

general management plan
development concept plan

april 1983

PADRE ISLAND



NATIONAL SEASHORE / TEXAS

RECOMMENDED:

John W. Bright
Assistant Manager, Denver Service Center

11/19/82

William M. Lukens
Superintendent, Padre Island National Seashore

12/7/82

APPROVED:

Robert Kerr
Regional Director, Southwest Region

2/8/83



PADRE ISLAND NATIONAL SEASHORE TEXAS

GENERAL MANAGEMENT PLAN
DEVELOPMENT CONCEPT PLAN

DENVER SERVICE CENTER
NATIONAL PARK SERVICE
U. S. DEPARTMENT OF THE INTERIOR

CONTENTS

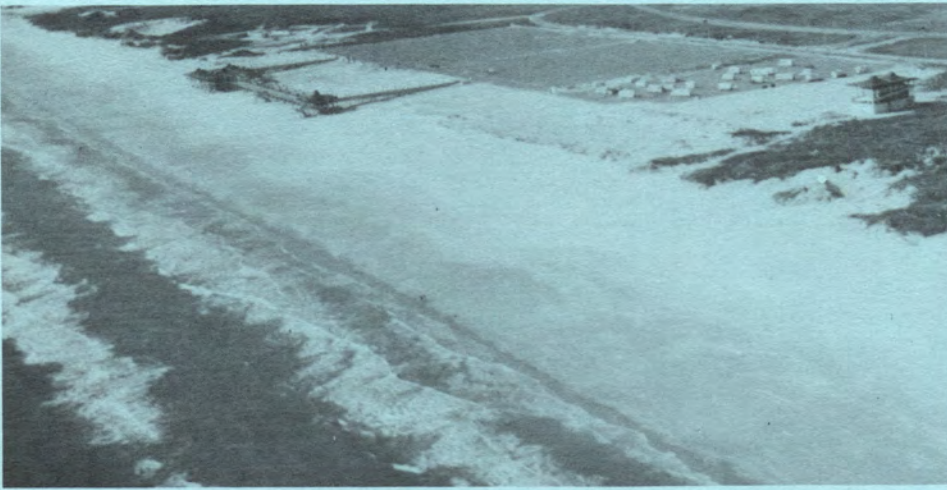
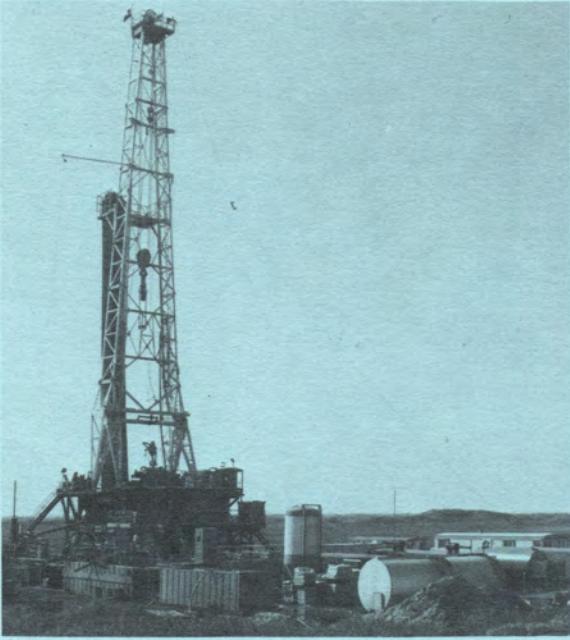
BACKGROUND	1
Purpose of and Need for the Plan	3
Overview of the National Seashore	4
Management Objectives/Management Zoning	6
THE PLAN	7
Plan Concepts	9
Management Zoning	9
Natural Resource Management	14
Cultural Resource Management	16
Visitor Use	17
Interpretation	18
Park Operations and Maintenance	19
General Development	20
Land Protection	24
PLAN IMPLEMENTATION	27
Phasing	29
Costs	29
Additional Planning and Research Requirements	31
Compliance and Mitigating Measures	31
Natural Resources	31
Cultural Resources	32
Site Planning and Development Considerations	32
APPENDIX: LEGISLATION	35
REFERENCES	41
LIST OF PREPARERS	44

ILLUSTRATIONS

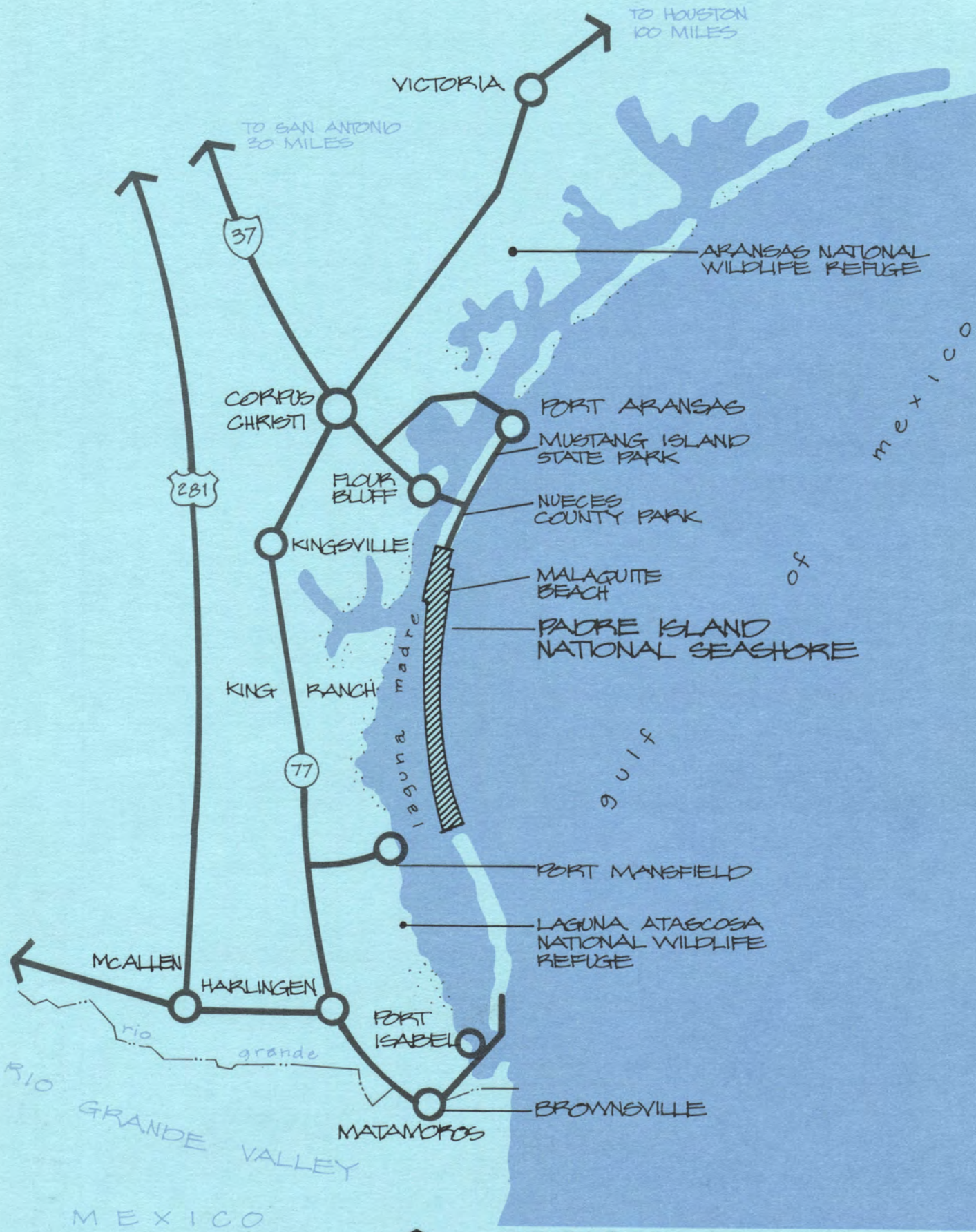
Region	2
Management Zoning	11
Development Concept Plan	21

TABLES

1. Development Schedule, Facility Capacity, and Cost Summary	30
2. Staffing Comparison	29



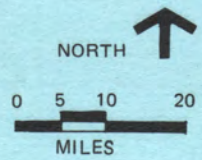
background



REGION

PADRE ISLAND NATIONAL SEASHORE
 UNITED STATES DEPARTMENT OF THE INTERIOR /
 NATIONAL PARK SERVICE

613 | 20012C
 DSC | MAR 83



PURPOSE OF AND NEED FOR THE PLAN

Padre Island National Seashore preserves a dynamic barrier island ecosystem that offers outstanding opportunities for shoreline recreation, natural history study, and contemplation of past and present uses of the coastline. Because the island remains relatively undisturbed, visitors can find solitude for their recreational activities in the island's farther reaches, or they can enjoy the convenience of staying near the moderate services (showers, interpretive programs, food, and campgrounds) offered at Malaquite Beach. Visitor use trends over the past 12 years indicate that use of the national seashore has stabilized at about a million visits a year.

This combination General Management Plan/ Development Concept Plan contains an integrated set of proposals that will be carried out over the next 10-15 year period to (1) ensure the continued protection of the island's natural and cultural resources, (2) support the established level and pattern of visitor use, and (3) facilitate efficient park operations. The following strategies will be followed to achieve the identified management objectives: Natural processes will be allowed to shape the barrier island with as little interference as possible. Natural resource manipulation will be limited to localized efforts to correct man-caused impacts. The vestiges of historic and prehistoric occupants of the island will be protected from man-caused damage but not from the effects of natural forces. Facilities that are sited in the coastal high-hazard area (the Malaquite pavilion and campground) will be retained until their maintenance is no longer cost-effective or they are damaged by a storm; at that time they will be removed, and the same services will be provided in a more environmentally sensitive manner. Recreational use will be supported by all ongoing services and by increased on-island information and interpretation. Activity zoning will be established around Bird Island Basin to minimize visitor conflicts and disturbance of nesting birds, and driving corridors will be delimited to reduce the potential for resource damage and conflicts among visitors associated with ORV driving along the beach. Required island operations and maintenance facilities, including housing for necessary law enforcement personnel, will be consolidated at Malaquite.

The primary planning issue has been the proposed relocation of visitor facilities out of the coastal high-hazard area to a more suitable location on the barrier island. The current proposals reflect recent NPS policies and federal regulations that now discourage new development of barrier islands at the scale of the existing visitor facilities on Padre Island, which were developed in the late 1960s. The current regulations reflect a growing understanding of barrier island systems and a realization that environmental manipulation to protect facilities in a high-hazard area potentially threatens the long-term perpetuation of the island's natural features. Furthermore, maintenance of the existing facilities on Padre Island has been extremely costly. Following Hurricane Allen, which swept the Texas Gulf Coast in August 1980, the costs of removing debris and repairing the storm damage in the park were estimated at \$562,000. The facilities have also required constant maintenance to repair damage caused by the corrosive salt-air atmosphere of the gulf shore. The development proposed in this plan will meet all the requirements for visitor use and

park operations with no significant impact on the natural environment and at a substantially reduced maintenance cost.

The plan proposals and alternatives were analyzed in a Draft General Management Plan/Development Concept Plan and Environmental Assessment that was published for review in November 1981. A copy of this document is on file at the park headquarters in Flour Bluff.

OVERVIEW OF THE NATIONAL SEASHORE

Padre Island National Seashore was established by Congress in 1962 "to save and preserve, for the purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped." In the enabling legislation (reprinted in the Appendix), Congress specifically directed that the national seashore be administered under the provisions of the 1916 act that established the National Park Service, indicating that it would be subject to the same mandates, policies, and regulations that apply to all units of the National Park System.

The area so designated by Congress stretches along approximately 66 miles of the longest barrier island in the country. The southernmost link in the chain of Texas barrier islands in the Gulf of Mexico, Padre Island extends for 113 miles from Corpus Christi Pass southward to Brazos Santiago Pass, just north of the U.S./Mexico border. It is separated from the mainland by Laguna Madre, a shallow body of water that is navigable through the Gulf Intracoastal Waterway maintained by the U.S. Army Corps of Engineers. The lagoon, which is 10 miles wide at its widest point, is connected to the gulf by the Mansfield Channel, which cuts through the southern portion of Padre Island. The national seashore lies almost entirely on the north side of the channel.

From the gulf to the lagoon--a width that varies along the island from 1,000 feet to 2½ miles--the island's landscape changes from broad sandy beaches, or in places beaches comprised almost entirely of shells, to ridges of fore-island dunes, then to grassy flats broken here and there by smaller dunes and ponds, and finally to vaguely defined back-island dunes and mudflats that merge with the waters of the lagoon. These land-and-water environments provide rich habitat for marine and terrestrial plants and animals, including seven threatened or endangered species of birds and sea turtles.

The barrier island is continuously being reshaped by the day-to-day action of winds, currents, waves, and tides. During storms, change is dramatic. The barrier island takes the full force of a hurricane's high-energy assault. As observed after Hurricane Allen, beaches are eroded, dunes are breached, overwash passes are cut, and property is damaged or destroyed. Where the fore-island dune ridge is well developed, the barrier island blocks the storm tidal surge and dissipates wave energy, providing a major defense for the mainland.

The island's visual resources serve as an amenity for the region's residents and many visitors. Extensive panoramas and vistas may be

viewed from higher elevations, such as ridges, foredunes, and especially the view tower at Malaquite Beach. The details of the landscape--a shell, a remnant from a shipwreck, a pattern in the sand--require a leisurely pace to be appreciated. Padre Island remains a relatively natural landscape. However, its natural character is somewhat tempered by the presence of oil and gas development, park facilities, and the road surface of route P-22. Because of the low, horizontal character of the landscape, vertical features are extremely conspicuous and tend to focus an observer's view. The landscape character of the island is most vulnerable to elements that oppose its horizontality.

Cultural resource surveys have recorded 32 sites on Padre Island, 20 of which are within the boundaries of the national seashore. Because the shifting sands of Padre Island constantly cover and reveal archeological sites--and because survey coverage is not yet complete--the presence of additional sites is likely. Three historic archeological sites within the park boundary are associated with at least three Spanish Colonial shipwrecks that occurred in 1554. These sites comprise the Mansfield Cut underwater archeological district, which is listed on the National Register of Historic Places. One associated site is located onshore and could be the survivors' and/or salvagers' camp related to the 1554 wrecks. Other historic sites include the Zachary Taylor campsite (Mexican-American War); and three sites known as Black Hill, Green Hill, and Novillo line camps, built for the cattle operations of the Dunn Ranch. The Novillo line camp, the only remaining structural expression of open-range ranching on the island, is included on the National Register of Historic Places.

With the longest stretch of undeveloped ocean beaches in the country, the national seashore provides a rare opportunity for primitive beach recreation. Nearly a million visitors come to enjoy the national seashore each year, mostly during the spring and summer. The majority of visitors are from Texas and come to spend the day, returning home at night. Visitor use is concentrated on the broad gulf beaches, where beachcombing, swimming, wading, sunbathing, fishing, picnicking, and strolling are popular activities. Beach use is densest near the pavilion and campground at Malaquite Beach. The pavilion provides a visitor contact station, showers, restrooms, and limited food service, making Malaquite an attractive beach destination. Many other visitors, however, seek a more solitary experience by driving down the beach, relying on their own vehicles for support. The lagoon is another destination for visitors. At Bird Island Basin and Yarborough Pass there are minor facilities near the lagoon to support boating, fishing, wading, and camping.

The level of use at the national seashore, now about a million visits a year, has remained relatively stable, increasing only 13 percent between 1969 and 1980. A regional growth in tourism and the subsequent development of coastal recreation facilities closer to the urban centers may contribute to a dispersal of public use away from the more remote national seashore. However, some increase in visitor use will probably occur.

For the past 20 to 30 years oil and gas exploration and extraction have been actively pursued on Padre Island. All mineral rights have been

reserved to the grantors, and provision for the recovery of minerals is made in the establishing act for the national seashore. Mineral exploration and recovery leases in the gulf and Laguna Madre are administered by the state of Texas. The leases are sold by the state to individual companies for a specified period of time, after which they revert to the state and can be resold.

MANAGEMENT OBJECTIVES/MANAGEMENT ZONING

The management objectives for the seashore reflect the National Park Service's intention to provide for recreational and interpretive uses that are compatible with the preservation of the natural environment, consistent with the legislated purpose of the park. Management will strive to

provide for recreational opportunities and development of the national seashore in a manner that is compatible with the protection of the natural and cultural resources of the area

avoid, to the extent possible, the long- and short-term impacts associated with the occupancy and modification of barrier island floodplains and the destruction or modification of wetlands

encourage a continuing research program which will provide the staff with information needed for interpretation and management of the natural and cultural aspects of the seashore

maintain and foster close liaison and cooperation with governmental and nongovernmental entities and individuals who have an interest in the national seashore and its surroundings

provide visitors with a varied and balanced interpretive program that offers insights into the natural and cultural values of the seashore

fulfill the commitment to previous property owners by ensuring their ability to recover the reserved oil and gas mineral resources with a minimum of environmental consequences

Management zones are designated for park lands and waters to indicate what visitor use, resource management, park operations, and development strategies are appropriate. The zones are based on the park's authorizing legislation, NPS policies, park resources, and established uses. Padre Island has a current management zoning system utilizing four major zones: natural, historic, development, and special use. Each of these zones is divided into several subzones to further specify particular use and management strategies. The current zoning system will change very little with the implementation of the plan. Current and proposed management zoning are compared on the Management Zoning map in the zoning section of the plan.



the plan

PLAN CONCEPTS

The GMP/DCP reflects several basic concepts about the nature of Padre Island, the purpose of the national seashore, and the character of appropriate uses. First, it recognizes that left alone the natural barrier island processes will perpetuate the unique resource values recognized by Congress and enjoyed by the public. Stated conversely, experience here and in other barrier island environments has proved that wherever man disturbs the natural features or interferes with natural forces on a barrier island, he eventually destroys or seriously impairs the island's natural ability to renew itself. Consequently, the island will be managed to sustain natural processes, accepting natural change as part of its evolution through time and space. Resource management problems will be reduced in the future by avoiding facilities and activities that run counter to the island's natural energy systems.

The plan also recognizes that the high-energy forebeach is both the most desirable setting for recreation and the most resilient natural zone, capable of withstanding high-density use while sustaining only minimal damage. Visitors' use of the beach does not depend upon extensive facilities. Therefore, the national seashore will be managed to retain its natural qualities, providing for an experience that complements, rather than duplicates, the experiences available at other regional shoreline recreation sites. The plan proposes that the seashore be operated to support a moderately high level of use--around one million visitors a year. It proposes facilities that will allow for the continuation of existing services and the possibility of future growth, but it does not commit the National Park Service to the long-term economic and environmental costs of maintaining large-scale permanent facilities in the coastal high-hazard area.

Finally, the GMP/DCP recognizes that hurricanes will continue to hit the Texas Gulf Coast and that natural and man-made features are vulnerable to storm damage. The perpetuation of the fore-island dune ridge is paramount to the island's storm defenses and thus to the overall preservation of the island.

The following specific proposals for resource management, visitor use, operations, and development are closely interrelated around these basic concepts, creating an integral plan for the future preservation and enjoyment of the national seashore.

MANAGEMENT ZONING

The kinds of lands and waters included in each zone and subzone and their prescribed management strategies are described below. The current and proposed acreages for each zone and subzone are listed on the Management Zoning map.

Natural Zone

This zone includes the natural environments that comprise the bulk of the national seashore. The lands and waters in this zone give Padre Island its character and value as a natural and visual resource.

Natural Environment Subzone. Lands and waters in this subzone are managed for resource-oriented recreation. Developments are confined to those essential for supporting visitor use--the beach vehicle corridor, unsurfaced back-island road, chemical toilets, and signs. The primary management strategy is noninterference with natural processes, but limited manipulation can occur to mitigate man-caused changes. Allowable activities include hiking, fishing, birding, swimming, beachcombing, primitive camping, and regulated vehicle use. Most of the natural zone falls into this subzone. It includes all of the beaches except Big Shell and Little Shell; the back-island grasslands, dune fields, and mudflats; all of Laguna Madre except the protected bird rookeries; and the gulf waters out to the 2-fathom line.

Outstanding Natural Feature Subzone. Resources in this subzone are managed for public appreciation and interpretation with a minimum of impact on the environment. In recognition of their value as unique natural resources, Big Shell Beach and Little Shell Beach are included in this subzone. The result of a convergence of longshore currents that deposit large amounts of shells at the heart of the barrier island sand and shell accretion system, these beaches provide an interesting visual contrast to the sand beaches and a focus for interpretation of the island's geology. Also included in this subzone is the small stand of live oaks near the Bird Island Basin road. These trees represent historic maritime forest vegetation on the island and provide a valuable opportunity for the interpretation of this environment type.

Protected Natural Area Subzone. Management in this subzone is intended to perpetuate ecologically significant and fragile environments. Minimal human intrusion is allowed and development is limited to boardwalks, signs, and wayside exhibits. The fore-island dune ridge, Laguna Madre bird rookeries, and marsh wetlands are included in this subzone. Other wildlife habitats, including the habitats of threatened or endangered species, may be managed as part of this subzone on a seasonal basis if restrictions on use are required.

Research Natural Area Subzone. Management in this subzone promotes research in undisturbed environments. A mile-long corridor of beach and fore-island dune ridge in the northern portion of the national seashore is included in this subzone. The area is closed to vehicle use, and no visitor facilities are provided. Researchers are recording the naturally occurring changes along the gulf side of the island.

Historic Zone

This zone and its associated subzones include archeological and historic resources and their settings. The overall management emphasis is on protection of cultural resources from man-caused damage. Allowable uses include interpretation and necessary support development, including trails, boardwalks, signs, and waysides.

Historic Site Subzone. The Dunn Ranch's Novillo line camp is included in this subzone. The management strategy for this site is limited maintenance to slow deterioration.

ESD
Y PARK

MALAUQUITE BEACH

YARBOROUGH PASS

GULF OF MEXICO

PADRE ISLAND NATIONAL SEASHORE

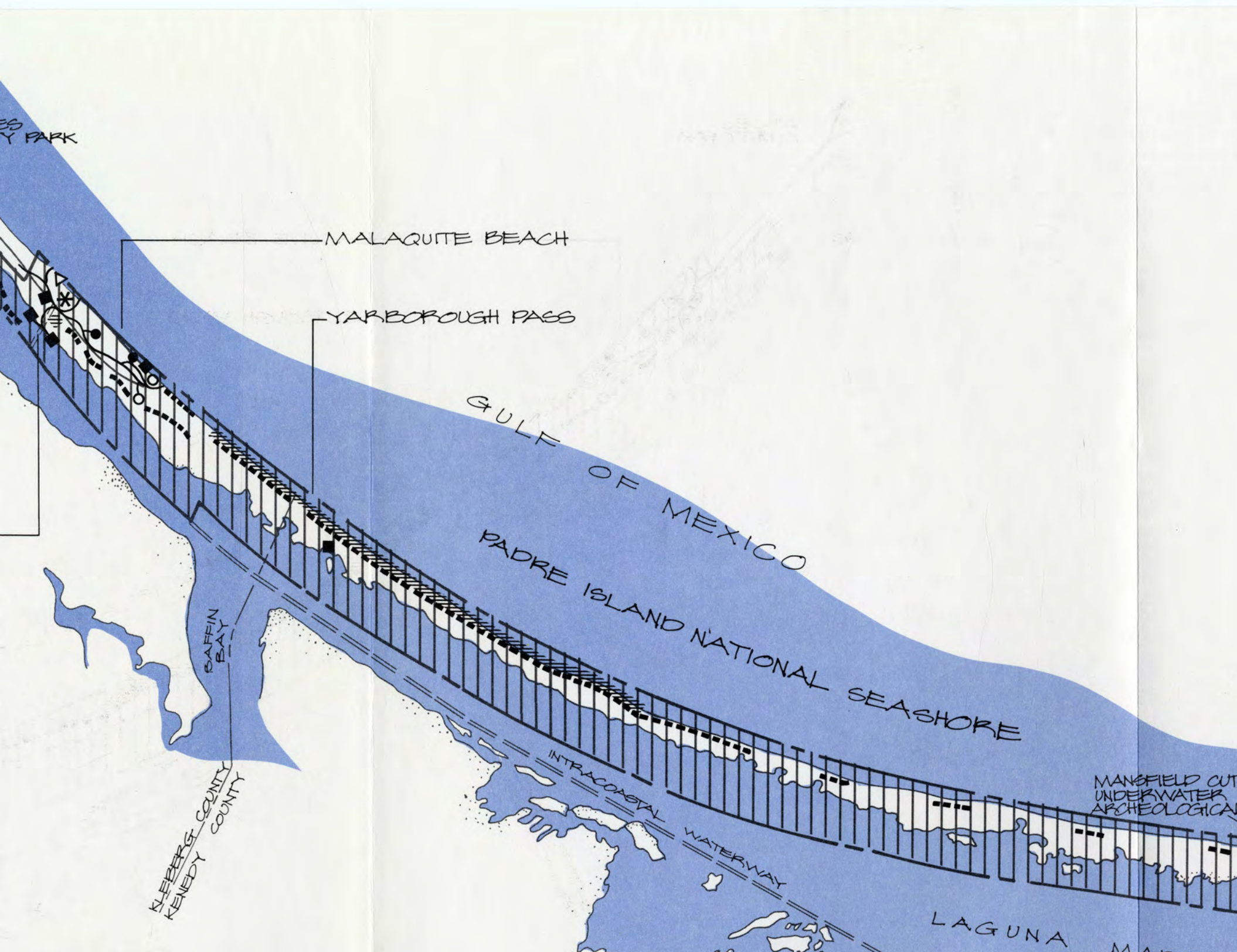
BAFFIN BAY

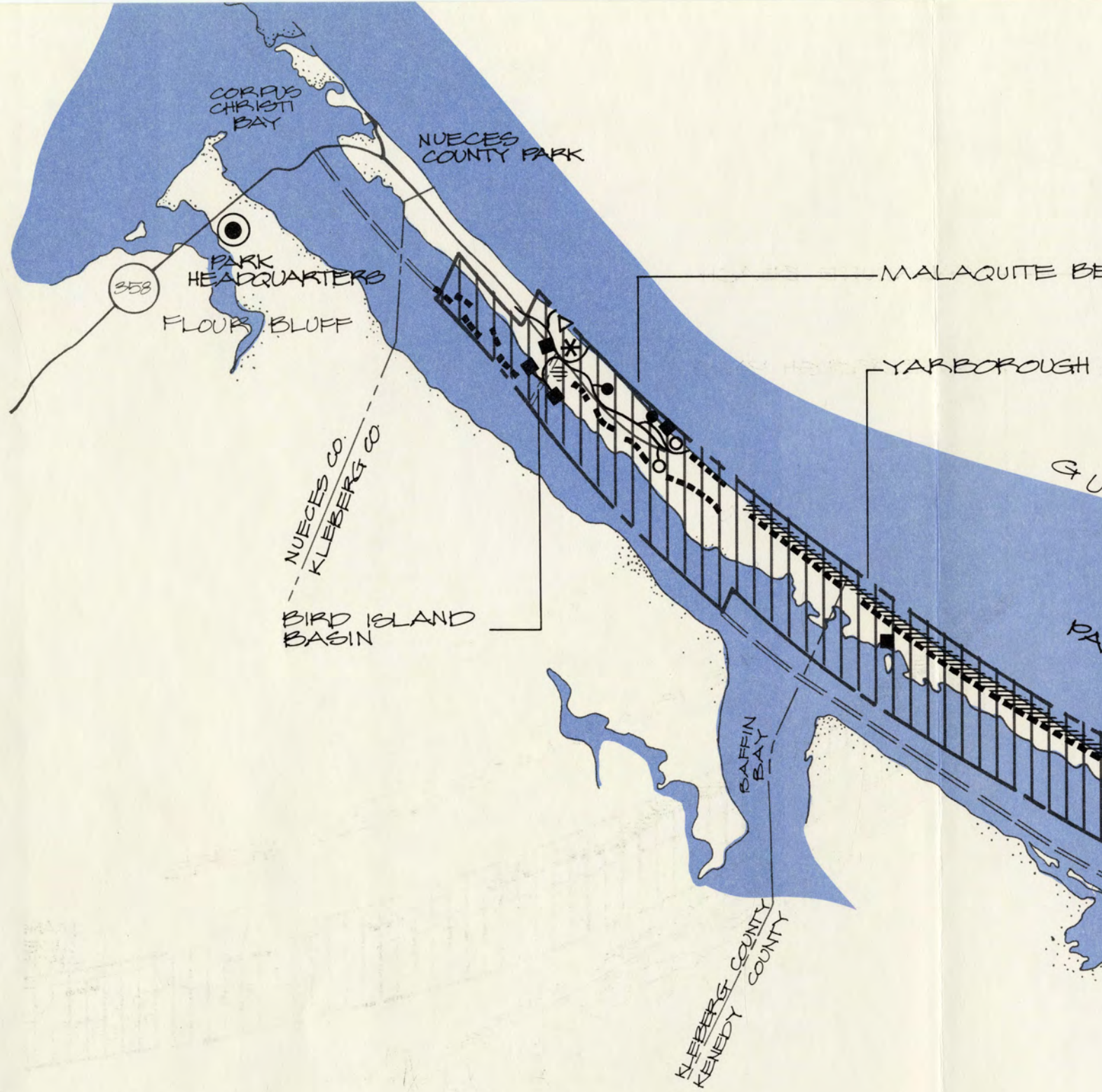
CLERBERG COUNTY
KENEDY COUNTY

INTRACOASTAL
WATERWAY

MANFIELD CUT
UNDERWATER
ARCHEOLOGICAL

LAGUNA MAE





CORPUS CHRISTI BAY

NUECES COUNTY PARK

358

PARK HEADQUARTERS

FLOUR BLUFF

NUECES CO.
KLEBERG CO.

BIRD ISLAND BASIN

MALAQUITE BEACH

YARBOROUGH

BAFFIN BAY

KLEBERG COUNTY
KENEDY COUNTY

GULF OF MEXICO

PACIFIC OCEAN

Bird Island Basin. The existing sand-bottomed boat launch will be retained. Infrequent dredging (every 20 years) may be necessary to maintain the boat channel. Overnight camping and such day uses as sail-fishing, wading, and picnicking will continue.

Yarborough Pass. No improvements will be made to the primitive campsites at Yarborough Pass. However, the dune crossing that allows vehicle access from the beach to these facilities will be improved so that oncoming vehicles can more easily be seen.

Interpretive Facilities. Interpretation, information, and orientation waysides will be placed at various locations from the north entrance to the beginning of the four-wheel-drive beach. At the north entrance wayside, immediately inside the park boundary along route P-22, pulloff parking for an additional three vehicles will be provided alongside the southbound lane. Other waysides will be placed at the Flour Bluff headquarters building, Bird Island Basin, the north beach barricade, the two self-guiding nature trails, Malaquite Beach, the campground, the south beach entrance, and the start of the four-wheel-drive beach.

A new barrier-free parking area and 1-mile self-guiding loop trail and raised wooden boardwalk will be constructed to interpret the ponds and wetlands across from Malaquite Beach. The existing grasslands nature trail will be upgraded to an on-grade boardwalk trail, and the parking area will be modified, to make them accessible to handicapped visitors.

Operations and Maintenance Facilities. The facilities at the island ranger station/maintenance area will eventually be removed. A minimal maintenance area will be developed at Malaquite for storage of essential supplies, materials, and vehicles. The materials not used on a regular basis will be kept on the mainland in the Flour Bluff area. On-island ranger functions will be relocated to the view tower, which will be modified for office space, storage, a communications center, and restrooms.

Housing. The two existing residences at Malaquite will be maintained and replaced as necessary, and two additional residences will be constructed. The total units on the island will not exceed four.

Park roads. The entrance road, the access roads to north beach, the maintenance area, and Bird Island Basin, and other service roads will be hard surfaced. No widening or significant realignment of roadways will be undertaken. Only one minor section on the Bird Island Basin access road will be realigned to correct a dangerous curve. Rodents may be controlled to prevent the significant road maintenance problem caused by burrowing.

Capacities

While visitor capacities at other parks are often dictated by the number of facilities and their sizes, this is not the case for most of Padre Island, where visitors can drive their vehicles the length of the national seashore, carrying their own recreational gear, food, and shade to almost

any point along the beach. In two places--the walk-in beach at Malaquite and the lagoon access point at Bird Island Basin--capacities will continue to be controlled by the size of the parking areas. Throughout the rest of the national seashore, however, use will be limited more by management policies, heat, insects, availability of drinking water, and whether or not a visitor's vehicle can navigate the soft sand south of the hard two-wheel-drive beach.

The capacities of the facilities proposed in the GMP/DCP reflect the current demands for these facilities at the national seashore. Based on visitor use trends over the past 12 years, the current level of use is anticipated to remain relatively constant for the life of this plan, so these capacities are expected to be adequate and appropriate for the visitor experience.

The overall recreation carrying capacity of the national seashore is unknown. It would be exceeded if visitors began causing an unacceptable change in the natural environment or if people began feeling overcrowded. These two parameters of capacity are known as physical capacity and social capacity. The physical capacity of the fore-island dune ridge is extremely low. Even a small amount of vehicle or foot traffic destroys the dune-binding vegetation and erodes the dunes, creating an unacceptable change. Consequently, visitors will be prohibited from climbing or driving on the dunes. The physical capacities of certain wildlife habitats are also low. The physical capacity of the gulf beach, where the impacts of use are washed away daily by forces stronger than man's, is quite high. So long as visitor use is confined generally to this resilient environment, the physical capacity of the national seashore will probably not be reached as quickly as the social capacity. Social capacity depends on individual visitors' perceptions and expectations, which in turn depend upon their aesthetic, emotional, and educational experiences, their socioeconomic and ethnic backgrounds, and a number of other variables. The current level of use at the national seashore is well below either the physical or the overall social capacity of the beach; however, in two locations where conflicting activities are occurring--the two-wheel-drive beach and Bird Island Basin--the social capacity is exceeded during peak use periods. The resulting conflicts will be reduced by regulating visitor activities, as described in the "Visitor Use" section.

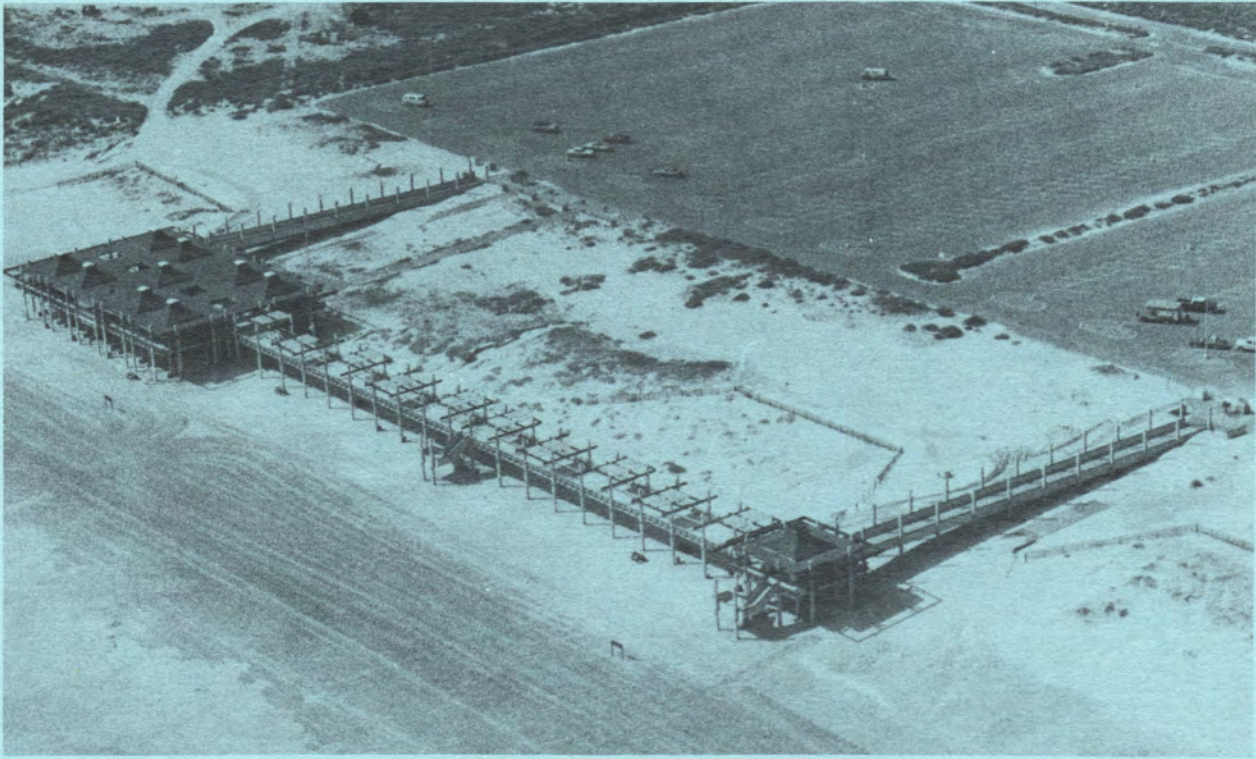
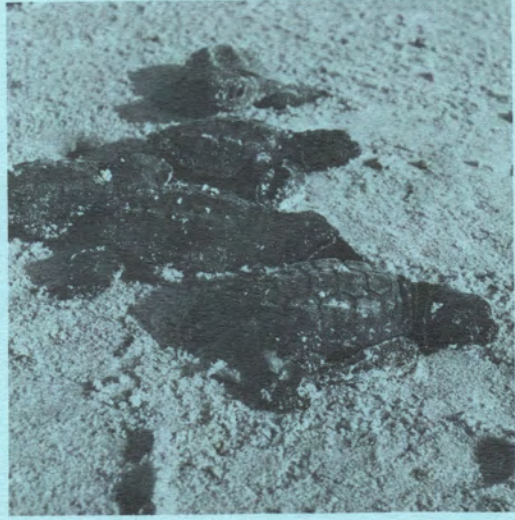
LAND PROTECTION

Federally owned lands south of Mansfield Channel that were deleted from the national seashore boundary by Public Law 96-199 (March 5, 1980) will be disposed of in accordance with federal property management regulations. Those lands donated by the state of Texas will be returned to the state in accordance with the conditions of the donations.

The National Park Service plans to delete the 262.56 acres of privately owned lands inside the national seashore boundary (see the Management Zoning map). These lands, which are south of and adjacent to Mansfield Channel, were intended to accommodate development proposals in a 1974 master plan. Based on this GMP/DCP the Park Service no longer feels

that these lands are essential to meet the park's purpose. NPS guidelines now discourage development in areas subject to flooding, wave erosion, or overwash, as these areas are. A legislative amendment will be required to delete these lands.

The lands north of the park boundary to the Kleberg County line, and the lands south of Mansfield Channel to the north terminus of park road 100, have been designated as undeveloped coastal areas and are not eligible for new flood insurance coverage after October 1, 1983. This designation was one of the findings of a recent Department of the Interior study that was conducted at the request of Congress in Public Law 97-35.



plan implementation

PHASING

The first actions to be taken in plan implementation will include constructing the ten wayside exhibits, upgrading the Yarrowborough Pass vehicle dune crossing, constructing the park entrance wayside and additional parking spaces, adapting the Malaquite view tower to serve as a ranger station, and modifying the grasslands nature trail to accommodate handicapped visitors.

Removal of the existing ranger station/maintenance facility will be accomplished after ranger activities are relocated to the view tower and the proposed maintenance facility is operational.

The Malaquite pavilion and campground will be removed when they are no longer cost-effective to maintain because of hurricane damage or structural deterioration. Programming of replacement facilities for visitor services and camping is critical so that new facilities will be operational prior to removal of old ones.

COSTS

Development costs are listed in table 1.

Annual operations and maintenance costs, including salaries, materials, equipment, and leasing, are expected to increase from \$1 million (current annual costs) to \$1.5 million (annual costs with implementation of the GMP/DCP). A comparison of staffing requirements is shown in table 2.

Table 2: Staffing Comparison

	Person-Years (Permanent/Seasonal)			
	<u>Proposed</u>		<u>Current</u>	
Superintendent	1.0	0.0	1.0	0.0
Administration	5.0	0.0	4.0	0.8
Visitor & Park Protection	9.0	5.0	7.5	4.0
Resource Management	2.0	0.6	1.5	0.3
Interpretation	4.0	0.6	3.0	0.3
Maintenance	<u>14.0</u>	<u>2.8</u>	<u>13.0</u>	<u>2.0</u>
Totals	35.0	9.0	30.0	7.4

Table 1: Development Schedule, Facility Capacity, and Cost Summary

Priority*	Location/Action	Facility Capacity**	Development Cost***	Priority*	Location/Action	Facility Capacity**	Development Cost***
1	Wayside Exhibits provide waysides (10 units)	100	\$ 29,000	8	Malaquite Beach construct visitor facilities and retain parking area (950 spaces)	3,040	\$ 600,000
2	Yarborough Pass upgrade vehicle dune-crossing (300 sq yd)	--	2,000		modify existing parking area to accommodate RV camping (100 sites)	320	202,000
3	North Entrance provide park entrance wayside	10	12,000		demolish pavilion	--	321,000
	enlarge parking area (3 RV spaces)	--	13,000		obliterate existing fore-island dune-ridge camp-ground (40 sites)	--	113,000
4	Malaquite View Tower adapt for ranger station (1,000 sq ft)	--	90,000		construct trails and boardwalks (12,000 sq ft)	--	160,000
5	Grasslands Nature Trail modify parking area and provide boardwalk for handicapped visitors (3/4 mi)	65	100,000		reestablish fore-island dune ridge (200,000 sq ft)	--	30,000
6	Island Employee Housing construct 4 housing units	--	600,000	9	site development	--	90,000
	site development	--	60,000		Pond Nature Trail construct trail and boardwalk (1 mi)	50	95,000
7	Island Ranger Station/Maintenance Area construct maintenance building (6,000 sq ft)	--	600,000		construct parking area (6 car, 3 RV spaces)	--	30,000
	construct road and parking area (asphalt, 32,000 sq ft)	--	154,000	N/A	construct viewing platform	10	15,000
	relocate fuel storage tanks and gas pumps	--	15,000	N/A	Flour Bluff Headquarters	--	--
	demolish ranger station and maintenance buildings	--	57,000		Bird Island Basin	200	--
	restore building sites (1,200 sq yd)	--	6,000			3,795	\$3,432,000
	obliterate parking area and road and restore site (5,300 sq yd)	--	53,000				

*Priorities are based on the normal NPS programming process and do not account for replacement of storm-damaged facilities, which could result in changes to this development schedule.

**Capacity is defined as the number of visitors that a facility will accommodate at any one time. Capacity shown for Malaquite Beach facilities was determined by the number of available parking spaces.

***Gross development costs (1982 dollars), including construction, project planning, construction supervision, and administrative services.

ADDITIONAL PLANNING AND RESEARCH REQUIREMENTS

A minerals management plan will be prepared that will identify and map existing leases and existing operations; identify and map critical resources to be protected (beach, dunes, ponds, archeological sites, endangered species, views, etc.); list minerals management policies; assess cumulative impacts of oil and gas operations; and describe procedures for managing oil and gas operations, including the time frames and content of required documentation.

COMPLIANCE AND MITIGATING MEASURES

Natural Resources

Much of Padre Island is within the 100-year coastal floodplain (U.S. Federal Emergency Management Agency, 1982). The preliminary flood insurance rate maps show the gulf side of the primary dune ridge as a coastal high-hazard area with an estimated flood elevation (including wave action) of up to 11 feet. Existing facilities in this zone include the Malaquite pavilion and campground, both of which are proposed for eventual removal. The maps show the 100-year flood elevations on the lagoon side to be up to 9 feet. Bird Island Basin is located in this zone. All new facilities proposed for development in this plan will be located in areas of minimal flooding (outside the 100-year floodplain).

Information and interpretive programs will be used to make visitors aware of the hazards of hurricanes. The seashore will be closed and evacuated under the threat of a hurricane. The seashore's hurricane plan is integrated with the evacuation plans for the city of Corpus Christi and Nueces County, with the Texas state Hurricane and Disaster plan, and with the National Weather Service's early warning system. Evacuation of the national seashore is sequenced to occur prior to evacuation of the remaining portions of Padre and Mustang islands. The early evacuation of the national seashore will reduce problems with crowded evacuation routes. All structures will be designed, where practicable, to be removable, resilient, or expendable under hurricane conditions. No further compliance with Executive Order 11988 is required.

No facility except an elevated boardwalk will be located in wetlands. Compliance with Executive Order 11990, Protection of Wetlands, is therefore not required.

Before a site is developed, the list of threatened or endangered animal and plant species will be rechecked for new entries. If necessary, a professional survey of the development sites will be conducted for any new listing, prior to construction. Any category I or II candidate species found will be avoided, or impacts upon them will be mitigated in the use of the site.

The National Park Service will consult with the Texas Parks and Wildlife Department prior to any limited resource manipulation of bird habitat on spoil islands in Laguna Madre.

The National Park Service, in cooperation with the agencies concerned, will ensure to the extent possible that waste and effluent discharges into Texas coastal waters resulting from activities in the national seashore will comply with the applicable Texas water quality standards for gulf and bay waters and with the related applicable guidelines and policies.

Cultural Resources

Professional surveys will be conducted early in project design stages to locate and evaluate cultural resources within project impact areas. Such impacts will be avoided or mitigated by professional data recovery or other means in compliance with Executive Order 11593, Protection and Enhancement of the Cultural Environment.

Site Planning and Development Considerations

New buildings will be mobile or of floodproof construction, energy efficient, and accessible to handicapped persons, all in conformance with the following applicable regulations: Executive Order 11988, Floodplain Management; Executive Order 11990, Protection of Wetlands; Executive Order 12003, Energy Policy and Conservation; Public Law 90-480, Design and Construction of Public Buildings to Accommodate the Physically Handicapped; and Public Law 93-112, the Rehabilitation Act of 1973.

At proposed building sites within the 100-year floodplain, buildings will either be elevated on open works--walls, columns, piers, piles--or will be portable and removable from the island. The finished floor elevations of the more permanent buildings will be above the combined storm surge and wave height as calculated for the specific site, so that the 100-year floodwaters will be accommodated.

The buildings will be oriented approximately 5 degrees east of south to minimize east and west solar exposure. This orientation will reduce both hot summer afternoon sun and cool winter winds. Wherever possible, indoor and outdoor activity spaces will also be oriented to the south and shaded with architectural features. Supplemental planting of vegetation may be needed to modify the microclimate for improved southwest summer wind movement in summer, and also to provide protection from cool northwest winds in winter. Facilities will be arranged in patterns that allow summer winds to facilitate cooling. Solar accessibility is excellent, and passive or active solar systems will be considered for space heating and cooling and for water heating.

Accessibility for handicapped persons will be provided by designing barrier-free structures and removing barriers from existing structures. Elevated structures will be accessible via ramps with landings. Curb cuts or ramps will be installed in parking areas. Campgrounds will have some barrier-free picnic tables and level sites located close to comfort stations. Except in areas where barrier-free design would cause serious environmental impacts, trails and boardwalks will be barrier-free with respect to trail width, grade (not to exceed 5%), and surfacing.

Site development will reflect the existing landscape character. Only plant materials indigenous to the barrier island will be used in landscaping. Indigenous plants will be used for vegetative screens and low foundation plantings to minimize both onsite and offsite visual intrusions. Vegetation disturbance and earth work will be minimized by taking advantage of previous building sites and existing or abandoned roads and trails in siting new facilities. Where possible new buildings will also be sited to utilize existing utilities. All new utilities will be placed underground and be concentrated where possible in a corridor along the roadway. Soil erosion resulting from construction will be reduced by controlling stormwater runoff.

Trails across the dune ridge will be sited to conform with natural site conditions. Boardwalks will be used where appropriate to minimize erosion of dunes. Trails in wetlands will include boardwalk sections, culverts, or other devices to avoid blockage of water movement.

APPENDIX

LEGISLATION

Padre Island National Seashore

Establishment authorized.....Act of September 28, 1962

An Act To provide for the establishment of the Padre Island National Seashore, approved September 28, 1962 (76 Stat. 650)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to save and preserve, for purposes of public recreation, benefit, and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped, the Secretary of the Interior shall take appropriate action in the public interest toward the establishment of the following described lands and waters as the Padre Island National Seashore: Beginning at a point one statute mile northerly of North Bird Island on the easterly line of the Intracoastal Waterway; thence due east to a point on Padre Island one statute mile west of the mean high water line of the Gulf of Mexico; thence southwesterly paralleling the said mean high water line of the Gulf of Mexico a distance of about three and five-tenths statute miles; thence due east to the two-fathom line on the east side of Padre Island as depicted on United States Coast and Geodetic Survey chart numbered 1286; thence along the said two-fathom line on the east side of Padre Island as depicted on United States Coast and Geodetic Survey charts numbered 1286, 1287, and 1288 to the Willacy-Cameron County line extended; thence westerly along said county line to a point 1,500 feet west of the mean high water line of the Gulf of Mexico as that line was determined by the survey of J. S. Boyles and is depicted on sections 9 and 10 of the map entitled "Survey of Padre Island made for the office of the Attorney General of the State of Texas", dated August 7 to 11, 1941, and August 11, 13, and 14, 1941, respectively; thence northerly along a line parallel to said survey line of J. S. Boyles and distant therefrom 1,500 feet west to a point on the centerline of the Port Mansfield Channel; thence westerly along said centerline to a point three statute miles west of the said two-fathom line; thence northerly parallel with said two-fathom line to 27 degrees 20 minutes north latitude; thence westerly along said latitude to the easterly line of the Intracoastal Waterway; thence northerly following the easterly line of the Intracoastal Waterway as indicated by channel markers in the Laguna Madre to the point of beginning.

SEC. 2. (a) The Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized to acquire by donation, purchase with donated or appropri-

Padre Island
National
Seashore, Tex.
Establishment.

Acquisition of
land, etc.

ated funds, condemnation, transfer from any Federal agency, exchange, or otherwise, the land, waters, and other property, and improvements thereon and any interest therein, within the areas described in the first section of this Act or which lie within the boundaries of the seashore as established under section 3 of this Act (hereinafter referred to as "such area"). Any property, or interest therein, owned by the State of Texas or political subdivision thereof may be acquired only with the concurrence of such owner. Notwithstanding any other provision of law, any Federal property located within such area may, with the concurrence of the agency having custody thereof, be transferred without consideration to the administrative jurisdiction of the Secretary for use by him in carrying out the provisions of this Act.

(b) The Secretary is authorized to pay for any acquisitions which he makes by purchase under this Act their fair market value, as determined by the Secretary, who may in his discretion base his determination on an independent appraisal obtained by him.

(c) In exercising his authority to acquire property by exchange, the Secretary may accept title to any non-Federal property located within such area and convey to the grantor of such property any federally owned property under the jurisdiction of the Secretary within such area. The properties so exchanged shall be approximately equal in fair market value: *Provided*, That the Secretary may accept cash from or pay cash to the grantor in such an exchange in order to equalize the values of the properties exchanged.

SEC. 3. (a) As soon as practicable after the date of enactment of this Act and following the acquisition by the Secretary of an acreage in the area described in section 1 of this Act, that is in the opinion of the Secretary efficiently administrable to carry out the purposes of this Act, the Secretary shall establish the area as a national seashore by the publication of notice thereof in the Federal Register.

Publication in
F.R.

(b) Such notice referred to in subsection (a) of this section shall contain a detailed description of the boundaries of the seashore which shall encompass an area as nearly as practicable identical to the area described in section 1 of this Act. The Secretary shall forthwith after the date of publication of such notice in the Federal Register (1) send a copy of such notice, together with a map showing such boundaries, by registered or certified mail to the Governor of the State and to the governing body of each of the political subdivisions involved; (2) cause a copy of such notice and map to be published in one or more newspapers which circulate in each of the localities; and (3) cause a certified copy of such notice,

Notice.

a copy of such map, and a copy of this Act to be recorded at the registry of deeds for the county involved.

SEC. 4. (a) When acquiring land, waters, or interests therein, the Secretary shall permit a reservation by the grantor of all or any part of the oil and gas minerals in such land or waters and of other minerals therein which can be removed by similar means, with the right of occupation and use of so much of the surface of the land or waters as may be required for all purposes reasonably incident to the mining or removal of such from beneath the surface of these lands and waters and the lands and waters adjacent thereto, under such regulations as may be prescribed by the Secretary with respect to such mining or removal.

Mineral reservation.

*mining
in seashore
ok -*

(b) Any acquisition hereunder shall exclude and shall not diminish any right of occupation or use of the surface under grants, leases, or easements existing on April 11, 1961, which are reasonably necessary for the exploration, development, production, storing, processing, or transporting of oil and gas minerals that are removed from outside the boundaries of the national seashore and the Secretary may grant additional rights of occupation or use of the surface for the purposes aforesaid upon the terms and under such regulations as may be prescribed by him.

SEC. 5. Except as otherwise provided in this Act, the property acquired by the Secretary under this Act shall be administered by the Secretary, subject to the provisions of the Act entitled "An Act to establish a National Park Service and for other purposes", approved August 25, 1916 (39 Stat. 535), as amended and supplemented, and in accordance with other laws of general application relating to the areas administered and supervised by the Secretary through the National Park Service; except that authority otherwise available to the Secretary for the conservation and management of natural resources may be utilized to the extent he finds such authority will further the purposes of this Act.

Administration.

16 U.S.C. 1.

SEC. 6. The Secretary may provide for roadways from the north and south boundaries of such public recreation area to the access highways from the mainland to Padre Island.

Roadways.

SEC. 7. The Secretary of the Interior shall enter into such administrative agreements with the Secretary of the Navy as the Secretary of the Navy may deem necessary to assure that the Secretary of the Interior will not exercise any authority granted by this Act so as to interfere with the use by the Department of the Navy of any aerial gunnery or bombing range located in the vicinity of Padre Island.

Gunnery or bombing ranges.

SEC. 8. There are authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act; except that no more than \$5,000,000 shall be appropriated for the acquisition of land and waters and improvements thereon, and interests therein, and incidental costs relating thereto, in accordance with the provisions of this Act.

Appropriation.

An Act to authorize the appropriation of funds for Padre Island National Seashore in the State of Texas, and for other purposes. (82 Stat. 1155)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, notwithstanding any other provision of law, there are hereby authorized to be appropriated such sums as may be necessary to satisfy the final judgment of \$6,810,380, (that is, \$9,212,730 minus \$2,402,350 deposited in court; all figures exclusive of amounts for tract No. 7) rendered against the United States in civil action numbered 65-C-54 in the United States District Court for the Southern District of Texas, for the acquisition of land and interests in land for the Padre Island National Seashore. The sums herein authorized to be appropriated shall be sufficient to pay the amount of said judgment, together with interest and costs as provided by law.

Approved October 17, 1968.

Legislative History

House Report No. 1856 (Committee on Interior and Insular Affairs).

Senate Report No. 1598 (Committee on Interior and Insular Affairs).

Congressional Record, Vol. 114 (1968) :

Sept. 16 : Considered and passed House.

Oct. 4 : Considered and passed Senate.

An Act to authorize the appropriation of funds for Padre Island National Seashore in the State of Texas, and for other purposes. (83 Stat. 45)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, notwithstanding any other provision of law, there are hereby authorized to be appropriated such sums as may be necessary to satisfy the final net judgments rendered against the United States in civil action numbered 66-B-1 in the United States District Court for the Southern District of Texas, for the acquisition of lands and interests in land for the Padre Island National Seashore, totaling \$4,129,829.00, plus interest as provided by law.

Approved July 11, 1969.

Legislative History

House Report No. 91-305 (Committee on Interior and Insular Affairs).

Senate Report No. 91-261 (Committee on Interior and Insular Affairs).

Congressional Record, Vol. 115 (1969) :

June 16 : Considered and passed House.

June 30 : Considered and passed Senate.

An Act to provide for increases in appropriation ceilings and boundary changes in certain units of the National Park System, and for other purposes. (90 Stat. 2732) (P.L. 94-578)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I—ACQUISITION CEILING INCREASES

SEC. 101. The limitations on appropriations for the acquisition of lands and interests therein within units of the National Park System contained in the following Acts are amended as follows:

* * * * *

(13) Padre Island National Seashore, Texas: section 8 of the Act of September 28, 1962 (76 Stat. 650) is amended by changing "\$5,000,000" to "\$5,350,000".

* * * * *

Approved October 21, 1976.

An Act

To establish the Channel Islands National Park, and for other purposes.

Mar. 5, 1980
[H.R. 3757]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

National Parks and Recreation Act of 1978, amendment.

TITLE I

SEC. 111. Paragraph (13) of section 101 of the Act entitled "An Act to provide for increases in appropriation ceilings and boundary changes in certain units of the National Park System, and for other purposes", approved October 21, 1976 (90 Stat. 2732, 2733), is amended by changing the period to a semicolon and inserting the following thereafter: "the Secretary of the Interior is authorized to revise the boundary of the seashore to add approximately two hundred and seventy-four acres and to delete approximately two thousand acres, and sections 302 and 303 of the Act of April 11, 1972 (86 Stat. 120, 121), shall apply to the boundary revision authorized herein."

16 USC 459d-7.

16 USC 459d-1 note.

Boundary change

REFERENCES

- BACCUS, J.T., and HORTON, J.K.
1979 "An Ecological and Sedimentary Study of Padre Island National Seashore." Prepared for the National Park Service. On file at Padre Island National Seashore, Flour Bluff.
- BULLARD, F.M.
1942 "Source of Beach and River Sands on Gulf Coast of Texas." Bull. Geol. Soc. Amer. 53:1021-44.
- BURNHAM, W., and RIDDLE, K.E.
1979 "The National Parks System and Peregrine Falcons." Paper presented at the Second Conference on Scientific Research in the National Parks, San Francisco.
- CORPUS CHRISTI, DEPARTMENT OF PLANNING AND URBAN DEVELOPMENT
n.d. Demography Study. Corpus Christi.
n.d. Economic Study. Corpus Christi.
- GUNDLACH, E.R.; DOMERACKI, D.D.; THEBEAU, L.C.; AND MUTHIG, M.
1981 "The Effects of Hurricane Allen on Padre Island National Seashore." Prepared for the National Park Service by Research Planning Institute, Inc.
- HAYES, M.O.
1965 "Sedimentation on a Semiarid, Wave-Dominated Coast (South Texas) with Emphasis on Hurricane Effects." Ph.D. dissertation, University of Texas at Austin.
- HENRY, W.K., and MCCORMACK, J.P.
1975 Hurricanes of the Texas Coast: Description and Climatology. College Station: Texas A & M University.
- LEATHERMAN, S.P.
1979 Barrier Island Handbook. Amherst: University of Massachusetts, the Environmental Institute, National Park Service Cooperative Research Unit.
- MCGOWEN, J.H.; GARNER, L.E.; and WILKINSON, B.H.
1977 The Gulf Shoreline of Texas: Processes, Characteristics, and Factors in Use. Bureau of Economic Geology Geological Circular 77-3. Austin: University of Texas.
- MCGOWEN, J.H.; GROAT, C.G.; BROWN, L.F., JR.; FISHER, W.L.; and SCOTT, A.J.
1970 Effects of Hurricane Celia: A Focus on Environmental Geologic Problems of the Texas Coastal Zone. Bureau of Economic Geology Geological Circular 70-3. Austin: University of Texas.

PRICE, W.A.

- 1965 "Geology and Oceanography, North Development Site, Padre Island National Seashore." Prepared for National Park Service. On file at Padre Island National Seashore, Flour Bluff.

TEXAS HISTORICAL COMMISSION, OFFICE OF STATE ARCHEOLOGIST

- 1974 An Assessment of the Archeological Resources of Padre Island National Seashore, Texas. Special Report No. 11. Austin.

U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

- 1977 General Soil Map of Kleberg County, Texas.

U.S. DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS, GALVESTON DISTRICT

- 1980 Floodplain Map of 100-Year and 500-Year Floodplains for Padre Island National Seashore. Galveston.

- 1981a Personal communication on coastal high-hazard zone. Galveston.

- 1981b "Floodplain Information on Padre Island National Seashore Administrative Office, Flour Bluff." Galveston.

U.S. DEPARTMENT OF COMMERCE, BUREAU OF THE CENSUS

- 1977 City and County Data Book. Washington: U.S. Government Printing Office.

U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, OFFICE OF COASTAL ZONE MANAGEMENT

- 1976 National Hazard Management in Coastal Areas. Washington, D.C.

U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, ENVIRONMENTAL DATA AND INFORMATION SERVICE

- 1979 Local Climatological Data: Annual Summary With Comparative Data. Corpus Christi, Texas.

U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT AND FISH AND WILDLIFE SERVICE

- 1980 Texas Barrier Islands Region Ecological Characterization: A Socioeconomic Study. Vols. 1 and 2. Slidell, La: Office of Biological Services.

U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE

- 1971 "Historic Resource Study, Padre Island National Seashore." Washington, D.C.

- 1973- "Public Use of the National Park System." Washington,
1975 D.C.

U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE,
DENVER SERVICE CENTER

- 1974 Master Plan, Padre Island National Seashore. Denver.
- 1975 "Interpretive Prospectus, Padre Island National Seashore." Denver.
- 1976 "National Park Statistical Abstracts." Denver.
- 1981 Draft General Management Plan/Development Concept Plan and Environmental Assessment, Padre Island National Seashore. Denver.

U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE,
PADRE ISLAND NATIONAL SEASHORE

- n.d. "Hurricane Plan--Padre Island National Seashore." Flour Bluff.
- 1978 "Statement for Interpretation and Visitor Services," by Robert G. Whistler. Flour Bluff.
- 1980a "Report on the Effects of Hurricane Allen on Padre Island National Seashore, August 8-11, 1980." Flour Bluff.
- 1980b "Endangered Species: Determination of Critical Habitat." Flour Bluff.
- 1980c "Determination of Critical Habitat, Class 3 Species." Flour Bluff.

U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE,
SOUTHWEST REGIONAL OFFICE

- 1979 "Novillo Line Camp Historic Structures Report, Padre Island National Seashore." Santa Fe, N.M.

U.S. FEDERAL EMERGENCY MANAGEMENT AGENCY

- 1982 Preliminary Flood Insurance Rate Maps, Kleberg County, Texas (Unincorporated Areas).

WARSHAW, S.

- 1975 "Water Quality Segment Report for Segment No. 2491 Laguna Madre." Report No. WQS-14. Prepared for Texas Water Quality Board.

WEISE, B.R., and WHITE, W.A.

- 1980 Padre Island National Seashore: A Guide to the Geology, Natural Environments, and History of a Texas Barrier Island. Bureau of Economic Geology Guidebook 17. Austin: University of Texas.

LIST OF PREPARERS

Planning Team Members

Gary W. Johnson, Project Manager, Landscape Architect/Sociologist,
Denver Service Center

Donald S. Follows, Former Project Manager, Park Ranger (Senior
Planner-Geologist), Denver Service Center

Richard Alesch, Planner/Environmental Specialist, Denver Service Center

Janet Bergquist-Dixon, Environmental Specialist, Denver Service Center

William M. Lukens, Park Superintendent, Padre Island National Seashore

James Woods, Biologist, Padre Island National Seashore

Consultants

Robert G. Whistler, Chief Naturalist, Padre Island National Seashore

Douglas Faris, Chief, Division of Planning and Design, Southwest
Regional Office

Thomas Lucke, Chief, Division of Environmental Coordination, Southwest
Regional Office

M. R. Fletcher, Chief, Division of Natural Resources Management,
Southwest Regional Office

David Gaines, Landscape Architect, Division of Planning and Design,
Southwest Regional Office

Jane Harvey, Division of Wayside Exhibits, Harpers Ferry Center

Terry Wong, Structural Engineer, Denver Service Center

Dave Stuart, Cultural Resource Specialist, Denver Service Center

As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Publication services were provided by the graphics and editorial staffs of the Denver Service Center. NPS 1844 A