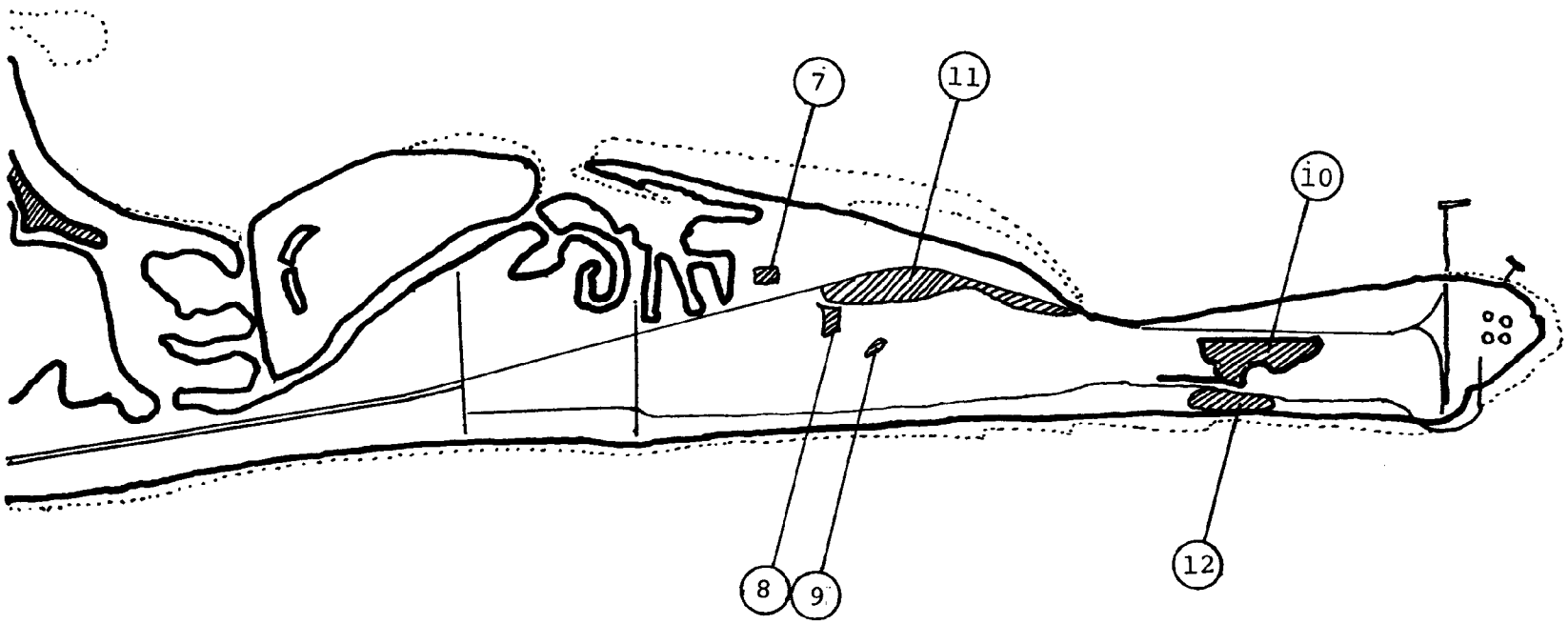
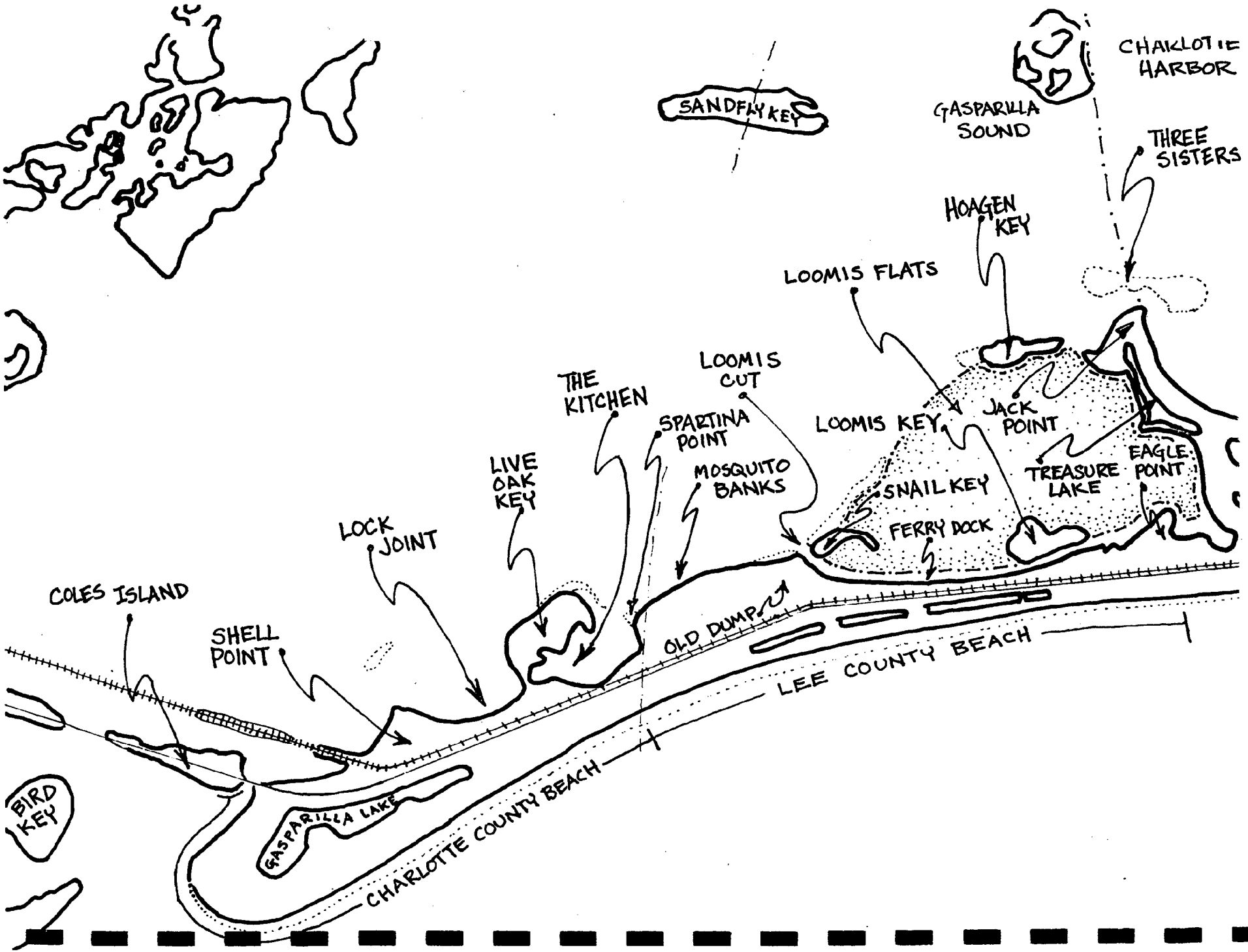


Plate 8. Names, depths, and salinities of Gasparilla Island's Interior Wetlands and Lakes

	Name	Salinity	Depth
7	Mosquito Control Borrow	24.8 ppt	--
8	Ballfield Pond	17 ppt	--
9	Cutlass Lake	6 ppt	--
10	Old South Bayou	18.5 ppt	6'
11	Railroad Swale	16.5 ppt	--
12	Golden Beach Swale	--	--


SANDFLY KEY
CHARLOTTE HARBOR
GASPARILLA SOUND
THREE SISTERS
HOAGEN KEY
LOOMIS FLATS
LOOMIS CUT
THE KITCHEN
SPARTINA POINT
LOOMIS KEY
JACK POINT
LIVE OAK KEY
MOSQUITO BANKS
TREASURE LAKE
EAGLE POINT
SNAIL KEY
LOCK JOINT
FERRY DOCK
COLES ISLAND
SHELL POINT
OLD DUMP
LEE COUNTY BEACH
BIRD KEY
GASPARILLA LAKE
CHARLOTTE COUNTY BEACH

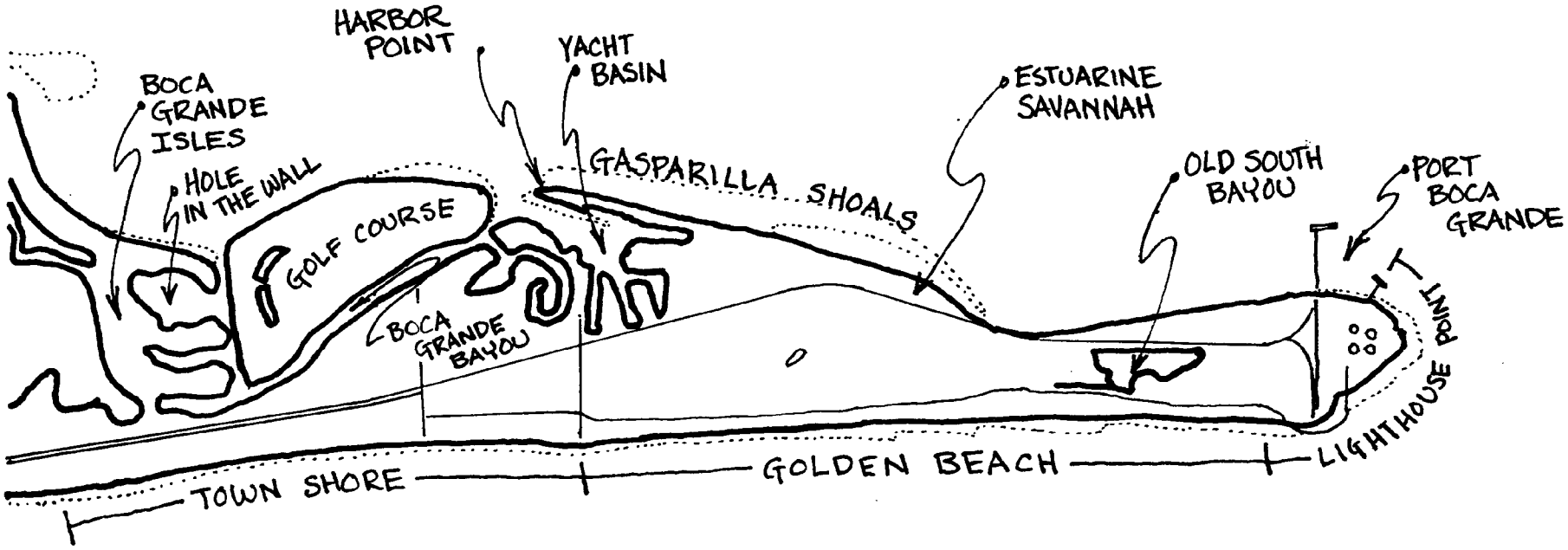


Plate 7. Place names and approximate boundary between Gasparilla Sound and Charlotte Harbor

Index to Plate 6. Soils of Gasparilla Island.
(USDA-SCS Data, 10/73)

Soil name and map symbol	Soil name and map symbol
2 Canaveral fine sand	24 Typic Sulfaquents
4 Canaveral Urban Land Complex	30 Quartzipsamments Urban Land Complex
22 Beaches	48 Quartzipsamments
23 Typic Sulfihemists	

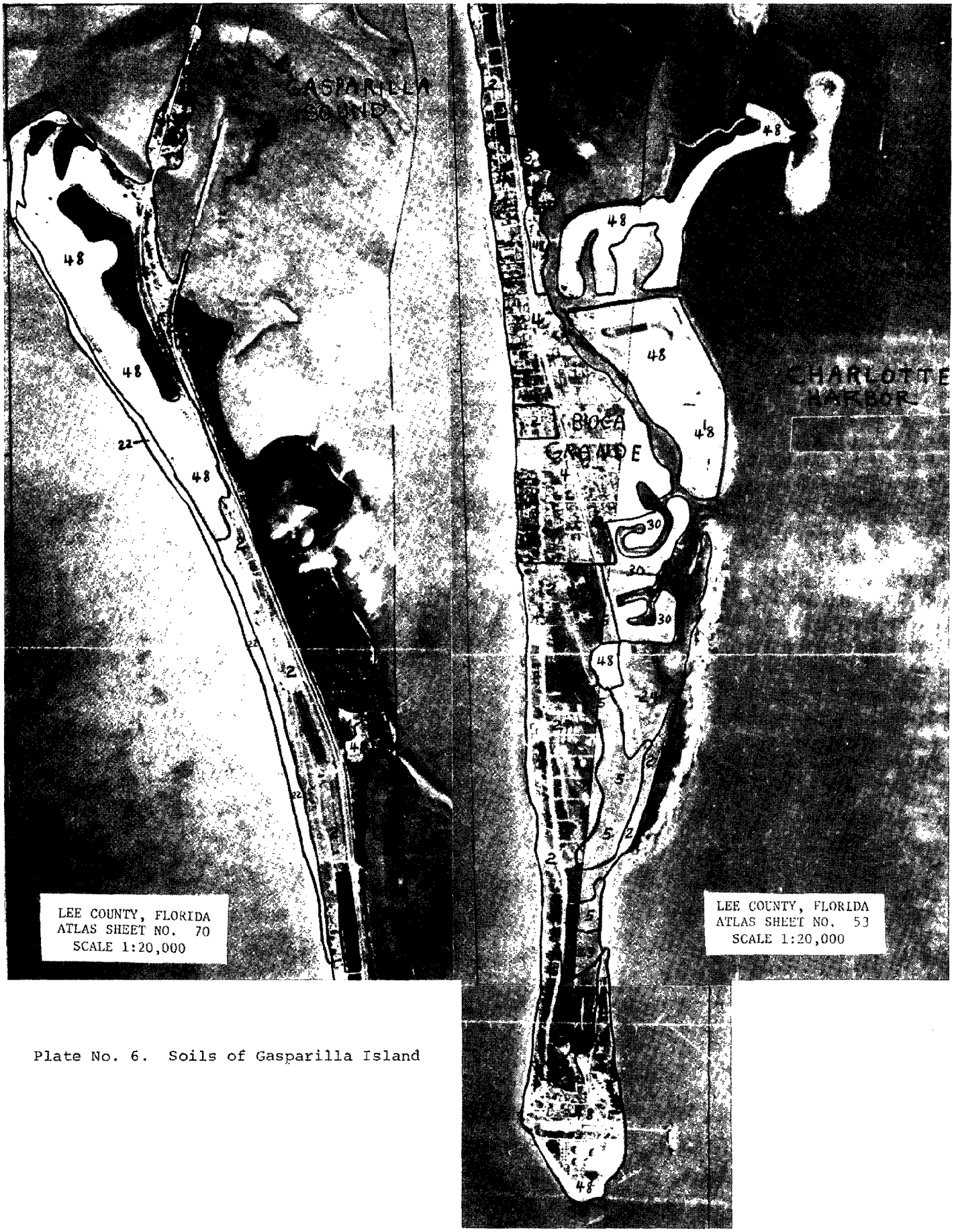


Plate No. 6. Soils of Gasparilla Island

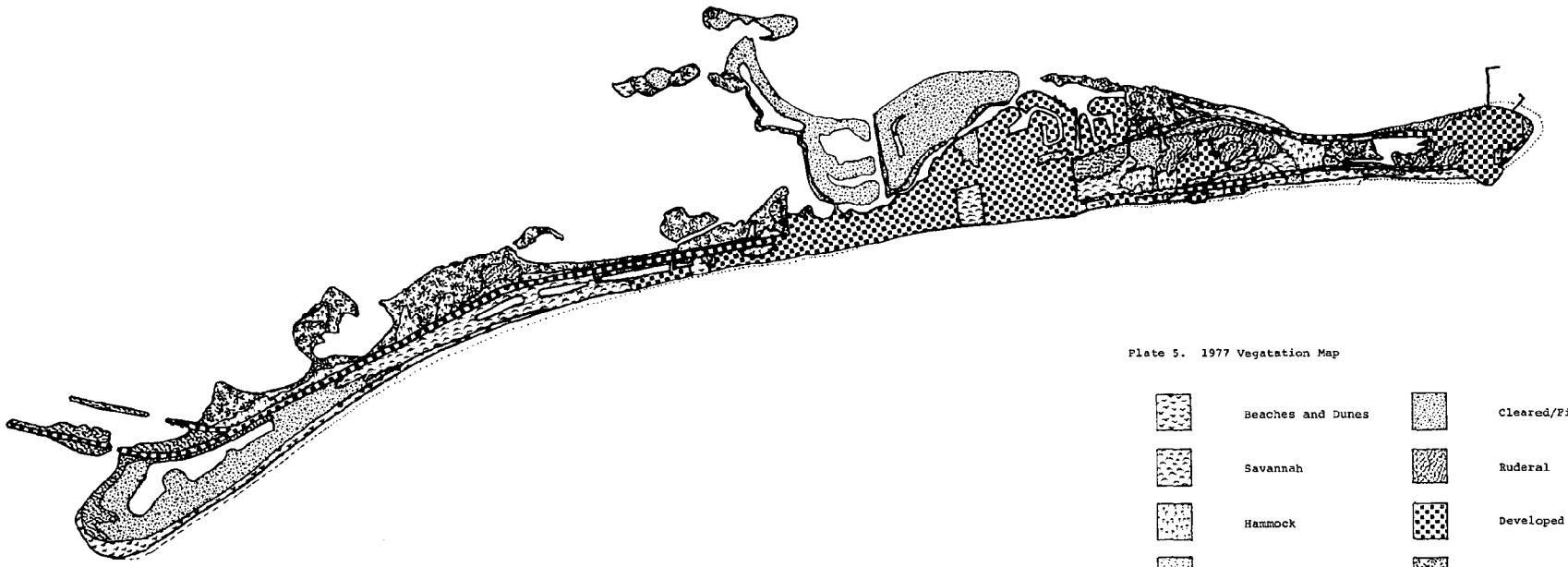


Plate 5. 1977 Vegatation Map

Beaches and Dunes

Savannah

Hammock

Swales and Marshes

Cleared/Filled

Ruderal

Developed

Mangrove

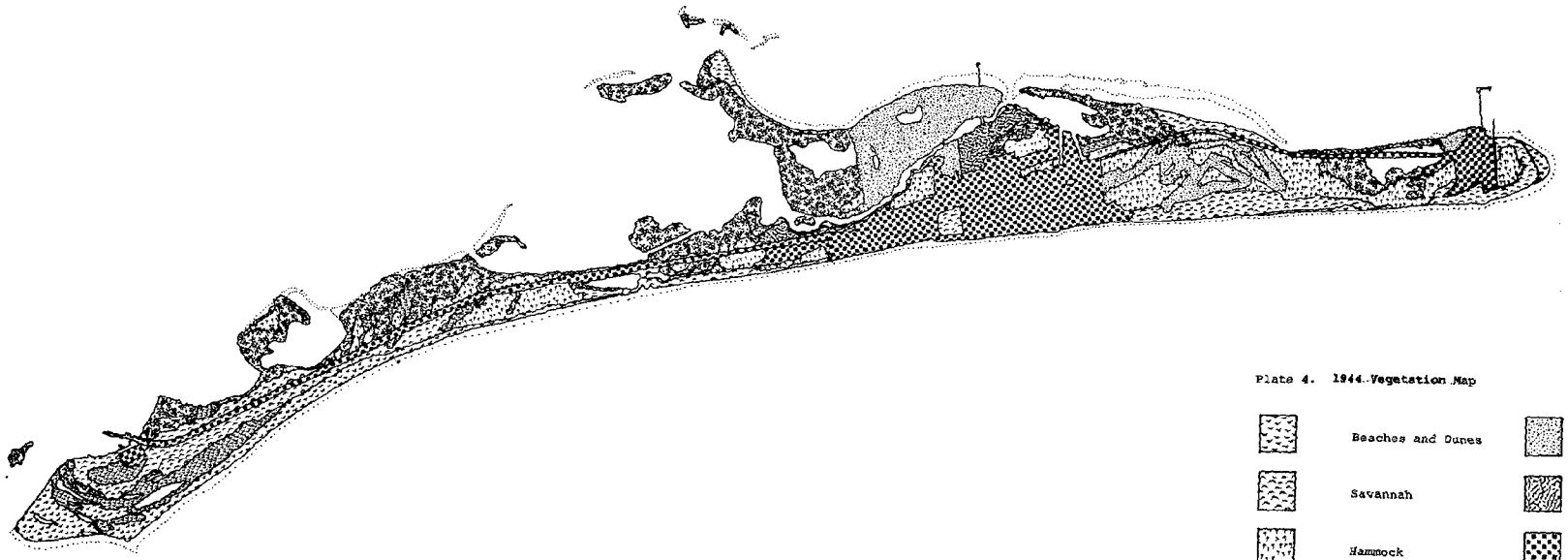
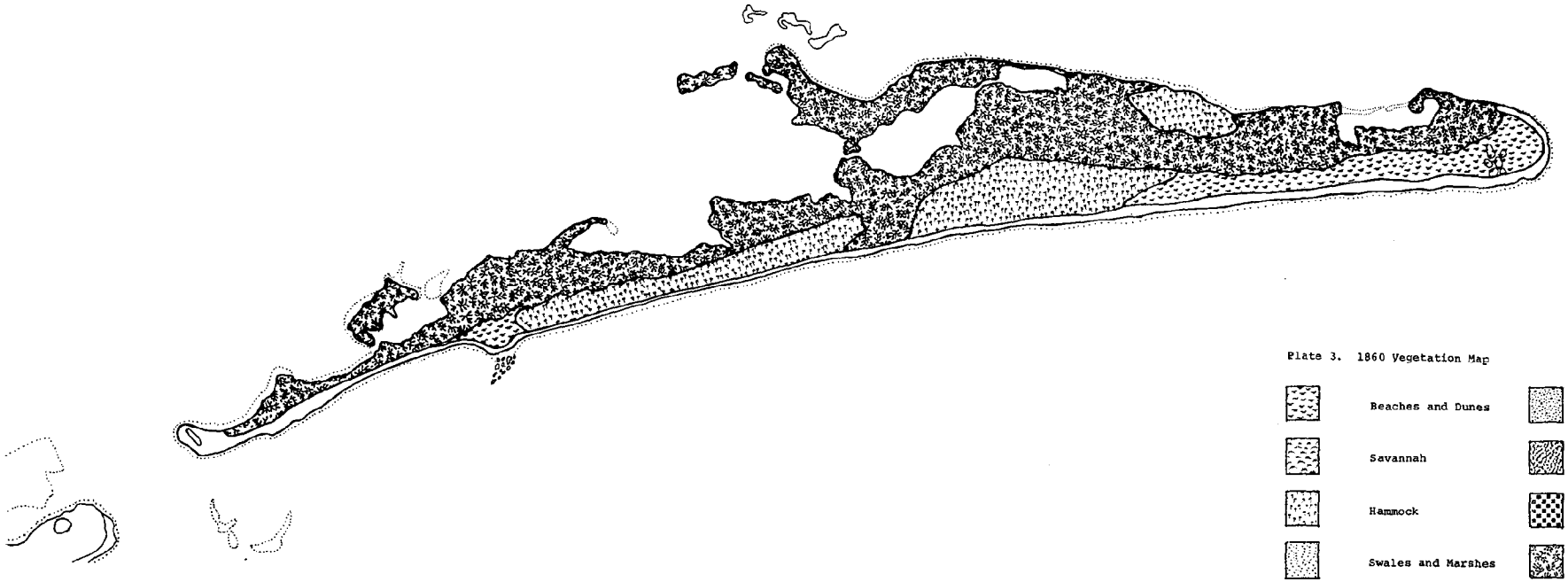


Plate 4. 1944 Vegetation Map

- Beaches and Dunes
- Savannah
- Hammock
- Swales and Marshes
- Cleared/Filled
- Ruderal
- Developed
- Mangrove


Plate 3. 1860 Vegetation Map
Beaches and Dunes
Savannah
Hammock
Swales and Marshes
Cleared/Filled
Ruderal
Developed
Mangrove

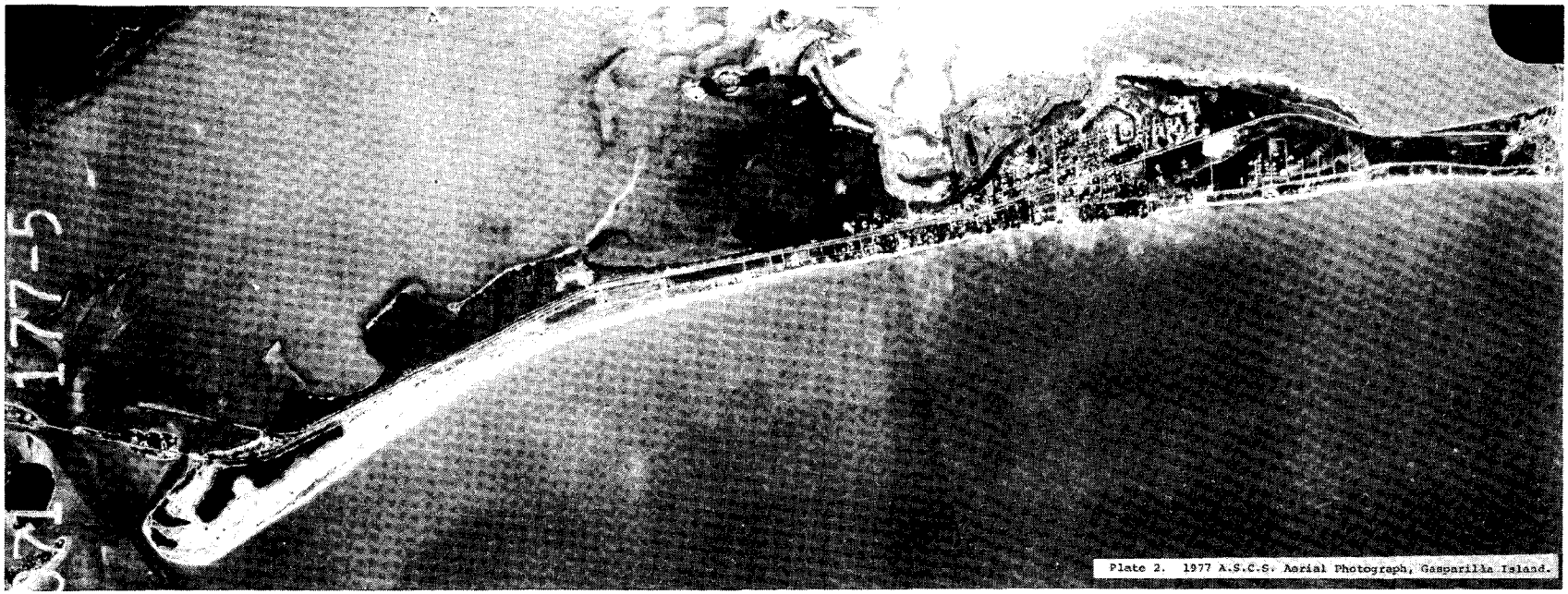


Plate 2. 1977 A.S.C.S. Aerial Photograph, Gasparilla Island.

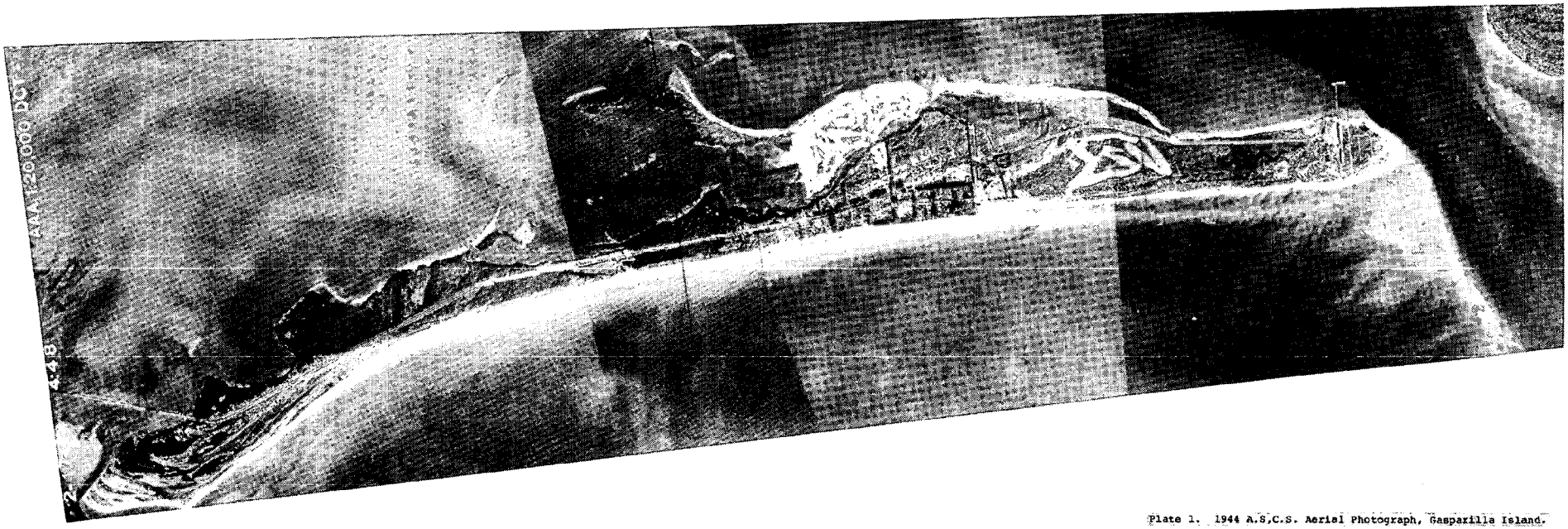


Plate 1. 1944 A.S.C.S. Aerial Photograph, Gasparilla Island.

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SUMMARY AND CONCLUSIONS

1. Gasparilla Island presents a different set of planning problems than mainland Lee County. It is a barrier island community--a special neighborhood with roots in the past. Its heritage is endowed with:

    - A long maritime history
    - Rich natural resources
    - A special sense of place and way of life

2. These heritage values set the tone for the island and provide the economic base of the residents.

3. This heritage can be maintained compatibly with increased development but sensitive planning is required. Heritage elements to be conserved, partially or wholly, include the following:

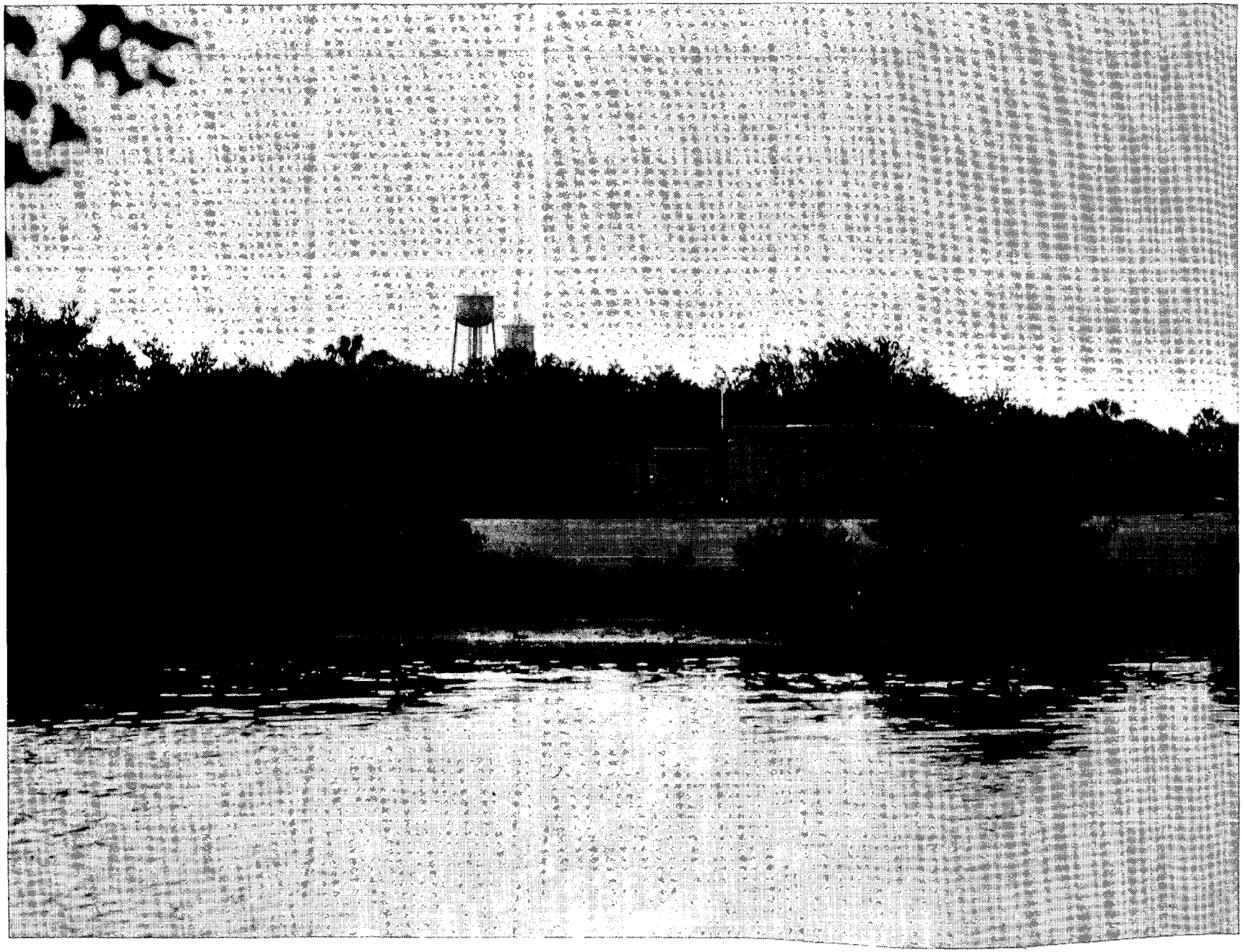
    - Wetlands and Mangroves (260 acres)
    - Particular stands of trees (109 acres)
    - Lakes and lagoons (85 acres)
    - Special wildlife habitats
    - Fish and shellfish resources, including tarpon
    - Commercial and sportfishing harbor and facilities
    - Special scenic situations
    - Historic structures

4. The priorities for conservation are different for different elements as are the methods; for example, the rapid loss of south end beach property would be remedied by public works, engineering, and structure siting, while wetlands would be conserved by performance standards.

5. The various readjustments to fit the historic and natural heritage plan and provide ample homesites could reasonably be made at this time, but could be difficult after further incompatible growth.

6. It appears unlikely that the three zoning petitions under consideration at this time would conform to a plan that was shaped to meet Gasparilla's special situation.

John Clark
March 16, 1978



At the present level of occupancy, the golf course is able to assimilate the effluent from the Gasparilla Sewage Treatment Plant

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